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Letter to stakeholders

[102-14]

“Shared value” Ebitda: +13% in 2019, towards 42% of total Ebitda

The sustainability report we are currently presenting was drafted during the health emergency caused by the spread of the Coronavirus in our Country. As of 21 February, we prepared for the ensuing operational difficulties and introduced health protection and safety measures to guarantee continuity in our services, collaborating with our main suppliers. We decided to describe the impact of this emergency in this report, along with the measures we have taken, including those intended to help our customers experiencing economic difficulties due to the epidemic. Smart working was already widely used in our company and was extended during the most critical period. We were thus able to maintain continuity in all administrative services, including the preparation of this report, which reaffirms the innovative representation of its content, focused on our new strategic approach: Creating shared value (CSV).

In 2019, “shared value” Ebitda, i.e. the portion of Ebitda deriving from business activities able to meet the goals included in the “global agenda”, amounted to 422.5 million euro, with a 13% increase over 2018, now corresponding to 39% of total Ebitda. This result well respects the path set out by our Business Plan, designed so that “shared value” Ebitda accounts for 42% of total Ebitda as at 2023. For us and our stakeholders, this indicator has become the gauge of our progress in working towards sustainability, and 20% of variable compensation for the Group’s senior and middle managers currently depends on its growth. We have therefore decided to submit it to an external firm for verification, as of this year.

Underlying everything, our new Code of ethics

Our values and principles already lead us, and will increasingly do so in the future, to fulfil our mission. They are contained in our Code of Ethics, which is revised every three years, as per our commitment. We have taken the World Economic Forum’s Davos Manifesto, in its most recent version, as the source of inspiration for the fourth update of our Code, completed in December 2019 as the result of initiatives supported by a large and well engaged number of Group employees. The main new feature consists in including an approach based on shared value among our operational principles. We are convinced that the companies of the future will use the strength of business to contribute to regenerating the ecosystem and the environment, while at the same time implementing measures that enable them to construct a system that shows resilience with respect to the emerging context.

Our analysis of the external context, carried out in 2019, confirmed our selection of 11 SDGs, 6 of which are given priority, which represent the portion of the UN Agenda to which we contribute with our activities. The three categories into which they fall, defined as follows, were thus also corroborated: (i) smart use of energy, (ii) efficient use of resources and (iii) innovation and contribution to development. These three areas explain the “sense” of our business activity and provide the backbone for the three main chapters of our sustainability report.

Hera for a smart use of energy

Our ambitions concerning a smart use of energy can be subdivided into three areas: (i) reducing our own energy consumption, (ii) reducing our customers’ energy consumption and (iii) promoting renewable energies and decarbonisation.

Thanks to Iso 50001 certification and an intense plan for energy improvement, we have succeeded in reducing our consumption by 5.1% compared to 2013. The additional energy efficiency initiatives we have already identified and planned will allow us to reach an overall savings coming to 5.9%, thus exceeding the target of 5% set for 2020.

Our residential and business customers can rely on a range of offers and solutions in energy efficiency, to which the “Consumption log” was added in 2019. This report, free of charge, was planned in a collaboration with the Milan Polytechnic, to raise awareness about energy savings among our customers, based on the principles of behavioural economics. In late 2019, 20% of our customers benefitted from Hera Comm’s energy efficiency services.

Decarbonisation has become a signature part of our commercial offer: in 2019, we launched Hera Zero Footprint which, in addition to calling for 100% renewable electricity, guarantees that the emission of greenhouse gasses coming from natural gas consumption will be compensated by the acquisition of carbon credits. Internally, we are committed to reducing our impact on the climate by acquiring renewable electricity for all the Group’s main companies, producing 6.5 million m³ of biomethane from organic waste in our biorefinery and reducing our carbon intensity in energy production by 22%.

Hera for an efficient use of resources

2019 saw a further increase in sorted waste, which reached 64.6% (2018 Italian average: 58.1%) and, at the same time, an additional reduction in the use of landfills for municipal waste, which settled at 3.4% (2018 Italian average: 24%). Hera is thus almost 20 years ahead of the EU’s circular economy goal and ranks at the same level as the most advanced European countries. The tenth edition of the report entitled “Tracking Waste”, published in 2019, shows a rate of packaging recycling coming to 72%, already meeting the EU goal set for 2030.

Once again in the area of circular economy, an increase was seen in the recovery of both materials and energy in Herambiente’s selection plants, coming to 83% in 2019 (as against 77% in 2018), and the recycled plastic sold by Aliplast, which in 2019 reached almost 73 thousand tons (+14% over 2018).

Lastly, important initiatives intended to improve the “circularity” of our operating activities were introduced in 2019: the “water management” project was launched, which led to a 5.5% reduction in our water consumption over the year; the “Consumption log” mentioned above was distributed to a selection of roughly 80 thousand residential customers in water services, aimed at improving their consumption behaviour; and the “circular procurement” project was launched, whose goal is to introduce the principles of a circular economy into purchasing processes.

Hera for innovation and a sustainable development of the local area

Significant results were achieved by the Group in 2019 regarding Csv issues linked to the economic and occupational development of local areas, innovation and digitalisation, and air and soil protection.

The value coming from local service providers reached 69% of the total in 2019, amounting to 695 million euro (+10% over the previous year), while induced employment is estimated at approximately 8,400 workers; this data confirms the Group’s leading role in local development.

Investments in innovation came to roughly 78 million euro and were dedicated to projects in four areas: smart city, circular economy, utility 4.0 and customer experience. In 2019, continued efforts were made towards developing digital means for customer relations: downloads of the MyHera app, dedicated to residential customers, more than doubled compared to 2018, reaching 230 thousand.

Air protection was confirmed by positive results coming from the emissions of the Group’s waste-to-energy plants, which in 2019 as well showed a very modest amount of emissions into the atmosphere, 86% lower on average than the legal limits. Furthermore, in soil protection the projects completed by HERAtech in 2019 reused 77% of the total soil involved.

The future of our reporting: adopting the TCFD's recommendations

We have always been oriented towards enhancing our sustainability reporting, to the advantage of all our Stakeholders, fully convinced that one of the merits of transparency is that it improves our performances. The report we are presenting to you this year adopts in advance the new GRI Standards concerning water consumption and health and safety on the workplace, gives an account of the environmental benefits coming from investments financed with the Green Bond issued in 2019, and includes new information such as a description of the actions undertaken to prevent and manage risks in the areas of IT and corruption.

We are however aware that the priority goes to climate change, as regards the future of our reporting as well. This is why we have launched a workgroup whose purpose is to adopt the recommendations provided by the Financial Stability Board's Task Force on Climate-Related Financial Disclosure, to which we have decided to give our support. This report already contains a few improvements in this area, such as the increased amount of reporting concerning direct and indirect greenhouse gas emissions. We are currently working towards quantifying significant targets in reducing these emissions, in line with a business model and a proposition of value for our stakeholders that are already oriented, as proven by this report, towards energy efficiency, circular economy and decarbonisation.

We are convinced that in order to face the climate crisis, which concerns the long term and is much more structural than other crises, it is necessary to make use of means including disclosure on climate risk prevention and management, as well as diligence in the transition towards an economy with low CO₂ emissions.

We will thus be pleased to keep you up to date with our upcoming report entitled "Value to energy", and with our next sustainability report.

Tomaso Tommasi di Vignano

Executive Chairman

Stefano Venier

Managing Director

Methodological guide to the Report

[102-32]

[102-50]

This sustainability report represents the **Consolidated non-financial reporting** (CNFR) of the Hera Group (the Group). It reports – to the extent necessary to ensure understanding of Hera's business activities – on its performance, its results and the impact it has on the issues considered relevant and referred to in Art. 3 and 4 of Italian Legislative Decree No. 254/16 with reference to financial year 2019 (from 1 January 2019 to 31 December 2019). In order to define the aspects relevant to the Group and its stakeholders, a structured **materiality analysis** process was carried out which is described in the paragraph "Definition of contents" of this methodological guide to the Report.

As established by Art. 5 of Italian Legislative Decree No. 254/16, this document forms a separate report and is marked with specific wording in order to connect it to the Non-Financial Reporting required by law.

The Hera Group considers the Non-Financial Reporting to be its **sustainability report**, a primary tool for managing and reporting its activities and results in the **economic, environmental and social fields**, as well as a fundamental tool for providing **information to and dialoguing** with its stakeholders.

[102-51] [102-52]

The Sustainability Report has been drawn up and published yearly since 2002. Since 2007, it has been **approved by the Board of Directors of Hera Spa** when the annual and consolidated financial statements are approved and has been submitted to the Shareholders' Meeting. The most recent sustainability report was published in April 2019. This edition was approved by the Board of Directors of Hera Spa on 25 March 2020. This aspect demonstrates the central role of sustainability and corporate social responsibility in Hera Group's planning and control system, which brought forward the obligations introduced by the European directive on non-financial reporting by more than ten years.

The document is widely disseminated to all of the Group's stakeholders through publication on the company's website and distribution and presentation to all Group workers.

In addition to the **performances** and **goals achieved**, the sustainability report provides the principles which guide Hera Group's actions, the **future objectives**, the results of its **dialogue with stakeholders** and its existing **initiatives**. Special focus was given to **case studies**: projects that demonstrate the Group's commitment towards sustainability and the creation of shared value and the results achieved in these spheres.

The structure of the sustainability report is the direct consequence of the **strategic approach aimed at the shared value** that Hera Group has adopted since 2016 to respond more effectively to the challenges of sustainable economic development at global and local level, and to make the value generated through the local area more tangible.






The **glossary** in the appendix explains the technical terms used, while the **analytical list of contents** makes it easier to read the document.

The scope of reporting

[102-5] [102-45]

The scope of the **economic and financial** data and information is the same as Hera Group's consolidated financial statements as at 31 December 2019. The scope of the **social and environmental** data and information includes all the companies consolidated using the line-by-line method in the Group's consolidated financial statements, as reported below.

Companies included in the scope of reporting

				
<ul style="list-style-type: none"> • Hera Spa • Acantho Spa • Cosea • Cosea Ambiente Spa • HERAtech Srl • Hera Trading Srl • Inrete • Distribuzione Energia Spa (and a subsidiary company ATR Srl) • Uniflotte Srl 	<ul style="list-style-type: none"> • Hera Comm Srl • Amgas Blu Srl • Estenergy Spa and 5 subsidiary companies (Ascopiave Energia Spa, Ascotrade Spa, Blue Meta Spa, Etra Energia Srl, Hera Comm Nordest Srl) • Hera Comm Marche Srl • Hera Servizi Energia Srl 	<ul style="list-style-type: none"> • Herambiente Spa • Aliplast Spa and 4 subsidiary companies (Alimpet Srl, Aliplast France, Aliplast Iberia, Aliplast Polska) • ASA Scpa • Feronia Srl • Frullo Energia Ambiente Srl • Herambiente Servizi Industriali Srl • Hestambiente Srl • Pistoia Ambiente Srl 	<ul style="list-style-type: none"> • AcegasApsAmga Spa • AcegasApsAmga Servizi Energetici Spa • Aresgas EAD • Aresenergy Eood • Black Sea Gas Company eood • Hera Luce Srl • Tri-Generazione Scarl 	<ul style="list-style-type: none"> • Marche • Multiservizi Spa • Marche • Multiservizi Falconara Srl

[102-10]

The changes in the scope with respect to 2018 concern the inclusion of the following companies:

- ATR Srl, a company which manages the distribution of gas in the province of Bologna (consolidated as from 1 March 2019);
- Cosea Ambiente Spa, a company which manages the waste collection and disposal service in the province of Bologna (consolidated as from 1 January 2019);
- Estenergy Spa and 5 subsidiary companies (Ascopiave Energia Spa, Ascotrade Spa, Blue Meta Spa, Etra Energia Srl, Hera Comm Nordest Srl), companies which manage electricity and gas sales activities (consolidated as from 31 December 2019);
- Amgas Blu Srl, a company which manages electricity and gas sales activities (consolidated as from 31 December 2019);
- Pistoia Ambiente Srl, a company which manages a landfill for special waste in the province of Pistoia (consolidated as from 1 July 2019).

Furthermore, even if not included in the scope of consolidation, information relating to Enomondo Srl (50% invested in by Herambiente Spa) has been included, a company which manages a biomass plant, with regard to the aspects involving atmospheric emissions, energy production and waste disposal.

In order to compare data over time and to assess the performance of the Group's activities, the comparative data relating to the two previous years has been included, if available. Furthermore, to ensure that the Group's performance is correctly represented and that the figures are reliable, estimates have been used as little as possible. When using estimates, they are based on the best available and appropriately reported methodologies.

Any changes to the scope indicated above are appropriately reported in the document and, where present, do not compromise the proper representation of the business activity.

The reporting standards

[102-12] [102-54]

This sustainability report/CNFR has been drawn up in compliance with the "**Global Reporting Initiative Sustainability Reporting Standards**" defined by the Global Reporting Initiative (GRI) according to the "**In accordance**" – **Core** option.

This report adopts, a year in advance, the **up-dates** to the **Standard 303 (Water)** and **403 (Occupational health and safety)** published in 2018.

For the definition of value added and its distribution to stakeholders the "**Standard GBS 2013 - Principles for drawing up sustainability reports**" defined by Gruppo di studio per il Bilancio Sociale (GBS) was also used.

Furthermore, as a result of the commitments undertaken by the Group in relation to the **Global Compact (United Nations)**, the report represents the yearly Communication on Progress that is submitted to this institution.



During 2019, the Hera Group launched a process of studies and analysis on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the Guidelines of the European Union on the communication of the information relating to the climate, published in 2017 by the Financial Stability Board.

Hera will gradually comply with the recommendations of the Task Force, integrating them in its reporting instruments. The alignment process defined was approved by the Management Review in December 2019 and envisaged the formation of a dedicated cross-functional team, comprising not only the Shared Value and Sustainability Department, but also Risk Management, Strategic Planning and Energy Management.

With regard to this sustainability report, certain information has already been included in line with the TCFD recommendations, such as a table with the main GHG metrics and targets in the appendix, the description of the bonus system linked to climate objectives, the fine-tuning of the scope 3 emissions inventory and an overview of the Group's total emissions by sector.

Structure of the report

The Hera Group adopts a strategic approach to corporate social responsibility and sustainability based on the theory of **Shared Value** (Csv, "Creating shared value"), which highlights how a company can enhance its business while generating at the same time a positive impact on society.

The sustainability report reflects this approach also in the **very layout of the contents**.

In addition to quantifying the **shared value EBITDA**, introduced for the first time for the purpose of drafting the 2016 sustainability report, this report also focuses on the activities, results, case studies and investments related to shared value creation.

The Csv approach was defined starting from the **analysis of the global and local scenario**, which led to identifying **three drivers** and **nine impact areas** of interest for the Hera Group. Each driver was associated with the main SDG - **Sustainable Development Goals**, defined by the 2030 Agenda of the United Nations, which the Group intends responding to.

The sustainability report is divided up into **three main sections**: Sustainability, strategy and shared value; The shared value; The bases and the organisational levers.

The "**Sustainability, Strategy and Shared Value**" section contains the letter to the stakeholders, the introduction (About us) and references with regard to sustainability management and shared value (Sustainability for the Hera Group; Shared value).

The "**Shared value**" section contains for each defined impact area, the present and future scenario (status indicators, policies and targets) and the Group's responses: improvement objectives, performance indicators and case studies.

The "**Bases and the organisational levers**" section contains all relevant corporate social responsibility aspects which were not included in the shared value section (Governance and creation of value; Quality, cost and safety of customer services; People; Suppliers). These must be considered as the basis for generating shared value and, at the same time, as organisational levers through which value can be increased over time.

The reporting process

In addition to the previously listed guidelines, the sustainability report was drawn up in compliance with a specific Group **internal procedure** issued in 2012, updated in 2015 and 2019. This procedure describes the activities required for planning, achieving, approving, disclosing and presenting the report, the associated roles and responsibilities.

The **social and environmental sustainability objectives** set out in the sustainability report were defined with reference to the planning and control instruments used by the Group: 2019-2023 Business Plan, 2020 budget and 2020 balanced scorecard. These interconnected instruments contain sustainability objectives which have an impact on stakeholders. In particular, the Business Plan includes sustainability-related indicators for which quantitative targets have been defined.

The **collation** and the **consolidation** of the information and data presented in the sustainability report took place by means of the use of dedicated software: the data and the information for 2019 were directly input via the software by the contact individuals and were subsequently validated by the designated managers in the internal procedure.

[102-48]

Any **changes in calculations** compared to previous years are suitably indicated in a note accompanying the tables.

The Management Review Committee and the work group

The sustainability report was drawn up by the Shared Value and Sustainability Department of Hera Spa, with the participation of numerous contact individuals, both in terms of data collection and for the descriptions and comments. The preparation and supervision of the work, as well as the approval of the improvement objectives and of the document to be submitted to the Board of Directors was carried out by the Management Review Committee, made up of the Chairman and the Managing Director and 16 Group directors.

Management Review Committee: Tomaso Tommasi di Vignano, Stefano Venier, Roberto Barilli, Luca Moroni, Salvatore Molè, Mila Fabbri, Cristian Fabbri, Giancarlo Campri, Massimo Vai, Giuseppe Gagliano, Marcello Guerrini, Andrea Ramonda, Mauro Tiviroli, Alessandro Baroncini, Roberto Gasparetto, Franco Fogacci, Antonio Dondi, Susanna Zucchelli.

[102-53]

Shared Value and Sustainability Department (bs@gruppohera.it): Filippo Bocchi, Benny Buoizzi, Gianluca Principato, Gaëlle Ridolfi, Erika Vignoli, Karin Bartolotti and Silvia Cicchelli.

Thanks to all the 213 persons involved in the preparation of this Sustainability Report.

Auditing of the report

[102-56]

The Consolidated non-financial reporting is subject to a limited audit ("limited assurance engagement" in accordance with the criteria indicated by the ISAE standard 3000, Revised version) by Audirevi Spa; these activities concluded with the issue of the "Independent auditors' report" presented at the end of this document.

It should be noted that the quantitative information contained in the Non-Financial Reporting, which does not refer to the indicators reported in the "GRI Contents reference table", has not been specifically examined by the independent auditing firm Audirevi Spa. This information has been presented voluntarily, also on the basis of the materiality analysis, to supplement that required by Italian Legislative Decree No. 254/16 and by the reporting standards adopted by the Hera Group.

The stakeholders and the materiality analysis

Hera's stakeholders

[102-21] [102-40] [102-42] [102-43] [102-44]

The stakeholder map has been defined starting off from an audit of the company's stakeholders. Each category identified presents particular interests and priority topics and is listened to through dialogue and involvement initiatives. The infographic below provides a summary of the stakeholders identified and the main dialogue and consultation activities carried out during the year. For detailed information see the "Dialogue with our stakeholders" paragraph (chapter "Governance and creation of value").

The materiality analysis and definition of the contents

[102-46]

Non-financial and sustainability reporting is preceded annually by the **analysis and identification of relevant topics** for the stakeholders and for the Hera Group. Specifically, the relevant aspects are selected according to the size of the impacts (positive and negative) generated and the repercussion they may have on stakeholders' decisions.

The process for defining the material topics is based on the **analysis of internal and external documents** which brings to light the most relevant topics related to the shared value and sustainability, which the reporting must focus on.

In order to identify the aspects linked to the activities of the Hera Group with an economic, social and environmental impact, **business plans** and **risk analysis** was looked at. Thanks to these two documents, it was possible to comprehend the strategic priorities and the main risks monitored and how these can affect the shared value and sustainability dimension.

In order to understand the relevant topics for stakeholders, the external scenario relating to the three drivers of shared value, the main regulatory changes, the press review, the issues raised, the aspects investigated by the HeraLABs and the main issues arising from other engagement activities (including the internal climate survey and the customer satisfaction survey) were taken into account.

The **external context pertaining to the three drivers identified for the creation of shared value** was then analysed: efficient use of resources, intelligent use of energy and innovation and contribution to development of the area. For each driver, global, European, national and local policies were analysed in-depth to define the priorities for change towards sustainability; this involved 75 policies, including the 2030 UN Agenda, in relation to which the commitments and the most significant quantitative targets for Hera's activities were considered. This set of policies was joined by 14 new policies analysed in 2019.

The **HeraLABs** were then considered, encounters with stakeholders which have the purpose of proposing initiatives for involving the reference area and improving the sustainability of the services offered in the area, periodically checking the effectiveness of the same. During the various meetings of the LABs aspects of interest to the categories of stakeholders which take part in the same are proposed and analysed, and improvement initiatives are identified which are jointly planned by Hera and the LAB itself.

Regarding the **press review**, the presence of information regarding the Hera Group was analysed in the leading local and national newspapers by highlighting the topics that showed greater visibility (whether

positive or negative) in more than one area (overall negative visibility index above one thousand points or positive visibility index above 5 thousand points).

The **annual customer satisfaction survey** assesses the quality of services offered and customers' satisfaction with the Group. The survey also highlights the topics that are of particular importance in determining customers' overall satisfaction.

The **biennial employee satisfaction survey**, dialogue activities with **consumer associations** and **area managers** also contributed to the definition of relevant topics.

[102-49]

With respect to the issues in the 2018 Sustainability Report, there have been no significant changes, except for the integration of some information in line with the **TCFD recommendations** and on the prevention and management of **cyber risks** and those within the sphere of **corruption**. Information has also been added with regard to the introduction of the principles of **circular economics** in the management processes such as those relating to purchasing.

The 2019 Sustainability Report also contains the indicators necessary for reporting on the projects financed by the 2019-2027 **Green bond**.

Breakdown of the information required by Italian Legislative Decree No. 254/2016 and relevant aspects [102-47] [103-1]

Each sphere of Italian Legislative Decree No. 254/16 has been reported on within this report, in accordance with current legislation. There are various relevant topics identified in the above-mentioned analysis, consistent with the decree on the non-financial information. The following table summarises the aspects of Italian Legislative Decree No. 254/16 and its link with relevant topics, the reason why the topic is relevant, the GRI reference standard, the scope of the impact and the reference stakeholder.

Areas It. Leg. Dec. No. 254/16	Material aspects of the Hera Group	Why it is material	GRI	Scope of the impact	Reference stakeholder
Aspects regarding HR management Art. 3.2, paragraph c), d)	<i>Occupational Health and Safety</i>	The Hera Group safeguards and ensures a healthy and safe work environment, committing itself to measures to reconcile the work-life balance, as well as to maintaining a consistently low accident rate. Furthermore, Hera considered possession of the Ohsas 18001/Iso 45001 certification to be a social criteria in the process for the identification, selection and monitoring of the suppliers, and monitors the main accident/injury indexes for the main suppliers of goods and services.	403-1	Internal External	Employees Suppliers
			403-2		
			403-3		
			403-4		
			403-5		
			403-6		
			403-7		
			403-8		
	<i>Diversity</i>	The Hera Group protects the rights of all the employees, undertaking to guarantee equal opportunities and to value diversity. In 2009 Hera signed the Equal Opportunities Charter and in 2011 established a Diversity manager who, together with a work group, defines projects, activities and initiatives concerning diversity and inclusion.	401-1	Internal	Employees
			405-1		
			405-2		

Areas It. Leg. Dec. No. 254/16	Material aspects of the Hera Group	Why it is material	GRI	Scope of the impact	Reference stakeholder
Environmental aspects Art. 3.2, paragraph a), b), c)	<i>Training and professional development, remuneration and incentives</i>	The Hera Group considers the training and professional development of its employees to be fundamental, and demonstrates this through the average <i>per capita</i> training hours for its employees, the numerous training activities organised at HerAcademy, the leadership model and the development process, which assesses over 5 thousand employees each year. Furthermore, Hera defines and applies a remuneration and incentive policy aimed at attracting, motivating and retaining its resources.	404-1	Internal	Employees
			404-2		
			404-3		
	<i>Sustainable management of water resources</i>	The Hera Group, since it is the operator of water services, undertakes to guarantee its customers the perfect quality of the water together with all the technical services indispensable for maintaining the continuity of the supply. Furthermore, Hera is involved in water management activities (for its own consumption and that of its customers), along with sewage and purification sector upgrade and network resilience activities.	303-1	External	Customers Local community
			303-2		
			303-3		
	<i>Transition towards a circular economy</i>	In its capacity as waste management services operator, the Hera Group is committed to the development of a business model increasingly oriented towards the circular economy. In fact, Hera is committed to increasing recycling and recovery (of material and energy), decreasing conferring material to landfills, promoting waste prevention initiatives and improving internal circularity.	306-2	Internal External	Group companies which manage waste management services and waste treatment plants Local community
	<i>Promotion of energy efficiency and spreading renewable energy</i>	The Hera Group, as an energy services provider, is committed to reducing internal and customer energy consumption, offering solutions aimed at energy efficiency and decarbonisation. Hera also instigates the use of renewable energy, which it produces mainly by exploiting the organic media of waste (e.g.: biomethane) and which it offers to its customers by means of dedicated offers.	302-1	Internal External	Group Customers
			302-3		
			302-4		
	<i>Compliance with environmental and social regulations</i>	When handling the services provided and managing its plants, the Hera Group observes the environmental and social legislation, also in the event of outsourced activities. From an environmental standpoint (emission limits and water quality), Hera sets itself more challenging objectives than those envisaged by the law, carrying out period checks care of its plants.	307-1	Internal	Group Employees
			419-1		
	<i>Reduction of greenhouse gas emissions (climate change)</i>	The Hera Group is committed to the reduction of greenhouse gas emissions produced directly (scope 1), indirectly deriving from the purchase of electricity acquired (scope 2) and indirectly (scope 3), but consequent to its own business activities. This commitment is also guaranteed by the annual compilation of the Carbon Disclosure Project questionnaire and process of gradual alignment with the recommendations of the Task Force on Climate-related Financial Disclosures and the Guidelines of the	305-1	Internal External	Group Customers Local community Suppliers
			305-2		
			305-3		
			305-4		

Areas It. Leg. Dec. No. 254/16	Material aspects of the Hera Group	Why it is material	GRI	Scope of the impact	Reference stakeholder
		European Union on the communication of climate-related information, launched in 2019.			
	<i>Integration of the climatic aspects in governance, in the strategy and in the analysis of the risks</i>	<p>During 2019, the Hera Group launched a process of studies and analysis on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the Guidelines of the European Union on the communication of the information relating to the climate, published in 2017 by the Financial Stability Board.</p> <p>The Hera Group will gradually comply with the TCFD recommendations, integrating them in its reporting instruments. The defined alignment process was approved by the Management Review in December 2019 and also envisages the establishment of a dedicated inter-functional team.</p>	*	Internal	Group
	<i>Environmental impact of waste treatment plants (NIMBY syndrome)</i>	When managing the waste treatment plants also close to urban contexts, the Hera Group is particularly careful not to create inconveniences for the reference community. Hera carries out environmental impact assessment and screening procedures aimed at assessing the effects of the works (both at construction site level and in the project stage), on the environment and on human health and well-being.	305-7	Internal External	<p>Group companies which manage waste management services and waste treatment plants</p> <p>Local community</p>
	<i>Air and soil quality</i>	When managing energy production and waste-to-energy plants, the Hera Group commits itself to maintaining the air quality levels much lower than the legal limits. By contrast, when managing the company vehicle fleet, comprising over 4 thousand vehicles, it sets itself the objective of preferring those which have a minor environmental impact. Furthermore, the Group is involved in the development of its own range in the electric mobility field and in the increase in the efficiency of the district heating service. With regard to land protection, the Group assesses the design and planning of its plants and infrastructures seeking to limit consumption.	305-7	Internal External	<p>Group</p> <p>Local community</p>
Social aspects Art. 3.2, paragraph d)	<i>Local development of the area, indirect economic impacts and social inclusion</i>	The activities managed by the Hera Group (water, waste management and energy services) generate significant indirect impacts on the reference area. These include the distribution of value added to the various categories of stakeholders, the lead-on employment of the suppliers, social responsibility in tenders with the social clause.	<p>201-1</p> <p>201-4</p> <p>203-1</p> <p>203-2</p> <p>204-1</p> <p>401-1</p>	Internal External	<p>Group</p> <p>Suppliers</p> <p>Shareholders</p> <p>Local community</p> <p>Public</p> <p>Administration</p>

Areas It. Leg. Dec. No. 254/16	Material aspects of the Hera Group	Why it is material	GRI	Scope of the impact	Reference stakeholder
	<i>Safety and continuity of the service provided to customers</i>	The Hera Group handles basic services for customers and the local community, such as the supply of water, gas and electricity, as well as waste collection. For this reason, it undertakes to guarantee a safe service limiting interruptions. The Group is committed to ensuring the resilience of its electricity grids and water networks, with a view to adaptation to the climate change.	416-1	Internal External	Group Customers Local community
	<i>Quality, costs of waste collection and city integrity service</i>	The Hera Group manages municipal waste collection services in the area served and, in order to guarantee the quality of the service provided, commits itself to observing minimum standards.	417-1	Internal External	Group Local community Public Administration
	<i>Commercial relations with customers through branches, the call centre and the web</i>	The Hera Group manages essential services for customers and the local community, and believes it is fundamental to ensure a quality service, also with regard to assistance via physical and web channels. In fact, Hera is constantly committed to reducing the waiting time at branches and call centres.	*	Internal External	Group Customers Local community
	<i>Economic value for the stakeholders</i>	The activities managed (water, waste management and energy services) generate economic value which the Hera Group distributes to the reference stakeholders. The main categories of stakeholder affected are: suppliers (local supplies), employees (remuneration), shareholders (dividend distribution), local community (sponsorship and donations) and the Public Administration Authorities (taxes, levies, fees).	201-1	Internal External	Group Employees Suppliers Shareholders Local community Public Administration
	<i>Quality and consumption of the mains water</i>	The Hera Group manages water services and has purification and drinking water plants. Therefore, it is committed to ensuring high levels of purification and drinking water quality, including through the planning of improvement measures for plants and networks.	416-1 416-2 417-1	Internal External	Group Customers Local community
	<i>Digitalisation, innovation, data analytics, artificial intelligence, cyber security</i>	The Group, by means of the Innovation Department, develops innovative projects within the digitalisation, data analytics and business intelligence sphere. Through these tools it is committed to innovating and digitalising internal processes and external services, in order to make its business more efficient, reliable, secure and circular.	203-1	Internal External	Group Local community
	<i>Management of the supply chain</i>	The activities managed by the Hera Group (water, waste management and energy services) generate significant indirect impacts on the reference area.	204-1 307-1	Internal External	Suppliers
	<i>Non-material - Respect for human rights</i>	The issue of respect for human rights is not regarded as material because the Group's operational offices are located mainly in Italy or in countries in which a significant risk from this point of view has not been noted. This assessment also takes into account the aspects indicated in the section "Innovation and contribution to development" (paragraph: "The impact of supplies on the areas") where the origin of foreign supplies is highlighted. Supplier audits on social responsibility did not reveal any critical issues in this sphere (see "Suppliers" section).			
Respect for human rights Art. 3.2, paragraph e)					
Fight against corruption Art. 3.2, paragraph f)	<i>Anti-corruption activities</i>	The topic is transversal to all the businesses managed and is material especially in the purchasing and tenders sphere and in the dealings with the institutions, in fact the majority of Hera	205-1 205-3	Internal External	Group Suppliers

Areas It. Leg. Dec. No. 254/16	Material aspects of the Hera Group	Why it is material	GRI	Scope of the impact	Reference stakeholder
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Group's supplies are handled by means of tenders, important supply contracts and the like.

*Specific GRI standards are not present for certain relevant aspects. Despite this, the related reporting is carried out by means of other indicators and information relating to the same within the following sections: "Customer relations" and "Risk management".

[102-12]

The main **management models** (Art. 3.1, paragraph a) of Italian Legislative Decree No. 254/16) adopted by the Group, relating to the aspects of Italian Legislative Decree No. 254/16, are:

- Organisational model for corporate crime prevention (Italian Legislative Decree No. 231/2001)
- Sa 8000 management system or supplier audit system which is based on criteria similar to that of the Sa 8000
- Iso 14001 environmental certification
- Iso 9001 quality certification
- Iso 50001 Energy efficiency certification
- Ohsas 18001/Iso 45001 workplace safety certification (in 2019 only Uniflotte and Fea were certified)
- Iso 37001 corruption prevention certification

The **company policies** (Art. 3.1, paragraph b) of Italian Legislative Decree No. 254/16), again with regard to these aspects, are the following (published on the Group's website):

- Code of Ethics and related implementing systems (Ethics and Sustainability Committee and its functioning regulations)
- Quality and sustainability policy
- Data protection policy
- Remuneration policy
- Corruption prevention model

The Hera Group has also signed the following commitment declarations:

- Charter for equal opportunities and equality in the workplace (furthered by the Ministry of Employment and the Ministry for Equal Opportunities, Sodalitas Foundation, Impronta Etica, AIDAF, AIDDA and UCID)
- Manifesto Valore D, for female employment
- Patto di Utilitalia for diversity and inclusion in the company
- Ceos call of Csr Europe "a New Deal for Europe"
- Women's Empowerment Principles (WEPs) of UN Global Compact and UN Women
- UN CEO Water Mandate
- New Plastics Economy Global Commitment of the Ellen Mac Arthur Foundation
- European strategy for plastics - voluntary pledges

it complies with the following organisations/programmes of international importance:

- UN Global Compact (Hera is a founding member of the Global Compact Network Italia Foundation)
- CE100 of the Ellen Mac Arthur Foundation

and supports the Task force on Climate-related Financial Disclosure (TCFD) set up by the Financial Stability Board.

Hera's **risk management model** (Art. 3.1, paragraph b) of Italian Legislative Decree No. 254/16) is also supplemented by environmental and social aspects, as described in the section "Sustainability and risk management".

Sustainability, Strategy and Shared Value

About us

[102-1] [102-3] [102-4]

The Hera Group is one of the major multiutility companies in Italy: it offers the sustainable management of several public services to over 4.3 million citizens in 330 municipalities spread over five Italian regions (Emilia-Romagna, Veneto, Friuli-Venezia Giulia, Marche and Tuscany). Aresgas, a subsidiary of AcegasApsAmga, deals with the distribution and sale services of natural gas to around 20 thousand customers in Bulgaria.

[102-2]

The Hera Group provides energy (distribution and sale of gas and electricity), water (aqueduct, sewage and purification) and waste management (collection, recycling and waste treatment) services to citizens and Group enterprises.

The Group's strengths lie in:

- the **balance of its services**, comprised of services managed according to free market criteria (sale of gas and electricity, and recycling and treatment of special waste) and regulated services (gas and electricity distribution, integrated water services, collection, recycling and treatment of waste);
- **strong roots in the areas in which it operates** and **deep focus on sustainability**;
- a **widespread shareholding structure** with around 17 thousand shareholders.

Main awards in 2019

The Hera Group's process of expansion is also marked by the awards received. Among the most recent awards, the main ones are:

- **Top Employers** 2020 Award for human resource management
- 3rd in the **Webranking by Lundquist** in 2019 for online communication
- **2019 Financial Statements Oscar**, a special award for their communication efforts and for their clear and transparent reporting content, focused on attention to and close relationship with the local area
- **Integrated Governance Index**: 1st in the special category focusing on sustainable finance and 4th absolute in the index that measures the **integration of the ESG factors in the company's strategies**
- **Sustainable Development** Award from the **Sustainable Development Foundation** for the biomethane plant in Sant'Agata Bolognese (BO) capable of producing quality compost and biomethane for local transportation.

Hera confirmed among the top performers in all sectors in Italy

The **Hera Group** confirmed its leading position in Italy in all businesses in which it operates and obtained the following ranking, compared to other listed companies:

1st operator in the environmental sector for treated waste

2nd operator in the water cycle sector for volume of water supplied

3rd operator in the distribution of gas for volume supplied

4th operator in the sale of gas and electricity by number of customers (3rd from January 2020 following the completion of the Ascopiave operation).

4th operator in the public lighting sector for number of light points managed

5th operator in the electricity distribution sector for volumes distributed.

Internally processed using 2018 public data

Services provided

[102-6] [102-7]

Hera's growth has developed with a strong focus on the aspects of sustainability with regard to regulated services (distribution of gas and electricity, water service and waste collection) and services managed according to free market criteria (hazardous waste disposal, sale of gas and electricity). Development was balanced across the sectors, confirming that Hera is strongly rooted to the local area and that it places quality at the core of the services it manages.

	Energy services Sale and distribution of gas and electricity, district heating, heat management and public lighting	Integrated water service Civil and industrial aqueduct, sewage and purification	Waste management services Collection, recovery, treatment and disposal of municipal and special waste
Customers	Gas: 2.0 million Electricity: 1.2 million District heating: 12 thousand	Water: 1.4 million	
Municipalities served	Gas distribution: 245 Electricity distribution: 26 District heating: 16 Public lighting: 181	Aqueduct: 227 Sewage and purification: 228	Waste collection: 187
Residents served	3.6 million	3.6 million	3.2 million
Volumes	Gas sold: 9.9 billion cubic metres Electricity sold: 12.8 TWh	Water sold: 289.3 million cubic metres	Waste collected: 2.0 million tonnes Waste treated: 7.2 million tonnes

Customers and municipalities served in the local areas (regulated services)

Local area	Company	Energy services	Water services	Waste management services	At least one service
Bologna	Hera	825 thousand (94%)	860 thousand (98%)	770 thousand (87%)	860 thousand (98%)
Ferrara	Hera	292 thousand (84%)	248 thousand (72%)	132 thousand (38%)	304 thousand (88%)
Forlì-Cesena	Hera	327 thousand (83%)	394 thousand (100%)	214 thousand (54%)	395 thousand (100%)
Imola-Faenza	Hera	194 thousand (76%)	256 thousand (100%)	256 thousand (100%)	256 thousand (100%)
Modena	Hera	478 thousand (68%)	470 thousand (67%)	498 thousand (71%)	501 thousand (71%)
Padua	AcegasApsAmga	287 thousand (31%)	301 thousand (25%)	267 thousand (22%)	389 thousand (41%)
Pesaro-Urbino	Marche Multiservizi	245 thousand (61%)	279 thousand (69%)	267 thousand (66%)	324 thousand (80%)
Ravenna	Hera	238 thousand (87%)	275 thousand (100%)	275 thousand (100%)	275 thousand (100%)
Rimini	Hera	35 thousand (10%)	338 thousand (100%)	322 thousand (95%)	338 thousand (100%)
Trieste	AcegasApsAmga	221 thousand (94%)	232 thousand (100%)	204 thousand (87%)	234 thousand (100%)
Udine, Gorizia and Pordenone	AcegasApsAmga	454 thousand (67%)	-	-	454 thousand (67%)
Hera Group		3.6 million (66%), 249 municipalities	3.6 million (66%), 228 municipalities	3.1 million (58%), 187 municipalities	4.3 million (79%), 330 municipalities

Number of municipalities, residents and percentage compared to total residents in the province or the local area (as at 1 January 2019, source: Istat) in which Hera manages at least one energy service (distribution of gas, electricity or district heating), water service (aqueduct, sewage or purification) and waste management service (separate or non-separate waste collection, or sweeping). The local area of Imola-Faenza includes three municipalities belonging to the Province of Florence in which Hera manages energy, water and waste management services. The Padua area includes one municipality from the Province of Venice in which AcegasApsAmga manages water services. The area of Pesaro-Urbino includes six municipalities belonging to the Province of Ancona in which Marche Multiservizi, through the subsidiary company Marche Multiservizi Falconara, manages the waste management services.

Mission and values

[102-16]

The mission

Hera's goal is to be the best multiutility in Italy for its customers, workforce and shareholders. It aims to achieve this through further development of an original corporate model capable of innovation and of forging strong links with the areas in which it operates by respecting the local environment.

For Hera, being the best means inspiring the pride and trust of:

- **customers** who, thanks to Hera's responsiveness to their needs, receive quality services that satisfy their expectations;
- **women and men** who work at Hera, whose skills, engagement and passion are the foundation of the company's success;

- **shareholders**, confident that the economic value of the company will continue to be generated, in full respect of the principles of social responsibility;
- **areas in which Hera operates**, where economic, social and environmental wealth represent the promise of a sustainable future;
- **suppliers**, key elements in the value chain and partners for growth.

Values

Integrity, proud to belong to a Group of people known for their honest and upright conduct;

Transparency, sincere, clear messages for all stakeholders;

Personal responsibility, shared commitment to the good of the company;

Consistency, living up to our Mission and Values.

Company operational principles

Creation of value and social and environmental responsibility: to be a company that is built to last, and to improve society and the environment for future generations

Service quality and excellence: putting customers first, as a trustworthy provider of services and safety

Efficiency: promoting the value of available resources, never wasting them

Innovation and ongoing improvement: feeling you are part of a team that generates ideas and improvement

Engagement and optimisation of personnel: sharing knowledge for self-improvement and improvement

Empowerment to choose: selecting the optimal solution for growth

The company's Mission, Charter of Values and Operational Principles are set forth and detailed on the Group's website, on the corporate intranet and in the Code of Ethics, which is reviewed every three years and was updated in 2019.

The Mission, Charter of Values and Operational Principles were created with the participation of the Hera Group's entire workforce and were approved by the Board of Directors of Hera Spa.

Sustainability for the Hera Group

Hera's approach to sustainability

[102-26]

Sustainability has always played a key role in Hera's strategy ever since its establishment. The approach adopted by the Group is based on **integrating sustainability** in its **planning and control** systems and, therefore, in the management of functions linked to its business activities. This aspect has been effectively implemented through a **balanced scorecard** system involving all the company management and with our constant commitment to stakeholder reporting, as confirmed by the sustainability report.

Competitiveness and sustainable development for the company and local area in which the company operates form the **vision** at the basis of Group's approach towards corporate social responsibility and sustainability.

The Company's **mission and values** have merged into the Code of Ethics, which was updated in 2019 with the **involvement of employees**, forming the basis of corporate conduct and serving as a point of reference for all the people working in the Group. These values represent the strategic and cultural focus with which to draw up the Business Plan every year and report the results to stakeholders transparently. Lastly, a

balanced scorecard system makes it possible to translate the strategy into operational projects that are an integral part of the management bonus system.

This process features a wide range of **listening and dialogue actions with stakeholders**.

In 2016, Hera began a process aimed at designing the Group's approach to the Creation of Shared Value and reached its own definition of **CSV (Creating Shared Value)** consistent with the nature of its business.

The aim is to further integrate sustainability into our business activities and to direct both our strategy and sustainability reporting to the urgencies dictated by the **2030 UN Agenda**. Thanks to this process, the Hera Group has reshaped its approach towards corporate social responsibility, which no longer focuses on the "what" and "how" of the company but on its "why", becoming a beacon that inspires strategy and guides innovation, with a more positive, direct and systematic impact on competitiveness, reputation and involvement. Please refer to the section "Shared value" for further details.

Integrating sustainability in the Group strategy

Our Group strategy must ensure, as usual, solid and coherent industrial and economic development of supervised businesses, in line with the performance and results achieved over these 17 years.

In order to respond effectively to the needs of our local area and our customers - such as, attention to the environment and new technologies, and the methods for interacting with stakeholders - three critical success factors have been identified for utilities in the coming years: Ecosystem, Circularity and Technology.

Belonging to a reference **ecosystem** in a constantly evolving context increases companies' resilience to changes in the environment and accelerates the evolution of corporate culture as a result of external contamination. Our Group strategy has always been based on a close relationship with the local area and its ecosystem: this distinctive aspect is regarded today as a real asset, even by investors and rating agencies.

Circular economy responds to a range of critical issues that modern society must address: from the gradual lack of resources to reduced atmospheric emissions or the reduction of non-recyclable waste. Over the years, the Group has developed industrial strategies based on sustainability, allowing it to become an international point of reference in terms of circular economy. Its future actions must also continue to effectively and purposefully steer circularity and decarbonisation goals.

Technological evolution in its complex and, more specifically, digitisation have become ever common priorities in the national industrial sector. Greater efficiency by operators will also produce benefits for customers and citizens, in terms of cost or service quality. The Group needs to use the opportunities offered by new technologies in order to extract cost efficiencies and synergies connected to data management and will be able to play a key role as facilitator for spreading a smart approach throughout the local area, especially in the case of smart cities.

The **five strategic levers** already used by the Hera Group in recent years (growth, excellence, efficiency, innovation and agility) are useful for coordinating the work and strategies of the single plan units, steering them towards a shared target and actions.

The 2019-2023 Business Plan, drawn up in compliance with the guidelines described above, confirms and strengthens the Group's industrial growth trajectory, projecting a goal of Euro 1,250 million of EBITDA in 2023, rising by Euro 219 million compared to the final balance of 2018. This goal will be achieved also by an investment volume of Euro 2.9 billion over five years, approximately Euro 2 billion of which will be used to maintain current plants and Euro 900 million for their further expansion.

Economic growth targets were defined as usual by ensuring financial balance (the net debt to EBITDA ratio will always be below 3.0x) and focusing on projects and actions that bring benefits to the company while at the same time achieve the 2030 UN Agenda targets applicable to Hera's activities (11 out of the 17 targets). To this effect, almost 70% of the five-year growth forecast in the Business Plan will be made up of projects

implemented to respond to this "call to action", thus bringing the "shared value EBITDA" to reach Euro 525 million in 2023 (42% of total EBITDA).

Furthermore, Hera has also included a number of **2030 target goals** in its business plan, in keeping with the deadlines defined by international and national institutions.

Our commitment to sustainability in national and international networks

[102-13]

Hera's commitment to sustainability has taken shape over the past years by joining leading international networks.

The Hera Group was the second Italian company to complete the process for inclusion in the **CE 100** programme of the **Ellen MacArthur Foundation**, a world reference in circular economy, which aims to promote awareness of aspects related to this issue, exchange experiences, initiate projects in partnerships and cooperate in the field of research and development. 2019 was the first year of reporting on the **New Plastics Economy Global Commitment**, an initiative set up by the Foundation to make the plastics sector more circular, and joined by the Group in 2018 with challenging goals. In 2019, the Hera Group company, Hera Luce, took part in the development and beta testing phase, with the support of other 30 organisations, of "**Circulytics**", the digital tool for promoting circular economy. Launched in January 2020 by the Foundation, it will help companies understand, measure and keep track of their performance in order to create new opportunities and solutions for some of the world's most urgent challenges, such as climate change and resource regeneration.

Hera is also among the promoters of the **Circular Economy Network**, a project promoted by the **Sustainable Development Foundation** and by a group of companies and associations involved in the transition to a new model of circular economy. The first Report on Circular Economy in Italy, drawn up in cooperation with Enea, was unveiled publicly during the National Conference on Circular Economy on 1 March 2019. Again at national level, Hera is a member of **ICESP** (Italian Circular Economy Stakeholder Platform), the Italian platform coordinated by ENEA that groups the main national players in the circular economy. ICESP is the only organisation that represents Italy in the similar European platform ECESP (European Circular Economy Stakeholder Platform).

The Hera Group joined the Global Compact in 2004, and in July 2017 it was included in the **Global Compact Network Italia Foundation**, the Italian network set up in 2013 which has been currently joined by over 50 businesses and non-businesses. In 2019 Hera hosted also the **Italian business and SDGs annual forum** in Trieste, at the Mib Trieste School of Management. This event brings together Italian companies and organisations participating in the United Nations Global Compact and committed to achieving the 2030 Agenda goals. The focus of this fourth edition was innovation at the service of sustainability, and its connections with inclusion, resilience, circular economy and sustainable finance.

This year the Group also contributed - together with 66 organisations, 30 of which companies - to the development of "**SDG Action Manager**", the new tool created by Global Compact and B Lab to help companies measure and report their contribution to achieving the SDGs and define new business opportunities in line with the UN 2030 Agenda.

Also within the Global Compact, Hera joined the **CEO Water Mandate**, the United Nations Global Compact initiative promoted to re-launch commitment by companies in the sustainable management of water resources.

Hera is also a member of **Impronta Etica**, an organisation that promotes corporate social responsibility and is part of the **CSREurope** network and **CSR Manager Network Italia**, the Italian network of sustainability professionals.

2030 UN goals for sustainable development and Hera projects

The 2030 Agenda for sustainable development ratified at the UN summit in September 2015 by 193 countries includes 17 goals regarding sustainable development (**Sustainable Development Goals** or SDGs), divided into 169 targets. The SDGs are regarded as the continuation of the Millennium Development Goals, already defined in 2000 by the United Nations.

An internal study was carried out in 2018 to understand in greater detail the exact goals which Hera contributes most to through its own activities. This detailed study required the **analysis of all 169 targets**. The Group activities, projects or policies that currently contribute to their achievement were identified. Contribution was classified as high, medium or low. Goals were considered to be relevant only if one target which Hera contributes to had a medium or high level. The analysis **confirmed the ten goals** already mapped in 2017, and **target 17 was added**. Of these eleven goals, **six were identified as "key"** goals for Hera: **goal 6**, clean water and sanitation services; **goal 7**, clean and accessible energy; **goal 9**, companies, innovation and infrastructure; **goal 11**, sustainable cities and communities; **goal 12**, accountable consumption and production; **goal 13**, combating climate change.












The SDGs which Hera contributes to are included in the **shared value impact and driver areas**; only goal 17 was regarded as cutting across the three shared value drivers. For the 11 goals which Hera contributes to, 47 targets were identified in connection with the Group's activities and projects: 13 targets were classified as having a high level of contribution, 14 medium and 20 low, as shown in the summary figure. The figure below shows the 11 goals to which the Group contributes: the coloured squares represent the 47 targets, while the shade indicates the level of contribution.

During 2019, this analysis was reviewed and supplemented in light of the ideas brought up by group work during two **internal training events** on the UN Agenda, which involved 80 people from different Company Managements and Group companies.

*This analysis was used to examine in greater detail the **52 goals for the future** (What we will do...) defined by the Hera Group for forthcoming years, reported in the table at the end of this section. Each "What we will do..." corresponds either to one of the three CSV drivers or to the organisational bases/levers.*

As reported in the table below, **Hera's contribution by number of "What we will do..."** (considering the SDGs affected by ten or more targets) is predominant in six goals: Clean and accessible energy; Decent work and economic growth; Companies, innovation and infrastructure; Sustainable cities and communities; Accountable consumption and production; Combating climate change.

What we will do... 2030 UN Agenda targets

											
Shared value	2	2	2	2	2	2	2	2	2	2	2
Smart use of energy				8	1	3	1		8		
Efficient use of resources			6		4		3	6		3	2
Innovation and contribution to development	2			1	4	3	3	3		1	3
Governance and creation of value			1		2		1				1
Quality, cost and safety of customer services						2			1		
People	2	2			2						1
Suppliers					4			2			
Total	6	4	9	11	19	10	10	13	11	6	9

The balanced objectives of the Hera Group

The balanced scorecard approach enables us to assign "balanced" objectives to our management team in four areas (development, quality and corporate social responsibility, organisational integration and efficiency upgrading) and provides a methodology for defining strategy and turning it into daily activities and goals. The innovation of this approach consists of considering the achievement of objectives of social and environmental sustainability as a condition for the achievement of the economic and financial objectives over the medium and long term.

What is the balanced scorecard?

The balanced scorecard is a strategic control system which is based on the connection between strategy and the day-to-day running of the company. It was devised in the early Nineties by the American academics R. Kaplan and D. Norton. It has generated an immense following among leading corporations in the USA and is now being taken up by major European players.

The **Strategic Map** is updated every year based on the contents of the business plan: it provides a **summary of the Group's strategic objectives** and its commitments to stakeholders set forth in the sustainability report.

During the 2019 budget process, **37 priority projects** were defined to achieve the **29 strategic objectives** set out in the 2020-2023 Strategic Map aimed at creating long-term value for the company and the stakeholders.

The Strategic Map was reviewed graphically in 2019 and its content was rationalised in line with the priorities of the business plan and with the Group's approach to shared value.

The number of strategic objectives has been reduced from 37 on the old map to 29 on the new strategic map, and the UN Agenda (SDGs) goals and the objective of increasing "shared value" EBITDA have also been included in the plane's trajectory. The classification of strategic objectives according to the strategic lines of the business plan has been maintained, highlighting agility as cross-cutting to all strategic objectives.

In line with the strategic guidelines outlined in the Business Plan, Hera Group's Strategic Map contains the strategic objectives connected to the **three drivers for the creation of shared value (CSV)**, namely:

- Efficient use of resources
- Smart use of energy
- Innovation and contribution to the development of the area.

Specifically, out of the 37 priority projects assigned to the members of the Management Review Committee, 22 belonged to areas regarding the creation of shared value for the company: seven projects in the "Efficient use of resources" area, five projects in the "Smart use of energy" area and 10 projects in the "Innovation and contribution to the development of the area" area.

The priority projects were assigned to members of the Management Review Committee.

All of the projects planned within the 2019 balanced scorecard system were assigned to a manager and included in the bonus system which involved 98.5% of Group managers and middle managers.

Each project identified:

- the process and result indicators with goals in line with the budget of the Group and the corporate departments required for their achievement;
- the key action plan for achievement of the project objectives in terms of time and cost.

The objective projects identified were monitored on a quarterly basis by the Hera Spa Management Review Committee and in the individual budget units.

The definition of **objective projects** and the relevant **quarterly monitoring system** of the project elements are a significant management instrument that ensures:

- integration of the several perspectives for the evaluation of corporate performance, in addition to traditional economic and financial measurements;
- integration of business plan objectives into the daily management of managers and middle managers;
- implementation of a continuous improvement process for strategic objectives and the relative projects and indicators;
- formalisation and tracking of both actions and sub-objectives required to achieve the targeted results;
- highlighting and analysis of critical situations and the definition of speedy corrective actions.

The commitments to stakeholders listed in this report ("What we will do...") are contained in the Hera balanced scorecard. This guarantees consistency among the various instruments used for managing and achieving the Group strategy: business plan, sustainability report, management reporting, bonus system.

CSV and sustainability KPIs

	2005	2017	2018	2019	2023	2030
Shared value						
Shared value EBITDA (millions of Euro)	-	328.7	375.2	422.5	525.0	-
Shared value EBITDA (% of total)	-	33%	36%	39%	42%	-
Shared value investments (millions of Euro)	-	198.5	184.0	202.4	187.81	-
Shared value investments (% of total)	-	41%	40%	40%	35% ¹	-
Shared value: Smart use of energy						
ISO 50001 energy saving measures (% of savings compared to 2013 consumption) ²	-	3.6%	4.4%	5.1%	6.5%	10%
Gas and electricity contracts with energy efficiency services (% of total gas and electricity contracts)	0%	15.9%	14.6%	19.9%	22% ³	>25% ³
Contracts with "green" offers (% of total gas and electricity contracts)	0%	3.7%	4.9%	11.6%	58% ³	>60% ³
Carbon intensity index of energy production (kg/MWh)	-	498	482	453	417	-
Shared value: Efficient use of resources						
Separate waste collection	28.9%	57.7%	62.5%	64.6%	74.9%	-
Kilograms of separate waste collection per capita	199	378	410	425	468	-
Portion of municipal waste collected for disposal via landfill (% total urban solid waste collected)	37.3% ¹⁰	7.0%	4.5%	3.4%	<5%	<5%
Recycling rate of municipal waste (% of recycled municipal waste out of total separate and non-separate municipal waste) ⁵	-	48%	53%	55% ¹¹	62%	67%
Volumes of recycled plastic sold by Aliplast (thousands of tonnes)	0	59.6	63.7	72.8	96.5	148.9
Non-invoiced water (physical and administrative losses from the domestic aqueduct): m ³ /km of network/day	-	10.4 ⁴	10.5	-	10.0	9.4
Urban areas >2,000 population equivalents adjusted to wastewater purification regulations (% of population equivalents)	-	-	92.2%	97.3%	100%	100%
Reduction rate of internal water consumption (compared to 2017) ⁶	-	-	-	-5.5%	-15%	-25%
Wastewater reused (% of total wastewater) ⁷	-	-	1%	3%	9%	15%
Shared value: Innovation and contribution to development						
Waste-to-energy plant emission levels vs. regulatory limits (real concentrations/regulatory limits: optimal value <100%)	22.4%	14.4%	13.8%	14.1%	-	-
Open-ended contract employees (average annual % of total workforce)	95.5%	96.8%	96.2%	96.6%	98.7%	-
Value of supplies from local suppliers (% of total)	62% ¹⁰	66%	69%	69%	-	-
Number of environmental education programme students	33,505	99,482	106,547	118,788	-	-
Employees with digital readiness (% of total)	-	-	23%	44%	50%	90%
Customers with electronic bills (% of total) ⁹	0%	20.2%	23.7%	30.1%	45%	60%
Electronic gas and electricity meters installed	-	37%	44%	54%	85%	85%
Land reuse in projects ¹²	0%	75%	68%	77%	73%	>80%
Bases and organisational levers						
Value added (millions of Euro)	722.1	1,480.7	1,540.8	1,734.5	1,742.2	-
Total return for shareholders since listing (%)	94.2%	225.0%	212.1%	319%	-	-
Training hours (average, per capita)	18.5	28.6	29.8	28.6	25.2	-
Employees involved in smart working (% of total excluding blue-collar workers)	0%	0%	8%	26%	50%	75%

	2005	2017	2018	2019	2023	2030
Accident frequency index (number of accidents/hours worked x 1,000,000)	49.6	17.1	15.7	14.1	≤ 15	-
Internal climate index (score 0-100)	50	64	-	68	-	-
Index of customer satisfaction for residential customers (score 0-100)	67	708	718	73	-	-
Emergency gas services: percentage of calls with service within 60 minutes	94.7%	96.2%	96.7%	97.0%	≤ 97%	-
Average call centre response time for residential customers (seconds, with the exclusion of IVR)	70.2	34	36	27	≤ 30	-
Average waiting times at branch offices (minutes)	26.9	10.6	9.6	9.4	≤ 10	-
Tender awards adopting the most economically advantageous bid method: sustainability score (% of total)	-	25	32	34	-	-

¹ 2020-2023 yearly average ² Figures referred to Hera Spa, Inrete, AcegasApsAmga, Marche Multiservizi ³ Excluding Estenergy ⁴ Recalculated on the basis of the Arera calculation method ⁵ EU 2025 goal: 55%, EU 2035 goal: 65% ⁶ Figure referred to domestic and industrial aqueduct consumption of the "water-hungry" business units served by Hera Spa in Emilia-Romagna ⁷ Figure referred to Hera Spa ⁸ Excluding Marche Multiservizi ⁹ Figure referred to Hera Spa and Hera Comm ¹⁰ 2007 figure ¹¹ Expected figure. The rate will be published in the 2020 «Tracking waste» report ¹² Both surface area occupation and reuse of excavation material

Shared value

Objectives and performance

What we said we would do	What we have done	Geographic scope*
<ul style="list-style-type: none"> • Euro 685 million of shared value investments in the 2019–2022 period (29% of the total). 	<ul style="list-style-type: none"> • Euro 202.4 million in investments in 2019 alone (39.7% of the total) 	
<ul style="list-style-type: none"> • 40% of the total, shared value EBITDA of over Euro 470 million by 2022 (around Euro +150 million compared to 2017). 	<ul style="list-style-type: none"> • Shared value EBITDA of Euro 422.5 million in 2019 (Euro +47.3 million compared to 2018), equal to 38.9% of the total 	

What we will do	Geographic scope*
<ul style="list-style-type: none"> • Euro 751 million of shared value investments in the 2020–2023 period (35% of the total net of the investments for gas tenders). 	
<ul style="list-style-type: none"> • 42% of the total, shared value EBITDA of over Euro 525 million by 2023 (around Euro +150 million compared to 2018). 	

* Geographic scope of the improvement objectives ER: Emilia-Romagna T: Triveneto M: Marche.

Our approach to shared value

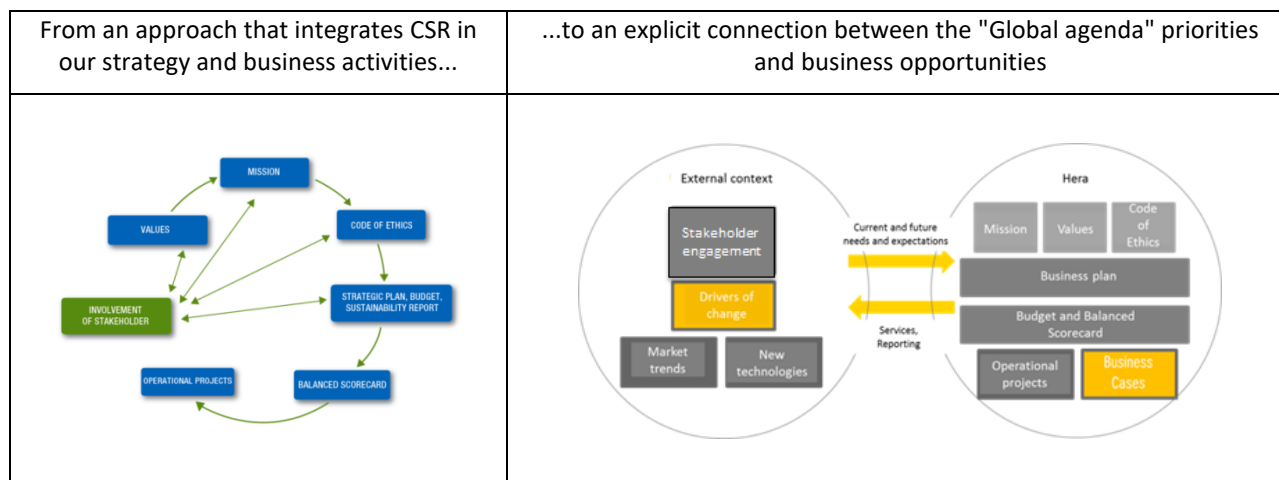
In their famous article of 2011, Porter and Kramer state that companies can create shared value with policies and practices that strengthen the company's competitiveness, while responding to the needs of the communities in which it operates and to society's challenges. Hera's multiutility activities are, by nature, highly integrated with the social and economic fabric of the local community and, since benefiting from a ten-year long integration of prospective sustainability within the Group's strategy, may already report a significant portion of shared value expressed through services, activities geared towards the local area and industrial projects.

A process was started in 2016 to identify Hera's approach to Creating Shared Value (CSV). Inspiration was taken from Porter and Kramer's indications and taking into account the new EU communication on corporate social responsibility of the same year. The programme made it possible to identify our own definition of CSV which is steering our evolving approach to CSR and has enhanced our sustainability reporting with new views and perspectives, among which quantification of **EBITDA generated by "shared value" activities and projects**, and of investments made in this area stand out.

For Hera, the creation of shared value is the result of all those business activities that generate operating margins and meet the global agenda drivers, i.e. those "calls to action" for change in specific fields, set out in global, European, national and local policies.

This definition of CSV is at the basis of a **new, evolved approach to social responsibility** and sustainability; besides having already enhanced non-financial reporting available to our stakeholders, it is also an important source of inspiration for future strategies and new projects, in line with the sustainable development targets of the 2030 UN Agenda. For Hera, the CSV approach is a consolidated point of reference for the **reclassification of economic results**, developed projects and future goals, in addition to representing a guide for strategic investment choices. These aspects are described in this Sustainability Report with a list of contents completely revised in 2017 and divided by areas identified for the creation of shared value.

Hera's approach to CSR and sustainability: confirmations and new ideas



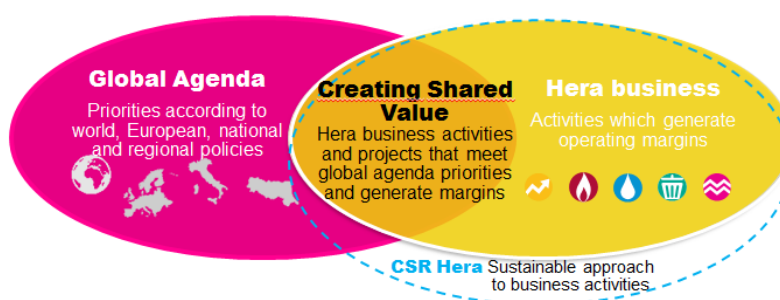
The relationship between CSR and CSV according to Hera

Hera's new approach to CSR merges the prospect for the creation of shared value with the integration of sustainability (already envisaged since the Group's establishment) into its strategy and business activities.

The new approach to CSR results in activities and projects that:

- improve its environmental and social sustainability performances mainly related to the businesses it manages (also, but not exclusively, in relation to the law and sector regulations);
- generate operating margins that are consistent with the Global Agenda drivers.

This latter point is a major development in Hera Group's traditional approach to CSR, which will **increase the shared value generated** by overlapping business and Global Agenda priorities.



How we identified the "Global agenda" priorities

In 2019, we continued to analyse the "Global Agenda" and the needs for change that are outlined in it, which represent the "calls to action" for a company like Hera. Understanding and sharing this scenario is essential for outlining the way we report the sustainability results achieved. At the same time, it is also **an opportunity to steer strategy** and operational processes in order to meet new needs and expectations of both the market and society, thus transforming them into business opportunities.

The process started by analysing European, national and local policies and ended by identifying Hera's Drivers of Change and Impact Areas, while keeping in mind its spheres of competence.

Seventy-five global, European, national and local policies were analysed in the three-year period 2016-2018 to define the priorities for change towards sustainability, **including the UN 2030 Agenda**. This set of policies was joined by 14 new policies analysed in 2019. The commitments and quantitative targets of these policies which are of key significance to Hera's activity were analysed. **Nine Impact Areas** were defined by identifying the cross-cutting thematic areas that group together several commitments and targets. Lastly, **three Drivers of change** were identified by grouping the various Impact Areas into strategic development lines for Hera.

The three Drivers of Change and nine Impact Areas were then linked to the 11 2030 UN Agenda goals for sustainable development that Hera identified as priorities in relation to the businesses managed and which include the 52 "What we will do..." (objectives for the future) detailed in this Sustainability Report.

Areas for the creation of shared value: the Drivers of Change, the Impact Areas and the 2030 UN Agenda goals of interest to Hera



"Shared value" EBITDA

The **measurement of the share of EBITDA** generated during the year by the Group's activities that meet the "Global agenda" priorities. This indicator has become a driving force for the strategy of the individual business areas and has increasingly drawn the attention of the internal workforce (the goals assigned to middle managers and managers which are included in the management bonus system are aimed at increasing it) and of external stakeholders since it is a summary measurement of the progress of Hera's activities towards fully sustainable development. In 2019, "shared value" EBITDA started to be **audited by an external company**.

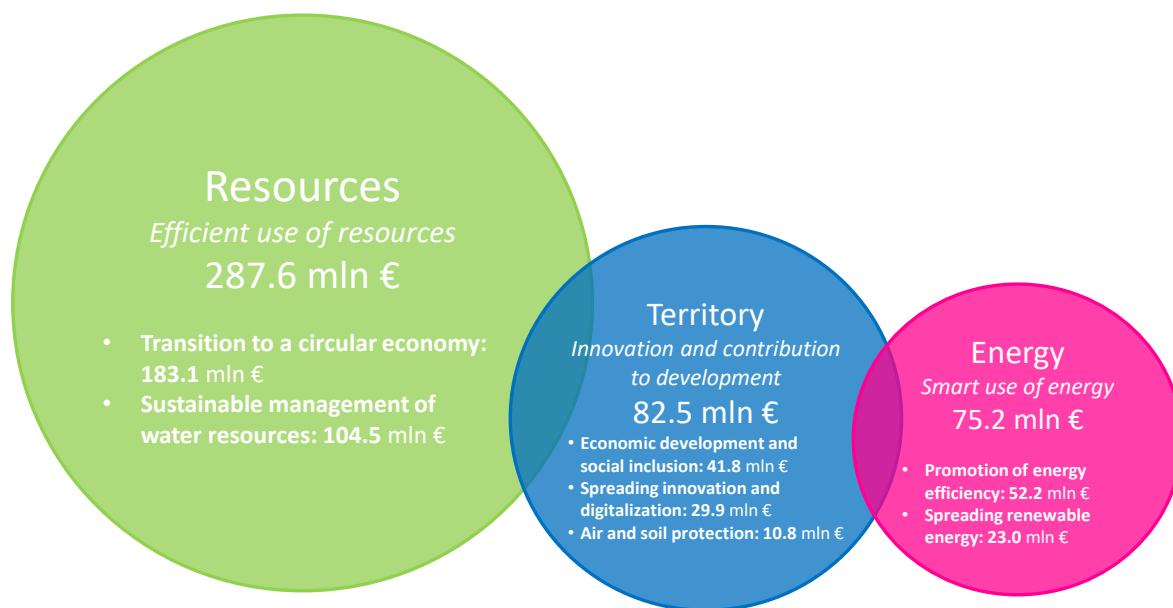
The method for calculating "shared value" EBITDA requires **specific criteria**. A study of all the activities managed by the Hera Group identifies the activities that are consistent with the Drivers as well as the Impact Areas for creating shared value. Consistency can be complete for activities that fully comply with the Drivers and with CSV Impact Areas or partial, if only some of the evaluated activities meet CSV requirements. In the event of partial consistency, an indicator/parameter is identified that allows to calculate the share of EBITDA generated by the activity to be allocated to the "shared value" EBITDA. For details regarding the method, see the specific report available at bs.gruppohera.it and the related audit certificate issued by the auditing firm.

In 2019, "shared value" EBITDA totalled Euro 422.5 million (equal to 38.9% of the total), a 12.6% increase compared to the previous year. This result is in line with the 2019-2023 Business Plan, created so that

approximately 42% of 2023 EBITDA will derive from business activities that respond to the priorities of the global sustainability agenda.

A roughly 13% increase in "shared value" EBITDA is recorded against a 5.2% increase in the Group's overall EBITDA (equal to Euro 1,085.1 million) compared to the previous year.

The prevailing contribution derives from activities and projects related to the efficient use of resources (Euro 287.6 million), followed by those related to innovation and contribution to development (approximately Euro 82.5 million). The smart use of energy accounts for Euro 75.2 million in 2019.



The total shared value EBITDA does not correspond to the sum of EBITDA of the single drivers, due to activities that affect several components.
Reduction of GHG emissions: sum of Spreading renewable energy and Promotion of energy efficiency.

As pointed out in the diagram, the "shared value" EBITDA generated in 2019 is mainly the result of activities and projects that meet the "calls to action" of the Global Agenda for an **"efficient use of resources"** (two thirds of total "shared value" EBITDA). As regards "Impact Area", the key role played by the Group in creating value with activities related to the **transition to a circular economy** and to the **sustainable management of water resources** emerges.

Around 18% of "shared value" EBITDA was instead generated from activities belonging to the Global Agenda areas that lead towards a **"smart use of energy"**. 69% of this share of EBITDA is the result of measures aimed at **promoting energy efficiency**, through (i) commercial offers to energy customers including services and tools to make consumption more efficient, (ii) energy efficiency services for the Public Administration, businesses and condominiums, (iii) industrial cogeneration, (iv) gradual energy efficiency of the public lighting service (particularly the extension of LED light points). The residual percentage of EBITDA from activities relating to the "smart use of energy" is linked to **spreading renewable energy**. In this area, the margins are calculated from: (i) the sale of renewable electricity and, since 2019, natural gas with CO₂ emission offsetting service, (ii) district heating (for the share of heat generated from geothermal sources), (iii) the generation of renewable electricity from biogas deriving from landfills and from the anaerobic digestion of waste, (iv) biomethane production.

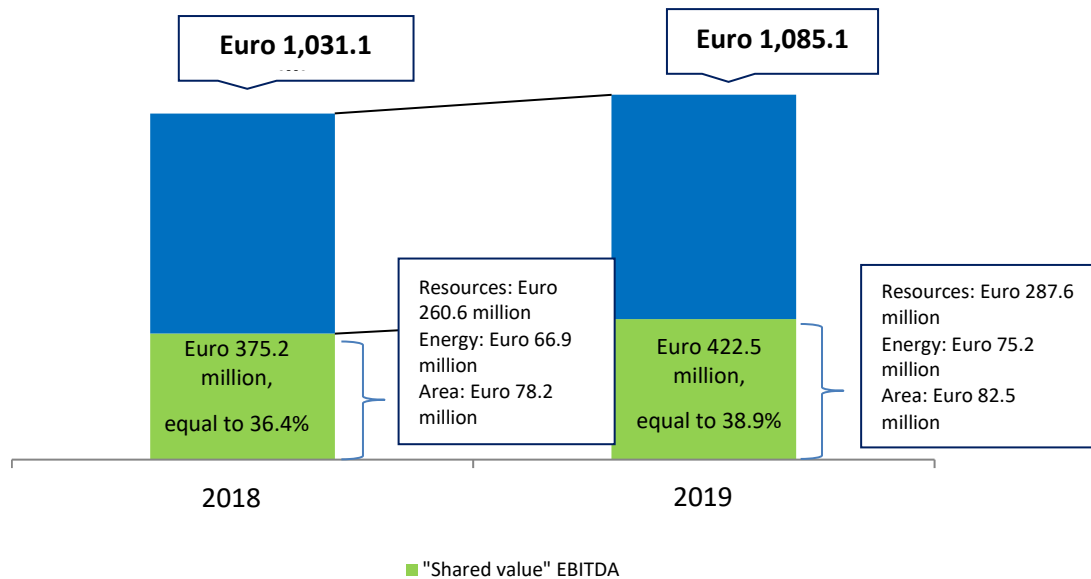
Lastly, the Hera Group generates about 14% of "shared value" EBITDA with reference to **innovation, digitalisation and its contribution to an inclusive development focused on the environment and stakeholders**. In the area of "**Spreading innovation and digitalisation**" the "shared value" EBITDA is pursued through the sale of telecommunication services, by means of Acantho, and through the development of projects and investments aimed at digitalising operational processes, services offered and cities. In the area of "**Economic development and social inclusion**" a share of "shared value" EBITDA is achieved thanks to the outsourcing of municipal waste collection services to social cooperatives which employ disadvantaged people with ensuing economic benefits for the Public Administration (lower welfare costs). Finally, in the area of "**Air and soil protection**", the most significant share of "shared value" EBITDA comes from the district heating service (for the share of heat generated by cogeneration and by energy recovery from the combustion of municipal and industrial waste).

"Shared value" EBITDA growth in 2019: an increase of Euro +47.3 million (+12.6%) compared to 2018

CSV Drivers	Impact Area	2019 main results
Smart use of energy: Euro +9.3 million	Promotion of energy efficiency: Euro +6.4 million	<ul style="list-style-type: none"> • Increase in gas and electricity contracts with energy efficiency services and solutions (19.9% in 2019 compared to 14.6% in 2018) • Increase in LED light points in public lighting (27% in 2019 compared to 15% in 2018)
	Spreading renewable energy: Euro +2.9 million	<ul style="list-style-type: none"> • Increase in gas contracts with CO₂ emission offsetting and electricity from renewable sources: 11.6% in 2019 (4.9% in 2018) • Start of biomethane production from the biodigestion of organic waste (6.5 mln of m³ in 2019)
Efficient use of resources: Euro +27.0 million	Transition towards a circular economy: Euro +26.3 million	<ul style="list-style-type: none"> • Further reduction in the use of landfills for municipal waste (3.4% municipal waste collected and disposed of compared to 4.5% in 2018) and increase in separate waste collection (64.6% compared to 62.5% in 2018) and in recycling rates • Aliplast production increase (72.8 thousand tonnes of recycled plastic sold in 2019; +14% compared to 2018)
	Sustainable management of water resources: Euro +0.7 million	<ul style="list-style-type: none"> • Increase in waste recovered from Herambiente selection plants (rising from 77.2% in 2018 to 83.3% in 2019) • Increase in urban areas >2000 P.E. adjusted to sewage and purification regulations (rising from 92.2% in 2018 to 97.3% in 2019 in terms of P.E.)
Innovation and contribution to the development of the area: Euro +11.1 million		<ul style="list-style-type: none"> • Innovation and digitalisation: Euro 78 million investments in 2019 and remote reading of gas and electricity meters for 54% at end 2019 (44% in 2018) • Innovation and digitalisation: Acantho business development (telecommunications and connectivity) • Social inclusion: 6.5% of customers with at least one instalment • Social inclusion: 875 disadvantaged workers hired (increasing compared to 2018) • Air protection: Increase of the volume served by district heating (+1.1% compared to 2018) with 70% of heat generated from cogeneration, energy recovery and geothermal energy

The total deviations of shared value EBITDA do not correspond to the sum of the single deviations in the single drivers and in the single impact areas, due to activities that affect several components.

Shared value EBITDA compared to total EBITDA



The total shared value EBITDA does not correspond to the sum of the single drivers, due to activities that affect several components.

"Shared value" EBITDA growth in the 2019-2023 Business Plan

The 2019-2023 Group Business Plan targets a 2023 "shared value" EBITDA reaches Euro 525 million, equal to +40% increase compared to 2018, reaching around 42% of the Group's overall EBITDA.

The approximately Euro +150 million increase during the time interval of the plan compared to 2018, equal to a 70% increase in the Group's 2023 overall margins, derives from the development of activities in the CSV drivers: "smart use of energy" (Euro +77 million), "efficient use of resources" (Euro +38 million) and "innovation and contribution to development of the area" (Euro +35 million).

CSV Drivers	Main actions and targets
Smart use of energy: Euro +77 million	<ul style="list-style-type: none"> Further development of offers for customers with energy efficiency services (customer joining this offer: around 22% in 2023) Further development of energy efficiency business (industrial cogeneration, heat management etc.) for Public Administrations, companies and condominiums Further increase in LED light points in municipalities managed (40% in 2023) Full-operation production of biomethane for 9.5 million m³ in 2023 including the new Voltana plant Increase in gas contracts with CO₂ emission offsetting and electricity from renewable sources: 58% of total contracts by 2023 Increase in the geothermal source used for district heating in Ferrara (+ 20% in 2023 compared to the 2016-19 average)
Efficient use of resources: Euro +38 million	<ul style="list-style-type: none"> Gradual adjustment of urban areas in the area served in keeping with EU directives and complete resolution of the EU infringements in the Triveneto and Marche regions to ensure full sustainability in the sewage and purification area and as a contribution to achieve "good" aquatic ecosystems within 2025. (ref.: Bologna Charter) (99% of citizens residing in urban areas > 200 P.E. adjusted to 2023) Further increase in separate waste collection (74.9% in 2023) and ensuing further increase in overall recycling rate (62% by 2023) and packaging recycling rate (72% by 2021) Aliplast industrial waste recovery and business development (+62% of recycled plastic sold by 2023 compared to 2017)

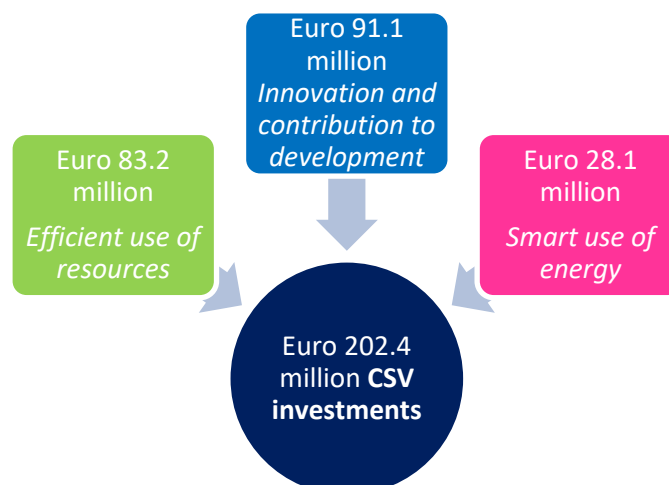
CSV Drivers	Main actions and targets
Innovation and contribution to the development of the area: Euro +35 million	<ul style="list-style-type: none"> • Innovation and digitalisation: investments in Utility 4.0 in order to optimise operating processes and management, and remote reading for 82% of gas meters at the end of 2023 • Innovation and digitalisation: Acantho business development (telecommunications and connectivity) • Development of district heating and greater exploitation of geothermal source in Ferrara for the benefit of city air quality (+12% of volume served in 2023 compared to 2018)

"Shared value" investments

[203-1]

In 2019, the Hera Group invested around **Euro 202.4 million** in initiatives and projects aimed at creating shared value. These investments represent **39.7% of the total investments** made by the Hera Group. Greater "shared value" investments for around Euro 9 million (+5%) compared to 2018.

The graph below shows these investments divided by impact driver:



The trend in the two-year period 2018-2019 in the three CSV areas can be summarised as follows: (i) Euro -16 million in investments for the "smart use of energy" with recording in 2018 of the construction of the biorefinery of Sant'Agata Bolognese for the production of biomethane which was practically completed in that year; (ii) Euro +14 million in investments for the "efficient use of resources" where there were increases in sewage and purification (specifically, Hera Spa and Marche Multiservizi for a total of Euro 8 million), in waste collection (Euro +4 million for the purchase of bins and containers) and in Aliplast (Euro +2 million aimed at increasing the recycling potential of plastics); (iii) Euro +11 million in investments related to the "innovation and contribution to development" driver and especially for the development of district heating (Euro +4 million) and the upgrading of information systems (Euro +7 million).

With regard to 2019, the main investments for the **"smart use of energy"** were as follows:

- The completion of the biomethane plant of Sant'Agata Bolognese (approximately Euro 3.3 million) and other investments in plants for the anaerobic biodigestion of waste (around Euro 5.1 million) - "Spreading renewable energy" impact area;
- upgrading of public lighting and energy efficiency systems in the public administration buildings as well as energy efficiency measures in condominiums and enterprises, also through the implementation of industrial cogeneration plants. These projects were carried out by Hera Luce, Hera Servizi Energia and

AcegasApsAmga Servizi Energetici (around Euro 19.5 million - "Promotion of energy efficiency" impact area).

Concerning the "**efficient use of resources**" driver, most of the funding (around Euro 57.2 million) was for adjustment operations in the sewage and purification sector to ensure the highest quality standards for water resources in both municipal and rural areas ("Sustainable management of water resources" impact area). The remaining part concerned projects to increase separate waste collection for municipal waste and waste recovery and recycling, primarily through Aliplast, Hasi, and Waste Recycling ("Transition towards a circular economy" impact area).

Lastly, as part of "**innovation and contribution to development**", investments were mainly aimed at spreading innovative technologies related to the development of smart cities, circular economy, Utility 4.0 and customer experience (approx. Euro 78.0 million - "Dissemination of innovation and digitalisation" impact area) and to the development of the district heating service and the purchase of environmentally-friendly vehicles (approx. Euro 13.1 million – "Air and soil protection" impact area).

The investments designed to create shared value, that are outlined in the 2019-23 Business Plan amount to approximately Euro 750 million for the years 2020-23, equal to 35% of the total. Around Euro 320 million is for projects linked to the driver "Innovation and contribution to development", Euro 330 million is for "Efficient use of resources" projects while the remainder concerns investments in the "Smart use of energy".

Shared value

Smart use of energy

Objectives and performance

What we said we would do	What we have done	Geographic scope*		
Promotion of energy efficiency				
<ul style="list-style-type: none">• Reduce the energy consumption of Hera, AAA and MMS by 6% by 2022, compared to 2013, 5% by 2020.	<ul style="list-style-type: none">• Consumption is down 5.1% in 2019 (compared to 2013), thanks to measures that have been implemented. (see page 41)	ER	T	M
<ul style="list-style-type: none">• Save 1,300 toe of energy in 2019 by implementing measures in public lighting including replacing luminaires with LED lamps (23% Hera Group; 21.4% Hera Luce and 60.9% Marche Multiservizi by 2022).	<ul style="list-style-type: none">• 720 toe were saved thanks to measures implemented in 2019 including replacing luminaires with LED lamps (27% in 2019). (see page 46)	ER	T	M
<ul style="list-style-type: none">• Achieve 19% of customers in 2022 under gas, electricity and district heating offers with energy efficiency services.	<ul style="list-style-type: none">• 19.9% of customers chose offers providing energy efficiency services as of end 2019 (14.6% in 2018). The Hera ContaWatt, Hera Thermo, Hera Led and Led Business offers were promoted again in 2019, as was the new Diario dei consumi (Consumption Diary) which helps customers monitor and reduce their consumption. (see page 44)			
<ul style="list-style-type: none">• Complete 4 new industrial cogeneration plants in 2019 and promote energy efficiency solutions for condominiums (+5% in the portfolio of condominiums with offers for "energy services", "solar thermal", "thermal insulation", "tax credit assignment offer", "heat metering system").	<ul style="list-style-type: none">• 4 new industrial cogeneration plants were completed in 2019; the portfolio of condominiums with offers for "energy services", "solar thermal", "thermal insulation", "tax credit assignment offer", and "heat metering system" increased by 20%. (see page 46)	ER	T	
Spreading renewable energy				
<ul style="list-style-type: none">• Produce 7 million m³ of biomethane at the S. Agata Bolognese (BO) plant in 2018 and feed it into the gas network. Start the permitting phase for the construction of the biomethane production plant in Lugo (RA).	<ul style="list-style-type: none">• 6.5 million m³ of biomethane were produced at the S. Agata Bolognese (BO) plant. The permits for the construction of the biomethane production plant in Lugo (RA) will be requested in 2020. (see page 64)	ER		
<ul style="list-style-type: none">• Achieve 19% of customers using energy from renewable sources by 2022 thanks to Hera Comm's "Pacchetto Natura" offer.	<ul style="list-style-type: none">• 20% of customers use electricity from renewable sources and 5% of customers use gas with CO₂ emissions compensated. (see page 61)	ER		

What we said we would do	What we have done	Geographic scope*		
Reduction of GHG emissions				
<ul style="list-style-type: none">• Reduce the carbon intensity index of energy production by 23% by 2022, compared to 2015 (kg CO2/MWh).	<ul style="list-style-type: none">• A 20% reduction was achieved in 2019 (compared to 2015) of the carbon intensity index of energy production (kg CO2/MWh). A 22% reduction was achieved in 2019, (compared to 2013). (see page 60)	ER	T	M

* Geographic scope of the improvement objectives: ER= Emilia-Romagna T= Triveneto M= Marche.

What we will do	SDGs	Geographic scope*		
Promotion of energy efficiency				
● Reduce the energy consumption of Hera, AAA and MMS by 6.5% by 2023, compared to 2013.	7, 13	ER	T	M
● Save 648 toe of energy by 2020 from public lighting measures including replacing luminaires with LED lamps (40% by 2023).	7, 13	ER	T	M
● Achieve 22% of customers in 2023 with gas, electricity and district heating offers with energy efficiency services or that use the Diario dei consumi (Consumption Diary).	7, 13			
● Complete 3 new industrial cogeneration plants by 2020 and promote energy efficiency solutions for condominiums (increase the condominiums portfolio thanks to the offers for "energy services", "solar thermal", "thermal insulation", "tax credit assignment offer", and "heat metering system").	7, 9, 13	ER	T	
Spreading renewable energy				
● Start the permitting phase during 2020 for the construction of two new biomethane production plants (Lugo (RA) and Enomondo).	7, 8, 9, 11, 13	ER		
● Achieve 58% of customers with electricity from renewable sources by 2023, and with natural gas with CO ₂ offsetting.	7, 9, 13			
Reduction of GHG emissions				
● Reduce the carbon intensity index of energy production by 26% by 2023, compared to 2013 (kg CO ₂ /MWh).	7, 13	ER	T	M
● Align our annual reporting with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the European Commission's Guidelines on reporting climate-related information.	7, 13			

* Geographic scope of the improvement objectives: ER= Emilia-Romagna T= Triveneto M= Marche.

Promotion of energy efficiency

Primary energy consumption of the Hera Group

Hera's energy consumption reflects the Group's multi-business nature.

The balanced portfolio of its businesses creates synergies that increase productivity in multiple sectors while reducing energy consumption. Hera operates both cogeneration plants for **district heating**, which produce thermal energy and electricity to sell to its customers, and **cogeneration plants**, mainly to satisfy internal consumption requirements. It also operates **waste-to-energy plants** that dispose of waste and recover the energy in it, **turboexpanders** that take advantage of pressure differentials in the natural gas distribution stations in the local networks it operates, and the **recovery of low enthalpy geothermic heat** at the district heating plant in Ferrara. Furthermore, we use part of the electricity produced by the Group's photovoltaic plants for our own facilities. Thanks to constant measures, Hera pursues a policy aimed at **increasing energy efficiency** throughout its operations.

Primary energy consumption, by type

toe	2017	2018	2019
Consumption of energy carriers for production (methane, geothermal energy, biogas, others)	152,973	204,893	217,776
Waste-to-energy treatment	326,743	320,942	319,389
<i>Total energy consumed in electricity or thermal energy production plants</i>	<i>479,716</i>	<i>525,835</i>	<i>537,165</i>
Electricity excluding public lighting	105,743	109,522	111,118
Electricity for public lighting	31,255	30,947	29,514
Methane and other energy carriers for heating our offices	2,962	2,819	2,852
Fuel for vehicles	9,843	9,889	9,377
<i>Total energy consumed for uses other than the production of electricity or thermal energy</i>	<i>149,802</i>	<i>153,177</i>	<i>152,861</i>
Total	629,518	679,012	690,026

Electricity data refer to the tons of oil equivalent used for the production of electricity consumed. The data refer to energy consumption by Hera Spa, Acantho, AcegasApsAmga, AcegasApsAmga Servizi Energetici, Aliplast, Aresgas Group, Fea, Feronia, Hasi, Hera Comm, Herambiente, Hera Luce, Hera Servizi Energia, Hera Trading, Heratech, Hestambiente, Inrete Distribuzione Energia, Marche Multiservizi, Marche Multiservizi Falconara, and Uniflotte.

In 2019, primary energy consumption increased slightly compared to the previous year's levels (+1.6%), mainly due to a change in the scope of reporting. The increase in the category "Energy carriers consumption for production" is, in fact, due to the inclusion of natural gas consumption by Hera Servizi Energia and the use of biogas in Marche Multiservizi's landfill, not included in previous years.

Electricity consumption, excluding public lighting, increased slightly (+1.5% compared to 2018), while electricity consumption in public lighting decreased by 4.6%, thanks to the energy efficiency measures we implemented.

Energy consumption within the organisation [302-1]

Thousands of GJ	2017	2018	2019
Fuel consumed from renewable sources	(+) 8,308	(+) 8,440	(+) 8,467
Fuel consumed from non-renewable sources	(+) 13,235	(+) 14,779	(+) 14,961
Electricity consumed	(+) 2,661	(+) 2,704	(+) 2,707
Thermal energy consumed	(+) 886	(+) 876	(+) 872
Electricity produced by photovoltaic	(+) 7	(+) 6	(+) 7
Electricity produced from consumed fuels	(-) 4,028	(-) 4,500	(-) 4,601
Thermal energy produced from consumed fuels	(-) 2,229	(-) 2,796	(-) 3,902
Total	18,840	19,509	18,511

Energy consumption does not include: AcegasApsAmga Servizi Energetici for 2017, ASA, EnergiaBaseTrieste, Hera Comm Marche, Herambiente Servizi Industriali, Tri-Generazione, whose consumption is estimated at 0.5% of total energy consumption.

The organisation's internal energy consumption, calculated according to the reporting standard used (GRI Sustainability Reporting Standard) were 18,511 thousand GJ. They are made up of the sum of the **consumption of fuel from renewable sources** (biogas and waste processed by waste-to-energy plants as the renewable share) and **non-renewable** sources (methane, diesel fuel, LPG, petrol, and waste processed by waste-to-energy plants, for a non-renewable share of 49%), **electricity consumption, the production of renewable electricity by photovoltaic plants**, and minus the electricity produced and fed into the grid, and the thermal energy produced. The decrease in energy consumed within the organisation is mainly caused by the increase in thermal energy produced. As specified in the paragraph on that subject, in 2019 the energy production of some of AcegasApsAmga Servizi Energetici's thermal power plants, which had not been considered in previous years, was included in the scope of reporting.

Primary energy consumption is calculated based on data gathered mainly from measurements and is based on calculation and conversion methods defined for the application of the regulatory provisions of Italian Law 10/91 (MISE Circular of 18 December 2014).

The Group's energy performance can be represented by several indicators that express its development and prospective targets and illustrate the company's savings strategies. A comparison of energy consumption with certain production and operating indicators can provide consumption intensity indices that reflect the improvements achieved by efficiency measures and by corporate energy management.

Intensity indices of primary energy consumption [302-3]

	2017	2018	2019
Purification: primary energy (MWh)/volumes purified (thousands of m ³)	587.2	414.8	412.6
Drinking water purification: primary energy (MWh)/water fed into the water network (thousands of m ³)	462.0	455.0	440.7
District heating: primary energy consumption (toe)/thermal energy fed into the network (MWh)	166.4	173.6	181.6
Waste-to-energy plants: net energy production (MWheq)/volumes processed (t)	550.1	544.6	545.3
Offices: total primary energy consumed (toe)/area of offices (thousands of m ²)	26.0	26.5	26.2
Public lighting: primary energy (kWh)/light points	370.6	336.4	303.8

The data concern the energy consumption of Hera Spa, AcegasApsAmga, Fea, Gruppo Aresgas, Hera Luce, Herambiente, Hestambiente, and Marche Multiservizi. The data refer to the consumption of electricity, methane, diesel fuel, LPG, petrol, and waste.

In 2019 the **water sector** improved overall, also as a result of investments, with consumption intensity indices falling for both water treatment and drinking water purification. Note, however, that the volumes treated directly influence the purification index, against energy consumption that by the nature itself of the plants remains substantially stable. The values for 2017 were higher than the historical data due to lower volumes treated as a result of the drought. As far as the production of drinking water is concerned, also in this case, consumption in 2017 had increased due to the unusually dry summer, which had made it necessary to use more energy-intensive sources of supply (groundwater). Compared to 2017, the volumes of purified water in 2019 increased by 5.1%, whereas the water fed into the water network in 2019 dropped by 3.2% compared to 2017, recording a further decrease in groundwater supplies compared to the previous year.

The indicator for **district heating** worsened, compared to the previous year (+4.6%), mainly due to a greater operation of the Imola cogeneration plant in the summer period in 2019 compared to 2018.

The **public lighting** index continued to improve (-9.7% compared to 2018), thanks to the energy efficiency improvement measures described below, while the waste-to-energy plants and site management indicators were substantially unchanged.

Energy efficiency within the Hera Group

[302-4]

The Group's focus on energy efficiency is reflected by its **ISO 50001** certification for energy management systems for **eight of the Group's companies**: AcegasApsAmga, AcegasApsAmga Servizi Energetici, Aresgas, Hera Spa, Hera Luce, Hera Servizi Energia, Inrete Distribuzione Energia, and Marche Multiservizi.

The energy improvement plans drawn up since 2014 as part of energy management systems envisaged achieving the reduction of energy consumption by 3% (compared to 2013 consumption) by 2017. As a result of the positive results it has achieved, Hera has set increasingly challenging targets: the Group's business plan envisages that **by 2030**, we will implement measures that enable us to achieve **savings of 10% of the 2013 consumption** (6.5% by 2023).

The objective is calculated as the average of the objectives that Hera Spa, InRete, AcegasApsAmga, and Marche Multiservizi have defined as part of their certification schemes.

We have achieved **significant energy saving** to date **in the water cycle**, both as regards the purification and the treatment of drinking water. We have also major efficiency improvements for **district heating**, where the measures mainly affect the optimisation of sources and the effective utilisation of the best-performing systems.

The energy improvement plans of Hera Spa, InRete, AcegasApsAmga and Marche Multiservizi (2014-2019)

Type of measure	Number of measures implemented or to be implemented	Savings per year due to measures implemented or to be implemented (toe)	Measures implemented by end 2019	Savings achieved by end 2019 (toe)	Company
Integrated water service	181	6,854	157	6,059	H-A-M
District heating	54	4,021	47	3,052	H
Energy networks	21	714	16	674	H-A-M
Vehicles and waste management services	13	662	12	646	H-A-M
Offices	53	368	49	336	H-A-M
Public lighting	21	1,121	18	981	A-M
Total	343	13,740	299	11,748	
	5.9% of 2013 consumption (123% of the reduction target of 5% by 2020)		5.1% of 2013 consumption (105% of the reduction target of 5% by 2020)		

The data refer to Hera Spa, Inrete, AcegasApsAmga and Marche Multiservizi. For AcegasApsAmga the baseline is the consumption for the year 2014.

The approximately 300 measures implemented by the end of 2019 saved over 11,700 toe (more than 491 thousand GJ), equal to 5.1% of the 2013 consumption, reaching the target set for 2020 early. The more than 340 measures identified and that at 31 December 2019 are included in the improvement plans of Hera Spa, InRete, AcegasApsAmga and Marche Multiservizi will reduce energy consumption by over 13,000 toe, 5.9% of 2013 consumption.

The measures identified in the action plan focus mainly on the water cycle where measures are planned that amount to more than 53% of overall energy saving.

The energy efficiency measures of Herambiente, Hera Servizi Energia and Hera Luce

Type of measure	Number of measures in progress or planned	Savings per year expected due to measures in progress or to be implemented (toe)	Of which measures implemented by end 2019	Of which annual savings achieved by end 2019 (toe)
Measures on waste-to-energy plants and landfills	35	2,938	28	1,795
Measures on businesses, condominiums and other buildings	217	11,261	86	9,805
Measures on public lighting systems	48	7,676	18	1,572
Total	300	21,875	132	13,172

In addition to the initiatives of the Energy Improvement Plan, we must also consider 300 more energy efficiency measures implemented, in progress or planned (132 of which have already been completed) by **Herambiente**, **Hera Servizi Energia**, **AcegasApsAmga Servizi Energetici**, and **Hera Luce** on waste disposal plants, condominiums or other buildings, for cogeneration plants and public lighting systems. These measures will save 21,875 toe per year (13,172 of which already achieved, equal to 551 thousand GJ).

The **white certificates mechanism** was created in Italy in 2005 as an incentive tool for energy efficiency and is based on Energy Efficiency Certificates (TEE) to which an economic value is attributed. These certificates are obtained by implementing measures that provide certified and measurable energy savings. The system sets saving requirements for gas and electricity distributors and assigns goals to achieve each year.

Italian Ministerial Decrees 11/01/2017 and 10/05/2018 changed the procedures for accessing the white certificates mechanism and redefined the obligations of distributors for the 2017/2020 period. These changes have significantly impacted the system, where uncertainty remains concerning the ability to generate sufficient certificates to meet obligations. The market value of the securities has been curbed, even in the event of a shortage of supply, by introducing a cap on the resources of the community involved in the system, as a tariff contribution granted to obligated entities to cover their costs, a parameter that from 2018 may amount to a maximum of Euro 250 per certificate.

In order to fulfil its obligations, Inrete Distribuzione Energia relies on Hera Spa as an **ESCO**, which continues the activity in the procurement of white certificates as has been occurring for over a decade.

As part of its **energy efficiency promotion initiatives** Hera Spa has also started cooperating with a team of researchers from the **Politecnico di Milano**, made up of experts in behavioural psychology and statistical sciences which, in addition to providing a useful contribution to design the initiatives, has the skills necessary to develop scientifically valid programs to measure and verify savings. The collaboration involves the **validation**, from the point of view of the savings obtained, of **energy optimisation measures** in homes, in business plants, in the tertiary sector and in public administration, due not to replacing or implementing technologies, but to inducing **virtuous behaviours** obtained with methodologies inspired by behavioural sciences.

In 2019, Hera Spa **presented the GSE with ten new initiatives** for energy-efficiency metered baseline projects, under the provisions of the new 11 January 2017 Decree. The initiatives detailed in the applications presented are mainly designed for implementation in the Group's service area. Among the energy efficiency improvement measures presented as part of the White Certificates mechanism and applicable to Hera Group's plants, the initiatives to improve the efficiency of district heating systems and on purification plants are noteworthy.

In particular, it should be noted that Hera has also pursued energy efficiency by working not only on hardware measures, but also on the so-called "**behavioural measures**", specifically by promoting the diffusion of conscious and virtuous attitudes towards the consumption not only of energy but also of water. **Two of the ten initiatives presented to the GSE during 2019 fall within this field of activity.** One of these initiatives concerns the "Diario dei consumi" (Consumption Report) report, a free service for Hera customers that aims to stimulate virtuous behaviour to reduce energy and water consumption. By mid-2020, at the end of the first year of testing, it will be possible to quantify the savings achieved. The second initiative, instead, concerns the promotion of energy efficiency at a banking group by raising employee awareness.

Lastly, as far as public lighting is concerned, AcegasApsAmga presented four new projects on the redevelopment works implemented by Hera Luce in the municipalities it serves.

In 2019, Hera also won the "Energy manager of the year" award, assigned by Fire to Claudio Palmieri, in recognition of the work carried out by the entire Group to improve its energy performance and promote a culture of rational energy use.

White certificate objectives

toe	2017	2018	2019
Gas distribution	313,670	326,025	355,199
Electricity distribution	32,183	33,489	37,018
Total	345,853	359,514	392,217

Hera's measures to increase energy efficiency continue both inside and outside the Group; on the one hand, by implementing and improving its ISO 50001-certified Energy Management System and, on the other, by **taking part in events and conferences that address the industrial sector**. These include participation in the important biennial Summer Study organised by the **European Council for an Energy Efficient Economy**, which Hera contributed to by presenting a project developed jointly with the Federazione italiana per l'uso razionale

dell'energia (Fire –Italian federation for the rational use of energy), concerning the multiple benefits of energy efficiency.

To confirm the Group's commitment in this area, since 2015 Hera has been publishing the "**Valore all'energia**" ("Value to Energy") report, entirely dedicated to energy efficiency and extended in 2015 to AcegasApsAmga and Marche Multiservizi, and submitted to DNV-GL for third-party auditing. A case study dedicated to the report is in the relevant section of this Sustainability Report.

Energy efficiency for families

In 2019, we confirmed our commitment to environmental sustainability and energy efficiency, with added-value services that provide consumption monitoring and reduction for Hera Comm's residential customers.

In collaboration with the Politecnico di Milano and researchers with expertise in mathematics, statistics, and behavioural psychology, the new **Diario dei consumi** (Consumption Diary) was launched in June 2019, replacing the Consumption Analysis report with the following measures:

- simplification of the information stimuli provided by the report;
- simplification of the language used in the report;
- reviewed layout;
- modification of customer clustering algorithms for comparison with "similar customers".

Hera Comm makes available to its customers the Consumption Diary, free of charge, to help them compare their energy consumption with that of a similar household by size, in the same province, and that uses a similar amount of energy (for residential customers). The report also compares a customer's consumption with the same period of the previous year and provides advice on how to optimise energy use. All data is also accessible on the platform and in the dedicated section of the MyHera app.

The service, which is already active for electricity, gas and district heating, was extended from October 2019 on an experimental basis to a sample of over 100 thousand residential water service customers.

The **Hera Led** option can be combined with many of Hera Comm's free market offers, for both new and existing customers, and offers customers one or two sets of ten LED bulbs each per contract at a 30% discount on their market value. Replacing an incandescent bulb with a high-efficiency LED bulb can save up to 80% of the energy used. The technical specifications of the products show that a 9 W LED bulb replaces a 60 W incandescent bulb. So if we consider an average daily use of 4 h/day, an LED bulb consumes about 13 kWh/year compared to the 88 kWh/year of an equivalent incandescent bulb, significantly reducing costs and benefiting the environment.

The **Hera Thermo** option lets customers control the gas consumption of their home thanks to a smart, remotely controllable thermostat. Using it leads to a greater attention to how the gas is used: in fact, the app makes it easy to check the temperature set in the house and check the operation of the boiler at any time. This ease of control increases awareness and reduces waste, both by decreasing the temperature set during certain time ranges and by optimising the on/off cycles of the system that were previously needed to keep the desired indoor temperature. Research shows that a 1 °C temperature reduction in a house leads to saving between 5% and 10% of gas during the winter season (Source: Enea).

Hera ContaWatt is an option that helps residential and business customers monitor their electricity consumption: the easy-to-install device connects to the electricity meter via a sensor so that users can check electricity consumption on an app on a mobile device or on a PC. A summary of the consumption details is also sent by email every week. The ContaWatt device independently connects to a data transfer platform, can send real-time anomaly alerts to the app or via email, and installation does not require specialists.

Contracts at year-end with electricity energy efficiency services

qty	2017	2018	2019
Contracts at year-end with electricity energy efficiency services	161,947	159,048	235,299
% Contracts at year-end with energy efficiency services out of total electricity contracts	18.7%	18.8%	23.4%
Contracts at year end with gas energy efficiency services	162,507	147,811	227,755
% Contracts at year end with energy efficiency services out of total gas contracts	13.8%	11.7%	17.3%
<i>Electricity and gas contracts with energy efficiency services</i>	<i>15.9%</i>	<i>14.6%</i>	<i>19.9%</i>

In 2019, customers using energy efficiency services accounted for 20% of the total (+36% compared to 2018). This increase applied both to energy efficiency services linked to electricity contracts (+24% compared to 2018) and gas contracts (+48% compared to 2018). Data includes the Diario dei consumi (Consumption Diary), Hera Led, Hera ContaWatt and Hera Thermo.

Energy efficiency for condominiums

Through its subsidiaries **Hera Servizi Energia (HSE)** and **AcegasApsAmga Servizi Energetici (ASE)**, the Hera Group operates actively in the energy efficiency sector providing a broad range of services, targeting mainly condominiums, large industrial customers and public administration.

HSE and ASE offer condominiums that have central heating, a **temperature control and heat metering system** that transparently and unequivocally identifies the consumption of each individual user. To respond to the needs of energy efficiency and to faithfully report real consumption, these systems must be designed with care and made suitable to existing systems which have generally been designed several years ago and are lacking of any supporting documentation.

The condominiums that carried out several energy refurbishment measures at the same time, individual metering and a heating system upgrade, have achieved savings of 20% to 40% of their consumption. Moreover, by assigning state incentive credit to the contractor and entering into a contract for energy provision, the measures did not involve any disbursement for the customers at the end of the work.

The commercial solutions, in fact, are combined with **assigning the state incentive credit** to the contractor for the ecobonus and sismabonus incentives for energy-related and structural upgrading of buildings, leaving the possibility for owners to independently choose among a range of solutions the one that best suits their available funds. Customers can choose whether to bear the cost of the work done and later deduct the amount on their tax return, or assign the tax deduction and pay the excess at the end of the work, or choose the solution that requires no disbursement at the end of the work adding to the credit assignment the financing of the remaining portion, even combined with an energy provision service that ensures energy savings and thus reduces heating costs.

In parallel to its individual heat metering business, HSE is actively **replacing old central heating boilers with high efficiency models** that, combined with the temperature control systems, significantly reduce gas consumption for condominiums. These condominiums can also have a complete heat management service under the "Servizio Energia" contract. At year end, **76 condominiums are using the energy service** (+5.2% compared to 2018) and the savings achieved by its integrated measures are about 27% of the total gas consumption.

At the end of 2019, a **portfolio** of 457 condominiums have installed and regularly use our control system, thanks to HSE's professionalism and experience. An average fuel consumption saving of 8.3% can be expected by installing the metering system. At the end of 2019, ASE's portfolio amounted to 455 condominiums (+11% compared to 2018).

Energy efficiency for companies

In the industrial cogeneration sector, Hera offers multi-year energy supply contracts that involve **building and operating electricity and thermal energy production plants** designed to meet all the energy needs of top customers. The main product sectors in which the energy service is particularly effective are plastics, food, pharmaceuticals, ceramics, and large-scale services such as museums, shopping centres, spas, and condominiums.

With cogeneration and trigeneration (production of electricity and thermal energy at the same plant, plus cooling services) primary energy is saved with respect to traditional consumption, emissions are reduced, energy efficiency is increased, and supply costs are reduced.

HSE offers a full range of all energy carriers, making it inexpensive and easy for customers to manage. According to the customer's energy requirements, HSE identifies the characteristics of the technological plant required, handles the preparation of all the permitting documents, and operates and manages the plant.

At the end of 2019, **18 cogeneration plants run by HSE were operational** (4 more than in 2018), of which 4 are trigeneration plants. The **environmental benefits** achieved in 2019 by these plants include 22,343 tonnes lower CO₂ emissions and primary energy savings of about 9,542 toe.

Furthermore, Hera Spa has entered into **agreements with trade associations** in the areas it serves, collaborating with companies within the scope of the requirements of Legislative Decree 102/14 on Energy Audits. At the end of 2019, 25 agreements were in place with local trade associations and businesses.

Energy efficiency for the public administration

Hera Servizi Energia and AcegasApsAmga Servizi Energetici use public-private partnership instruments in the **public administration** customer market. Also for this particular type of contract, the Group companies propose significant **investments both for heat generation by installing new condensing boilers** and heat pumps, and insulating building envelopes by installing thermal insulation and replacing windows and doors with better-performing types. The offer is completed by modern energy management, provided under an "Energy Service" contract.

Implementing several measures can achieve savings of 8 to 18%, depending on consumption and previous measures on the envelopes and can be combined with the seismic upgrading of the buildings.

Under this model, energy efficiency measures can be financed with the energy savings provided by those same measures, and when possible, without increasing the current expense level of the recipient of the measures.

ASE is the Hera Group company dedicated to public administration tenders for energy service, facility management, operation, and maintenance. In 2019, as a result of the tenders it won, it **invested more than Euro eight million in energy efficiency improvement projects**.

Energy efficiency in public lighting

Two Hera Group companies, Hera Luce and Marche Multiservizi, operate around **550 thousand light points** (+3% compared 2018), ensuring the proper operation of the public lighting service in **181 municipalities** in ten regions: Emilia-Romagna, Umbria, Lombardy, Marche, Lazio, Tuscany, Piedmont, Veneto, Friuli-Venezia Giulia, and Abruzzo. In some areas they also manage a total of **about 10,500 traffic lights**.

In **27.5%** of the light points the companies operate, **LED lamps** are now used, up compared to 2018. Consumption optimisation systems (brightness reduction, partial shut-down, etc.) manage 53.3% of the light points the companies operate. Energy-saving light bulbs (i.e. not mercury-vapour lamps which, according to the energy qualification system developed by Hera Luce on the basis of the Minimum Environmental Criteria, belong to class G) are used by 32.9% of the light points we operate.

Considering the 149 municipalities for which Hera Luce operated the public lighting service from January to December 2019, only electricity from renewable sources is used in 84 municipalities; electricity consumption in these municipalities is 39.8% of total consumption. In 55 municipalities, the electricity consumption per population equivalent (calculated considering both residents and tourists) is less than 50 KWh/pe, which is the threshold of the highest classes of the 8 defined by the minimum environmental criteria for the public lighting service. These municipalities consume 26.0% of the total electricity. Lastly, there are 17 municipalities where all the lighting points we operate use LED lamps (5.3% of total consumption). In total, 108 of the municipalities feature one or more of these three good environmental practices (use of renewable sources, low power consumption, LED lamps) with a consumption of 57.8% of the total.

During 2019, Hera Luce's commercial effort aimed at consolidating the area it serves and expanding its area of influence, offering potential customers smart solutions for their respective cities. Among these proposals, the commitment to energy efficiency achieved by installing low-consumption systems and, above all, latest-technology LEDs, is particularly notable.

Light points and traffic lights operated

	2017	2018	2019
No. of municipalities served	163	176	181
Light points at 31/12	518,659	534,486	549,009
of which low-power (%)	41.7%	34.5%	32.8%
of which LED (%)	14.2%	14.9%	27.4%
of which fitted with consumption optimisation systems (reduction of brightness, partial switching off, etc.) (%)	51.3%	51.2%	53.2%
Traffic lights	11,634	10,523	10,496
of which LED (%)	64.6%	62.0%	62.1%

The 2017 data for the percentage of energy-efficient light points were recalculated on the basis of the calculation criteria used since 2018.

During 2019, Hera Luce engaged in completing several public-private partnership projects under the project finance provisions of Art. 183(15) of Italian Legislative Decree No. 50/2016. The projects submitted involve reducing the energy consumption and improving the safety of public lighting installations, to comply with the minimum environmental criteria **for lighting equipment** which came into force in 2017 and with those **for public lighting services** that came into force in 2018. Among the criteria used to award the contracts, references to the circular economy and to presenting the material balance are increasingly frequent. In this context, Hera Luce carried out the first Italian national and European case study of **circular economy applied to public lighting**.

During 2019, work was completed on projects started in 2018 and 2019 in 14 municipalities and work started in a further 15 municipalities. Overall, the measures carried out in 2019 will **save 5,124,000 kWh of electricity** each year, which amounts to **958 tonnes of oil equivalent**. Considering as 2,700 kWh per year the average electricity consumption of a household of four people, the amount of energy that will be saved each year with the measures implemented by Hera Luce in 2019 is equal to the annual consumption of 1,898 households. Lower electricity consumption results in over 2,065 tonnes of carbon dioxide emissions being avoided each year.

We also paid special attention to **energy-saving measures at the Hera Group offices**: external lighting efficiency improvements were carried out at the headquarters in Viale Berti Pichat in Bologna (including architectural lighting, as done for the office building and for the Hera monument), the Frullo and Cristina Campo offices in Bologna, in Via Terrapieno and Consolare in Rimini and renovation started at the offices in Via Spinelli in Cesena and Molino Rosso in Imola.

Hera Luce continues the **development activities** related to various actions and partnerships launched in previous years related to:

- update of the minimum environmental criteria (MEC) for public lighting and definition of the new MEC for lighting services, as a member of the workgroup created by the Italian Ministry for the Environment, Land and Sea Protection;
- dissemination of the culture of light;
- lighting device performance monitoring system in line with the minimum environmental criteria, together with the Ministry for the Environment, Land and Sea Protection;
- the development of models designed to provide local authorities with tools that enable them to understand the process of analysing and assessing energy efficiency improvement activities, obtain information on the activities to undertake for an energy renovation programme, and attain an initial estimate of the costs of the measures and the benefits that can be obtained;
- analysis of new lighting technologies, assessing costs/benefits and future development options, in association with several universities;
- the creation of projects designed to advance public lighting towards the development of smart cities using the public lighting infrastructure;
- development of the circular economy project, by studying a practical case applied to a public lighting system, drafting the material balance for the projects presented in the tender, using a tool that measures the circularity of materials.

Spreading renewable energy

Renewable energy production plants and total production

Herambiente produces heat and electricity from **burning waste**, in its ten waste-to-energy plants with an overall installed electrical capacity of more than 130 MW. Nine of these waste-to-energy plants are used for municipal waste and as described in greater detail below, the energy they produce is considered to be **51% from renewable sources** (the biodegradable share of the waste used). Three of these waste-to-energy plants, moreover, recover thermal energy to supply nearby **district heating** networks. The Ferrara plant is joined, in the production of thermal energy, by **geothermal wells** located in Casaglia, thanks to which heat is drawn from underground: in this case, geothermal energy is the primary source of the district heating system.

Herambiente group owns the **biodigesters** in Rimini, Lugo (RA), and Cesena, where there are biogas cogeneration plants with an electrical power of about one MW each. In addition, the biogas exploitation plants at nine landfills are still active, as is the biomass plant operated in Faenza by Enomondo, in which Herambiente has a 50% stake. The integrated water system also includes cogeneration plants located at a certain wastewater purification plants operated by the group (Bologna, Cesena, Forlì, and Savignano sul Rubicone), where the biogas produced by the treatment of **wastewater purification sludge** is used to produce electricity typically for self-consumption at such sites.

In the gas distribution field, the group has for some time now operated four **turboexpanders**, located in Bologna, Forlì, Ravenna, and Ferrara, which generate electricity by exploiting the gas pressure differentials in the distribution network. During 2019, we started up a fifth turboexpander in Bologna, at one of the largest stations that serves the city.

The **photovoltaic plants** installed at Hera's offices and facilities of Bologna, Ferrara, Imola, Faenza, Cesena, and Ravenna add a total of 150 kW more, besides those installed at the Herambiente plants of Mordano (BO), Lugo (RA), Pozzilli (IS), and Rimini for a further 1.7 MW. AcegasApsAmga operates three photovoltaic plants with a total output exceeding 100 kW, a turboexpander on the Padua's gas network that outputs about 2 MW, a natural gas cogenerator with a nominal electricity output of 500 kW, and two biogas cogenerators installed at major wastewater purification plants that together generate about 500 kW. The new Sant'Agata Bolognese plant became fully operational in 2019. The **biomethane** it produces from the organic fraction of separately collected waste is fed into the local distribution network.

In addition to the above renewable energy production plants, the Hera Group also operates other plants that efficiently generate energy, among which the 85 MW **Imola cogeneration plant** as well as 10 other smaller **cogen- and trigeneration** plants, for an additional total installed capacity of 27 MW of electricity.

Electric and thermal power

MW	2019	%
Renewable electric power	92	30%
Electric power cogeneration + turboexpansion	152	49%
Other	65	21%
Total electric power	309	100%
Renewable thermal power	53	7%
Cogeneration thermal power	131	18%
Other	555	75%
Total thermal power	739	100%

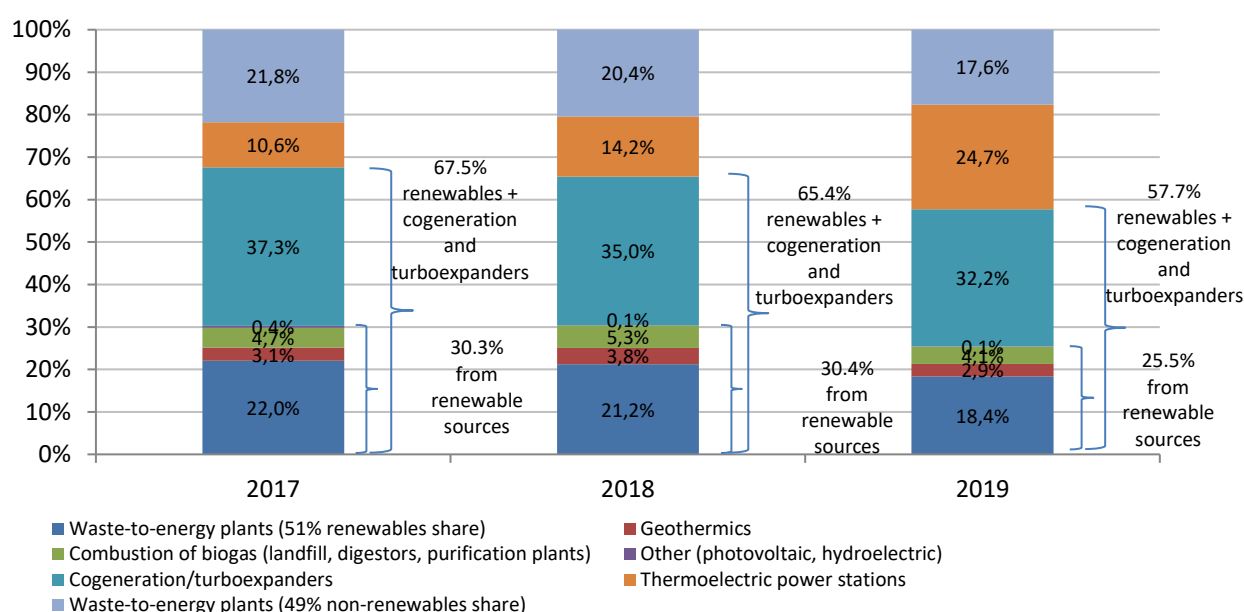
The figures do not include the production of biomethane at the Sant'Agata Bolognese plant, which totalled 6.5 million cubic metres of biomethane in 2019. Electric power: renewable electric power includes 51% from waste-to-energy plants (the share considered renewable), biogas, and photovoltaic; the Other item includes 49% from waste-to-energy plants (the share considered non-renewable). Thermal power: renewable thermal power includes 51% from waste-to-energy plants (the share considered renewable), biogas, and geothermics; the Other item includes 49% from waste-to-energy plants (the share considered non-renewable) and thermoelectric power stations.

Total energy produced

MWh	2017	2018	2019
Waste-to-energy plants (51% renewables share)	447,421	418,712	420,571
Combustion of landfill biogas	50,527	56,373	47,714
Combustion of landfill biogas in third-party plants	12,281	12,922	11,020
Combustion of digester biogas	19,966	22,309	22,466
Combustion of purification plant biogas	12,344	12,947	12,550
Photovoltaic energy	1,971	1,714	1,858
Geothermics	63,535	75,382	67,415
Total renewable sources	608,045	600,358	583,593
Cogeneration	541,587	475,347	492,862
Cogeneration operated as a service	209,067	208,542	236,488
Turboexpanders	7,918	5,725	8,804
Total cogeneration + turboexpansion	758,572	689,614	738,154
Waste-to-energy plants (49% non-renewables share)	441,938	402,292	404,078
Thermoelectric power stations	216,055	280,361	564,691
Total traditional sources	657,993	682,653	968,769
Total	2,024,610	1,972,625	2,290,516

The figures do not include the production of biomethane at the Sant'Agata Bolognese plant, which totalled 6.5 million cubic metres of biomethane in 2019, corresponding to 59,215 MWh.

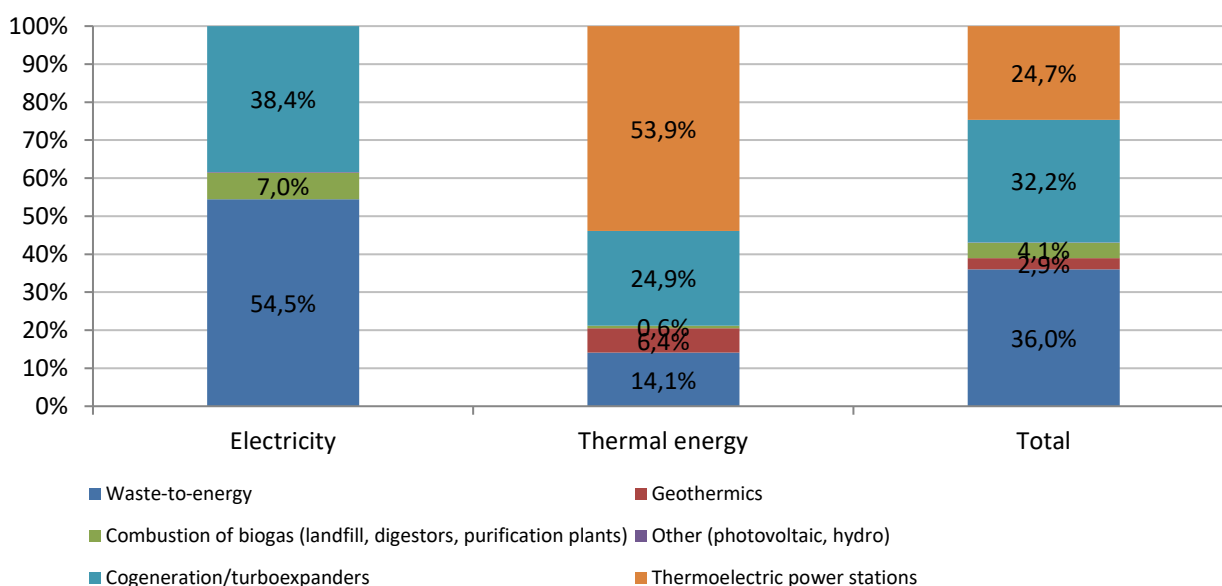
Total energy produced



The figures do not include the production of biomethane at the Sant'Agata Bolognese plant, which totalled 6.5 million cubic metres of biomethane in 2019, corresponding to 59,215 MWh.

The share of **energy produced from renewable sources in 2019** was 25.5%, down from the previous year, due to the increase in heat produced by thermal power plants (see the section on thermal energy). The share of energy produced by cogeneration and turboexpanders amounts to 32%. Together, the two categories represent about 58% of the total energy the Group produces.

Total energy produced



The figures do not include the production of biomethane at the Sant'Agata Bolognese plant, which totalled 6.5 million cubic metres of biomethane in 2019, corresponding to 59,215 MWh.

In coming years, the Group's energy production sustainability profile will improve, mainly due to:

- full operation of the plant mentioned above to produce biomethane from organic waste;
- the 20% increase by 2023 (compared to 2016-19 average) in the use of geothermal energy for Ferrara's district heating system, following the award to Hera of the concession for direct operation of geothermal wells.

Electricity generation

The table below outlines the **net electricity generation** of the Group's plants. The energy, net of consumption required by generation (auxiliary consumption), may not match that fed into the grid since part of it may be used in other production processes.

Net electricity generated

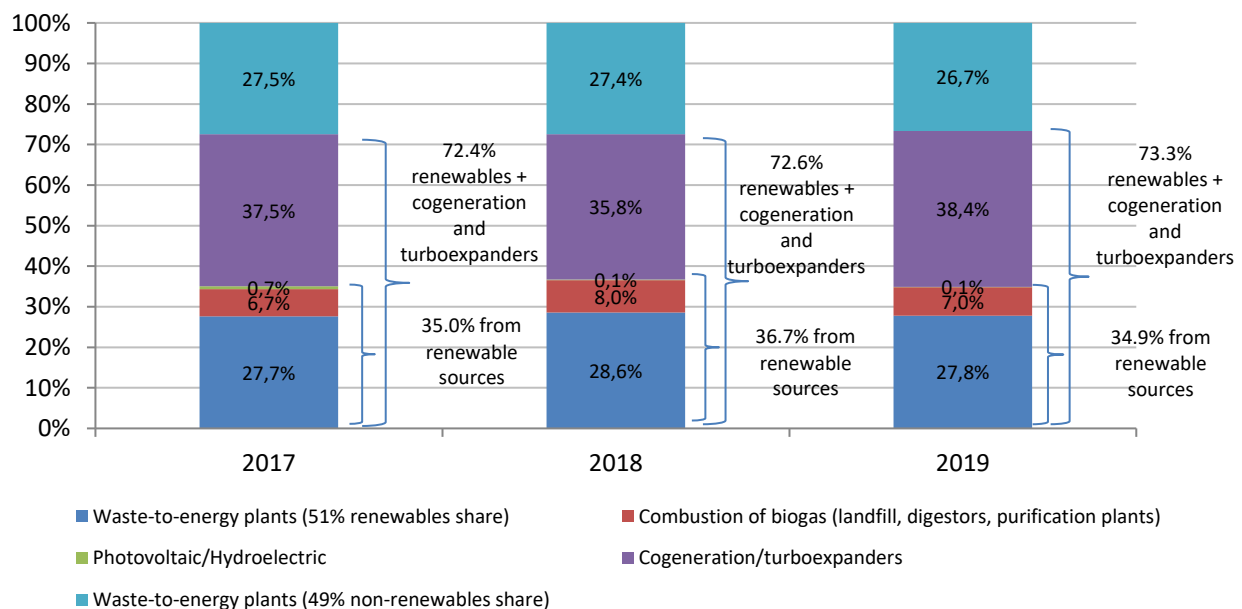
MWh	2017	2018	2019
Waste-to-energy plants (51% renewables share)	367,638	347,481	345,259
Combustion of landfill biogas	50,527	56,373	47,714
Combustion of landfill biogas in third-party plants	12,280	12,922	11,020
Combustion of digester biogas	19,966	22,309	22,466
Combustion of purification plant biogas	6,036	6,139	5,967
Photovoltaic energy	1,971	1,714	1,858
Total renewable sources	458,419	446,937	434,285
Cogeneration	362,337	302,626	324,429
Cogeneration operated as a service	128,194	127,538	143,726
Turboexpanders	7,918	5,725	8,804
Total cogeneration + turboexpansion	498,449	435,889	476,959
Waste-to-energy plants (49% non-renewables share)	365,283	333,854	331,720
Total traditional sources	365,283	333,854	331,720
Total	1,322,151	1,216,680	1,242,963

Electricity generation from renewable sources was 434 GWh (-2.8% compared to 2018) as a result of a decrease in the total electricity produced by the waste-to-energy plants, by landfill biogas, and to a smaller extent from purification plant biogas.

Electricity generation from cogeneration plants and turboexpanders increased by 9.4%, while electricity generated from traditional sources decreased slightly (-0.6% compared to 2018).

Overall net electricity generated by the Group plants, therefore, increased by 2.2%.

Net electricity generated



The **electricity generated from renewable sources** accounted for 34.9% of the total in 2019, down compared to 2018 for the reasons explained above. 38.4% is generated by cogeneration and turboexpansion, high energy efficiency systems. Together, the two categories account for 73.3% of the electricity generated. The

remaining production has a high level of environmental sustainability, as it is energy recovered from waste-to-energy transformation for the share exceeding 51%.

Incentives to generate electricity using green certificates are awarded to plants fuelled by renewable sources which started operating by 31 December 2012 and to cogeneration plants combined with district heating networks which started operating by 31 December 2009. In both cases, the amount of energy incentivised is not exactly equal to the amount of electricity generated. In the first case, for plants that started operations after 2007, multiplication coefficients were introduced that take into account the plant's technology: for example, if landfill biogas is used, the recognition awarded is calculated by multiplying the energy generated by 0.8. For non-agricultural biomass with a short supply chain, the factor is 1.3. In the second case, the incentive is proportional to the sale of cogenerated useful heat to district heating network users. Since 2016, any remaining right to the issue of green certificates has been converted into an incentive for the electricity generated, as required by Italian Ministerial Decree of 6 July 2012.

For waste-derived electricity, the energy recognised for earning incentives, and to which the above-mentioned factors apply, is limited to the biodegradable portion, since it is considered a renewable source by European and Italian regulations. Italian Ministerial Decree of 6 July 2012 defines the criteria for evaluating this portion on a flat rate basis, set at 51% for waste-to-energy plants that use municipal waste downstream from separate waste collection. In calculating the share of energy produced from renewable sources, a figure of 51% was considered for both electricity and thermal energy produced from waste-to-energy plants, applying the flat-rate criteria. This percentage was assumed as applied to all waste disposed of in waste-to-energy plants (municipal and special) and for all the three years considered, in order to have consistent terms of comparison defined in accordance with the regulations in force. The one exception is the special-waste waste-to-energy plant in Ravenna, whose production is given a biodegradability coefficient of nearly zero since the waste it treats is considered totally non-renewable, because it comes from industrial processes.

For cogeneration plants, the Italian Ministerial Decree of 4 August 2011, implementing Italian Legislative Decree No. 20/2007, establishes the methods to calculate cogeneration production and the performance level the cogeneration process must achieve to qualify as high-performance cogeneration. The subsequent decree of the Ministry of Economic Development of 5 September 2011 sets a new support regime for cogeneration. The incentive is based on white certificates and is recognised by the Energy Services Manager, after attributing the qualification of cogeneration, according to the actual primary energy savings achieved.

Thermal power generation

Thermal energy generated

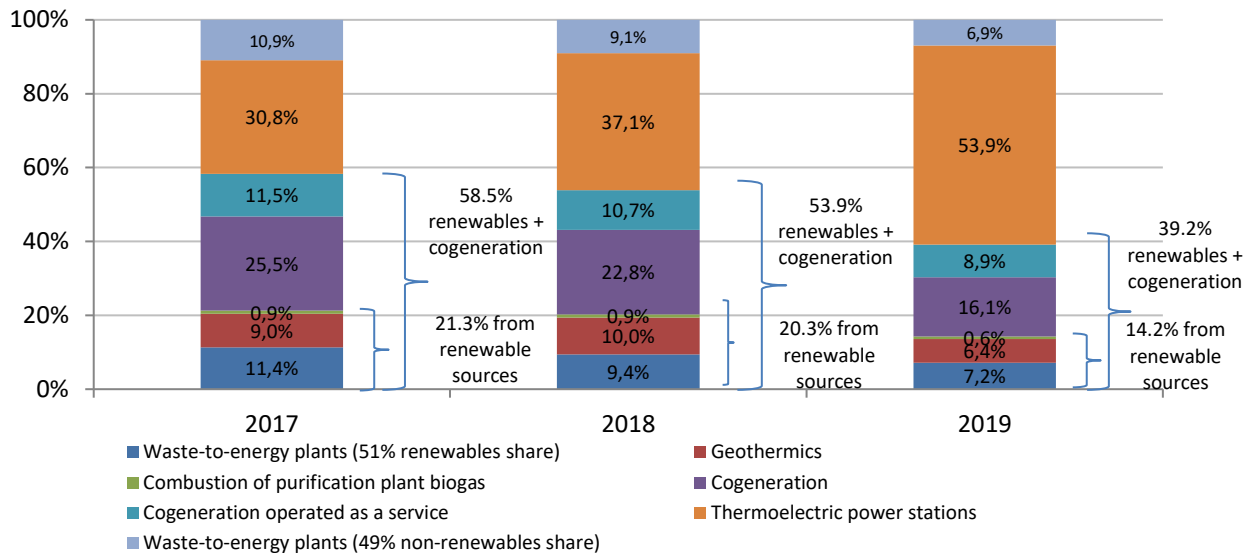
MWh	2017	2018	2019
Waste-to-energy plants (51% renewables share)	79,783	71,231	75,312
Geothermics	63,535	75,382	67,415
Combustion of purification plant biogas	5,985	6,808	6,582
<i>Total renewable sources</i>	<i>149,304</i>	<i>153,422</i>	<i>149,309</i>
Cogeneration	179,250	172,721	168,433
Cogeneration operated as a service	80,873	81,004	92,762
<i>Total cogeneration</i>	<i>260,123</i>	<i>253,725</i>	<i>261,195</i>
Thermoelectric power stations	216,055	280,361	564,691
Waste-to-energy plants (49% non-renewables share)	76,655	68,438	72,358
<i>Total traditional sources</i>	<i>292,710</i>	<i>348,799</i>	<i>637,049</i>
Total	702,136	755,946	1,047,533

Starting from 2019, some AcegasApsAmga Servizi Energetici thermal power plants, not accounted for in the previous year, are also considered within the scope of the thermal energy generated. On a like-for-like basis

with the previous year, thermal energy generation decreases slightly (742,811 MWh produced; -1.7% compared to 2018).

The energy generated from renewable sources fell slightly (-2.7% compared to 2018), but remained in line with the 2017 result. On the other hand, the share of thermal energy generated by cogeneration increased by 3% compared to 2018.

Thermal energy generated



The thermal energy generated from renewable sources accounted for 14.2% of the total in 2019, down compared to 2018 for the reasons explained above. 25% comes from cogeneration, a highly energy-efficient system and, together, the two categories account for 39% of the thermal energy generated.

The energy recovered from waste-to-energy transformation for the share exceeding 51% is 6.9%.

Renewable energy for the Hera Group and our customers

In 2019, 74% of the Group's total consumption was covered by energy from renewable sources. The companies for which electricity from renewable sources was purchased in 2019 are: Acantho, AcegasApsAmga (for 100% of consumption), AcegasApsAmga Servizi Energetici, Feronia (for 100% of consumption), Frullo Energia Ambiente (for 100% of consumption), Hera Spa, Herambiente (for 100% of consumption), Herambiente Servizi Industriali, Hera Luce, HestAmbiente (for 100% of consumption), Inrete Distribuzione Energia, Marche Multiservizi (for 100% of consumption), Marche Multiservizi Falconara, Uniflotte, and Waste Recycling.

Creating shared value and sustainability are the pillars on which Hera Comm bases its commercial operations; the planning of new offers and solutions also revolves around these principles.

In addition to the "**Pacchetto Natura**" tariff, which already provided electricity from renewable sources, "**Hera Impronta Zero**" was launched in June 2019 (see the case study at the end of this chapter). The offer includes electricity from renewable sources, and compensates for the gas used by customers by purchasing carbon credits that support CO₂ reduction projects. Customers who choose Hera's commercial offers also contribute to reducing paper consumption because they use online billing and are on the road less since they use direct debit to pay their bills.

At year end, 20.0% of customers had contracts that provided renewable electricity, almost twice as many as in 2018. 5.2% of customers chose to offset emissions from their gas consumption. Overall, contracts with "green" offers totalled 11.6% in 2019.

Contracts at year-end with "Pacchetto Natura" and "Hera Impronta Zero"

qty	2017	2018	2019
Contracts at year-end with the "Pacchetto Natura" and "Hera Impronta Zero" options (electricity)	75,277	102,779	201,339
% of contracts at year-end with the "Pacchetto Natura" and "Hera Impronta Zero" options on total contracts (electricity)	8.7%	12.2%	20.0%
Contracts at year end with the "Hera Impronta Zero" offer (gas)	-	-	67,961
% of contracts at year end with the "Hera Impronta Zero" offer out of total contracts (gas)	-	-	5.2%
Contracts with "green" offers (% of total gas and electricity contracts)	3.7%	4.9%	11.6%

As specified in the **disclosure on the sources of the electricity sold** by Hera Comm, provided on bills, in 2018 the renewable share was 26% (9% in the previous year). Customers can check the share of renewables in the table published in their bill. The energy mix shown on bills is calculated by the Italian energy services manager (Gestore dei Servizi Energetici – GSE) using a complex procedure defined by the Ministry of Economic Development (as per Ministerial Decree of 31 July 2009). In detail, the electricity from renewable sources sold by Hera Comm has two parts:

- the renewable electricity that the Hera Group offers customers who choose this type of energy with the aforementioned "Pacchetto Natura" or "Hera Impronta Zero" rate plans, as shown in the table;
- the renewable part of the electricity that the Group purchases on the wholesale market, for customers who decide not to use renewable energy. In fact, part of the electricity bought on the wholesale market is from renewable sources, but at the time of purchase, there is no distinction by source. The breakdown is only reported in the year following the year of sale. **From 2015 to 2018, the share of electricity from renewable sources in the wholesale market has dropped from 27% to 4%.**

Once again, in 2019, as an extraordinary measure, Hera purchased enough electricity from **renewable sources** to fully cover the consumption of all of Hera Comm's free market household customers, not just those with the Pacchetto Natura or Hera Impronta Zero offers. The transaction, which involves the purchase of **Guarantee of Origin (GO) certificates**, ensuring that the energy comes from renewable sources, was made possible thanks to the availability and price conditions such as to be able to cover the 1,698 GWh consumed by Hera Comm's free market household customers.

Considering also the renewable energy sold by Hera Comm to companies that voluntarily chose a more sustainable energy profile, and that sold to Group companies, Hera sold 2,005 GWh of renewable energy in 2019 (20% of the electricity sold on the free market).

Reduction of GHG emissions

Total emissions of the Hera Group

It is well known that fossil fuels are the leading cause of climate change, so reducing their use is key to curb the increase of the main and most common greenhouse gas: carbon dioxide.

The Group's commitment starts with transparent reporting of its impacts on the climate and its commitments in this area in terms of **mitigation and adaptation**. In terms of mitigation, the Group's commitment is mainly achieved:

- by **purchasing renewable energy** to power its business, and to sell it to its customers;
- by increasing **renewable energy production** (in particular biomethane and geothermal energy);
- by **reducing its energy consumption** and offering **energy efficiency solutions** to its customers in all segments (households, condominiums, businesses, and public administration);
- by promoting and implementing **circular economy** principles.

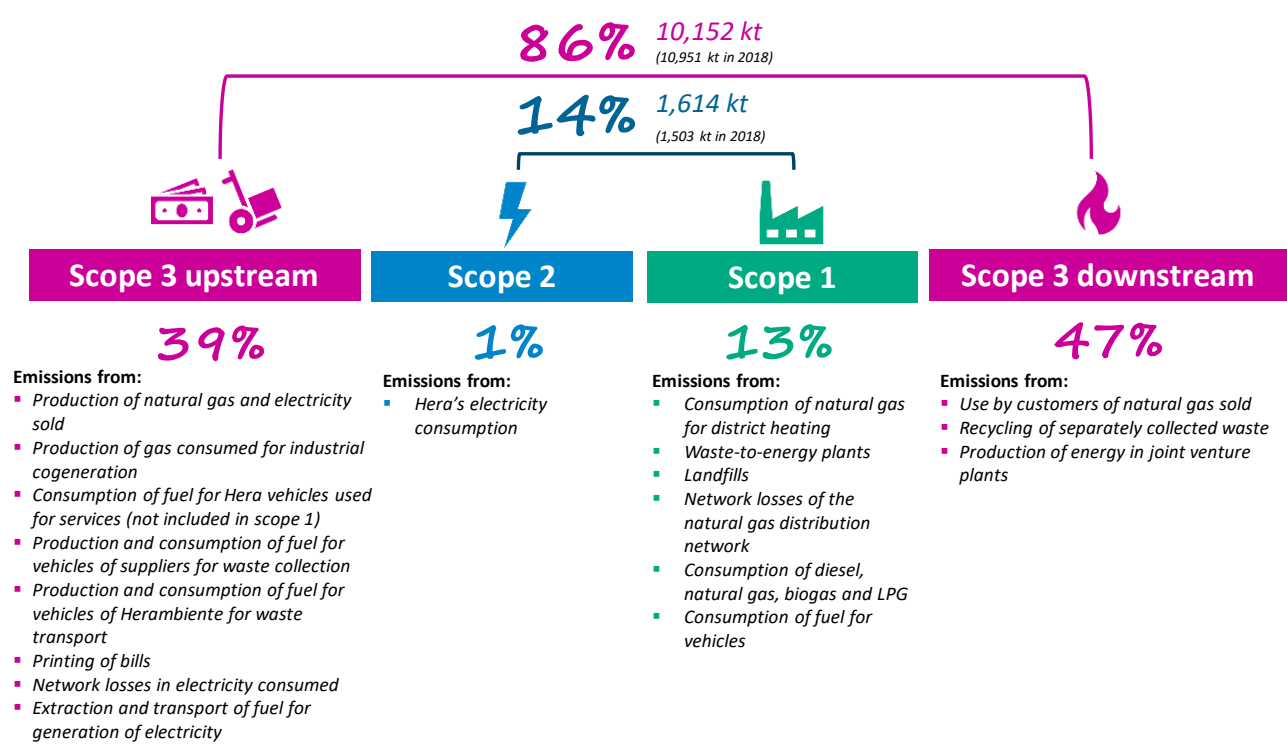
Since 2006, in fact, the Hera Group has been a member of the Carbon Disclosure Project (CDP), an independent not-for-profit organisation that offers businesses and countries a way to measure, track, manage and share information about climate change and on the sustainable use of water resources, on a global scale. Compliance with the CDP requires measuring and reporting all of an organisation's performance, and the initiatives it takes to reduce GHG emissions. In 2019, Hera achieved level B on an A–D scale, above both the European and worldwide averages (level C) for the oil and gas sector.

The Group's greenhouse gas (GHG) emissions are mainly due to its waste-to-energy and district heating plants, and to leaks from the natural gas distribution network and from landfills.

An annex to this report summarises the main data, and the indicators monitored regarding the Group's GHG emissions, and those of our customers and suppliers. It also includes the objective for 2023 for the carbon intensity index of energy production.

GHG emissions at a glance

Consistent with our alignment with the **TCFD recommendations**, launched this year, we have prepared an infographic to illustrate Hera Group's total emissions, including those produced by our suppliers and customers, by supply chain.



The **Group's total emissions** (Scope 1 + Scope 2 + Scope 3) are about 11,766 thousand tonnes of CO₂e.

The **emissions directly produced** by the Group (Scope 1) are equal to 1,519 thousand tonnes of CO₂e and represent 13% of the Group's total emissions.

The Group's **emissions from consumption of electricity** (Scope 2) amount to 94 thousand tonnes of CO₂e and represent only 1% of the Group's total emissions.

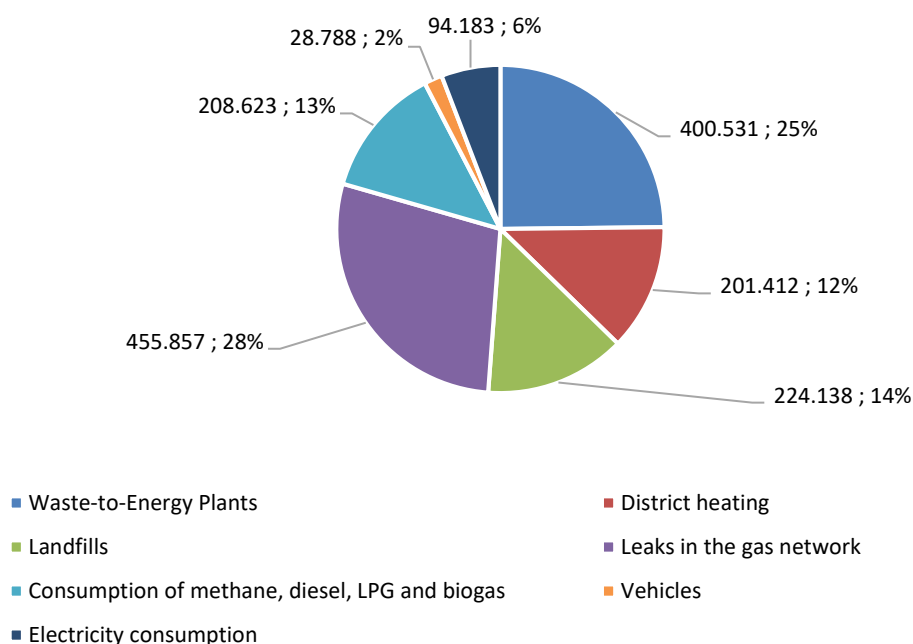
The **emissions indirectly caused by the Group's activities** (Scope 3) amount to 10,152 thousand tonnes of CO₂e, 86% of the Group's total emissions. According to the "Technical Guidance for Calculating Scope 3 Emissions" published by the GHG Protocol, Scope 3 emissions can be divided into two categories: upstream (upstream categories) and downstream (downstream categories). Hera Group's Scope 3 is made up as follows:

- *upstream category* (4,516 thousand tonnes of CO₂e, 39% of the Group's total emissions): emissions from production of the gas sold, emissions from the production of the electricity sold, emissions from the production of the gas consumed in industrial cogeneration plants, emissions from fuel consumption for vehicles used in services (not included in Scope 1), emissions from fuel consumption of suppliers' vehicles for waste collection, emissions from fuel consumption of Herambiente's vehicles for waste transport, emissions from printing paper bills, emissions from network losses (electricity), emissions from extraction and transport of fuels for electricity generation;
- *downstream category* (5,601 thousand tonnes of CO₂e, 47% of the Group's total emissions): emissions from customers' use of the gas sold, emissions from the recovered fraction of separate waste collection, emissions from energy production from joint venture plants.

Scope 1 and Scope 2 GHG emissions

	2017	2018	2019
Total indirect emissions – Scope 1 (t CO ₂ e) [305-1]	1,426,401	1,355,024	1,519,350
Indirect emissions from consumption of electricity (Scope 2 market-based) (t CO ₂ e) [305-2]	193,746	148,433	94,183
Total of scopes 1 and 2 (t CO₂e)	1,620,147	1,503,457	1,613,532
EBITDA (millions of Euro)	985	1,031	1,085
Carbon intensity index (t CO₂e emitted as Scope 1 and 2/EBITDA millions of Euro) [305-3]	1,645	1,458	1,484

Composition of total Scope 1 and Scope 2 GHG emissions (t CO₂e)



We used the following coefficients to estimate Scope 1 emissions: the Defra 2019 coefficients (expressed in CO₂e) for motor vehicle fuels (diesel, petrol, natural gas, LPG) and for the consumption of diesel, LPG, and biogas for other uses; the coefficient of the Ministry for the Environment (expressed in CO₂e) for natural gas consumption (excluding vehicles). It should be noted that the emissions associated with consumption of diesel fuel and LPG for other uses and natural gas for uses other than district heating and waste-to-energy plants were considered starting from 2017. Greenhouse gas emissions from landfills were estimated considering the methane contained in the biogas given off by the landfill matter, plus carbon dioxide from the combustion of tapped biogas, from which the portion of biodegradable substances was removed; for waste-to-energy plants, the estimate was carried out by considering the carbon dioxide during combustion of the non-biodegradable portion of waste and of the other fuels used in the plant; the gas network losses were estimated and considered completely dispersed in the atmosphere - the GWP considered is 25 for natural gas and 298 for N₂O, (4th Assessment Report IPCC). On the other hand, to estimate electricity consumption emissions (Scope 2), we used Ispra's "National Inventory Report 2019" coefficients for the location-based method and the AIB's "European Residual Mixes, Results for calendar year 2018" for the market-based method (expressed in CO₂e). The indicator does not include the Trieste trigeneration plant, the emissions of which can be estimated at 3.5% of the total.

In 2019, the Hera Group released 1.6 million tonnes of Scope 1 and Scope 2 GHG (+7.3% compared to 2018). This increase is mainly due to a different classification of Hera Servizi Energia's methane consumption, in line with the figures for energy consumption and production, considered as Scope 3 until 2018 and as Scope 1 starting this year (direct consumption). **Direct emissions** (Scope 1) amounted to 1.5 million tonnes of CO₂e, up compared to 2018 (+12.1%). The increase is mainly caused by the reasons explained above. Instead, the following have decreased: (i) emissions from waste-to-energy plants (-2.8%); (ii) emissions from district heating (-2.1%); (iii) emissions from fuel consumption for vehicles (-2.1%).

The emissions indirectly caused by **electricity consumption** (Scope 2) amounted to 94 thousand tonnes, down from 2018 (-36.5%), as a result of the increase of the share of renewable energy used to power the activities managed by the Group, which in 2019 accounted for 74% of overall consumption. This has allowed the Group to save more than 250 thousand tonnes of CO₂, about 18% of the Group's total. The value of the Scope 2 emissions specified above takes into account the company's energy purchase choices (market-based method), i.e. the share of renewable energy purchased with Guarantee of Origin certificates and the share

of electricity purchased without certificates. For this second component, the emission factor relative to the national residual mix was used. The Scope 2 emissions calculated under the location-based method amount to 237,642 tonnes. This value is based on the company's location and therefore uses the average emission factor of the national fuel mix without taking into account the company's purchase choices.

[305-3]

The **intensity index of emissions**, obtained by comparing GHG emissions with the Group's **EBITDA** in 2019, increased slightly compared with the previous year due to the increase in Scope 1 emissions (+2% compared with 2018). There was, however, a positive trend over the three years (-12% compared to 2017). The revenue ratio shows an improvement, going from 245 tonnes of CO₂e per million Euro in 2018 to 233 in 2019, due to a 13% increase in revenue in 2019 compared to 2018.

Scope 3 GHG emissions

	2017	2018	2019
Sales of natural gas (thousands of t CO ₂ e)	5,433	5,469	4,862
Sales of electricity (thousands of t CO ₂ e)	4,989	4,381	4,122
Emissions from energy production and consumption (not included in Scope 1 and 2) (thousands of t CO ₂ e)	118	115	432
Emissions from services provided (thousands of t CO ₂ e)	806	777	736
Total (thousands of t CO₂e) [305-3]	11,346	10,741	10,152

The Defra 2019 coefficients (expressed in CO₂e) have been used to estimate Scope 3 emissions, except for emissions from the sale of non-renewable electricity, for which the coefficients of the Ispra "National Inventory Report 2019" have been used. The Sales of natural gas item includes the production of the gas sold (upstream) and its use by customers (net of gas purchased with CO₂ emissions offset). The sales of electricity item includes the generation of electricity sold to customers (net of purchased renewable electricity). Emissions concerning energy production include the production of the gas consumed (upstream) in industrial cogeneration plants operated as a service by HSE and the emissions produced by the Tamarete, Teverola, and Sparanise plants operated as joint ventures. Emissions from services provided include: (i) the extraction and transport of fuels used in the Group's vehicles; (ii) the use of vehicles by suppliers for waste collection; (iii) the use of vehicles by Herambiente for waste collection; (iv) the use of glass, plastic and paper sent for recovery; (iv) printing bills. Emissions relating to energy consumed include electricity grid losses and the extraction and transport of fuels used to generate electricity.

Since 2017, we have been calculating our Scope 3 emissions, i.e. indirect GHG emissions that occur as a result of the company's activities, but from sources that are not owned or directly controlled by the organisation. This category may include activities both upstream and downstream of the business perimeter, such as the extraction and production of purchased raw materials or emissions occurring in the use-phase of the products sold.

Starting this year, consistent with our alignment with the TCFD recommendations, we have decided to refine the calculation of Scope 3 emissions. The main additions concern the GHG emissions of Herambiente's vehicles used to transport waste, which are included in the "Emissions from services provided" category, and the addition of the category "Emissions from energy production from joint venture plants", which includes Hera's share of the emissions produced by three joint venture thermoelectric power plants (included in the category "Emissions from energy production (not included in Scope 1 and 3)").

In 2019 the **total Scope 3 emissions** amounted to 10.2 million tonnes CO₂e, about ten times the Group's total direct and indirect emissions (Scopes 1 and 2). The higher values are those for the sale of electricity and gas (9 million tonnes) to customers. Emissions from the sale of natural gas decreased due to: (i) reduction of gas sold, (ii) reduction of emission coefficients, (iii) effect of offsetting emissions from gas sales through the "Hera Impronta Zero" offer (discussed in more detail in the next paragraph). The share of emissions related to electricity sold decreased due to the reduction of the emission coefficient. The increase in emissions from energy production and consumption is mainly due to the addition, starting in 2019, of emissions from the

three joint venture thermoelectric power plants. Lastly, the reduction of emissions from services provided, despite the addition of GHG emissions from Herambiente's waste transport vehicles, is caused by the reclassification of HSE emissions due to methane consumption from Scope 3 to Scope 1 (this is in fact direct consumption of the company), as previously explained in the comments on Scope 1 emissions.

The commitment to reduce our GHG emissions

As part of the ISO 50001 management system, 343 energy consumption reduction measures have been defined by Hera Spa, InRete, AcegasApsAmga and Marche Multiservizi, some of which have been implemented and some of which will be implemented by 2020, and which achieve an overall savings of over 13,740 toe/year (over the 2021 target of reducing consumption by 5% compared to 2013) and over 24 thousand tonnes of CO₂ per year. In addition, 300 other energy efficiency improvement measures have been implemented, are in progress or are planned by Herambiente, Hera Servizi Energia, AcegasApsAmga Servizi Energetici and Hera Luce, for a total of 21,875 toe/year of overall savings, reaching more than 38 thousand tonnes of CO₂ per year.

Carbon intensity index of energy production

	2017	2018	2019
Waste-to-energy plants (t CO ₂ e)	421,236	412,162	400,531
District heating (t CO ₂ e)	206,552	190,181	201,412
Landfills and biogas from biodigestion (t CO ₂ e)	275,871	248,310	224,243
Total (t CO₂e)	903,660	850,652	826,186
Electricity and thermal energy produced by plants (MWh)	1,815,543	1,764,084	1,825,178
Carbon intensity index of energy production (kg/MWh) [305-4]	498	482	453

Considering the emissions generated by the plants that produce electricity and heat specified in the table, the **carbon intensity index of energy production** in 2019 was 453 kg/MWh, 22% below the 2013 baseline (-20% compared to 2015) and down compared to 2018 (-6%) as a result of lower emissions: (i) from waste-to-energy plants, as a result of lower energy production; (ii) from district heating plants, as a result of lower electricity production from the cogeneration plants.

The measures already in place and those planned by the Hera Group will enable us to further reduce the carbon intensity index of our energy production in the years to come. By 2023, we expect to decrease the carbon intensity index of our energy production by 26% (417 kg of CO₂/MWh) compared to 2013, mainly by producing biomethane from organic waste and as a result of further decreasing the use of landfills to treat municipal waste.

The EU-ETS (European Union Emission Trading System) sets a cap on the total level of emissions allowed to all participants in the scheme, but it also allows them to trade emission quotas on the market according to their needs. The Hera Group has 9 plants that are authorised to emit greenhouse gases on the basis of Emissions Trading regulations, for a total installed furnace power of 520 MW. The carbon dioxide emissions recorded in 2019 (162,679 tonnes), were higher than those of 2018 (158,924 tonnes despite milder weather). All the plants supply district heating networks whose energy demand depends on seasonal factors, but in 2019 there was greater electricity production from the largest of the plants (Casalegno Imola, +7,739 tonnes). For all the plants concerned, the maximum emissions limit set for 2019 is 30,004 tonnes, lower compared to the previous year as envisaged by the regulatory system. The free quota allocation in 2019 amounted to 16,726 tonnes.

The commitment to reduce our customers' emissions

Emissions from the use of gas and electricity sold to customers account for 72% of the Group's total emissions.

Hera Comm sells **renewable energy** to its residential and business customers. With the "Pacchetto Natura" and "Hera Impronta Zero" offers (see the case study section for more details), customers can choose energy produced from renewable sources and guaranteed with Guarantee of Origin certificates and "green" gas (offset CO₂ emissions), at no additional cost. In 2019 the number of customers who chose renewable electricity increased by 65% compared to 2018, reaching **20% of total Hera Comm** customers. The renewable energy sold under this option has accordingly increased from 539 thousand MWh in 2017, to 614 thousand MWh in 2018 and 694 thousand MWh in 2019. The "green" gas provided by the "Hera Impronta Zero" offer was chosen by 5% of customers at the end of 2019, for a total of 15.3 million m³.

Moreover, in line with the previous year, in 2019 the Group also chose to purchase renewable energy for the 2019 consumption of **all free market residential customers**, including those who did not choose the "Pacchetto Natura" or "Hera Impronta Zero", amounting to 1.3 million MWh. This was made possible thanks to favourable availability and price conditions at the beginning of 2019, when the certificates were purchased.

We implemented many activities to help our customers reduce their emissions by using better tools to control their consumption or by implementing energy-saving measures. 20% of the gas and electricity contracts include energy efficiency improvement solutions such as the Diario dei consumi (Consumption Diary), Hera Led, Hera Thermo, and Hera ContaWatt, described in the chapter on energy efficiency.

The Hera Group also, via its subsidiaries Hera Servizi Energia and AcegasApsAmga Servizi Energetici works actively in energy efficiency improvement services, mainly addressing condominiums (who are offered a range of energy efficiency improvement solutions among which a system that provides individual metering of the heat and energy service), large industrial customers (for which it operates as an ESCO) and the public administration (heat management with renovation of thermal plants and buildings).

In particular, in the industrial cogeneration sector, Hera offers multi-year energy supply contracts based on its construction and operation of electricity and thermal energy production plants designed to meet all the energy needs of top customers (18 plants operated, of which four are trigeneration plants, and 22,343 tonnes of CO₂ avoided in 2018).

In collaboration with external partners, the Hera team provides its own know-how to support energy audits and to implement measures. As reported in the third edition of our "Value to energy" report on energy efficiency, Hera has supported the creation of 635 projects (from 2007 to 2020) of which 144 at companies in its service area, that saved 891 thousand toe, equal to the annual electricity consumption of about 625 thousand households and 1.7 million tonnes of CO₂ avoided.

Emissions avoided

GHG emissions avoided

(thousands of tonnes)	2017	2018	2019
Energy production from renewable sources	240.8	233.8	184.4
White certificates	496.2	515.9	662.8
Internal energy efficiency measures	19.3	34.0	41.7
District heating	125.7	121.0	119.6
Separate waste collection	209.4	217.3	230.1
Electricity from renewable sources sold	971.1	1,044.0	926.9
<i>of which electricity from renewable sources sold to "Pacchetto Natura" or "Hera Impronta Zero" customers and purchased for the Group's main companies</i>	235.7	490.1	395.2
<i>of which electricity from renewable sources sold to customers without "Pacchetto Natura" or "Hera Impronta Zero" (purchased by the Group with GO certificates of origin)</i>	-	439.2	414.6
<i>of which electricity from renewable sources sold to our customers without the "Pacchetto Natura" (from domestic fuel mix)</i>	735.4	114.8	117.1
Sale of recycled plastic by Aliplast	-	150.0	170.4
Total	2,062.5	2,316.0	2,335.9

Considering the emissions avoided by producing energy from renewable sources, energy-saving initiatives, district heating, separate waste collection, and sales to customers of electricity produced from renewable sources, total GHG emissions avoided in 2019 amounted to 2.3 million tonnes. Comparing this value to the number of inhabitants served by the Group, 539 kg of greenhouse gases per person were avoided by the measures Hera has taken.

The GHG emissions avoided through the sale of electricity from renewable sources are made up of three categories, specifically:

- electricity from renewable sources sold to "Pacchetto Natura" and "Hera Impronta Zero" customers and purchased for the Group thanks to: (i) the purchase of renewable energy for all the operating activities of the main Group companies, which accounts for about 74% of total electricity consumption; (ii) the increase in the number of customers who have chosen the "Pacchetto Natura" or "Hera Impronta Zero" offers;
- electricity from renewable sources that the Group has chosen to purchase also for the 2019 consumption of all free market residential customers who have not chosen the "Pacchetto Natura" or "Hera Impronta Zero" offers, as in the previous year;
- electricity purchased on the market, which includes a component from renewable sources, determined according to the composition of the complementary national energy mix (GSE data), which increased from 3% in 2018 to 4% in 2019, as described in greater detail in the following paragraph. The latest available data is always used to calculate this share, which refers to the year preceding the year to which the Sustainability Report refers.

Purchases of renewable energy are guaranteed by Guarantee of Origin (GO) certificates, which certify that it comes from renewable sources. For every MWh of renewable electricity fed into the grid by certified plants, the Energy Services Manager issues a GO certificate, in accordance with Directive 2009/28/EC. Since 1 January 2013, sales companies are required to purchase a quantity of GO certificates equal to the renewable electricity sold, by 31 March of the year following that in which the renewable electricity was supplied to end customers.

Case study

Promotion of energy efficiency

More light and less consumption in 14 municipalities

In 2019, work was completed in the **municipality of Tortoreto** (TE), where almost all the existing lighting points were upgraded with about 3,600 luminaires equipped with LED technology. The works to make the plants compliant and to ensure they are safe include, among other things, the replacement of sections of the power line, for a total of over 11 km. Special attention was paid to the architectural and scenic lighting to highlight the historical and outstanding elements of the municipality, revitalizing the walls along the provincial road near the gate to the fortified town. We expect **energy savings of over 70%** compared to the initial state of the systems, which means about 350 toe, and a reduction of about 325 tonnes/year of CO₂ emissions.

Work has also been completed in Caprino Bergamasco (BG), Madone (BG), Suisio (BS), Marcheno (BS), Sarezzo (BS), Attimis (UD), Mariano del Friuli (GO), Martignacco (UD), Pasian di Prato (UD), Piacenza d'Adige (PD), San Canzian d'Isonzo (GO), Vighizzolo d'Este (PD) and Vivaro (PN), while **work began** in Longiano (FC), Bernate Ticino (MI), Curno (BG), Carbognano (VT), Paliano (FR), Cervia (RA), Misano Adriatico (RN), Boltiere (BG), Pedrengo (bg), Roncofreddo (FC), Lugo (RA), Romans d'Isonzo (GO) and Padua in the Arcella district.

The work carried out in 2019 will **save** 5,124,000 kWh of electricity every year, amounting to 958 tonnes of oil equivalent. Considering as 2,700 kWh per year the average electricity consumption of a household of four people, the amount of energy that will be saved each year with the measures implemented by Hera Luce in 2019 is equal to the annual consumption of 1,898 households.

In 2019, Hera Luce was awarded the contract for the assignment and management of the works to improve the efficiency of public lighting systems in the municipalities of **Paliano** (FR), **Cervia** (RA), **Boltiere** (BG), **Pedrengo** (BG), **Roncofreddo** (FC), **Lugo** (RA), **Tavullia** (PS), **Endine Gaiano** (BG), **Roncadelle** (BS), **Torre de' Busi** (BG), **Ferrara** (FE), **Orgosolo** (NU), **Valtopina** (PG) and **Ovindoli** (AQ).

Hera Luce's work to improve the efficiency of public lighting contributes to achieving **target 7.3 of the UN's 2030 Agenda**.

Energy consumption: -18% in Modena

The contract entered into by the Hera Group and the municipality of Modena is an important example of an **energy supply contract**, awarded to the Group as a result of a European public tender, competing with some of the leading companies in the industry.

The Hera Group, which partnered in the tender with AcegasApsAmga Servizi Energetici committed to providing **significant results** to the municipality in terms of **energy efficiency improvement**, to be achieved through both management improvements and energy renovation measures.

In particular, Hera Group's offer included an 18% reduction of thermal energy consumption compared to the past (based on the average of the last five years) for the buildings included in the scope of the contract, and also planned to improve this performance by a further 10% due to energy efficiency improvement measures which will involve investments of Euro seven million in the initial years of the contract.

From the systems engineering point of view, the most significant investments concern implementing energy renovation measures for the thermal power plants, installing thermostatic valves on radiators, replacing burners, building solar thermal and photovoltaic plants, renovating lighting systems by installing LED lamps. "Passive" measures to limit heat dispersion from buildings also play an important role, including installing vertical cladding insulation on 12 buildings and insulating the roofs of 10 others.

In the start-up phase of the contract, since the plant upgrading work had not yet been carried out, the efficiency objectives were pursued by giving special attention to the management aspects of the service. From the very first year, this made it possible to **reach and exceed the contractual target of 18% saving** compared to the tender baseline. The management efficiencies have enabled us to approach 25%.

In 2019, an **initial, significant part of the measures** was carried out (approximately Euro 5.8 million out of the Euro 7 planned), both for plant upgrading and for "passive" measures, and their completion is expected in 2020.

The energy efficiency measures required by the Modena heat management contract, contribute to achieving **target 7.3 of the UN's 2030 Agenda**.

An annual report on energy saving

In the **fifth edition** of the "Value to Energy" report, published in July 2019 (on 2018 data), the Hera Group reported to its stakeholders the results it had achieved over the last eleven years, in terms of energy efficiency. Verified by an independent certification body, the report examines all the aspects of the multiutility's commitment to **saving and efficiently using energy**, in the name of environmental and economic sustainability, in the interests of the area it serves and of its over four million customers.

Between 2007 and 2020, **635 projects have been completed and are planned** that have and will enable the Group to save energy (108 were completed in 2018), saving approximately 891 thousand toe (tonnes of oil equivalent), corresponding to the annual consumption of 625 thousand households, and avoiding 1.7 million tonnes of CO₂, equivalent to approximately 1.3 million fewer cars on the road for a year (travelling 10 thousand km).

Decarbonisation is crucial to fight climate change. This is the direction taken by both our energy efficiency measures and the other projects to promote the production of energy from renewable sources explained in the "Value to energy" report.

Energy efficiency has always been a fundamental objective for Hera Group, as we are committed to constantly seek and develop innovative solutions for both process control systems and plants. Energy efficiency is also considered the "fifth fuel": the cheapest, with the greatest environmental benefit and one that can be generated by everyone, every day. Hera's commitment on this front is shown by its results and also by Hera being given the CESEF Energy Efficiency Award, for 2018.

The publishing of the "Value to energy" report contributes to achieving **target 12.8 of the UN's 2030 Agenda**.

Spreading renewable energy

From separate waste collection of organic waste to 100% renewable biomethane

Hera has been producing biogas for years, using biodigesters and landfills, and using it to generate electricity. In the last two years, Hera has taken a further step: to refine it to make biomethane like the gas that flows in the pipes of homes.

The first project completed is the one located in **Sant'Agata Bolognese**, which uses the **organic part of separate municipal waste** as raw material to obtain biomethane; the biomethane produced is **fed into Snam's transmission network** and transported to roadside service stations for use as fuel in methane-powered vehicles, also serving local public transport.

The process begins in a semi-dry, continuous flow anaerobic biodigester (consisting of 4 reactors in parallel) where the pre-treated organic waste (fragmented and after eliminated plastic, metal and undesirable material) is anaerobically digested, producing biogas and digestate. The digestate is then sent to the subsequent composting step that includes oxidation and final screening, to obtain high-quality compost. The

biogas is sent to an upgrading section to separate methane from carbon dioxide and eliminate unwanted components until the biomethane meets the specifications required to feed it as natural gas into the grid. This process is the foundation of a perfect circular economy in which food waste makes natural gas that can be used to cook more food or even be used for heating and for vehicles.

The biodigester can process 100 thousand tonnes per year of organic waste and 35 thousand tonnes of pruning material from separate waste collection, and will produce about 7.5 million m³ per year of biomethane and about 20,000 tonnes of compost.

In December 2018, after an initial start-up phase, we started to inject our biomethane into SNAM's network. In 2019 the plant completed its industrial commissioning, passed performance tests and operated at rated capacity from March onwards. In 2019, **about 6.5 million m³ of biomethane were injected into the network**, treating about **94 thousand tonnes of organic waste** (a result in line with project forecasts, considering that in the first two months of the year the plant was not in industrial operation at full capacity). The biomethane injected into the grid is sold to power motor vehicles; by doing so Herambiente obtains the incentive through biofuel immission certificates (Certificati di Immissione in Consumo – CIC). The total investment amounted to Euro 37.5 million.

In April 2019, collaboration began with **TPER** (Bologna's local public transport service) and **Cotabo** (Bologna's taxi operator), to use the biomethane produced in the Sant'Agata Bolognese plant using the area's separate waste collection, to feed four city buses and about twenty of Bologna's taxis. The same biomethane also powers four service stations for the general public.

The biomethane-from-waste project contributes to achieving **targets 7.2, 8.2, 9.1, 9.2, 9.4, 11.2, 11.6, 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**.

Energy recovery from methane decompression with General Electric

The project involves the exclusive **development, construction and installation** of an **experimental system**, based on a patented technology, **to recover energy from the pressure drop in R&M stations**. It is a small to medium-sized turbo expander (330 kW electric) installed in the medium-sized R&M stations, in combination with a heat pump system that uses CO₂ as a heat carrier fluid, designed to use in the process itself part of the electrical energy produced to preheat the gas.

A contract was signed in 2017 with BHGE for prototype testing of the system, and the design of the prototype and the complementary works necessary for its installation in the "Ducati" R&M station in Bologna were completed.

In 2018, we completed all the authorisation activities, the supplier completed construction of the machinery, all the necessary complementary works were carried out and the prototype itself was installed on the site.

In 2019, all production start-up activities and the provisional running phase were completed and performance and endurance tests were started and expected to be completed in the second half of 2020, when the machine will start operating at full capacity.

The methane decompression energy recovery project contributes to achieving **target 7.3 of the UN's 2030 Agenda**.

Hera Impronta Zero

In June 2019 we launched the new, 100% "green, "Hera Impronta Zero" **electricity and gas offer**, addressed to residential customers and small and individual businesses. The offer includes **"GO"-certified electricity from renewable sources** and the **offsetting of the gas consumed** by our customers by purchasing of carbon

credits that support projects that offset CO₂ emissions for an amount equivalent to the consumption of the individual customer.

"Hera Impronta Zero" provides to our customers natural gas the CO₂ emissions of which are offset by purchasing **certified carbon credits**, which subsidise international projects that reduce GHG emissions into the atmosphere.

The **projects funded** are certified by the highest international standards of carbon reduction:

- the "Hydroelectric Project in Kinnaur District in Himachal Pradesh", certified under the VCS standard and located in India, is a **project for a run-of-the-river hydroelectric power plant**. The project's objective is to sustainably generate electricity in the northern region of India, avoiding the construction of a fossil fuel powered thermal power plant. The hydroelectric power plant will provide about 4,500 GWh per year of renewable energy and have a peak power of 1,000 MW during the year;
- the "Süleoğlu Wind Power Plant", certified under the Gold standard, involves the **construction of a wind power plant** in Turkey, to achieve environmental, social and economic benefits at the same time. The plant has an installed capacity of 66 MW and can generate over 200 GWh of clean energy per year, avoiding over 110,000 tonnes of carbon dioxide per year.

The Hera Impronta Zero offer contributes to achieving **targets 7.2, 13.1, and 13.2 of the UN's 2030 Agenda**.

Reduction of GHG emissions

Aliplast measures the carbon footprint of its products

In order to make available information on the carbon footprint of some products, Aliplast has developed a computer-based tool to rapidly calculate the carbon footprint of five types of product: PE granules, PE films, PET granules, PET plates, and PET scales.

Aliplast commissioned this study to understand the environmental performance in relation to global warming of the above products, and therefore the quantity of GHG emission per functional unit of product (set as one kg), to identify the most environmentally critical phases of their life cycles and be able to act to reduce their environmental impact. The IPCC 2013 GWP 100a method, version 1.03, was used.

The project involved analysing the **GHG emissions of Aliplast's products and comparing them with those of the corresponding virgin products**. The result is expressed in kg of CO₂ equivalent associated with production. The CO₂ equivalent is, in fact, the unit of measure used to describe the rate of emission of greenhouse gases with different climate-altering effects using a single index (the so-called GWP, Global Warming Potential). CO₂ is used as reference by the IPCC (Intergovernmental Panel on Climate Change) and its GWP has been set at 1. The other gases are therefore converted into CO₂ equivalents according to their GWP: for example, a gas that has climate-changing potential 21 times higher than CO₂, is counted as 21 tonnes of CO₂ equivalent.

The analysis showed that in 2019, the **production of more than 90 thousand tonnes**, including PE Granules, PE Films, PET Granules, and regenerated PET plate, **avoided the production of more than 170 thousand tonnes of CO₂**, corresponding to more than 430 thousand barrels of oil. The CO₂ savings, obtained thanks to the contribution of suppliers and customers who believe in Aliplast's recycled products, is equivalent to a reduction of more than 115,000 cars in a year, equal to those of an average Italian city.

Aliplast intends to **extend the analysis to all the Group's manufacturing plants** and to start from them to obtain even better performance with its future developments.

Aliplast's business contributes to achieving **targets 12.2, 12.4, 12.5, and 13.2 of the UN's 2030 Agenda**.

Efficient use of resources

Objectives and performance

What we said we would do	What we have done	Geographic scope*		
Transition towards a circular economy				
<ul style="list-style-type: none">• Achieve 73.2% separate waste collection by 2022 also by extending the quantity-based tariff in Emilia-Romagna (74.2% Hera, 72.5% Marche Multiservizi, 67.6% AcegasApsAmga).	<ul style="list-style-type: none">• 64.6% separate waste collection was achieved in 2019 (62.5% in 2018) (65.6% Hera, 70.2% Marche Multiservizi, 54.5% AcegasApsAmga).	ER	T	M
<ul style="list-style-type: none">• 76% recycling rate for packaging and 60% overall recycling rate for municipal waste by 2022.	<ul style="list-style-type: none">• The recycling rate of packaging was 72% in 2018 (compared to 70% in 2017). The overall recycling rate was 53% in 2018 (compared to 48% in 2017). The 2019 data will be accounted for in the "Tracking Waste" report	ER	T	M
<ul style="list-style-type: none">• Achieve a 55% coverage rate of "Farmacoamico" of the residents served in 2020. Extend the presence of "reuse areas" in separate waste collection centres to other areas.	<ul style="list-style-type: none">• A 61% coverage rate of "Farmacoamico" was achieved, of citizens served in Emilia-Romagna in 2019 (48% in 2018). Two new "reuse areas" were activated in Ravenna and Modena.	ER		
<ul style="list-style-type: none">• Develop for large industrial companies a unique offer with "circular" solutions in the fields of waste, energy, water and telecommunications.	<ul style="list-style-type: none">• During the year, the Hera Business Solution offer was developed: Hera Group's integrated and sustainable solution for businesses.			
<ul style="list-style-type: none">• The commitments made for the "New Plastics Economy Global Commitment" of the Ellen MacArthur Foundation to combat pollution from plastic waste involve increasing by 2025 (as compared to 2017) the plastic recycled by Aliplast by +70%, the plastic collected in the municipalities served by 30%, and the plastic sorted and sent for recycling by the Group's plants by 50%.	<ul style="list-style-type: none">• +22% recycled plastic sold by Aliplast in 2019 (compared to 2017), +20% plastic collected in 2019 in the municipalities served and +14% plastic selected and sent for recycling in 2019 by the Group's plants, in line with the 2025 commitments for the "New Plastics Economy Global Commitment" of the Ellen MacArthur Foundation.			
<ul style="list-style-type: none">• Explore the possibility of using recycled plastics and, more generally, the use of secondary raw materials in network services.	<ul style="list-style-type: none">• In the province of Rimini, we laid 2 km of polyethylene sewage pipes made with 70% recycled material.			
Sustainable management of water resources				
<ul style="list-style-type: none">• Complete 2 further measures 2019 for the Rimini Seawater Protection Plan. We completed 9 measures by the end of 2019 out of the 14 set out in the Plan, which will be completed by 2023.	<ul style="list-style-type: none">• The conclusion of the 2 interventions scheduled for 2019 has been postponed to 2020. Seven of the 14 measures set out in the Plan were completed by the end of 2019.	ER		
<ul style="list-style-type: none">• Achieve a 10% reduction in internal water consumption by 2022, compared to 2017 consumption.	<ul style="list-style-type: none">• A 5.5% reduction in internal consumption was achieved in 2019, compared to 2017.	ER		

What we said we would do	What we have done	Geographic scope*		
Achieve 90 thousand residential customers and 6 thousand industrial customers with the water consumption monitoring service, to promote water saving.	<ul style="list-style-type: none"> 80 thousand residential customers used the "Diario dei consumi" (Consumption Diary) and 70 water-hungry companies used the "water management portal" to promote water saving. 	ER		
<ul style="list-style-type: none"> Start new measures to reuse purified water and make those started in 2018 fully operational. 	<ul style="list-style-type: none"> In July 2019, Hera signed a Memorandum of Understanding with the Consorzio della Bonifica Renana to reuse the water treated by the purification plants to improve the hydrological balance of the flows through the consortium's water bodies. 	ER		
<ul style="list-style-type: none"> Achieve compliance of 100% of urban areas >2,000 pe by end 2021 thanks to the continuation of the compliance plan for the sewage and purification sector. Furthermore: <ul style="list-style-type: none"> achieve compliance in 252 urban areas over the 254 served between 200 and 2,000 pe in Emilia-Romagna and Triveneto by end 2021 (1 in Triveneto and 91 in Emilia-Romagna) by 2021, further implement 6 measures in 4 urban areas of more than 10,000 pe (in Emilia-Romagna) in relation to the requirements of Resolution 201/2016 of the Regional Government of Emilia-Romagna on the compliance of municipal wastewater sewage (8 measures in total carried out by 2021, compared to 33 to be carried out by end of 2030). 	<ul style="list-style-type: none"> 95.6% urban areas >2,000 pe (129 out of 135) achieved compliance by the end of 2019. Furthermore: <ul style="list-style-type: none"> 171 urban areas achieved compliance over 249 served between 200 and 2,000 pe in Emilia-Romagna and <2,000 in Triveneto in 2019 (1 urban area achieved compliance in Emilia-Romagna and 1 in Triveneto in 2019); 2 measures were carried out in 2019 in urban areas of more than 10,000 pe (in Emilia-Romagna) in relation to the requirements of Resolution 201/2016 of the Regional Government of Emilia-Romagna on the compliance of urban wastewater sewage. 	ER	T	M

What we will do	SDGs	Geographic scope*		
Transition towards a circular economy				
● Achieve 75% of separate waste collection by 2023 also by extending quantity-based tariff in Emilia-Romagna (77% Hera, 63% AcegasApsAmga, 73% Marche Multiservizi).	11, 12	ER	T	M
● Reach a >70% recycling rate for packaging and 62% overall recycling rate for municipal waste by 2023 (exceeding the EU objectives for 2030).	11, 12	ER	T	M
● The commitments made for the "New Plastics Economy Global Commitment" of the Ellen MacArthur Foundation to combat pollution from plastic waste involve increasing by 2025 (as compared to 2017) the plastic recycled by Aliplast by +70%, the plastic collected in the municipalities served by 30%, and the plastic sorted and sent for recycling by the Group's plants by 50%.	11, 12			

What we will do	SDGs	Geographic scope*		
<ul style="list-style-type: none"> Promote the principles of the circular economy among suppliers: define a Group guideline for "circular" purchases and increase the value of adjudications consistent with the "circularity" criteria identified. 	12	ER	T	M
<ul style="list-style-type: none"> Launch a partnership project for the chemical recovery of PET waste, currently not mechanically recycled 	12			
Sustainable management of water resources				
<ul style="list-style-type: none"> Achieve compliance of 100% of urban areas >2,000 pe by end 2021 thanks to the continuation of the compliance plan for the sewage and purification sector. Furthermore: <ul style="list-style-type: none"> Achieve compliance for 247 urban areas over the 249 served between 200 and 2,000 pe in Emilia-Romagna and <2,000 in Triveneto by end 2021 (76 in Emilia-Romagna); by 2021, implement further 7 measures in urban areas of more than 10,000 pe in relation to the requirements of Resolution 201/2016 of the Regional Government of Emilia-Romagna on the compliance of urban wastewater sewage (11 interventions in total carried out by 2021, compared to 35 to be carried out by end of 2030). 	6, 14	ER	T	M
<ul style="list-style-type: none"> Complete 3 further measures by 2021 for the Rimini Seawater Protection Plan. Complete 10 measures by the end of 2021 out of the 14 that make up the Plan. 	6, 14	ER		
<ul style="list-style-type: none"> Reduce by 15% the internal water consumption by 2023, compared to 2017 consumption. 	6, 8	ER		
<ul style="list-style-type: none"> Reduce domestic consumption by 5% by 2023 compared to 2018 also thanks to the diffusion of the "Diario dei consumi" (Consumption Diary) (26% of residential customers in 2021). 	6, 8	ER		
<ul style="list-style-type: none"> Reduce linear water losses by 4.8% in 2023 (10.0 m³/km/day) compared to 2018 (10.5 m³/km/day). 	6, 8	ER	T	M
<ul style="list-style-type: none"> Reuse 9% of reusable wastewater out of total wastewater by 2023. 	6, 8, 12, 14	ER		

* Geographic scope of the improvement objectives: ER= Emilia-Romagna T= Triveneto M= Marche.

Transition to a circular economy

The results of integrated municipal waste management system

The Hera Group is a leading player in the field of municipal waste management, serving **187 municipalities in four regions for a total population of 3.2 million inhabitants**. In Emilia-Romagna, Hera Spa manages the municipal sanitation service in six provinces, for a total of 133 municipalities. The acquisition of Cosea Ambiente in 2019 brought 15 new municipalities in the Bologna area into Hera Spa's scope. Besides these municipalities, Hera Spa manages three others in the province of Florence. In addition, through Marche Multiservizi, it also serves 39 municipalities in the province of Pesaro-Urbino and another six municipalities in areas adjacent to the Marche Region. Since 2013, through AcegasApsAmga, it has served six municipalities in the provinces of Padua and Trieste.

Total municipal waste collected, by area

thousands of tonnes	2017	2018	2019
Hera	1,617.1	1,554.7	1,619.5
AcegasApsAmga	246.8	252.8	254.3
Marche Multiservizi	175.2	172.8	163.9
Total	2,039.0	1,980.3	2,037.7
kg/inhabitant	616	632	636

The analysis of the data on collected waste must take into account the change in scope due to the addition of 15 municipalities in the Bologna area, as a result of the acquisition of Cosea Ambiente in 2019. For the same area, the trend in the 2018-2019 period shows a slight increase in the quantities collected in Emilia-Romagna (+1.7% compared to 2018) and Triveneto (+0.6%), and a decrease in the Marche region (-5.1%) mainly due to lower quantities of wood, organic waste, and inert materials.

Hera's service area is characterised by a high level of production of similar-to-municipal waste and, as such, it has one of the highest annual **per capita waste production rates** in Italy: 636 kilograms per inhabitant (659 kilograms per capita in Emilia-Romagna, 615 in Marche and 540 in Triveneto), compared with a national average of 500 kg in 2018 (Source: Ispra, 2019 Municipal Waste Report). The value slightly increased overall compared to 2018, in particular in Emilia-Romagna and Triveneto.

Hera Group's service area has a very well-structured collection system that can separately collect many different types of municipal waste, primarily for material recovery, reconciling the needs of the Municipalities with operating efficiency and effectiveness.

Hera's Waste Management System (WMS) is characterised by three main services:

- **local collection:** these are widespread collections throughout the territory, primarily targeted at residential users and small, non-residential users and can be carried out using;
 - roadside bins, set up according to the basic drop-off points (Isole Ecologiche di Base – IEB) model, which groups the main collection chains into individual stations. In recent years, electronic traceability systems for disposal monitoring (e.g. the "lid" model for mixed waste or locking systems for separate waste collection chains) have become increasingly widespread in combination with roadside bins;
 - door-to-door collection, carried out at the users' premises, where residents set out the waste for collection on set days and times.
- **residential collection** for "target", non-residential users that produce specific waste similar to municipal waste (cardboard in shops, glass or cans in bars, organic waste in canteens or restaurants, etc.);
- **Separate waste collection centres:** also known as Drop-Off Points, these facilities are present in almost all the municipalities Hera serves and complete the range of services offered to residents for disposing of their separated municipal waste. The use of waste collection centres is becoming a real habit for residents: a wide range of categories of municipal waste (including certain hazardous waste) can be safely disposed of besides bulky and heavy waste. Moreover, in many areas, there is a system of discounts that rewards the disposal of various categories of separate waste.

The system is also supplemented by the door-to-door collection of bulky waste (free of charge, by phone call or by appointment), the collection of green waste, and the collection of other types of hazardous waste (such as batteries and pharmaceuticals), at specific businesses. Lastly, roadside collection and collection at shopping centres of WEEE (Waste Electrical and Electronic Equipment) and of used vegetable oil is gradually spreading.

To improve their effectiveness, the collection services are **diversified according to standardised area types** (city centres, residential areas, tourist areas, suburban areas, industrial zones). For each area, the collection system that best fits in with urban, environmental and local characteristics is identified. The aim is to **maximise the percentage of separate waste collection** and its quality by providing a technically and economically sustainable service.

Main forms of waste collection used in the areas served

number of municipalities served	2017	2018	2019	% 2019 (on the number of residents)
Roadside collection	106	86	84	52%
Roadside collection with special disposal-control mechanisms	32	31	35	20%
Mixed system (door-to-door mixed waste and roadside separate waste collection)	24	31	40	8%
Total door to door	25	26	28	20%
Total	187	174	187	100%

In view of the gradual switch to quantity-based tariff in **Emilia-Romagna**, reorganisation of the service has started and will continue in coming years to implement the identification and measurement of disposals. In 2019 in Emilia-Romagna, for the same area, the number of municipalities using normal bin-based roadside collection fell again while use of collection systems that identify users at the time of disposal increased, to initiate or prepare for quantity-based tariffs. The number of municipalities that use **disposal control systems** increased from 30 in 2018 to 34 (plus one municipality in the Triveneto area), and those that use **total door-to-door collection** increased from 17 to 18 (plus four municipalities in the Triveneto area and six in the Marche region). As far as the "**mixed**" system is concerned, i.e. with door-to-door collection for organic and mixed waste and roadside collection for other separate waste collection, seven municipalities now use the method – four more than in 2018 (plus 33 municipalities in the Marche region).

Separate waste collection

The main types of separately collected waste are:

- **packaging and similar:** paper and cardboard, plastic, glass, aluminium and steel cans, wood;
- **durable goods:** iron, waste from electrical and electronic equipment (WEEE) and bulky waste;
- **compostable waste:** kitchen organic waste and "green" waste from mowing and pruning material;
- **other waste:** inert material from small demolitions, used mineral oil and cooking oil, batteries and accumulators, pharmaceuticals, and other hazardous municipal waste.

In **Emilia-Romagna**, Regional Law 16 of 2015 on the Circular Economy set as a minimum objective **by 2020** the launch of **quantity-based tariff** throughout the region. Quantity-based tariff is one of the economic and financial instruments for implementing the Regional Waste Management Plan and makes the payment of sanitation services no longer only linked to the area and the number of residents in a house, but also to the quantity of mixed waste produced. Quantity-based tariff rewards responsible conduct.

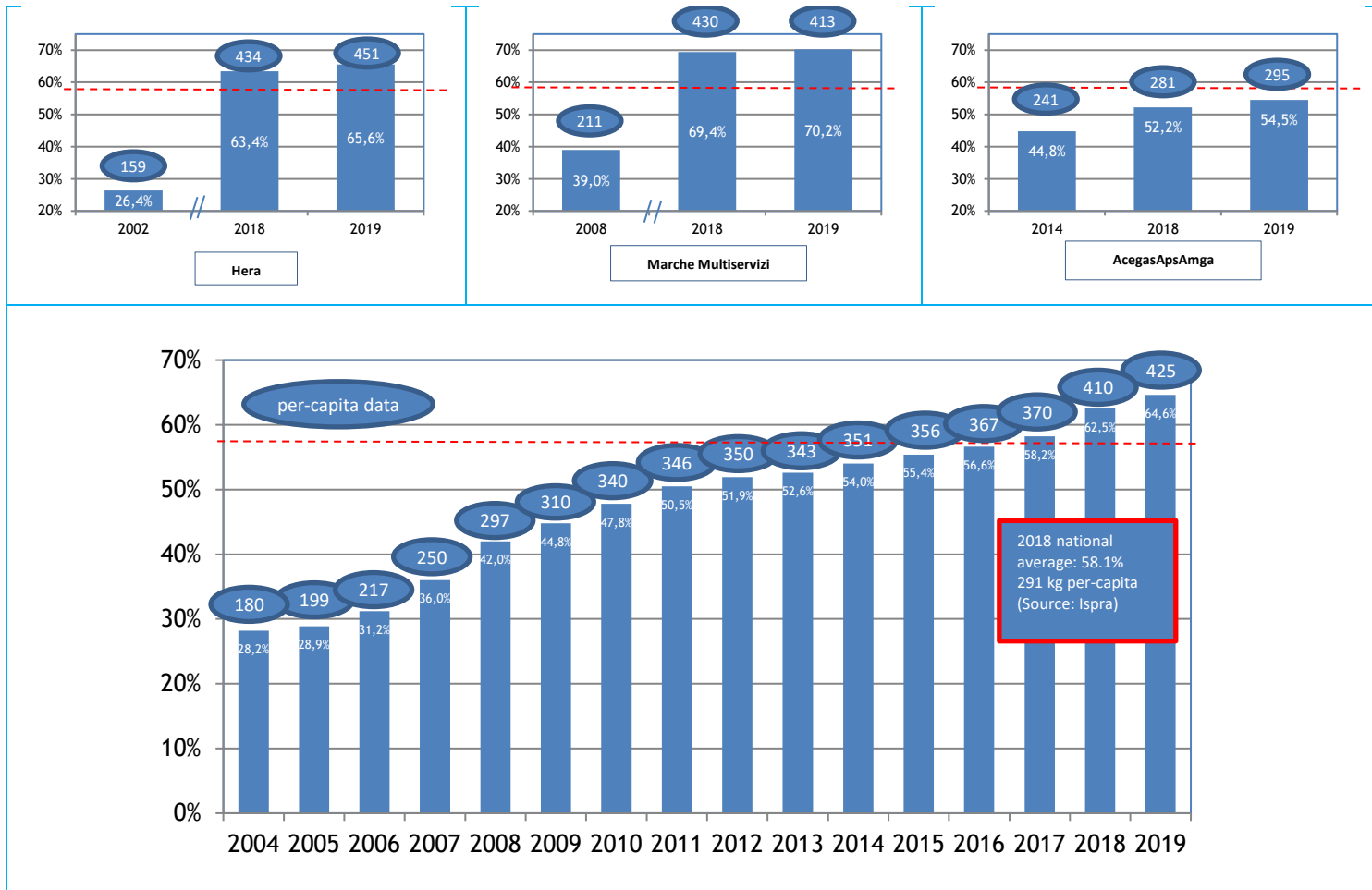
As regards local collection, which accounts for the majority of waste, Hera is implementing various systems **geared towards the future application of quantity-based tariff**:

- roadside bins with a control system and user identification ("lid" system);
- residential collection with bins equipped with tag transponders;
- collection centres with weighing and user registration systems.

In many municipalities, there are mixed local collection systems (for example, roadside collection for some materials and door-to-door for others; roadside collection in some areas, door-to-door in others): for the

sake of simplicity, the local collection services of each municipality are reclassified by their most common system.

Separate waste collection



The percentage of separate waste collection for 2004-2016 is calculated including the quantities of waste from road sweeping, and excluding the waste from the beaches, and only for 2013-2016 takes into account Emilia-Romagna's Regional Authority Decision 2317/2009. Data from 2017 onwards are calculated according to Regional Authority Decision 2218/2016, including road sweeping for recovery and the assessment of waste from home composting as granted by the Regional Government, excluding neutral fractions (beach, cemetery, and EWC flows not allowed as municipal waste). Separately collected waste also includes similar-to-municipal waste disposed of by manufacturers for recovery and waste collected by volunteer associations or directly by municipalities. The differing criteria for considering waste as similar-to-municipal laid down by ATERSIR and Municipalities may be responsible for quota differences from one area to the next. The amount of waste consists of separate (allowed EWC sent for recovery, allowed community and home composting) and mixed waste collection (solid municipal waste, street sweeping for disposal, bulky waste for disposal, and any waste collected separately but sent for disposal).

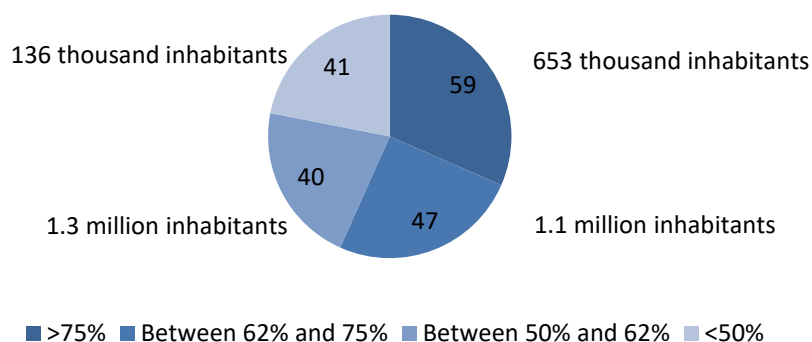
In 2019, **separate waste collection** amounted to 1,361.4 thousand tonnes (+6% compared to 2018). At Group level, the percentage of separately collected waste, i.e. the ratio between the quantity of municipal waste collected separately and total municipal waste, increased **from 62.5% in 2018 to 64.6% in 2019**. The national average, as found by Ispra, was 58.1% in 2018 (Source: Ispra, 2019 Municipal Waste Report).

In 2018, in the **eight provincial capital cities served by Hera Group**, the level of separate waste collection reached 58%, compared to a national average of 49% for all of Italy's provincial capital cities (weighted average, Source: processing of Legambiente data, Ecosistema Urbano 2018).

In Emilia-Romagna, the percentage of separate waste collection increased by 2.2 percentage points, from 63.4% to 65.6%. **At the provincial level**, the percentage of separate waste collection exceeds 85% in Ferrara, 65% in the provinces of Modena and Rimini, and 60% in the provinces of Bologna (64.4%, up 2.8 percentage points compared to 2018) and of Forlì-Cesena. With 59% separate waste collection, the province of Ravenna ranks above the Italian national average of 58.1%.

At the municipal level, 2019 closed with **106 out of 187 municipalities served (8 more than the previous year) with a percentage of separate waste collection exceeding 62%** (the Group average in 2018). Of these, 59 municipalities exceeded 75% (44 did so in 2018). In Emilia-Romagna 62 out of 136 municipalities achieved more than 62% of separate waste collection, for a total of 1.4 million inhabitants (59% of the total). There were 31 municipalities with more than 75% of separate waste collection, 16 of which were applying quantity-based tariff. In fact, the 8 municipalities already using quantity-based tariff in 2018 were joined by another 8 municipalities in 2019: Dozza, Marano Sul Panaro, Spilamberto, Vignola, Cattolica, Coriano, Misano Adriatico, and Mordano. The business plan's target for 2023 is to reach 77.1% as the average of the municipalities served in the region. In Triveneto four out of six municipalities exceeded 62%, and the target for 2023 is to bring the value of separate collection in all municipalities to an average of 63.5%. In the Marche region, 40 out of 45 municipalities achieved more than 62% of separate waste collection, which reflects 96% of the total inhabitants of that area. The target for separate waste collection by 2023 is 72.7%. **The Group's separate waste collection target for 2023 is 75%**, as envisaged in the latest business plan approved by Hera Spa's Board of Directors in January 2020.

Separate waste collection in the service area: number of municipalities by percentage range of separate waste collection



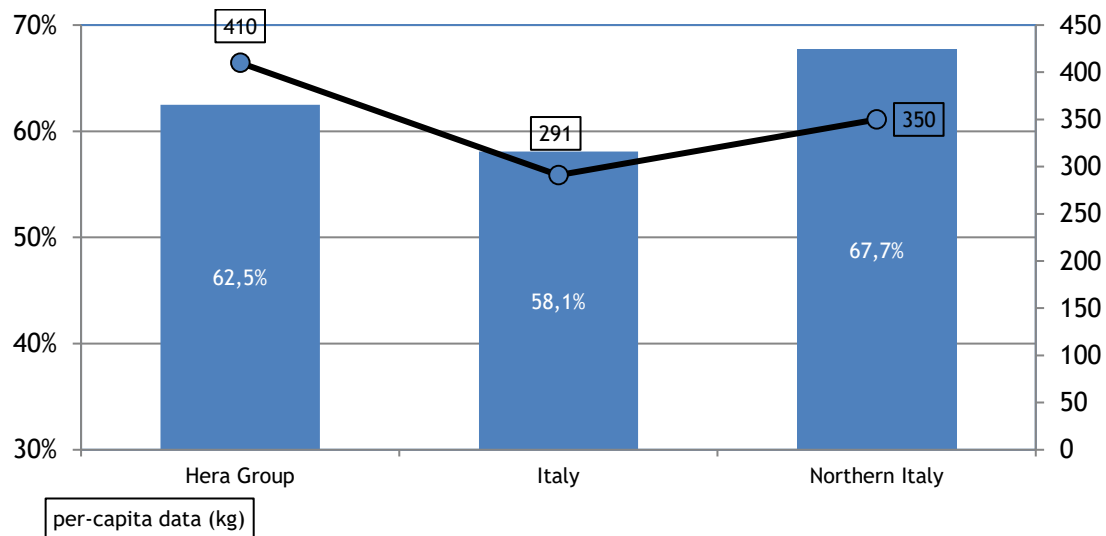
The Group's separate waste collection, according to Emilia-Romagna data, includes similar-to-municipal waste sent for recovery by manufacturers and separate waste collected by volunteer associations or directly by municipalities as defined by Regional Authority Decision 2218/2016, implemented in the municipal and local regulations in force. The situation is very diverse throughout our service area and depends on the revisions of the regulations of the individual municipalities. In 2019, this amount of waste was around 105 thousand tonnes, excluding AcegasApsAmga and Marche Multiservizi, or 8% of the total amount of separate waste collected at Group level, down from 2018 (-5%). Note, however, that these quantities are subject to different timing and dynamics that are not directly related to the services present in the area.

When considering the **effectiveness of separate waste collection**, a useful indicator is the quantity per capita figure, expressed in kg/inhabitant/year, which enables significant analyses on the quantities of waste sent for recovery, both overall and by single supply chain. **Per inhabitant separate waste collection** at Group level increased from 410 kg in 2018 to 425 kg in 2019, up 3.5% compared to the previous year.

At **per capita level**, separate waste collection in **Emilia-Romagna**, in the areas served by Hera Spa, is around 451 kg/inhabitant/year, with an increase of 4.0% compared to 2018, (+5.1% on a like-for-like basis), for a total quantity of more than 1.1 million tonnes. Concerning the individual areas, the upward trend of **Cesena** (+11.3% compared to 2018), as well as **Bologna** and **Ravenna** (+6.2% and +6.8% respectively) is noteworthy. **Rimini** and **Modena** also experienced an increase in separate waste collection per capita, although smaller (+4.9% and +2.8% respectively). The only exception is the municipality of **Ferrara**, which decreased slightly due to the amendment of the municipal regulation on special waste similar to municipal waste (waste not handled by Hera, but added to the calculation of total waste).

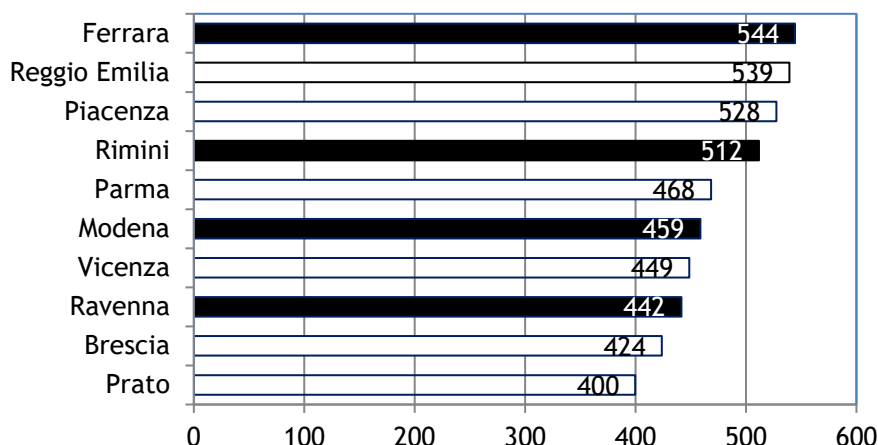
The **comparison** of the Group data for 2018 with the 2018 average national figure (291 kg per capita) and with that of Northern Italy (350 kg), as found by Ipsra, is quite significant also due to the high amount of similar-to-municipal waste in Hera's service area.

Separate waste collection percentage and per capita (2018 data)



Considering Italy's provincial capital cities with populations over 100,000 inhabitants, **four of the top ten best-performing Italian cities** by per capita separate waste collection **were served by the Hera Group in 2018**. Of these 4 cities, Ferrara and Rimini are among the top ten Italian cities also in terms of separate waste collection percentage (Ferrara came in first in the ranking of all provincial capital cities and Rimini came in tenth in the ranking of capital cities with more than 100,000 inhabitants). As the figures show, the large amount of similar-to-municipal waste in the areas managed by the Group generate important benefits in terms of volumes of waste for recycling and recovery.

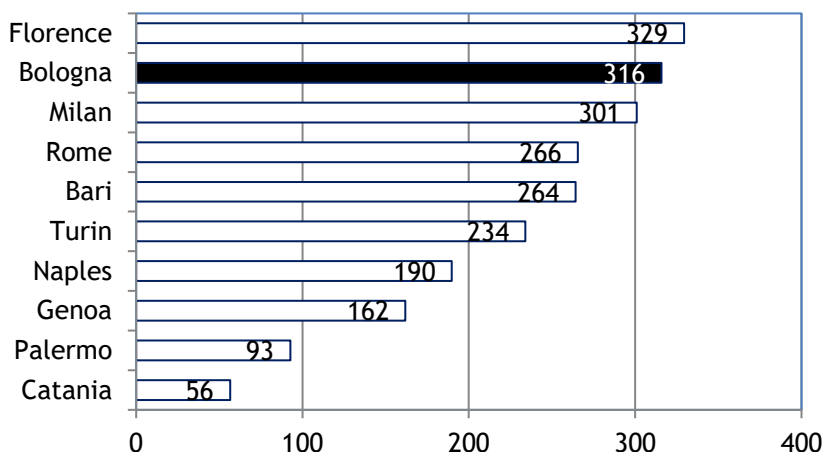
Separate waste collection per capita, in kilograms, for municipalities with over 100,000 inhabitants (2018)



Source: processing of Legambiente data, Ecosistema Urbano 2019

On the other hand, considering provincial capital cities with over 300,000 inhabitants, **Bologna ranks second in Italy**, while it was fourth in 2012. (Source: processing of Legambiente data, Ecosistema Urbano 2019). This result was made possible thanks to the measures in the historical centre, with 109 underground drop-off points, 13 drop-off points above ground and the new smarty bins for the collection of the mixed waste, which can be opened with the Smeraldo card (also used in the Savena district). The old-town changed from 61.8% of 2018 to 67.5% in 2019.

Separate waste collection per capita, in kilograms, for municipalities with over 300,000 inhabitants (2018)



Source: processing of Legambiente data, Ecosistema Urbano 2019

As regards the separate waste collection data on the **types of material collected**, the details of the individual types are set out below, with the most significant changes in 2019 compared to 2018:

- the number of glass (+12%) and plastic (+11%) container collections is growing further, due to the conversion of multi-material collections. The data on the per capita quantities are significant in these supply chains, with a +10% increase for glass and a +9% increase for plastic;

- there was also a significant increase in the collection of WEEE (+14%) and bulky waste (+10% at Group level and +15% for Emilia-Romagna alone);
- there is growth in the organic fraction and green waste (+7% for both items), particularly in Emilia-Romagna and Marche, confirming the trend already highlighted in the two-year period 2017-2018, also following the introduction in some areas with the new service reorganisations;
- there is a slight decrease in the collection of paper and cardboard (-1%), greater in Emilia-Romagna (-3%), linked to similar-to-municipal waste and not handled by Hera Spa (directly collected by the producer and municipal collections managed as a service), but included in the calculation of separate waste collection;
- for the same reason there is a +1% increase in multi-material collections, due to the similar-to-municipal waste and not handled by Hera Spa. The drop in multi-material in Emilia-Romagna is confirmed for the part directly managed by the Group;
- the Other item increased (+8%) mainly due to the effect of 3,000 tonnes more than in 2018 of home composting in Emilia-Romagna, included in the calculation of separate waste collection as per Regional Authority Decision 2218/2016.

Separate waste collection by waste type

Thousands of tonnes	2017	2018	2019
Paper and cardboard	258.5	263.5	261.4
Green waste	227.7	227.6	243.4
Glass	91.2	103.9	116.6
Organic waste	203.4	220.9	237.0
Plastic containers	84.4	100.3	111.5
Waste from multi-material collection	61.4	63.6	64.1
Wood	95.5	102.1	108.1
Bulky waste	50.4	47.5	52.4
Inert material	67.4	66.4	69.0
Iron	10.8	12.1	12.8
WEEE	16.9	17.6	20.0
Other	56.5	60.2	65.1
Total	1,224.9	1,285.6	1,361.4

Separate waste collection per capita (2018)

kg/inhabitant	Paper	Glass	Plastic	Wood	Metals	Organic and green waste
Hera Group (2019)	82	36	35	34	4	150
Northern Italy	64	43	27	24	8	133
Italy	57	35	23	15	6	117
Best region	89*	56**	54**	61**	13***	174*

*Emilia-Romagna, **Valle d'Aosta, ***Trentino-Alto Adige. Source: Ispra, 2019 Municipal Waste Report

Hera's separate waste collection levels are due to the widespread coverage of its services and to the regulations for categorisation as similar-to-municipal waste, that encourage the material recovery. In all cases, except for metal, Hera is above the national average and for all cases, except glass and metal, it is above the average for northern Italy.

The cost of collecting and disposing of municipal waste is also influenced by the revenue coming from the sale of separately collected and recovered material or from the subsidies that CONAI (the national packaging association) provides to the service operator. In 2018, these revenues and contributions amounted to 27%

of the direct costs of separate waste collection (including the cost of treating and recovering waste) as described in the "Tracking Waste" report.

Separate Waste Collection Centres

Among other types, the waste collection centres receive waste that, due to its nature or size, cannot be collected with normal local services, supplementing roadside and residential collection, and is the most sustainable environmental solution with the lowest impact for collection of separate municipal waste.

There are 169 **separate waste collection centres**, or drop-off points, for direct delivery by citizens. Of these, 140 are located in Emilia-Romagna (14 have been added to the 126 managed by Hera Spa by the acquisition of Cosea, in the corresponding municipalities of the Bologna area), 10 in Triveneto and 19 in Marche. Many collection centres are equipped with weighing and user-recognition systems that make it possible to track waste disposal and apply tariff discounts.

The waste received by the separate waste collection centres increased by 8% compared to 2018, and amounted to 321,137 tonnes. As regards Emilia-Romagna, the comparison between the 2019 figure and that of 2018 on a like-for-like basis shows an upward trend of 9%, mainly due to the supply chains of green and wood waste.

There were more than 2 million accesses to the separate waste collection centres, 15% more than in 2018 and once again increasing. The access data for the Emilia-Romagna area apply only to the 126 waste collection centres already under its management in 2018, which in total recorded 187 thousand more accesses than in 2018.

Minor separate waste collection categories

The new service for the **roadside collection of vegetable oils**, carried out using new aesthetically pleasing bins specially designed to contain residual domestic cooking oil, was launched in Emilia-Romagna on a trial basis at the beginning of 2018. This new initiative is part of a broader Hera project, and the only one of its kind in Italy in terms of the service provided and geographical extent, aimed at spreading this type of collection which until 2013 was only carried out via the Group's separate waste collection centres. At the end of 2018 there were around 700 roadside bins located in 90 municipalities in the Emilia-Romagna area, for an overall customer base of about 2.2 million citizens. During 2019 we put in service another 50 roadside, bringing the total number of roadside bins in the area to 750 units distributed across more than 100 municipalities, to serve about 2.3 million inhabitants.

The results of the collection of vegetable oils in Emilia-Romagna feed a virtuous **circular economy project**. In fact, under an experimental framework agreement signed in November 2018 with Eni, all spent vegetable oil collected by Hera, once processed in affiliated plants, is sent to Eni's Bio-refinery in Porto Marghera (VE) where it is transformed into biodiesel. Under this framework agreement, Eni supplies 600,000 litres/year of this green diesel fuel to the service station inside Hera's Modena headquarters, where it is used to power 20 compactors used for waste collection in the province of Modena.

The **LIFE Identis WEEE project**, supported by the EU's LIFE fund, was designed to prove the traceability of Waste from Electrical and Electronic Equipment and increase the collection of small appliances such as chargers, mobile phones, televisions, electronic toys, and electronic lamps. This kind of collection is especially difficult using traditional systems. Hera Spa is the parent company of the project that was created by partnering with two consortia: Ecolight in Italy and Ecolum in Spain. The project, funded by the European Community, terminated in 2015 and became part of the collection services in Hera's service area. Currently, 13 "WEEE Point EVO" and 21 "WEEE Shop EVO" service points are active in Hera's area, distributed throughout its several provinces, mainly in shopping malls, to collect small WEEE. In addition, in the Bologna area, the "mobile" service model provides scheduled itinerant collection, and collects all types of WEEE. In 2019, almost 38,000 disposals were made to the WEEE Shops and WEEE Points and almost 6,000 to the mobile service.

For 2019, Ecorecuperi was again awarded the contract to provide the **collection and recovery of used toner cartridges** in Emilia-Romagna, as a result of a call for tenders again for 2019 for the provision of this service. In 2019, using the "Ecobox" containers distributed to public users such as schools and municipal offices, approximately 200 tonnes of used cartridges were collected and provided to the reuse market (regenerated toner cartridges for printers).

In the **Triveneto area**, separate waste collection of minor types is carried out at the collection centres, during the so-called "Ecological Saturdays" and, for some specific types, through dedicated roadside collections or centres. For example, in the Padua area, specific experimental roadside containers have been installed to collect used home cooking oil. Toner collection is also provided by door-to-door collection systems for non-residential users. In smaller municipalities that have no collection centre, the presence of the "ecoself" is provided on specific days of the month to collect small WEEE and other fractions that cannot be disposed of in the main collection circuits.

The bulky waste collection

Bulky waste is waste that due to its type, size and weight, cannot be disposed of in the bins provided for municipal waste. Hera currently offers a number of options to dispose of bulky waste and large appliances, giving users the possibility of sending objects in good condition to be reused, preventing the production of waste or by sending them to the correct recovery or disposal flow:

- **donating the item to the non-profit organisations** involved in the "Change the Ending" project: if the item can be re-used, its user can donate it for reuse through one of the participating non-profit organisations. Non-profit organisations may collect bulky waste free of charge at its facility or at the user's home, to give it a new life and use it for charity. Since 2018, in the Ferrara area, and since 2019 in Ravenna and Modena, citizens can also take their reusable goods to give to non-profit organisations to drop-off points, dropping them off at the "Reuse area";
- **disposing of the item at drop-off points** (Separate Waste Collection Centres): if the bulky goods are not reusable, they can be delivered to the nearest drop-off point using the extensive network of drop-off points located throughout the service area;
- **using the home collection service** provided by Hera: if the item is not reusable and the customer cannot take it to a drop-off point, they can call the call centre to schedule free bulky waste at-home collection.

In 2019, these types of waste amounted to 3.5% of the total waste collected and to 5.8% of separate waste collection, in line with the previous year. Improving on the previous year (+18%), 128 thousand bulky waste collection requests were made in Hera Spa's service area. Including the waste disposed of at separate waste collection centres and the waste dumped without notification, over 55,000 tonnes were collected, up compared to 2018. The number of bulky waste collection requests increased, in line with previous years, due to greater use of dedicated collection services and a greater number of reports for this type of waste, largely linked to a better usability of the channels to contact Hera and a greater appreciation of the cityscape.

In 2019, in the Triveneto area, bookings increased for bulky waste at-home collection. In Padua, the increase was +16% while in Trieste it was +26%. Note that in both areas a dedicated service is provided for the collection of abandoned bulky waste.

Waste collection with particular social relevance

Lastly, among its solidarity-oriented initiatives, during 2018 Hera started to reorganise its **textile waste collection**, typically for used clothes and fabric.

In the past, such waste collection was based on agreements between municipalities and several social cooperation operators, private operators and non-profit organisations, sometimes present at the same time in the individual municipalities. To ensure the needed transparency on the collection of used clothing and its social aims, in 2018 Hera conducted special tenders in Emilia, open to all market operators, including social

cooperatives. The tenders involved awarding an increase of the auction base to the benefit of the share of revenue reserved for the municipalities concerned by the service.

The collection of used clothes provides no margin for Hera Spa and the income obtained, net of covering the costs of the service, can be allocated by the individual municipalities either to reduce the costs of the municipal sanitation service for residents (therefore of the TARI or of the quantity-based tariff) or to specific non-profit organisations identified by the municipalities.

Several types of interested operators took part in the tenders. If successful, they were committed to offer open-ended employment contracts to personnel who had worked for the outgoing operators for at least 90 days. The operators awarded contracts in Emilia started the service in July 2018 in the province of Bologna and in October 2018 the provinces of Modena and Ferrara.

As reported in the 2019 edition of "Tracking waste", 52% of the resources available to municipalities for 2018 were deducted from municipal sanitation service costs and 48% were donated to non-profit organisations in the area, identified by the municipalities themselves.

Revenues of Euro 77 thousand were recorded in 2018 for the province of Bologna. Euro 16 thousand of them were allocated to reduce service costs and Euro 61 thousand to the following non-profit organisations in descending order of amounts received:

- Fondazione San Petronio Onlus under the Insieme per il lavoro protocol;
- Associazione Onlus Emporio Solidale Samoggia and Emporio Solidale il Sole;
- Associazione polisportiva Monterenzio (BO);
- Associazione Auser Volontariato of Bologna;
- Associazione Amici della Terra - Club of Granarolo dell'Emilia (BO);
- Associazione La Strada Onlus and Associazione Germoglio ODV di Medicina (BO).

Revenues of Euro 31 thousand were recorded in 2018 in the province of Modena, all used to reduce service costs. In fact, the Modena contract did not start until October 2018 and some municipalities only identified the non-profit organisations as beneficiaries in January 2019. Ferrara recorded revenues of Euro 20 thousand in 2018, all of which were used to reduce service costs.

Data on the economic resources available to municipalities and referring to 2019 will be reported in the 2020 edition of the "Tracking Waste" report.

The initiatives to prevent waste

The European Directive 2008/98/EC on waste, transposed into Italian law by Italian Legislative Decree No. 205/2010, defines the following waste prevention and management hierarchy:

- prevention;
- preparation for reuse;
- recycling;
- other types of recovery, such as energy recovery;
- disposal.

Waste prevention is also confirmed as a priority action by the European circular economy package, referenced in one of the case studies in this chapter, which, among other things, includes a target for preventing food waste, and has set indicative targets for the European Union of 30% by end 2025 and 50% by end 2030, compared to the quantity generated in 2014.

Emilia-Romagna's Regional Law 16/2015 on "Provisions to support the circular economy, the reduction of the production of municipal waste, the reuse of end-of-life goods, separate waste collection and amendments to Regional Law 31 of 19 August 1996" also addresses waste prevention, including the possibility to grant, within the framework of the regulation on waste management service fees, incentives to companies that implement waste prevention measures.

During 2019, Hera participated in many initiatives aimed at encouraging waste prevention. This commitment is in line with the new European, national and regional regulations which, as seen above, introduce prevention and reuse objectives as an essential part of integrated waste management. These initiatives have enabled us to prevent the production of around **12,000 tonnes of waste**, equivalent to the annual output of about 19,600 people.

Some of the most significant initiatives included: Among the most significant initiatives there are "Cambia il finale" (Change the ending), "Farmaco Amico" (Medicine friend), "Cibo Amico" (Food friend), "Hera2O" and "Sorgenti Urbane" (Urban Springs) which are covered by special in-depth sections of this Sustainability Report (case histories).

Reuse area

Since 2018, Hera has been offering citizens a further opportunity to reduce waste production and extend the life-cycle of products. Based on a proposal from the Ferrara HeraLAB, the local workshop set up by Hera to promote dialogue and relations with the local community, a new Reuse Area was set up within Ferrara's drop-off point in via Caretti. It is a real garage, housed inside the Collection Centre but not related to it, where citizens can bring furniture (tables, chairs, beds, etc.), crockery, books, electrical and electronic appliances and miscellaneous objects, provided they are in good condition and therefore suitable for being used again by other people. Everything brought by citizens is for all intents and purposes a donation and at the time of delivery, a document is prepared as a receipt of the donation. The material is then delivered to one of the Associations that participates in the Cambia il Finale project (described in a case study of this report) which handles the reuse of the goods deemed suitable. With this initiative, every time a citizen goes to the drop-off point, they can therefore choose whether to give a second chance of life to their goods by using the Reuse Area or whether to send it for material recovery, through the recycling chains. Through the activities of the non-profit organisations involved in the project, the Reuse Area also has social aims, offering support to sensitive sections of the population, making used goods available and creating job opportunities for the unemployed, disabled or disadvantaged.

During 2019, two additional Reuse Areas were set up in Ravenna and Modena, respectively; a fourth was completed in Cesena to be set up at the beginning of 2020.

A total of 1,595 objects were donated during the year (considering as a single object the simultaneous donation of a number of small or inexpensive items, such as books or crockery or other small objects) for a total weight of 4,407 kilograms less waste.

Trashware

Developed in 2011 by the S.P.R.I.Te. student association in a partnership with the municipality of Cesena, Hera and the Campus of the University of Cesena, the project represents a reference point in the area for those that wish to get rid of old but still working computer equipment and for all parties that need reconditioned computers for basic computer activities. The objective of the project is to recover PCs and computer components in general to counter the problems related to hazardous electronic waste. At the same time, it aims to reduce the digital divide of its residents by donating PCs with related peripherals to private individuals, associations and schools in the municipality of Cesena. In 2019, after eight years of operation, the Trashware project was confirmed again for 2020. The project was promoted through widespread leafleting and active presence on the main social networks (and in particular: *Facebook* as a channel to provide information or receive requests; *Instagram*, aimed at the younger generation, to promote events or the normal workshop session; *trashwarecesena.it* as a showcase on the web, for those less accustomed to social media) and supported the organisation of training courses for children in collaboration with schools in the area.

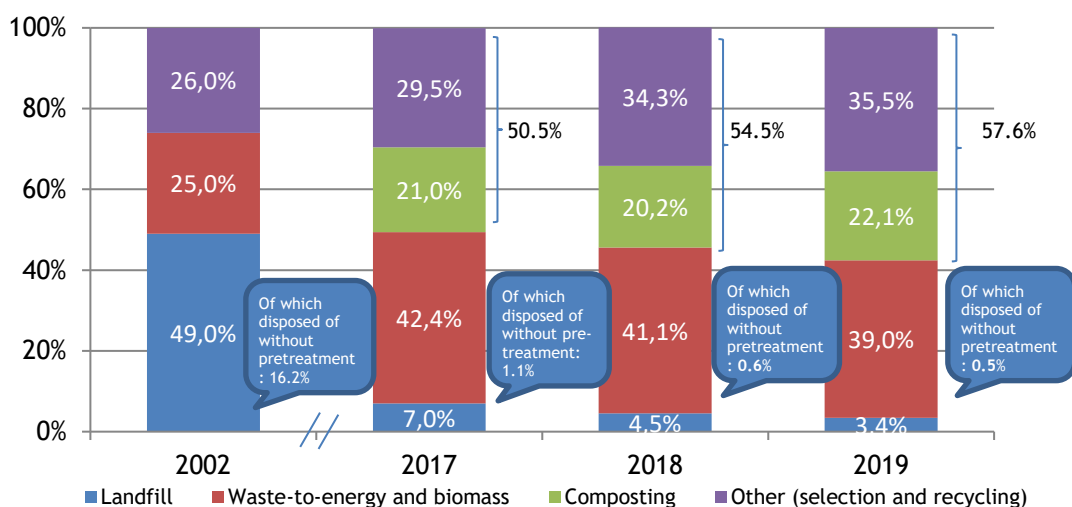
Fifty-five stakeholders made contact to donate equipment during the year (exceeding 3,000 since the start of the project) and 102 reconditioned PCs were delivered to schools and associations in 2019 (over 1,300 since the beginning of the project).

Disposal of municipal waste in Italy and Europe and comparison with Hera

National and EU regulations define principles and priorities for waste management, from minimising waste at source to material recovery, energy recovery and, only as last resort, disposal in landfills.

Over the years, the Hera Group has worked in this direction, as shown by the comparison between 2002 data and data of the last three years. In particular, the results were successful in terms of reduction of material being sent to landfills, for which a further reduction was also posted in 2019 (-1.1 percentage points compared to 2018). This is consistent with the Group's objectives, which, in line with national and European regulations and the plans of the relevant authorities, call for a reduction in the use of landfills and an increase in separate waste collection. In 2019, the portion of municipal waste treated via landfills after pre-treatment was 3.4%, compared with the 2018 Italian average of 23% (Source: Eurostat), therefore below the 2035 goal set by the new European directives envisaged in the circular economy package. The use of landfills was particularly low in the Emilia-Romagna service area, standing at 1.4% in 2019 compared to the average for Emilia-Romagna of 11% in 2018 (Source: Ispra, 2019 Municipal Waste Report). It also decreased again in 2019, in the areas served in the Marche region compared to 2017 (from 34.9% in 2017 to 28.5% in 2019), thanks to the introduction of residential waste collection in nine municipalities, which decreased the production of mixed waste and therefore of the municipal waste sent to landfill. At the same time, there has been an increase in the disposal of municipal waste at third-party plants that carry out treatment and recovery. As of 2019, Hera's Triveneto region continues to have no landfills for the disposal of municipal solid waste. Lastly, a positive note is the increase in the percentage of composting waste, largely linked to the start-up of the new Sant'Agata plant.

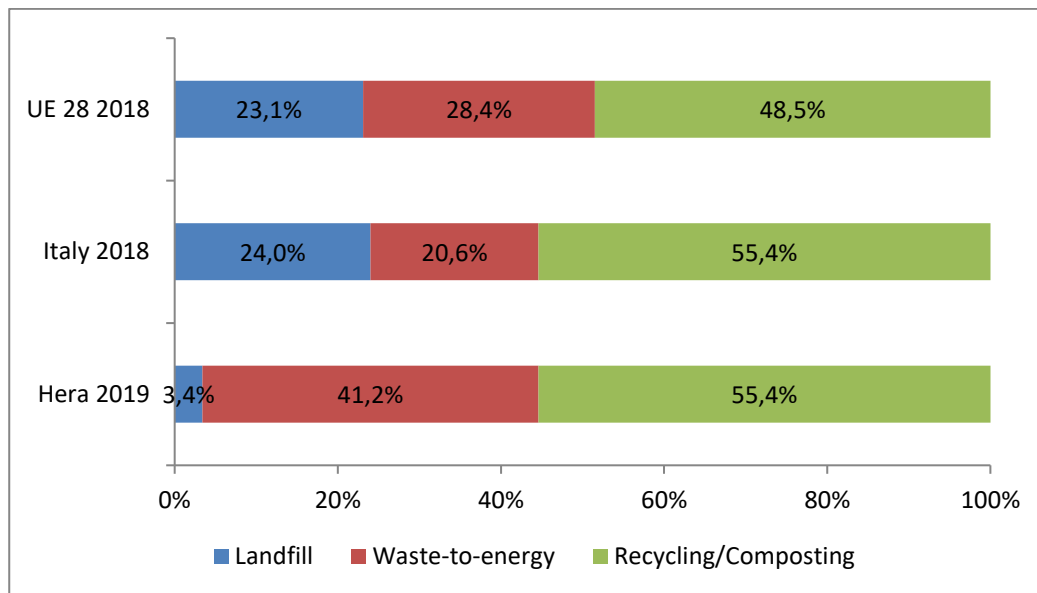
Municipal waste collected by Hera, by disposal method



At European level, the trend towards reducing the use of landfills for municipal waste disposal is also continuing, although there are significant differences among the countries: in the EU-28 the figure for 2018 was 23% (Source: Eurostat). In Italy, 24% of municipal waste disposed of in 2018 was sent to landfills compared to 21% sent for waste-to-energy treatment. The use of landfills decreased by two percentage points while the use of waste-to-energy treatment remained stable.

Landfills continue to be the primary treatment method in 15 European countries, with peaks of up to 93% in Malta and 82% in Romania and Cyprus. In Germany, Sweden, Finland, Denmark, Belgium and the Netherlands, the use of landfill is around 1% and waste-to-energy ranges from 31% to 57%, while the remainder is sent for recycling. Hera is in line with these countries in terms of recycling with further improvements planned for the coming years.

Municipal waste management in Europe and Italy, and Hera's ranking (2018)



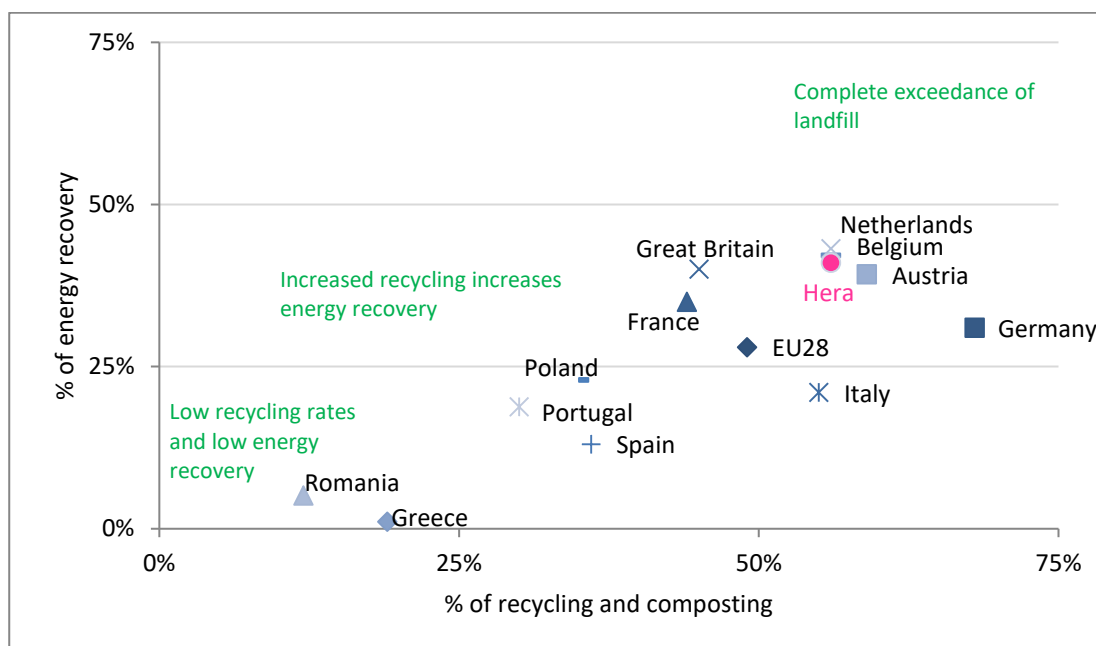
Municipal waste: A three-speed Europe and Hera's area of operation is among the most virtuous (2018)

Country	Landfill	Waste-to-energy	Recycling/Composting
Countries with landfill use lower than the European average			
Germany	0%	31%	68%
Sweden	1%	53%	46%
Finland	1%	57%	42%
Denmark	1%	51%	48%
Belgium	1%	43%	56%
Netherlands	1%	42%	56%
Austria	2%	39%	59%
Hera Group	3%	41%	56%
Luxembourg	6%	44%	50%
Slovenia	12%	12%	75%
Great Britain	15%	40%	45%
France	21%	35%	44%
European Union (28 countries)	23%	28%	49%
Countries with landfill less than 50% but higher than the European average			
Estonia	24%	45%	31%
Ireland*	24%	34%	43%
Italy	24%	21%	55%
Lithuania	27%	14%	59%
Poland	42%	23%	35%
Czechoslovakia	49%	16%	35%
Hungary	49%	13%	37%
Countries with landfill greater than or equal to 50%			
Portugal	51%	19%	30%
Spain	51%	13%	36%
Slovakia	56%	7%	37%
Bulgaria	60%	4%	37%
Latvia	68%	2%	29%
Croatia	72%	0%	28%

Country	Landfill	Waste-to-energy	Recycling/Composting
Greece*	80%	1%	19%
Cyprus*	82%	0%	17%
Romania	82%	5%	12%
Malta	93%	0%	7%

* 2018 data. Source: Eurostat

Disposal of municipal waste in Europe: the correlation between recycling/composting and energy recovery. Hera among the European best practices



Source: Eurostat

Equipment to support the circular economy

Through its Herambiente subsidiary, the Hera Group runs over 90 treatment plants for recovery and disposal of municipal waste, and of hazardous and non-hazardous special waste, among which the main types are: 10 waste-to-energy plants, 11 composting plants/digesters, 15 selection plants, 16 chemical/physical and stabilisation plants. Marche Multiservizi has two landfills for waste disposal, two mechanical municipal waste treatment plants, a biostabilisation plant and a bulky waste selection/recovery plant. Herambiente also holds a 50% stake in Enomondo, which operates a biomass plant. Herambiente also has more than 25 plants exclusively dedicated to the disposal of special waste, including Disidrat (RA) for the treatment of pumpable, palable sludge, ash and soil, F3 (RA) for the incineration of special industrial waste and the HASI (RA) waste storage and pre-treatment centre.

The initiatives launched by Herambiente in terms of material and energy recovery continued in 2019, characterised by constant focus on transformation of its business towards a **circular economy** approach. In particular:

- the completion, start-up and attainment of industrial operation of the biomethane production plant, built at the **Sant'Agata** site, that uses the organic fraction of separately collected municipal waste to make **biomethane**. In 2019 the plant, which became fully operational in March, injected about 6.5 million m³ into the network, confirming its planned capacity of 7.5 million m³ per year;
- the conclusion of the merger by incorporation of the **Waste Recycling** subsidiary into **Herambiente Servizi Industriali (HASI)** which, from 1 July 2019, became the largest Italian company dedicated to

the management of industrial waste, with a view to improving the performance of the circular economy for customer companies and the synergy of the services it provides;

- Herambiente group's constant focus on implementing the synergies deriving from its presence throughout the entire **PE and PET-based polymer** recovery value chain, through **Aliplast**, with the recovery and selection of waste, including the waste from separate waste collection. Aliplast's activities are perfectly integrated with the "plastic strategy" policies of European countries for the reduction and reuse of these materials;
- the completion of the construction and of the tests on an experimental plant to produce **biomethane from landfill biogas**. It is a unique example of experimentation and technological innovation, at national level, which aims to assess the technical/economic sustainability of biomethane production, with characteristics suitable for use in motor vehicles (and/or feeding into the gas network), using the biogas from exhausted landfills that contains a low percentage of methane (LIFE Project + "Biomether"). The production of 300 thousand cubic meters of biomethane is expected.

The constant development of Herambiente's **plant pool** continued in parallel with the important initiatives described above, following these main guidelines:

- integrated material and energy recovery (e.g. in anaerobic digestion plants), including through the production of biofuels (biomethane). In 2019 a project was started to **partially convert the anaerobic digestion plant in Lugo (RA)** from production of electricity to biomethane; the project – included in the 2020-2023 business plan – will begin its permitting process in 2020 with the objective of being completed by 31/12/2022;
- identification and implementation of solutions to efficiently produce and **use electricity and thermal energy** at sites where waste-to-energy plants and landfills with energy recovery are located;
- implementation, in the field of **liquid industrial waste**, of techniques to **recover**, instead of disposing organic process water, solvents, sludge, etc. The recent approval of the sector's BAT (Best Available Techniques) has triggered a review of existing authorisations with improvements to meet the requirements of these regulations. The process will take about 3-4 years to fully implement;
- modernisation and adaptation of **composting** plants and **aerobic stabilisation** of the organic media. The BATs for the sector were also approved for this Business Unit, activating the review of existing permits, with improvements to comply with the requirements of these regulations. The process will take about 3-4 years to fully implement;
- activities related to building new landfill volumes for the **non-recoverable fractions**.

The material and energy recovery in Herambiente's selection plants

The **selection plants** treat the municipal and special waste coming from separate waste collection and from industrial or artisan manufacturing in the province in which they are located. The objective of the process, which uses more or less complex technologies and treatment lines according to the type of waste to be treated, is to recover the greatest possible amount of material from the incoming flow and reduce reliance on landfills. These systems recover: paper/cardboard, plastic, wood, metal, glass, biodegradable waste (pruning material), tires, textiles, inert materials. The treatment lines used are specific to the characteristics of each collection. Five of the six plants have computer vision systems that are particularly effective in separating plastic and paper from municipal waste both in terms of flow (hourly quantity of waste treated) and in terms of the quality of the material obtained by the operation. The scrap of the treatment, the non-reusable fractions that are not sent for material recovery, are dispatched to be used for energy recovery or to be disposed of.

In 2019, Herambiente's selection and recovery plants handled **432,478 tonnes of waste** (+1.6% compared to 2018), the quantity treated and **sent for material recovery** was **75.4% of the incoming waste**, and the portion used for energy recovery was 7.8%, for an **overall recovery of 83.3%**. The material recovery level confirms the upward trend compared to previous years. A portion of the non-reusable fractions is used for energy recovery, about 33% in 2019. The shredding activity, already present in the Ferrara plant for a long time, was

also started up and put into operation in 2019 at the Granarolo plant, while it was started up at year end at the Coriano plant. In terms of permits for shredding, the process was started at the Modena and Voltana plants, with the possibility of construction in 2020.

Destination of total waste treated – Herambiente's selection plants

	2017	2018	2019
Waste sent for material recovery (t)	270,862	313,318	327,480
Non-reusable fractions outgoing (t)	101,044	112,457	104,799
<i>of which for energy recovery</i>	<i>12,368</i>	<i>15,153</i>	<i>34,097</i>
Other waste to disposal			199
Total treated in selection plants	371,905	425,775	432,478
% of waste sent for material recovery on total quantity of waste treated	72.9%	73.6%	75.4%
% of waste sent for energy recovery on total quantity of waste treated	3.3%	3.6%	7.8%
% of waste sent for recovery on total quantity of waste treated	76.2%	77.2%	83.3%

Aliplast's integrated system

The Aliplast Group, that Herambiente acquired in 2017, has **eight plants**. The three foreign plants located in Spain, Poland and France, and the two Italian plants, at Formigine (MO) and Quinto di Treviso (TV), are engaged in the procurement and selection of plastic. The Ospedaletto di Istrana (TV) and Borgolavezzaro (NO) plants transform waste plastic into finished products, while the Gualdo Cattaneo (PG) plant produces finished products from semi-finished recycled plastic products.

Aliplast **manages the integrated plastic cycle**, transforming waste into finished products, mainly PE films, PET plate and granules/flakes of the leading polymers. Its main commitment is to make the plastic life-cycle sustainable, by collecting and recycling plastic to produce new materials, with the lowest possible environmental impact. Focusing on constant research, development and technological innovation (regarding products, services and processes), Aliplast manages a traceable plastics production chain, which is capable of transforming a disjointed chain into a virtuous circle and of ensuring high-quality final products that are efficient and economically more convenient than traditional materials.

Waste treated by Aliplast (t)

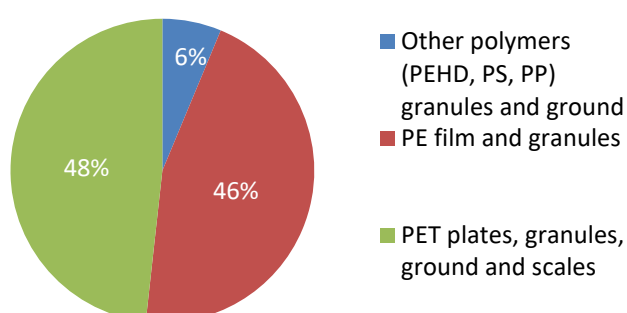
	2017	2018	2019
Incoming waste	83,498	84,802	90,104
Secondary raw material from incoming waste	59,556	63,726	72,766
Incoming waste sold (material recovered from third parties)	18,865	13,974	7,650
Total incoming waste sent for material recovery	78,421	77,700	80,416
% of waste sent for material recovery on total quantity of waste treated	93.9%	91.6%	89.2%

The plants treat **waste from industrial scrap and from separate municipal waste collection**. The 2018-19 trend for incoming waste is an increase of about 6%. This waste was transformed into new products or delivered to third party recycling companies (over 7 thousand tonnes). The Aliplast Group directly recycles a significant portion of the incoming waste and discards only a small percentage of it if it is made of non-recyclable polymers or because of weight loss due to the presence of liquids. The reduction in the percentage of incoming waste sent for material recovery from 2018 to 2019 is a result of the start-up of the PET washing

system at the Borgolavezzaro plant, which recycles PET bottles with waste percentages typically higher than those for PE recycling. It should be noted, however, that the ratio of incoming waste to secondary raw material obtained is increasing over the three-year period, rising from 71% in 2017 to 75% in 2018 and 81% in 2019. These data are also reported in the New Plastics Economy Global Commitment, described in a case study of this report. The reduction in incoming waste sold and sent for material recovery by third parties, on the other hand, is a consequence of the choice – linked to the external macroeconomic context – to reduce the collection of low quality plastic waste, in order to focus on high quality, more suitable for use in the production of finished products.

The secondary raw material from the incoming waste is used to produce recycled plastic products. In 2019 Aliplast sold about 91,300 tonnes of recycled plastic products (compared to about 84,100 in 2018). Of these, 80% of the content is made up of the secondary raw material made from the plastic waste.

Products sold by Aliplast, by type (2019)



The food industry demands high safety standards and strict compliance with applicable food industry regulations. Aliplast's range of products, which is entirely **certified for food contact at European level**, consists of polymers in granules and flakes, and PET plate for thermoforming and extrusion, ideal to produce food trays and bottles.

In 2018 Aliplast developed an IT tool for calculating the **carbon footprint** of five types of products, as described in greater detail in a case study in this Sustainability Report.

The recovery of industrial waste with Herambiente Servizi Industriali (HASI)

Herambiente Servizi Industriali is the company of the Group that offers waste management solutions and services for businesses. From July 1, Waste Recycling, a company in Tuscany controlled by Herambiente, merged by incorporation into **HASI, thus becoming the largest Italian company entirely focused on the treatment of industrial waste.**

Key elements of HASI's offer are **maximum traceability, compliance with all environmental regulations** and the identification of the optimal recovery and recycling solution that **minimises landfill disposal.**

During 2019, our commercial strategy was aimed at creating value for the Group and for its customers, also due to the synergies with the subsidiaries and parent companies, by proposing **solutions that are increasingly oriented towards sustainability.**

The global waste management solutions were complemented by offers aimed at O&M (operations and maintenance) customers of private waste treatment plants, implementation of improvement/efficiency plans, solutions to maximise recovery and overall reduction of waste produced, such as the management of certain flows as by-products.

In this regard, during the year, it is worth mentioning the start up of a global service contract for leading Italian group producer of pasta and bread substitutes/snacks, the start up of a global service contract and operation of a private purification plant of a large Italian group operating that produces canned and frozen food and an offer for the management of purification plants at the main production sites of the leading Italian dairy group.

The integration of our waste management services with on-site systems operation helps the Group be effective and well-known in the market, encourages customer loyalty and creates value, besides being a factor that sets it apart from its competitors.

The traceability of all waste delivered to HASI is totally transparent. Starting in 2015, a special area for customers was added to Herambiente's website to provide real time information on the treatment operations for each contract, showing where each was sent to and the recovery percentage achieved versus the total waste disposed of. In 2019 the reserved area was redesigned, offering customers new features (such as online booking of their disposals), the possibility of access from any type of device, improving the browsing experience.

The new HASI treated over **1,440 thousand tonnes of industrial waste** during 2019, of which about 23% was recycled for material or energy recovery:

Destination of total waste treated – Herambiente Servizi Industriali

Thousands of tonnes	2018	2019
Waste sent for material and energy recovery	264.9	329.2
Total waste sent for disposal	710.0	1,112.8
Total waste treated	974.9	1,441.9
% of waste sent for material or energy recovery on total quantity of waste treated	27.2%	22.8%

The percentage of waste sent for recovery in 2019 was affected by the expansion of the company's perimeter (merger of Waste Recycling into Hasi). The main types of waste processed by the plants in the Pisa area (e.g. liquid waste or sludge to stabilize) undergo major treatment operations and, where possible, volumetric reduction, in line with the best technologies available on the market, but which in many cases are still classified as disposal operations and not recovery operations. It should be noted, in addition, that the 2019 data are not fully comparable with the 2018 data, also due to a different calculation method. The upward trend in waste is a result of the company's commercial activity during 2019.

The main business solutions of 2019, with a focus on recovery, targeted SMEs.

Below are some examples of recovery solutions applied to the customer portfolio:

- scraps of leather are used to produce soil improvers and fertilizers;
- the recoverable parts of paper are sent to paper mills;
- plastic is washed, cleaned and made into flakes for subsequent processing;
- wood scraps are used to produce chipboard panels;
- ferrous materials are separated and recycled in foundries;
- organic waste from food manufacturing companies are used for composting to produce energy and produce compost;
- some types of production waste made of plastic or poly laminates (which until recently were sent to energy recovery) are selected and separated directly in the company and sent for material recovery at the group's plants or at third parties;
- all mixed waste that is not hazardous, non-separable nor recoverable in terms of material, to be used for energy recovery.

During the year, the Hera Business Solution offer has been expanded: Hera Group's integrated and sustainable solution for companies, for waste and water management along the principles of the circular economy and of energy with the aim of maximising energy efficiency and the use of renewable sources.

The **objective for 2020** is to increase the recovery rate of industrial waste by commercially developing further circular economy solutions and expanding the green offer with additional services and integrated solutions in terms of environmental sustainability, such as the supply of renewable energy, efficiency improvement measures for energy, heat, and water, working together with other companies of the Group.

Main waste treatment plant expansion measures

In 2019, after carrying out the performance tests, the **Sant'Agata biomethane** plant was commissioned, in parallel with the completion of the architectural work to restyle the existing industrial buildings which were converted for the new business. This intervention, which gave a new look to the existing site, completed the plant's conversion project, into which Hera Group **invested Euro 37.5 million** (of which Euro 3.3 million in 2019). We also completed the major M&A operation that led the Group to acquire **Pistoia Ambiente**, a company which operates a landfill in Pistoia and the related on-site treatment plant for the leachate it produces.

In addition to these activities, Hera Group made operating investments of a further **Euro 58 million** for the **material and energy recovery**, as well as additional landfill volumes. Below is a summary of some of the main environmental measures being planned, in progress or that have been completed at the end of 2019. There are 17 projects in the Marche region, in addition to the expansion of the third lot of the Cà Asprete di Tavullia landfill, completed last year.

Main waste treatment plant expansion/improvement measures

Plant	Progress at 31 December 2019	Type of measure	Environmental benefits expected/obtained
S. Agata Bolognese (BO)	Plant completed and in industrial operation since March 2019	Construction of biomethane plant	Biomethane production and feed-in of about 6.6 Mm ³ in 2019 (in the full year 7.5 Mm ³ /year)
Trieste waste-to-energy plant	Planning stage	Revamping of Line 2	Increased treatment and energy recovery capacity (20 thousand MWh/year expected)
Ravenna waste-to-energy plant (F3)	In progress	Revamping of incinerator for hazardous waste F3 (Ravenna)	Increased treatment capacity (+10 kt/year) and energy recovery (+7,000 MWh/year)
Ravenna landfill	Completed and started cultivation	Implementation of sector 10	Capacity increase
Castiglione delle Stiviere (MN) plant	Purchase of equipment in progress	Modification and revamping of high-quality secondary solid fuel (SSF) production line	Reduction of processing waste that cannot be used as fuel
Cordenons (PN) landfill	Completed and started cultivation	Construction of sectors 1, 2, 3, and 4	Capacity increase
Ravenna landfill	Completed	Implementation of energy recovery for sector 9	Electricity production (up to 8.5 thousand MWh/year)
Landfill Lugo (RA)	Completed	Capping and environmental restoration of the Voltana (RA) landfill	Reduction of leachate production and environmental restoration
S. Agata Bolognese (BO) landfill	In progress	Capping and environmental restoration	Reduction of leachate production and environmental restoration
Civitella (FC) landfill	In progress	Capping and environmental restoration	Reduction of leachate production and environmental restoration
Ravenna landfill, fourth portion	Assigned jobs	Capping and environmental restoration	Reduction of leachate production and environmental restoration
Firenzuola (FI) landfill	Completed	Construction of 5th lot	Capacity increase
Alipplast	In progress	Construction of Alipplast PE regeneration line	Capacity increase
Chioggia reclamation	In progress (plant completed)	Soil washing plant for "in situ" remediation	Polluted site remediation
Rimini selection plant	Completed (line operating)	New line for the treatment of glass waste from separate waste collection	Improvement of glass recovery system from separate waste collection
Rimini waste-to-energy plant	Completed (line operating)	Construction of iron recovery section from combustion slag	Recovery of ferrous scrap from combustion slag
Malpasso site (HASI)	Construction in progress	New osmosis line for liquid waste/wastewater	Recovery of water for industrial use

Environmental impact assessments presented during the year [102-11]

The IEA and Screening procedures are accompanied by a series of **environmental assessments** of the effects of the works (both during construction and at the project stage) on the environment, and on human health and well-being, based on the characteristics of the project and following analysis of the components involved in their ante-operam condition. In particular, interference with the following aspects was analysed:

atmosphere, water resources, soil and subsoil, flora, fauna and ecosystems, noise, human health and well-being, landscape and cultural heritage, residential system, and socio-economic conditions.

The approach used involves performing **specific model simulations** in addition to qualitative and descriptive evaluations, using software and calculation algorithms, to obtain numerical data that can be compared with standards and limits set by industry regulations and so as to assess the significance of the impact. Model simulations are carried out in particular for the release of pollutants and odorous substances into the atmosphere, and noise emissions.

All the simulations carried out involve the precise characterisation of the sources and the evaluation of the most disadvantageous scenario in order to make a **precautionary assessment**. Landscape assessments are carried out by using renderings and photomontages to assess the visual effect of the new works on the surrounding environment, and specifically for creating new lots/landfill sites. In some cases, the applications are also accompanied by a specific "Health impact assessment and proposed health monitoring plan".

Once all impacts have been assessed, specific **mitigation measures** are identified, where necessary, in order to reduce them and, if that is not possible, specific compensatory measures are prepared (construction of photovoltaic plants, planting trees, construction of charging stations for electric vehicles, etc.).

It must be noted that the design of the works is always carried out by identifying and using the best available technologies as required by Legislative Decree No. 152/06 as amended and Art. 29 bis, paragraph 3, which, for landfills, are defined by Italian Legislative Decree No. 36/03.

The following **Environmental Impact Assessment** procedures were activated in 2019 (still in progress):

- **Multifunctional waste treatment platform in Via Ragghianti, Pisa (PI)** – Plant optimisation and implementation of new production lines

The project presented concerns major work to optimise the plants that make up the multifunctional site and in particular:

- construction of an evaporation plant for liquid waste, for the treatment of waste produced by chemical-physical-biological treatment and waste from external plants. This new section is an optimisation and improvement of the current physical chemical plant together with the optimisation of the biological plant. It involves the installation of new equipment to increase water recovery without producing an increase in discharges;
- construction of a new stabilisation treatment plant inside a new industrial building, a modification required for the existing stabilisation plant and revamping of the soil washing plant in order to maximise the recovery and enhancement of inert material fractions;
- construction of a new thermal desorption plant for the thermal desorption of contaminated sludge/soil, aimed at the production of waste for possible subsequent stabilisation treatment and recovery as part of environmental restoration operations, landfill cover or the production of raw materials consisting of non-contaminated soil (end of waste). This facility will be housed in a newly constructed building;
- reorganisation of the hazardous and non-hazardous packaging recovery line to recover the packaging itself or reuse the individual separate components such as iron, plastic, wood, etc., so it no longer is classified as waste (end of waste) pursuant to Art. 184-ter of Italian Legislative Decree No. 152/06;
- reorganisation and optimisation of the warehouses and depots and of the reconditioning, mixing and shredding areas and other measures required to operate the new plant sections such as: implementation of new emissions extraction and abatement systems, along with the optimisation of the existing systems, the sewage system, the electrical system and the fire-fighting system.

As a result of the planned optimisation work, the total amount of waste that can be treated at the plant has increased from 323,600 tonnes per year under the current permit to 495,000 tonnes per year and the instantaneous storage capacity has increased from 17,880 tonnes to 27,110 tonnes.

The potential impact on the air component was assessed through a specific study that reported a substantial increase in emissions compared to the current emissions, but not capable of causing breaches of the annual air quality limits.

Model-based assessments carried out on the dispersion of odorous substances in the atmosphere found that the expected odorous impact of the current design is acceptable or negligible. Specific annual monitoring of the main odour sources of the plant site is planned.

The noise impact assessment showed that both the current situation and the project design complied with the differential and emission limits at all the receptors examined.

In relation to the vehicular traffic induced as a result of the request to increase the site's overall potential, the study carried out found that it is fully compatible and sustainable in relation to the characteristics of the main roads around the plant.

The positive impact on the "water resource" media is noteworthy, since the changes made to the biological plant will make it possible to recover greater quantities of industrial water, significantly reducing the abstraction from wells.

Assessments were also made of the impact of the planned activities on the Natura 2000 sites. The site is located in an area outside the protected areas and at a minimum distance of about 6 km, therefore the potential interference with them is negligible.

- **Multifunctional waste treatment platform located in the municipalities of Santa Croce sull'Arno and Castelfranco di Sotto (PI)** - A review project, with plant modifications and merging of the following IPPC installations: Hazardous and non-hazardous liquid waste treatment plant, hazardous and non-hazardous waste storage, selection and treatment plant, each with permits based on its own integrated environmental authorisation.

The project involves the construction of substantial modifications, to increase the production capacity of the existing plant, from its current 272,700 tonnes per year to 322,700 tonnes per year and, at the same time, to increase the storage capacity of both of wastewater delivered as bulk and that delivered in containers of various kinds, in order to optimise the flows to be sent to individual treatments. Under the plan, the area will be expanded on a new plot of land of approximately 4,500 m² and the storage facilities will be reorganised. The new installations in the plan include a new finishing plant to recover, from the drain of the purification plant, a suitable quantity of industrial water able to completely satisfy the needs of the entire platform and, consequently, to drastically reduce the withdrawal of groundwater. In essence, the project's measures complement recent interventions, to strengthen the purification process and increase its yields, as well as to further minimise its environmental impact. The proposed changes will therefore increase the flexibility and processing capacity of the chemical-physical sector.

The main environmental impacts of the planned activities are induced traffic, atmospheric emissions and environmental noise, while the other impacts have been assessed as negligible.

The traffic assessment found that the increase in vehicle traffic induced by the increase in the quantities entering the plant leads to a small change in overall traffic, which can be considered completely negligible. On the basis of the results of the calculation obtained and the estimates of vehicle flows, the modification in question can be considered completely sustainable and compatible with the characteristics of the main roads around the plant itself.

Concerning the acoustic impact, the forecast assessment showed compliance with the limits of the laws in force, following the implementation, on some sections of the plant, of containment measures such as soundproofing barriers and soundproofing of some mechanical components.

As to the emissions of dust into the atmosphere, specific assessments were carried out both in relation to the construction of the works and during operation, and in both cases the impact was assessed as causing a slight increase in average emissions compared to the values currently found in the area, which does not result in annual and hourly limit values being exceeded. The plant's emissions will all be treated with special abatement systems and comply with the Best Available Techniques.

As far as odorous impact is concerned, the plant sections potentially responsible for odorous emissions are fitted with covers and are conveyed to the air treatment before emission into the atmosphere.

During **2019**, the main applications for **Environmental Authorisations** were filed as **Requests for Review for compliance with BATs** (Best Available Techniques) following the update of the reference document published in the European Journal of Implementing Decision (EU) 2018/1147 of the Commission dated 10 August 2018 that sets the Best Available Techniques (BAT) for waste treatment, pursuant to Directive 2010/75/EU of the European Parliament and of the Council:

- review of the integrated environmental authorisation of the **Cà Baldacci composting plant** located in Via San Martino 19 in Rimini (RN). The assessment shows substantial compliance with BATs (Best Available Techniques);
- review of the integrated environmental authorisation of the **physical and chemical waste treatment plant** located in Via Tomba 25 in Lugo (RA). The assessment shows substantial compliance with BATs (Best Available Techniques).

In addition, the following **requests to amend the integrated environmental authorisation** following the conclusion of the relevant IEA procedures which established its exclusion have been activated:

- **Non-substantial change to the integrated environmental authorisation at the selection and recovery plant in the municipality of Castiglione delle Stiviere (MN)**

The purpose of the change is to add some new machinery to the existing SSF production line to optimise the production process and improve the quality of the SSF end product and increase its production at the expense of the average size in that line, with the possibility of also obtaining a secondary solid fuel that, if compliant with the criteria set out in Italian Ministerial Decree No. 22/2013, pursuant to Art. 184 ter of Italian Legislative Decree No. 152/06 as amended, will cease being waste (End of Waste). The change was enacted pursuant to an order by the Provincial Administration of Mantua (PD 610 of 4 June 2019), which exempted the SSF production line optimisation project from requiring an IEA.

- **Non-substantial change to the integrated environmental authorisation for the Trieste waste-to-energy plant**

The change involves plant maintenance for extraordinary modernisation on Line 2, mainly to maximise energy recovery from waste combustion by work on the components of the thermal cycle (furnace, boiler and turbine), increasing the effectiveness of flue gas purification by changes to components of that section and also increasing the plant's overall reliability to ensure greater continuity of operation. These measures, therefore, involve an increase in the thermal capacity of the F3 furnace and therefore a request to increase the quantity of waste that can be treated annually by about 19,000 tonnes per year. As a result of these measures, the installed capacity to produce electricity increased, compared to the current 3 MW. The amendment was implemented as a result of Decree 1619/AMB of 05/04/2019, of the Environmental Assessment Service of the Autonomous Region Friuli-Venezia-Giulia, that exempted the project from requiring an IEA.

Recovery plant classification for Hera Group's waste-to-energy plants

Directive 2008/98/EC, implemented in Italy by Italian Legislative Decree No. 205/2010, introduces a criterion to calculate energy efficiency which makes it possible to classify a municipal waste incineration plant as an

energy recovery plant. This criterion makes it possible to calculate the energy efficiency of the incineration process on the basis of the energy introduced with the waste, the amount of energy consumed and the amount of energy produced (thermal and electrical).

All the waste-to-energy plants operated by the Herambiente Group (including those of Hestambiente at Padua and Trieste) are R1 recovery plants, except for the Ravenna special waste plant (F3).

The "Sblocca Italia" decree and the new regulations on waste disposal

Art. 35 of Italian Legislative Decree No. 133/2014, converted, with amendments, into Italian Law No. 164/2014, the so-called "Sblocca Italia" law, aims to develop a suitable, integrated system at national level to manage municipal waste and to meet the separate waste collection and recycling objectives.

To apply the principles and objectives defined in Art. 35, the Hera Group uses the following hierarchy to identify the priority criteria for the saturation of the capacities of its waste-to-energy plants:

- local municipal waste;
- regional municipal waste;
- any municipal waste from outside the region according to the resolutions of the relevant bodies;
- non-hazardous special waste until saturation of the residual heat load.

On the basis of these principles, our integrated environmental authorisations (IEAs) have been updated between the end of 2015 and during 2016 and, at the same time, we have signed framework agreements with Local Authorities for the waste-to-energy plants of Forlì, Rimini and Modena. For the waste-to-energy plant of Ferrara, in the context of these updates, we were granted a permit to increase the amount of waste to treat up to 142,000 tonnes a year to cope with any emergencies outside the region for municipal solid waste, subject to a specific request from the relevant authorities. In December 2015, the local authorities in Forlì and the Regional Administration signed a specific agreement for the management of municipal waste in the Forlì waste-to-energy plant to which municipal waste is sent only from the regional catchment area in respect of the planning being approved.

In **2019, no solid municipal waste from other regions was treated** in Herambiente's nine waste-to-energy plants as determined by the relevant authorities. No solid municipal waste from other regions was treated in Herambiente's **landfills**.

Total waste treated by the Group

Waste treated, by type

migliaia di t	2018	2019
Municipal waste	2,348.0	2,347.8
Market waste	2,142.8	2,211.1
Commercialized waste	4,490.8	4,558.9
Plant by-products	2,802.2	2,616.2
Waste treated by type	7,293.0	7,175.1

The municipal waste treated in the Group's plants as well as the municipal waste collected in the municipalities where Hera operates the municipal sanitation service, includes about 310 thousand tonnes collected by other companies or public bodies.

Analysis of the quantitative data shows an increase in waste sold due to street market waste, up 3.2%, and a substantial stability in municipal waste. The growth in market volumes is due to the start-up at full capacity of the Sant'Agata biomethane plant and the new Ostellato line and the incoming limits. Lastly, market volumes benefit from the increase in intermediated flows. Municipal waste is substantially stable, in particular the quantities of sorted and beach cleaning waste are up by 6.9%, while the quantities of mixed waste are down by 6.9%. The plant by-products decreased because of a smaller production of leachates in landfills due to lower rainfall in 2019 compared to the same period of 2018.

Municipal and special waste disposed of, by plant type

thousands of tonnes	2018	2019
Selection plants	531.2	572.8
Waste-to-energy plants and biomass plants	1,309.8	1,259.9
Composting and stabilisation plants	361.5	506.1
Landfill	704.3	663.5
Stabilisation, and chemical-physical treatment	1,231.7	1,600.2
Third-party plants/Other plants	3,154.6	2,572.7
Total	7,293.0	7,175.1

The data concern waste incoming to the plant. Duplication may therefore occur. Some of the waste treated in selection plants, for example, may be disposed of in landfills following selection. The waste outgoing from plants, which has therefore been included among the final-use plants, was subtracted from the quantities counted in the separation plants.

Waste treatment decreased by 1.6% compared to December 2018. In this respect, it is worth mentioning the lower quantities in landfills, while in the waste-to-energy sector the reduction in treated waste is due to a different availability of the plants compared to 2018, due to plant downtime and scheduled maintenance. The increase in quantities at the selection plants is mainly due to a different classification of some plants compared to the third-party/other plants. The increase in quantities at the composting and stabilisation plants is mainly due to the higher volumes treated at the Sant'Agata plant and the new Ostellato line. The higher quantities in the stabilisation and chemical-physical plant supply chain are due to a different classification of some plants compared to the third-party/other plants, despite the reduction in leachate from landfills due to lower rainfall. Lastly, the decrease in the third-party/other plants is due to a reduction in by-products, mainly wastewater, treated at third-party facilities and the different representation in other categories of some facilities (mentioned earlier in this report), despite the higher volumes resulting from the acquisition of Cosea Ambiente.

The circular approach within the Hera Group

Waste produced by the company

In 2019 the Group produced around 2.6 million tonnes of waste. Compared to 2018 (2.8 million tonnes) there was a decrease in total by-products leaving Hera Group's plants. In particular:

- lower output from landfills/composting (leachate) and chemical-physical plants as a result of lower rainfall;
- reduction of the production of SSF and of non-reusable fractions due to smaller amounts treated by the plants;
- reductions also in the production of dust and slag due to different mixes fed into the waste-to-energy plants.

These reductions are partly mitigated by an increase in the quantities of by-products from stabilisation and others for increased industrial activity.

Main types of waste, by disposal method (2019) [306-2]

tonnes	Landfill	Energy recovery	Other treatments	Total
Waste-to-energy plant electrofilter particulates*	0	0	52,869	52,869
Waste-to-energy plant slag	50,070	0	196,199	246,269
Solid waste from stabilisation	47,446	0	102,924	150,370
Water purification sludge	17,028	26,210	118,750	161,988
Sand from purification plants	0	0	590	590
Sludge produced by chemical-physical-biological plants	6,228	981	36,384	43,593
Leachate from landfills/composting	0	0	495,019	495,019
Non-reusable fractions from selection plants	39,962	62,367	69,626	171,955
Liquid waste from stabilisation	0	0	40,720	40,720
Biostabilised	27,470	611	54,828	82,909
Water from chemical-physical-biological treatment	0	0	507,004	507,004
Production of fuel from waste	0	85	87,647	87,732
Other waste from Herambiente storage and plants	20,679	17,920	584,781	623,380
Total	208,883	108,174	2,347,341	2,664,398

*hazardous waste.

Recovery of waste-to-energy plant slag

The waste-to-energy plant growth and renovation plan pursued by Herambiente in recent years has had a positive impact on the production of combustion slag. The new combustion systems and, above all, the systems for the "cooling" and "gondola"-type systems to extract combustion slag, make it possible to have waste with a very low quantity of unburned matter and low water content. This has resulted in a lower percentage of slag being produced and, above all, a quality level that is more suitable for subsequent recovery.

In 2019, the nine waste-to-energy plants operated by the Group for the disposal of municipal waste produced 246,269 tonnes of waste, equal to 18% of the waste treated at these plants. **80% of the slag produced was recovered**, for example in the production of cement and cement mixes, while the remainder was disposed of in landfills.

The plants in Ferrara, Pozzilli, Bologna (since 2018), and Rimini (from the second half of 2019), also have **metal separation systems** for reuse of the metal in the metallurgical industry. In 2019, 3,667 tonnes of metals were recovered, up compared to 2018 (2,506 tonnes), despite the shut-down of the Pozzilli separation system.

Recovery of purification sludge

Purification sludge is considered special waste and must be managed as specified in **Italian Legislative Decree No. 152/2006**. In 2019, the plants operated by the Group produced 36 kg of sludge per population equivalent served, in line with the previous year. At Group level, the sludge produced was processed by **dedicated incineration** (26,210 tonnes, 16.2% of the total), **transfer to landfills** (17,028 tonnes, 10.5% of the total compared to 19.0% in 2015) and **indirect agricultural reuse, following composting** (111,048 tonnes, 68.6%). Recovered purification sludge was **used directly in agriculture** only in the Triveneto area and accounts for 4.7% of the total. The Hera Group aims to further reduce the amount of sludge sent to landfills in Emilia-Romagna (Hera Spa's service area), reaching 3.6% by 2023 and 1.5% by 2030. As far as the Triveneto area is concerned, it is worth mentioning the project of the solar greenhouse for sludge drying at Ca' Nordio, to which an in-depth analysis is dedicated in the Innovation chapter of this sustainability report.

Sustainable management of water resources

Water resources

[GRI 303-1]

The integrated water service makes the water available in nature suitable for human use and consumption and returns it purified to the environment. Hera is present in the **operation of the water service** in 228 municipalities with a catchment area of over 3.6 million inhabitants. In this area, Hera Group deals with the integrated management of all the phases necessary to make water usable and available for civil and industrial use and consumption: from withdrawal to drinking water purification and distribution to users, from sewage system management to purification and returning water to the environment.

The management of entire system of water collection, purification and distribution systems up to the end customer is the so-called **water mains service**. Hera Group's water supply sources include underground water, surface water and, to a lesser extent, springs. In Romagna, the distributed water is purchased wholesale from Romagna Acque – Società delle Fonti.

The complexity of drinking water purification processes varies depending on the quality of the source water: they range from advanced chemical and physical processes, usually used for surface water, to simpler filtration and disinfection treatments for water coming from deep wells and springs that is already of good quality when collected.

The treatments carried out ensure that the product we distribute has suitable chemical, physical and microbiological features for human consumption, and is constantly compliant with the limits set by applicable regulations.

Water withdrawn and fed into the network, by source [GRI 303-3]

Thousands of m ³	2017		2018		2019	
Groundwater	239,043	55.6%	223,777	53.1%	221,221	52.9%
Surface water	164,887	38.3%	165,414	39.2%	162,784	38.9%
Springs and minor sources	26,146	6.1%	32,558	7.7%	34,150	8.2%
Total	430,076	100.0%	421,749	100.0%	418,155	100.0%

The data concern both the civil and the industrial aqueduct networks (the latter being present in the Forlì-Cesena, Imola-Faenza, Modena, and Ravenna areas, and account for around 3% of the total). All sources specified in the table are fresh water ($\leq 1,000$ mg/l total dissolved solids). All water withdrawals refer to areas classified as having a "moderate" water stress risk (values between 2.6 and 3.4, WWF Water Risk Filter, Overall Risk Layer)

The data provided shows that the total volume of water fed into the network decreased slightly compared to 2018 (-0.9%). The mix of supply sources is substantially unchanged. The less dry period of 2019, however, led to a greater rebalancing of the sources with less use of groundwater (-1.1%) compared to 2018, and even more compared to 2017. From a geographical point of view, the share of groundwater is lowest in the Marche Multiservizi area (16.3%), while it is predominant in the Triveneto area (87.7%).

Hera Group's distribution network covers **35,056 kilometres** and, where possible, is interconnected and linked in order to ensure **supply continuity** even in the event of temporary interruptions of one or more pipelines.

Make-up of the water network

%	2017	2018	2019
Plastic	53.1%	53.7%	54.3%
Asbestos-cement	20.8%	20.5%	20.3%
Steel	16.9%	16.6%	16.1%
Cast iron	8.4%	8.5%	8.6%
Other materials	0.8%	0.7%	0.7%
Total	100.0%	100%	100%

The amount of asbestos-cement in the water network is continuing to decrease, and accounted for 20.3% of the Group's share in 2019. The slight decrease is due to use of materials other than asbestos-cement in new networks or in those subject to extraordinary maintenance. Over the last three years the Group has replaced approximately 81 kilometres of asbestos-cement network.

Management of water-related impacts

The Hera Group, as part of its **environmental management system (ISO 14001:2015)**, has identified the environmental aspects related to the activities, services and plants it operates and the potential environmental impacts; this led to an assessment of the significance of the environmental aspects and risks related to each one.

The "environmental analysis" process was conducted at Hera consistently and according to the shared methodology identified in the "Identification and Evaluation of Environmental Aspects and Related Risks/Opportunities". Certain plants/services, representative of clusters with uniform characteristics, were examined for each process. In particular, when assessing the environmental impact of the use of water resources, the **type of water supply** and the **amount of water consumed/abstracted** in relation to the output produced are taken into account; the assessments carried out showed that this aspect is typically to be kept under control in some plants of the water cycle.

In parallel, ISO 14001 requires the organisation to implement its environmental management system with a "Risk Based Thinking" approach. Within the Hera Group, **risk assessment** is carried out by adopting the ERM (Enterprise Risk Management) approach, which identifies risk scenarios that may impact the Group, and the related financial and reputational consequences. The severity of risk scenarios related to individual environmental aspects of representative plants/services is given by the combination of the likelihood of occurrence and impact, within which the reputational factor was considered particularly important. Given the supply system and the type of plant, the environmental risk scenarios (i.e. the risk of aggravating the impacts on the environment itself) related to the methods of use of the water resource were of low severity.

Actions to address drought risk

[GRI 303-1]

Resilient aqueduct and water source management

Our reaffirmed commitment to the protection of water resources led us, a year ago, during 2018, to identify major **measures to enhance and renovate the aqueduct infrastructure** by 2030, to counter the effects of droughts, increase the reliability of supply and the overall resilience of the systems, increasingly called to support new operating conditions to better cope with the current climate change. In this regard, various scenarios have been defined, which can be grouped on the one hand to the **supplementation or partial replacement of the sources** currently exploited, and on the other hand to the creation of **interconnections** to allow the exchange of resources and the possibility of dealing with emergency conditions.

In relation to the **integration of supply sources**, in Emilia the ongoing feasibility studies are continuing (such as water withdrawal from the Emilia-Romagnolo Canal serving the municipalities of the Bolognese plain, or

the possible exploitation of the volumes accumulated in the Brasimone artificial lake). These scenarios will be more defined also in relation to the results of the collaboration started with various organisations (RER, ARPA, CMCC, in more detail below) which, focusing on the Bolognese water system, will correlate meteorological and hydrological parameters to identify the potential criticality in meeting demand and the most appropriate adaptive actions. Some of the **interconnections** between the Secchia Valley and the Panaro Valley, which will be continued in the coming years in order to improve the resilience of the two systems, have also been started. In the Romagna area, the connection of the distribution backbone in San Leo with the Siepi-Pianacci station has already been completed. It will ensure the supply in the municipality of San Leo during dry periods. The interconnection between the Novafeltria wells and the municipality of Talamello, has also been completed, another potentially critical area in case of water shortage. In addition, drilling has started on new wells in Ponte Baffoni, to enable the integration of the sources that feed the Novafeltria area.

During 2019, Hera consolidated its commitment to drought risk prevention measures, continuing its design activities to increase the resilience of its water systems, together with actions to reduce pressure, actively seek leaks and plan the replacement of networks and connections. These activities have also been carried out by adopting **innovative data analysis systems**, which better target leak detection and network upgrades. In addition to the ongoing use of satellite technology for pre-localisation of breakages, asset management experiments are being launched to identify the pipelines most likely to be subject to the breakage (by interpolating past series of breakages with satellite surveys of ground subsidence, ingress of roots, groundwater level).

In addition, in collaboration with the Department of Civil, Chemical, Environmental and Materials Engineering of the University of Bologna, Hera has **carried out a study on the factors influencing breakages**, revising the choice of pipeline materials accordingly. In fact, the study has shown that the materials perform very differently depending on conditions such as the age of the pipeline, the external temperature and the type of soil. The correlation of these factors with the propensity to breakage risk will therefore make it possible to identify the materials of the pipelines, with increasing awareness of the potential mechanical behaviour of the networks due to the surrounding conditions.

With the aim of correlating the availability of water resources to **climate change** scenarios, studies have also been launched to investigate how changes in rainfall can affect the sources, differentiated between superficial and deep, through influx-flow models of consolidated application in hydrology. The analyses, which will lead to the first results becoming available in 2020, use of multiple sources of expertise (Centro Meteorologico per i Cambiamenti Climatici, Regional Government of Emilia-Romagna/ARPA, Unibo), and are aimed at correlating the response of hydro-geological systems with simulated climate variations over the medium-long term, further orienting Hera's design choices mentioned at the beginning of the paragraph, to reduce drought risk.

In addition to the new work described above, we would like to mention what we have done **in recent years**, which has made it possible to cope with a particularly dry summer in 2017, an exceptional condition that could occur again in the future. In the Apennines, the **Modena area** has been equipped over the years with infrastructure designed to manage the water requirements and the original municipal aqueducts have been interconnected so that the physical integration of each of them makes up an infrastructure system capable of mutuality and subsidiarity. In the **Apennines area near Bologna**, on the other hand, the interconnection with the Modena system, the construction of two new pumping plants in the municipality of Guiglia and in particular the construction of a new storage and pumping plant in the Monte Severo (Monte San Pietro, BO) area, have made it possible to reduce reliance on tanker trucks to supply water tanks in the mountains. In 2019, Hera Spa's service area, 726 m³ were distributed to manage water shortages or drought of the source, which represents about 0.00023% of the volume fed into the network. In **Romagna**, where Hera operates mainly as a distributor, Romagna Acque Società delle Fonti built the "Standiana" drinking water plant (capable of treating a flow of 1,100 l/sec) in the Ravenna area in response to the problem of water reserves on the Adriatic coast, a major tourist destination, supplementing the Ridracoli feeding system.

The construction of the **Reno-Setta feeder channel**, in 2010, was a fundamental measure for the Bologna area, the substantial results of which can now be quantified. As requested by the Regional Government of Emilia-Romagna among the offsetting measures for the construction of the Variante di Valico, the feeder channel conveys part of the water from the Reno river to the Sasso Marconi drinking water plant, in order to supplement the abduction from the Setta torrent, increasing the volumes of drinking water purified from surface sources and thus reducing groundwater withdrawals from well fields in the plains. The analysis of past data on the water table levels in the Bolognese plain (average static levels of the 5 stations of Borgo, Tiro, S. Vitale, Mirandola, and Fossolo) and the monthly volumes taken from the water table, from 2002 to 2018, shows an **increase in the water table level** after 2010 and a **substantial decrease in volumes withdrawn**. In particular, the analysis shows that before 2010 the average static level was about -50 m below ground level, while from 2010 to 2018 the average is around -42/-43 m, with an average increase of 7-8 m. As regards the volumes before and after 2010, the difference is on average 531,000 m³/month less water drawn from groundwater (6,370,000 m³/year). It is therefore possible to estimate that about 50 million m³ less groundwater has been withdrawn in well over 8 years. This volume is equivalent to about 7 months of total production of the primary system. This is a decisive contribution from an environmental point of view of the **circular economy of the water resource that benefits both the environment** (reduction of subsidence) and **the service** (increase in groundwater storage).

The recovery of purified water in the interest of the local area

In April 2018, Regional Government of Emilia-Romagna, ARPAE, ATERSIR and Consorzio Bonifica Renana signed a three-year programme agreement to **recover the wastewater** discharged from the **IDAR** purification plant near Bologna. Since August 2018 the protocol has become operational and to date (2019 figure) the flow rate of treated water recovered is **966,158 m³**. The agreement enables withdrawal by the consortium of about 2,160 m³/h, equal to about 40% of the flow rate treated during the summer period. In particular, part of the water purified by the IDAR plant is carried through a dedicated pipeline to the "Abandoned Savena", leaving the corresponding flow, coming from the river Reno, to go to the "Canale Navile". This is done through a modulated management of surface water flows by the Consorzio della Bonifica Renana, in relation to the demands and the degree of drought of the water bodies.

Under the agreement, Hera and the Consorzio della Bonifica Renana have invested about Euro 120,000 to implement the transfer system (sluice gate and pumping/extraction plant) of a part of the flow treated by the Bologna purification plant (IDAR), to the network of channels managed by the consortium. During the activity, additional analyses are planned on the waste water discharged by IDAR, to monitor additional parameters with respect to those already in the authorisation.

This initiative, in addition to the primary objective of protecting water bodies in the area, also pursues the principle of reuse of water as a good to be preserved.

In addition, in July 2019, a Memorandum of Understanding was signed by Hera and the Consorzio della Bonifica Renana in order to identify the operating methods to apply so that the water treated by the purification plants located in the consortium's district could be reused downstream of the discharge, and possibly stored, to improve the hydrological balance of the flows through the water bodies in the consortium's district.

Reused wastewater accounted for 3% of the total in 2019 (it was 1% in 2018) and Hera Group's business plan targets 9% by 2023 and 15% by 2030.

Non-invoiced water

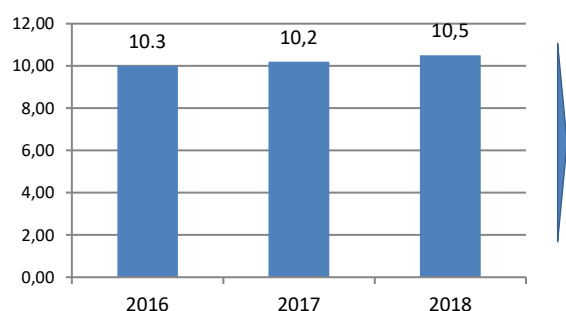
The percentage of non-invoiced water compared to water fed into the network is related to physical or real losses (due to breakage of pipes or hydraulic equipment, etc.) or procedural or apparent losses (metering inaccuracies, errors in estimated presumed consumption at 31 December, unrecorded internal consumption, and illegal use). The latter losses result in water which is effectively delivered to the end customer but is not recorded and invoiced.

Until 2006, network losses were calculated as the difference between the water fed into the aqueduct network during the year and the water accounted for as supplied to customers during the same period: the amount was estimated at 31 December of every year on the basis of the historical consumption of customers since it is not possible to take a single reading at 31 December of all the meters. This estimate was then supplemented so as to take into account the correct period of recording in accounts of the water sold to customers as at 31 December of the previous year, calculated after reading all the meters. Since 2007, network losses have been calculated by integrating the adjustments coming from meter readings in the pertinent year, thereby ensuring comparability between water sold and the related amounts fed into the system each year. With this approach, it is however possible to calculate the final figure for the year only around four to six months after the close of the financial statements, after all the meters have been read. That is why the table below does not include the figures for 2019. On the basis of the information available at the date of approval of this Sustainability Report, there is no evidence to suggest that the final figure for non-invoiced water for 2019 differs significantly from that for 2018.

At Group level, **network losses** for 2018 (final data) were **31.0%**, in line with 2017 (both data calculated according to Arera's new resolution). The Group continues to rank **significantly below the national average**, at 42.4% in 2016, **also below the average of the North East area**, at 38.9% in 2016 (Source: Arera, 2019 Annual report) and below the **average of provincial capital cities**, at 36% (Source: Legambiente Ecosistema Urbano 2019).

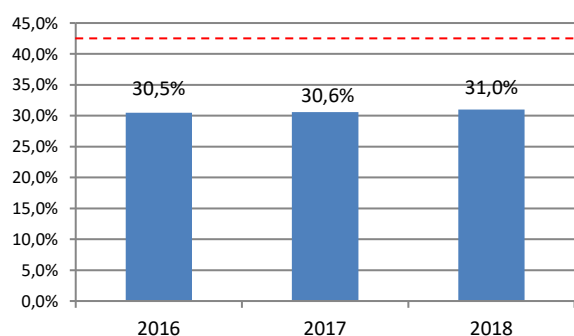
The corresponding **line loss** (2018 data) is **10.5 m³/km/day**, substantially in line with 2017. We believe that the figure of non-invoiced water per kilometre of network is more representative of the effectiveness and efficiency of the distribution system and more useful for comparison with other companies. The figure for line losses in Emilia-Romagna was 9.4 m³/km/day in 2018, substantially in line with the average of 8.3-8.4 m³/km/day found by the European Environment Agency on a group of **32 European utilities** that took part in the study entitled "Performance of water utilities beyond compliance". It is an even more significant value if compared with the average of 24 m³/km/day of the Italian utilities for 2017 (Source: Utilitalia, 2017 Sustainability Report) and with the 23.1 m³/km/day of the **Italian average** reported by Arera for 2016 (Source: Arera, 2019 Annual Report). The figure is also lower than the **average for the North-east**, which shows the best performance at national level, at 14.4 m³/km/day in 2016 (Source: Arera, 2019 Annual Report). **Hera Group's business plan objective** is to reduce linear losses to 10.0 m³/km/day by 2023 (-4.8% compared to 2018) and 9.4 m³/km/day by 2030.

Non-invoiced water per kilometre of network operated (m³/km/day) (physical and administrative losses from the domestic aqueduct network)



	2016	2017	2018
Hera	8.7	9.1	9.4
Marche Multiservizi	6.4	6.5	6.6
AcegasApsAmga	32.4	30.7	28.6

Non-invoiced water (physical and administrative losses from the domestic aqueduct)



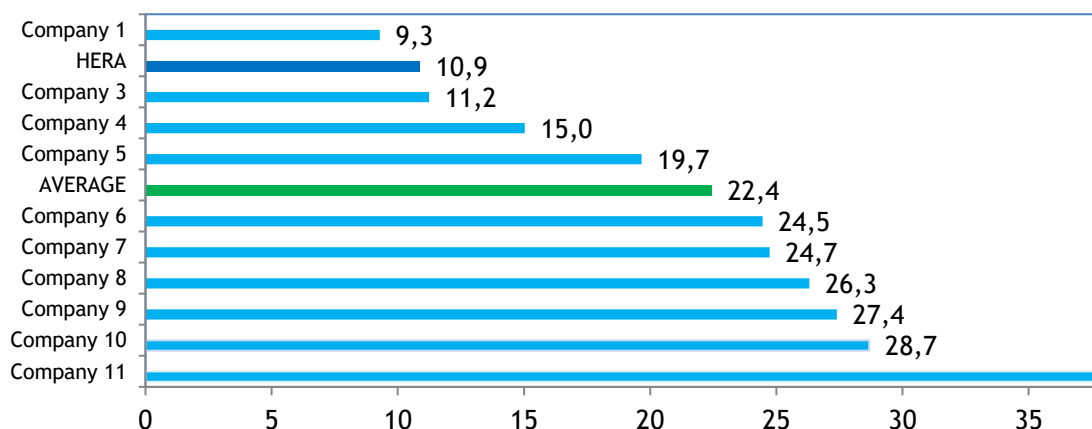
	2016	2017	2018
Hera	28.4%	28.9%	29.7%
Marche Multiservizi	32.1%	32.8%	34.7%
AcegasApsAmga	37.4%	36.1%	34.4%

The figure for 2019 is not reported since it is provisional.

Non-invoiced water for the main Italian utilities

Utilitatis performed a comparative analysis of the main Italian utility companies in terms of non-invoiced water per kilometre of network. Hera ranks second among the 11 companies considered.

Non-invoiced water per kilometre of network operated (m³/km/day) (2018)



Source: Utilitatis, 2019 Sustainability Benchmarking

Commitment to reduce water consumption

The reduction in consumption within the Group

The attention that the Hera Group has always paid to sustainability and circularity matters has led to the decision to concretely plan actions aimed at **saving, reusing and recovering water** ("water management"). The roadmap, defined in 2018, will be operationally implemented during the four years from 2019 to 2022. The concrete and challenging objective, set in 2018, was to **reduce by 10% in four years** (compared to 2017) the water consumption from the civil and industrial aqueduct of the Group's most "water-hungry" business units served by Hera Spa in Emilia-Romagna, i.e. its sewage and water purification service, district heating, the Imola cogeneration plant and the consumption of its facilities (which make up 82% of the drinking water consumption of Hera Spa), in addition to the waste treatment plants of Herambiente in Emilia-Romagna, another water-hungry company of the Group.

Therefore, for the four years, we have scheduled projects, both structural (i.e. fields of operation involving investments in plant modernisation) and non-structural (i.e. aimed at creating awareness of the use of water resources). More in detail, the main actions of the plan are:

- **improvement of the main plants** (waste-to-energy plants, purification plants, etc.) to allow the recovery and reuse of process water which would otherwise be discharged into public sewage or into the surface water body after purification treatment;
- **technological modernisation** to optimise the cooling systems (cogeneration and district heating plants), thus reducing water consumption for the replenishment of circuits;
- enhancement of the search for **hidden leaks** downstream of meters.

The annual target set in 2018 called for a **1% reduction** in the volumes of water used for the activities of the sites and plants **compared to the final 2017 figure** (project baseline), the first step to reach the target of -10% set for 2022. The sharing of objectives, the analysis of processes, and the change in management habits has led to a significantly better result than expected, with a **5.5% reduction in consumption compared to the 2017 baseline** (1,268,649 m³ in 2019, compared to 1,342,462 in 2017).

In addition, important infrastructural measures have been identified that have revealed a **potential for efficiency gains of 15%**, achievable in the coming years of the business plan, which is therefore the new **target for 2023**. The objective by 2030 is to reduce consumption by 25%.

Water consumption within the Group (2019)

m ³	Civil and industrial aqueduct	Canal (surface water)	Well (groundwater)
Sewage and wastewater purification service	405,869	4,254	97,419
Waste treatment plants	278,088	575,343	44,365
District heating	174,150	-	-
Imola cogeneration plant	266,272	-	-
Facility	144,270	-	-
Total	1,268,649	579,597	141,784

The scope of consumption was aligned with that of the Group's water management project. It includes all the Group's purification plants, all the district heating plants in Emilia-Romagna, the six waste-to-energy plants in Emilia-Romagna, the main industrial waste treatment plants (excluding waste-to-energy plant F3), Herambiente's composting and recovery plants, and the consumption of the Group's offices in Emilia-Romagna. The reduction targets concern consumption from the civil and industrial aqueducts.

In 2019, the Group's water consumption amounted to 1.3 million m³ of water drawn from the aqueduct, 580 thousand m³ from surface water and 142 thousand m³ from groundwater. In 2019, in the Group's **purification plants**, **85%** of the water required for the process was reused (internal and external reuse), thus reducing

overall consumption. Water coming from the purification plants or reused process water is used for **52%** of total consumption also in the **waste-to-energy plants** in the Emilia-Romagna region. Lastly, in the Imola cogeneration plant, this percentage of reuse (boiler waste water) is **17%**.

The commitment to reduce the consumption of residential customers and businesses

[GRI 303-1]

The importance of extending water management saving, reuse and recovery, measures to **external domestic and business customers** was clear since the first discussions on the topic took place at the beginning of 2018, as we were aware that habits, choices and culture in the use of water resources can only improve if the company engages its service area and community in its sustainable development.

Campaigns were therefore prepared and addressed to **retail and business customers**, to analyse and help them reduce their consumption, so as to stimulate and increase virtuous and conscious behaviour in the use of water resources also among our customers.

The "**Diario dei consumi**" is the tool introduced in 2019 to support the **reduction of domestic consumption**, similar to what has already been experimented in the energy field on the basis of Thaler's behavioural theories. It is an experimental project, developed in collaboration with the "Department of Management, Economics and Industrial Organization" of the Politecnico di Milano, which in 2019 involved about 80,000 residential customers. A report is sent to them, via email, which analyses their consumption patterns in detail, comparing the volumes of water used by the individual customer with that of similar customers and the change in the customer's consumption over time. The report is also complete with tips to help customers choose some good functional water-saving household practices. The activation will be gradual and over the next four years will involve all users who have provided their e-mail address to Hera Group.

An important element to be considered in the assessment of consumption by residential customers is the data on volumes of **water sold for residential use**, which in 2018 were 131,879,000 m³ in Emilia-Romagna. The figure is not comparable with that of previous years, due to a conversion of the intended use categories to correctly apply the water tariff, which has led to substantial changes (among which the exclusion of volumes previously considered to belong to the residential use category). Even more significant is the assessment of the **average annual per capita consumption** figure of 50 m³ per inhabitant in 2018, for which the Group has set a reduction target of 5% by 2023.

On the other hand, the "**water management portal**" has been created, specifically for water-hungry **business customers**, i.e. those with water consumption of more than 50,000 m³ per year. In December, 70 companies from the area served were involved in the project. The portal is an interface that allows companies to monitor, through trend analysis, how they use water, so as to evaluate process optimisation strategies.

Wastewater purification quality

In 2019, the Hera Group operated the sewage and purification service in 228 municipalities, 48 of which as Marche Multiservizi and 16 of which as AcegasApsAmga while the coverage of the **sewage service** for all urban areas is equal to 93% of the needs of the area (population equivalents).

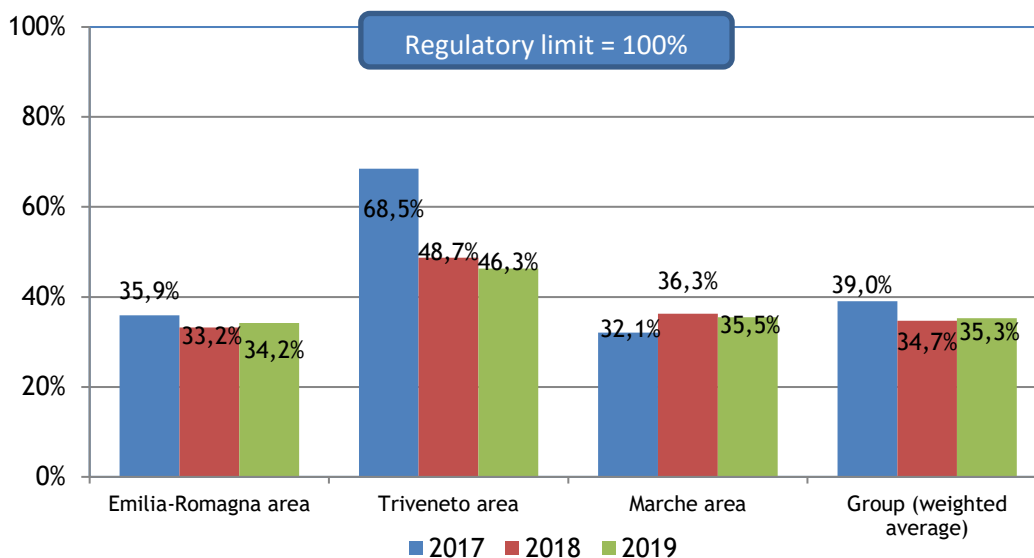
In 2019, the **purification service** covered 92% of the population equivalents in the areas served by the Group.

These values are very positive if compared with the average of the Italian utilities that were included in the Utilitatis study in 2016, at 90% for the sewage network and 88% for the purification network. Concerning the country-wide values, the latest data available are for 2007, when 85% of Italians was served by the sewage network and 70% by a purification plant. (Source: 2009 Utilitatis Blue Book). Assessing the percentage of wastewater treated compared to the total, the Italian average in 2015 was 89.9%, with negative spikes for the regions of southern Italy such as 68.5% in Sicily or 76.9% in Calabria (Source: ISPRA).

In 2019 the Hera Group treated a total of over 383 million m³ of wastewater, in line with the 2018 data (382 million m³). The sewage networks that feed those plants are generally mixed-type systems, and the volumes treated therefore depend on rainfall.

The sewage network that Hera Spa operates is approximately 14,828 km long and about 53% of the total (55% in 2014) is a mixed-type system. At Group level, our sewage network is 18,788 kilometres long, and 57% of the total is a mixed-type network.

Compliance of the purified water with the regulatory limits (optimal values <100%)



The indicator concerns the plants that serve over ten thousand population equivalents (the volumes treated in these plants are 87% of the total wastewater treated) and expresses the ratio between the measured concentration of BOD5, COD, TSS, ammoniacal nitrogen, phosphorus and total nitrogen, and the corresponding maximum concentrations allowed by Italian Legislative Decree No. 152/2006.

The efficiency in removing pollutants to comply with the regulatory limits, as expressed by the indicator in the chart, is related to the purification capacity of the plant and the technologies used. Low indicator values indicate higher purified water quality. At Group level, this indicator averages 35.3% of regulatory limits, taking into account BOD5, COD, TSS, ammoniacal nitrogen, phosphorus and total nitrogen, and 26.5% excluding phosphorus and total nitrogen. The indicator that expresses the efficiency of removal of the main pollutants improved slightly compared to previous years, also due to the fact that some large upgrade projects that started in previous years are nearing completion. In particular, with regard to the Triveneto area, in the first few months of 2018 the new biological section of the Servola purification plant in Trieste was launched, and went into operation in June 2018. This led to a significant improvement of the results compared to previous years, when the plant was only primary chemical-physical as reflected in the data for 2018–2019.

[GRI 303-2]

The water leaving the purification plants must comply with the applicable regulations, Italian Legislative Decree No. 152/06 as amended and the permit requirements. For discharges of municipal wastewater into urban areas of more than 2,000 population equivalents, required to comply with the tables in Annex 5 of Italian Legislative Decree No. 152/06, a Protocol for the proper performance of control activities between ARPAE/ARPAT has been drawn up, aimed at planning the number of annual controls on the discharge, to assess the conformity of the discharge, while for discharges in smaller urban areas (less than 2,000 population equivalents) the limits of acceptability and the appropriate treatment are set by the Regions. Group procedures are used to manage and plan the controls, to handle anomalies and non-conformities to the rules

and regulations on the integrated water service, at EU, Italian, regional and provincial level, in the individual provinces and municipalities of the Hera Group's service area.

The following table shows the main enhancement and upgrade measures of purification plants completed during the year and in progress.

Main purification plant expansion/improvement measures

Plant	Populati on equiv.	Progress (at end 2019)	Type of measure	Environmental benefits expected/obtained
Lugo (RA)	270,000	Completed	Measure to achieve plant's compliance with regulations	Improvement of purification efficiency
Ravenna	240,000	Construction in progress (to be completed in 2020)	Purification plant revamping, water line and sludge/centrifuge room	Improved handling of water purification sludge and greater efficiency of the plant
Cesena (FC)	197,500	Completed	Measure to achieve plant's compliance with regulations	Improvement of purification efficiency and upgrade of drainage
Ca' Nordio (PD)	197,000	Ongoing (to be completed in 2022)	Plant upgrade measure	Increase of the nominal power of the system to 230,000 pe
Borgheria (PU)	116,500	Ongoing (to be completed in 2021)	Measure to achieve plant's compliance with regulations	Improvement of purification efficiency and of compliance with applicable regulations. EC Infringement Resolution 2009/2034 and 2014/2059
Imola (BO)	75,000	Construction in progress (to be completed in 2020)	Reclamation of Santerno purification plant digesters	Improved handling of purification sludge
Montecchio (PU)	30,000	Construction in progress (to be completed in 2021)	Plant upgrade measure	More effective treatment and greater guarantee of compliance with applicable regulations EC Infringement Resolution 2014/2059
Sasso Marconi (BO)	12,000	Construction in progress (to be completed in 2020)	Purification plant revamping	Improvement of purification efficiency and upgrade of drainage
Orciano (PU)	3,300	Under construction – purification portion completed, sewage to be completed (conclusion by 2021)	Plant upgrade measure	More effective treatment and greater guarantee of compliance with applicable regulations EC Infringement Resolution 2009/2034 and 2014/2059

Percentage of analyses on outgoing purification plant water compliant with regulations

%	2017	2018	2019
Plants with over 10,000 population equivalents	99.0%	99.7%	99.5%
Plants with less than 10,000 population equivalents	99.5%	99.8%	99.9%
Weighted average	99.1%	99.7%	99.6%

Considering the 9,411 analyses carried out in 2019 on 226 purification plants, in 99.6% of the cases the results were compliant with the regulatory limits. The final values for this indicator in 2019 show a very satisfactory situation with excellent percentages of the total checks found compliant. The only cases that exceeded the authorised limits were in relation to purely incidental situations, largely compatible with the variability of the incoming quantities, the operating conditions and the structural condition of the plants.

Wastewater purification quality can also be identified by monitoring the upgrade trends of urban areas, defined as areas in which population and production activities are concentrated to the extent that it is technically and economically acceptable to build an independent sewage purification system. As set out by Directive 91/271/EEC, Italian Legislative Decree No. 152/2006, and by the Water Protection Plan of the Regional Government of Emilia-Romagna, compliance requires that at least 95% of wastewater must be collected and the capacity of the purification plants must exceed the requirement for the population equivalents of the urban area with secondary or tertiary treatment (where necessary).

The adaptation of the sewage-water purification system, urban areas

	2019	2021
Urban areas compliant for purification >2,000 pe (qty)	129	135
Urban areas compliant for purification >2,000 pe (% population equivalents)	97.3%	100%
Urban areas compliant for purification <2,000 pe (qty)	171	247
Urban areas compliant for purification <2,000 pe (% population equivalents)	72.8%	98.9%
Urban areas compliant for purification total (qty)	300	382
Urban areas compliant for purification total (% population equivalents)	96.50%	99.96%

The urban areas <2,000 pe are in the Emilia-Romagna Region, for which they are all between 200 and 2,000 pe, and in the Friuli-Venezia Giulia Region. There are no urban areas <2,000 pe in the areas served by the Group in the province of Padua, and the Marche Region has not yet issued provisions regarding urban areas <2,000 pe.

At Group level, at the end of 2019, 129 of 135 (95.6%) **urban areas with more than 2,000 population equivalents** (pe) have been upgraded to comply with Italian Legislative Decree No. 152/2006. Under Regional Authority Decision 569/2019, the Regional Government of Emilia-Romagna has updated the population equivalent numbers and the perimeters of the urban areas, which have therefore changed, in the Group's service area from a total of 137 urban areas to a total of 135. In 2019 Trieste Muggia joined the urban areas that had already achieved compliance in 2018: the Servola plant started operation in June 2018 respecting all discharge parameters and in 2019 the urban area was released from the EC infringement procedure. Compliant urban areas amount to 97.3% of the total equivalent population. It should be noted that the percentage is not easily comparable with that reported in the 2018 Sustainability Report (92.2% of the population equivalents), due to the update of the stocks and perimeters of the urban areas of Emilia-Romagna, mentioned above. In **Emilia-Romagna** 100% of the urban areas with more than 2,000 pe are compliant. In 2017, in fact, the Ministry for the Environment formally informed the Regional Government of Emilia-Romagna that it had withdrawn infringement procedure 2014/2059, which therefore ended reinstating the compliance of the region's 206 urban areas with >2,000 pe, of which 101 (at the time 102) are served by Hera. In 2016, all of those urban areas had achieved the quality objectives set out in the Water Protection Plan of the Regional Government of Emilia-Romagna, in terms of extension of the networks and the presence of treatment plants. As far as **Triveneto** is concerned, thanks to the above-mentioned adaptation of the urban area of Trieste Muggia for a total of 256,882 population equivalents, 100% of the urban areas served in the territory is now compliant for purification. In the **Marche** region, in the area served by the Group, six urban areas have been declared non-compliant and infringement procedures 2014/2059

and 2009/2034 have been initiated. Action is already planned to bring each urban area into line with the requirements of Community and national regulations by 2021. By 2021, therefore, all urban areas with a population equivalent greater than 2,000 in the service areas of Hera will have achieved compliance.

In addition to the above, the Regional Government of Emilia-Romagna, in its resolutions 201/2016 and 569/2019, on the upgrade of municipal wastewater discharges, ruled to implement some additional measures in **urban areas with more than 10,000 pe**. These are structural adjustments relating, for example, to the upgrade of network floodways or more thorough nitrogen abatement. Although these situations do not undermine the compliance of those urban areas to Italian Legislative Decree No. 152/2006, they may locally jeopardise the achievement of quality objectives for water bodies. Therefore, the Regional Government of Emilia-Romagna, together with the integrated water service operators, have defined timescales and compliance criteria in the aforementioned resolution. Four measures have already been carried out (Riccione in 2017, Cattolica in 2018, Castel San Pietro and Lugo in 2019). A further seven measures are planned by 2021 (urban areas of Budrio, Medicina, San Giovanni in Persiceto, Savignano sul Rubicone, Alfonsine, Lido di Classe - Lido di Savio, and Massa Lombarda), for a total of 11 measures. In addition to these, 8 measures are planned by 2024 and 16 by 2030. It should be borne in mind that a total of 25 urban areas are affected by the 35 improvement measures, some of which involve more than one intervention in different years.

As to **urban areas under 2,000 pe**, (between 200 and 2,000 for Emilia-Romagna), where there are still critical issues for subjecting the final effluents to appropriate treatment, Regional Government of Emilia-Romagna identified and set the timeframe for achieving compliance in its Resolutions 201/2016 and 569/2019 as: 31/12/2018 to prepare the detailed plan; 31/12/2021 to implement the measure. In 2019, an urban area in the Modena area was made compliant for a total of 435 population equivalents. Compliance is to be achieved by end 2021 in 76 urban areas in Emilia-Romagna for a total of about 40 thousand population equivalents. It should be noted that the data are not comparable with those reported in the 2018 Sustainability Report, due changes in population and perimeters of the urban areas of Emilia-Romagna, mentioned above. In the area served in Triveneto there are 37 urban areas of less than 2,000 pe, of which 34 were already compliant with regulations in 2018, one complied in 2019 (Longera, with 309 population equivalents) and two will be upgraded in coming years. Considering Emilia-Romagna and Triveneto, there are 249 urban areas with less than 2,000 pe for a total of 153 thousand population equivalents, of which 68.7% are compliant (171 urban areas for 112 thousand population equivalents, equal to 72.8% of the population equivalents). By 2021, 247 urban areas out of 249 (99.2%) with less than 2,000 pe will be made compliant. With regard to urban areas of less than 2,000 pe in Marche, the Regional Government is still at a standstill having done their initial identification, without having yet issued provisions in this regard.

Constructed wetlands

Constructed wetlands are a natural process used to treat polluted water based on the capability of soil and vegetation to remove pollutants. They are designed as a system of biological ponds and of planted macrophyte vegetation. The purification process is completely environmentally friendly and does not involve the use of chemicals. The wastewater arriving at the plant flows into a bed of gravel and aquatic plants: here microorganisms come into play to eliminate the pollutants present. The action of the plants is fundamental because the micro-organisms necessary for the entire system develop in their roots; they absorb the oxygen produced by the plant species and trigger the processes necessary for purification of the wastewater.

This kind of treatment also contributes to the reclamation of borderline areas, creating natural environments and landscapes that are pleasing to the eye, and often chosen as refuges for various species of birds, amphibians and reptiles.

Hera Spa operates eighteen small or medium-capacity constructed wetlands, located in the provinces of Bologna, Florence, Forlì-Cesena, Rimini and Ravenna: some are secondary biological treatment plants downstream of primary sedimentation while others are tertiary treatments used for final refinement of the

wastewater before its final discharge. Marche Multiservizi operates five constructed wetlands plants with a potential of between 80 and 180 population equivalents.

Case study

Transition towards a circular economy

European circular economy package: Hera leads the way

While in Italy the Council of Ministers approved, under preliminary examination, four legislative decrees implementing the European directives on waste, landfills and end-of-life vehicles (Council of Ministers of 5 March 2020) included in the "circular economy package", Hera confirmed its targets on packaging recycling and landfill reduction, showing that it is **ahead of both European targets for municipal waste**.

In the Group's service area, the targets for landfill use have already been achieved (3.4% at the end of 2019 compared to the 2035 objective of not over 10%) while we are on track to reach the target for recycling of packaging (72% in 2018 compared to a target of 65% by 2025 and 70% by 2030). The service area is also on track to reach the overall target recycling rate (53% at the end of 2018 compared to the 2025 objective of 55%, 60% by 2030 and 65% by 2035). The data for these last two targets will be updated to 2019 in the coming months and as usual published in the "Tracking Waste" report.

Achieving and exceeding the European targets on municipal waste contribute to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**. The publishing of the "Value to energy" report contributes to achieving **target 12.8 of the UN's 2030 Agenda**.

Projects and collaborations with national and international networks for the circular economy

In October 2017, the Hera Group was the second Italian company to join the **Ellen MacArthur Foundation's** prestigious international CE100 programme and immediately started a close collaboration relationship to implement the projects carried out to create shared value through activities inspired by the circular economy principles. In addition to large groups concentrated mainly in Europe, the United States and South America, the programme also includes institutions, universities, small and medium-sized enterprises, with the aim of promoting awareness of these issues, the exchange of experience, the launching of partnership projects and collaborations in the field of research and development. Through the Ellen MacArthur Foundation, the Group has the opportunity to increase the exchange of ideas with other members of the CE100 programme, to increase the creation of shared value and contribute to long-term sustainable development.

2019 was the first year of reporting on the **New Plastics Economy Global Commitment**, an initiative set up by the Foundation to make the plastics sector more circular, and joined by the Group in 2018 with challenging goals.

During 2019, the Hera Group also participated in the development of "**Circulytics**", a digital tool that supports transition towards the circular economy. Launched in January 2020, the Foundation developed this tool in collaboration with over 30 international partners. It supports decision-making and the adoption of circular economy principles in business strategies, demonstrates strengths and highlights areas for improvement, provides transparency to investors and customers on circularity projects, to generate value in a multi-stakeholder perspective. Hera Group participated in the beta testing of Circulytics with its Hera Luce subsidiary, a company that has long supported circularity in public lighting by including circular economy parameters in its tenders. In 2017 Hera Luce participated in the definition workgroup for the minimum environmental criteria (Criteri Ambientali Minimi – CAM) which is now recognised as a best practice in the field, in line with the criteria of the tool developed by the Mac Arthur Foundation.

Hera is also among the promoters of the **Circular Economy Network**, a project promoted by Fondazione per lo Sviluppo Sostenibile (a foundation for sustainable development) and by a group of companies and trade associations involved in the transition to a circular economy. Other significant events in 2019 included the

first National Conference on the Circular Economy, held on 1 March in Rome, at which the Report on the Circular Economy in Italy, produced in collaboration with ENEA, was presented.

Moreover, since its foundation, Hera has been a member of the **Italian Circular Economy Stakeholder Platform** (ICESP), created in 2018 as a mirror of the European Circular Economy Stakeholder Platform – ECESP initiative, which promotes the Italian way for circular economy, by involving Italian stakeholders committed to the issue. At the second ICESP Annual Conference, held by ENEA in Rome on 27 and 28 November 2019 at their headquarters and the Italian Chamber of Deputies, the priorities for the definition of a strategic agenda for the circular economy in Italy, as for other European States, were identified.

The projects and collaborations with Italian and international networks contribute to achieving **targets 17.16, and 17.17 of the UN's 2030 Agenda**.

Hera Group's commitment to the new plastics economy

Hera is one of the 250 companies worldwide, the only Italian multiutility company that in 2018 has signed the **New Plastics Economy Global Commitment** of the Ellen MacArthur Foundation, in collaboration with UNEP, the United Nations Environment Programme. The Foundation's initiative has the ultimate aim of tackling the problem of plastic pollution at the source and making the entire supply chain more circular: eliminating disposable products as much as possible, producing and using only recyclable, reusable or compostable packaging and promoting the use of recycled plastic. For this reason, the Foundation has created a global movement, involving all players in the supply chain, such as plastic packaging manufacturers and companies that use them to pack their products, large retailers, recycling companies, but also governments and investors.

Hera Group is committed to:

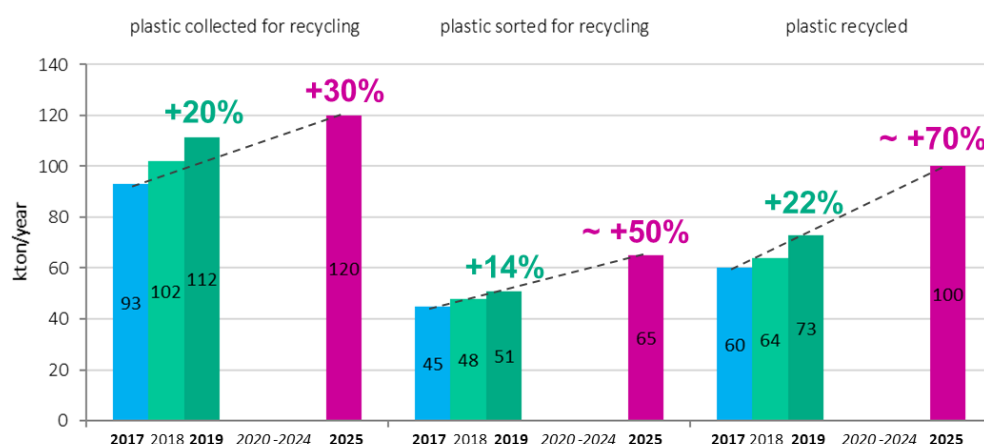
- increase by 2025 the amount of plastic collected in the municipalities served, by 30%;
- increase by 50% the amount of plastic sorted and recycled by the Group's plants;
- increase the plastic recycled sold by Aliplast by 70%.

To date, the Global Commitment has been signed by more than 400 organisations worldwide:

- 5 major investors who have committed to a plan worth over \$200 million;
- 19 governments and public administrations on 5 continents;
- more than 200 companies active in the different stages of the plastic packaging value chain, which together account for more than 20% of the plastic packaging volumes used globally;
- more than 200 institutions, including National Geographic, WWF, World Economic Forum, Consumer Goods Forum, International Union for Conservation of Nature (IUCN), 50 universities and research institutions, 27 financial institutions.

The first Progress report was published in October 2019, and contained data from 176 companies (93% of those eligible for reporting, depending on the date they became members) and 14 governments/administrations (of the 16 eligible for reporting). The momentum created around the issue of the circular plastic economy is unprecedented and the initial progress made by the signatories is noteworthy. Despite this, efforts to eliminate the problem of plastic waste pollution at source must advance towards a higher level of ambition. The data reported on that occasion by the Hera Group was for 2018.

New Plastics Economy Global Commitment Progress 2019



The data of the Hera Group at the end of 2019 show **gradual and positive progress** compared to the objectives, showing that the **direction is the right one**. Achieving the targets will be possible only by continuing the efforts on the innovation front and by leveraging the Group's industrial capacity, but also requires the fundamental contribution of citizens, in the framework of a logic geared towards – also on this front – encouraging reuse and recycling, thus extending as much as possible the average life of products and plastic materials.

The same targets were presented by Hera in the context of the "EU-wide pledging campaign for the uptake of recycled plastics", the campaign promoted by the European Commission to accelerate the diffusion of recycled plastics and achieve the European target of ten million tonnes of recycled plastic used for new products by 2025.

Achieving the objectives on the plastics supply chain contributes to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**.

A new waste tariff for 13% of the residents served by Hera in Emilia-Romagna

During 2019, Hera managed the third year of application of large-scale quantity-based tariff, ending the trial phase and becoming fully operational, thanks to an integrated management of systems and processes that has allowed its effective and uniform application in all its aspects and phases, from customer management to the measurement of mixed waste disposed of, and up to final invoicing. The new system is a fairer and more transparent way to finance waste management services and can promote virtuous behaviour and participation in separate waste collection.

In particular, the first year of application of quantity-based tariff was completed in **8 municipalities in the service area**, in addition to the 8 municipalities already applying it in 2018, for a total of 16 municipalities using the method in Emilia-Romagna.

Municipality	Province	Residents at 1-1-2019	Start year of quantity-based tariff	SWC band (%)
Budrio	Bologna	18,460	2016	More than 85%
San Giovanni in Marignano	Rimini	9,452	2017	More than 85%
Bastiglia	Modena	4,263	2018	More than 90%
Bomporto	Modena	10,189	2018	More than 90%
Castelfranco Emilia	Modena	33,059	2018	More than 85%
Ferrara	Ferrara	132,052	2018	More than 85%
Monte San Pietro	Bologna	10,875	2018	More than 85%
San Cesario sul Panaro	Modena	6,513	2018	More than 85%
Cattolica	Rimini	17,143	2019	More than 75%
Coriano	Rimini	10,595	2019	More than 75%
Dozza	Bologna	6,587	2019	More than 90%
Marano sul Panaro	Modena	5,264	2019	More than 85%
Misano Adriatico	Rimini	13,400	2019	More than 85%
Mordano	Bologna	4,683	2019	More than 90%
Spilamberto	Modena	12,859	2019	More than 90%
Vignola	Modena	25,493	2019	More than 85%

The new tariff system has thus reached about **321,000 inhabitants in 2019**, equal to 13% of the residents of Emilia-Romagna served by the Hera Group through the integrated management of municipal waste.

For these municipalities, the new quantity-based collection services have been activated and personal equipment for disposal has been distributed to all citizens and companies. For an effective and consistent introduction of the new tariff model and the new services, special control rooms have been set up jointly between Hera and the municipal administrations.

The necessary communication initiatives have also been taken to inform and involve users on how the new system will be introduced. Notable communication initiatives implemented include:

- articles and press releases to report the initial results;
- information meetings open to citizens and dedicated meetings for trade associations;
- setting up additional information points to support citizens and distribution of information materials;
- sending letters to homes to explain the introduction of quantity-based tariff to domestic and non-residential users;
- systematic updating of the customer website with dedicated information for each municipality.

The increase in the percentage of separate waste collection, thanks to the behavioural change induced by quantity-based tariff, contributes to achieving **targets 11.3, 11.6, 12.2, 12.4, 12.5, and 12.8 of the UN's 2030 Agenda**.

Circular economy and separate waste collection: 92% has been recovered

For the tenth consecutive year Hera published its "Tracking Waste" report, which transparently and completely certifies that the percentage of separate waste collection actually recovered by the company reached **92%** in 2018, divided into 91% of material recycling and 9% of energy recovery that is obtained exclusively in the plastic and green waste sectors. The initiative regarded the main materials that are collected separately: green waste, paper, organic waste, glass, plastic, wood, iron and metals (aluminium, steel and tinplate packaging).

The report, that for the first time covers the entire Group, shows a recovery rate of 97% for green waste, 92% for paper, 92% for organic waste, 96% for glass, 72% for plastic, 98% for wood, 98% for iron and 93% for metal, and over 302 kg of separate waste collected per capita.

To produce this year's report, **46 companies** were involved, that operate **60 first-destination waste plants**. Thanks to them we have gone up the entire recovery chain, tracing the 179 final recovery plants managed by 165 companies that **regenerated, renewed and entered into a circular economy cycle** the waste from separate waste collection, reinstating it in the production cycle in a circular economy perspective. Of these, 45 plants are in the Group's service area.

The report also includes two sections on Hera's initiatives for the circular economy, which summarise the main initiatives for recycling and reuse and for the circular economy and the Group's commitments and results in relation to the European Commission's objectives in terms of recycling and use of landfills. Lastly, for the second year in a row, there is a section that for each material allows users to see the percentage collected separately and recycled, but also the portion still present in the mixed waste, highlighting the important effort still to be made by all.

The report was presented at the international Ecomondo 2019 event, and emphasizes how recovery is one of the key supply chains of the green economy. The circular economy of recovery, in fact, feeds 165 recovery facilities that employ a total of **20 thousand people** and achieve a total turnover of over Euro **12 billion**. To ensure maximum transparency and reliability of the data provided, the report was examined and entirely audited by DNV GL.

The extended contents of the project and further in-depth data can be found on the website www.gruppohera.it/report.

The improvement in the rate of separate waste collection contributes to achieving **targets 12.2, 12.4, 12.5, and 12.8 of the UN's 2030 Agenda**.

McDonalds and Coprob: two important partnerships signed in 2019 to "close the circle"

In November 2019, at Ecomondo – Europe's reference event on technological and industrial innovation in the circular economy — **McDonald's** and the **Hera Group** signed an agreement to reduce the quantity and improve the quality of separate waste collection in the company's 30 restaurants served by multiutility in Emilia-Romagna. The agreement, which starts on 1 January 2020, is designed to increase the **separate waste collection** of recyclable waste such as paper and organic waste, by implementing a monitoring action that constantly assesses the quantity, but above all the quality, of the waste produced. The project will last **two years** and will involve **30 restaurants in 14 different municipalities**, for an average of 45,000 McDonald's customers per day.

The project was born after a **trial project** that measured the quantity and quality of waste produced in McDonald's restaurants in **Ferrara**, by putting in place specific actions to raise awareness on the correct disposal of each type of waste. According to the surveys carried out by Hera during trial project, these restaurants achieved an average of around 90% separate waste collection. Important data, which have led the two companies to set themselves the goal of achieving similar performance in other restaurants under their collaboration agreement. To do so, they will introduce a new model of waste container, designed jointly with Hera, to help customers separate what remains on their tray at the end of the meal more properly, so as to minimise waste disposal errors. For the success of the project, it will be fundamental to raise awareness and engage customers, who will be the recipients of a dedicated campaign that will also be carried out inside the restaurants.

Also in 2019, **Herambiente** and **Coprob**, a beet growers' cooperative and the only sugar producer in Italy based in Minerbio (Bologna), started a five-year collaboration to use compost land used to grow beets. Herambiente will supply the Cooperative with the organic matter, i.e. the compost produced in the six,

quality-certified Herambiente plants in Emilia-Romagna, to use in the fertilisation plans of the associated farms, to replenish the soil with the organic resources essential for its complete fertility. The aim is to feed the land with an organic product and at the same time experiment its use, to test its effectiveness, with a qualitative and quantitative evaluation of the crops involved: a valid example of agreement between different production sectors that aims to address both environmental and productive issues. From the organic waste of the population, through the local separate waste collection, the matter returns to the soil, **closing the biological cycle**. From the 370,000 tonnes of waste treated each year, in fact, 50,000 tonnes of compost are obtained through a natural decomposition process. The recovery of organic matter in the company's plants also makes it possible to produce biogas or biomethane.

The two important projects described here contribute to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**, as well as – thanks to the partnerships developed – contributing to achieving **target 17.7**.

Evaluation of circularity with the Hera Luce tool

In 2017, Hera Luce developed an evaluation system to **measure the circularity of public lighting systems** in terms of life cycle, based on an analysis of material flows (materials used in relation to their origin and end-of-life destination) and economic flows (costs/revenues at the beginning and end of the life cycle). This approach to measuring circularity was already in line at the time with the guidelines of the Ministry for the Environment (MATTM), and was then confirmed to be consistent with the most recent international methodological approaches, such as the Circulytics tool developed by the Ellen MacArthur Foundation during 2019. As specified in another case study of this Report, Hera Luce also participated in the beta testing of Circulytics.

The system used to evaluate the circularity of Hera Luce's installations also anticipated the requirements of the Minimum Environmental Criteria (CAM) for public lighting services, which since 2018 require that this evaluation be carried out in all calls for tenders. The CAMs were approved by Ministerial Decree on 28th March 2018 and they contain, in paragraph 4.5.4, the requirement for the Bidder to carry out the material balance. It should be noted that Art. 34 of Italian Legislative Decree No. 50/16 also states the mandatory compliance for tenders with CAMs by including in the design and tender documentation the technical specifications and contractual clauses contained in the minimum environmental criteria adopted in the decree of the Ministry for the Environment, Land and Sea Protection. Since then Hera Luce has won tenders in the municipalities of **Ferrara, Lugo, Tavullia, and Cervia**.

The drafting of the material balance during the tender phase was a **winning evaluation criterion** during the tender phase and enabled Hera Luce to win the tenders. For example, the call for tenders issued by the Municipality of Ferrara awarded 10 points on the basis of the quality, durability, robustness of the proposed materials and on the environmental and social impact of the project and the materials. The call for tenders issued by the municipality of Lugo awarded 5 points for the preparation of the material balance and 6 points for the type of materials proposed, judged on the basis of quality, durability, robustness of the materials and environmental impact.

The evaluation system previously prepared by Hera Luce and the sensitisation process started with the suppliers, enabled the Company to win the tenders because it had built for itself an advantage over the competitors who did not appear, at least until the CAM came into force, to be attentive to the issues of circularity and environmental sustainability. Hera Luce's efforts concerning circularity and sustainability have led the Administrations to consider it a partner capable of conveying the topics of sustainable, intelligent and supportive development and therefore to promote the achievement of the UN's 2030 Agenda targets.

In coming years, the Hera Group will also **extend the use of Hera Luce's circularity assessment tool to water connection sites**, in line with the internal circularity projects that the company has been implementing in recent years and which are discussed in this Report, such as the recycled plastic pipes produced and used on construction sites and the assessment of the circularity of supplies.

The use of the Hera Luce tool contributes to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**.

With Riciclandino we help the environment and schools

Riciclandino is environmental initiative for young people and families that involves the part of a town's residents that is tied to schools, considered as an institution and community of people. Under the project, the more separate waste collection is done by residents, by delivering their waste to drop-off points, the more points are given to their local school, giving it the possibility to receive financial incentives.

Families of students can use their Riciclandino Card to dispose of waste at drop-off points, obtaining a discount on their own bill, as per municipal regulations, and providing a matching incentive to their child's school. The added value of the initiative is raising environmental awareness and sharing actions that create and strengthen the civic and social sense of the community.

The project was launched in 2010 in Ravenna. In 2019, the 18 municipalities of Ravenna and 22 municipalities in the Modena area joined the association, for a total of 40 municipalities. In the 2019-2020 school year, Riciclandino involved 246 schools in the province of Ravenna and 172 in the province of Modena, for a total of 74,580 students. The participating schools were awarded prizes for their work, amounting to over Euro 114,300. As part of the project, more than 787 tonnes were delivered to drop-off points in the province of Ravenna, and 821 tonnes in the province of Modena, for a total of 1,608 tonnes of waste brought by children and their families, 171 tonnes more than those collected in 2018.

The delivery of separated waste to the drop-off points by students and families contributes to achieving **targets 11.3, 11.6, 12.2, 12.4, 12.5, and 12.8 of the UN's 2030 Agenda**, as well as – thanks to the involvement of schools – contributing to achieving **target 17.7**.

Cibo Amico (Food Friend): 100,000 complete meals recovered in Hera's canteens since the beginning of the project

Launched in 2009 with the support of Last Minute Market, a company of the University of Bologna that promotes environmental sustainability and the fight against waste, Cibo Amico is a concrete action taken by our company to promote the development of the circular economy, linking different businesses of the area for a shared social responsibility, addressing a concrete help to the neediest. Currently there are five company canteens involved: Bologna, Granarolo dell'Emilia, Imola, Rimini and Ferrara. The recovered meals are donated to non-profit organisations in the area that provide hospitality and daily care for people in need. In 2019 alone, more than 9,700 complete meals were recovered and given to four local non-profit organisations that assist about 115 people daily, corresponding to more than 4 tonnes of food worth over Euro 42,000. This also avoided the production of 4.3 tonnes of waste, corresponding to the capacity of about 10 bins and the emission of almost 19 tonnes of CO₂ into the environment. In addition, the waste of water, energy and land consumption that was necessary to pack those meals was avoided.

After ten years from the start of the project around over 100,000 meals have been donated overall for an overall economic value of about Euro 417,000. This avoided the production of 44 tonnes of waste (corresponding to about 95 bins) and the emission of about 186 tonnes of CO₂.

There are many partners of non-profit organisations in the area involved to ensure increasingly important results such as: Fraternità Cristiana Opera di Padre Marella - Pronto Soccorso Sociale of Bologna, Fraternità Cristiana Opera Padre Marella Città Dei Ragazzi of San Lazzaro di Savena, Associazione Comunità Papa Giovanni XXIII of Rimini and Associazione Viale K of Ferrara. In addition, there are many partner organisations of the initiative, where the recovered meals are served: the Pronto Soccorso Sociale of Bologna, the "Gemma Nanni Costa" therapeutic community of San Lazzaro di Savena, Capanna di Betlemme of Rimini, Casa della Donne, Casa Mambro and Mensa in via Gaetano Pesci of Ferrara.

At the end of 2017, *Cibo amico* also went beyond company canteens to involve a city market. The initiative, created on the basis of a proposal of HeraLab Modena, is carried out with Consorzio del **Mercato Albinelli** and the collaboration of the municipality of Modena and the non-profit organisations Porta Aperta and CEIS Group. While in the canteens the objective was the recovery of unconsumed meals, the collaboration between Hera and the Albinelli traders aims to avoid the waste of the fresh products that, at the end of the day, can be left over on the market stalls: food that is still perfectly edible but that, for various reasons, the next day could no longer be sold. Food recoveries from individual retailers takes place every Wednesday and Friday when the Mercato Albinelli is open, it is mainly bread and baked goods, and fresh fruit and vegetables. There is now a virtuous alternative for these products, which otherwise would be thrown away, thanks to the collaboration between the municipality of Modena, the Hera Group and the market itself. Traders can choose to donate their unsold goods to the CEIS Foundation, so they can be recovered and used to benefit people in distress. In 2019, more than 3,700 kg of food was collected and reused by 28 operators who collaborated in the project. The Italian Bike Messenger (IBM) association is among the partners involved in the project, the headquarters of which is within the Mercato Albinelli and provides support for the delivery of surpluses in case of need.

Waste prevention initiatives, such as *Cibo amico*, contribute to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**, as well as – thanks to the partnerships with the non-profit organisations – contributing to achieving **target 17.7**.

FarmacoAmico ("Medicine Friend"): *more than 312 thousand packages of pharmaceuticals not yet expired have been recovered*

FarmacoAmico is the project promoted by Hera to collect medicines that have not yet expired and to create a charitable reuse network in the local area. The intact pharmaceuticals, which must still have at least six months to go before their use-by dates and which have been properly stored, are thus reused by non-profit organisations that operate in local or decentralised cooperation projects. The goal is to prevent the production of waste, spreading good practices on the decrease of waste and supporting the organisations that help the weaker sections of society.

Launched in 2013, in Bologna, the *Farmaco Amico* initiative was jointly organised with Last Minute Market and currently involves 25 municipalities in Emilia-Romagna where there are about 1.5 million inhabitants (61% of the population served).

In 2019, more than **55,000 packages of pharmaceuticals** (+21% on 2018 values) for a total value of more than Euro 668 thousand (+21.7% on 2018 values) were sent for reuse. The new activations that occurred during 2019 (Dozza, Ozzano nell'Emilia, Cintura Modenese, Cervia, and Cesena) and the coming activations planned for 2020, certainly confirm the growth of the project as a whole.

The project involved a total of 142 pharmacies and 28 third sector organisations, some of which operate in Italy and others abroad, as well as several partners, institutions, trade and business associations, for a total of 45 parties involved.

Since the beginning of the project, more than 312 thousand packages of pharmaceuticals with a total economic value of **Euro 3.5 million** have been collected and sent for reuse, corresponding to an equivalent saving for the National Health System. For the third year in a row, we cooperated with the ANT Association to promote an initiative to raise the community's awareness of the *FarmacoAmico* project in the Bologna area, an initiative that involves students from high schools in Bologna, to support the school-work alternation paths required by the Italian education system.

Waste prevention initiatives, such as *FarmacoAmico*, contribute to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**, as well as – thanks to partnerships with non-profit organisations – contributing to achieving **target 17.7**.

Cambia il finale (Change the Ending) is an ongoing success: 850 tonnes of bulky waste collected in 2019

The project, now at its sixth year of activity, makes it possible to intercept all objects in good condition otherwise to be disposed of as bulky waste and allow their reuse, thanks to a network of third sector organisations spread throughout the area, giving a new life to the goods donated by citizens. The project is linked to the specific memorandum of understanding between Atersir and Hera on the management of bulky waste, developed in collaboration with Last Minute Market. The goods can be donated by residents to a circuit of non-profit organisations in Emilia-Romagna that collect more or less bulky goods at their headquarters or door-to-door, giving them to second-hand markets, using them in their offices or donating them to people in need. The collection of goods carried out by our partner organisations is promoted through all of Hera Group's communication tools, in particular through call centre operators, who offer users the possibility of donating bulky objects in good condition if they intend to dispose of them.

The initiative promotes good habits related to reuse and generates positive social effects thanks to the activities of the third sector organisations involved, in line with Hera Group's social responsibility and environmental protection principles. It also responds to current developments in environmental regulations, which aim to establish a management model based on the concepts of prevention and reuse.

At the end of 2019, 18 participating partner organisations were distributed throughout the Emilia-Romagna region served by Hera, ensuring the coverage of all its main cities. In 2019, the organisations received over 8,600 phone calls from residents willing to donate bulky goods and performed over 6,700 collections, for a total of about 218,000 items and about 854 tonnes collected, confirming results in line with the previous year. The majority of the goods donated were dispatched to be reused, with an average percentage close to 75%: from January to December 2019 the project as a whole therefore made it possible to avoid a total of about **634 tonnes** of bulky waste, an increase compared to the previous year with great savings to the benefit of the environment and lower charges for waste collection.

Moreover, as part of the "Cambia il finale" project, during 2019 two "reuse boxes" were set up in the municipalities of Modena and Ravenna, in addition to the "reuse box" installed in 2018 in the municipality of Ferrara. It is a real box inside the Hera Collection Centres, where residents can bring furniture and small objects that are in good condition, which are collected and sent for reuse by accredited third sector bodies. In 2019, 214 donations were made by citizens, for a total of 1,595 items, corresponding to 4,400 kg of goods.

Waste prevention initiatives, such as Cambia il finale, contribute to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**, as well as – thanks to the partnerships with the non-profit organisations – contributing to achieving **target 17.7**.

Recycled plastic to be used for the pipes of future network services

The Hera Group, thanks also to the expertise of its subsidiary Aliplast, the Italian leader in plastic treatment and recycling, is the first company in Italy to start an important experiment to use recycled, traced-origin plastic to build polyethylene pipelines. The first construction site, where the laying of the pipes has just been completed, concerns a total of one kilometre of electricity grid, partly in the area of Modena and partly in that of Imola. The second construction site involved two kilometres of sewage network in the municipality of Bellaria-Igea Marina (RN), thus bringing further added value to the plan to safeguard Rimini's bathing area, the largest sewage restoration project ever carried out in Italy. For the development of pre-production and for laboratory tests, Hera has made use of the expertise of Idrotherm 2000, Italian excellence in the construction of pipes for network services: this has allowed Hera to obtain a multilayer polyethylene pipe with low environmental impact, at least 70% of which comes from recycled material without any cost increase and with identical technical performance. After this initial phase, the new method of pipeline construction could be extended to other construction sites and, in the future, to other uses, thus making it possible to achieve important sustainability objectives. On the basis of the metres of new pipes that Hera lays on average over a year, the use of recycled plastic could in fact guarantee an estimated CO₂ saving, for the electricity grid alone, of 126.6 tonnes, equal to the annual emissions of 95 medium-sized vehicles

(assuming that each of them covers 10,000 km). Once the first experience of laying pipes in recycled plastic material has been successfully completed, a further refinement of the pilot project is on an industrial scale, which will involve the adoption of these materials in a further 4 pilot sites for laying and durability tests.

In addition, in 2020 to 2023, applying the principles of circularity, both material and economic, we plan to implement a circularity evaluation model to some simpler and more repetitive assets, in order to optimise them in terms of sustainability, by redefining standards and procedures.

The process envisages the following steps:

- Project circularity evaluation system

Implementation of calculation tools to assess the material circularity of networks and systems throughout their life cycle, as already required for public lighting with the introduction of Minimum Environmental Criteria (CAM).

- Process Optimisation

Application of the analysis system described above to certain types of assets, in order to optimise processes in terms of choice of materials, construction technologies and maintenance methods, to minimise the impact on material consumption and maximise the use of secondary raw materials.

- Development of new standards and procedures

The results of the analyses so developed will be translated into new standards and procedures to design, build, operate and maintain the assessed infrastructure.

The project to apply circularity in construction sites contributes to achieving **targets 12.2, 12.4, and 12.5 of the UN's 2030 Agenda**.

SCART®: the beautiful and useful side of waste

In 1998, Waste Recycling (a company now merged into Hasi) started up SCART®, an ecological and original project inspired by the desire to restore life to the materials that become waste every day. SCART® is now a registered trademark throughout the European Community under which exclusive works and installations are 100% made of waste. Its goal is to encourage responsible behaviour versus environmental matters, offering new stimuli to create useful and artistic objects starting only and exclusively from waste as their raw material. As a result, sofas, armchairs, tables, chairs, lamps, drawers, games, musical instruments, clothing, and installations were made, but also scenery for shows and costumes. SCART® is an invitation to think of new styles of intelligent, creative and most importantly sustainable life.

Many initiatives at national and international level, such as the important conventions with the Academies of Fine Arts in Florence, Bologna, and Ravenna, involve many students every year at the seminars and workshops held at the SMART® located within Hera Group's facilities in Santa Croce sull'Arno and Pisa. These are artistic and training initiatives addressed to students and their topic is experimentation on the artistic use of industrial scrap. Over the years SCART® has also participated in many national exhibitions - those held at Ravenna, Imola, Modena, Pisa, Udine, Bologna and Padua, to name a few - and international exhibitions (Berlin 2016). Since 2012 the SCART® project has been the exclusive partner for the production of costumes and stage components for Andrea Bocelli's concert at the Teatro del Silenzio in Lajatico, the small Tuscan town where the great tenor was born. About 250 costumes are made for each edition, using exclusively industrial processing waste that is collected, chosen and sorted in the SCART® Laboratories of the Hera Group. For the 2019 edition of the **Barcolana**, the historic international sailing regatta that takes place every year in the Gulf of Trieste, Alice, a large installation in Piazza dell'Unità, was created: it is a giant sardine over 10 meters long, made by reusing about 5 thousand bottles and plastic bottles. Thanks to the power of art and the extraordinary media influence that the Barcolana is able to arouse, we were able to promote

awareness of the importance of the circular economy, on which the Hera Group is constantly engaged, an essential tool to protect the sea and biodiversity.

Aliplast's business contributes to achieving **targets 12.2, 12.4, 12.5, and 12.8 of the UN's 2030 Agenda**.

More trees in town thanks to Hera's drop-off points

The "More trees in town" continued again in 2019. It was created in collaboration with the Municipality of Modena and is designed to increase an urban forestation project, encouraging citizens to use drop-off points more. Thanks to this initiative, in fact, again for 2019, Hera donated a tree to the city for every 50 new households that disposed of their waste at the drop-off points. For the second year in a row the collaboration and commitment of the people of Modena have led to achieving the project objectives, since, as a result, at the end of 2019, more than 200 plants were donated to the city's Chinnici Park, 170 of which have already been planted: 20 more than last year!

Following the example of the positive experience in Modena, and again in collaboration with the municipal administrations, "More trees in town" was also launched in Ferrara – where 70 trees were donated between March and December 2019 and (towards year end) also in Rimini, setting the same objectives for 2020 as done for Modena.

The project was developed to encourage greater use of Hera's drop-off points: this behaviour, in fact, is beneficial for the environment and for the appearance of city streets because it helps to reduce the phenomenon of waste abandonment and to increase the quantity and quality of separate waste collection, and it also translates into an economic advantage for citizens: the municipality grants users a discount on the TARI waste tax for each kg of waste disposed of.

In 2019 "More trees in town" also became operational in the Northeast: AcegasApsAmga, in fact, started the project in the city of Padua by planting a tree for every 3 accesses to the drop-off points. The initiative was very successful, in fact, 1,000 trees were donated, planted in early 2020 in public parks in two different districts of Padua.

"More trees in town" has made it possible to improve air quality and mitigate the negative effects of climate change: each tree can capture around 100 kg of CO₂ annually.

According to calculations, once fully operational, the plants donated by Hera will be able to remove 15 tonnes of carbon dioxide from the air every year, which is equivalent to the amount produced by a car travelling 112,000 km.

Some details of the initiatives are available at: www.ilrifiutologo.it/alberimodena, www.ilrifiutologo.it/alberiferrara, www.ilrifiutologo.it/alberirimini.

The "More trees in town" project contributes to achieving **targets 11.3, 11.6, 12.2, 12.4, 12.5, and 12.8 of the UN's 2030 Agenda**.

Sustainable management of water resources

The Rimini Seawater Protection Plan continues

The Seawater Protection Plan aims to eliminate swimming bans and reduce the pollution measured in terms of COD by 90% by 2020, through structural measures on the sewage and purification system of the City of Rimini.

The numerical modelling of the sewage and purification system which started in 2014, led to further optimisation of the measures that had been planned for the system of tanks that serves the southern area of Rimini and to the identification of three additional measures. By introducing a different way to handle rainwater, the optimisation of the tanks – together with additional measures that involve the construction

of the works called the Ausa backbone sewage collector, Mavone spillway and the sewage pumping system in via Santa Chiara – sets up synergies that significantly reduce the risk of flooding in most of the built-up area where this problem often occurs and thus expands the objectives of the plan to include the mitigation of hydrological risks. In this regard, it should be noted that in December 2019 the Dorsale Ausa project received a contribution of approximately Euro 8.5 million in public funding for hydrogeological instability under the "Italia Sicura" initiative.

The Plan is currently essentially made up of its original ten measures, plus the filling of the Ausa Canal, added in 2015, and the additional measures mentioned above, **for a total of 14 measures**.

The further optimisation of the Plan, with the required design improvements and the necessary permitting, made achievement of the environmental objectives, initially planned for 2020, slip to 2024. It should be noted that by that year, the works necessary to reduce the city's hydrological risks will also be completed: the extension of the timeframe for implementing the plan as initially envisaged is closely linked to the substantial improvement of the Plan's impact on the city, which, for all the above reasons, will benefit from a significant improvement in both hydrological and environmental performance.

The progress of the construction work does not lead us to expect any significant issues and the quantity goals we have set are in sight. All other measures are in progress and in the design phase.

The situation of the 14 measures is as follows:

Measure	Progress at 31 December 2019	Expected/actual year of completion	Motivation/benefits
1. Doubling of the Santa Giustina purification plant	Completed	2016	Purification process improvement
2. Conversion of the Rimini Marecchiese purification plant into a collection tank	Completed	2018	Purification process improvement
3. Construction of the Dorsale Nord backbone, for drainage of the Bellaria purification plant into the S. Giustina treatment plant	Completed	2016	Purification process improvement
4. Completion of the separation of sewage networks in the northern area of Rimini	Construction of second portion in progress (first portion completed in 2018)	2022	Conversion of five sewage drains discharging into the sea into rainwater drains (of which three already done under the first portion)
5. Construction of the Dorsale Sud backbone	The third portion of the pressure unit and the third portion of the pumping stations are under construction (second portion completed in 2018)	2021	Reduction in the number of openings of the Ausa and Colonnella I drains into the sea
6. Completion of the separation in the Roncasso and Pradella basins	Design in progress	2022	Conversion of two sewage drains into the sea into rainwater drains
7. Construction of subsea pipeline and pumping station for the Ausa basin and reservoirs	Construction in progress	2020	Reduction in the number of openings of the Ausa drains into the sea

Measure	Progress at 31 December 2019	Expected/actual year of completion	Motivation/benefits
8. Construction of hospital balancing reservoir	Completed	2016	Reduction in the number of openings of the Colonnella I drains into the sea
9. Construction of conduit between Fossa Colonnella I and Fossa Colonnella II; Vasca Colonnella II and Vasca Rodella and subsea discharge conduit	Design in progress	2024	Reduction in the number of openings of the Colonnella I, Colonnella II and Rodella drains into the sea
10. Isola sewage decontamination	Completed	2014	Optimisation of the sewage system
11. Filling the AUSA beach stretch	Completed	2016	Improvement of the usability of the area and of its environmental conditions
12. Sewage collector of AUSA backbone	Design in progress	2022	Reduction of hydrological risks
13. Mavone spillway	Completed	2018	Reduction of hydrological risks
14. Sewage pumping in via Santa Chiara	Construction in progress	2020	Reduction of hydrological risks

The completion of seven measures has produced significant environmental benefits, reducing the quantities of organic substances (COD/BOD) discharged into the sea during intense weather events.

We had to postpone completion to 2020 for the two works scheduled for completion in 2019 (construction of the subsea pipeline and the pumping station for the AUSA basin and reservoirs and sewage pumping in Via Santa Chiara). This rescheduling is due both to the adverse weather conditions on average in 2019, which led to extensive stops in the laying of subsea pipelines, and to the significant financial difficulties of the contractors, which caused significant delays in the work. The measures, planned for 2020, will lead to a considerable reduction in the pollution load discharged near the shore, with benefits for the quality of the water on the coast. This will mean that the bathing bans that occur if discharges are opened up along a large part of the city's coastline, including both areas where the separation of the sewage networks has been completed and the stretch of sea bordering the Fossa AUSA, will no longer apply. From this point of view, since 2017, **3,084 metres of beach have been "freed" from bathing bans and in 2020 we expect to increase to 5,584 metres.**

Moreover, as a further proof of the strong link between the Plan and the City of Rimini, it is highlighted that a part of the measures under the Plan will be integrated into the broader coastal redevelopment project called Parco del Mare, so as to pursue synergies that can provide an overall improvement of the urban structure of the city.

The Rimini Seawater Protection Plan was included among the best practices in the SDG Industry Matrix report published by the Global Compact and KPMG in 2017, which reports on business opportunities linked to the objectives of the UN's 2030 Agenda.

By applying measures to improve the water and sewage systems, reducing marine pollution, upgrading the infrastructure, while involving municipalities and citizens in the project, the Rimini Seawater Protection Plan contributes to achieving **targets 6.2, 6.3, 6.b, 9.1, 9.4, and 14.1 of the UN's 2030 Agenda.**

Innovation and contribution to development

Objectives and performance

What we said we would do	What we have done	Geographic scope*		
Spreading innovation and digitalisation				
<ul style="list-style-type: none">41% of customers with online bills and 27% of customers using the online services in 2022. Promote digitalisation among customers also by extending "Digi e Lode" to the digitalisation of local schools.	<ul style="list-style-type: none">30.1% of customers chose online bills and 23.7% of customers use the online services in 2019. The third edition of "Digi e Lode", a project that brings customers and the company together to digitalise schools in the area, has started and been extended to the Marche and Abruzzo regions. (see page 139)	ER		M
<ul style="list-style-type: none">Continue the implementation of business intelligence/data analytics projects. Main objectives: to optimise gas leak detection work, waste collection and purification plant operation, improving the results of each.	<ul style="list-style-type: none">Main results: gas leak detection has been optimised with the new NexMeter meter, the waste collection service has been improved thanks to big data analysis, treatment plant operation was optimised thanks to a control system based on predictive logic. (see pages 127)	ER		
<ul style="list-style-type: none">Promote circular smart city solutions in municipalities and universities.	<ul style="list-style-type: none">We built the second prototype of PUNTONet waste: an automated separated municipal waste collection centre. Testing of the first prototype in Castel Bolognese ended in October 2019. (see page 127)	ER		
<ul style="list-style-type: none">Continue research into the production of bioplastics from organic waste fractions.	<ul style="list-style-type: none">We produced the first samples of bioplastic from waste cellulose (pruning material) in the laboratory. (see page 129)			
Economic development and social inclusion				
<ul style="list-style-type: none">Promote tariff concessions and initiatives to support customers experiencing financial hardship, through the new SOSstegno Hera initiative. Maintain a rate of avoided of disconnections of 80% of the total thanks to protocols signed with municipalities to prevent service disconnections for customers assisted by social services.	<ul style="list-style-type: none">Tariff concessions and initiatives to support customers facing financial hardship have been promoted through the updated SOSstegno Hera guideline initiative. 60% of disconnections were avoided in 2019, thanks to protocols signed with 83 municipalities. (see page 152151)	ER		
<ul style="list-style-type: none">Supplier selection: continue to reward social commitment in the sustainability points, also by including disadvantaged personnel, in particular for waste management services.	<ul style="list-style-type: none">In 2019, 875 disadvantaged people found jobs as a result of outsourcing to social cooperatives, particularly in the management of waste management services. (see page 153)	ER	T	M

What we said we would do	What we have done	Geographic scope*		
Job creation and development of new skills				
<ul style="list-style-type: none">2019 Learning Plan: training measures to develop the new skills required in the three reference axes (technical-professional, managerial, technological), to support the development of the reference context and of the businesses managed. These include, for example, those in the field of digital transformation, modelling and predictive analysis, circular economy, etc.	<ul style="list-style-type: none">Several initiatives were launched for the development of new skills. In particular, the training covered the following areas: change management, digital workplace, digital transformation (Her@futura path), data analytics/predictive analysis, circular economy and IT security. (see page 162)	ER	T	M
<ul style="list-style-type: none">Continue to apply the social clause to protect employment in the contracts for emergency services on networks and services relating to customer management (except for insourcing situations).	<ul style="list-style-type: none">Twenty tenders, among the most notable, included a social clause to protect employment. (see page 158)	ER	T	M
Air and soil protection				
<ul style="list-style-type: none">700 thousand m² of land reused between 2019 and 2022 in the design of infrastructure (3/4 of the total land involved in new designs).	<ul style="list-style-type: none">77% of land reused in the construction of new infrastructure in 2019 (162 thousand m²). (see page 178)	ER		
<ul style="list-style-type: none">8% increase of the volume served by district heating by the end of 2022 compared to 2018, improving the air quality of the cities we serve. Start projects to increase the use of geothermal energy in Ferrara (+2.7% by 2022 compared to 2018 of geothermal energy exploited) and for its use at low enthalpy.	<ul style="list-style-type: none">1.1% increase of the volume served by district heating in 2019 compared to 2018. The projects to increase the exploitation of geothermal energy in Ferrara will be implemented from 2020 as a result of Hera taking over the management of the reservoir in December 2019. (see page 171)	ER		
<ul style="list-style-type: none">31% low environmental impact vehicles in 2022 (42% Uniflotte, 8% AcegasApsAmga, 11% Marche Multiservizi).	<ul style="list-style-type: none">22.7% low environmental impact vehicles in 2019 (22.8% in 2018). (see page 174)	ER	T	M
<ul style="list-style-type: none">+200 public and private infrastructures installed in 2019 for electric transportation in cities.	<ul style="list-style-type: none">+134 public and private infrastructures installed in 2019 for electric transportation in cities. (see page 177)	ER	T	M

* Geographic scope of the improvement objectives: ER= Emilia-Romagna T= Triveneto M= Marche.

What we will do	SDGs	Geographic scope*	
Spreading innovation and digitalisation			
<ul style="list-style-type: none">Continue the implementation of data analytics and artificial intelligence projects. Main objectives: to optimise gas leak detection, preventive maintenance of networks and plants, waste collection, the quality of separate waste collection, and the management of purification plants, improving results.	9, 17	ER	T

What we will do	SDGs	Geographic scope*		
<ul style="list-style-type: none"> Prevention of cyber attacks: activation of new intrusion prevention solutions, to protect business services exposed on the Internet and to increase the security of workstations and digital identities. Implementation of new awareness and training campaigns for workers. 		ER	T	M
<ul style="list-style-type: none"> 45% of customers use online billing and 34% of customers use the online services in 2023. Promote digitalisation among customers also through the "Digi e Lode" initiative that promotes the digitalisation of local schools. 	4, 12	ER	T	M
<ul style="list-style-type: none"> Innovation for circular economy and energy transition: continuation of the experimental production of bioplastics and construction of a prototype "power-to-gas" plant. 	9, 12	ER		
<ul style="list-style-type: none"> Promote and implement circular smart city solutions in municipalities and universities. 	9, 11, 12, 17	ER		
Economic development and social inclusion				
<ul style="list-style-type: none"> Supplier selection: in waste management services continue to promote the employment of disadvantaged people 	8	ER	T	M
<ul style="list-style-type: none"> Spread awareness of tariff concessions and other initiatives to support customers in financial hardship 	17	ER		
Job creation and development of new skills				
<ul style="list-style-type: none"> 2020 Learning Plan: training measures to develop the new skills required in the three reference axes (technical-professional, managerial, technological), to support the development of the reference context and of the businesses managed. Among the new skills included in the plan are: water safety management, circular economy and decarbonisation, new certification schemes, green and ESG finance, Office 365. With regard to digital skills, we expect to reach 50% of employees with digital readiness, by 2023. 	4, 8	ER	T	M
<ul style="list-style-type: none"> Continue to apply the social clause to protect employment in the contracts for emergency services on networks and services relating to customer management (except for insourcing situations). 	8	ER	T	M
Air and soil protection				
<ul style="list-style-type: none"> 450 thousand m² of land reused between 2020 and 2023 to design, build and upgrade infrastructure (73% of the total land involved in new designs, constructions and upgrades by 2023). 	8	ER		
<ul style="list-style-type: none"> 13% increase of the volume served by district heating by the end of 2023 compared to 2018 improving the air quality in the cities served. In Ferrara, implement plant solutions to make greater use of geothermal energy (+20% geothermal energy produced in 2023 compared to the 2016-19 average) 	7, 11, 14	ER		
<ul style="list-style-type: none"> Over 270 public infrastructures installed by 2023 for electric transportation in cities. 	11	ER	T	M

* Geographic scope of the improvement objectives: ER= Emilia-Romagna T= Triveneto M= Marche.

Spreading innovation and digitalisation

The term innovation traditionally is used to identify a process that turns an idea into a good or service that has a value. In addition, innovation must be repeatable at an affordable cost and must meet specific needs. Innovating does not mean inventing, nor planning, but rather seeking, perceiving, discovering, making progress, improving and knowing how to gain value in the present and future contexts.

Progress, change and development can take place both as a development and an improvement of the current condition, either by breaking with, or sharply diverging with respect to the present. We can therefore identify two types of innovation:

- **evolutionary innovations:** those that lead to the advancement of technologies, processes, products or services;
- **revolutionary innovations:** those that occur where there is discontinuity with the past, at times even disruptive, or that completely replace the current situation.

There is always an element of risk in innovation: it may not prove to be successful or have effects and interactions that were not initially expected. This requires us to carry out a detailed preliminary evaluation to minimise the possible waste of resources or unexpected negative impacts.

Innovation for the Hera Group

Innovation is **one of the Group's five strategic levers** (agility, efficiency, growth, innovation, excellence). The model we use is based on widespread innovation: each department is responsible for its own individual innovation initiatives, from the review of processes to the identification of new services, from instruments for improving efficiency to the launch of new operating models.

However, there are guidelines, factors and tools that enable the innovation process, such as information technology and connectivity. This is why Hera has set up a specific **Central Innovation Department**, reporting to the Chief Executive Officer, with the goal of analysing the main market trends, identifying the areas of greatest interest, evaluating and proposing projects and solutions to the individual departments, and supporting developments with Information and Communication Technology methods and tools.

The Central Innovation Department includes the IT systems, the connectivity and telecommunications services (through the Acantho subsidiary), and the Development department, which identifies scenarios and possible action areas, and proposes engineering projects, and technological and digital innovation projects.

Intervention areas

The main **innovation areas** within the Hera Group, also in line with its business plan, can be summarised as follows:

- **circular economy**, aimed at environmental sustainability, the optimisation of materials, and maximising the recovery of waste and scrap;
- **customer experience**, aimed at understanding the needs and wishes, whether expressed and not, of consumers in order to shape actions to improve their satisfaction level;
- **digitalisation and data analytics (Utilities 4.0)**, with activities linked to implementing new technologies, mainly IT, for the digitalisation, automation, and flexibility of processes, and the enhancement and efficient use of data;
- **smart cities**, to introduce technologies that can improve living conditions in cities, and the services supplied to the general public.

To encourage and boost innovation in its businesses, the Group has also launched **social innovation initiatives**, involving both external stakeholders through HeraLAB (see the "Dialogue with our stakeholders" paragraph) and internal players, through the Heureka initiative (see the "Case studies" section of this chapter).

Investments in innovation

[203-1]

In 2019, the Hera Group invested about Euro 78 million (+25% compared to 2018) in innovation and digitalisation, a figure that is part of the total investments aimed at creating shared value (see the section on Shared Value in the "Sustainability, Strategy and Shared Value" chapter), Euro 78 million was invested by the Group for innovation. Specifically, in order of size, the Group invested approximately Euro 39.0 million for Utility 4.0 projects. Euro 33.7 million in smart city initiatives (including investments for the installation of electronic gas meters); Euro 4.7 million in innovative circular economy initiatives, and Euro 0.6 million in projects aimed at improving the customer experience.

The main projects and the innovation areas they belong to are listed below.

Innovation areas	Main projects
<i>Smart cities</i>	Smart drop-off point
	Environmental sensors
	Dashboards and IoT sensors
<i>Circular economy</i>	Hera's biomethane from waste (see Case Study in the "Smart use of energy" chapter – page 64)
	Bioplastic from cellulose
	Biorefinery 2.0 to produce biomethane from pruning material
	Ultrasonic sludge hydrolysis system
	Greenhouse for drying purification sludge
	The recovery of purification water for the benefit of the territory (see Case Study in the "Sustainable management of water resources" chapter – page 99)
<i>Internal digitalisation and data analytics (Utility 4.0)</i>	Workforce management (Hergo Reti)
	Digital workplace
	Senseable Dep: purification plants trend dashboard
	Robotic & Intelligent Process Automation
	Optimisation of purification plants operation
	HergoAmbiente and data analysis for waste management services
	Heratech digitalisation projects
	NexMeter, the new generation meter
	Forli remote control technology hub
<i>Customer experience</i>	Customer experience project
	New ways to pay bills

Smart cities: Smart drop-off point

The aim of the project is to create a **technological infrastructure to gather the services for the city in a single point**, to optimise the use of energy, environmental, economic and IT resources. After the construction of the first outdoor prototype and its experimentation in the municipality of Castel Bolognese which started in October 2018, in 2019 the **second prototype** called **PUNTONet waste** was built: an automated separate municipal waste collection centre designed to:

- Be accessible to **people with disabilities**
- Enable clean disposal without levers and pedals
- Recognise users, talking to them and helping them to dispose of their waste
- Reduce impact on the cityscape and improve urban décor
- Weigh the waste
- Call *when it's full*
- Enable gamification projects among people, communities and neighbourhoods

- Be eligible for quantity-based tariff

The PUNTONet waste system can be **integrated with other infrastructures** such as bus shelters, bicycle shelters, e-bike recharging stations, and with technological totems. This modularity enables the integrated provision of multiple smart services such as:

- Wi-Fi connectivity
- Video surveillance
- Electric charging of mobile devices
- Electric charging of mobile systems for the disabled
- Environmental sensors (air and noise)
- Water dispensers
- Drop-off and collection of parcels
- LED lighting
- Cycle-parking slots for recharging electrically assisted bicycles (e-bikes) or areas dedicated to micromobility (scooters, etc.)

All the infrastructures called PUNTONet are remotely **controllable and manageable through computer-based applications** that can be implemented in the dashboards for municipalities.

The first PUNTONet waste prototype was used by 50 selected users in the Castel Bolognese municipality for a whole year, until October 2019. The people involved were very satisfied by the pilot project and this showed that the constantly monitored waste collected was of high quality. The second prototype incorporated some aesthetic improvements, and others to improve user recognition. In addition, an **app was developed** to enable users to monitor their disposals, be always up to date on the quality of the waste collected, to receive information on recovery of the material, and also to be able to identify themselves when disposing of waste at the PUNTONet waste system.

Also, in the Castel Bolognese municipality, two prototypes were installed of smart shelters with led lighting, electric charging stations for mobile devices, and mobile systems for disabled people.

Prototyping work will continue during 2020, including the construction of a **technological totem with a water dispenser**. The prototypes made to date will be used as starting bases to satisfy any new design requirement that may arise.

Smart cities: Environmental sensors

The sensor network that **monitors the main air quality parameters** installed in the municipality of Castel Bolognese collected data on an hourly basis throughout 2019. These data show a **seasonal variability** linked to both climatic factors and human activities. In order to understand in detail the weight of each emission source (heating and traffic) in the urban environment, the data collected were processed with weather data, road traffic data and energy consumption data using advanced machine learning techniques.

The results showed that **biomass heating** is a major factor for polluting particulate matter, while **traffic** could contribute by raising the particulate matter from the road surface.

In order to better investigate this second aspect, we are evaluating an experimental test that consists in treating the road surface with a natural product to fix the fine particles, so that stay out of the air and cannot reach the respiratory tract. Avoiding particulate matter blowing up into the air could help solve the pollution problems, on major roads, in the most critical periods of the year.

The data from the acoustic control units have been incorporated in the **municipal dashboard of Castel Bolognese**, to offer a qualitative view of local noise pollution. The measures will be further developed to try to understand the factors that lead to exceeding the regulatory thresholds.

Smart cities: Dashboards and IoT sensors

Municipal **dashboards analyse and monitor the environmental, social and economic KPIs**. They provide integrated views of the processing and correlation of Big Data from various services and sensors strategically placed throughout the service areas.

The objectives that are monitored are based on the SDGs of the **UN's 2030 Agenda** and the Italian protocols or specific objectives of the Administrations.

Using this tool, municipal administrations can take advantage of computer-based system that provides **constant and real-time monitoring** of environmental, social and economic data. This analysis process helps assess the qualitative condition of the area and therefore to implement improvement and change processes to achieve sustainability.

During 2019, an assessment of the impact of the services offered to the **Municipality of Castel Bolognese** showed a high level of appreciation for the innovative initiatives promoted in the area. In addition, an agreement has been entered into with the **Municipality of Cesena** to work on experimental projects related to the circular economy, energy transition and the digital transition that may include the supply of the dashboard, IoT sensors for acoustic and air quality monitoring, and PUNTONet technological infrastructure. The functionality of the dashboard has also been expanded for other contexts such as **companies and university campuses**.

The dashboard for municipal administrations includes an **energy map**, a tool that promotes the energy transition of municipalities and that, by processing the consumption data for energy from fossil fuels and from renewable sources, in particular photovoltaics, has led to the development of an algorithm capable of **mapping the area from the energy point of view**. Such a view allows public administrations not only to gain in-depth knowledge of their areas, but also to identify the most critical areas, and above all to understand the factors that generate such situations.

In 2020 we expect to release the **Dashboard platform and related smart services** (Sustainability Passport, IoT sensors, environmental mapping, sentiment analysis, etc.) for other municipalities and public and private organisations that aim to achieve sustainability objectives by digitalising their processes.

Circular economy: Bioplastic from cellulose

During 2019, intensive research was conducted to develop a technology capable of producing **bioplastics from the sugars obtained from waste cellulose** (e.g. pruning material).

The activity has led to the production, on a laboratory scale, of the first quantities of bioplastics with characteristics almost similar to those obtained from traditional sugars.

Experimental work will continue in 2020 to optimising the process and reduce production costs of cellulosic sugars with a view to possible industrial development of the technology.

Circular economy: Biorefinery 2.0 to produce biomethane from pruning material and agricultural by-products

The project to use **pruning material to produce biomethane** received European funding from the LIFE Programme in 2019, as it was awarded around Euro 1.4 million for the LIFE STEAM project.

For years, Hera has been conducting research to analyse technologies to produce advanced biofuels by processing mowing and pruning material collected in its service area. This waste material is currently used in composting processes or for energy recovery but in the future it may be used to produce bioethanol and biomethane. Both of these **fuels** can be considered **advanced** because they are produced from waste material and not from dedicated energy crops which use land which could be used for human food or animal feed. Pre-treatments are required to be able to obtain these fuels from ligno-cellulosic waste, such as steam explosion, a particular thermal treatment that uses high-pressure steam, that makes the material readily degradable by bacteria, enzymes or yeasts, in anaerobic digestion processes or alcoholic fermentation.

The results of the experiments, completed in 2018, led to the definition of an initial project on an industrial scale to produce biomethane from waste ligno-cellulosic biomass, for which the permitting process will begin in 2020 (at the Enomondo plant).

Circular economy: Ultrasonic sludge hydrolysis system

This project was developed after research carried out in 2017 to identify new technologies to **optimise the water cycle and dispose of the sludge from urban wastewater purification**.

In the ultrasonic sludge hydrolysis system a part of the thickened sludge from the treatment process (20-50%) is subjected to sound waves which, by cavitating the liquid to be treated generate a cellular breakdown which makes more volatile solids available for biodegradation, increasing biogas production and reducing the final dry matter in the sludge and thus reducing the volume to be disposed of.

The system has been **installed and started up in November 2019 at the Forlì treatment plant**. The expected results of increased biogas production achievable thanks to the ultrasound system will be measured and validated during 2020.

Circular economy: Greenhouse for drying purification sludge

During 2018, we completed the technological scouting and technical feasibility analysis of using special greenhouses to dry purification sludge.

The **pilot solar greenhouse** at the Ca' Nordio-Padua treatment plant, which was completed in 2018, gave excellent results, **saving 335 tonnes of sludge in 15 months**. Given the efficiency and simplicity of the system and its low operating costs, we decided to continue with the construction of the **final greenhouse that is 4 times larger** than the current drying chamber.

In each treatment cycle, the 900 m² solar greenhouse will dehydrate about 200 tonnes of incoming sludge into 30% dry matter, which will come out with a dry matter content from 50 to 80% according to operating needs and seasonal weather conditions. Start-up of the new greenhouse is scheduled for April 2020 and we expect to achieve an annual saving of 900 tonnes of sludge, equal to about 15% of the sludge produced annually by the Ca' Nordio treatment plant.

Utilities 4.0: Workforce management (Hergo Reti)

In 2018 we introduced "Geocall", a new software platform designed to **manage** the field activities of our network systems, from operation and maintenance, to technical assistance and emergency services. The first release, in November 2018, immediately increased the **efficiency of the emergency services**, by simplifying operations, providing an easy graphical interface and all the features made possible by smart mobile devices.

Geocall has been fully integrated with our IT systems based on SAP technology, and overcomes the previous operational inefficiencies that were due to cumbersome consultation of documents offline, persistence of paper documents, the need for frequent phone calls with assistants, the possibility of accessing data only from fixed locations, and the need to use multiple devices for a range of functions.

Its **main characteristics** are briefly described below:

- immediate access to technical information of user facilities;
- data entry and search with direct access to company databases (e.g. technical specifications of the instrumentation supporting a specific activity);
- creation, update, assigning, and reporting the various work phases directly from mobile devices;
- optimisation of the monitoring and scheduling of work orders, thanks to the quality of data on the traceability of individual activities (time and space);
- direct, in-field readings of meters;
- online and offline access to maps;

- access and visibility of the data concerning the staff in service (e.g. on-call time, unavailability bands, work calendars) in order to optimise the management of activities to be carried out on the area;
- road navigation to the address of the service call;
- acquisition and consultation of multimedia documents (images, pdfs, CAD files, etc.) which can be attached to the work order.

All this translates into three words that describe what has been achieved: efficiency, performance and satisfaction.

In 2019, **130,000 emergency service calls** were handled with this new system, which involved 1,500 employees.

In 2019, we developed the model, implementing all the functions for managing operations and maintenance, for which operational go-live is expected in the first few months of 2020, to handle a volume of about 50,000 calls. The dissemination process is now going ahead to include management of meter-related work, planned for the beginning of 2021.

The platform is used in Emilia-Romagna, Triveneto and Marche.

Utilities 4.0: Digital workplace

During 2019 we started the **change management** plan to implement the **Digital Workplace - Office 365**, by setting up an e-learning platform focused on the use of digital tools, and a suite of application workshops aimed at the digitalisation of operational micro-processes.

The introduction of the Office 365 Microsoft Digital Workplace provides everyone with a modern technological architecture on the Microsoft Azure Cloud platform, providing mobility, collaboration, integration, ease of use and management, flexibility and security.

Workstations become devices like smartphones, secure and always up to date, while documents are accessible equally from all devices and through all channels, with continuous backup, services are always available even in case of problems to the corporate network, the user can independently install business applications and mailboxes become virtually limitless.

Also from the point of view of IT service management, the Digital Workplace provides enormous efficiencies in terms of ease of installation and upgrades, self-service deployments, integration of management and maintenance systems, advanced telemetry with identity protection, threat and breach blocking, storage management, governance and data discovery in accordance with the European Union's GDPR (General Data Protection Regulation).

At the end of 2019, 5,505 Digital Workplace-enabled workstations had been installed. During the first few months of 2020, the platform will be **distributed to the entire population** served by the Group.

Utilities 4.0: Senseable Dep: Purification process monitoring dashboard

A **purification process monitoring platform** has been developed for the fifteen main purification plants. It uses simplified dashboards that show just a few indices to summarise the "health" of the purification process from the biological, hydraulic and energy points of view.

During 2019, various algorithms were implemented in order to monitor normalised functionality indicators, to properly handle the purification processes.

In addition, a concise and aggregated view of the platform has been developed, accessible via a management dashboard.

Utilities 4.0: Robotic & Intelligent Process Automation

The foundation of the Robotic & Intelligent Process Automation platform was completed at the end of 2019, a system designed to **automate processes** that involve interaction with information systems characterised by **high volumes, high effort, or high levels of expected quality**.

The industrialisation of the platform for the digitalisation and robotisation of business processes, has given extremely satisfactory results in the **7 identified processes** (management of the DURC of suppliers, management of communications between vendors and energy distributors, management of the vendor's Order Entry process, management of "expense reports", management of service notices related to waste management services, management of work orders for the replacement of measurement equipment in the networks, virtual assistant for planning meetings and booking meeting rooms), both in terms of speeding up the process, and resulting efficiency, and reliability of the operations carried out.

By adding special **dashboards to monitor automated activities**, we can analyse the main causes of waste and act effectively on business processes, continuously optimising productivity and efficiency. These tools also effectively facilitate man-machine operation and extend the scope of application of processes that can be automated, thanks to their continuous technological development (semantic text interpretation engines, OCR management, etc.).

The results in terms of potential efficiency on a Group scale are certainly significant, also considering the technological development that is rapidly expanding the scope of application of the platform which has been created and is managed with agile methods from a Competence Center perspective to support all the Group' Business Units. The findings collected in the years 2018–2019 confirm the opportunities for **using the company's resources in more qualifying tasks**, enhancing the intellectual skills applied to the processes that generate the greatest value for the company.

Utilities 4.0: Optimisation of purification plants operation

The Modena purification plant has been equipped with a leading-edge system, the only one of its kind in Italy, which uses predictive logic to further reduce energy consumption and improve the quality of the outgoing water. The project was supported by Energy Way, and involved developing a **control system based on MPC (Model predictive control)** and artificial intelligence to optimise the oxygen supply to the oxidation tanks. The project has the following objectives:

- to improve the performance of total nitrogen abatement compared to the regulatory limits;
- to optimise oxygen delivery in the aerobic compartment;
- to minimise the energy costs of air blowers.

The project also included the development of a dynamic baseline aimed at forecasting energy consumption, to quantify the real performance of the process and develop multi-variable, real-time **energy and production performance indicators**, aimed at improving control over the real performance of the wastewater purification plant.

The pilot project yielded positive results: the line in which this control system is present, the Modenese purification plant, which has the capacity to meet the needs of 500,000 inhabitants, **decreased the amount of energy needed** for its oxidation process by 16%, compared to what was found in a similar situation with a traditional control system, and decreased the presence of nitrogen in outgoing water (a parameter already below the regulatory limits) by a further 8.1%.

Utilities 4.0: HergoAmbiente and data analysis for waste management services

In 2019, work continued on the exploitation of the big data provided by HergoAmbiente to obtain information on the basis of the redesign of services and for the analysis of citizens' behaviour.

In particular, the 2019 projects were developed along three lines:

- static and dynamic routing models for collection and street sweeping services based on the services' final data and from findings from the technologies installed in the field;

- development of tools linked to the central systems to improve the user experience (e.g. development of the "Rifiutologo" app and initial experiments with the use of voice assistants);
- integrated analysis of technical data, user/customer behaviour data, and statistical/sociological data for engagement projects.

In addition, as part of the cassONetto Smarty project (i.e. Hera Group's new electronic bin), an innovative capability has been developed that enables residents to open electronic bins using the "Rifiutologo" app, via NFC (Near Field Communication) communication, without using their physical card.

Starting with HergoAmbiente, developments continue to improve the user and customer experience, thanks to innovative and enabling technologies.

Utilities 4.0: Heratech digitalisation projects

For Heratech, "digitalisation" is synonymous with an innovative change that involves the company's entire structure, by implementing an "integrated" system of new functions on corporate management system (SAP) and on portable devices. The objective is to bring together a range of diverse project initiatives, in order to rationalise and digitise end-to-end operational processes, particularly in terms of the services offered to customers.

The project covers several areas:

- **Customer quotes:** a centralised integrated dashboard manages all quote requests from customers and dispatches the individual technicians via their mobile devices so they can perform the work "in the field" using a specific app, avoiding the need for the operators to stop by the company headquarters. All the data collected are immediately and automatically sent to the central system, where all the technical and commercial information is stored and from which the quotation is then automatically sent to the customer.
- **Execution of work for customers:** likewise, a dashboard has been developed to manage all work for customers, which also includes the management of the permits needed. Again in this case, each "work order" can be assigned on a mobile device both to the technicians of Heratech's Work Management office and to the subcontractors. Specific apps provide to these parties all the information they need to carry out the work requested. Once the job is completed, it can also be finalised in the app, automatically updating the central system.
- **Work progress accessible to customers:** an application has been prepared, and is available via web with a reserved access for each customer, which allows them to check the progress of technical work that they requested and to receive a text message at each step of the process.
- **Back-office for technical work:** a CRM (Customer Relationship Management) system has been developed for all back-office activities for technical work. Tools have also been implemented to digitally manage paper-based documents which are needed for other technical customer account activities (e.g. supply activation/deactivation).

In particular, in 2019, the Engineering Department launched and implemented two new project:

- called "**Technical tool for the management of complex orders**". The Oracle-based application manages complex orders, is integrated with the company's business systems, and has advanced **scheduling** and **reporting** capabilities. The program helps to **manage loads** on resources/structures and **plan the costs** of individual tasks, and **manage** technical and economic **progress**. It can be expanded to support all Business Units, and customised to address the complexity levels required. In detail:
 - the application can be used to program the individual stages and activities of a project, allocating time, costs and resources;
 - the tool features workload analysis and resource use optimisation capabilities;
 - the integration with SAP, that has already been implemented, provides the possibility of allocating the final results directly to the projects;

- the cost and time performance of the orders can be analysed using tools provided by the application.
- **“Building Information Model” (BIM)**, a new model for the integrated and optimised design, construction, operation and maintenance of corporate assets through the introduction of a life-long collaborative management technology, ranging from design to operation and maintenance. In accordance with regulatory obligations on the use of the BIM for public tenders (Italian Ministerial Decree 560/2017 MIT - Ministry of Infrastructure and Transport), the aim of the project over the next three years is to gradually extend the BIM method within the Engineering structure for all engineering projects developed. The testing scenario started in 2018 will move onto a “business as usual” phase, achieving full integration of geographical models and data with viewing from GIS platform collaboration tools.

The main environmental benefits it provides are less travel for personnel involved, and therefore a reduction in the use of company vehicles and consequently lower emissions, and the digitalisation of a range of activities that were previously managed on paper, thus using less paper.

Utilities 4.0: NexMeter, the new generation meter

The **new smart gas meter 4.0** was previewed at the European Utility Week in Paris and will be installed in the cities served by the Hera Group, starting from Ferrara and Udine, where 30,000 devices will be installed by 2020. Thanks to investments of Euro 45 million, a total of 300,000 meters will be installed over the next three years.

The innovative meter is the result of the Group's experience and the application of its know-how in the management of the gas distribution service. **NexMeter** is equipped with cutting-edge technology that offers **advanced safety features**, an essential aspect for gas services. For example, the system's proper operation can be verified by constantly checking the supply and network pressures, immediately reporting out of range values. The device will therefore be able to detect all gas leaks, including small and continuous gas leaks that customers may not immediately notice, and will be able to interrupt the supply if anomalies occur, thus ensuring the safety of the system. Moreover, it will be able to detect **earthquakes** in real time, and stopping the gas supply, taking action to ensure greater safety.

NexMeter also **benefits the environment** by encouraging the intelligent use of energy and the rational use of resources. In fact, eliminating leaks also reduces the leakage of methane, which is itself highly polluting.

It is the first meter **made with materials that contain recycled plastic** and is ready for future "clean gas" systems, such as biomethane.

Utilities 4.0: Forlì remote control technology hub

The remote control hub of Forlì is the heart of Hera Group's plants and networks: this facility is unique in Italy, and controls over 6,600 plants. We are constantly expanding it both in terms of quality and size. Our main innovative development and expansion projects built and expanded in 2019 include:

- Creation of an environment for energy data management and Hera-standard KPIs for monitoring and tracking the changes of ISO 50001 parameters. In particular, dashboards and energy table summaries were implemented at the IDAR purification plants, including automated facilities to complete the monthly ISO 50001 reporting.
- Development of a dashboard that thanks to the interface with the software used by third party companies, provides the operational water service department with greater awareness of the progress of the construction sites, a total view of ongoing work, their progress and technical data, by using filter fields and enables the user to select the data to be displayed in the graphic views of the dashboard.

- Implementation of an expert decision support system for Rimini's wastewater drainage system (a project that started in 2018).
- Weather Radar at the Santa Giustina purification plant in Rimini: a system that forecasts weather and climate events in the Rimini area (with a range of about 50 km). The peculiarity of this radar is its remarkable accuracy at local level that makes it optimal for operational use, particularly useful in nowcasting, and especially for detecting violent phenomena (thunderstorms, convective weather, hail, wind shear) and essential to monitor thunderstorms and phenomena that can be particularly intense, but are of limited extent, that are missed by the public weather stations in the area.
- Extension of the Senseable Dep to 6 new purification plants.
- The 3D functionality we have developed provides a very realistic three-dimensional view of the plant with an integrated representation of all its functional parameters. It will be extended to a further 5 plants.
- Extension and further refinement of the Smart Water Grid project.
- Creation of the "Man down" app, designed for operating structures for staff working independently, and developed to increase the occupational safety level. Via a mobile device it sends an alarm to the remote control hub if certain dangerous situations occur: falls, fainting and accidents. The app therefore allows a faster and more timely management of emergency situations.
- An artificial intelligence-based development that applies machine learning techniques and technologies (translation of human language into an info request) to reduce "false alarms" in AcegasApsAmga chlorination systems and to implement a chatbot, in order to improve the interaction between the remote control operators with the data present in it. Artificial Intelligence techniques are used to facilitate the interaction and structured search in the various types of information by combining both "natural language processing" and machine learning tools.
- Full operation of the "Cloud Gateway" project. The device supplied, a smartphone or tablet, identifies all the process parameters through QR codes on the users/plant devices and displays them giving the possibility to see all the useful data in real time.
- Development of gas optimisation projects in cooperation with INRETE, to optimise the management and increase competitiveness in the bidding process. Among the main projects: energy dashboards that calculate the energy performance parameters of the SNAM Stations defined as the incidence of the preheating volume on the total distributed volume on a daily basis; a new tool that governs the monitoring of the operating pressure according to set detection points, acquisition and processing methods of the data and of the efficiency parameter of the distribution plant; management of the odorant to monitor the correct injection of odorant into the gas network, in addition to the ordinary tools.
- Incorporation in the remote control of "native" algorithms related to the process logic for the provision of the know-how underlying the process optimisation logic.
- Automation of the Bologna water system. The project satisfied the objective of replacing the existing manual management with an automatic system capable of regulating the combined operation of the individual plants, while taking into account the relationships and interconnections of an extensive and complex system that consists of 12 plants in total. The remote control has developed the "software" part which consists in the programming of the operating sequences of the plants according to the several consumption and resource availability scenarios, structuring correlations of various available information, in practice translating the operating instructions adopted by the staff of the remote control hub into plant automation logic.

Customer experience: Customer experience project

The activities relating to the customer experience project are nearing completion. The project aims to reduce the gap between the service provided by the Hera Group and customer expectations.

Thanks to this project, customers have **new channels** to improve and complete their digital experience, such as the selfcaring portal, the app and the social networks. The customer experience has also been improved

through the touch points of the physical channels, the functional redesign of the layout of the branch offices, the introduction of digital signing, the **Alert** service (bill issue, deadline for meter self-reading, and appointment reminder) and the **Tracking** function to check the progress over time of one's requests (via SMS, email and notifications on the app and on online services) for an ever-increasing number of processes (switching, transferring, and power level and flow rate changes).

The **Hera Angel** service was released in 2018. It is a reminder developed to support moving from one home to another. Its "Queue management system" was improved, adding room and counter displays, and branch office counter tickets can now be booked through call centers, branch offices, online services and the app.

During 2019, we improved the experience of all digital channels, such as the new website for gas and energy commercial offers and the new digital services, which were integrated with the main physical contact channels (counters) and the telephone channel. The **satisfaction** and experience **survey system** that analyses the various interactions between the Group and its customers will remain active. It is designed to spot ideas for improvement and identify new initiatives.

Customer experience: New ways to pay bills

Hera has signed several cooperation agreements with major banking players (Unicredit, CBILL, MyBank, Jiffy, Amazon Pay, Paga con Postepay, Masterpass) to develop services that will significantly **simplify payments and the related accounting management**.

Under the agreement with **Unicredit**, six million dedicated "virtual" IBANs have been generated that Hera, the first company in Italy to do so on a large scale, has made available to all customers through a notification on the bill, or on the invoice. Customers can thus pay conveniently, even from their own internet banking service, without waiting in queues, and with automatic and unique identification of the payment.

In addition to the "virtual" IBAN system, Hera is developing **additional "smart and mobile" payment methods** for its customers, such as digital wallets, to make transactions increasingly simple, quick and user-friendly.

Specifically, **MyBank** supports making irrevocable online transfers simply and securely using the Internet banking service of the customers' bank. The service provides real-time confirmation of payment and 100% automatically speeds up reconciliation processes, and further reduces the risk of fraud.

The **CBILL service**, on the other hand, using an innovative and advanced, multi-bank and multi-channel approach, enables customers to pay using their own Internet banking service, and also using mobile devices, at ATMs and branch offices, providing security for the payer, real-time reporting, and complete and integrated coverage of the entire bill collection process, from the issue of the notice to reconciliation.

Using the **MyHera app** or the Group's **online services**, customers will also be able to pay bills by simply entering their mobile phone number in **Jiffy** (Bancomat Pay), without having to enter their credit card or bank account details.

Lastly, the **digital wallets Amazon Pay** (bill payment through Amazon account), Masterpass, Paga con Postepay, and Apple Pay simplify payments via mobile devices or desktop computers, providing a simple and fast user experience.

The initiative is part of the broader **infrastructure and services digitalisation process** that the Hera Group started some time ago, with the aim, among other things, of addressing the needs of an increasingly "connected" and demanding public. This roadmap is fully consistent with the European Union's strategy for creating a digital single market based on three pillars: improving online access to goods and services for consumers and businesses, creating an environment conducive to the development of digital networks and services, and maximising the growth potential of the digital economy.

The spread of digitalisation and the use of data within the Hera Group

Starting in 2018, the Hera Group initiated a **change management process** aimed at developing its internal staff and services in the areas of digitalisation, data analysis and smart working. The aim of this process is to accompany the Hera Group along the necessary development to successfully face the digital transformation and the change in work methods. The project acts on the aspects of culture, processes, tools, and enhancement of human capital. The range of initiatives includes: bite-sized training units, distance learning, envisioning sessions, application sessions, and participation in master courses/external measures. As part of the change management process, work continued on the **community on digital innovation** (Community Data Analytics), which in 2019 carried out various training initiatives for community members, as well as two topic-based workshops supported by major international partners (DAMA International, Google Italy).

Concurrently with the change management process, internal **meetings** are held between the **Group's top management**, coordinated by its CEO, to update top management on the progress of the initiatives underway in the various business units area concerning digitalisation and data analytics. These internal meetings involved about 20 people within the Hera Group.

During the year, the work team met three times and monitored the progress of 13 projects, both as operations and as customer management. The main projects, some of which are still in progress, concern:

- development of a preventive maintenance system for gas networks that uses Internet of Things technologies and data analysis tools to collect present and past data and make future forecasts;
- business intelligence systems for energy efficiency and process quality of purification plants;
- use of deep learning and natural language processing technologies for the proper classification of emergency calls, to support the technical call centre operators;
- remote analysis and optimisation of assets by using augmented reality and experimentation with drones;
- use of RPA (Robotic Process Automation) artificial intelligence systems to automate processes that involve repetitive and time-consuming activities, in particular in administrative work and back-office customer management;
- use of advanced analytics to improve customer service quality and customer experience through customer base clustering models and value extraction from consumption data to promote energy savings (Diario dei consumi).

Digitalisation for our customers

The role of Acantho

Acantho is the digital company of the Hera Group that serves the main cities of Emilia-Romagna and Triveneto with its own fibre-optic network that is about 4,200 km long. The company has been developing an ultra broadband fibre-optic network for more than 15 years, on which it offers next-generation telecommunications services. Their data centres in Imola and Milan offer cloud services to our customers, providing high levels of service quality and data security.

The main services they offer include:

- connectivity services at up to ten gigabits per second;
- virtual private network services;
- voice services and virtual switchboard;
- video presence services;
- video analysis and video surveillance services;
- data centre services (housing, virtual servers, virtual data centre, storage and backup, business continuity and disaster recovery);
- IT security services;
- transport services to the world's leading Cloud providers (OTT – Over The Top).

Together with the Hera Group, Acantho also offers services for local smart cities, such as public Wi-Fi services, smart security systems, and digital signage. The latter are multifunctional totems (digital signage), located near points of sale or public spaces, and which show users information or promotional content.

For business customers in particular, the connectivity services offered are based on fibre-optic technologies, radio links, and copper. The objective for the future is specifically to increase the number of customers connected to optical fibre, compared to copper technologies, also by integration with other operators (regional and national).

The Italian ultra-broadband network strategic plan has set specific objectives for 2020, and the implementation of the strategy is coordinated by the Ministry of Economic Development (MiSE) as follows:

- Coverage at least at 100 megabits per second for up to 85% of the population;
- Coverage at least at 30 megabits per second for the remaining population;
- The coverage at least 100 megabits per second of public buildings and offices (schools, hospitals, etc.), areas of greatest economic importance and highest population concentration, industrial areas, major tourist resorts, and logistics hubs.

With its fibre-optics, Acantho provides ultra-wideband connectivity (with connection speeds of up to ten gigabits per second) to 14,571 companies out of the 28,283 counted in its service area, thus covering 52% of them.

The expression "digital divide" indicates an uneven distribution in the access to information and communication technologies between districts or areas, both in terms of public infrastructure and private equipment. "Digital divide" is synonymous with technological backwardness and, in particular, identifies the lack (or slowness) of connection to the Internet. Acantho participates, through a formal expression of interest, in the integration of other operators' fibre-optic networks in order to reach business users based in digital divide areas, with its commercial services. In 2019, its commercial coverage was extended to six new digital divide areas in the municipalities of Bologna, Ravenna, and Piacenza by an expression of interest towards another regional operator, with positive results.

In addition, in 2019, Acantho has interconnected with Open Fiber, thus ensuring a growing reach in relation to the users that can be served by fibre and further expanding geographical boundaries.

During 2019, Acantho implemented innovative services for the Hera Group and collaborated with various Departments and Companies of the Group. Below are the main ones:

- Smart metering and smart grid: work continued, under the contracts with InRete Distribuzione Energia and AcegasApsAmga to create point-to-multipoint smart metering wireless coverage, considerably exceeding targets. Maintenance services on smart grid systems also continued;
- Innovation for Hera Comm customer counters: extension of the queue management service, for which in addition to some developmental maintenance and moves, extensions have been made for the counters in Cattolica (RN) and Massa Lombarda (RA). The extension of the aggressive behaviour deterrence service (Virtual Guard) also continued, for which an extension was made to the EstEnergy branches in Padua and Trieste;
- Total dematerialisation of Hera meal vouchers, with the introduction of the OTP (One Time Password): developmental maintenance has been brought into production that allows users to carry out an electronic transaction occasionally lacking their company badge, using a one-time password sent by SMS;
- Physical and logical security (building automation): management of the IT components of physical security systems (access control, anti-intrusion, video surveillance, fire protection) on behalf of Hera SpA (facility management and collection centres), Herambiente and AcegasApsAmga (some of the company's offices, including the Servola purification plant in Trieste);
- Other special initiatives: Acantho's collaboration with Uniflotte's CassONetto Smarty project continued, and the coding and testing process of the new Smeraldo cards was consolidated with around 320 thousand physical cards and 100 thousand virtual cards processed by Acantho during the

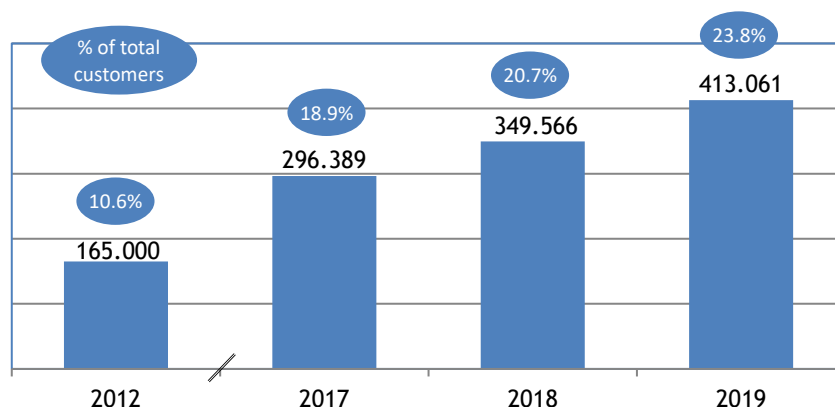
year, in line with the deadlines set by the introduction of quantity-based tariff in Bologna and other municipalities in the area. Collaboration also continued with the Innovation Department for the smart drop-off point project (see the "Innovation for the Hera Group" section). Lastly, Acantho is the Group's supplier of the Digital Newsstand service, also designed to maximise the dematerialisation of information content and to provide simple and straightforward access to information of interest.

The digital channels for our customers

The Hera Group continues to help its customers become more digital, both by developing and updating its **online services** and by providing **applications for mobile devices** (Rifiutologo, Acquologo, and My Hera).

During 2019, online services were significantly enhanced in order to improve the experience of using the features most commonly accessed by our customers. Thanks to these initiatives, online services are increasingly established as a **useful tool for customers** to view their bills and pay them, check their consumption, submit complaints, report self-readings, and check the progress of their procedures.

Customers using the online services



Figures apply only to Hera Comm

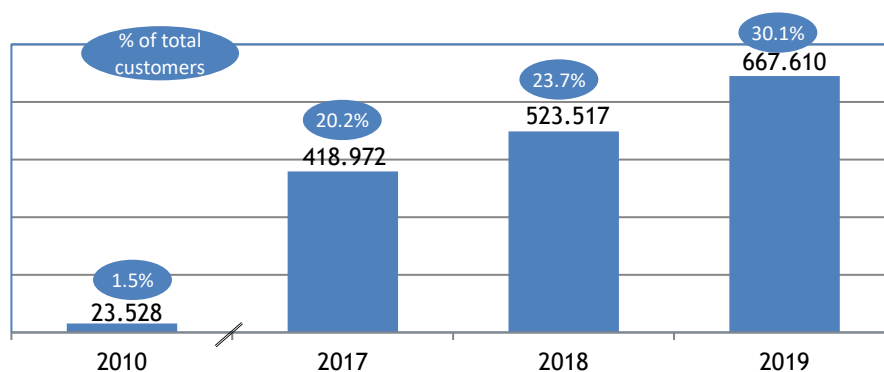
Hera Comm's online services proved very popular among customers again in 2019: its growth trend is continuing, and this year 23.8% of our customers had subscribed to the services. In fact, the number of subscribers rose by 18% compared to last year, reaching over 413 thousand customers. The interest of customers in receiving their **bills in electronic format** continues: 30.1% of participating customers have chosen to receive their bills via email, a 27% increase compared to 2018. The bills of customers who have not chosen electronic billing are printed on 100% recycled paper and delivered by regular mail.

In 2019, 21.2% (18.4% in 2018) of **EstEnergy's** customers and 14.0% (13.1% in 2018) of **Marche Multiservizi's** customers had subscribed to online services, while those using electronic billing were 19.3% for EstEnergy (15.7% in 2018) and 4.3% for Marche Multiservizi (2.8% in 2018).

Hera Comm Marche's customers are also continuing to grow towards digitalisation: in 2019, 13.7% of the total number of customers registered for online services (11.4% in 2018) and 17.1% of them preferred to send their bills without paper (compared to 12% in 2018).

In 2019 **AcegasApsAmga** experienced strong growth in the number of customers who signed up for online services, reaching almost 13 thousand customers (8 thousand in 2018). Electronic billing also grew significantly in 2019: 13% of customers chose to receive their bills electronically, compared to 10% in 2018. Dedicated campaigns launched in July 2019 also contributed to achieving these results.

Customers with electronic billing



Figures apply only to Hera Comm

In 2019, actions to promote the digital behaviour of the Group's customers continued.

The "**Digi e Lode**" project (see the "Case Study" section) continued to be promoted for the 2019-2020 school year, expanding it to customers in Marche and Abruzzo. The project aims to promote our digital services, such as electronic billing, online services, applications for mobile devices, and the use of digital self-care areas.

In 2019, 67% of total bills issued by **Acantho** were digital, avoiding the printing of around 183,000 sheets of paper, compared to 60% in 2018. Acantho does not print paper reports on its customers' electronic traffic, but customers can view them on the customer portal. Overall, the digitalisation of these two processes saved more than 622 kg of CO₂ equivalent per year.

IT security

The World Economic Forum ranked cyberattacks among the top 10 risks for people and the global economy once again in its 2020 Global Risks Report, both in terms of impact and probability.

The ability to cope with these new scenarios is also particularly crucial in the world of multiutilities. The Hera Group is adopting an increasingly systemic and structured approach to cyber risk management, to increase resilience and resistance to possible attacks.

The areas of intervention we have identified are:

- **device and user protection:** this measure aims to increase the security of workstations (desktop PCs, laptops, smartphones, tablets) and the users' awareness of cybersecurity risks;
- **identity protection:** the aim is to reduce the risk of digital identity theft (e.g., access credentials), unauthorised accesses, illegal activities;
- **infrastructure protection:** this measure aims to protect computer networks, including those of industrial plants, active equipment, and computer systems.

In the area of device and user protection, we strengthened our email security system in 2019 thanks to the development of the company's antispam solution. At the same time, the content filtering system for secure web browsing has been developed and integrated, to block malicious links sent via e-mail. These measures reduce the risk of receiving emails that contain possible threats by using global verification engines.

To further strengthen the protection of devices and users, in 2020, we will implement a security framework to protect centrally managed and monitored devices in real time against attacks that impact integrity or confidentiality, also by exploiting machine learning and artificial intelligence technologies.

Technological measures must always be accompanied by suitable attention to human factors. To address this need, from 2017 onwards, regular training and awareness campaigns have been carried out for all Group personnel through channels such as the Corporate Intranet Portal, screensavers, House Organ articles. In

addition, since 2017, 5 Ethical Phishing campaigns have been conducted (realistic simulation of an email attack through which an attacker tries to trick the victim into providing personal information, company data or access codes). The aim is to check the reaction of users and help them learn from mistakes.

The results and feedback obtained by these awareness campaigns encourage the Group to continue to invest in training and increasingly advanced simulation, e-learning and gaming tools.

Within the field of identity protection, one of the initiatives in 2019 concerned the introduction of multi factor authentication for particularly critical users in the cloud. This authentication method is designed to protect access to particularly critical systems by requesting additional authentication elements in addition to username and password, such as PINs generated in real-time. Access mode verification functions will be introduced within the security framework planned for 2020 and mentioned above. The checks will enable the automatic recognition of anomalous access conditions and block them if necessary.

Concerning infrastructure protection, in 2019 the implementation of an Intrusion Detection Prevention System (IDPS) was started to protect the services provided through the corporate data center against possible attacks from the Internet and the internal network. The implementation is split into two phases. The first, completed in 2019, included activation in detection mode. In 2020, the tuning phase will be activated, which will allow the final transition to the block mode (prevention) by the end of the second half of the year. In addition, by 2020, an additional level of protection focused on the Group's websites will be introduced, by activating a Web Application Firewall (WAF) system that will allow the recognition and blocking of malicious attempts to use the sites themselves.

Following on with a view to improving the Security Operation Center service started in 2017, the monitoring areas will be extended in 2020, in particular by starting coverage of the networks of industrial plants. The extension of the scope of the service will make it possible to introduce additional event correlation rules to increase the capability of analysing and detecting safety incidents. The integration of the technology in business processes and the centrality of people are fundamental for the adoption of an effective ICT Security strategy that mitigates the risks related to cyberattacks.

The Group also supervises the management of IT security incidents, in order to minimise any inefficiencies and impacts on the confidentiality, availability and integrity of data, governing the reporting obligations to the Information Security Incident Control Bodies of incidents that result in the abuse of personal data or have a significant impact on the continuity of Essential Services.

Staff training, E-learning, Security Awareness Campaigns and Ethical Phishing, and publication on the company intranet of IT security briefs are carried out continuously.

Regulatory compliance regarding the privacy of the Group's processes is pursued by means of a central Monitoring Body which, also in the execution of inter-company service contracts, manages requests for consultancy and specialist legal support, by preparing specific in-depth regulatory analyses and the documentation necessary to ensure compliance with the GDPR.

A single Data Protection Officer (DPO) was appointed for the Hera Group, in accordance with legal requirements.

The Group is certified under the ISO 9001 standard and the Group company that manages the network infrastructure, the data center and the disaster recovery services (Acantho Spa) is also certified under the ISO/IEC 27001 standard.

Main initiatives in 2019	Main initiatives in 2020
Activation of security solutions to protect the computer network (Intrusion Detection probes)	Development of solutions for blocking attacks via computer network (activation of Intrusion Prevention solutions)
Activation of solutions for increasing the protection against e-mail attacks (Antispam)	Adoption of solutions to increase the security of workstations and digital identities (Security Ring Project)
Vulnerability Assessment and Penetration Test campaigns on major corporate systems	Introduction of advanced solutions to protect business services exposed on the Internet (Web Application Firewall)
Activation of Abuse service for reporting suspicious e-mails	Extension of the monitoring scope of the Security Operation Center and development of event correlation techniques
Specific awareness campaigns (ethical phishing)	Awareness and training campaigns
	Extension of the security control perimeter to Industrial Controls (Operation Technology)

Economic development and social inclusion

Hera's contribution to the local economic development

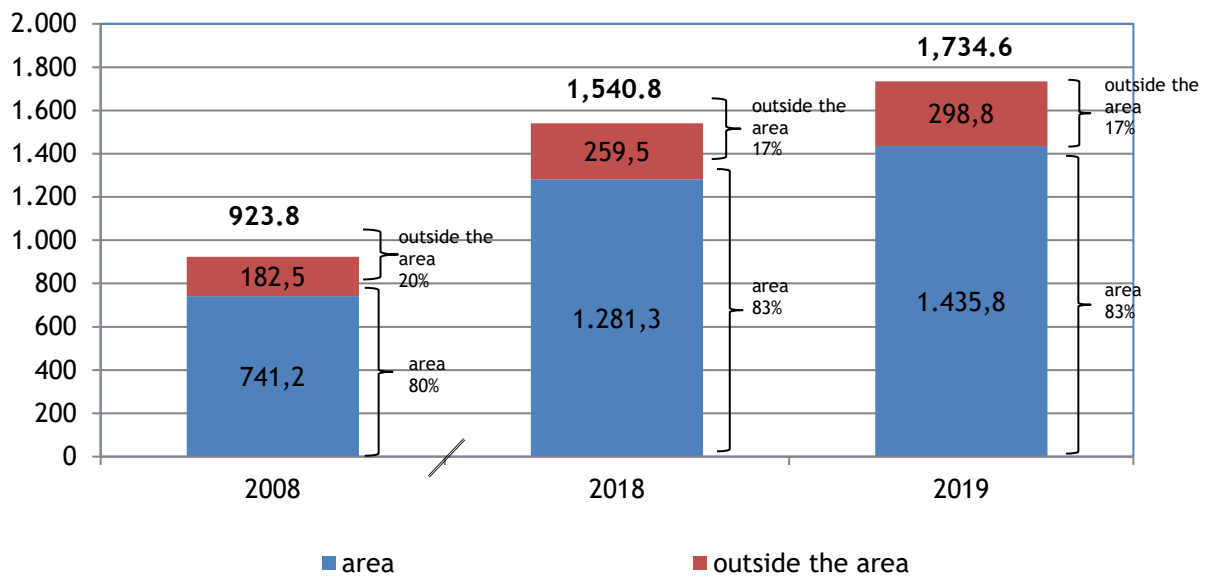
The economic value distributed to stakeholders

In 2019, the value added distributed to local stakeholders was Euro 1,435.8 million (+12.1% compared to 2018).

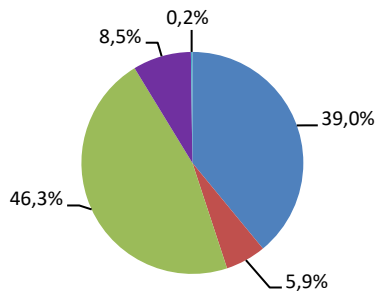
It includes:

- employee salaries (39.0% of the total);
- dividends to local Hera Spa shareholders (5.9% of the total);
- duties, taxes and fees to local authorities (8.5% of the total);
- donations and sponsorships (0.2% of the total);
- resources re-invested in the company (46.3% of the total).

Value added distributed (millions of Euro)

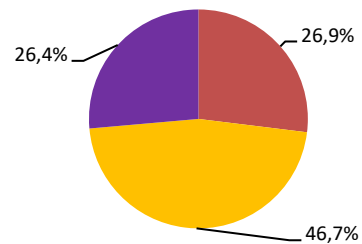


Allocation of value added to local stakeholders (2019)



■ Workforce
■ Company
■ Local community
■ Shareholders
■ Public Administration

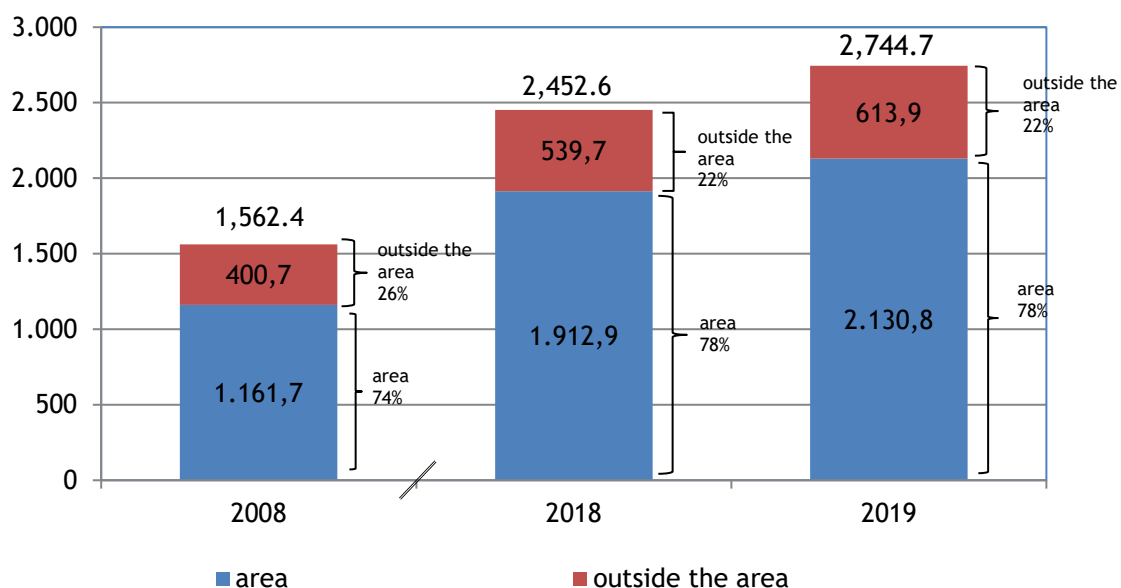
Allocation of value added to non-local stakeholders (2019)



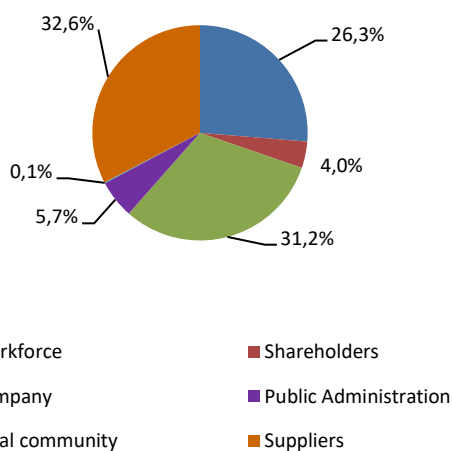
■ Shareholders
■ Financial institutions/Banks
■ Public Administration

If we add to the added value distributed to the area the amount of supplies from local suppliers (which at consolidated level represent 69% of the Group's total supplies, worth Euro 695 million), the economic value that in 2019 was distributed to the local area can be estimated at Euro 2,130.8 million (+11.4% compared to 2018), equal to 78% of the total wealth produced, which was Euro 2,744.7 million.

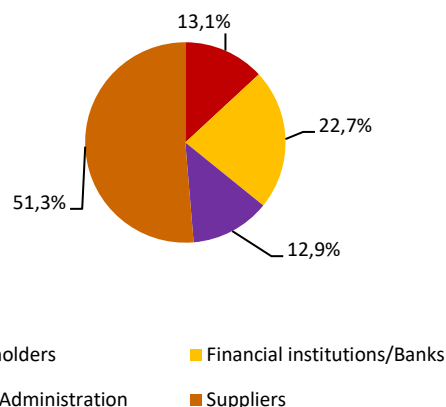
Economic value distributed (millions of Euro) [201-1]



Allocation of economical value to local stakeholders (2019)



Allocation of economical value to non-local stakeholders (2019)



The minority shareholders of the subsidiaries have not been taken into account to calculate the value added distributed to the local areas; as to the distribution of Hera Spa's dividends, reference is made to the share composition as of the 2018 dividend payment date.

Focus on economic value distributed to suppliers [203-2]

About 60% of the companies listed in the suppliers register is **based in our service area** (Bologna, Ferrara, Forlì-Cesena, Modena, Ravenna, Rimini, Triveneto, and Marche).

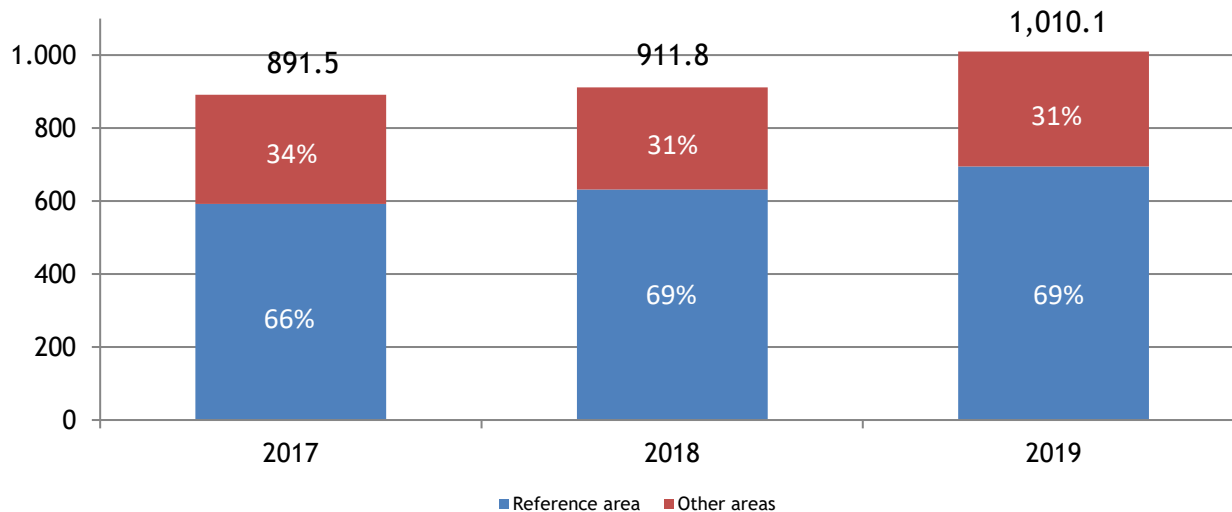
In terms of **economic value**, Hera issued purchase orders for **Euro 695 million (69% of the total and up by 10% compared to 2018)** to businesses based in its service area, a percentage substantially in line with previous years.

Suppliers, by geographic area

number	2017	2018	2019	% of 2019 total
Bologna area	461	475	475	8.8%
Ferrara area	143	148	144	2.7%
Forlì-Cesena area	237	239	226	4.2%
Imola-Faenza area	172	173	163	3.0%
Modena area	241	256	246	4.6%
Ravenna area	208	206	192	3.6%
Rimini area	170	175	168	3.1%
Triveneto	1,187	1,269	1,258	23.3%
Marche	101	125	280	5.2%
<i>Total for local area</i>	<i>2,920</i>	<i>3,066</i>	<i>3,152</i>	<i>58.4%</i>
Other Italian regions	1,761	1,954	1,985	36.8%
Other European Union nations	56	65	95	1.8%
Other	28	25	169	3.1%
Total	4,765	5,110	5,401	100%

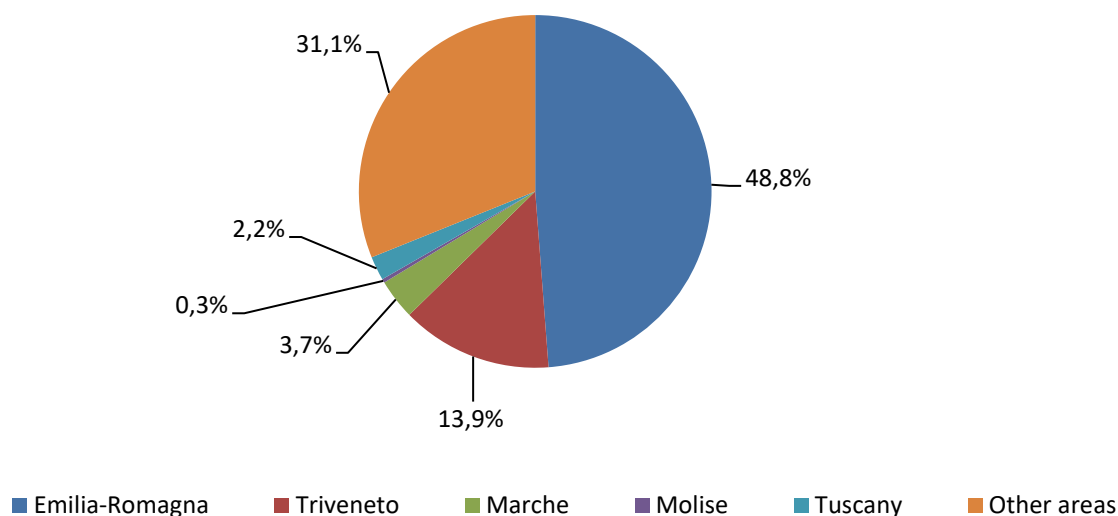
The data refers to the companies Hera Spa, AcegasApsAmga, AcegasApsAmga Servizi Energetici, Hera Luce, Herambiente, Fea, Herambiente Servizi Industriali, Hestambiente, Hera Comm, Inrete Distribuzione Energia, Heratech, Marche Multiservizi, and Uniflotte; intercompany purchases are excluded.

Value of supplies: breakdown by geographic area (millions of Euro) [204-1]



Purchases outside the European Union were made from suppliers based in Canada, Switzerland, Israel, the Republic of San Marino, and the United States.

Value of supplies: breakdown by geographic area (2019)



Focus on distributed economic value with donations and sponsorships

Proximity, shared value, and corporate reputation: the partnerships promoted by the Group contribute to consolidating the positive relationship with customers by establishing a dialogue with stakeholders who are increasingly attentive to corporate ethics. This is the leitmotif of the partnership activity that the Hera Group promotes in the area thanks to intense research and development of the best project proposals. In this respect, identifying and rewarding significant partnerships translates into acting in the interest of the area and stimulating its growth, fostering positive relationships, and promoting the proactive role of the Group in the areas it serves.

Sponsorships

thousands of Euro	2017	2018	2019
Recreational activities	160	551	767
Culture	1,071	1,062	1,047
Sports	297	416	429
Social	31	51	71
Environmental	360	239	179
Other	168	110	129
Total	2,087	2,429	2,622
<i>of which in areas served</i>	<i>2,042</i>	<i>2,212</i>	<i>2,520</i>
<i>of which in areas not served</i>	<i>45</i>	<i>217</i>	<i>99</i>

In 2019 Hera Spa contributed to organising more than 165 activities in various fields that have contributed to **enrich the content and the initiatives of the local communities**. In this perspective, the Group's commitment to promoting art, music, cinema, theatre, sports, and the environment becomes the driver both to convey highly artistic content and to make it usable and accessible to all.

Art. During 2019, Hera contributed to the creation of prominent shows, exhibitions, and artistic projects. Among the most significant partnerships are the exhibitions "Ottocento. L'arte dell'Italia tra Hayez e Segantini" (Forlì) and "Emozione Barocca. Il Guercino a Cento" in the artist's home town. Access to culture and support for the area are evident concepts also thanks to the Group's commitment to **SalaBorsa**, the historical library in Bologna which, thanks to Hera's support, can now extend its opening hours in the winter, and stay open to all, also on Sundays.

Theatre. From Modena to Rimini, the Hera Group has maintained a high level of interest in the theatres and theatre seasons in the area. The Hera Group has supported **small and large companies** recognised for their excellence, enhancing culture and its diffusion. Among the main partnerships: the "Rossini" Theatre in Lugo, the Rete Teatrale della Valmarecchia in the Rimini area, the Teatro Mentore of Santa Sofia in the upper Cesena area, the summer season of "Ribalta Marea" in Cesenatico; the Duse Theatre in Bologna and the theatre season of the ERT Foundation (the Bonci Theatre in Cesena, the Storchi e Passioni in Modena, the Arena del Sole in Bologna, and the Fabbri Theatre in Vignola).

Music. Every year, Hera identifies the concert seasons of great excellence, of interest to a broad range of audiences. Among these, the **Bologna Festival** with the review "I grandi interpreti", the Fondazione Musica Insieme of the **Ravenna Festival**, which in 2019 celebrated its XXXth edition. For this special event, the Group promoted an environmental improvement operation that allowed the best citizens of Ravenna to win tickets for the most eagerly awaited event of the Festival, the Ben Harper concert. The Group also showed its renewed interest in the **Bologna Jazz Festival** and the **Ferrara Buskers Festival**, an international street musician festival.

Cinema. Among the successful partnerships, Hera confirms its support for the promotion of film culture, which involves and excites audiences. Among the most prestigious partnerships, we consolidated our support for **Cineteca di Bologna**, that by organising the "Il cinema ritrovato" (Cinema rediscovered) and "Sotto le stelle del Cinema" (Cinema under the stars) events, gave thousands of people free access to the projections in the attractive setting of Piazza Maggiore during the summer. We confirmed our interest for theatre and cinema also by supporting initiatives that take place in other areas, including "Rassegne itineranti", held in 10 municipalities near Imola, Cinema Estivo at Sassuolo and the "La settimana arte" exhibition in Rimini. The collaboration with the Cinevasioni association continued, allowing the creation of a multimedia cinema inside the Bologna prison.

Sports and Social Activities. Hera is also close to the sports clubs in the area, thanks to several targeted projects dedicated to getting started in sports. These include basketball (the youth teams of Ravenna Basket, Andrea Costa Imola Basket, and San Benedetto XIV in Cento), rugby with the under 14-16 and 18 of Bologna Rugby 1928, and the youth football team of Felsinea. Besides, in 2019, sports were also combined with electric transportation, as we supported the first round of the world Ebike championship, held in Bologna. On the social front, it is worth mentioning our partnership with the first edition of **Me ne Cibo**, a free multidisciplinary event organised in Forlì by the Istituto Oncologico Romagnolo and focused on nutrition, with major speeches by guests ranging from philosophy to medicine, and from art to science.

Environmental and economic sustainability issues are central to the Group. Emphasis was also given to a number of events that dealt with these topics during the year, such as the Sustainability and Innovation Forum, support for the National Zero Waste Campaign to raise awareness on the issue of food waste, and the Resilienze Festival that addressed environmental sustainability through the languages of art to explore alternative points of view.

Donations

thousands of Euro	2017	2018	2019
Recreational activities	5	27	29
Culture	159	46	70
Sports	9	6	24
Social	134	174	276
Environmental	38	6	1
Other	17	70	12
Total	361	329	412
<i>of which in areas served</i>	<i>268</i>	<i>284</i>	<i>301</i>
<i>of which in areas not served</i>	<i>93</i>	<i>45</i>	<i>110</i>

Donations are a further **opportunity for supporting the area**, that Hera Group uses to promote solidarity and to support social and environmental projects. This sensitivity is also extended by the **HeraSolidale** initiative (see the case study in the chapter "People").

In 2019, the Group donated over Euro 412 thousand, 73% of which to its service area. About 84% of donations are for cultural and social purposes.

In 2019, Hera renewed its membership of bodies and associations engaged both in **scientific research**, such as LILT, and in **prevention within health-related projects**, such as UNICEF.

On the **social front**, the Hera Group supports the work of **Emporio Sociale il Mantello di Ferrara**, which provides income support by distributing basic necessities, and also by offering training opportunities, work orientation and social and health services, family budget management, education for responsible consumption, and promotion of active citizenship. We confirmed our support for other businesses involved in inclusion and socialisation activities, including the AiAsport non-profit association that offers an equestrian activities service for people with disabilities, and the Mus-e project for artistic courses aimed at schools located in difficult contexts, designed to accompany children to discover themselves and others, by experimenting with several artistic disciplines together with classmates and teachers.

Consistent with the provisions of the Group's Code of Ethics and protocol for Model 231, our corporate policy does not allow contributions of any kind to any party or politician.

The investments

[203-1]

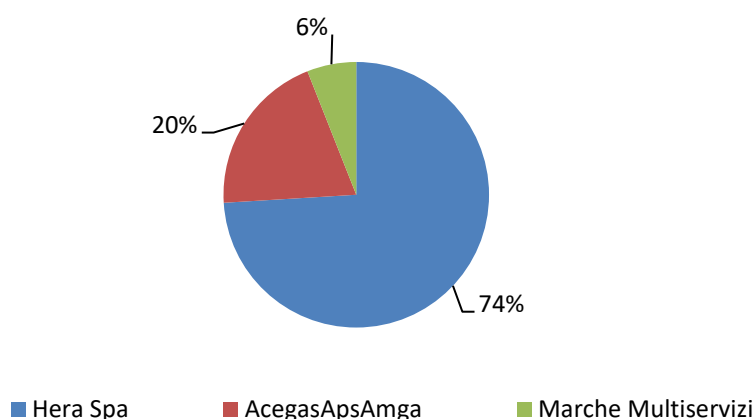
During 2019, the **Group's investments** amounted to Euro 509.2 million, with the benefit of Euro 24.5 million in capital grants, of which 13.4 million for Fondo Nuovi Investimenti (FoNI), as envisaged by the tariff method for the integrated water service.

Gross of the capital grants, total Group investments amounted to Euro 533.8 million. **Net investments rose by Euro 77.4 million**, from Euro 431.8 million in 2018 to Euro 509.2 million in 2019.

The Group's operating investments, amounting to Euro 533.5 million, were up 15.4% compared to the previous year and mainly concern work on plants, networks and infrastructures. In addition, regulatory adjustments were made, particularly on gas distribution for the mass replacement of meters and for the purification and sewage sectors.

Investments

millions of Euro	2018	2019
Gas area	115.4	138.3
Electricity area	23.0	43.4
Integrated water cycle area	157.9	175.8
Waste management area	78.1	81.8
Other services area	18.8	16.0
Central structure	69.1	78.2
Total operating investments	462.3	533.5
Financial investments	0.3	0.2
Total gross investments	462.6	533.8
Capital grants	30.8	24.5
<i>of which for FoNI (Fondo Nuovi Investimenti)</i>	<i>12.5</i>	<i>13.4</i>
Total net investments	431.8	509.2



In 2019, the net **investments in the gas area** were Euro 138.3 million, up by Euro 22.9 million compared to the previous year. In gas distribution, there was an increase of Euro 10.7 million, mainly due to greater extraordinary maintenance on networks and plants, the massive replacement of meters, and the ongoing update of cathodic protection in AcegasApsAmga's service area. The demand for new connections has also increased compared to the previous year. In gas sales, investments of Euro 8.3 million were made for activities related to the acquisition of new customers.

Investments also increased for district heating services, while they were substantially in line with the previous year for heat management, with the activities of Hera Servizi Energia Srl and AcegasApsAmga Servizi Energetici Spa. New district heating connections are slightly down compared to the previous year.

In the **electricity** area, investments in 2019 amounted to Euro 43.4 million, up by Euro 20.4 million compared to the previous year, of which Euro 15.5 million was attributed to the sale of energy investments for actions related to the acquisition of new customers. The measures carried out mainly concern the extraordinary maintenance of plants and distribution networks in the Modena, Imola, Trieste and Gorizia areas, which increased investments in electricity distribution by Euro 4.9 million compared to the previous year, and mainly refer to measures on networks and plants in the Trieste area and the new Modena Est primary distribution station. The demand for new connections has also increased compared to the previous year.

In 2019, our net investment in the **integrated water cycle** area rose to Euro 151.5 million, up by Euro 23.9 million compared to the previous year. Including capital grants, which decreased by Euro 6.0 million, investments increased by Euro 17.9 million to Euro 175.8 million, compared to Euro 157.9 million in the previous year. The investments were mainly for extensions, enhancements, and upgrades of networks and

facilities, and regulatory compliance work, mostly for water and sewage treatment. We invested Euro 99.7 million in the aqueduct area, Euro 48.3 million in the sewage area, and Euro 27.7 million in the purification area.

Net investments in the **waste management area** concerned maintenance and enhancement of plants and amounted to Euro 81.8 million, up by Euro 3.7 million compared to the previous year.

The composting/digesters sector decreased by Euro 16.2 million, due to major measures on the Sant'Agata Bolognese composting plant last year to build its biomethane plant, besides other measures, including plant upgrades at the Tre Monti mechanical biological treatment plant. Investments in landfills increased by Euro 6.3 million, mainly due to the construction of the first portion of the Cordenons plant and the work carried out on the tenth portion of the Ravenna landfill. The WTE sector increased investments by Euro 3.7 million, mainly for extraordinary maintenance work on the Padua, Bologna and Trieste plants. The increase of Euro 0.9 million in investments in the special waste plants sector is mainly due to maintenance work on industrial waste treatment plants in Ravenna. Investments in the drop-off points and collection equipment sector increased by Euro 4.7 million mainly in Hera Spa's service area, while the Euro 4.1 million increase in the selection and recovery plants sector is primarily attributable to the measures carried out on the mobile soil washing plant of Chioggia, the installation of the PE extruder, and more maintenance in the Aliplast Group companies.

Investments in the **Other services area** came to Euro 16.0 million, down compared to last year. In telecommunications, Euro 10.1 million was invested in for the network and for telecommunications and Internet data centre services, in line with 2018, while for the public lighting service, the Euro 5.9 million invested was for maintenance, upgrading and modernisation of lighting systems in the service areas. These investments decreased by Euro 2.8 million due to more work carried out by Marche Multiservizi during the previous year in the municipality of Pesaro, and in the municipalities covered by Hera Luce, in addition to the effects of the different accounting method for the works due to the application of IFRIC 12.

For our **central structure**, investments concerned measures on the buildings of company sites, on information systems, on the vehicle fleet, as well as the laboratories and the remote control centres. Overall, structural investments increased by Euro 9.1 million compared to the previous year, mainly due to measures on the Information System and corporate fleets.

Hera's contribution to social inclusion

Tariffs for families facing financial and physical hardship

Social bonuses are aids that **reduce the expense** sustained by residential customers for the electricity and gas they use. Residential customers with an ISEE indicator not exceeding **Euro 8,107.5**, or Euro 20,000 for families with more than three dependent children, are entitled to the reduction as defined by the Government in the Ministerial Decree of 28/12/2007.

The **electricity bonus** was designed to provide savings on the yearly electricity expense for two types of households: those in financial hardship and those in which a person is in serious health conditions and is kept alive by household electromedical equipment. For families that are struggling to pay their bills, the electricity bonus provides savings ranging from Euro 125 to 184, while for families facing physical hardship, it provides savings of Euro 193 to 692.

The amounts of the **gas bonuses** are determined according to the climate areas. They provide savings ranging from Euro 32 to Euro 273.

Gas and electricity bonuses issued

	2017	2018	2019
Number of bonuses issued	57,702	65,305	77,628
Value of bonuses issued (thousands of Euro)	5,255	6,471	7,868

In 2018, the **gas and electricity bonuses** issued to Hera Group customers amounted to 77,628 (+22% compared to 2018) for a total of Euro 7.9 million. As regards Hera Comm alone, 66,815 bonuses were paid out, for a total of around Euro 6.8 million (+24% compared to 2018).

As far as the **water service** is concerned, starting 1 January 2018 a **social bonus** for the **supply of water** to residential users facing social and economic hardship was established by Resolution Arera 897/2017 of 21 December 2017 (for those with an ISEE indicator not exceeding Euro 8,107.50 for families with a maximum of three dependent children, or not exceeding Euro 20,000 for large families). Applications for admission to compensation for water supply must be submitted together with the applications for the social bonus for electricity and/or gas, and is valid for 12 months with the possibility of renewal within the month preceding the expiry of the aid.

Atersir has instituted a **supplementary bonus** in the areas served by Hera Spa as an additional protection measure (Resolution CAMB 45/2018), while as far as AcegasApsAmga is concerned the new per-capita tariff structure for resident domestic users came into force in 2019 (Res. 665/2017- TICSII) with validity from 1 January 2018. Both ATOs with territorial jurisdiction (Ausir and Consiglio di Bacino Bacchiglione) have set a more favourable regime than that established by the Authority, of 18.25 m³/year. In fact, a consumption of 24 m³/year per inhabitant is applied to calculate the reduced rate.

In the areas served by Hera Spa, for 2019, the operator made the **initial payments** of water service social bonuses to 33,596 users for a total of Euro 3.1 million (of which Euro 1.2 million for additional bonuses).

In 2019, in Marche Multiservizi's service area, 3,609 applications for the water service social bonuses were received and validated for domestic users facing economic difficulties, a 51.4% increase over 2018.

For **waste management services**, a total or partial exemption from the payment of TARI or the quantity-based tariff may be granted to subjects facing severe social and welfare hardship. The municipalities allocate the funds for this aid, according to the income of the applicants. In some areas of Emilia-Romagna, discounts apply to individuals living alone that are affected by over 60% of permanent invalidity.

Hera's initiatives to support users facing financial hardship

Hera allows customers dealing with challenging financial circumstances to **pay their bills in instalments**. Households **experiencing financial hardship** (but that are not behind with any payments, including any previously-granted instalments) are allowed to pay their bills in three instalments, applying an interest rate equal to the official reference interest rate at which the European Central Bank grants loans to other banks equal to 0% since 16 March 2016), increased by 3.5%. For amounts over Euro 2,000, Hera reserves the right to carry out more accurate checks before granting an instalment plan. In certain cases of financial hardship (customers using the temporary state unemployment fund, or on unemployment benefits, beneficiaries of the income support fund provided by Ente Bilaterale Emilia-Romagna, or customers who are unemployed as a result of the reduction or termination of their employment) the number of instalments is increased to six, interest-free. In addition, subject to approval of social workers, the instalments may be increased to nine. This procedure also applies to **professionals** and **small condominiums**.

Businesses facing financial difficulty can also ask to pay Hera in instalments. In these cases, Hera grants similar conditions after checking their creditworthiness.

AcegasApsAmga offers its customers the opportunity to **postpone the due date** of their bills or to agree on a repayment plan in three instalments, provided that they have always paid their previously-granted instalments. In both cases, the amounts of the instalments may be increased by interest at the rate set by the ECB (0%). Moreover, in addition to the cases identified in the Protocols signed with the municipalities of

Padua and Trieste, the company assesses possible payment extensions for customers in particularly serious economic conditions.

In Marche Multiservizi's service area, the company grants payment of bills by instalments to customers that are in financial hardship, provided that they have always paid their previously-granted instalments. Payment by instalments for residential customers applies only to bills over Euro 50. Customers with VAT numbers and condominiums must pay 50% immediately, and the amount of the bill must be less than Euro 3,000. The instalments may not exceed a maximum period of 6 months, and the frequency of the instalments may not exceed one month. The instalments are agreed with the users according to the amounts of the bills issued and up to four instalments may be allowed, except in special cases agreed with the social services of the municipalities, where more instalments may be agreed. In these latter cases of financial hardship (customers using the temporary state lay-off fund, or on unemployment benefits, beneficiaries of the income support from municipalities, or customers who are unemployed as a result of the reduction or termination of their employment and assisted by social services) the instalments are interest-free. For users that fall within the above procedure, an interest rate equal to the official reference interest rate at which the ECB grants loans to other banks is granted, equal to 0% at 16 March 2016) increased by 3%. This procedure also applies to professionals and small condominiums. In particular, for businesses, payment by instalments is authorised following checks on their level of solvency.

In 2019, **220,940 instalment plans were granted** (+3% compared to 2018), of which 215,143 were mass-market customers and 5,797 were business customers. Overall, the amount paid in instalments amounted to Euro 128.2 million (+6% compared to 2018). At the **geographical level**, more than 215,237 bills were paid in instalments in Emilia-Romagna (+3% compared to last year), 3,183 in Triveneto (+1% compared to last year) and 2,520 in Marche (+27% compared to last year), for a value of about Euro 122 million in Emilia-Romagna, more than Euro 5 million in Triveneto and about Euro 1.2 million in Marche.

Customers who requested **at least one bill to be paid in instalments** during the year, considering Hera Spa and Hera Comm, accounted for 6.5% of total customers (6.5% for residential customers and 2.7% for business customers).

Number and value of bills paid in instalments

	2017	2018	2019
Bills paid in instalments (qty)	195,974	214,618	220,940
of which mass market (qty)	189,863	208,048	215,143
of which business (qty)	6,111	6,570	5,797
Bills paid in instalments (thousands of Euro)	112,591	121,315	128,240
of which mass market (thousands of Euro)	81,273	89,690	92,137
of which business (thousands of Euro)	31,317	31,625	36,103

In 2019, application continued of the **Agreements** aimed at preventing the suspension of services for assisted persons, reported by the social services of the Municipalities and the Bodies dealing with personal services. The Group confirmed its focus on the weaker social groups in 2019. The collaboration that the Group has pursued for many years with the social services of the municipalities and with the organisations that provide services to citizens is a distinctive aspect that sets Hera apart in the context of multiutilities and sales companies: a dedicated channel with operators that offer **support and counselling to social workers** through structured forms of relief for the most economically fragile portion of society. Collaboration with such authorities makes it possible to avoid service disconnections or reactivation of the service if it has been stopped, optimising the management of economic contributions by social services. In 2019, more than 18,000 requests were handled, as a result of reports from social workers, and 60% of suspensions were avoided. Agreements were signed with 83 municipalities. All the municipalities in the provincial capital city of Emilia-Romagna are involved except for Rimini, where energy contracts have a lower incidence.

AcegasApsAmga also continues to collaborate with the municipalities of Trieste and Padua, within the framework of the agreements signed to support and manage customers struggling to pay their bills. These agreements were updated during 2019 and involve instalment payments on bills, granting subsidies, and preventing service suspensions.

In 2010, **on its own initiative**, Hera introduced a **bonus** to offset expenses for the **district heating** service, to be given to customers who have the income requirements, with the same procedures as those used for gas and electricity expense compensation. The bonus for 2019 is worth Euro 136 per year for households up to 4 members, and Euro 187 per year for households with a greater number of members. At the date of approval of this report, we estimate that, for the year 2019, approximately 1,000 applications were filed (1,050 in the previous year) for a total economic value of approximately Euro 145 thousand, an increase of approximately 11.5% compared to the amount paid in 2018.

As regards **Hera** and **AcegasApsAmga**, the contracts state that if the **bill is not paid**, the **service may be suspended**. In these cases, an initial reminder is sent approximately 20 days after the bill's expiry date (only for reliable payers and debts of up to Euro 150) and a subsequent reminder (after an additional 20 days) is sent by registered mail, to inform customers that the service may be suspended. For amounts due under Euro 150, if payment is not made the supply is suspended, on average two months after the bill's due date. If the invoice is for more than Euro 150, a single reminder is sent by registered mail, warning the customer that their service may be suspended. In this case, the service can be suspended about one month after the invoice's due date. The customer may request to pay the bill in instalments, up to the time the supply is suspended. If the suspension involves condominium users, Hera informs its residents individually before disconnecting the service.

As concerns the **supply of water**, until February 2014 Hera reduced or disconnected the flow, in line with the provisions of the integrated water service charter and with the applicable regulations of competent authorities. In March 2014, on its own initiative, Hera voluntarily decided that in the event of late payments by residential customers or mixed-type customers, it would reduce the service in all Emilia-Romagna and Triveneto areas it serves, but never suspend it.

If it is **not possible to suspend** the service (e.g. the meter cannot be accessed) customers are sent an additional notice to inform them that the service will be disconnected (connection cut off) should they fail to pay their bill in the specified timeframe. For energy services, (gas, electricity, district heating), if disconnection is also not technically feasible, the selling party may terminate the contract and activate the last resort services.

In addition, the **updated SOStegno Hera guide** is available on the Group's website, and it contains all the information necessary on the opportunities of reducing expenses for energy and water services, available to Hera Spa and Hera Comm Spa customers in difficult economic and/or physical conditions. It also provides information on how to pay bills in instalments and what to do in the event of late payments. SOStegno Hera explains how users can benefit from the social bonuses for electricity, gas, water and district heating, and who to contact in the event of water leaks. Lastly, it provides advice on good practices for reducing consumption, actively contributing to the responsible use of environmental resources. SOStegno Hera will also be updated during 2020.

Placement under supply contracts with social cooperatives

[203-2]

In 2019, the **value of supplies** by types of work or services requested by the Hera Group to social cooperatives was more than **Euro 66 million**, up 7% compared to 2018.

Over Euro 65 million was assigned for **waste management services**, amounting to **27%** of the Group's total awards for these services. Supplies involved 51 cooperatives or consortia of social cooperatives, hiring 875 disadvantaged people (pursuant to Art. 4 of Italian Law 381/91), slightly up compared to 2018: 675 under

open-ended employment contracts and 406 under full-time contracts. At the geographic level, 397 individuals found jobs in the Emilia area, 336 in Romagna, 102 in Triveneto, and 40 in Marche.

Supplies from social cooperatives

	2017	2018	2019
Social cooperatives or consortia (qty)	48	49	51
Value of supplied goods/services (thousands of Euro)	62,654	62,158	66,390
Disadvantaged people hired (qty)	807	816	875

Workers employed for less than one year were also counted among the disadvantaged people hired.

The "Valoris" economic evaluation model developed by the University of Brescia in 2013 provides a measurement of the value created by social entrepreneurship of job placement, based on the results of empirical research. In particular, the model makes it possible to quantify **the economic impact for the Public Administration** of the social integration of type B social cooperatives. The research showed that the benefits essentially are a result of lower welfare costs and greater tax revenues due to the payment of income tax on the employment of disadvantaged individuals. The lower revenues for the Government due to tax and contribution exemptions which type B social cooperative benefit from have been deducted from the benefits. All of this ends up being a benefit for the Public Administration and amounts, on average, to Euro 4,209 in the year for each disadvantaged person. The economic benefit for Public Administrations due to Hera Group awarding contracts to social cooperatives can, therefore, be considered to be around Euro 3.7 million, for 2019.

Hera contributed to the inclusion in the national collective labour agreement for waste management services (renewed in July 2016) of a specific protection clause for outsourcing to social cooperation. This clause stipulates that a portion of outsourcing for the street sweeping, collection, waste transportation activities, septic tank cleaning and bin washing, is exempted from the requirement to apply the national collective labour agreement for waste management services, by defining socially inclusive projects. This portion is 5% and can be raised to 15% at the company level. Hera applies 15% on the basis of an agreement entered into in March 2012 with the trade union organisations and with the Group's union co-ordination.

Protected recruitment categories among Hera's workforce

In all the provinces it serves, Hera complies with Law 68/1999, which requires that **personnel belonging to protected recruitment categories be hired** in the proportion specified by that law.

According to the regulations on the rights to work of people with disabilities, companies that, due to the special conditions of their business, cannot provide jobs to the entire percentage of those entitled (disabled persons), may apply for **partial exemption** from the obligation to hire on condition that they pay to the Regional Fund for the Employment of Disabled People a sum equal to Euro 30.64 for each worker not employed and for each working day not worked; the maximum percentage allowed is 60%. Hera also uses this option, which requires payments to the provincial governments by the individual Group companies if they employ fewer disabled people than required by law.

This regulation, that promotes the recruitment and integration into the working world of certain categories of people (disabled people, orphans, etc.), also requires that the worker's employment placement must abide by solutions agreed among the company, the regional employment office and the worker.

At the end of 2019, there were **426 persons belonging to the categories protected by Law 68/1999** working in Group companies: **357** (266 Hera, 69 AcegasApsAmga and 22 Marche Multiservizi) are present pursuant to Art. 3 of the law (disabled people).

Persons belonging to the categories identified by Law 68/1999

qty	2017	2018	2019
Persons belonging to the categories identified by Law 68/1999	379	394	426

The data, at 31 December, apply to the following companies: The data apply to the following companies: Hera Spa, Acantho, Aliplast, Alimpet, Fea, Herambiente, Herambiente Servizi Industriali, Hera Servizi Energia, Heratech, Hestambiente, Hera Comm, Hera Comm Nord Est, Hera Trading, Inrete Distribuzione Energia, Uniflotte, AcegasApsAmga, Hera Luce, AcegasApsAmga Servizi Energetici, Aresgas, and Marche Multiservizi.

Development of occupation and new expertise

Hera's contribution to creating jobs

The importance that the Hera Group attributes to employment development, as highlighted in this paragraph, is not only reflected in the number of employees of the company itself, but also in indirect job creation and development of social responsibility initiatives in tenders. Adding to the Group's average number of workers the workforce employed by its suppliers, **the total employment impact is more than 17 thousand employees.**

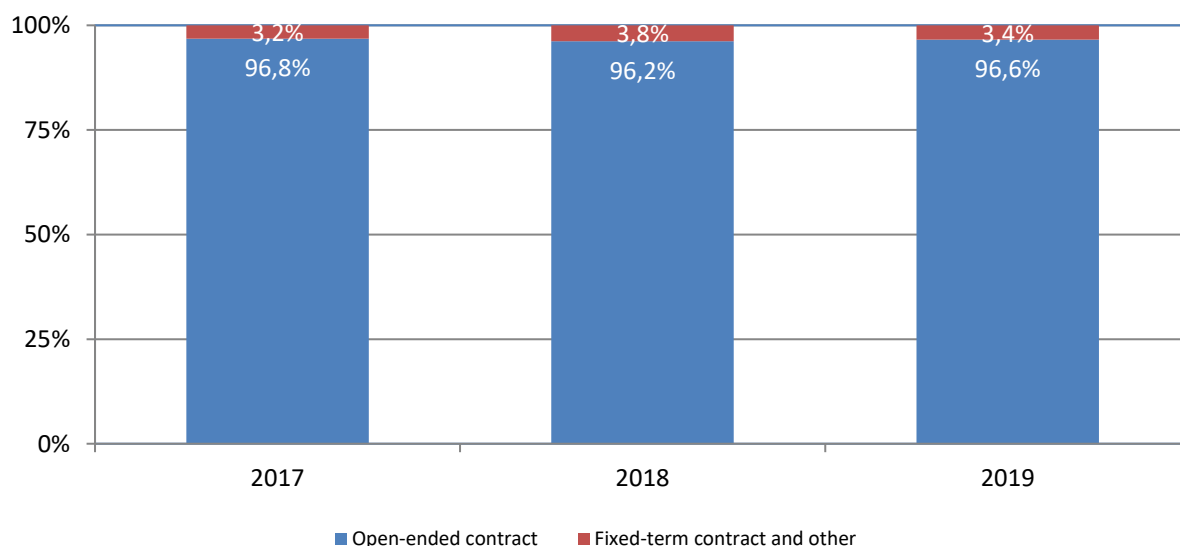
Stable employment and turnover

[401-1]

Up compared to the previous year, **96.6%** of the Group's average workers have open-ended contracts.

There was a **percentage increase in the average number of open-ended contract employees** compared to 2018, thanks to the completion of consolidation processes for employees previously on fixed-term contracts within the Group.

Workforce figures (average)



The total average number of workers was 8,924, of which 8,751 were employees on **open-ended contracts**, 218 were **fixed-term** employees (2.4%) and 84 were **non-hired employees** (0.9%), hired with other employment flexibility instruments (fixed-term contract employees and staff leasing contracts).

We hereby reiterate the Group's will to **reduce the use of flexible employment contracts**, applying them only for urgent situations (seasonality, extraordinary and temporary work peaks, substitution of workers who are absent temporarily). However, the employees hired under flexible contracts are given priority for hiring under open-ended contracts.

Personnel hired during the year, by position

Qty	2017	2018	2019
Managers	1	1	0
Middle managers	2	2	10
White-collar workers	161	238	266
Blue-collar workers	120	222	261
Open-ended contract employees	284	463	537
Fixed-term contract employees	236	361	331
Staff leasing contracts (temporary workers)	53	25	106
Job training and placement contracts	0	0	0
Project-based and freelance contract workers	0	0	0
Seasonal workers and apprentices	2	5	2
Non-open-ended contract employees	291	391	439

New employees are generally **hired from outside the company** for top-ranking professional positions (both specialised and operative), which are difficult to cover with internal personnel. Most of the clerical and operational roles are normally covered by internal personnel.

In 2019, **537 open-ended contract employees were hired**, to which 402 open-ended contract employees must be added due to changes in the perimeter. In addition, there have been 251 consolidations of fixed-term contract employees. As regards non-open-ended contract workers, an increased use of staff leasing contracts was recorded for temporary projects related to tenders for the awarding of the waste collection service in the Romagna area. Use of these contracts also rose in the Herambiente and Aliplast area due to temporary needs.

Over the past three years, overall **1,284 open-ended contract employees were hired**, 622 of which following initial hiring within the Group under fixed-term contracts.

Women hired under open-ended contracts during the year, by position

Qty	2017	2018	2019
Managers	0	0	0
Middle managers	0	0	2
White-collar workers	77	111	115
Blue-collar workers	2	0	2
Total	79	111	119

In 2019, **119 female workers were hired under open-ended contracts** (8 more than in 2018). The percentage of newly-hired female managers, middle managers and employees was 42.4% of the total number of hires.

Personnel hired with open-ended contracts during the year, by age and gender

Qty	2017			2018			2019		
	F	M	Total	F	M	Total	F	M	Total
under 30 years of age	40	71	111	51	97	148	46	131	177
between 30 and 50 years of age	38	112	150	55	220	275	69	254	323
over 50 years of age	1	22	23	5	35	40	4	33	37
Open-ended contract employees	79	205	284	111	352	463	119	418	537

Among the hires, 177 were for new, open-ended contract employees **under 30 years of age** (+29 compared to 2018), 323 between 30 and 50 years (+43 compared to 2018) and 37 over 50 years old (-3 compared to 2018).

Open-ended contract employees leaving, by reason

qty	2017	2018	2019
Resignations	90	143	147
Retirements	189	266	292
Deaths	14	14	11
Dismissals	8	15	19
Inabilities	23	12	13
Transfers to other companies/demergers	7	74	97
Total	331	524	579

In 2019 there was a 10.5% increase in employees leaving, 75.8% of which was due to **retirements and voluntary resignations**. In addition to these, 97 employees left the Group's perimeter for transfer to other companies or demergers, related to the exit from the perimeter of the gas distribution branch of Padua (AcegasApsAmga).

Workers leaving, by age and gender (2019)

Qty	Men	Women	Total
under 30 years of age	17	4	21
between 30 and 50 years of age	97	30	127
over 50 years of age	378	53	431
Total	492	87	579

There were 579 terminations in 2019, of which more than 50% were due to retirements and more than 74% in the over-50s class.

Turnover rate for workers, by role

%	2017	2018	2019
Managers	3.9%	7.1%	4.5%
Middle managers	2.6%	4.3%	5.0%
White-collar workers	3.4%	4.4%	5.6%
Blue-collar workers	4.3%	8.2%	7.7%
Average	3.7%	5.9%	6.3%

Turnover rate for workers, by gender

%	2017	2018	2019
Men	4.1%	6.8%	7.3%
Women	2.7%	3.4%	3.6%
Average	3.7%	5.9%	6.3%

Turnover rate for workers, by age

%	2017	2018	2019
under 30 years of age	2.5%	4.2%	4.6%
between 31 and 50 years of age	1.6%	2.3%	2.8%
over 50 years of age	5.9%	9.6%	10.1%
Average	3.7%	5.9%	6.3%

The **turnover rate** is calculated by dividing the number of employees leaving during the year by the number of employees at year end: in 2019, it was 6.3%. The cluster most subject to turnover is the male workforce over 50 years of age, due to the increase in retirements over the past years.

Suppliers' lead-on employment and corporate social responsibility in procurement

In order to globally assess Hera Group's social repercussions on Italy, however, we should also take into account the **employment at our suppliers** who supply goods, various services or support certain stages of the company process.

Lead-on employment of suppliers can be estimated as the portion of the workforce of the suppliers which carries out activities on behalf of the Hera Group. In 2019, lead-on employment generated an estimated **8,392 jobs** of which over 2,897 in Emilia, 2,010 in Romagna, 1,091 in Triveneto, 274 in Marche and 2,120 in other areas, not served.

This figure was obtained by analysing the financial statements of the Group's leading suppliers which cover 80% of the volume purchased in 2019. In order to estimate the lead-on employment our suppliers generated, the **ratio between the value commissioned by Hera and the total sales turnover of the supplier was considered**; this percentage was multiplied by the number of total employees declared in the suppliers' financial statements.

The further actions for social responsibility in tenders

Hera Group's employment impact is also due to concrete actions of **social responsibility in tendering**, which the Group continued to implement in 2019, consistently with the principles set out in the Group's Code of Ethics and attention towards the work conditions in the supply chain.

Again, in 2019, we applied the **Memorandum of Understanding on tenders**, entered into on 26 October 2016, by the Hera Group and the Italian trade union organisations. This protocol is mandatory between the Hera Group and the unions, which implies an obligation for the Group to incorporate the protocol's requirements into the tendering rules.

In addition to specifying the sector national collective labour agreement to apply to the main business sectors, the procurement protocol also governs aspects related to **employment continuity**, requiring the application of the **social clause**, which is of "voluntary" application (i.e., when not directly due to the specific labour agreement), in particular in the area of regulated and labour-intensive sectors, in labour agreements and services for activities after the initial measure on networks and services related to the management of the relationship with the end customer (meter reading and auxiliary metering activities), for new contracts for services that have been already outsourced.

This social clause requires that the new contractor must **make a job offer that is consistent with the overall conditions in force at the time of the contract change** such as retribution, professional requirements and duration of the contract to the personnel that is employed on a permanent basis and employed directly and mainly in the activities covered by the contract in force at the operator leaving the company in the period of 90 days prior to the start of the new management. In all the other cases of takeover of tenders, a prior meeting must take place among the outgoing contractor, the new contractor and the local trade unions to assess any possible solution to safeguard employment.

It should also be noted that during 2019, ANAC published its **Guidelines 13 of 13/02/2019** on "**The regulation of social clauses**", which provide an interpretation of the regulations in force. The guidelines are not binding, but represent an important reference. The principles and indications contained therein have been taken into account by the Hera Group, which has thus integrated the rules of the national collective labour agreement and social clauses deriving from the above protocol with the principles established by the aforementioned guidelines. The scenario has therefore changed considerably, leading to a **strengthening of the provisions on the protection of contractors' personnel**.

As a result, a **specially formed Working Group**, which involved the Personnel and Organisation Central Department and the Purchasing and Procurement Department, has drawn up a document with the aim of directing the activities of the contract representatives and making their behaviour as **uniform** as possible.

All this also in the light of the provisions of Art. 30, paragraph 4, of the Procurement Code, which establishes the obligation to apply in contracts the sector's "leader" National Collective Labour Agreement code, signed by the comparatively most representative trade unions, whose scope of application is closely related to the activity covered by the contract, in conjunction with the provision of Art. 50 of the Code itself, which establishes the obligation, with particular regard to labour-intensive contracts, to include in the tender documents specific social clauses aimed at promoting the employment stability of the personnel employed.

The work carried out can be considered neither exhaustive nor definitive, given on the one hand the complexity and variety of the Group's types of contracts and, on the other, the constant regulatory and jurisprudential changes in this area. However, it is proposed as guidance, the result of in-depth and shared evaluations, although it is susceptible to future, possible revisions that may become necessary.

The purpose of the document is to attribute the national collective labour agreement related to the most strategic types of jobs and services outsourced by the Hera Group and to require the social clause for each of them in the event of the contract being transferred. Therefore, the resulting changes have been made in the standard CSA (Contratto Speciale Appalto – Special Contract Specifications) to the article on the economic and regulatory treatment of the contractor's personnel, establishing five types of social and employment clauses in the event of a contract replacing an expiring contractual relationship, among which the one that is suitable for the case in question must be identified.

The most important tenders to which the Procurement Protocol rules described above were applied were the following 20 (of which four for AcegasApsAmga and one for Marche Multiservizi):

Type	Description	Legal entity	Amount (millions of Euro)	Duration (years)	National collective labour agreement	Clause
Open procedure	Scheduled maintenance work, extension of networks and accessories, water, sewage, district heating, gas and any other sectors	Hera Spa	106.6	4	Construction companies and similar	Social
Restricted procedure	Collection and transport of municipal and similar waste, beach cleaning and related activities	Hera Spa	30.4	2	Fise Assoambiente	Social
Restricted procedure	Mechanised and mixed sweeping services, manual sweeping, door-to-door collection of municipal waste in tourist areas and city centres, supervision and routine maintenance of collection centres	Hera Spa	29.4	2	Social Cooperation	Social
Open procedure	Reading service for water, gas, LPG, district heating, electricity and any other product sectors, distributed throughout the areas served by the Hera Group companies	Hera Spa	25.2	4	Gas water	Social
Open procedure	Construction works of underground utility connections, limited extensions/expansions, connections and small movements of networks and plants for water, gas and sewage services	Heratech Srl	23.2	4	Construction companies and similar	Social
Open procedure	Network maintenance work and support activities for emergency services in the electricity sector	Inrete Spa	23.2	3	Construction companies and similar	Social
Restricted procedure	Restricted procedure for the award of waste management services in the municipalities of Padua, Saonara and Noventa Padovana	AcegasAp sAmga Spa	17.5	4	Social Cooperation	Social
Restricted procedure	Restricted procedure to award waste management services in the municipalities of Padua, Saonara and Noventa Padovana	AcegasAp sAmga Spa	15.3	4	Fise Assoambiente	Social
Open procedure	Door-to-door waste collection, local collection, manual sweeping and adjunct services	Marche Multiservizi	13.9	4	Fise Assoambiente	Social
Restricted procedure	Collection and transport of solid municipal and similar waste, and services related to the sweeping service, including ancillary services	Hera Spa	12.8	2	Fise Assoambiente	Social
Open procedure	Gully sucker services in Hera Spa's service area	Hera Spa	11	2	Fise Assoambiente	Social
Restricted procedure	Service related to waste treatment and exploitation activities through mechanical/manual sorting and selection and mechanical handling at the selection and recovery plant in Voltana di Lugo (RA)	Herambiente Srl	6.3	4	Sector national collective labour agreement Art. 30 paragraph 4 procurement code	Social
Open procedure	Open procedure for the execution of the service of treatment and exploitation of cellulosic based waste	AcegasAp sAmga Spa on	5	2.5	Most representative union's national	Social

Type	Description	Legal entity	Amount (millions of Euro)	Duration (years)	National collective labour agreement	Clause
		behalf of Hera Spa			collective labour agreement	
Restricted procedure	Service related to materials handling and activities for the operational management of the Ravenna landfill and for the post-operational management of the Ravenna landfill and the Romagna Area of Herambiente Spa	Herambiente Srl	3.6	2	Fise Assoambiente	Social
Restricted procedure	Service related to waste treatment and exploitation activities through mechanical/manual sorting and selection and mechanical handling at the selection and recovery plant in Ferrara	Herambiente Srl	3.4	4	Sector national collective labour agreement Art. 30 paragraph 4 procurement code	Social
Restricted procedure	Service relating to materials handling activities and activities for the operational management of the Imola Tre Monti (BO) landfill site	Herambiente Srl	3.1	1	Fise Assoambiente	Social
Open procedure	Maintenance activities related to the volume conversion devices installed in the gas metering units and periodic checks, as well as random metrological checks and supply and installation of the devices	Inrete Spa	2.2	2	Gas water	Social
Restricted procedure	Services for the management of collection centres, door-to-door separate collection, cleaning and monitoring of basic drop-off points and related ancillary services	Hera Spa	2	2	Social Cooperation	Social
Restricted procedure	Restricted procedure to award park and green areas cleaning service consisting of manual sweeping, bin emptying, walkway cleaning and weeding, both manual and mechanised, in the area of the municipality of Trieste	AcegasAp sAmga Spa	1.5	4	Social Cooperation	Social
Restricted procedure	Service relating to operational management activities at waste transfer stations and equipped drop-off points	Herambiente Srl	1.3	1	Sector national collective labour agreement Art. 30 paragraph 4 procurement code	Social

It is hereby also pointed out that in the following tenders a **clause limiting the discount percentage** was also introduced, worded as follows "having taken into account the technical specificities of the tender and the economic analysis which underlies the price items which make up the unit price list under tender, the

contracting body deems that reductions of the tender base higher than 25% may present critical elements of sustainability and reductions higher than 30% may be difficult to accept":

- tender for gully sucker services in Hera Spa's service area, divided into 3 lots (Ravenna, Rimini, Forlì-Cesena);
- tender for the reading service for water, gas, LPG, district heating, electricity and any other product sectors, distributed throughout the areas served by the Hera Group companies and, specifically, by Heratech Srl and AcegasApsAmga Spa, divided into 7 lots;
- tender for the construction of underground user connections, limited extensions/expansions, connections and small movements of networks and plants for water, gas and sewage services provided by Heratech Srl in the territorial areas of Bologna, Forlì-Cesena, Ravenna, Rimini, Ferrara and Modena, divided into 6 lots;
- tender for network maintenance work and support activities for emergency services in the electricity sector, in the areas served by Inrete Distribuzione Energia Spa;
- tender for maintenance activities related to the volume conversion devices (converters) installed in the Gas Measuring Groups (Gruppi di Misura – GdM) and periodic checks, as well as random metrological checks pursuant to Ministerial Decree 93 of 21/04/2017 as amended, and supply and installation of the devices;
- tender for the restoration of road pavement in the areas served by the Hera Group;
- tender for scheduled maintenance work, network extension and accessories, in the water, sewage, district heating, gas and any other sectors, to be carried out in the areas served by Hera Spa and Inrete Distribuzione Energia Spa;
- tender for the construction of overhead connections to Hera group companies (Heratech Srl and Inrete Distribuzione Energia Spa).

In 2019, in the standard specifications for the work and services categories used in the tender procedures, we maintained both the **clause that requires requesting authorisation to use temporary manpower**, and the clause that **prohibits using accessory work services** (so-called vouchers) under contracts for work or services.

Lastly, it should be noted that, as part of its corporate social responsibility, the Hera Group pays constant attention to **checking regularity of social security payments** through the automated and centralised tool that came into operation in 2018, which responsibly involves the entire corporate supply chain involved in the management of supplies, so as to make this control even more systematic and widespread.

Development of new skills within the Hera Group

Since 2018, and as further developed in 2019, the Hera Group has offered various training activities to its employees in order to support their needed development of **new skills** and to embrace the **digital transformation**.

The main **initiatives already launched or underway** on new skills and on skills undergoing "transformation" include the following:

- communication and training initiatives in the field of **change management** and, in particular, on agility, flexibility, delegation, planning and remote collaboration in the implementation/extension of smart working;
- the **HER@futura** programme on skills in the digital transformation field, with differentiated targets;
- a change management plan related to the implementation of the **Digital Workplace - Office 365** with the activation of an e-learning platform focused on the use of digital tools and a series of application workshops designed for the digitalisation of operational micro-processes;

- specific training initiatives on skills in the field of **data analytics** and in the field of **modelling and predictive analysis**, in particular with application training for the data analytics community resources. Among them are the workshops organized by DAMA (Data Management International) and Google;
- subscriptions and participation in initiatives specific to the **Digital Innovation Observatories** of the Politecnico di Milano for resources involved in innovation projects in the Group's various Business Units;
- **Action Learning** initiatives with Design Thinking and Lean Start Up (Digital Lab) approaches, aimed at the development of prototypes by transversal groups, for resources with high potential and strong propensity to digital innovation;
- training on the topic of the **circular economy**, such as participation in various initiatives (including the Carbon Footprint and Water Footprint workshop on the organisation's product and those linked to Hera's presence in the CE100 network of the Ellen MacArthur Foundation);
- transversal training initiatives to strengthen **influencing and negotiation** skills, in particular for managers (leadership model, and speeches on advanced management negotiation techniques);
- vertical training initiatives on advanced **IT security** skills for resources that deal with quality, safety, and the environment, and with information technology;
- training on **new corporate applications** (such as: Geocall, Salesforce, Oracle).

Further initiatives are planned for **2020** such as for example:

- consolidation of digital transformation and data analytics initiatives with evolution towards aspects of Intelligent Automation and focus on Artificial Intelligence;
- continuation of the change management programme related to the Digital Workplace – Office 365 project with possible evolution towards the Power Platform;
- programme to further raise awareness and generate awareness of cybersecurity;
- initiatives to disseminate the culture of innovation;
- a new updated edition of the survey on Digital Proficiency.

Development of digital skills

The main initiative launched in the field of new digital skills is **HER@futura**, which aims to develop a digital-friendly culture and widespread know-how on these issues, while strengthening the vertical and cross-functional skills of the Group's workforce. The importance of the initiative is such that the entire scenario of the Group's Digital Transformation initiatives has now been given its name.

The **first phase** involved creating a survey, based on an online gaming path and aimed at exploring the Group's Digital Readiness.

The **second phase**, which started in April 2018, included a training and application programme diversified by channel, target and content, aimed at strengthening basic skills and the managerial approach of our staff, and increasing the speed and effectiveness of corporate projects in those areas. In this regard, nine **online training pills** have been released on issues related to the digital world, with a personalised training path based on the results of the survey.

In addition, the **Digital & Analytics for Managers** project was implemented by developing a special custom-made platform; six "digital lab" **action learning projects** were set up (two in 2018 and four in 2019), aimed at fostering new ideas in digital innovation, and two **envisioning initiatives** were also implemented for management.

In the **third phase** we set up the change management plan for the implementation of the Digital Workplace - Office 365 (see above) and at the end of that phase the foundations will be laid to start the second cycle of HER@futura oriented to Digital Proficiency, which will start with the delivery of the updated version of the Digital Survey.

With regard to digital skills in 2019, 44% of Hera Group's workforce has digital readiness skills.

Hera Educational for school-work alternation

In 2019, the Group continued its activities with the "Hera Educational" system with the creation of the **Pathways for transversal skills and orientation**, previously called joint school-work experiences, based on the joint design of company skills and educational plans for the individual courses of study. In 2019, a total of **95 pathways** were developed, 73 in Emilia-Romagna, 18 in Triveneto and 4 in Marche.

In addition, the "**Hera teaches you a trade...at school**" initiative continued, consisting in the co-design and implementation of educational activities, with the participation of Group employees acting as teachers, at technical institutes based in the local area (currently in the areas of Forlì, Modena and Ravenna).

In 2019, at Ferrara, we completed the first year of an experimental project for the curvature of educational paths with a view to strategic workforce management for the entire three-year period of the "Meccanica Energia" initiative, that focuses on **technical and operational trades** in the field of operation and maintenance of gas networks and plants. The course includes a teaching phase conducted by Hera staff at the school; then, from the second year of the project, the creation of pathways for transversal skills and for orientation which are designed in line with the topics addressed during the teaching phase.

In 2019, the Group started its initial activities in the international "**GrEnFin – Greening Energy Market and Finance**" project, financed by the European Commission and implemented by a broad international partnership of Universities and companies, coordinated by the University of Bologna. The aim of the project is the development of skills to support the **transition to renewable energy sources** and the **decarbonisation** of the European economy. Specifically, Hera will provide its expert contribution to the project in terms of content, methodologies and application experimentation. It will be directly responsible for implementing the "Professional module targeted to the Energy sector professionals" work package within the scope of the partnership, and will participate by carrying out teaching activities in the international summer schools.

Sustainability among the "new skills" of young people: Hera Group's contribution

Environmental education

For years the Hera Group has been promoting many **environmental education** projects, in all the areas, to raise awareness in schools on issues related to its services and to take part in the disclosure processes, making available a variety of company skills.

The success of the free educational project **La Grande Macchina del Mondo** is continuing and consolidating, confirming that the school world, from pre-schools to secondary schools, is attentive and interested in the Group's proposals. Hera Group's educational offer is a high-quality teaching tool that guides, enriches and completes school programmes.

The increasingly deep-rooted conviction that one learns from a very young age to become aware and environmentally conscious citizens encourages the Hera Group to continue this project and to improve and update it every year with care and attention. The aim is to support schools on the most current environmental issues, with the tools that technology provides, and to stimulate young people to choose lifestyles that are more sustainable for the planet.

The results for the 2019 school year were very positive, both for the number of students admitted and for the number of requests met. In **Emilia-Romagna**, the part of the project dedicated to the 4 to 13 years old age groups posted an increase in the number of participating schools in all areas. Many educational activities are offered, including **scientific workshops**, shows, **debates**, challenges and **guided tours** of Hera's facilities on the topics of water, energy and waste. The workshops have been renewed and updated concerning their content and methodology, are always engaging and interactive, and have been highly appreciated. The innovations introduced, including virtual tours of Hera's facilities, have been very popular with teachers. Particular attention was paid to schools in areas where new waste management services have been introduced, with a view to the introduction of **quantity-based tariff**. Involving children was also intended to make them become ambassadors of the new aspects to their families.

The didactic part designed for **high schools** involved more than 22,000 students, 1,000 more than the previous school year, confirming that the topics proposed are current, of great interest, and highly innovative for schools.

For the **next school year**, the meetings and activities will have the **topic of resilience** as a common thread. The scope will cover environmental issues related to our core business: the availability of resources, the reduction of pollution, CO₂ and waste sources, the resilience of electricity grids, sustainable consumption, adaptation to climate change, energy efficiency, under a perspective of integration of several disciplines in order to really trigger the transition to a more circular and sustainable model for society.

Environmental education projects

Qty	2017	2018	2019
Participating students	99,482	106,547	118,788
Teachers involved	8,169	8,821	10,128
Schools involved	1,213	1,278	1,440

In 2019, the total number of **students participating** in the initiatives rose further (+11.5% compared to 2018), as did the number of **teachers** involved (+14.8% compared to 2018) and the number of **schools involved** (+12.7% compared to 2018).

In addition, in collaboration with Acantho, Hera **donated 220 company PCs** that were no longer being used but in working order to the finalist institutes in the "Ti piace l'idea?" (Do you like the idea?) and "Click Day" competitions, which took place at the end of the educational projects and tested students from Emilia-Romagna's primary and secondary schools. The initiative focuses on Hera's attention towards the reuse of goods, making a concrete contribution to reducing the production and disposal of WEEE (waste electrical and electronic equipment) and providing a very important support to schools, giving them tools they can use for educational purposes.

The number of schools involved in **AcegasApsAmga's** service area also increased (301 compared to 251 in 2018), as did the number of students (+13.0% compared to 2018) and teachers involved (+19.4% compared to 2018). AcegasApsAmga continues to pursue with conviction its commitment to environmental education for young people, also offering tours of major water and waste treatment plants. The main objective is to encourage young people to cultivate a responsible attitude towards the environment and the rational use of resources.

In the case of **Marche Multiservizi**, 24 schools participated (more than twice as many as in 2018), with 81 teachers (doubled compared to 2018) and 1,072 students, a 4% increase compared to the previous year. Marche Multiservizi promotes environmental education projects throughout its service area to raise awareness in the school world on issues concerning its services and act upon information processes, also by providing business expertise.

Air and soil protection

Atmospheric emissions of waste-to-energy plants

All of Hera Group's waste-to-energy plants are equipped with **flue gas purification systems** and **process and emission control systems**, designed and built so as to attain:

- high flue gas purification performance in all process conditions;
- high operational versatility;
- high reliability of emission control systems.

In order to pursue these objectives, the plant **engineering standards** adopted in the Group's plants are characterised by the following:

- double reaction and filtration system to lower the concentrations of particulate, hydrochloric acid, hydrofluoric acid, sulphur dioxide, heavy metals, dioxins and furans and aromatic polycyclic hydrocarbons (except for the Pozzilli plant, equipped with a single reaction and filtration system);
- double reaction system (non-catalytic and catalytic) to reduce nitrogen oxide concentrations (except for the Pozzilli plant, equipped with a single reaction and filtration system);
- double flue gas monitoring system for process control (except for the plants in Padua, Pozzilli and Trieste, equipped with a single system): the two systems measure the concentrations of the main pollutants from the furnace and downstream of the first reaction and filtration phase. On that basis we calculate the volume of reactants required to ensure purification levels that ensure compliance with statutory emission thresholds and which are, on average, 80-90% below such thresholds;
- continuous double monitoring system for chimney emissions: one as a backup for the other in order to ensure the continuity of the analysis of the concentrations in atmospheric emissions.

The possibility of using double purification and monitoring systems in series (or in parallel for chimney monitoring) enables us to successfully pursue the objectives described above.

In addition to the aforementioned activities, we carry out the following operations on an annual basis to monitor emissions and environmental impact:

- **specific chimney inspections**, carried out by certified inspectors at intervals set by the integrated environmental authorisation, for the parameters which cannot be continuously monitored;
- **checks on soil fallout of pollutants**: we carry out external monitoring programmes jointly with University and research agencies to analyse the fallout on soil, ground and vegetation, etc., to ensure that the emissions are not only within the regulatory limits, but also have no significant impact on the surrounding environment.

This paragraph also contains data on the Faenza biomass plant (operated by Enomondo, 50% owned by Herambiente and not consolidated using the line-by-line method), which is equipped with a double reaction system (catalytic and non-catalytic) to reduce the concentration of nitrogen oxides.

Atmospheric emissions of waste-to-energy plants [305-7]

t	2017	2018	2019
Particulates	6.2	6.2	4.6
Hydrochloric acid	17.4	16.7	18.5
Nitrogen oxides	705.3	689.9	701.7
Sulphur oxides	14.9	13.1	18.4
Carbon monoxide	83.0	82.2	80.3
Hydrofluoric acid	0.6	0.6	0.6
Total Organic Carbon	10.4	9.7	9.9
Waste treated in the plants (thousands of t)	1,403	1,407	1,360
Net electricity generated (MWh)	802,675	754,043	760,640
Thermal energy produced (MWh)	265,920	245,493	243,248

The data are calculated using continuous measurement systems which are subject to the approval of the supervisory bodies at the time the plant is granted a permit to operate. The procedures used by individual plants to collect and calculate the volume of substances released are not completely standardised. Including the Enomondo waste-to-energy plant.

The analysis of mass flows shows an improvement with regard to emissions of particulate (-25.8% compared to 2018) and carbon monoxide (-2.3% compared to 2018). The values for nitrogen oxides, hydrofluoric acid

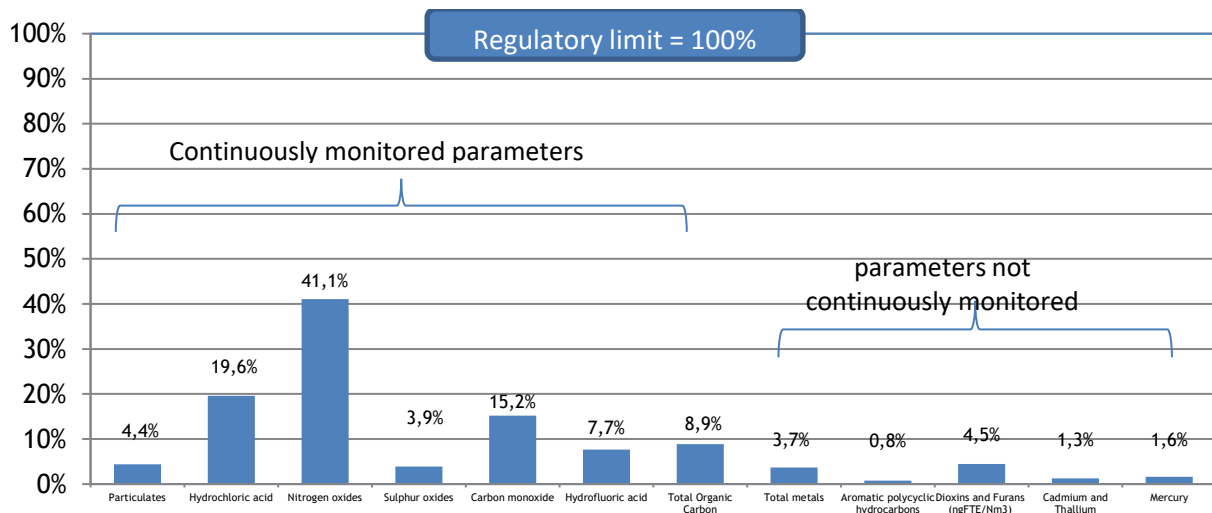
and total organic carbon remain stable. Sulphur oxides, on the other hand, worsened slightly due to a different composition of the incoming waste. Note, furthermore, that for all continuously monitored pollutants, the concentrations measures at the chimney, in 2019 were once again much lower than the regulatory limits: from a maximum of 96.1% below the regulatory limits for sulphur oxides to a minimum of 58.9% for nitrogen oxides.

Concerning pollutants that are not continuously monitored, total emissions can be estimated on the basis of the results of the analyses performed during the year. In 2019, 152 kg of metals were emitted (120 in 2018), along with 0.72 kg of aromatic polycyclic hydrocarbons (0.56 in 2018) and 17.4 mg of dioxins (22.7 in 2018). All values are at least 95.5% below regulatory limits.

The results of the emissions measurements at Hera Group's waste-to-energy plants confirm that, since they are equipped with the best technologies available and run in the most efficient manner possible, these plants emit levels of particulate, dioxins and furans, aromatic polycyclic hydrocarbons and metals that are **far below the emissions limits**. Compared with the other parameters, subject to continuous monitoring, at plants equipped with the double reaction sulphur oxide reduction system (Bologna, Ferrara, Forlì, Modena, and Rimini) the **concentrations** were not only **well below** the regulatory limits, but **also** below the **limits set by local authorities**, which are much more stringent than Italian national regulations.

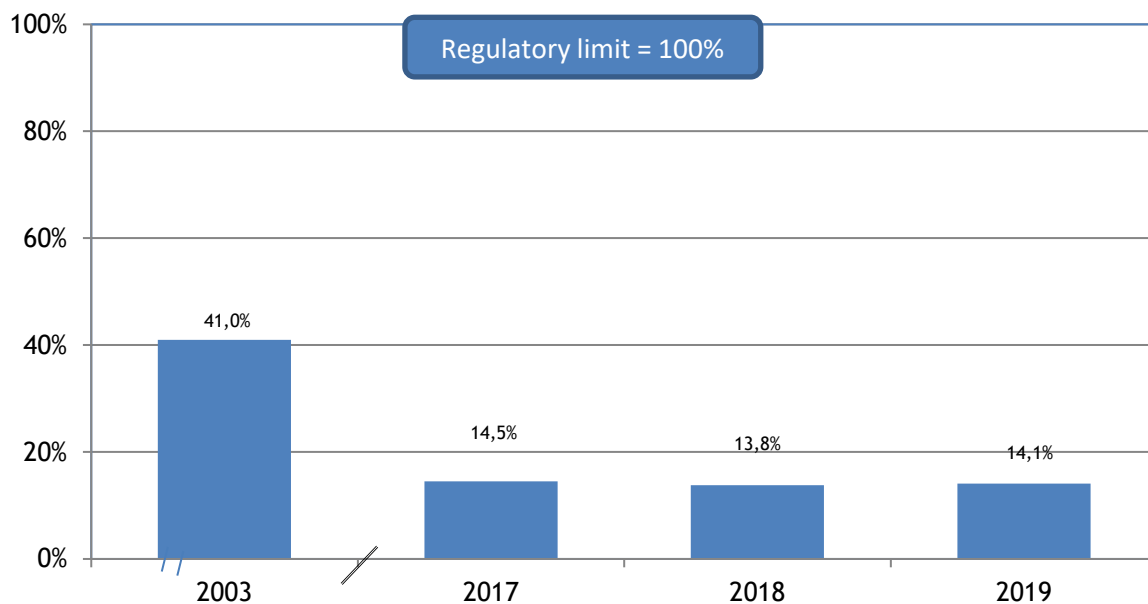
Italian Legislative Decree No. 133/2005 requires continuous monitoring of flue emissions for seven parameters. In addition, mercury is also continuously monitored in the Ferrara, Forlì, Modena and Rimini plants.

Compliance of atmospheric emissions of waste-to-energy plants with regulatory limits pursuant to Italian Legislative Decree No. 133/2005 - (optimal values <100%), 2019



Including the Enomondo waste-to-energy plant.

Compliance of atmospheric emissions of waste-to-energy plants with regulatory limits pursuant to Italian Legislative Decree No. 133/2005 - continuously monitored parameters (optimal values<100%), weighted average of the volumes of waste treated in the plants operated

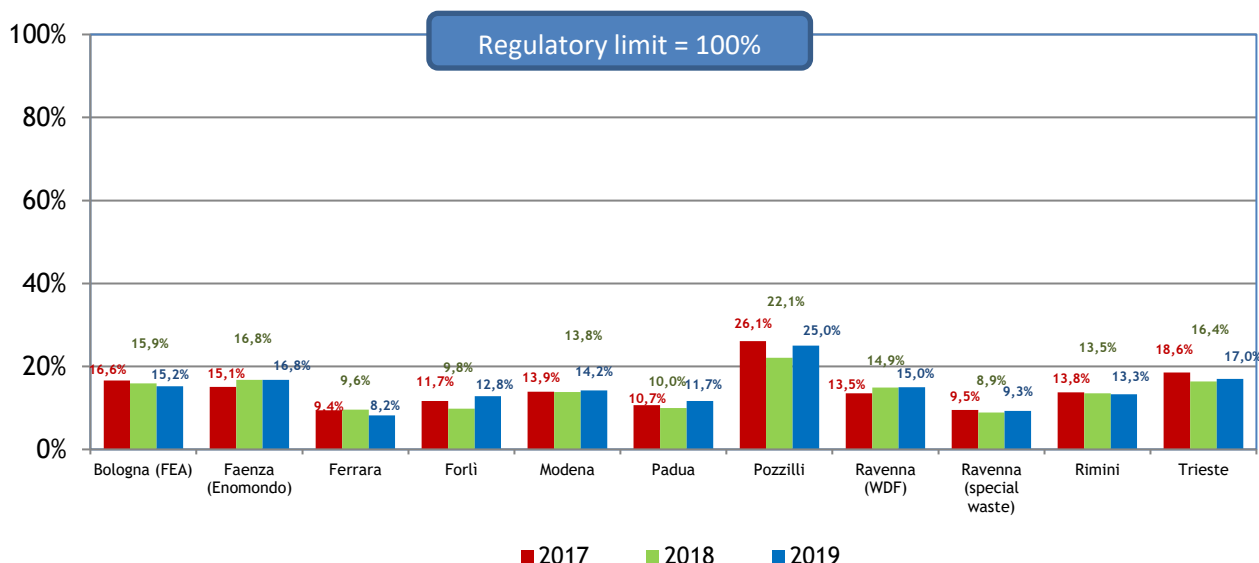


The **plant renovation process** has resulted in a significant improvement in the abatement percentages of pollutant emissions:

- in January 2008, two new lines of the Ferrara waste-to-energy plant became fully operational;
- the new Forlì plant became fully operational at the beginning of 2009;
- in April 2010, the new line 4 of the Modena waste-to-energy plant became operational;
- in October 2010, the new line 4 of the Rimini waste-to-energy plant became operational.

In 2019, the **average concentrations of the atmospheric emissions of the waste-to-energy plants were 14.1% of the regulatory limits**. This means that in 2019, emissions were 85.9% below the limit, while in 2003 the percentage stood at 59%. **The levels of parameters that do not require continuous monitoring (total metals, aromatic polycyclic hydrocarbons, dioxins and furans, cadmium and thallium, and mercury) are also below regulatory limits: from -95% to -99%.**

Compliance of atmospheric emissions of waste-to-energy plants with regulatory limits pursuant to Italian Legislative Decree No. 133/2005 - continuously monitored parameters (optimal values <100%), detail by plant



Waste-to-energy plant atmospheric emissions compared to authorised limits – continuously monitored parameters (optimal values <100%)

%	2017	2018	2019
Bologna (FEA) waste-to-energy plant	28.3%	26.7%	25.7%
Ferrara waste-to-energy plant	10.2%	10.8%	8.5%
Forlì waste-to-energy plant	22.2%	23.8%	24.2%
Modena waste-to-energy plant	16.7%	17.7%	17.2%
Ravenna waste-to-energy plant (special waste)	11.4%	13.4%	11.1%
Faenza (Enomondo) waste-to-energy plant	20.7%	20.3%	19.4%
Average	18.2%	18.8%	17.7%

The integrated environmental authorisations for the plants in Ferrara, Forlì, Modena and Faenza also require continuous mercury monitoring.

The same indicator was calculated for the six plants with authorisation limits that are more stringent than Italian regulations for 2019 (for the eight continuously-monitored parameters on average the limits set by the authorisations are at 73% of the limits let by Italian Legislative Decree No. 133/2005). The data are shown in the table above. The results are excellent again in this case: the concentrations are, on average, 82.3% below the most restrictive limits. Note that since the limits set by the individual authorisations depend on the specific plant, they are not comparable.

District heating: an answer to protect air quality

District heating is a service that sells heat for customer home heating and domestic hot water. It is an alternative system to traditional autonomous or condominium-based boilers which makes it possible to concentrate the production of heat in central installations, which are more efficient and better controlled than home boilers. From these installations, the heat, in the form of hot water, is brought to customer homes through a distribution network made of insulated piping. The heat then fuels the domestic heating system via non-polluting heat exchangers.

Customers have the advantage of increased safety and lower running and maintenance costs, while maintaining the freedom to independently adjust the temperature of their homes.

District heating is a solution to air pollution problems in cities by replacing home boilers, which are sometimes fuelled by diesel fuel, with high-efficiency heat production methods, renewable energy, or energy recovered from other production processes.

We have been able to achieve significant energy-environmental improvements in the Group's district heating plants by continuing the process of replacing fossil fuels with renewable energies or fuels from recovery.

During 2019, some new factors arose:

- the transfer of the geothermics assets to the new Hera – Enel Green Power joint venture was completed at the end of 2019;
- the Cesena Isole and Ravenna Berlinguer – Centro systems are completely out of the scope.

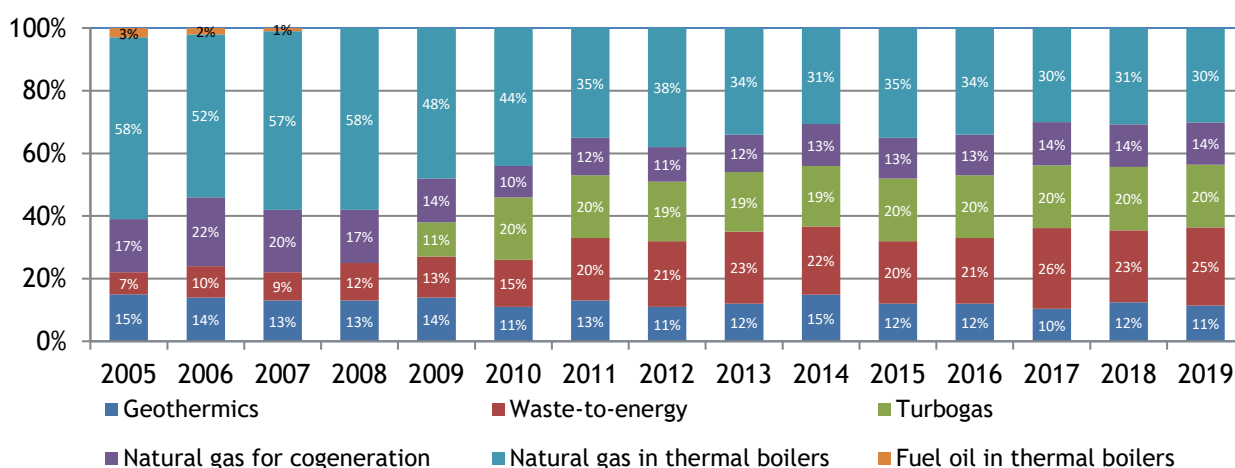
Environmental advantages of district heating [302-5] [305-7]

	2017	2018	2019
Primary energy saved (toe)	37,450	36,495	35,132
Nitrogen oxides avoided (t)	301	265	281
Carbon dioxide avoided (t)	125,684	121,022	119,639
Sulphur oxides avoided (t)	296	268	273

Calculated as the difference between a traditional system (existing boiler park comprising 65% natural gas-powered boilers and 35% diesel boilers with an average seasonal yield of 75% (Source: Comitato Termotecnico Italiano, 2009), and the national electricity grid) and Hera's district heating systems for the quantities of energy (thermal and electric) produced by Hera. Excluding AcegasApsAmga. The emissions coefficients of the national electricity and thermal grid were updated in 2016.

In 2019, the plants operated by Hera saved 35,149 tonnes of primary energy equivalent.

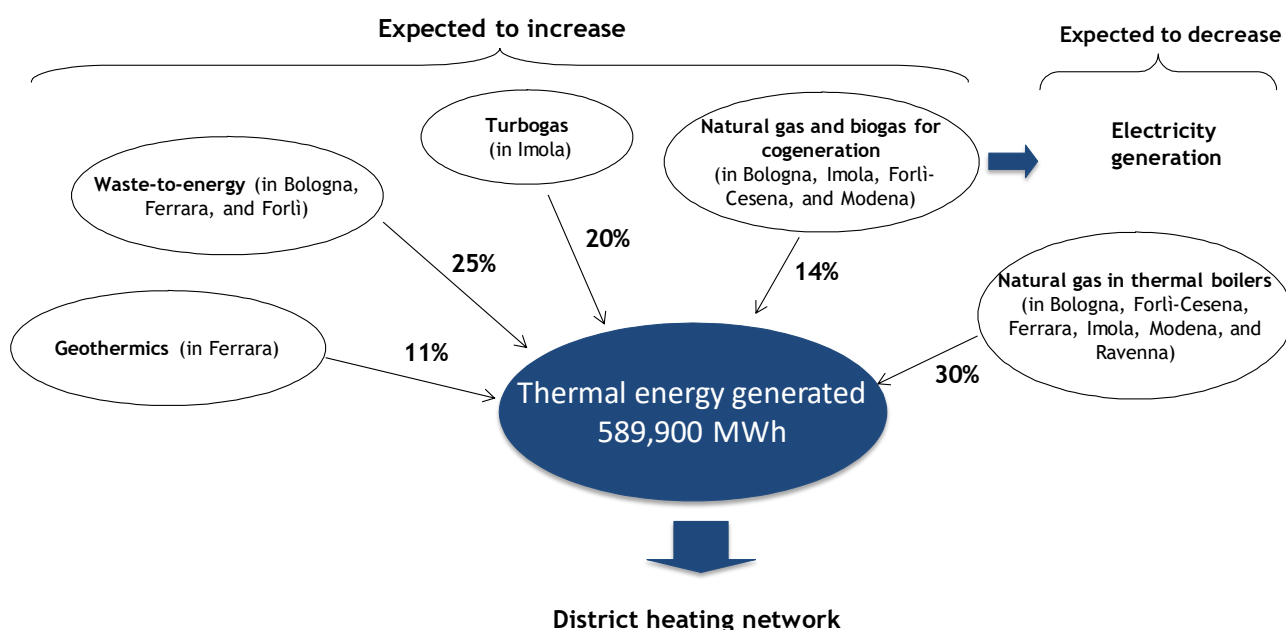
Sources used for district heating (2005-2019)



Excluding AcegasApsAmga.

With regard to the sources used for district heating, it should be noted that the **percentage of thermal energy from renewable or similar sources** remained generally substantially constant compared to 2018, despite some technical problems that occurred with geothermal energy production, and the general decrease in input due to a decrease in thermal energy unit in the winter months of 10% and on an annual basis of 2%. The general decrease in input was 2.6% or 15.7 GWh. This impacted all sources of production. The decrease in thermal **energy production from cogeneration** is due to the combination of a lower hourly value of electricity, and lower gas costs that meant that cogeneration worked for fewer hours, also taking into account the increasing cost of CO₂.

Sources used for district heating (2019)



Excluding AcegasApsAmga.

District heating: energy sold and volume served

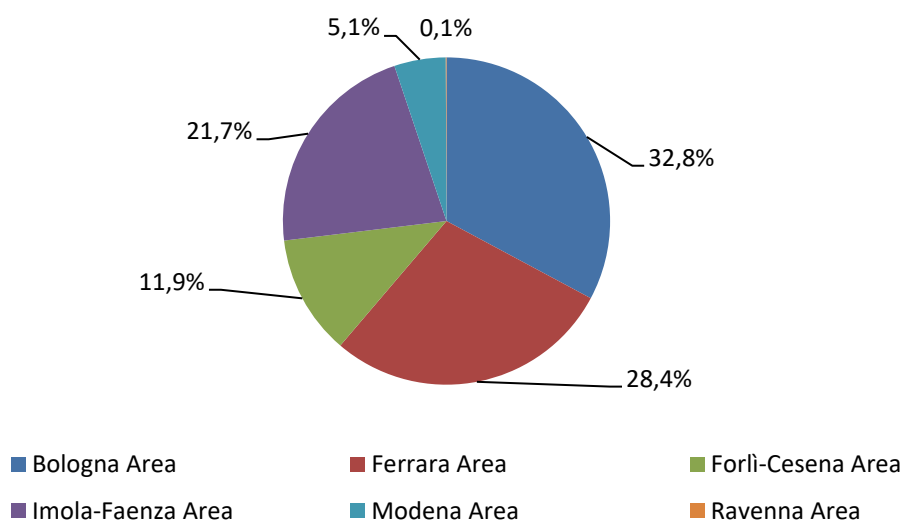
	2017	2018	2019
Thermal energy sold (MWh)	499,144	500,916	481,510
Volumes served (thousands of m ³)	20,935	21,174	21,194
Housing unit equivalents served (qty)	87,231	88,225	88,307

The housing unit equivalents were calculated on the basis of an average apartment volume of 240 m³. Excluding AcegasApsAmga.

In 2019, the volumes attributable to Cesena Isole and Impianti Ravenna exited the reporting scope since they were sold entirely during 2018. Net of these exiting factors, the increase in volume would be 224,100 m³, a 1.1% increase.

The 2019 results confirm the strategy we have pursued to expand and develop district heating to maintain or increase the share of energy from renewable and similar sources achieved in previous years: in fact, during 2019, the supply of thermal energy from renewable and assimilated sources increased by 1%, with +5.2%, equal to 7 GWh generated by waste-to-energy plants, which partly compensated for the problems encountered in the geothermal plant. The total amount generated generally remains substantially constant at a portfolio value of about 70% of the energy used.

Housing unit equivalents served, by area (2019)



Excluding AcegasApsAmga.

Cogeneration for district heating

The term cogeneration identifies the combined production of electricity and thermal energy from a single source (whether fossil fuel or renewable), and that takes place in a single integrated system. It is done in specially-designed thermoelectric power plants, which recover heat from the flue gas produced by an engine powered by any fuel. The process, therefore, achieves significant energy savings (about 40%) compared to separate electricity and thermal energy production.

Thanks to their connection with district heating networks, Hera Group's cogeneration plants help improve the air quality of the towns where they are located. Thanks to them, many boilers have been replaced with modern, efficient systems to heat and supply hot water to buildings. With district heating, systems are monitored continuously, both in terms of combustion processes and atmospheric emissions.

Hera Spa – District Heating Department operates ten cogeneration plants, of which three are trigeneration plants, for an overall nominal installed electric power of 27.15 MW. In 2019, they produced 191,507 MWh of thermal energy for district heating in all our service areas, of which 118,785 MWh were generated in the Imola cogeneration plant.

Atmospheric emissions generated by district heating

In 2019, the district heating plants produced a total of 658.8 GWh of electricity and thermal energy, down by 3.1% compared to 2018. In 2019, in fact, there was a 10% drop in temperature during the winter months and 2% on an annual basis, which impacted the thermal energy injected, and a combination of a lower hourly value of electricity, and lower gas costs, that resulted in some cogenerations supplying less energy. Retention of maintenance activities carried out on our plants, and the objective of optimising production and network management and the integrated management of our source portfolio allowed savings of 35,132 toe in 2019 (excluding Ravenna), slightly down by 1,363 toe, equal to 3.7% less compared to 2018. Despite this decrease, due to a significant reduction in heat input and lower electricity production, energy from waste-to-energy plants increased by 5.2% compared to 2018.

The ratio between emissions and the energy produced provides a measure of specific emissions. In 2019, 110.8 tonnes of NO_x were emitted, down 7.1% compared to 2018, and 168 grams of nitrogen oxides per megawatt-hour of energy produced (-4.3% compared to 2018).

Atmospheric emissions generated by district heating

t	2017	2018	2019
Nitrogen oxides	123.0	119.2	110.8

The data refer to the thermoelectric and cogeneration power stations that provide district heating (source of emission factors for NO_x: Corinair 2004 for boilers and data from manufacturers for cogenerators). The data do not include Imola's power plant, detailed below.

Atmospheric emissions generated by district heating (2019)

t	Nitrogen oxides
Bologna	50.6
Ferrara	6.7
Forlì-Cesena	30.8
Imola-Faenza	2.3
Modena	20.2
Ravenna	0.2
Total	110.8

The data refer to the thermoelectric and cogeneration power stations that provide district heating (source of emission factors for NO_x: Corinair 2004 for boilers and data from manufacturers for cogenerators). The data do not include Imola's power plant, detailed below.

Emissions of the Imola cogeneration plant

In 2019, the Imola Cogeneration Plant, with its 80 MW of electrical and 65 MW of thermal power, produced 118,785 MWh of thermal power, and 257,900 MWh of electricity.

Again in 2019, the absolute **specific emissions** of the Imola cogeneration plant remained at extremely low levels. The environmental authorisation for the Imola plant requires pollutant limits 75%/80% lower than nationwide Italian regulations for the pollutants most present in flue gases (NO_x and CO). In 2019, The Hague amended the limits on airborne emissions by introducing compliance with the daily limit instead of the hourly limit for continuously monitored pollutants.

267,577 m³ of industrial water were consumed, of which 183,509 m³ were used to replenish the cooling tower, an amount compliant with the 210,000 m³ authorised by the IEA for that year.

Atmospheric emissions of the Imola cogeneration plant

mg/Nm ³	National limit	Authorised limit	2017	2018	2019
Nitrogen oxides	60	14.5	9.3	10.0	9.0
Carbon monoxide	50	9.5	1.0	2.2	2.1
Ammonia slip	not required	2	0.40	0.45	0.38
Total particulate matter	not required	4	0.01	0.01	0.01
PM10	not required	1	<0.04	<0.04	0.01

The authorised emission limits are those set by the environmental compatibility decree issued by the Ministry for the Environment, Land and Sea Protection DEC/DAS/2006/00142 of 15 February 2006 (only NO_x, CO and NH₃) and the integrated environmental authorisation of the province of Bologna of 11 April 2007, reference 124043, as amended. The values are the average continuously-measured values (for PM₁₀ the values are the average of the eight analyses carried out). The Italian limits are for the hourly average (except for PM₁₀), while the authorised limits are for the daily average.

The Imola plant, used for **district heating**, stands out not only for its excellent performance in terms of energy production but also from an environmental perspective since its low atmospheric emissions were achieved while also saving a significant amount of energy.

In 2019, we continued to implement several **energy efficiency** measures, resulting in total consumption savings of 1,001 toe from completed projects and 1,168 toe from planned projects that we will complete in 2020. In 2019, in fact, a refrigeration unit was designed to be installed in parallel with the absorbers, in order to produce chilled air for the summer season when the plant is not cogenerative (during maintenance).

In 2019, several feasibility studies were also analysed in order to reduce the power plant's **water consumption**.

The corporate vehicle fleet and mobility management

No. of vehicles

number	2017	2018	2019
Diesel	2,785	2,796	2,780
Petrol	376	326	270
Methane	503	496	468
LPG	373	404	412
Electric	19	22	18
Total with lower environmental impact	895	922	898
Total	4,056	4,044	3,948

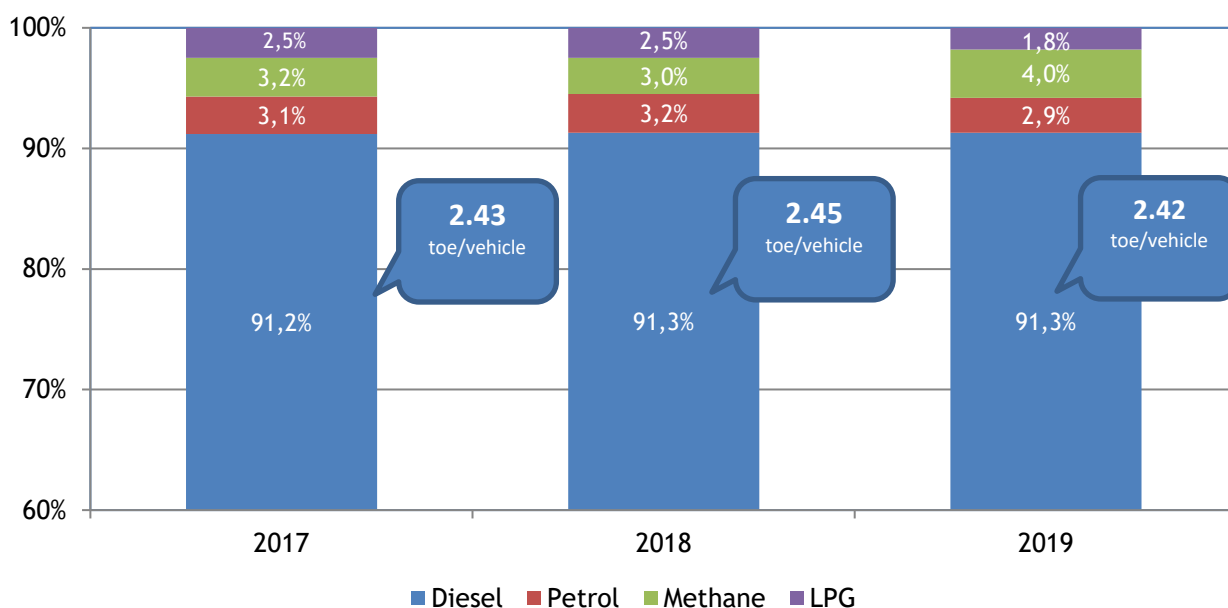
Non-circulating vehicles being disposed of were not included.

We continued along our strategy to optimise the use of the vehicles, beginning by purchasing technologically advanced vehicles powered by **low environmental impact fuels**, to replace obsolete vehicles.

The Group owns 3,948 vehicles, of which 468 are methane-powered, 412 are powered by LPG, and 18 are electric, amounting to 22.7% of the total. In 2018, 387 vehicles were **sold and/or scrapped**, while 164 vehicles were **registered**, of which 140 diesel, 4 petrol, 11 methane, 4 LPG, and 5 electric.

Currently, **excluding AcegasApsAmga and Marche Multiservizi**, the Hera Group has 2,882 vehicles, of which 408 are methane-powered, 400 are powered by LPG and 11 are electric, amounting to 28% of the total. In 2019, 211 vehicles were sold and/or scrapped, while 140 vehicles were registered, of which 8 methane-powered, 4 by LPG, and one was electric.

Fuel consumed by vehicles



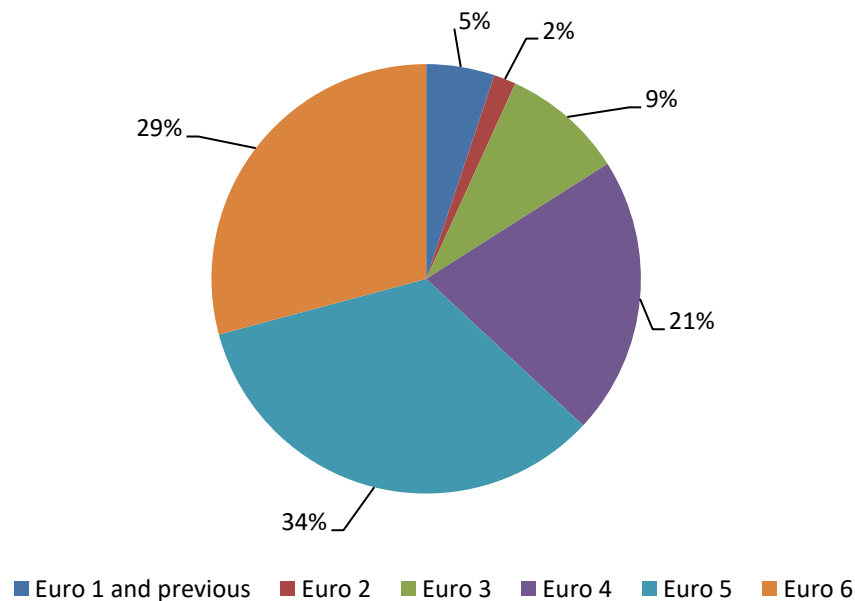
A comparison between the several types of fuel was made considering the primary energy present in the individual fuels.

At the Group level, fuel consumption by vehicles is decreasing. Diesel fuel consumption fell by 3.2%, petrol consumption by 12% and LPG consumption by 29% compared to 2018. On the other hand, methane consumption increased by 28% compared to the previous year.

Fuel consumed by vehicles (toe)

	2017	2018	2019
Diesel	8,977	9,025	8,734
Petrol	305	313	275
Methane	312	301	384
LPG	245	250	177
Total	9,839	9,889	9,570
<i>Consumption per vehicle (toe/vehicle)</i>	<i>2.43</i>	<i>2.45</i>	<i>2.42</i>

Breakdown of vehicles by anti-pollution directive class (2019)

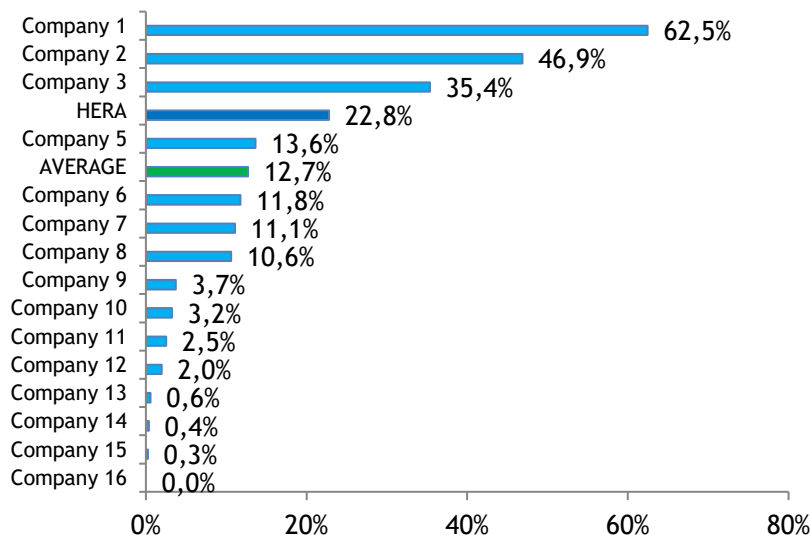


The **average age** of the Group's fleet in 2019 is 7.5 years. For Uniflotte, instead, it is 7.2 years, stable compared to 2018, and it continues to decrease compared to 2013 when it was eight years. These results are the fruit of the company's investments to renew its vehicle fleet.

Low environmental impact vehicles in the leading Italian utilities

According to a comparative analysis carried out by Utilitatis among the leading Italian utilities, Hera ranks fourth among the 16 Italian utilities considered, as to the percentage of low environmental impact vehicles.

Low environmental impact vehicles (2018)

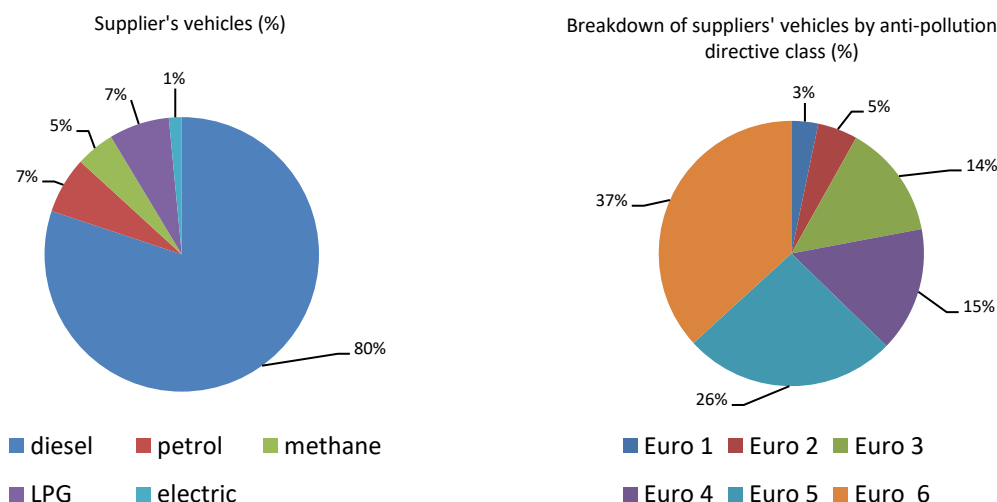


Source: Utilitatis, 2019 Sustainability Benchmarking

Hera's commitment to sustainability and energy efficiency also affects the **supply chain**, and, in particular, the criteria used to choose suppliers. Given the high environmental impact of municipal sanitation services,

especially in terms of atmospheric emissions, the Group has decided to reward the best-performing suppliers in this respect, favouring those who use low environmental impact vehicles.

In 2019, excluding Marche Multiservizi, waste management service providers used approximately 2,500 vehicles for waste collection. Of these, 13% have a low environmental impact (7.1% use LPG, 4.6% use methane and 1.5% are electric) and 63% are classified Euro 5/6. There was also an 8% increase in light vehicles, in line with the increase in door-to-door third-party collection services requiring a greater use of light vehicles.



Excluding Marche Multiservizi

Mobility management

In 2019, actions continued to reduce the environmental impact of Group employee **commutes**. These included the continuation of the **shuttle bus service** in Bologna that connects Stazione Centrale (Central Station) with our offices in Viale Berti Pichat, Via del Frullo/Via Cristina Campo and the Imola Station to our offices in Via Molino Rosso and Via Casalegno.

To raise awareness of sustainable transportation, Hera organised a challenge among the Group's sites during the **European Sustainable Mobility Week**, inviting people to use non-polluting vehicles or carpool. Also, activities have been organised in collaboration with the Salvaiciclisti association aimed at increasing the use of **bicycles** as a means of transport.

More than 200 staff members took advantage of special discounts on **annual public transport passes**: 50% for the services provided by T-per and 45% for those run by Trenitalia.

The new offices in Bologna in Viale Berti Pichat have been equipped with 5 electrically assisted bicycles, thus continuing our commitment to facilitate the adoption of sustainable means of transport.

Hera for electric transportation

During 2019, the Hera Group, through Hera Comm, signed 14 agreements with municipalities in its service area, committing itself to build more than 130 public charging stations in the coming years. The Group's objective is to exceed 270 public charging stations by 2023 in the reference areas.

This development activity is part of a broader programme to promote sustainable transportation, which led to the **renewal of the offer dedicated to owners of electric vehicles** during the year. In fact, in addition to updating the commercial conditions for public recharging, the Group has activated a dedicated support service and launched the new portal and the new HeraRicarica app.

In 2019, the public infrastructure had **43 charging stations** (36 in 2018), which recorded consumption of over 60,000 kWh. Thanks to agreements with other operators in the sector, the more than 140 customers of the public recharging service were also able to recharge at other recharging stations, consuming a total of more than 110,000 kWh and thus contributing to an estimated environmental benefit of 90 tonnes of CO₂ avoided.

The new offer also includes the supply of private charging stations for both domestic and business customers. These solutions were particularly appreciated by customers, who purchased over 100 charging stations in the last three months of the year. A total of **127 private charging stations** were sold in 2019.

Hera for land protection

Land reuse in Group projects and re-use of excavated soil

Continuing the path of sustainability that started last year, in 2019, the network and plant work we completed used almost 210,000 m² of **land, 77% of which was already occupied** by existing infrastructure.

From the preliminary analyses to the design of the works, Hera Group identifies technical solutions aimed at **reusing areas that have already been developed and/or preserving** the natural context of the land subject to intervention, in line with the objectives of the UN's 2030 Agenda.

The following are noteworthy, among the main design criteria:

- in the network area: extensions carried out using existing roads and/or urban fabric, improvement of the network layout by upgrading or reclaiming existing pipelines, laying of new pipelines adjacent to existing services;
- in the plant area: reuse of existing/occupied infrastructure and areas; disposal of infrastructure and restoration/restitution of the area at the end of its life cycle, use of technological solutions to reduce the overall size of the infrastructure.

In application of the principles of sustainability and material circularity, the Hera Group is implementing **procedures and methodologies** aimed at minimising the use of virgin land on construction sites. During 2020, we will define a methodology for this process, to be shared with the competent bodies, aimed at maximising the reuse of excavated land in construction sites.

In the **2020-2023 period**, we plan to reuse about 450 thousand m² of land for infrastructure, amounting to 3/4 of the total land involved in new projects.

Biodiversity

As regards the **protection and conservation of habitats and wild species**, the EU issued two regulations, Council Directive 409/79, adopted in April 1979, on the conservation of wild birds (the "Birds Directive") and Council Directive 43/92, adopted in May 1992, on the conservation of natural habitats and wild flora and fauna (the "Habitats Directive"). These directives created a consistent ecological network of protected areas in the European Union, known as **Natura 2000**.

In the province of Ferrara, the two largest water collection plants, Pontelagoscuro and Stellata, on the Po river, are located within the special protection area called "**Fiume Po da Stellata a Mesola e Cavo Napoleonico**". In the province of Ravenna, the Marina di Ravenna treatment plant is located within the EU Conservation Area "**Piallassa Piombone**" and discharges the treated wastewater into the "**Piallassa Baiona**" special protection area.

At these two plants, in order to protect biodiversity, Hera Group carries out **acute toxicity tests** on the purification plants.

Case study

Spreading innovation and digitalisation

Social innovation: The Heureka Project

Heureka+ is Hera group's social innovation platform created at the end of 2016 to give all colleagues a space where they can gather suggestions and ideas that can improve and enhance the business processes for products and services. Employees can, therefore, **submit their innovative proposals**, jointly develop ideas with colleagues, contribute ideas, or vote on the **proposals of others**.

In 2019, we released the third edition of Heureka+, which presented many new features while maintaining its original purpose: to create a large container of ideas generated by colleagues in an increasingly collaborative way.

The first new aspect of the third edition is a **new graphic design**, designed to make the user experience even easier and simpler. Navigation, in fact, has been made easier and compatible both with PCs and mobile devices, such as tablets or smartphones. Sending proposals and sharing them with colleagues is possible from anywhere, at any time, and with any device.

The system of **challenges**, already present in previous editions, has been accompanied by the mechanism of the **Ide@labs**, 5 rooms characterised by a macro-category to refer to submit an innovative idea:

- circularity and shared value;
- services for employees;
- services for customers;
- assets and infrastructure;
- digitalisation, and data analytics.

All the proposals are reviewed and evaluated by a team of experts, the **Innovation coaches**, who aim to encourage the development of the most promising projects up to the creation of a real concept, i.e., the phase of the design and implementation of the fundamental elements that transform the dream into reality.

The other aspect that is given importance is that of sharing and co-creation. A new section has, in fact, been set up within the platform: the **Ideas Marketplace**, where everyone can report a need, look for new ideas and offer suggestions to the company.

The last new element is the **gamification** mechanism that provides contests and games with prizes to get points, badges and other awards to make the use of the site fun without, however, forgetting its main function: to innovate.

The new edition was launched on **21 October 2019**, and in its initial months of activity was a great success: about **750 users** visited the heureka.gruppohera.it site, for a total of almost **20 thousand pages viewed**.

No fewer than **56 ideas** have been submitted to the different *Ide@labs*; many people (almost **250 comments** so far) have discussed and voted the suggestions: the ones considered best have been addressed by the Innovation Coach team. Besides, the team is working to create a real innovation community, outside the context of the platform, to share experiences, proposals, ideas and contacts.

Among the **10 ideas already adopted** by the Innovation Coach there is, for example, the "Hera Free Spot – work everywhere" proposal, which calls for a mechanism that makes your workstations available to other colleagues when you are not in the office, optimising space and work.

3 ideas are already at the concept stage and are almost ready to be turned into reality, such as:

- **Drink and Fly**, a pilot project to create an innovative, modular and interactive container for large public and private companies (e.g., airports), for separated collection of several types of liquid containers;

- **Amazon Alexa Skill: Rifiutologo**, a project for the development of an Alexa skill that responds in real time with data from the Rifiutologo app to help citizens recycle in a new, more sustainable way: straightforward, innovative, practical and effective;
- **Training simulator**, the project to introduce in the company the systematic use of augmented reality and virtual reality tools in training on health and safety issues in the workplace.

During 2020 new challenges will be launched, the Innovation Coach team will be expanded, and some features of the Heureka+ platform will be improved.

Hera, Iren, Smat and A2A together to improve the integrated water service

On 8 April 2014, Hera, Iren, and Smat signed a **five-year partnership agreement to carry out applied research** to develop joint research, innovation and training projects in the sectors and activities related to the integrated water service.

During 2019, work continued by Hera, Iren, Smat, and A2A on the development of a **methodology for controlling Legionella pneumophila** in the water systems they run. The working group coordinated by A2A has drawn up some chapters of a guideline for use by operators and has carried out some monitoring, by checking for the possible presence of Legionella throughout the supply chain starting from the sources of supply up to certain points on the internal network. The results of these control campaigns highlight the absence of Legionella in drinking water. Two more check-up campaigns will follow, one in spring and one in summer. At the same time, work is continuing on the methods to search for cultures and for shipping them so as to identify the most reliable analysis method with the shortest response times.

During 2020, the activities launched during 2019 in relation to the chlorites and chlorates project will continue. Among the main topics for further study:

- criteria currently adopted for the purchase of sodium hypochlorite and sodium chlorite;
- data collection on chlorate concentration (in the supply, after storage and neoformation during the treatment process);
- identification of the causes of degradation of the product during storage;
- definition of technical supply requirements;
- identification of innovative processes and technologies to reduce by-product formation.

Another project of shared interest concerns **sensors for early warning purposes**. The main topics that will be worked on during 2020 concern:

- sharing the monitoring experience already acquired;
- the examination of online monitoring needs, with early warning functions;
- the description for the instruments used, the areas of use, the parameters monitored, the detection limits, and the installation requirements.

A further project to be developed during 2020 is the **study for the production of bioplastics** as polyhydroxyalkanoate (PHA) recovery **from purification sludge**. The project includes a phase of analysis and quantitative study of the application of full-scale technology (benchmark of the technologies available at the most advanced stage of development) and verification of the implementation of the process of biopolymer recovery and nutrient management (nitrogen and phosphorus) for some target plants (technical-economic feasibility).

The partnership between Hera, Iren, A2A, and Smat contributes to achieving **target 17.17 of the UN's 2030 Agenda**.

Acantho-Open Fiber broadband extension agreement

In 2019, Acantho signed an agreement with Open Fiber to **extend broadband**, expanding its geographical boundaries and ensuring greater ubiquity in relation to users reachable by fibre.

Open Fiber is not only a strategic supplier for Acantho, but also an important customer.

Thanks to this agreement, Acantho will be able to provide its customers with offers for the retail world, with connections up to one Gb and solutions for the business world up to 10 Gb. The extension for Acantho will be mainly geographical in scope, also serving customers in areas where its own optical fibre was not present.

Acantho has supported the Open Fiber network development roadmap by granting the rights to use its optical fibre for a total of about 500 km in the provinces of Modena, Bologna, Ravenna, Rimini and Forlì-Cesena.

For the city of Imola, Acantho has supplied Open Fiber with an 18 km fibre-optic ring, which is the primary network for the city.

The Acantho-Open Fiber Broadband Extension Agreement contributes to achieving **targets 9.1, 9.2, 9.4, and 17.17 of the UN's 2030 Agenda**.

The Rifiutologo, an app for separate waste collection and more: over 300 thousand citizens use it!

The Rifiutologo is a **free app with several features**, available both online on the Hera website and on apps for smartphones and tablets. As of 31 December 2019, it has been **downloaded over 390,000 times**, and there are more than **215,000 active users** of the application, proving the usefulness of the tool.

By "**Searching for waste**", users can find up-to-the-minute information on the individual local collections or the dates of door-to-door collections scheduled for their address, and even set up a reminder for the day and time of each collection.

The service information is made available to users through the customer site and the app.

In addition, the "**Waste management reporting**" feature is now even easier to use. Residents can use it to report problems with the waste management services (such as damaged bins) by sending a real-time picture to Hera's personnel, and correspondingly get a report back when the issue has been dealt with, besides customised push alerts. In 2019, **59,655 reports concerned emptying bins**, cleaning roads and dumped waste (+53% compared to 2018), and **201 suggestions** were sent on new types of waste to be added to the database.

Thanks to geolocation, the Rifiutologo App also shows the user the **closest drop-off point**, with complete information on the waste types accepted, the schedules, and any discounts provided by the Municipality. It also offers information on "**Points of Interest**" for citizens, such as special waste collection runs, mobile collection points, distribution points for materials, and underground drop-off points.

Another highly appreciated feature of the Rifiutologo is the "**barcode scanner**", a feature which recognises materials by the barcode printed on products and shows how to properly dispose of each package, accessing an **archive of 1,586,000 barcodes of the most widely used products** as of 31 December 2019. For packages made of multiple materials, the app can provide instructions on where to dispose of each component. If a code is not recognised, or a type of waste is missing, the citizen can report the circumstance via the specific function so that it can be added to the system: in 2019, the **19,970 barcode reports** were sent by citizens to update the database, compared to 12,233 in 2018. The **searches carried out by scanning barcodes** increased to **654,108** in 2019 compared to 430,266 in 2018.

Thanks to the information contained in the Rifiutologo and the reports from customers, its use contributes to achieving **targets 11.3, 11.6, 12.2, 12.4, 12.5, and 12.8 of the UN's 2030 Agenda**.

With Acquologo, the entire water service is smartphone-accessible

Acquologo is a **free application dedicated to the integrated water service**, created to set up a communication channel between Hera and the citizens living in the service areas. Its usefulness is shown by it having been **downloaded 8,497 times**, and by the number of **accesses: 32,038** in 2019 alone.

The app **provides many useful features** for users, ranging from self-meter reading to checking data on the quality of the water in their municipality, and includes alerts for water network interruptions for ordinary maintenance work and reporting breakage or leakage of water on public land.

The **most used sections** are "**Water quality**" and "**Meter reading**". In the first one, Acquologo provides the main data (average values) on the quality of the water supplied for each of the municipalities served by the multiutility, comparing them with the regulatory limits; in the second one, citizens with a Hera bill can quickly self-read their meter and report the actual water consumption. In 2019, 3,581 readings were sent.

In addition to the most commonly used features mentioned above, there is also the evaluation of the economic savings generated by the consumption of tap water instead of bottled water, in the "**How much you save**" section, and the possibility to contact experts with questions and requests about the local water service or read the answers to the most frequently asked questions, in the "**The expert answers**" section.

On a **trial basis**, and only in some areas, the app can also be used to report major **water leaks** due to breakage of pipes under the road surface. After taking a picture and adding a brief text, users can send the report directly to Hera's Emergency Service. By using geolocation, the system can rapidly detect the location of the report and provide it to the service personnel who will go to the site. During 2019, 72 reports were made using the app (photographic reports and calls to the toll-free number).

Thanks to the information contained in the Acquologo, its use contributes to achieving **targets 6.b and 12.8 of the UN's 2030 Agenda**.

My Hera: Hera's services accessible using an app

My Hera is the **application**, completely **free of charge**, dedicated to residential customers, freelancers and businesses, which helps our customers to manage their relationship with the Hera Group and the services it offers when they want, by themselves.

All the functions can be accessed from the My Hera **homepage**:

- paying bills online and consulting the bills archive;
- self-reading the meter;
- monitoring the consumption trend and details;
- showing the nearest drop-off points and Hera Points on the map;
- accessing the "Rifiutologo" and "Acquologo" apps;
- finding out about offers and new initiatives;
- requesting electronic billing;
- activating direct debit payment.

My Hera is also an **additional channel to contact the company**, since customers can use it to:

- get help on contracts, bills, and payments;
- activate the bulky waste collection service;
- submit waste management reports;

- alert emergency services operators if a network problem occurs.

During 2019 My Hera has been **downloaded over 230,000 times**, doubling its usage compared to 2018. It also achieved high **satisfaction levels**, with a ranking of 4.3/5.

Also, during 2019, some **upgrades improved the user experience** for the most used functions, and some new features were implemented. The main changes were:

- improved access and use of telephone contact and live chat;
- expansion of the range of payment methods available, with the addition of Apple Pay;
- particular attention was paid to the specific section dedicated to the customers of the waste management service with the quantity-based tariff, adding charts and tables that help customers clearly and easily view the trend of their mixed waste disposals, linking them to the minimum threshold of annual disposals;
- improved presentation of invoices issued and their payment status;
- improved self-meter reading functions;
- changes in the presentation of business opportunities and promotions and initiatives for our customers.

Digi e Lode, for more digital services and schools

Digi e Lode, now at its **third edition**, is the project that brings together customers and the company to digitise schools in the area by promoting Hera's digital services under the patronage of 101 municipalities in the area.

Since the project began in 2017, the Group has already donated Euro 200,000 to 80 schools.

The project involves **all first-level primary and secondary schools**, public and state authorised, of the areas involved in Emilia-Romagna and, since 2019/2020, also in Marche and Abruzzo. For the school year 2019/2020 Digi e Lode has put up for grabs a total of Euro 125,000 to **fund projects for the digitalisation of schools** with students as the beneficiaries.

It uses the same **mechanism**: every time a customer activates one of the digital services offered by the Hera Group, it donates one point that can be assigned to a specific school (this way it is multiplied by five) or distributed among the schools of the customer's municipality. The Hera Group rewards the schools in the area that achieve the highest score.

The **digital services** of the Hera Group that contribute to the project are:

- online services, to manage services on the website;
- information and support apps for virtuous behaviours (Acquologo and Rifiutologo);
- service app (My Hera) for fast and easy management of contracts;
- electronic billing, to receive bills quickly while respecting the environment;
- direct debit, to pay bills easily and on time;
- digital self-meter reading (using online Services, the app, text messages or on the phone using an automatic system);
- Hera Fast Check Up, to be helped to reduce gas and electricity waste.

Digi e Lode consolidates the contribution that the Group wants to bring to its service area, as a continuation of the business strategies that identify innovation and sustainable development of the area and the activation of **partnerships between the company, customers, municipalities and schools**, as the leading drivers for the development of shared value, in line with the objectives of the UN's 2030 Global Agenda.

The Digi e Lode project contributes to achieving **targets 4.a, 12.8, and 17.17 of the UN's 2030 Agenda**.

Economic development and social inclusion

The leak fund for hidden water leaks

In July 2014, Hera Spa defined a joint regulation across all the areas it serves that sets up a "leak fund" to **protect customers in the event of water leaks in their plumbing system**, i.e., downstream from their meter. This voluntary instrument partially covers bills of even very high amounts that are due to accidental and unknown leaks within a customer's own plumbing system. By paying Euro 15 per year in their bill, participating customers can receive, for hidden water leaks within their system, a reimbursement for the entire amount for the volumes that exceed their usual average consumption by 80%, up to a maximum of Euro 10,000.

Participation in the fund is not compulsory, and customers may withdraw at any time by simply asking to do so.

The "leak fund" is exclusively designed to cover the additional costs incurred by customers that have a water leak.

Leak fund and customers that have benefitted from the fund

	2017	2018	2019
Funds disbursed (thousands of Euro)	17,636	17,406	19,790
Number of customers that have benefitted from the fund	12,539	12,146	13,576
Average reimbursement (Euro)	1,407	1,433	1,458

The fund's balance at 31 December 2019 is negative, at about Euro -2.840 million, (including interest income for previous fiscal years). The balance, for 2019 alone, is negative by Euro 1.500 million. The effect of the growth in the number of leaks downstream of meters, which became apparent significantly from the summer of 2017 and continued during 2018, also impacted 2019. In fact, despite the changes introduced on 01/01/2019 (a new method of charging the membership fee, which consists of a fixed fee of Euro 10/year per contract and a variable fee of Euro 5/year per property unit served) have made it possible to increase the annual fee available to users, the number of events reported by users in recent years, whose management has also impacted the year 2019, has been so high that it does not allow the planned recovery.

Nevertheless, during 2019 the number of requests for reimbursement for leaks decreased by about 7%, compared to 2018. This may imply, should the downward trend be confirmed, that during 2020 we could see a return from the negative values of the balance of the leaks fund.

Since the fund is exclusively designed to benefit its participating customers, and since the monthly balances were almost negative in 2019, no interest was calculated. Since its creation, the fund has reimbursed more than 65 thousand users and reimbursed over Euro 90 million. During 2019, 13,576 users benefited from the fund with an average refund of Euro 1,458. Less than 4% of customers is not covered by the "leak fund". During 2019, just over 2 thousand customers withdrew from the fund.

The leak fund contributes to achieving **target 6.b of the UN's 2030 Agenda**.

The per-capita tariff rewards water savings and helps large households

In its resolution 665/2017 of 28 September 2017, Arera introduced a **per-capita tariff for all resident residential users**, to be gradually applied in all municipalities starting in 2018, and to be completed by 2022.

In fact, a transitional period has been set, during which the Water Service Operator, lacking information on the actual number of components, can invoice according to a standard criterion (i.e., considering a typical three-member resident domestic household user) although the user may provide a self-declaration.

As of 2019, **Hera Spa** will apply a per-capita tariff structure to resident households based on the actual number of components for 96 municipalities. For the other 67 per-capita tariff municipalities, Hera applies the tariff structure based on the number of standard components (equal to 3).

As of 2019, 16 municipalities in **Triveneto** (Abano Terme, Arzergrande, Brugine, Codevigo, Correzzola, Legnaro, Padova, Piove di Sacco, Polverara, Pontelongo, Sant'Angelo di Piove di Sacco, Cona, Trieste, Muggia, San Dorligo, and Duino Aurisina) and 48 municipalities in Marche switched to per-capita tariff.

The per-capita tariff contributes to achieving **target 6.4 of the UN's 2030 Agenda**.

When environmental and social sustainability go hand-in-hand

Hera continues to be committed to initiatives dedicated to the support and social inclusion of people in difficulty and in disadvantaged conditions, through the following initiatives that have proven to be effective.

The **RAEEbilitando** project, initiated in 2010 with the collaboration of Consorzio Remedia, Opera dell'Immacolata Onlus (OPIMM) and Tred Carpi Srl, continued its activity until 30 June 2018, when the protocol expired. The partners then agreed to terminate the activity, which had been carried out in the Laboratory of Bologna, to allow OPIMM to plan and implement a set of measures to restructure the premises and to reorganise the logistical management of the spaces used for the various activities carried out within the Laboratory.

In this period, children and adults in disadvantaged conditions worked in the laboratory providing their energy and their commitment to disassemble no less than **132,000 kilograms of small electrical and electronic equipment** into about 20 smaller categories of parts, thus ensuring for each of them the most appropriate type of recovery or recycling.

At year-end, the OPIMM Association confirmed its intention to resume operation of the Project in July 2020 and to have started the procedures for obtaining the new authorisation.

The **Manolibera** project, active since 2011 thanks to the collaboration between the Forlì prison, Hera and the Techne training institute, uses a laboratory inside the Forlì prison, in the form of an original artisan paper mill that produces paper products of high artistic value.

The exclusivity of its production methods and the refined decoration, make these products unique, refined and imbued with an important artistic, social, and ecological value that makes them particularly appreciated in the wedding planning field.

Thanks to the collaboration with the Cils Cooperative of Cesena, which is responsible for monitoring and checking the work done in the laboratory and with the Berti bookbindery in Forlì, the laboratory can support its operations and provide work placement for 4 inmates suitably supported by an appropriate training course.

Also in 2019 participation continued in fairs and events of the "ceremonies sector", where the wide range of products for weddings and important events was presented: elegant invitations and refined thank you cards, photo albums complete with boxes, precious wedding favours, frames, and paintings.

The collaboration with the national network of prison economics "Freedhome", the concept store dedicated to the excellence of Italian prison economics, helps to give broad visibility to the project.

The laboratory also employed 4 prisoners in 2019, and in total more than 40 people have been involved since the beginning of the activity.

The **RAEEincarcere** project was confirmed in 2018 for a further three years. This project, that started more than a decade ago at the prisons of Forlì, Ferrara and Bologna, was developed on the basis of a study and

joint collaboration between Hera and the Techne training institute. These partners were joined by the Regional Government of Emilia-Romagna and many other bodies, such as the Ecolight recovery consortium, and local organisations. By doing so, the objective of the project, namely the social and working inclusion of men and women who are paying for crimes or detained, has been guaranteed for all these years, allowing them to return to legality and the civil life of their community.

In the 4 workshops set up inside and outside the prisons, prisoners attend training and advanced training activities, learning the skills and knowledge necessary to disassemble small and large waste electrical and electronic equipment from the collection streams handled or organised by Hera.

A range of components are obtained from this activity and are separately sent to suitable plants for recovery of material. The results obtained by the labs continue to increase. On the social front, **35 former inmates were hired or helped to find jobs** in local companies, and more than **105** have been **interested and attended training courses** thanks to the collaboration and commitment of the social cooperatives that coordinate and manage the laboratories. From an environmental point of view, in a decade of activity the laboratories treated about **5,169,244 kg of waste** electrical and electronic equipment.

During 2019, by signing a special agreement between Hera and the Techne training institute, the **Informatica Solidale** project was confirmed, which aims to promote computer literacy and reintegration into work and society, with the further objective of promoting the reuse of assets with residual potential for use.

Under the project, **Hera will donate its IT equipment** (no longer suitable for its own business and therefore to be disposed but perfectly able to satisfy the basic needs of users such as those identified and protected by the Project) and Techne will take care of the functional updating and testing, the identification of the recipients and the management of the deliveries. The recipients of such "regenerated" IT equipment have been identified mainly among institutional, public and private local organisations, whose vocation is to support the inclusion and integration of disadvantaged people through services and initiatives (educational, training, empowerment) that can find real benefit and strengthening from the availability of appropriate technological tools. In this context, the donated equipment made it possible to set up computer labs at schools, cooperatives/social enterprises, and social promotion associations, prisons, and education centres for adults at risk of "social exclusion".

As it did in 2018, in 2019 Hera **donated 100 computers** that it no longer used in its business, part of which, after being reconditioned, were allocated by Techne to the organisations (schools, cooperatives and social promotion associations, and prisons) that had requested them, on the basis of a suitable training project.

At the end of 2019 about 50 of the 100 computers donated by Hera had been assigned, distributed among Techne workshops, volunteer associations, schools, Prison and adult learning centres.

The remaining computers will be allocated during the second year of the agreement.

The "Informatica Solidale" project once again contributed to social support and environmental protection.

The projects described in this case study contribute to achieving **targets 8.5, 12.2, 12.4, 12.5, and 17.17 of the UN's 2030 Agenda**.

Job creation and development of new skills

Plant visits for over six thousand people

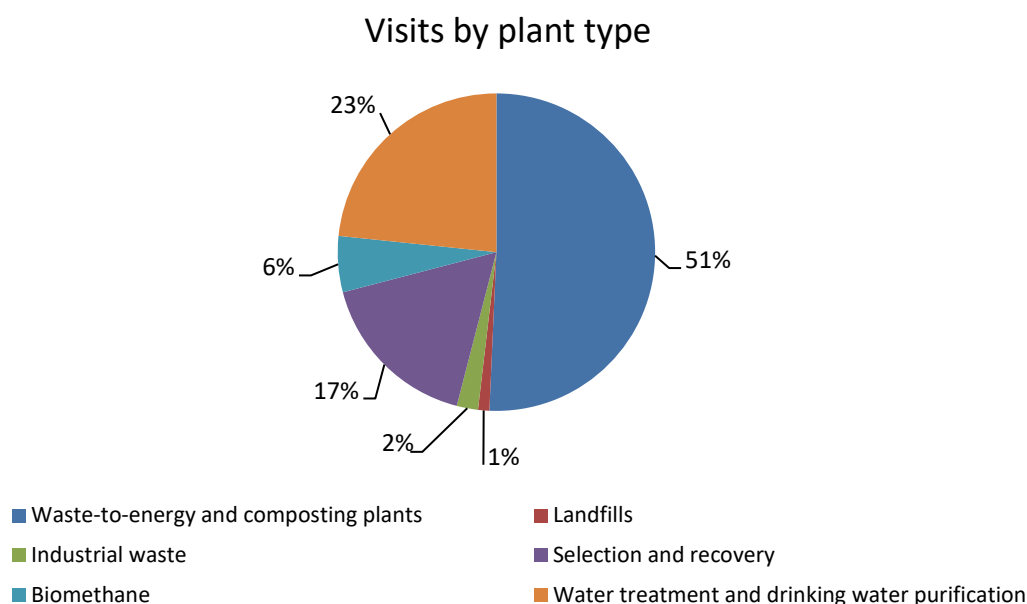
Through its subsidiary Herambiente Spa, the Hera Group showcases its attention to **environmental issues** and the **spread of an environmentally responsible mindset**, offering guided tours of its waste treatment and purification plants.

These visits give interested parties the opportunity to familiarise themselves with how the plants are **operated and managed**. Our waste treatment plants are among **the most advanced in Europe** in terms of operating and quality standards and the tours give visitors an opportunity to understand how they properly handle waste in the most environmentally-friendly manner possible, using solutions with the lowest overall impact on the environment.

In addition to offering "traditional" guided tours (on-site), and to foster greater interest among the "new generations", we have organised **"virtual" tours for schools**. By doing so, directly from their school desks, students can listen to an environmental instructor that illustrates the various phases of the plant's operation.

In total, in 2019, **6,288 visitors** (+38% compared to 2018) toured Herambiente Group's facilities over 291 days. In addition, **443 students** visited our facilities during 10 days of "virtual" tours. Over a video call, they attended a tour from their classrooms as an environmental instructor illustrated the various phases of the plant's operation. This method promotes the use of multimedia learning technologies to **stimulate curiosity and involvement among the pupils while reducing the environmental and organisational impact** due to the travel between the school to the plant to visit.

Furthermore, the possibility of booking visits online from Herambiente's website, created to make it easier for stakeholders to book visits to our facilities, was met with a positive response, especially to waste-to-energy plants and excellent results were also obtained for other types of plants.



Analysing the data of 2019, the visits involved overall: 3,190 visitors to **waste-to-energy plants**, 1,305 visitors to **composting and anaerobic digestion plants**, 102 visitors to **landfills**, 147 visitors to **industrial waste treatment plants**, 1,499 visitors to **selection and recovery plants**, and 45 visitors to Herambiente Group's industrial waste facilities in Tuscany.

Noteworthy is the interest in the new **biomethane** plant in Sant'Agata Bolognese. In 2019 the plant was visited by a total of 506 visitors over 40 days. This data underscores the extent to which investments to relaunch the challenge of the circular economy on an industrial scale, with the resulting minimisation of environmental impacts, attract favourable attention from stakeholders.

Lastly, 2,071 visitors toured the **purification plants** in 2019, of which about 91% were students.

Visits to the plants contribute to achieving **targets 4.7, 6.b, and 12.8 of the UN's 2030 Agenda**.

Air and soil protection

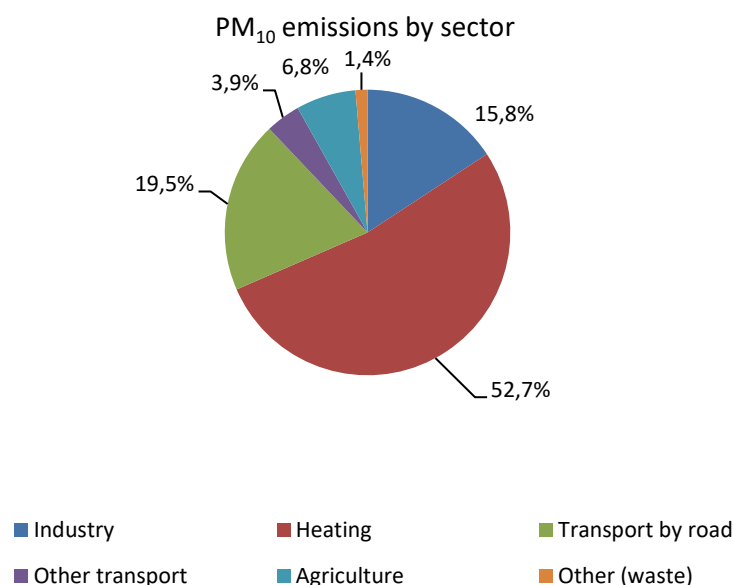
Studies on the environmental impacts of waste-to-energy plants

For many years, the waste incineration business has been the subject of several **studies and monitoring projects**, as well as of major **technical improvements** also related to the introduction of increasingly stringent

plant and management criteria by European and Italian legislation. The technology has achieved very high performance levels in terms of **reducing emissions and environmental impact**.

If we consider the total annual emissions of dioxins into the atmosphere as the sum of all waste incineration plants in the country from 1990 to 2017, we can see that as a result of regulatory and technological developments there has been a 99% reduction in emissions (Source: Sinanet-Ispira-SNAP databank).

Putting the analysis of the different production sectors into context, since 2001, waste incineration has been



the smallest source in terms of dioxins and furans emissions, in contrast to the iron and steel industry and the entire residential sector (e.g., domestic heating).

The PM₁₀ emissions of Italy's waste incinerators are around three magnitudes lower than those of the residential segment. In Italy, the main sources of PM₁₀ are the residential segment, vehicular traffic, combustion processes with contact (e.g., foundries), and agriculture.

Source: XIV Report (2018) ISPRA State of the Environment

Environmental supervision and air quality monitoring projects

According to the permits for the **waste-to-energy plants in Ferrara, Modena, Forlì, Rimini, Bologna, Padua, and Isernia**, the Hera Group must carry out studies on the potential impact that its plants have on the surrounding environment.

In 2008, under the provisions of the integrated environmental authorisation of the **Rimini** incinerator, the level of air quality was monitored by ARPAE (pre-construction monitoring). This study was designed to determine the air quality in the areas around the incinerator, potentially affected by the plant's emissions. In 2013, with the new line 4 now fully operational, the monitoring process was repeated in the same way in order to assess any differences or impacts on air quality that could be attributed to the new plant (post-construction monitoring). The monitoring results were prepared by the Regional Agency for the Protection of the Environment (ARPA) of Rimini in 2014 and made available in 2015. The study shows that there is no significant impact on air quality, post-construction vs. pre-construction.

In the industrial area in which the **Forlì** plant is located, Hera has installed a station for monitoring air quality that is run by ARPAE Forlì. This station has been operational since 2009, and provides a continuous stream of data that are validated by ARPAE and published on their website. Periodic campaigns are also carried out at the station to identify for micro-pollutants and metals in the particulate matter. The results show that there is no substantial difference between a public area and the area around the plant, indicating the presence of a uniform environment, influenced significantly by the town rather than the presence/contribution of the plant. These results were confirmed in 2019 when ARPAE Forlì made available the previous year's air and soil quality monitoring data.

For over a decade, environmental monitoring tests have been carried out at the **Modena** plant on various environmental media: air and soil quality, biomonitoring, total depositions. Since 2013, the monitoring network has been operated by the local ARPA (now ARPAE), which carries out all the analyses required by the waste-to-energy plant's IEA. In addition, in Modena, in accordance with the IEA, a health monitoring study was carried out in 2003 to assess health risks for the population that lives near the incinerator and the workers at industrial sites near it. Two reproduction indicators were analysed: teratogenic risk, i.e., congenital malformations, and spontaneous abortion risk. The program ended in 2014 with the processing of the data collected in 2013 and showed no dose-response relationships between exposure and relative risk of miscarriage and congenital disabilities.

Between 2010 and 2012, a genuine environmental and health monitoring protocol was carried out at the **Ferrara** waste-to-energy plant. Its details were defined by ARPA (now ARPAE), AUSL and the provincial government of Ferrara, and it examined a number of environmental media. We appointed institutions with proven experience in the sector (CNR and Universities) to handle the scientific coordination for these studies. The results of the first two-year study, which ended in October 2012, confirmed the preliminary evaluations made when the Integrated Environmental Authorisation was granted and showed that the plant's contribution, in terms of air quality, cannot be distinguished from the environmental background levels. In the light of the results that have been obtained, a subset of the monitoring was extended for a second period (2013-2015), to examine only the aspects considered most significant: air quality and studies of soil pollutants. Air quality monitoring activities ended in early 2015, confirming the results of the two previous years. In particular, the study of the soil, repeated in the autumn of 2013, showed no accumulation of metals and micro-pollutants in the areas surrounding the plant, thereby confirming that the incinerator's emissions cannot be distinguished from the environmental baseline. In 2015, the monitoring guidelines for the coming years were also agreed with regulators. To this end, the collaboration with CNR-IIA and La Sapienza University has been maintained in order to guarantee the continuity of the study of air quality, which takes place annually with four monitoring campaigns lasting 30 days (winter, spring, summer, and autumn). Also, in 2016, we signed a convention with ARPAE to continue the three-year soil monitoring project. As for previous studies, no correlation with the presence of the plant has been identified. The study was repeated in autumn 2019 and its results will be available in the first half of 2020.

The **Padua** waste-to-energy plant, in line with the requirements of the "Memorandum of understanding on the assessment of the health impact in the city of Padua and in its metropolitan area" signed by the municipalities of Padua and Noventa Padovana, with Arpav, ULSS 16 of Padua, and the University of Padua was the subject of a study that was completed in December 2015, with the presentation of the "Report on the pilot project of population health monitoring assisted by the ULSS 16 state healthcare unit of Padua, particularly on potential health effects from air pollution – a longitudinal study in Padua (SLPD)". The conclusions showed on one hand insufficient statistical evidence to identify statistical effects on people's health related to the plant's emissions, on the other the differential of the concentration estimates (with three decimal digits of precision) is not compatible with measurable health effects, i.e., the effect of PM₁₀ emissions from the waste-to-energy plant on the background pollution levels appears to be irrelevant. The same system is the subject of the Voluntary agreement to monitor the effects of the San Lazzaro waste-to-energy plant near Padua, which lasts three years. Hestambiente and Arpav have carried out some environmental studies in addition to those required by the applicable regulations and by the permits. In more detail, we managed the operation of two of HestAmbiente's fixed air quality monitoring stations (to monitor

SO₂, CO, O₃, NO_x, PM₁₀ and PM_{2.5} with automatic equipment and publish on Arpav's website a page dedicated to the waste-to-energy plant data, validated by ARPAV itself). An annual air quality monitoring campaign was carried out using a mobile lab provided to Arpav by Hestambiente. We sampled the soil at five sites near the waste-to-energy plant, and performed laboratory analyses on it for: Pb, As, Cd, Ni, and Hg, for aromatic polycyclic hydrocarbons, dioxins, furans and PCBs, and we measured the sound pressure levels around the plant. All the surveys summarised above highlighted the plant's negligible environmental impacts. A new agreement was stipulated between various bodies for monitoring the fallout of the Padua waste-to-energy plant for three years, to which Hestambiente has already expressed its willingness to continue.

In the area surrounding the **Isernia** waste-to-energy plant, in agreement with ARPA Molise, a series of representative monitoring points have been identified at which studies on atmospheric depositions and PM_{2.5} atmospheric particulate sampling have been carried out in the 2017-2018 two-year period. At all monitoring points, the annual average PM_{2.5} was below the regulatory level and the deposition study showed values for organic micro-pollutants (dioxins, PAHs) always below the instrumental detection limits.

Many environmental monitoring campaigns have been conducted in the area surrounding the plant site of the waste-to-energy plant in **Granarolo dell'Emilia (BO)**. At the end of 2004 a memorandum of understanding was signed by the Provincial Administration, Arpa Bologna, the municipalities of Castenaso and Granarolo dell'Emilia, Ausl of Bologna, the University of Bologna and Fea Srl for the environmental monitoring of the area surrounding the plant. The monitoring, which continued until 2007, analysed the air media by monitoring the five sites. Innovative bio-toxicological tests have been performed on solid particulate matter samples to assess and estimate carcinogenic risk. The public health department of the local health organisation, following up on the work carried out in the previous campaign, also carried out an epidemiological survey on the causes of mortality, extending the research to include reproductive data. Lastly, the experimental centre for the study and analysis of soil at the University of Bologna analysed the presence of heavy metals and micro-elements in the water-soil-plant system and also in surface and groundwater. The study has also included the analysis and verification of atmospheric emissions and water discharges from the waste-to-energy plant. A study has also been carried out to assess and estimate the carcinogenic risk. The 2004–2007 campaign attested that concerning air quality, atmospheric emissions and the water-soil-plant system, the plant did not determine significant impacts on the area. The waste-to-energy plant in Granarolo dell'Emilia has also been included in the Monitor project (Monitoring of waste-to-energy plants in Emilia-Romagna), promoted by the Emilia-Romagna Region and Arpa, whose goal is to organise an environmental surveillance and epidemiological evaluation system in the areas surrounding the plants. The project, carried out between 2007 and 2011, has improved scientific knowledge on the quality and quantity of the substances emitted by waste-to-energy plants and their impact on the quality of the surrounding air; it has also studied the health effects with toxicological investigations and has assessed their correlation with exposure to waste-to-energy plants in epidemiological terms. The results of the Monitor project were presented to the public in 2011, and the related documentation (Quaderni Monitor) can be freely downloaded from the Arpa Emilia-Romagna website. The current Integrated Environmental Authorisation confirms the air quality monitoring activities, which are carried out through two fixed permanent monitoring units that monitor PM₁₀ and PM_{2.5} particulate matter, PAH, and metals.

The supervision and monitoring projects contribute to achieving **targets 11.6 and 12.4 of the UN's 2030 Agenda**.

Transparency of waste-to-energy plant emissions

Since 2008, the Group's website has provided the **previous day's average emission values** and "**half-hourly averages**" of the Group's waste-to-energy plants (every half hour the online data are updated with the average value of the past 30 minutes). The data are automatically transmitted by the **measurement systems**,

operational 24/7 at all the Group's plants, located in the provinces of Bologna, Ferrara, Forlì-Cesena, Modena, Ravenna, Rimini, and Isernia.

As a further guarantee of transparency, Hera commits to:

- daily or weekly reporting of the half-hour and daily averages to the control agency (ARPA);
- yearly reporting on the plant's operations, by 30 April every year, to the competent authority;
- if the plant is EMAS registered, the control results are published upon formalisation of the "Environmental Declaration";
- publishing annual data, compared to regulatory limits and limits in the permits, in the Group's sustainability report.

Since 2015, the Group's website also provides the data of the Padua and Trieste plants, in the same format (half-hour average updated in real-time).

Lastly, from 2018 on, average annual data on periodic self-checks on metals and organic micro-pollutants has also been available for all plants.

The Group's focus on transparent reporting of emissions from waste-to-energy plants contributes to achieving **targets 11.6 and 12.4 of the UN's 2030 Agenda**.

Increasing usage of telepresence

Telepresence is increasingly proving to be a facilitator to manage meetings, saving travel time, reducing risk and fatigue, significantly saving energy and, last but not least, helping to reduce the Group's **environmental footprint**.

In 2019, **100** rooms were connected by telepresence equipment (+5% compared to previous year) for a total of **24,579 meetings** (+3%) and about **32,152 the hours** of usage (+5%).

The further increase in terms of both sessions and hours of use of Hera Group's telepresence rooms is due to an increase in the number of the rooms, as well as to more intense use of the clients installed on the company's PCs.

The Hera Group's telepresence services contribute to achieving **targets 8.2 and 11.6 of the UN's 2030 Agenda**.

Urban and environmental redevelopment at Hera Group's offices

Environmental monitoring of the air media and assessment of the conditions of the soil and water after completion of the field remediation operations required by the remediation operating plan approved by the relevant authorities in 2016 continued throughout 2019 at the **Group's headquarters** in Bologna, Viale Berti Pichat.

During 2019, the program for the **removal** of all connected **underground tanks** continued with the extraction and soil testing of a further 8 tanks. The completion of this activity and the total abandonment of underground hydrocarbon storage is planned for the year 2021. To date, 7 tanks from 3 different sites are yet to be removed, while we have decided to stabilise the tanks in the Forlì Via Balzella laboratories, which do not contain hydrocarbons, but only process water.

As far as **energy containment projects** are concerned, the replacement of the external lighting systems has been completed at the facilities of Bologna Via del Frullo, Bologna Via C. Campo, Cesena via Spinelli, Rimini via Terrapieno e Consolare, and Imola Molino Rosso. The conclusion of the plant renovation works is

scheduled for 2020 by completing the work at the offices in Imola Via Casalegno, Forlì via Balzella, and Ferrara via Diana.

The **energy savings achieved**, in addition to those due to further measures implemented by the integrated maintenance provider under the Global service contract, have resulted in an expected savings of 47 toe, enabling us to achieve the objectives we had set and contributing to achieving the prestigious FIRE award (Federazione italiana per l'uso razionale delle energie – Italian Federation for Energy Efficiency) in 2019.

Regarding the **internal office equipment**, the new supply and furniture contract was initiated for the entire Hera Group in accordance with the CAM (Minimum Environmental Criteria) defined by the Ministry for the Environment. In addition, various "**smart points**" have been set up in the company offices with a coordinated design, in order to enable employees to use the common areas for communication activities and to exchange ideas. Also, as part of the improvement of the company's spaces, plans were made, and work began on restoring the changing rooms for the operating staff and improving the equipment of the meeting and videoconference rooms in the Group's Emilia-Romagna area.

Bases and organisational levers

Governance and creation of value

Objectives and performance

What we said we would do	What we have done	Geographic scope*
<ul style="list-style-type: none"> Euro 1,684 million. Value added to stakeholders as at 2022 (+9.3% compared to 2018). 	<ul style="list-style-type: none"> +13% compared to 2018, the value added to stakeholders which in 2019 came to Euro 1,735 million 	
<ul style="list-style-type: none"> Euro 2.4 billion. Investments completed in the period 2019-2022. 	<ul style="list-style-type: none"> Euro 534 million. Investment completed in 2019 (+15% compared to 2018). 	
<ul style="list-style-type: none"> 2 HeraLABs active in two new areas in 2019 for dialogue with the local communities. Achieve the 12 local initiatives jointly planned in 2018 with the Ferrara and Ravenna LABs by the end of 2020. 	<ul style="list-style-type: none"> 2 HeraLABs activated in Bologna and Rimini in 2019. 8 initiatives achieved by Hera and stakeholders in the Ferrara and Ravenna LABs, 4 to be achieved by the end of 2020. 	ER
<ul style="list-style-type: none"> 65/100 employee satisfaction index in the internal climate survey carried out in 2019. Complete the internal climate improvement actions defined on the basis of the 2017 survey. 	<ul style="list-style-type: none"> 68/100 employee satisfaction index in the internal climate survey carried out in 2019. 	ER T M
<ul style="list-style-type: none"> 70/100 customer satisfaction index in the survey carried out in 2019. 	<ul style="list-style-type: none"> 73/100 customer satisfaction index in the survey carried out in 2019. 	ER T M
<ul style="list-style-type: none"> Obtain certification of the anti-corruption management system according to the ISO 37001 standard for Hera Spa. 	<ul style="list-style-type: none"> Certification of the anti-corruption management system according to the ISO 37001 standard for Hera Spa obtained in October 2019. 	ER

What we will do	SDGs	Geographic scope*
<ul style="list-style-type: none"> Euro 1,747 million. Value added to stakeholders by 2023 (+9.3% compared to 2019). 	8	
<ul style="list-style-type: none"> Euro 2.3 billion. Investments completed in the period 2020-2023. 	8	
<ul style="list-style-type: none"> 2 new HeraLABs launched in two areas in 2020 for dialogue with the local communities. Achieve by the end of 2020 the remaining 4 local initiatives jointly planned in 2018 with the Ferrara and Ravenna LABs (8 concluded during 2019) and realize the additional initiatives jointly planned with the Bologna and Rimini LABs, launched in 2019. 	6, 11, 17	ER

* Geographic scope of the improvement objectives ER: Emilia-Romagna T: Triveneto M: Marche.

Sustainability and risk management

[103-2] [103-3]

Corporate governance

[102-18] [102-20] [102-22] [102-26] [405-1]

Hera is a multiutility company with public sector majority shareholders and a markedly diversified shareholder base. Regarding corporate governance, the Group has adopted statutory procedures, with specific attention to the implementation of the principles contained in the code of conduct prepared by Borsa Italiana.

The main governance bodies of Hera are the **Board of Directors**, the **Executive Committee**, the **Board of Statutory Auditors**, the **internal committees** and the **Shareholders' Meeting**. The Board of Directors is supported in its duties by two committees: the Remuneration Committee and the Control and Risks Committee. The Board of Directors has also established a Supervisory Body pursuant to Italian Legislative Decree No. 231/2001, as well as an Ethics and Sustainability Committee to monitor the dissemination and implementation of the principles in Hera Group's Code of Ethics and the supervision of the sustainability aspects linked to the business activities.

All detailed information concerning the Group's corporate governance and the functioning of its main bodies is dealt with in the Corporate Governance Report in the Group's consolidated and separate financial statements approved by the Board of Directors on 25 March 2020.

The Ethics and Sustainability Committee

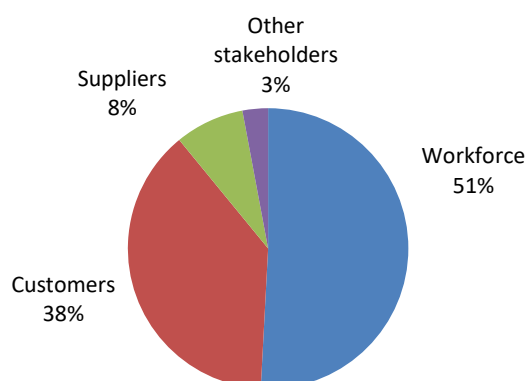
[102-17] [102-33] [102-34]

The Ethics and Sustainability Committee, renewed by Hera Spa's Board of Directors on 10 May 2017, has the task of monitoring the **divulgment** and **implementation of the Code of Ethics** and exercising the functions for the **supervision of the sustainability aspects** associated with the exercise of the business activities. In particular: it receives reports of violations of the Code and assesses whether or not proceedings may be initiated, monitors the implementation of sustainability policies, formulates, at the request of the Board of Directors, an opinion on specific sustainability issues, examines company procedures on social and environmental issues, and examines in advance the sustainability report to be submitted to the Board of Directors.

The Hera Ethics and Sustainability Committee is made up of four members, including at least one Independent Director of Hera Spa, the Director of the Shared Value and Sustainability Department and at least one external member experienced in social responsibility and sustainability. The Committee met seven times in 2019. On 25 March 2020, the Ethics and Sustainability Committee submitted to the Board of Directors of Hera Spa the annual report on the activities carried out and on reports received during 2019.

In 2019 the Ethics and Sustainability Committee received **15 reports**. Four reports came from **workers**, seven from **customers**, two from **suppliers** and two from **public administration authorities**; 238 reports have been examined by the Ethics Committee since 2008.

The reports by stakeholder 2008-2019



During 2019, the Committee completed an investigation initiated on the basis of a report received from a Hera Spa employee concerning the handling of her return from maternity leave. The Committee, in addition to facilitating dialogue between the parties, has furthered the extension of the "Good Return Policies" project in AcegasApsAmga and Marche Multiservizi as well as a relaunch of the same, involving the Central Personnel and Organisation Department. The "Good Return Policies" project aims to facilitate the return to work from extended periods of absence from work.

The four reports of **workers** concerned the relationship between colleagues and between managers/co-workers, the turning to account of human resources and the protection of equal opportunities. With regard to the four reports received from workers (two of which were anonymous), as at 31 December 2019, three investigations were completed and one is in progress. On the basis of the investigations concluded, the Committee found no violations of the Code of Ethics.

Customers' reports concerned the timing of communications and/or execution of services, the clarity/correctness of the information provided and/or invoicing and the commercial conduct of the sales agencies. All the investigations have been concluded. On the basis of the investigations concluded, the Committee found no violations of the Code of Ethics.

The Committee has received two anonymous reports from workers of **suppliers** who reported alleged irregularities in the separate waste collection services (improper sorting of waste by suppliers' employees), in the performance of sweeping services (resulting in damage to the Group in the presence of an undue advantage for the supplier) and irregular conduct vis-à-vis the supplier's employees.

Both investigations have been concluded. On the basis of the investigations concluded, the Committee found no violations of the Code of Ethics. With regard to the first report, relating to a supplier of Hera Spa, the Committee found the existence of a system for monitoring the work of suppliers based on a supplier control procedure and a procedure for managing the traceability of waste collected by subcontractors. With regard to the second report, concerning a supplier of AcegasApsAmga, the Committee looked in greater depth at the control system applied to the supplier in question with the Waste Management Services Unit of AcegasApsAmga. The report produced by the AcegasApsAmga Unit was considered exhaustive by the Committee and was shared with the Central Legal and Corporate Affairs Department of Hera Spa in accordance with the company's fraud risk prevention and management procedure. With regard to the alleged irregularities in personnel management, the Committee proposed to the Central Corporate Services Department of Hera Spa to include the supplier among those to be audited in relation to Corporate Social Responsibility in line with the provisions of the vendor rating model also adopted by AcegasApsAmga. The proposal was accepted and the supplier included in the audit programme.

The two reports received in the **public administration authority** sphere concerned the correctness of the economic reporting relating to waste management services and the time required to carry out works relating to the water service. For both reports, the Committee referred the handling of the report to the Legal and Corporate Affairs Department of Hera Spa on the basis of Articles 73 "Limits on the competence of the Committee" and 85 "Relations between the Committee and Company Departments" of the Code.

With regard to the supervision of sustainability aspects, the Committee examined the **company's social and environmental procedures** (such as the selection of projects eligible for Green Bond financing and the management of funds raised), discussed the draft **Sustainability Report** and examined its main contents in advance of the Board of Directors' Meeting.

The Ethics and Sustainability Committee also coordinated, together with the Shared Value and Sustainability Department, the process of updating the **Code of Ethics** concluded in December 2019.

Risk management

[102-18] [102-30]

Hera adopts an organisational structure that appropriately and consciously manages the **exposure and risk appetite** arising from its business, defining an integrated approach aimed at preserving the effectiveness, profitability and sustainability of management throughout the entire value chain.

Top Management plays a fundamental role in this process and is called upon to express the medium/long-term vision of the desired risk profile for the Group defining the risk areas within which the Group intends to move.

The Group's risk appetite is managed through three fundamental pillars which are:

- the establishment of a Governance system that through the definition of roles and responsibilities approves **risk limits** and the **risk management policy**;
- the development of a **method** to measure risk exposure with respect to which risk limits are set;
- the implementation of a **risk monitoring** and **management process** and remediation **action** in the event of overrun.

For a description of the corporate governance system for the management of the risk and for the nature of the risks and their handling, please see the Group's Corporate Governance Report and the Management Report included in the Group's Consolidated Financial Statements as at 31 December 2019.

The prevention of active and passive corruption and fraud [102-17]

Importance for the Hera Group and monitoring of this aspect

Corruption and fraud pose a significant risk to business activities as they can significantly compromise the company's reputation and image and cause significant financial damage. Hera furthers the fight against the above by adopting a "zero tolerance" commitment towards corruption and fraud in any form, confirmed both in the **Code of Ethics**, updated in 2019, and in the **Corruption prevention model**. Furthermore, Hera Spa, again in 2019, obtained **Iso 37001** certification for the Management system for the prevention of corruption.

Hera's commitment applies to both employees and third parties (e.g. consultants, suppliers and business partners), through appropriate preventive measures, a disciplinary system and specific "ethical" clauses that all employees and third parties must accept and adopt.

Hera has adopted a structured compliance system consisting of tools and policies designed to prevent and combat active and passive corruption, in addition to the matters envisaged in the **Group's Code of Ethics** and the **231 Organisational Model**.

Hera's anti-corruption system comprises the following:

- the Code of Ethics;
- the Quality and sustainability policy;
- the **Corruption prevention model** that supplements the existing "**231 Model**", which already covered the types of corruption included in Italian Legislative Decree No. 231/2001;
- **guidelines** for the prevention and management of fraud;
- periodic **audits** and **training** activities with a view to corruption and fraud prevention;
- a **whistleblowing** system for the handling of reports relating to offences concerning both corruption and those potentially significant for 231-related purposes.

Main activities and results achieved in 2019

During 2019, the Board of Directors of Hera Spa approved the **Quality and Sustainability Policy**, which guarantees the Group's commitment not to tolerate any form of illegality, corruption and fraud and envisages a system of sanctions for such illegal behaviour, also encouraging the reporting of illegal or even only suspicious events, without fear of retaliation.

Subsequently, again in 2019, all the Hera Group Companies which adopt the Group's 231 Model adopted the **Corruption prevention model**, which supplements the already existing model for the prevention of "231-related offences". This document defines the concept of corruption, both active and passive, and disciplines the measures to prevent corruption and unpermitted conduct in the various dealings subject to risk of offence: with public officials, customers, suppliers and all other business partners. A comprehensive management system for the prevention of corruption and fraud is therefore operational, which in 2019, after an audit by the third-party certification body Bureau Veritas, obtained **Iso 37001** certification for Hera Spa, the parent company that manages the most important services, also being the entity most exposed to the risk of corruption.

[102-33]

Since April 2019, the 231 procedure has been operational, defining the criteria for reporting offences within the sphere of **a whistleblowing system**; such offences may involve corruption and may also be relevant for the purpose of 231-related offences or have fraudulent features. The new procedure for handling of reports (whistleblowing) envisages new measures to protect the confidentiality of those who makes reports and establishes a specific channel for receiving reports on 231-related corruption in addition to the one envisaged by the Group's Code of Ethics.

In the fourth update of the Group's **Code of Ethics**, which took place in 2019, the **value of integrity** was further emphasised, as reflected in various parts of the Code, in line with Hera's 37001 management system, which aims to prevent corruption.

Throughout 2019, numerous anti-corruption **training activities** were carried out, aimed above all else at those who must implement the corrective action emerging at the time of verification of the 231 Model and which involved various categories of the corporate population, with the participation of **156 workers**.

Training and awareness-raising activities in these areas were supplemented with training sessions on the Group's Code of Ethics, which in 2019 involved 375 Group workers, including new hires and workers from companies that have joined the Group (through the "AlfabEtico" initiative lasting 4 hours) and managers (via the "CSR and Code of Ethics in day-to-day management" seminars lasting approximately 8 hours).

In addition, a basic training course on the concept of corruption and expected behaviour was launched at the beginning of 2020, which will involve the entire corporate population of the Hera Group.

The 231 organisational model

Italian Legislative Decree No. 231/2001 introduced a **regime of administrative liability** into the Italian legal system. These measures are applied to entities which commit crimes in their own interests or to their own advantage. These crimes may be committed by natural persons acting as representatives, directors or managers on behalf of the entities, or by natural persons acting under the supervision of such persons or subjected to management on their part.

The Board of Directors of Hera Spa and the boards of the main Group subsidiaries have adopted an Organisation, management and control model (231 Model) aiming to ensure conditions of correctness and transparency in conducting business and company activities. The model includes the principles of conduct formalised in the Code of Ethics.

The companies which have a "231 Model" are: Hera SpA, Acantho Spa, AcegasApsAmga Spa, AcegasApsAmga Servizi Energetici Spa, Aliplast Spa, Alimpet Spa, Asa Scpa, Estenergy Spa, Feronia Srl, Frullo Energia Ambiente Srl, Hera Comm Nord Est Srl, Hera Comm Spa, Hera Luce Srl, Hera Servizi Energia Srl, Hera Trading Srl, Herambiente Spa, Herambiente Servizi Industriali Srl, HERAtech Srl, Hestambiente Srl, Inrete Distribuzione Energia Spa, Marche Multiservizi Spa, Uniflotte Srl. All these 22 companies (55% of the total of the companies) include 93.7% of Group employees. AcegasApsAmga Spa, AcegasApsAmga Servizi Energetici Spa, Marche Multiservizi Spa and Estenergy Spa have adopted their own "231 Model". The 231 Model of AcegasApsAmga Spa and AcegasApsAmga Servizi Energetici Spa is very similar to that of the Hera Group and envisages the same Supervisory Body.

The Group companies, following a mapping of company activities sensitive to the risks of offence included in Italian Legislative Decree No. 231/2001, have defined **25 protocols** to be followed when carrying out sensitive company processes given that they are exposed to the potential risk of committing 231-related crimes, and periodically make the resulting information flows available which inform the Supervisory Body on the most sensitive events for the purposes of these risks. The protocols are widely distributed to all workers through their publication and periodic updating on the Company Information Portal. Their application is analysed and monitored during the audit phase. In 2019, the protocols for the handling of the process for participation in **gas tenders**, that relating to the handling of reports to the Supervisory Body (**whistleblowing**) and the **public financing** and **procurement** protocols (the latter simply updated with respect to the past) were approved and published.

For further information on the "231 Model", please refer to the Corporate Governance Report included in the 2019 Annual Financial Statements.

231 risk assessment activities

[205-1]

The risk assessment activities carried out by the **Internal Auditing Department** concern all the business processes implemented by the Hera Group. A mapping of the activities carried out by the business and staff units was carried out, determining whether they are exposed to risk. The risks examined are: regulatory compliance, reliability and integrity of information, protection of company assets and effectiveness and efficiency of operations. The risk map has logics of continuity with those used by **Enterprise Risk Management (ERM)**. It includes the **risks of fraud, corruption and the offences** referred to in Italian Legislative Decree No. 231/2001. Specifically, 564 risk scenarios were identified, with respect to which the inherent and intrinsic risk was evaluated, downstream from the risk mitigation implemented by the internal control system. These activities were carried out on the basis of the results of the previous assessments, on the outcomes and the key aspects of the audit activities performed, the ERM analysis presented to the Board of Directors of Hera Spa in January 2019 and in relation to the sector risks deriving from benchmarks of other companies. The assessments, referring to the risk event, were guided and gauged in relation to the type of the processes or the business: the drivers which supported the assessments and the prioritisation of the risk aspects also took into account the peculiarities of the Group. The risks as per Italian Legislative Decree No. 231/2001 have been identified by macro-processes, assessed *ad hoc* and included in the risk assessment within the sphere of the compliance risks.

As part of the Risk assessment activities, the areas of risk from the **offence of corruption** are identified mainly in the dealings with Authorities and supervision and control public law bodies that the Group maintains, for example, within the sphere of participation in public tender procedures, in the application for licences, administrative measures and authorisations, in the sending of reporting documents, in the stipulation and execution of contracts with the Public Administration Authorities. These areas, together with spheres such

as tenders, donations and sponsorships, entertainment expenses and the management of credit positions, are constantly monitored. In addition to these areas, there are areas exposed to the offence of corruption between private parties, such as the management of active contracts (preparation, participation in tenders, negotiation, etc.), commodity trading, dealings with third parties, the selection, recruitment and administrative management of personnel and the procurement of goods, work and services.

The risk assessment activities generated a risk-based audit plan for the Hera Group. Both the audit plan and the risk assessment, developed for the three-year period 2019-2021, were approved by the Board of Directors of Hera Spa in February 2019. During 2019, the consequent internal audit plan for the year under review was completed, the most significant risk areas were identified and the related risk mitigation action was agreed with management.

Based on the matrix identified in the risk assessment, the Hera Group's Internal Auditing Department specifically focused on the risk of **fraud and/or corruption**, examined in its implementation methods with respect to the various processes and stakeholders (e.g. Public Officials or Hera business partners). During 2019, the audits envisaged in the plan that are significant for anti-corruption purposes were carried out.

No episodes of corruption were detected during these activities and there were no reports of corruption pursuant to the 231 model.

The handling and prevention of fraud

During 2017, the Hera Group drew up Guidelines, in application as from 15 February 2018, for the purpose of facilitating the further development and co-ordination of the **internal control system** supporting the prevention and handling of fraud.

The Guidelines assign roles and responsibilities within the sphere of the prevention, detection and investigation of potential frauds and further conduct within the organisation consistent and in line with the principles expressed. They also provide indications with regard to the channels to be used, hardcopy post or dedicated e-mail addresses, to report any suspicion of fraud. All the Departments involved must ensure the confidentiality of the information received and handle it in a strictly confidential manner protecting the identity of the whistle-blower, without prejudice to the legal obligations.

A work group was set up, under the co-ordination of the Law No. 262/05 Compliance Unit, which developed a method-based technical support, "self-assessment", for the company Departments and the Group companies, for the purpose of providing them with elements for self-assessment in the identification of risks and related prevention controls. This instrument becomes an integral part of the internal control system.

The "self-assessment" includes:

- the types of fraud;
- the fraud risks, or which type of action is implemented;
- the fraud schemes, or how the fraud is implemented.

The document includes, by way of example but not limited to, practical examples, red flags and analytical controls.

During 2019, the Law No. 262/05 Compliance Unit took steps to integrate the control matrixes (Risk Control Matrix) with the types of fraud (undue misappropriation, corruption and false accounting) in the various sub-processes, where the risk is present.

The guidelines for fraud prevention and management envisage two channels for receiving reports: the Ethics and Sustainability Committee and the Central Legal and Corporate Affairs Department of Hera Spa as well as a specific way of managing the same. During 2019, the Ethics and Sustainability Committee received an anonymous report that alleged damage to the Group due to an undue advantage of an AcegasApsAmga supplier. The Committee, together with the Waste Management Services Unit of AcegasApsAmga, has looked in greater depth at the control system applied to the supplier in question. The report produced AcegasApsAmga was considered exhaustive by the Committee and was shared with the Central Legal and

Corporate Affairs Department of Hera Spa in accordance with the company's fraud risk prevention and management procedure. The Central Legal and Corporate Affairs Department did not receive any fraud risk reports during 2019.

Managing sustainability

[102-20] [102-22] [102-26]

In order to ensure that **social responsibility** and **sustainability** are an integral part of **corporate planning** and **management**, in May 2005, the Board of Directors of Hera Spa set up a Corporate Social Responsibility organisation unit, reporting to the Managing Director, which has been a Department since 2010. Hera has thus been one of the first companies in Italy to endow itself with a unit dedicated to corporate social responsibility. As from 1 March 2019, on a consistent basis with the development process undertaken in the last few years, the CSR Department was renamed the **Shared Value and Sustainability Department**. Management is responsible for proposing and defining the company guidelines on corporate social responsibility and on the creation of shared value as well as the policies concerning reporting on the shared value and on sustainability; it oversees the balanced scorecard system, drafts the reporting on sustainability and proposes initiatives within the Csr/Csv sphere; it works together on the stakeholder engagement initiatives and is responsible for the periodic up-date of the Group's Code of Ethics. The SVS Director is a member of the Group's Ethics and Sustainability Committee.

In **AcegasApsAmga**, following the corporate reorganisation, the sustainability report unit has been transferred to the Administration, Finance, Control, Sustainability Report and Regulatory Department. It carries out the sustainability accountability activities by means of the processing of KPIs and specific reports, laying down in the context of AcegasApsAmga the corporate guidelines related to corporate social responsibility, and ensures that top management is informed on the progress of the pertinent issues. It also guarantees the implementation of the Balanced Scorecard system in line with the Business Plan, the Budget and the Group guidelines.

The Code of Ethics

[102-16]

The Code of Ethics is the document that contains the **commitments** and **ethical responsibilities** to be implemented by the managers, the workforce and collaborators of the Group for the achievement of corporate objectives. The Code of Ethics guides the business management and the individual conduct towards the observance of the ethics values and the functioning principles of Hera which represent, together with the mission, the basis of the principles contained in the articles which make up the Code. **Supplier qualification** is subject expressly to acceptance of the Code and the supply contracts drawn up by the Group companies include **termination clauses** linked to the failure by suppliers to comply with the principles of the Code of Ethics.

The Code of Ethics was approved by the Board of Directors in 2007 and is subject to **checking** and **up-dating on a three-yearly basis** by means of a participative process which sees all the workers and the trade unions involved. The current version of the Code of Ethics (the fifth) was approved by the Board of Directors in December 2019.

In 2019, after the previous ones dated 2010, 2013 and 2016, the fourth **update** of the Code of Ethics was achieved via a participatory process involving some of the colleagues present at the "Corporate Social Responsibility and Code of Ethics in day-to-day management" seminars. The work group was coordinated by the Shared Value and Sustainability Department and the Ethics and Sustainability Committee.

Sustainability and shared value, enhancement of diversity and inclusion, mutual collaboration and cooperation, continuity of service and digital innovation, regeneration of the environment and circular

economy are some of the new concepts that characterise the fourth update of the Code of Ethics. Below are the main innovations of the update:

- the inclusion of the concept of "**sustainability and shared value**" in the operating principles;
- the evolution of Hera's role in relation to the **environment**, highlighting the commitment to its **improvement** and not only to its respect;
- the reference to the creation of **shared value** and results in the environmental, social and corporate governance spheres as elements for enhancing the value of the **stock**;
- the specification of the **importance of the digital aspect** in commitments to **innovation**;
- the respect for and **enhancement of diversity**, both with regard to workers, customers and other stakeholders;
- greater emphasis on commitments for **collaboration and cooperation between persons**, company structures and society;
- the promotion of sustainability and positive customer conduct, highlighting the need for "**doing things together**" and stressing the commitment to partnerships;
- the reference to **enhancement of suppliers' environmental and social policies**, taking into account the areas of shared value creation, both in the qualification and selection phases;
- the widening of attention to the general **working conditions of suppliers' employees** and not only to health and safety;
- the further emphasis of the value of **integrity** by stressing it in various sections of the Code in line with the definition of a management system aimed at **preventing corruption**;
- broadening the focus on **service continuity**, in addition to quality;
- several improvements regarding the **implementation of the Code**.

The updating process also envisaged a benchmark with respect to the Ethical Codes of other companies, the involvement of the Executive Chairman, Managing Director, Group Managers and Trade Unions, as well as all workers who wished to express their contribution.

All the new recruits and the new employees entering the Group further to corporate acquisitions are involved in a half-day training session on the contents of the Code of Ethics via the ethical game AlfabEtico. Furthermore, since 2013 the Hera Group has undertaken an intense programme for raising awareness on the Code of Ethics annually addressing 25-30 managers (management white-collars, middle managers and managers) by means of the Corporate Social Responsibility and Code of Ethics in current operations seminars.

The Quality, Safety, Environmental and Social Responsibility management system

[103-2] [103-3]

An important step in aligning and consolidating the principles on which the Management Systems of the Hera Group companies are based was the adoption by Hera's Board of Directors on 30 July 2019 of the Quality and Sustainability **Policy**, which was progressively approved by all the Boards of Directors of the Group. The Policy has been updated in order to acknowledge the requirements of the new standards that the Group is committed to adopting.

In 2019, in fact, Hera Spa obtained the important **Iso 37001** certification for its system for the **prevention of corruption**, which bears witness to the Group's commitment in the fight against corruption, implementing a fraud and corruption prevention management system, integrated into the **Model for the prevention of corporate offences (231 Model)**, already applied as from 2004. In fact, the Hera Group rejects corruption in all its direct and indirect forms, a premise reiterated in the Corruption prevention model, which is overseen by the compliance unit, which coincides with the Supervisory Body.

As indicated in the previous section, in 2019, activities continued with the Certification Body for the renewal and maintenance of the various certification schemes of the Group companies, in continuity with the previous year. All verification activities were successfully concluded with the maintenance of the certifications of the integrated quality, safety and environment and energy management system of Hera Spa and its direct subsidiaries, including Inrete Distribuzione Energia, Uniflotte, HERAtech and Acantho, as well

as of the Groups Herambiente, AcegasApsAmga and Hera Comm. The certifications of all the companies involved in corporate transactions that changed the Group's scope were also managed, in line with Group policies.

[403-1] [403-8]

In particular, the workplace **health and safety** management system is applicable to all activities managed and is implemented, on a voluntary basis, in compliance with the requirements of the Ohsas 18001:2007 standard for all certified Group companies. During 2019, the Group began activities to migrate the certification of the Workers health and safety management system to the Uni Iso 45001:2018 standard. Further to the gap analysis with respect to the requirements of the new standard and consequent system implementation activities, in 2020 the extension of the ISO 45001 certification to the other companies of the Hera Group is envisaged, acknowledging the philosophy, contents and results of the Erm risk analysis and the related health and safety Risk Assessment, as well as a fundamental focus on context analysis and non-employee workers (suppliers), similar to the process previously adopted with the changeover to the new quality and environmental systems reviews. In 2019, the project - as the first "pilot" experiences - saw the attainment of **Iso 45001** certification by Uniflotte and FEA (Frullo Energia Ambiente).

In 2019 the "**Group Review**" tool, which presents Top Management with the results of the various management systems on the main environmental and safety issues, was also consolidated. The "Review" provided Top Management with elements for identifying new opportunities for synergy regarding the system aspects so as to achieve increasingly challenging objectives in terms of standardisation and simplification.

With regard to **AcegasApsAmga**, all companies successfully passed the maintenance and/or renewal audits for certifications during 2019, demonstrating a satisfactory structure and implementation of quality, environment and safety systems. The effectiveness of the integrated systems is also demonstrated by the adoption of improvement plans in line with the "Plan Do Check Act" principle expressed in the Iso 9001/14001 and Ohsas 18001 standards.

During 2019, with regard to AcegasApsAmga Servizi Energia and Hera Luce, maintenance/renewal audits for all certification schemes were carried out for the first time by Bureau Veritas, a third party certification body that certifies the Hera Group's management systems.

Marche Multiservizi, via the adoption of an Integrated Quality, Safety, Environment, Energy and Social Responsibility (QSAE) Management System compliant with the Iso 9001, Ohsas 18001, Iso 14001, Iso 50001 and Sa 8000 certified standards, is committed to the continuous improvement of its services and the management of the Quality, Safety, Environment, Energy and Social Responsibility dimension.

The Integrated Qsae and Social Responsibility Management System of Marche Multiservizi consists of 75 procedures and 113 technical instructions, continuously updated for new regulatory, structural and/or process changes, always keeping in mind the observance of health and safety of operators with the intent to respect, from every standpoint, the environment and sustainability. The management system is shared with all personnel involved in the processes and is accessible from any workstation, via the company intranet portal.

Hera's commitment to quality, safety, environment and social responsibility certification

The management systems adopted establish the requirements that are necessary in an organisation to improve corporate processes in order to increase the satisfaction of the end customer, who is the end beneficiary of the services provided by Hera, to develop and improve its environmental and energy performances, to improve workplace health and safety and its social performance. The high diffusion of the Group companies' certified management systems is shown in the following table.

Management system	Hera		AcegasApsAmga		Marche Multiservizi		Group	
	No. of companies	% of employees	No. of companies	% of employees	No. of companies	% of employees	No. of companies	% of employees
Iso 9001 - Quality	20	95%	6	100%	2	100%	28	97%
Iso 14001 - Environment	16	83%	5	100%	1	88%	22	87%
Ohsas 18001/Iso 45001 – Health and safety [403-8]	12	79%	5	100%	1	88%	18	83%
Iso 50001 - Energy	3	52%	4	100%	1	88%	8	63%
Sa 8000 – Social responsibility	0	0%	3	92%	1	88%	4	23%

Economic value for the stakeholders

The production and allocation of value added

Value added, in this Sustainability Report, is understood as the difference between revenues and production costs not constituting corporate stakeholder remuneration and the purchase costs for goods and services useful for the production process. It is therefore the difference between the revenues and costs incurred for the purchase of the production factors from other businesses and thus represents the value that the production factors within the company, own capital and labour, have added to the inputs acquired from outside. The concept of value added adopted is distinct from the definition of value added strictly applying to accounting practices. Here, the methodology applied is that proposed in 2001 by the Gruppo di studio per il Bilancio Sociale (GBS). With respect to the GBS methodology, rental payments for use of assets owned by shareholder municipalities and sponsorship costs are considered, as they are deemed significant for stakeholders. In addition, in contrast to the proposal of the GBS, the portion of value allocated to financial institutions was calculated considering the balance of financial income and charges, as deemed a better quantification of the relationships with this type of stakeholder, as opposed to the sole figure of financial charges. With this framework, the gross overall value added distributed is almost equal to the gross value added produced by normal operations.

There are two important reasons for using the indicator of value added. Firstly, it enables quantification of the wealth generated by the company, and accounts for how this wealth was generated and how it is allocated to stakeholders; it is therefore useful for comprehending the economic impacts the company produces. Secondly, through this report it connects the Sustainability Report with the Annual Financial Statements. In this sense, production and allocation of value added provides an instrument by means of which we can reconsider the corporate Annual Financial Statements from the vantage point of stakeholders.

Production of value added

millions of Euro	2017	2018	2019
Revenues [102-7]	5,612.1	6,118.9	6,910.9
Other operating and non-operating revenues	524.8	492.0	642.3
Grants received from public institutions	-38.8	-40.3	-37.3
Consumption of raw materials and consumables (net of changes to raw materials inventories and stocks)	-2,606.8	-2,984.1	-3,458.2
Costs for reclassified services	-1,861.4	-1,955.1	-2,234.4
Bad debt provisions	-103.4	-89.3	-80.5
Accruals to provisions for contingencies and other provisions	-50.6	-46.4	-33.4
Other reclassified operating costs	-52.9	-28.5	-28.1
Capitalised costs	43.0	43.2	37.6
Core gross value added	1,466.0	1,525.9	1,721.1
Portion of profit (loss) pertaining to associated companies and joint ventures	14.7	14.9	13.4
Gross overall value added	1,480.7	1,540.8	1,734.5

The values of the consumption of raw materials and consumables, costs for services and other operating costs are indicated net of the costs considered as stakeholder remuneration.

Gross overall value added generated for stakeholders in 2019 came to Euro 1,734.5 million, with an increase of Euro 193.7 million on the previous year (+12.6%).

Distribution of value added to stakeholders

millions of Euro	2017		2018		2019	
Workforce	551.6	37.3%	551.4	35.8%	560.4	32.3%
Shareholders	156.9	10.6%	163.6	10.6%	165.2	9.5%
Company	479.6	32.4%	518.3	33.6%	665.5	38.4%
Financial institutions/Banks	116.2	7.8%	106.6	6.9%	139.4	8.0%
Public Administration	173.9	11.7%	198.2	12.9%	201.0	11.6%
Local community	2.5	0.2%	2.7	0.2%	3.0	0.2%
Gross overall value added	1,480.7	100%	1,540.8	100%	1,734.5	100%

The portion of value added allocated to the **workforce** increased by Euro 9 million, due to changes in the corporate scope for Euro 7 million, which led to an increase in the number of employees, and for the remaining portion related to salary increases envisaged by the national collective labour agreement, contained by reductions for contribution benefits and lower average presence.

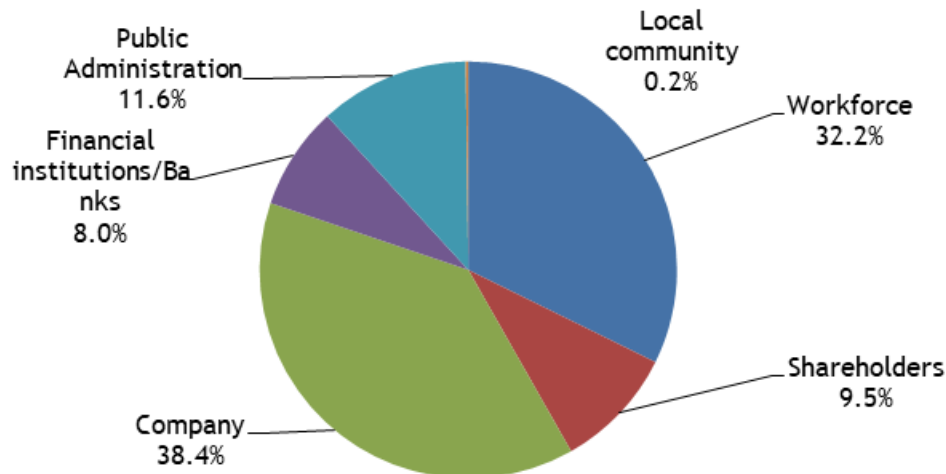
The portion allocated to the **shareholders** of Hera Spa and the minority shareholders of the subsidiaries rose by Euro 1.6 million (+1.0%) and equates to 9.5% of the total, down slightly with respect to the previous year. Of this portion, Euro 148.9 million was allocated as dividends distributed to Hera Spa shareholders (unchanged with respect to 2018) and Euro 16.3 million was allocated as the portion of earnings pertaining to the minority shareholders of the subsidiaries of Hera Spa.

A portion totalling 38.4% of the value added generated in 2019 was **re-invested in the company**. This portion increased considerably with respect to 2018 (+28.4%) and includes the net profit for the year not allocated to shareholders (Euro 236.8 million, up Euro 103.8 million compared to 2018) and amortisation/depreciation of investments made (Euro 428.7 million, up Euro 43.4 million compared to 2018). The increase in undistributed profit is mainly the result of: i) an increase in **special items** for approximately Euro 85 million linked to other non-operating revenues of Euro 111.6 million linked to the Ascopiave acquisition transaction, Euro 26 million in write-downs of electricity generation vehicles and additional tax effects generated by the previous operations for the remaining part; ii) an increase in net profit for Euro 20.5 million. The increase in

the **amortisation/depreciation** of investments made was the result of the new investments in operations, due to the adjustment of the rate to the useful life of the water sector plants (Arera Res. 580/2019/R/idr) and due to the application of the new accounting standard IFRS 16 regarding the recognition of lease agreements.

The portion of value added allocated to **financial institutions** in 2019 came to Euro 139.4 million (8.0% of the total, +30.8% compared to 2018). This share comprises Euro 247.6 million in financial charges (Euro 203.5 million in 2018), and Euro 108.2 million in financial income (Euro 96.9 million in 2018).

Distribution of value added to stakeholders (2019)



The portion allocated to the **Public Administration** came to Euro 201.0 million, 11.6% of the total (+1.4% compared with 2018), essentially stable with respect to the previous year.

Duties and taxes amounted to Euro 143.8 million (8.3% of the total value added distributed), up 0.4% compared with last year. Of the taxes and duties, Euro 102.6 million was allocated to the Government (Euro 99.1 million in 2018), Euro 33.7 million to the Regional authorities and Euro 7.5 million to the Provincial and Municipal authorities. Business income taxation rose from Euro 121.8 million in 2018 to Euro 126.0 million in 2019.

[201-4]

The production plants and installations used by the company are in part owned by shareholding municipalities, and **rental payments** are made for their use; the portion for Public Administration also includes environmental compensations paid to the municipalities regarding the waste treatment plants. In 2019, total rental payments for use of the assets of shareholder municipalities and environmental compensations came to Euro 89.0 million. There was also Euro 5.2 million relating to the running costs of the national (Aeegsi and Agcm) and local authorities. **Public grants** received in 2019 amounted to Euro 37.0 million, Euro 27 million of which allocated as operating grants and Euro 10 million as plant grants; this item includes the former green certificate contributions for a total of approximately Euro 24 million.

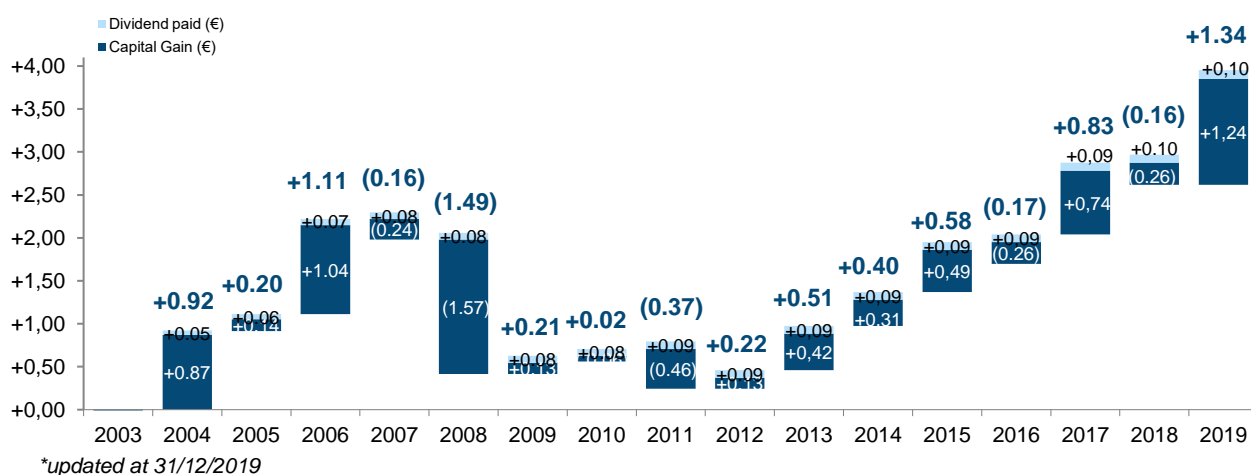
Lastly, an amount of Euro 3.0 million was allocated to **donations** (Euro 0.4 million) and **sponsorships** (Euro 2.6 million); details on these items can be found in the "Innovation and contribution to development" section (under "Economic development and social inclusion").

Shareholders and financial institutions

Hera's commitment toward investors

Hera undertakes to **create value** by placing the quality and efficiency of the services managed and the growth by lines, both internal and external, at the centre of its strategic approach; at the same time, it pursues a balanced development of the strategic areas of its business portfolio. The stability of these strategic policies over time, the handling based on a low propensity to risk and the sustainable approach have contributed towards producing economic-financial results constantly on the up over 17 consecutive years, even when the conditions of the reference context were worse. The **overall share investment return** (total shareholders' return), with respect to the IPO, came to +319.0% at the end of 2019: a value which has always remained positive, even in periods characterised by considerable volatility on the financial markets. The average annual growth of the total shareholders' return is consistent with the average annual increase in earnings per share, confirming the full transfer of the economic fundamentals in the share price on the Stock Exchange, also favoured by the inclusion in 2019 in the FTSE Mib index, the main share index of the Italian market.

Total shareholder return from the IPO



Hera stock closed 2019 with a **performance** of +46.2%, higher than the Italian stock market (+27.2%) and the sector index (+35.0%), reaching an official price of Euro 3.909 (achieving a new all-time high of Euro 4.042 on 20 December, a level reached and exceeded again in the first few weeks of 2020), compared to a price of Euro 2.674 at the end of 2018. Capitalisation came to around Euro 5.8 billion, confirming itself amongst the 30 highest capitalisations of the Italian share list. The positive performance of Hera stock, compared with the trend of the Italian market, was supported by the appreciation of the investors for the business plan presented to the financial community in January, by the inclusion in the FTSE Mib index in March, by the sound fundamentals of the Company emerging during the year at the time of the publication of the results and by the positive finalisation of important extraordinary transactions (partnership with Ascopiave, acquisition of Pistoia Ambiente, Cosea Ambiente and CMV).

Official share price and average traded quantities in 2019

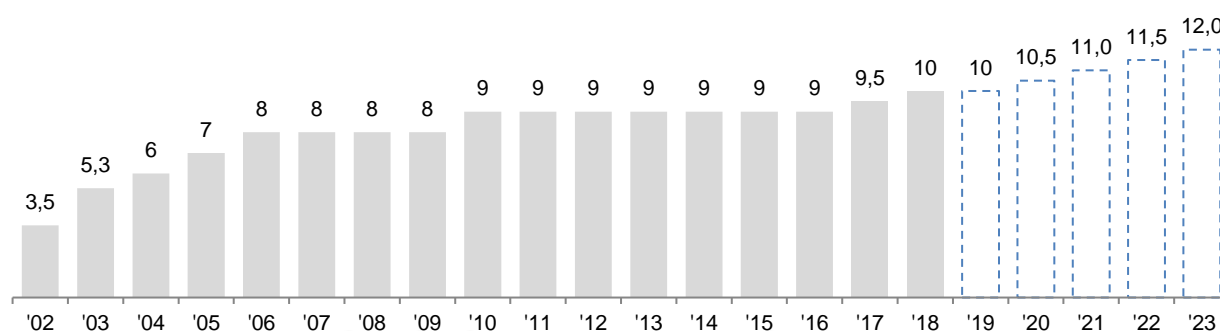
	QI	QII	QIII	QIV
Official price at close of period (Euro)	3.23	3.36	3.75	3.91
Average volume traded (thousands of Euro)	4,243	3,336	3,145	2,977
Average volume traded (thousands of Euro)	12,510	10,928	11,142	11,521

The Hera official listed price at the end of 2019 disclosed an implicit valuation premium with respect to the local utilities sector. The multiple of the **business value on the gross operating margin** (EV/Ebitda) was in fact equal to 7.8 compared with a 6.8 peer average, and also the multiple of the **share value on the net profit** (P/E), equal to 19.0, exceeded the 14.6 average. The greater valuation which the market acknowledged Hera with respect to the main listed local utility companies reflects: the persistent outperformance of the final results with respect to expectations, the future growth prospects of the business results, the low risk implicit in the mix of the strategic business areas, the stability of top management over time, the diversified composition of the shareholding structure and the time series of the results undergoing continual growth. Also the characteristics of the historical series of the stock performance, which show a low volatility (beta) and a high propensity for "autonomous" positive trends (alpha) justify the greater appeal included in the premium.

The **dividend policy** has been identified as an important component of the remuneration of the invested capital. Hera has ensured a constant and rising flow of dividends since listing: it has distributed Euro 1.69 billion in total since its establishment in 2002. The stock has been included in the Etf Spdr S&P Euro Dividend Aristocrats since 2016, a basket of 40 European securities (only three are Italian, including Hera) which distinguished themselves due to the uninterrupted distribution of stable or rising dividends in the last 10 years.

Dividend distributed (Euro cents per share)

The constant coupon flow has guaranteed the return on capital for the shareholders.



Proposal of the BoD to the General Shareholders' Meeting

In the five-year business plan, presented in the first few days of 2020, Hera increased the remuneration objectives for the shareholders envisaging a **minimum dividend rising up to 12.0 cents per share** by 2023, up +20% compared with the last dividend distributed. This policy, which has been further improved compared to what was foreseen in the previous business plan, allows shareholders to have clear visibility on the minimum future return on their investment.

The consensus of financial analysts considers Hera's dividend policy to be sustainable: it is consistent with the estimated cash generation, which is expected to increase compared to the previous business plan and which, after the payment of dividends, will be able to further improve equity soundness, already among the best in the industry, while maintaining ample margins to finance further growth opportunities not included in the business plan.

Complete transparency with the shareholders and the financial market on the creation of value

Hera provides the market with significant economic-financial information promptly facilitating the correct assessment of the same and the transfer of the value generated by operations to the listed shares.

In order to ensure the shareholders transparent disclosure, all the press releases which may influence the price of the stock are disclosed in real time. The communication is specific, multimedia and forwarded via various channels to all the categories of investors (institutional, SRI, private and retail, public institutions) and ensures accessibility to the main information both of an economic-financial and social and environmental nature.







Hera continues to make the greatest commitment so as to ensure a plurality of professional and independent appraisals on the company's value and on the Group's sustainable approach. At year end, all the brokers had a positive or neutral opinion on Hera stock, while sales recommendations were absent. Supported by the economic results presented quarterly by the Group, the analysts expressed upwards assessments during the year, with the average target price which rose from Euro 3.28 to Euro 3.87 at the end of the period. After the presentation of the new business plan, on 10 January 2020 the analysts once again improved their assessments, raising the average target price to Euro 4.15.

Appraisal and target price of the analysts which follow Hera stock

Company	2019		January 2020	
 Banca Akros	Accumulated	4.10	Accumulated	4.10
 BANCA IMI	Buy	4.40	Buy	4.70
 EQUITA	Hold	4.00	Hold	4.00
 fidentiis	Buy	3.30	Hold	4.20
 Intermonte	Outperform	4.20	Outperform	4.30
 Kepler Cheuvreux	Hold	3.80	Hold	3.80
 MAINFIRST	Neutral	3.52	Neutral	4.03
 MEDIOBANCA <i>Banca di Credito e Risparmio - SpA</i>	Outperform	3.60	Neutral	4.10
Average target price		3.87		4.15

Consistent with the growing interest for Hera's sustainable approach on the market, the Group adopted a policy of coverage of the ESG analysts during 2019, selecting those most relevant in terms of their stature and research quality. The assistance provided to ESG analysts and the preparation of questionnaires have in some cases led to a significant increase in assessments. The coverage policy provides for the exclusion of activities for analysts not included in the coverage.

ESG rating of Hera stock

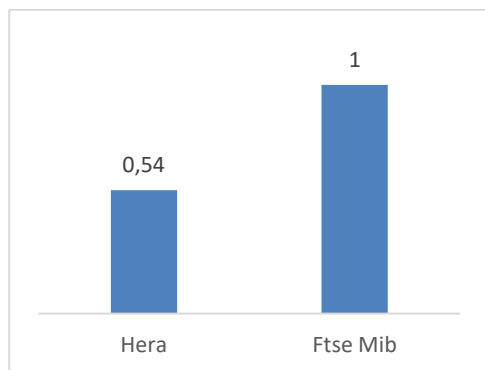
Company	Rating	Comment
	68	With the inclusion in the FTSE Mib index, Hera was invited for the first time to participate in the questionnaire for inclusion in the Dow Jones Sustainability Index. Already on the first attempt, the industry average (48) was exceeded with a significant outperformance in the environmental aspect.
	B	Rating unchanged with respect to 2018, but with improvements in the following aspects: Governance, Opportunities disclosure, Risk disclosure, Risk management process, Business impact assessment & financial planning, Value chain engagement
	79 Outperformer	Rating improved by +4 points with respect to 2018, with inclusion in the class of the Outperformer companies
	A	Rating unchanged with respect to 2018, with outperformance in the assessment of the carbon footprint
	4th place / 1st place	Fourth absolute place in the ranking of the Integrated Governance Index furthered by Etica News (compared with fifth place in 2018) and first absolute place in the ranking for green finance
 TOP 100 COMPANY 2019 Diversity and Inclusion Index	14th place	Fourteenth global place (an improvement of eight positions with respect to 2018 and first multiutility) in the ranking drawn up by Refinitiv on the promotion of diversity, inclusion and development of people.
Bloomberg Gender Equality Index	93.9%	More than utility average (92.7%)

The Hera Group confirms its position among the Italian companies that combine their business strategies with the commitment to sustainability. This is certified by the **Integrated Governance Index**, a ranking of stature that gives an account of the degree of integration of ESG factors (environmental, social and governance) in the company's strategies, enhancing activities that, in addition to pursuing traditional business objectives, consider social and environmental aspects. Factors, moreover, which investors are looking at with increasing interest. In the 2019 edition, the Hera Group maintained its leadership in the **special category dedicated to sustainable finance** and ranked fourth overall, improving on last year's result. Of particular importance in achieving the result were the Group's policies on diversity and inclusion, issues of ever increasing interest to the financial community, both nationally and internationally.

The commitment to reduce the investment risk

Hera pays great attention to the monitoring of the risk components associated with the trend of the stock on the stock market, such as the volatility of the listed prices (beta), the ability to generate value independently from market conditions (alpha) and the liquidity of the trading.

Hera 3-year Beta and Ftse Mib index



Source: Refinitiv.

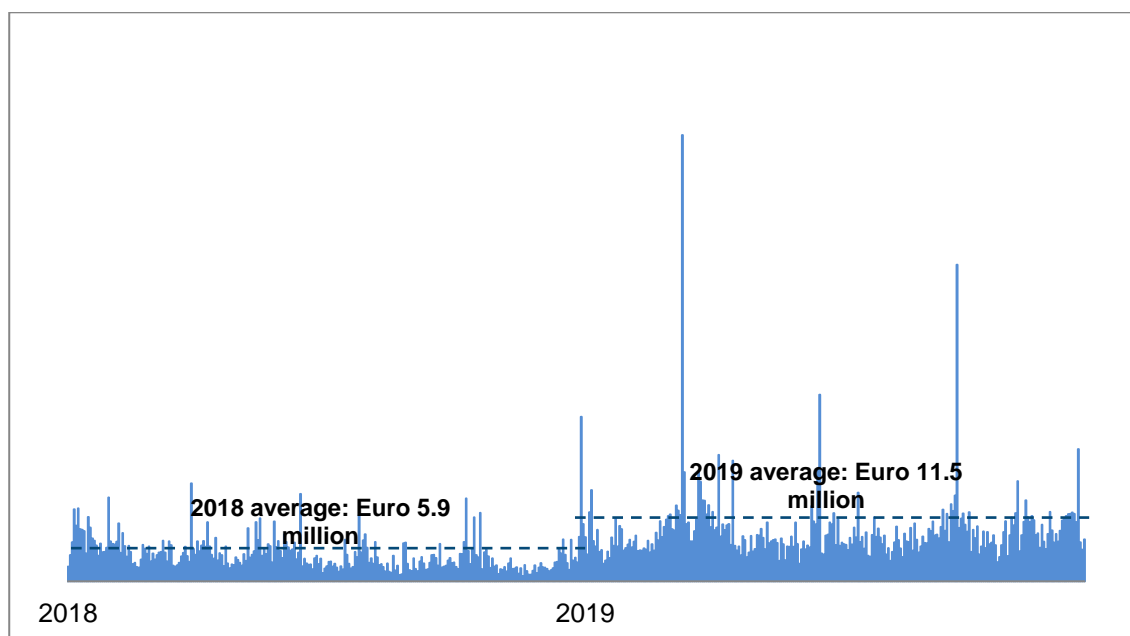
Over the three years, the stock has shown one of the most conservative **volatility indexes in pricing** (beta index) compared to the securities present in the FTSE Mib index and the lowest of all the utilities. At the same time, it also showed the positive ability to generate value (alpha index) irrespective of market trends, again distinguishing itself within the main stock exchange and sector index.

These characteristics of the stock are consistent with the strong resilience of the economic results, the low risk profile of the portfolio of assets under management, the solidity of the governance and the business model, oriented towards constant growth also through M&A.

The **daily average volumes** in 2019 came to 3.1 million shares traded (+60.6% compared with 2018), while the average equivalent value of the daily trading came to Euro 11.5 million (+94.2% compared with 2018). The positive increase in trading was also made possible by the inclusion in the FTSE Mib Index, which increased the stock's attractiveness for both the leading active and passive institutional investors.

The greater liquidity of daily trading made it possible to bring the values of sales orders closer to those for purchase, highlighting a spread more or less halved in 2019 (0.14%) compared to the average recorded in 2018 (0.27%).

Value of the trading in 2019 and 2018 compared (millions of Euro)

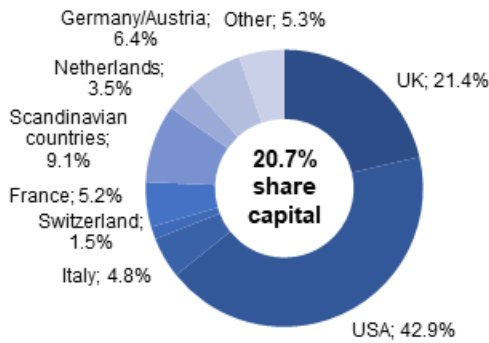


The **trading liquidity** of the stock market is also the result of intense dialogue with the financial market operators, with around 449 contacts and meetings in 2019, and the launch of new relations with professional investors which have an investment style consistent with the share profile of the Group. Management has participated in theme-based and sustainability conferences, meeting with investors who combine ESG aspects with financial assessments and now account for approximately 30% of total assets under management globally.

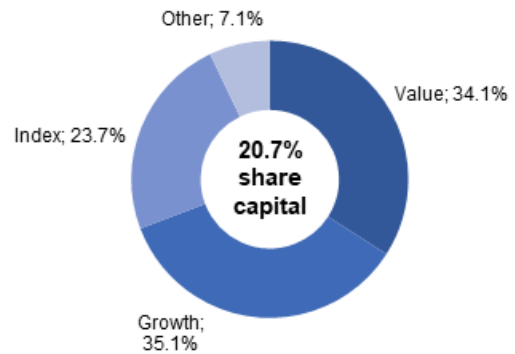
Refinitiv surveys show that, during 2019, institutional investors increased by 42 units (+24%).

The **diversification of the institutional investors** between the shareholders of the company is an important factor for facilitating an on-going evolution of the shareholding structure and a balance of the listed prices of the stock over time. As the following diagrams show, Hera presents a balanced geographic and investment style diversification of the professional investors, benefiting the resilience and low volatility of the stock. Around a quarter of institutional investors has a passive investment style (index), which increased also thanks to inclusion in the FTSE Mib index.

Institutional shareholding structure by geographic area at 31 December 2019



Institutional shareholding structure by investment style at 31 December 2019



In the graph on the left the item Other includes: Australia, Belgium, Brazil, Canada, Hong Kong, Ireland, Liechtenstein, Luxembourg, Portugal, Singapore, South Korea, Spain, Taiwan

In the graph on the right the item Other includes: hedge fund, long/short, momentum, sector specific, specialty, yield

Source: Refinitiv

The Hera stock is included in the FTSE Mib, FTSE All Share and FTSE Italia Servizi Pubblici of Borsa Italiana **share indexes**.

At the same time, the Hera stock forms part of the following **sustainable indices**: ECPI Euro ESG Equity, ECPI Global Megatrend 100, ECPI Global Blue Gold GD Equity, ECPI Global Renewable Energy Liquid, 6 indexes of the STOXX Sustainability family, 17 indexes of the EURO STOXX ESG-X family, 15 indexes of the STOXX Low Carbon family, 7 indexes of the EURO STOXX Low Risk family, 4 indexes of the STOXX Climate Awareness family, 4 indexes of the STOXX Climate Impact family, 7 indexes of the STOXX Industry Neutral ESG family, STOXX Global ESG Governance Leaders, STOXX Global ESG Impact, STOXX Global ESG Leaders, Stoxx Global ESG Social Leaders, FTSE Environmental Opportunities Italy Index, Refinitiv Diversity and Inclusion Index, Thomson Reuters TOP100 Global Energy Leaders, Bloomberg Gender Equality Index.

The sustainable indexes, which include securities of companies excellent in terms of corporate sustainability, are designed to facilitate the investment choices of socially responsible funds (Sri). The organisation of these indexes considers that the companies with sustainable management, from an environmental standpoint, as well as with regard to the dealings with the stakeholders and the corporate governance, obtain significantly higher results than the competitors over the long-term.

Ethical indexes in which Hera stock is present



The last shareholders' meeting authorised the exercise of a plan for the repurchase of own shares for a maximum of 60 million shares (equal to 4% of the share capital) for the purpose of creating value for the shareholders, contributing to the liquidity of the trading, avoiding anomalous fluctuations with respect to the benchmark and serving M&A transactions with the intention of counter-diluting the shareholders.

Corporate Governance and safeguards for shareholders

As from when it was established, the Group has adopted a Corporate Governance system based on the traditional model, with a Board of Directors made up of executive and independent directors, which ensure - in line with the company mission - the protection of the shareholders, the return on invested capital for shareholders and satisfying the stakeholder interests.

Hera's activities are handled by management in accordance with the Code of Ethics adopted by the Group and are also perfectly in line with the Code of Conduct furthered by Borsa Italiana Spa in force for 2019.

Hera's management body has always been attentive to the aspects of good governance and the protection of shareholders' interests, which is why it promptly accepts any changes to its structure that contribute to achieve an increase in the value created. With this intention, in 2015 the loyalty vote was established, an instrument which makes it possible to assign up to two votes for each share held by the same shareholder for a period of at least 24 months. Shareholders who demonstrate - with the stability of their investment - a greater sensitivity to the long-term growth of the Group and to the active participation in the appointment of the shareholders' representatives, are thus rewarded. In order to fully safeguard the interests of the minorities, the loyalty vote was applied in a reduced version with respect to that envisaged by legislation: in fact, it has exclusive efficacy for the appointment and/or removal of the Board of Directors and the Board of Statutory Auditors, for the changing of the limit to share possession, and for the amendment of the same article which established the loyalty vote.

During the same meeting which established the loyalty vote, the shareholders also approved the increase from three to four of the number of board directors appointed from the lists presented by the minorities: this innovation has the purpose of attracting greater participation of private capital in the choice of the Group's strategies. Furthermore, to encourage greater participation of the minority shareholders, the percentage of share capital required to present a list for the election of the Board of Statutory Auditors has been reduced from 3% to 1%, as already envisaged for the election of the Board of Directors.

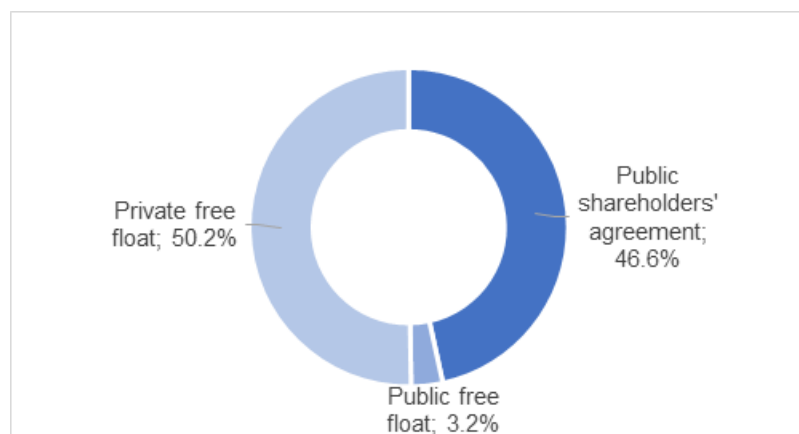
The breakdown of the shareholding structure

[102-5] [102-7]

Hera's past features a peculiar aspect: the Group is considered to be one of the main interpreters of the sector consolidation process with a merger model which has involved more than 43 utility companies since its establishment in 2002, ensuring around 40% of the growth of the results in the last 17 years. The merger transactions have been financed mainly by the issue of new shares and with an overall number of shares representing the share capital which has almost doubled: from 789 million in 2002 they became 1,490 million at the end of 2019. These transactions have not had diluting effects for the shareholders, as the annual average growth of the earnings per share of around +10% bears witness to. The creation of value took place also thanks to the extraction of synergies and the increased economies of scale. The Group's capitalisation thus reached, at the end of 2019, almost Euro 5.8 billion (compared to Euro 1 billion in 2003), i.e. an average annual growth of +10% in line with the growth in earnings per share.

The expansion of the shareholding structure maintained a constant balance between the public and private component, and highlights a diversification of the shareholders both in terms of number and geographic origin.

Shareholding structure as at 31 December 2019



ESG financial instruments

Hera Green bonds

Green bonds are those which associate environmental-type investments and activities with the funds raised. The first financial instrument of this type was issued by the World Bank in 2008. Interest in Green bonds has grown over time and in 2019, according to the Climate Bonds Initiative, 1,788 bonds were issued for a total value of US\$ 257.7 billion, up 51% over the previous year.

In Italy, the Hera Group was the first to launch this new financial instrument in 2014, and opened the way up for other operators in the utility sector or otherwise.

Five years after the issue of the first green bond in Italy, Hera launched its second green bond. The financial instrument was presented by means of a roadshow in the main European markets, to illustrate to investors and analysts the allocation of resources in environmental sustainability projects in the fields of environment, water, energy. The Group's second green bond (issued on 5 July 2019) amounts to Euro 500 million. The transaction saw a significant participation of international investors (France, Germany, Great Britain, Holland), who were largely focused on the environmental and social performance of companies.

The funds raised will be used to finance or refinance numerous projects, already launched or planned in the 2022 Business Plan, which pursue one or more of the objectives of the UN 2030 Agenda:

- energy efficiency (SDG 7 and 13): installation of smart meters, development of district heating networks, public lighting projects;
- circular economy and sustainable waste management (SDG 12): innovative projects in waste collection systems, extension of the quantity-based tariff, construction of facilities and structures for recycling, recovery and reuse of materials similar to that for biomethane production;
- water infrastructures (SDG 6 and 14): wastewater management, sewage and water infrastructure projects for resilience and adaptation to climate change.

Use of the funds received via the 2019-2027 Green Bond

	Total funds raised (millions of Euro)	% of total
Infrastructures in the water sector	188.4	37.7%
Circular economy and sustainable waste management	188.6	37.7%
Energy efficiency and gas infrastructures	45.9	9.2%
Energy efficiency and electricity infrastructures	77.1	15.4%
Total	500.0	100%

The definition of the funded projects was validated by a "Second Party Opinion", drawn up by ISS-oekom, which ranked Hera "Prime" in terms of ESG performance (sixth in a panel of 43 global companies) and highlighted its particular excellence in the water sector.

An appendix to this report contains a section dedicated to reporting on the funds allocated to each measure and the environmental performances achieved. This section has also been audited by the Sustainability Report auditors.

With the first green bond, issued in 2014, 26 projects belonging to the categories indicated in the table below were financed or refinanced for a total of Euro 500 million.

Use of the funds received via the 2014-2024 Green Bond

	Total funds raised (millions of Euro)	Number of projects
Increase in energy production from non-fossil sources	57.1	10
Increase in energy efficiency	219.1	7
Increase in the use of waste-to-energy plants for the treatment of waste	173.2	4
Improvement of the purification plants	31.9	4
Increase in separate waste collection and reduction in the use of landfills	18.8	1
Total	500.0	26

The first sustainable revolving credit facility in Italy

In May 2018 a new credit facility was taken out for Euro 200 million, entitled "ESG Linked RCF Facility", which introduces elements of sustainability by means of an incentive mechanism linked to the achievement of specific environmental, social and governance objectives. In the commitment undertaken with the banks, a number of sustainability performance indicators have been defined, by virtue of which the multiutility company may benefit over time by more favourable rates.

The spheres of the identified indicators coincide with two Csv drivers: smart use of energy and efficient use of resources. In particular, they concern the following areas of Csv impact: promotion of energy efficiency, reduction of greenhouse gas emissions and transition towards the circular economy. The identified indicators are among the GRI indicators of this Sustainability Report submitted for external audit.

Dialogue with our stakeholders

Dialogue and consultation initiatives

[102-21] [102-42] [102-43] [102-44]

Hera's significant commitment to involving stakeholders is by now part of the operational structure of the departments that deal with the relations with various stakeholders. This strong commitment continued throughout 2019.

The main engagement and dialogue activities carried out with the company's stakeholders and the method used for identifying the material issues that guided this activity are described in the methodological note of this document in the section *Stakeholders and materiality analysis*.

Customer satisfaction survey

Since 2005, the quality of our services has been assessed through annual customer satisfaction surveys aimed at defining improvement measures. Since 2014, as well as Hera's residential customers, the survey has included the customers of AcegasApsAmga (Padua and Trieste), Hera Comm Marche (Pesaro and Urbino) and Amga (Udine).

Assessment of overall satisfaction of residential customers

CSI (from 0 to 100)	2017	2018	2019
Service satisfaction index (Services CSI)	75	75	76
Overall satisfaction index (CSI)	70	71	73
Global satisfaction	73	74	75
Satisfaction with respect to expectations	69	70	72
Satisfaction with respect to the ideal	68	69	71

The satisfaction index increased in 2019: it rose by two points and settled at 73, exceeding the high satisfaction threshold. Average satisfaction for the services provided also increased, reaching 76 points. All services exceeded the threshold of 70 points, confirming high levels of satisfaction.

The contact channels show an excellent level of customer satisfaction and above all are consistently high: the ratings of branch offices, call centres and online services are above 78 points, which means that customers will always find competent operators and appropriate procedures, regardless of the contact channel. The "app" channel started to be monitored in 2017, reaching a satisfaction rating of 82 in 2019. Customer loyalty grew for the third year in a row, reaching an excellent rating of 83 points.

The satisfaction of customers with regulated services in the areas of Pesaro, Urbino and the other municipalities served by **Marche Multiservizi** also continued to grow. The overall satisfaction index increased by one point compared to the previous year, settling at 73, while average satisfaction for the services provided increased by two points compared to last year, reaching 71. A study was conducted among the areas to analyse consistent satisfaction; Urbino continues to improve compared to the previous years even if the evaluations are still below the ideal threshold of 70 points (67 points), but well above the minimum threshold.

The methodology used for the customer satisfaction survey

The Customer Satisfaction survey is based on an internationally recognised methodology designed to assess the quality of services offered and customers' overall satisfaction with Hera. The number of telephone interviews in 2019 settled at over 6,300 replies. A total of 700 interviews were conducted in the survey on regulated services in the areas managed by Marche Multiservizi. The survey was conducted by Computer Aided Telephone Interviews (CATI) with a survey population chosen so as to ensure that the sample is representative of the customers of all of the Group's services. Monitoring was carried out by interviewing

the main contact individual for Hera within the household. The questionnaire, which lasts around 15 minutes, monitors satisfaction components and measures future behaviour (word-of-mouth, loyalty etc.) towards the company. The assessments of the results are expressed in numerical scales, divided into levels of satisfaction: under 50 points indicates insufficiency; up to 60, "minimal" satisfaction; between 60 and 70, a good level of satisfaction, and above 70, a high level of satisfaction.

From the second half of 2017, the call centres, branches, Online Services and app are monitored as contact channels through daily interviews conducted the day after the contact has been made, in order to gain insight into the customer's satisfaction while the experience is still fresh. Over 10,000 interviews/month are carried out using IVR (by telephone with pre-recorded questions) and CAWI (by email) methods.

Over 150 thousand interviews were carried out in 2019 to monitor the contact channels. The portal used for analysing customer evaluations allowed channel performance to continuously improve.

The survey was also carried out for business customers in order to monitor customer satisfaction levels both for the free market and protected market. In the case of companies, the contact individual for the services provided by Hera is interviewed. The results of the 2018 survey are reported since those regarding 2019 were being processed on the date of approval of this report. There is a cross-cutting increase in the number of customers contacted to monitor satisfaction.

Assessment of business customer satisfaction

CSI (from 0 to 100)	2016	2017	2018
Service satisfaction index (Services CSI)	73	73	74
Overall satisfaction index (CSI)	68	68	69
Global satisfaction	71	71	72
Satisfaction with respect to expectations	68	67	68
Satisfaction with respect to the ideal	65	64	67

Other dialogue initiatives with customers

Our **web portal for consumer groups** has been on line since 2011: the section of the Group's corporate website is entirely reserved for representatives of the main associations in the areas Hera serves, who are key contacts for the company in its relations with end customers. For associations, this web channel is an important interface with Hera. They can use it to handle reports and procedures, prevent disputes and minimise the time needed to respond and solve problems. In 2019, **21,253 visitors** accessed the web, for a total of **58,218 page views**: these figures show a growth in traffic, with a 12.6% increase in page views compared to the previous year.

In addition to the portal, the contact individuals and operators of the associations can use dedicated email addresses, and phone and fax numbers that, together with the web section, make up a real communication channel reserved to consumer groups. In 2019, 797 cases were managed through this dedicated channel (855 in 2018), 91.42% of which were solved successfully; average case resolution time was 1.5 business days.

Furthermore, in order to build positive relationships and create an increasingly open dialogue, Hera organised meetings with consumer group contact individuals, again in 2019. A total of **14 meetings** were held involving overall **75 representatives** from the main consumer associations operating throughout the local areas. Particularly interesting and current topics for the consumer associations were addressed during the meeting: per capita water tariffs and water bonus, the performance of the customer protection system, regulatory developments issued by Arera, the Hera channel dedicated to Consumer Associations and, lastly, focus, for each area, on main waste collection system innovations.

Internal climate survey and other dialogue initiatives

The 8th edition of the **internal climate survey** was carried out in 2019. Over the years, this biennial survey has allowed the company to implement a wide range of ideas and suggestions from workers and to set up detailed improvement plans based on the outcome of the survey.

This year, the survey also involved Aliplast staff for the first time, proving to be an activity that speeds the integration process between all of the Group's companies.

As usual, the survey could be compiled online (made even more accessible thanks to specific PC stations spread across the area) or using paper forms: 76% of the **company workforce** compiled the survey online.

The targets that the Group set out to achieve were an overall employees satisfaction index of 65 (ESI) and workforce participation index of 70% (redemption). The overall results showed achievement of the ESI target (68 points) and overachievement of the participation index which reached 80% (+2% compared to the previous survey in 2017).

Instead, with regard to the specific ratings of the three different Group perimeters, different results were achieved:

- **AcegasApsAmga**: ESI equal to 64 (rising compared with the previous survey), redemption 83%;
- **Hera**: ESI equal to 69 (rising compared with the previous survey), redemption 75%;
- **Marche Multiservizi**: ESI equal to 71 (rising compared with the previous survey), redemption 88%.

The excellent journey we have undertaken over the years is quite clear: the main climate indicators have increased by 10-16 points compared to the first survey in 2005. Analysis of the behavioural clusters also shows how the general attitude towards the Group has changed since 2005: assessment of the most critical clusters - "Unhappy" and "Angry" employees - strongly increased in all areas that make up the corporate climate. An increase was also recorded in the perception of customer satisfaction by staff compared to the past.

Among the initiatives most appreciated by workers, of note are the meetings with the Chairman and Managing Director, the Passaparola (Word of Mouth) and the top-down meetings with managers, the Hextra corporate welfare plan and smart working.

In the two-year period 2020-2021, a new improvement plan will be defined by all Group structures.

The methodology used for the employee satisfaction survey

The internal climate survey is conducted with a guarantee of full anonymity for the respondents: the questionnaire is available inside the portal where the employee's payslip is saved. A paper questionnaire is delivered to whoever does not have a computer workstation. PCs have been provided in all areas to make it possible to fill in the questionnaire. The survey has been designed to verify the extent to which the improvements made following the previous survey are appreciated by the personnel. The assessments of the results are expressed in numerical scales, with thresholds corresponding to the various levels of satisfaction: under 50 points indicates insufficiency, up to 59 indicates less than complete satisfaction, between 60 and 70 indicates a good level of satisfaction and above 70 indicates "very satisfied".

Internal communication

Many communication activities and aggregation initiatives were introduced during the year to increase the dissemination and sharing of corporate projects and to stimulate the involvement of the entire workforce as part of the Hera community.

The two main communication topics in 2019 were: the dissemination of **UN Agenda** issues and **digitalisation paths**. These topics will increasingly involve proactively colleagues in a constantly changing professional and relational context.

In 2019, the project for the new **intranet** makeover was launched designed to create an increasingly satisfying, customised and digital experience capable of integrating information, applications and social media. The process leading to the new intranet has been highly participated and involved 90 members of staff holding different positions and belonging to different areas, allowing needs and suggestions to be collected.

Pending the go-live of the new intranet, the current intranet continued to be constantly updated, as also the **digital HO** - the house organ for workers and the leading tool for communication to Group employees - with the publication of 380 articles during the year. Among the topics most frequently covered were: digitalisation paths (Digital Workplace, HER@Futura activities), business projects seeking to promote circular economy, engagement projects involving employees, and the various areas in which the Group operates.

2019 was the year of the **Hera Water Challenge** campaign, an ironic, episode-based journey to raise awareness about water saving. The campaign was addressed to a variety of target groups and included interactive games aimed at raising awareness about the consumption of clean water and how we can all reduce consumption. The campaign was strengthened with a visit for employees and family members to the Pontelagoscuro (FE) water purifying plant.

The initiative **"Percorsi nel cuore di Hera"** (Journeys within Hera) was continued in 2019, allowing staff to discover circular economy in the fields of drinking water purification (Pontelagoscuro) and biomethane production (Sant'Agata Bolognese plant). Over 270 Hera employees and their family members arrived from the Group's different areas to discover the technological secrets of our plants, to get to know the work of their colleagues better and to share processes and strategies.

Employee participation in the 19 meetings of **"Facciamo il punto"** (Let's take stock) was high (over 7,000 employees). The meetings were held in 14 cities throughout the area served by the Group and allowed the Chairman and Managing Director to inform employees about strategies, results achieved and future goals. For the first time in 2019, the focus of the meetings was on circular economy and on how we - as a Group - can respond to the climate emergencies that the planet is facing.

The recreational and sporting gatherings organised together with employee recreational associations continued to be greatly appreciated: the twelfth edition of Hera Ski Adventure, the long skiing weekend for employees and their families, counted over 550 participants with a rich programme of activities also for non-skiers, in a highly exciting and inclusive environment.

Recreational associations

Socialisation and interpersonal relations among Group workers are facilitated by the opportunity to take part in recreational activities which are promoted throughout the various areas by recreational associations. These associations organise cultural, sports, tourism and recreational activities, allowing workers to benefit from special commercial agreements and take part in the organisation of dinner parties, outings, Christmas and carnival events, competitive sports events, fishing competitions and ski excursions. These associations also provide members with theatre season tickets and book-lending services. Furthermore, the associations contribute a portion to text book spending on the part of student workers and the children of employees. Other discounts are provided for sporting activities and from several businesses. The associations are run on the basis of budgets and yearly programmes: they are managed independently by a Management Board whose members are elected directly by association members. Hera contributes to the activities of the associations by guaranteeing the financial resources provided for by national collective labour agreements and locally stipulated agreements: the company also provides space for recreational activities or for management of these activities. The initiatives are also promoted through internal communications instruments to ensure greater visibility.

Relationships with the local community

[102-44]

Associations of which Hera is a member

[102-13]

The Hera Group is present at the highest levels of the organisations which represent the system of local public services, first and foremost Utilitalia. Hera participates actively in the association's activities and supports the institutional communication through the identification of its representatives in the different roundtables opened with service regulators by the Associations. At local level, Hera takes part actively in Confservizi Emilia Romagna and Confservizi Tuscany (the Regional Association for Companies, Firms and both public and private Bodies that manage local public Services in their area of reference), Confindustria, Unindustria and Apindustria in many of the local areas it is responsible for.

In the energy field, the Group is also a member of AIRU (the Italian association for Municipal Heating), CIG (Italian Gas Committee), FIRE (Italian Federation for the Rational Use of Energy) and CTI (Italian Thermotechnical Committee).

In the environmental sector, the Group is also a member of the national association FISE Assombiente and the European association for hazardous waste Eurits, as well as the production-chain and recovery consortia of Corepla, Comieco, Polieco, Conip and CIC. It also participates in the EMAS Ravenna association, the first entity at national level to have obtained district Emas registration.

The Group contributes to research activities regarding the public services sector performed by leading institutions, both as a client for specific research and by participating in the scientific debate proposed by them with contributions published under record (AREL - Research and Legislation Agency, AGICI Business Finance, REF Ricerche, Florence School of Regulation and Leap Mater) as well as by directly participating in top level bodies (such as the IEFE board, Institute of energy and environment politics and economics at Bocconi University).

Hera is also a member of the ASPHI (promotion and integration of disabled people through the use of Information and Communication Technology) Foundation, Impronta Etica (a business association to promote social responsibility), Aziende Modenesi per la Responsabilità Sociale d'Impresa (Companies from Modena for Corporate Social Responsibility) and is also a member of the Circular Economy Network (support and promotion of circular economy development), the CSR Manager Network (sustainability issues), the Rubes Triva Foundation (training and promotion of occupational safety in waste management companies), the Global Compact Network Foundation (promotion of corporate citizenship culture), the Flaminia Foundation (supporting the decentralisation of Bologna University in Romagna) and the Urban Center (promoting dialogue between citizens, public authority representatives and associations on urban and metropolitan areas).

HeraLAB, a tool for listening to the local communities

[413-1]

The LABs are local multistakeholder boards that Hera provides to the areas in which it operates as structured channels for listening to and discussing with local communities. In 2019, two new LABs were launched in Rimini and Bologna based on the new HeraLAB model, tested for the first time in 2018 in the areas of Ferrara and Ravenna.

The new model is simpler and more innovation-oriented as regards the services managed by Hera. It includes five meetings held in one year. The new LABs of Rimini and Bologna were made up of 12 members from various local stakeholders, appointed by Hera's Board of Directors in January 2019. They met four times during the year in each area.

Taking into consideration the previous and the new edition, as at 31 December 2019, a total of 106 meetings were organised (equal to over 2,300 hours of listening) and 92 members planned and proposed to Hera 78 new projects, 52 of which have already been developed. Specifically, eight ordinary meetings were held in 2019 for the LABs of Rimini and Bologna and two visits to the selection plants in Granarolo dell'Emilia and the Remote Control Technological Centre in Forlì.

In 2019, eight of the 12 initiatives co-planned in 2018 in Ravenna and Ferrara were completed.

The three **Ravenna** initiatives that will be completed in 2020 are:

- **E scartoz.** (Paper cornets) This project belongs to the food waste prevention initiatives and regards the creation of a "green" restaurant network that promotes the practice of using doggy bags for leftovers to their customers.
- **Consuma bene e raccogli meglio!** (Good consumption and better collection!) The aim of the initiative is to integrate separate waste collection with drop-off points at shopping centres for the collection of quality plastic or other waste.
- **Dal rubinetto, please!** (From the tap, please!) The aim is to promote the consumption of mains water by shopkeepers and public services for their customers, in order to prevent and reduce the environmental impact resulting from bottled water consumption.

The only initiative still to be implemented in **Ferrara** in 2020 regards the promotion of domestic composting which, as agreed with the Municipality of Ferrara, will only involve social vegetable gardens and will not be extended to domestic users for which a communication project on organic waste has been planned.

The six new initiatives in **Rimini** are:

- **Il Circolino** (The Club) The aim of the project is to set up a permanent and representative body involving leading stakeholders in the area. Local institutions, economic and voluntary associations, and the Hera Group will share project ideas with a view to sustainability and circular economy;
- **Environmentally friendly Events** The initiative aims to develop Guidelines for the Management of Sustainable Events. This will be a useful tool guiding various local players who choose to give their event a sustainable approach;
- **Senza reti** (Without nets) The project is designed to create a virtuous network made up of institutions, environmental associations, harbour authorities, fishing operators, fishing cooperatives and Hera, and to work together to recover plastic from the sea;
- **Occhio a cosa butti!** (Watch what you throw away!) Planning and developing a mainly social media campaign to raise awareness among citizens and tourists about the impact and effects of throwing waste into the drains of toilets (e.g. ear buds) and sinks (e.g. frying oil);
- **Riempimi d'immenso** (Fill me totally up) The initiative aims to promote the practice of refilling water bottles. With the involvement of public administrations and business associations, cafés and kiosks will join the project and fill up water flasks or other containers with the mains water for free;
- **Testimonial dell'Acqua** (Water Testimonial) A campaign designed to inform citizens that tap water is safe and monitored, using the content of the **In Buone Acque** (In Good Waters) report. This will also be achieved by involving famous and local testimonials and especially focusing on the drinking water purification process that makes water safe to drink.

The four new **Bologna** initiatives are:

- **Giardini Margherita Plastic Free** A number of actions to promote the mains water "as is" inside the **Giardini Margherita Park** in Bologna. Several businesses will be involved (cafés, kiosks, stalls) to boost refilling and the drinking fountains inside the gardens will be revived;
- **Acqua bene comune** (Water, a common asset) The project aims to create a social information campaign that will target young and very young people and increase their awareness that tap water can be trusted because safe and monitored;

- **Raccolta differenziata dall'inizio alla fine** (Separate waste collection from beginning to end) The project intends to tell the virtuous cycle made by waste in our area. It is the "story of a journey" from the dustbins in our homes to the sorting and recovery plants (from beginning to end). The aim is to show citizens that their virtuous actions always have a 'happy ending';
- **Quality over Quantity** The project will raise citizens' awareness about the Santo Stefano and Porto Saragozza Districts of the Municipality of Bologna in order to extend the Smarty project. The residents of the Santo Stefano and Porto Saragozza Districts will be involved in a participatory project which will also include Savena District (best practice district) citizens as ambassadors of the project.

Appointment as LAB member is free of charge. As attendance fee, Hera pays Euro 150 for each participant and for each LAB meeting. The attendance fees go into an annual fund for sustainability projects promoted by local public bodies or non-profit organisations. In the Bologna area, LAB participants decided to donate Euro 7,200 to the Non-Profit Il Cucciolo Association, while in Rimini Euro 3,975 were allocated to the Consulta della solidarietà Association in Riccione and Euro 3,975 to the Alzheimer Rimini Association.

The Forlì-Cesena and Modena LAB members will be appointed in March 2020. Work will start in May 2020 with the first meeting on the awareness of Hera and on defining the key local issues that will form the LAB's work areas.

The HeraLAB stakeholder consultation committee is present in six of the 10 provinces (60%) where the Group operates, in which 59% of total residing citizens are served.

Building the future together, a report on community engagement activities

The involvement and cooperation between local companies, citizens, customers, organisations and associations are essential to create shared value. By regulating our daily behaviour, we can all become real drivers of change and help achieve key goals in terms of sustainability, efficiency and social inclusion.

Hera's sustainability report "Costruire insieme il futuro" ("Building the future together"), available at www.gruppohera.it/report, presents all the initiatives in which citizens, customers and organisations play an active role. Companies and communities meet new challenges, generating long-term relationships and a tangible environmental and/or social impact. Involvement is achieved through collaboration with local organisations and through the implementation of initiatives where the combination of different approaches produces benefits to society and the environment. In other cases, Hera enhances customers and citizens by providing them with tools and knowledge which allow them to produce a positive impact on the environment and society and to acquire new awareness.

In cases where involvement is higher, Hera involves citizens and customers in initiatives that generate value for the local area. This category includes, for example, the HeraLABs or "Cambia il Finale" ("Change the ending") and "FarmacoAmico" ("Medicine Friend"), which with a gesture of solidarity allow over 634 tonnes of bulky waste still in good use and unexpired pharmaceuticals to be recovered every year and donated to non-profit organisations throughout the local area, amounting to a value of Euro 668 thousand.

Communication

Social and environmental communication

The 2019 communication campaigns were based on a simple, direct language that was close to citizens, and on easy-to-remember messages and visuals, all designed to promote effective separate waste collection practices, to raise awareness on the importance of improving waste collection quality and to promote the advantages of waste recovery.

The national and local campaign for **sustainable urban mobility** was a true meeting point between several company businesses, from Herambiente with the production of biomethane to Hera Comm with the development of electric mobility. It also gave the Group the opportunity to spread a new approach towards circular economy for the creation of informed and aware consumers.

A new communication campaign started in the Bologna area on a popular local TV: with the TV format "Tutta mia la città" (The city's mine) the company went out into the streets to make people talk about most heartfelt issues (cleaning the city, recycling, abandoned waste, water). A well-known comedian and journalist, Giorgio Comaschi, gave small doses of information so that hot debate topics could be discussed with fun, yet launching a message and inviting citizens to improve their attitude and lifestyle.

In 2019, a widespread analysis of the product categories showed that in various areas there were significant criticalities in the quality of paper and organic separate waste collections. In an attempt to better inform citizens about how to correctly separate these types of waste, communication campaigns were planned in Modena, Bologna and Ferrara on organic waste and in Modena on paper. For both campaigns, the claim was deliberately short and the visual was highly evocative giving both words and images equal potential.

For the paper campaign in Modena ("Sulla carta siamo tutti bravi" (On paper we're all really good)), bus stop shelters, supermarket info points, geolocalised text messages and online ADVs were chosen to convey the information.

For the organic waste quality campaign ("Differenzia bene gli scarti di cucina. Hanno un valore infinito" (Separate kitchen waste. It has endless value)), posters, supermarket trolleys - particularly suitable for the message to be spread -, online ADVs and radio announcements were chosen. Both campaigns are expected to continue in 2020 in other critical areas also based on the results of this experience.

Local campaigns were also organised on waste abandonment: in Ferrara together with Trade Associations and the Municipality, and in Modena with the Municipality.

A campaign against waste abandonment was also set up again inside buses in Bologna.

Hera in the Internet

Hera is continually committed to ensuring effective web communication, which fully meets the transparency expectations of its stakeholders and is in line with the principles of environmental sustainability which has always been in the company's DNA. The Group website is an important communication tool between the company and citizens, offering a service that is constantly updated and renewed.

Website traffic increased in 2019 compared to the previous year: website visits (+4.7%), single visitors (+4.9%) and page views (+5.5%). At technological level, the trends of recent years were confirmed with a new increase in traffic from mobile devices, rising from 43.6% in 2018 to 47.8% in 2019.

Website access

Qty	2017	2018	2019
Customers section	167,697	168,785	174,461
Section on Corporate Social Responsibility, sustainability reporting and CSR initiatives	10,699	10,042	9,699
Suppliers section	9,712	10,000	11,347
Investor Relations Section	3,394	3,799	4,776
Other sections	60,627	65,823	70,403
Total average monthly visits	252,129	258,448	270,686
Total page views (monthly)	766,701	753,087	794,845
Total unique visitors (monthly)	151,485	152,241	159,775

Excluding AcegasApsAmga and Marche Multiservizi

What is Hera's presence on the web?

The Group's visibility dropped in 2019 (-12%). Hera's presence on the web focuses on blogs, forums and social networks, platforms where the Group listens and responds to the needs of its users and monitors exchanges that are relevant for its reputation. The analysis of over 6,500 posts referring to Hera showed that the global visibility index is growing especially on blogs. The Group confirms its visibility on social networks, while it is lower on forums and YouTube. Sentiment increased sharply showing very positive ratings.

In 2019, Hera Group's **Twitter** account reached 6,250 followers (+31% compared to 2018), with an average of 139 tweets published each month (1,668 total). The tweets had an average 381,250 thousand monthly views (4,575,000 totals), and generated about 15 thousand shares (4,767 retweets and 10,204 likes).

As to **LinkedIn**, Hera Group's account followers increased in 2019 by 37% compared to 2018, reaching a total of 61,416. 421 posts were published on the profile during the year, reaching around 48 thousand shares.

The **Instagram** page has 2,793 followers (compared to 1,048 in 2018) and publishes three posts per week, for a total 289 posts including single photos, videos, photo galleries and sponsorships, getting on average 100 likes per photo and over 1,000 viewings.

In 2019, the **Facebook** page dedicated to giving assistance with separate waste collection in the Ferrara area reached over 3,500 fans and supported citizens by providing useful information and improving the quality of separate waste collection. The positive experiment led to the decision to extend this activity in 2020 to all local areas served by Hera.

Media relations

The press office manages Hera Group's communication on the local, regional and national news media. This work is accomplished by continuously drawing attention to the company's many initiatives and achievements and to the events that it organises, both by publishing press releases and by organising press conferences. This effort complements, in parallel, the promotion of the Group's activities with in-depth interviews with management on specific issues, and by providing, at the request of journalists, information, photographs and videos related to the services provided and to the company's many business areas. The press office also promptly answers letters from citizens, reacts to statements in the media of opinion leaders, public administrators and politicians, countering any critical positions against the company or its services, and provides a direct line, through the press, for local communities and customers. These activities are carried out in collaboration with all the company's structures and with all the Group's companies. Lastly, the office handles relations with the press offices of public and private institutions, associations or third parties to promote joint activities.

A qualitative and quantitative analysis has been set up to gauge this daily work. It is carried out by a specialised third party, which constantly monitors national and local press. All the articles are weighted according to specific criteria, such as the circulation of the publication, the size of the article, the position on the page, the presence of photographs or lack thereof. The pieces are then grouped according to their tone: positive, neutral, or critical.

Hera-related news items (national press review)

%	2017	2018	2019
Favourable or highly favourable articles	94.2%	94.3%	97.2%
Neutral articles	4.6%	5.3%	2.6%
Critical or extremely critical articles	1.2%	0.3%	0.2%
Total articles (No.)	456	448	752

Hera-related news items (local press review)

%	2017	2018	2019
Favourable or highly favourable articles	76.8%	79.9%	84.9%
Neutral articles	11.8%	11.5%	9.8%
Critical or extremely critical articles	11.4%	8.5%	5.3%
Total articles (No.)	6,933	6,032	6,486

Thanks to the work done, in 2019 Hera's positive visibility in the press (especially the national press) increased over the previous year. The number of articles rose by 67%: 752 out of 7,238 articles published globally. The large number of articles published reveal the high level of attention from the press as well as the Group's firm involvement in national and local events, whether specific or general, and is evidence of the company's role among the nation's leading players. This is even more evident by its entry on 18 March 2019 in the Ftse Mib index of Borsa Italiana, which includes the 40 top companies of the Milan Stock Exchange in terms of capitalisation, liquidity and trading volume. From a qualitative standpoint, the positivity concerning Hera increased and settled at very high levels: 97% on national publications and 85% on regional and local publications. Among the topics that contributed to this positive feedback: the business plan, the economic results and investments, the entry in the Ftse Mib index, good share performance and market confidence in Hera shares, the acquisitions and partnerships, the welfare and HR management corporate policies, the broad offer of educational activities for schools, the many projects aimed at increasing public lighting efficiency implemented by Hera Luce, sustainability projects and results, circular economy, resource regeneration and innovation, waste management services set up in the various areas, sponsorships, innovative projects such as the new "smart" gas meter NexMeter and the Rimini Bathing Protection Plan.

For years now, the trend of critical articles has settled at very low levels and continued to drop in 2019 also compared to the previous year: below 1% for the national press and decreases to 5.3% for local press, quite a logical result and in any case very low if we consider the nature and size of the Group's activities and the sensitivity of the public opinion.

Pending legal proceedings**[307-1] [419-1]**

In addition to the disputes involving customers and suppliers which are discussed in the corresponding sections of this report, at the end of 2019, an additional 534 disputes were pending mainly concerning disconnections of gas supplies to late-paying end customers who, having signed contracts with salespeople for the redelivery points on the distribution network managed by the distributor Inrete, were subject to administrative termination as governed by Arera legislation (specifically the Consolidated Law on Gas Delinquency). The remaining disputes refer to different issues regarding claims for damages associated with the management of the services performed by Hera or Group companies. During 2019, 628 disputes were settled of which: 176 with energy service customers, 33 with water service customers, 12 with waste management service customers, 20 with suppliers and the remaining 387 with other company stakeholders.

With regard to the networks and plants managed by the Group, the following litigation proceedings brought by associations, citizens and/or other parties/bodies are reported.

Flood in Rimini

With reference to the **flood** which, on 24 June 2013, following a violent storm, submerged the street Via Santa Cristina S.P. 69 in Rimini and caused the flooding of the Rimini prison and neighbouring dwellings (including that of an inhabitant who died on the same day due to illness), an employee of Hera Spa and two other external parties were served a notice for setting a preliminary hearing in which they were accused of disaster and involuntary manslaughter. At the date of drafting of this report, the investigation phase is underway.

Odorous and noisy emissions

Worthy of mention is the notification in July 2017 of the decree that ordered the committal to trial of two Herambiente managers, with which the Public Prosecutor of Rimini questioned, in particular, the **odorous and noisy emissions** from the recovery and storage plant in Rimini which allegedly caused nuisance to the owners of nearby lands. At the first hearing scheduled for 28 November 2017, a local committee was set up as plaintiff for damages and the defence of the Herambiente managers filed an application to settle some of the charges with payment of a fine. At the date of drafting of this report, the investigation phase is underway.

Florence waste-to-energy plant

In ruling no. 1602/2016, Section II of Regional Administrative Court of Tuscany (T.A.R.) upheld the appeal on additional grounds in case no. 143/2016 brought by environmental associations (WWF and Italia Nostra) and the appeal no. 180/2016 brought by the Municipality of Campi Bisenzio and accordingly, ordered the annulment of the measure adopted on 23 November 2015 no. 4688 by the Officer for Environmental quality O.P. of the Metropolitan City of Florence, of the minutes of the related service conferences of and subsequent pleadings for repossession. The object of the measure annulled by the Regional Administrative Court is the granting of a Single Authorisation and Integrated Environmental Authorisation for the construction, management and operation of a **waste incineration plant filed by the company Q.tHermo**. The aforementioned decision of the Regional Administrative Court of Tuscany was challenged before the Council of State which confirmed the objections of the first instance Judge, with specific reference to the fact that the location of the waste-to-energy plant at Case Passerini was closely linked to the implementation of environmental redevelopment projects and especially to the renaturalising works comprising the so-called "Boschi della Piana" which, instead, had not been built before the construction of the waste-to-energy plant. Q.tHermo started revocation proceedings of the aforementioned ruling in order to obtain its overturning. On 5 March 2020, a hearing was held before the Council of State and the company is waiting for the filing of the ruling.

Expansion of the Imola landfill

With an action brought before the Regional Administrative Court of Emilia-Romagna in 2017 by WWF, Panda Imola - Non-profit voluntary organisation and Legambiente Medicina against the Regional Government of Emilia-Romagna and against CON.AMI. and Herambiente, the claimants challenged the decision of the Regional Council of Emilia-Romagna dated 21 December 2016, no. 2262 entitled "provision for an Environmental Impact Assessment (EIA) regarding the project for the **expansion of the Tre Monti landfill**: volumetric recovery through raising of the 3rd lot in the Municipality of Imola (BO) - Proposers CON.AMI and Herambiente" published in the B.U.R.E.R. on 9 January 2017 and related annexes. By way of the aforementioned resolution, the Regional Government issued the EIA ruling regarding the raising of the "Tre Monti" landfill and the claimants challenged its legitimacy, raising as main claim the fact that the Regional Government, since not taking into account the negative opinion expressed by the Ministry of Cultural Heritage and Activities and Tourism (MiBACT), did not set up the referral procedure to the Council of Ministers. Although this negative opinion was not necessary for the raising work, given that this area does not need to comply with any landscape protection obligations, the Regional Administrative Court, with ruling filed on 10 January 2018, upheld the complaint lodged by the applicants. Herambiente challenged the ruling

before the Council of State which rejected the appeal of Herambiente and of the Regional Government of Emilia-Romagna on the main ground that the latter had obligated itself by asking MiBACT for an opinion, which when given was negative, even though such opinion was not necessary for the raising of the existing plant. According to the Court, this conduct gave rise in all the Authorities involved in the Conference of Services to the reasonable expectation of an existing relationship of interference between the protected areas and those not subject to restrictions.

2015 Economic and Financial Plan appeals

With distinct appeals in 2015 before the Regional Administrative Court of Emilia-Romagna against Atersir, and against Hera Spa as the other party to the proceedings, the Municipality of Sassuolo, on the one hand, and the Municipalities of Maranello, Fiorano and Formigine, on the other hand, sought cancellation of resolution no. 6/2015 of the Authority Council, issued on 10 June 2015, containing the "**Economic and Financial Plan for 2015**". The municipalities that are applicants include the Municipality of Sassuolo, which, in addition to the above resolution, appealed against the Local Council of Modena's resolution no. 3/2015 of 13 April 2015 and every other prerequisite and consequential measure. The municipalities that filed the application complained, mainly, of the lack of discussion to agree on the Economic and Financial Plan, that the cost elements therein were expressed in an aggregated form instead showing the unit cost of services for each entry and the alleged unjustified increase of the costs of the service for municipal and similar-to-municipal waste. Hera Spa appeared before the court disputing what had been claimed in fact and law by the municipalities that filed the application. With further appeals notified in 2016, again before the Regional Administrative Court of Emilia-Romagna against Atersir, and against Hera Spa as the other party to the proceedings, the above Municipalities sought the cancellation of Area Council Resolution 25/2016, published on 11 May 2016 on "Approval of economic/financial plans for the municipal waste management service for the year 2016". By rulings filed on 29 January 2020 and 20 February 2020, respectively, the Administrative Regional Court of Emilia-Romagna rejected the appeals submitted.

2017 Economic and Financial Plan appeals

With further appeals notified in 2017 before the Regional Administrative Court of Emilia-Romagna against Atersir, and against Hera Spa as the other party to the proceedings, the Municipalities of Sassuolo, Maranello, Fiorano, Formigine, Predappio, Tredozio, Rocca San Casciano, Bertinoro, Forlimpopoli, Galeata, Premilcuore, Meldola, Savignano sul Rubicone, Borghi, Sogliano al Rubicone, San Mauro Pascoli, Longiano, Gambettola, Roncofreddo, Santa Sofia, Castelnuovo Rangone, Castelvetro di Modena, Savignano sul Panaro, Spilamberto, Vignola, Guiglia, Marano sul Panaro and Zocca challenged, within their area of responsibility, resolution no. 27 of 24 March 2017 and resolution no. 17 of 15 March 2017 adopted by the Authority Council of Atersir and through which the Economic and Financial Plans for the 2017 municipal waste management service covering the local areas related to the above municipalities were approved. By rulings filed on 29 January 2020 and 20 February 2020, respectively, the Administrative Regional Court of Emilia-Romagna rejected the appeals submitted by Municipality of Maranello, Fiorano, Formigine, Castelnuovo Rangone, Castelvetro di Modena, Savignano sul Panaro, Spilamberto, Vignola, Guiglia, Marano sul Panaro and Zocca.

2018 Economic and Financial Plan appeals

With further appeals notified in 2018 before the Regional Administrative Court of Emilia-Romagna against Atersir, and against Hera Spa as the other party to the proceedings, the Municipalities of Sassuolo, Formigine, Castelvetro di Modena, Savignano sul Panaro, Spilamberto, Vignola, Zocca, Castel Guelfo, Maranello and Fiorano Modenese challenged resolution no. 9 of 19 February 2018 of the Authority Council and resolution no. 1 of 12 February 2018 of the Local Council, respectively, through which the Economic and Financial Plans for the 2018 municipal waste management service covering the local areas related to the above municipalities were approved. With a similar extraordinary appeal to the President of the Republic, then brought before the Regional Administrative Court of Emilia-Romagna, the Municipality of Imola challenged Atersir resolution no. 19 of 19 March 2018 of the Authority Council containing the Economic and Financial Plan for the 2018 municipal waste management service relating to the Municipality of Imola, as well as, to the extent concerned, Atersir resolution no. 3 of 8 March 2018 of the Local Council of Bologna. By rulings

filed on 29 January 2020 and 20 February 2020, respectively, the Administrative Regional Court of Emilia-Romagna rejected the appeals submitted by the Municipalities of Maranello, Fiorano, Castelvetro di Modena, Savignano sul Panaro, Spilamberto, Vignola and Zocca, whilst the hearing for the appeal filed by the Municipality of Formigine has been scheduled for 19 February 2020.

The following **new litigation proceedings** brought by third parties were opened in 2019:

2019 Economic and Financial Plan appeals

With further appeals notified in 2019 before the Regional Administrative Court of Emilia-Romagna against Atersir, and against Hera Spa as the other party to the proceedings, the Municipalities of Sassuolo, Formigine, Maranello, Fiorano Modenese, Castelvetro di Modena, Savignano sul Panaro, Imola and Castel Guelfo challenged, respectively, resolutions no. 18 and no. 19 of 13 March 2019 of the Authority Council, and resolution no. 14 of 5 February 2019 of the Authority Council, through which the **Economic and Financial Plans** for the 2019 municipal waste management service covering the local areas related to the above municipalities were approved. By rulings filed on 29 January 2020 and 20 February 2020, respectively, the Administrative Regional Court of Emilia-Romagna rejected the appeals submitted by the Municipalities of Sassuolo, Fiorano, Maranello, Guiglia, Marano sul Panaro and Zocca.

Finale Emilia landfill (MO)

In the proceedings before the Regional Administrative Court of Emilia-Romagna against the Regional Government of Emilia-Romagna, and against Feronia Srl as other party to the proceedings, the Municipality of Finale Emilia challenged, subject to suspension, Regional Authority Decision no. 356 of 11 March 2019 which approved the Environmental Impact Assessment of the project for the **optimisation of the technological area and the volumetric expansion of the existing landfill in the Municipality of Finale Emilia**. The Municipality also challenged, among other things, the Integrated Environmental Authorisation serving as Single Authorisation for the construction and management of the plant as well as being an alternative tool to the municipal urban planning tool. The Regional Administrative Court rejected the request for suspension and at the hearing of 18 December 2019 the Municipality requested a deadline to file additional grounds. The Regional Administrative Court removed the case from the register; the proceedings, therefore, will terminate six months after cancellation and if the parties fail to act.

On 10 December 2019, the Judge for Preliminary Investigations of Modena preventively seized a **section of the Finale Emilia special and municipal waste landfill**. Two officials of Feronia Srl are under investigation for alleged participation in the adoption of the decision to renew the IEA of the landfill despite the maximum landfill capacity established by the IEA had been exceeded (in 2015), as well as the contamination threshold concentrations (CTC) at the landfill (in 2017). Application for review of the preventive seizure order was submitted.

Relationships with the Public Administration

[102-44]

Integrity in relationships with the Public Administration

Hera is committed to ensuring the highest levels of integrity and honesty in its relationships with the Public Administration. This is why the Group has adopted, and regularly updates, an organisation, management and control model designed to identify specific risks associated with the crimes identified in Italian Legislative Decree No. 231/2001. The Group has supplemented it, as previously mentioned, by adopting a specific policy for the Prevention of Corruption. The 231 Model comprises protocols that strive to ensure transparency and a sense of responsibility in internal and external relationships. For each "high risk" process, the protocols identify principles, roles, and responsibilities which should be followed in managing the activities and define the periodic information flows for control. Each protocol ensures the constant monitoring of risk activities for the Supervisory Body, including: relationship management with the Authorities, public loans, sponsorships, donations and gifts, procurement, protection of the environment and health and safety in the

workplace, the management of activities regarding tenders for the concession of natural gas distribution and sanitation services.

The procedures adopted conform to the principles of the Code of Ethics and seek to guide Group management based on the values and principles defined in the Charter of Values.

Relations with Local Authorities

The Central Department for Strategy, Regulation and Local Authorities constantly and effectively supervises relations with partner Municipalities and with Local Authorities, with a view to giving proper attention to the areas served by the Group. Despite having a good part of its activities clearly "included" in the areas in which it operates, the Group is gradually growing in both industrial and organisational terms. All Local Authorities served, therefore, can always and easily reach a contact to receive a response, in due time, to questions and problems on the services provided by the Group, being certain they are talking with the right people and will obtain the required feedback within a reasonable time.

After integration with Strategic Planning and Regulatory Affairs, Management introduced the Policy Making unit and acquired the coordination of HeraLAB. The information content available to Area Managers continued to increase, multiplying the opportunities for bi-directional dialogue between the Group and the area served.

2019 was also the year in which the new Customer Relationship Management (CRM) system was launched to support local relationship activities in Emilia-Romagna, Veneto and Friuli-Venezia-Giulia. This tool is gradually introducing customer experience logics into the relations with Local Authorities to make interactions with them quicker and more effective, while also ensuring a far more streamlined management of available historical data. Administrative elections were also held in 2019 in the majority of the Municipalities served, leading to the need to directly contact the new public administrators and set up productive relations both in the area of Emilia-Romagna and in the areas directly supervised by AcegasApsAmga.

During 2019, the **Area Managers** of Hera Spa therefore held **1,488 meetings** with the municipal administrations. In terms of number, 3,496 relations were set up - including requests for support and opportunities for dialogue - and mainly concerned issues regarding the integrated water service (34.8%) and waste management services (30.6%). Less common were issues regarding general business topics (11.7%) and the Customers area (8.4%).

With a view to increasing cooperation at Group level, the practice continued of exchanging views about Emilia-Romagna area issues on a monthly basis with AcegasApsAmga colleagues dealing with Local Authority Relations. This exchange of views facilitated the joint development of the new CRM and a more homogeneous approach to new public administrators.

Lastly, of note is the continuation of the close collaboration with the Shared Value and Sustainability Department concerning the promotion and coordination of the HeraLABs.

The relationship with the Area Authority for water and waste services

The Water and Waste Services Regulator for Emilia-Romagna (Atersir) was founded by Regional Law No. 23/2011 and has regional competence since it has incorporated the previous provincial Water and Waste Regulatory Authorities. It deals with the governance of the water service and the municipal waste management services, with functions of service and investment planning, governance and management control, and management of activities that are inherent to the award of the water and municipal waste services.

As regards the water service, Atersir operates with second level functions as a result of the transfer to the Italian Regularity Authority for Energy, Networks and the Environment (Arera) of regulatory and supervisory functions which occurred at the end of 2011, with Italian Law Decree No. 201/2011.

In 2018, Atersir started to operate with second level functions also for the waste service, following assignment to Arera of the regulation and control functions under Italian Law No. 205/17, which includes the waste disposal and treatment activities.

The relationship with the Italian regulatory and supervisory authorities

[307-1] [419-1]

The Italian regulatory authorities that mainly affect the Group's management and activities are the **Regulatory Authority for Energy, Networks and the Environment (Arera)**, and the **Italian Antitrust Authority (Agcm)**.

The Arera proceedings that directly involved the Group in 2019, as part of the Authority enforcement activities, are reported below.

With reference to the preliminary investigation that was closed due to failure to comply with the obligations to **replace the cast iron pipelines** with hemp and lead joints (VIS 39/2011), after completing our commitment to rapidly replace them entirely in the Ferrara distribution system, we are going ahead with our commitment to inspect the entire hemp asbestos cement network that will involve the complete replacement thereof as per the timescales set by the Regulation of the Quality of the Gas Distribution Service (RQDG).

Following the **audit** carried out in October 2018 at the offices of Hera Spa on the integrated water service tariffs with regard to IWS operators, that is, area government bodies and other competent parties (resolution 170/2018/E/IDR), by way of decision DSAI/41/2019/IDR Arera started a sanctioning procedure, establishing a pecuniary administrative sanction of Euro 378,000.00 and granting the right to waive the further formalities of the procedure by paying the administrative sanction reduced to one third. Hera Spa, however, decided to continue with the ordinary sanctioning procedure initiated by the decision.

Separation between the regulated activities and the deregulated activities in electricity and gas services

The legislation on functional unbundling plays a key role in the reform of the energy sector, since it aims to separate the management of regulated activities from deregulated ones, promoting the development of competition.

In particular, the rules for functional unbundling, governed by the Italian Regulatory Authority for energy, networks and the environment (Arera) by way of resolution 296/2015/R/com, set the requirements for vertically integrated companies that operate in the sectors of electricity and natural gas in order to guarantee:

- the neutrality of the management of the infrastructures under concession;
- the non-discriminatory management of the commercially sensitive information, relevant for the correct development of competition;
- the absence of subsidies crossing over between activities, in particular between those subject to tariff regulation and those carried out on the basis of the free market.

In compliance with the regulations, Inrete Distribuzione Energia Spa, A Tutta Rete Srl, AcegasApsAmga Spa and Marche Multiservizi Spa, vertically integrated in the Hera Group, set up the respective Independent Operators for natural gas and electricity distribution activities.

Independent Operators are tasked with the actual implementation of the functional unbundling of the activities, which they implement and guarantee by means of the arrangement of a Programme of Fulfilments, containing the measures for pursuing legislative goals.

The Programme of Fulfilments is updated on an annual basis and submitted to the Authority within 30 June every year. Pursuant to the current legislation, these companies also appointed their own Compliance Officers.

Compliance Officers check that the corporate measures and procedures adopted by the Independent Operator are appropriate, and draw up a yearly Reports of measures, which is submitted to the Authority within 30 June every year.

Litigation proceedings brought by the Group

Details are given below on some of the litigation proceedings brought by the Group against the Public Administration.

- By means of an appeal filed in 2014 before the **Regional Administrative Court of Emilia-Romagna** against the Regional Government of Emilia-Romagna and against Atersir, **Herambiente** requested the cancellation of resolution no. 380 of the Regional Authority of the Regional Government of Emilia-Romagna dated 24 March 2014, containing "Amendments to the Regional Authority Decision 135/13 - Provisions defining the **management of the increase limit** and of the **fee for the disposal of municipal waste**". Resolution 380/2014 was challenged with regard to the part where it has the effect of laying down the full deduction, from the waste disposal fee, of the revenues from incentives to generate electricity from renewable sources. At the date of drafting of this report, the date of the trial hearing is yet to be scheduled.
- By means of an appeal filed in 2015 by **Herambiente** before the **Regional Administrative Court of Emilia-Romagna** against the Regional Government of Emilia-Romagna and against Atersir, cancellation was requested of resolution no. 467 of the Regional Authority of the Regional Government of Emilia-Romagna dated 27 April 2015, concerning the criteria to **define the fee for the disposal of municipal waste and similar waste** pursuant to art. 16, paragraph 1 of Regional Law No. 23 of 2011. The filed appeal particularly objected to two aspects of resolution no. 467, considered illegitimate, i.e.:
 - the erroneous inclusion of revenue from incentives for renewable electricity generation among the amounts to deduct from fees expected;
 - the lack of specific mention of tax charges among the costs incurred by Herambiente that the contested resolution does not recognise.

At the date of drafting of this report, the date of the trial hearing is yet to be scheduled.

- With **separate appeals**, which were then united, **Herambiente** challenged the following acts before the **Regional Administrative Court of Molise**:
 - challenge of Regional Authority Decision no. 231 of 19 May 2015 which identifies as substantial variations the introduction of the CER code 19.12.12, the adjustment of the authorisation for saturation of the thermal load and the introduction of a shredder;
 - challenge of IEA regarding the plant of Pozzilli and, for additional reasons, the Single Authorisation;
 - challenge of Regional Council resolution no. 341 of 28 December 2015 regarding the "Regional plan for waste management. Italian Legislative Decree No. 152/2006 Conclusion of the Strategic Environmental Assessment procedure. Adoption of Plan proposal."

The Regional Administrative Court of Molise did not uphold the appeals of Herambiente which challenged the ruling before the Council of State. At the date of drafting of this report, the date of the trial hearing to deal with the case is yet to be scheduled.

- **Hera Spa, Inrete Distribuzione Energia Spa, AcegasApsAmga Spa and Marche Multiservizi Spa**, as well as the other leading operators, challenged before the **Regional Administrative Court of Lazio**, the ANAC Guidelines no. 11 containing indications for verifying the obligations required by art. 177 of the Tender Code (Italian Legislative Decree No. 50/2016). The Code lays down the obligation for public or private entities, holders of concessions for works, public services or supplies already in place on the date of entry into force of the Code, that were not awarded by a public tendering procedure,

to award an 80% share of the contract for the works, services and supplies relating to concessions for an amount equal or exceeding Euro 150 thousand, through a public tendering procedure. The remaining part may be performed by in-house companies or by companies that are directly or indirectly controlled or affiliated. Separate complaints were filed for the waste management, district heating, gas distribution and electricity distribution services.

In June 2019, the Regional Administrative Court declared that the appeals were inadmissible, holding that the Guidelines challenged were not immediately harmful. The appellant companies appealed for overruling of the first instance rulings. The Council of State set a hearing for 11 June 2020 to deal with the appeals. New ANAC Resolution no. 570/2019 was also challenged before the Regional Administrative Court of Lazio, which updated Guidelines no. 11 with the new deadline (31/12/2020) for adapting the provisions of art. 177 laid down by Italian Decree Law No. 32 of 18 April 2019.

In **2019**, new disputes were brought by the Group, as reported below:

- **Herambiente Spa** filed an appeal before the **Regional Administrative Court of Emilia-Romagna** in which it challenged and requested cancellation of Managerial Decision no. 17621 of 30 September 2019 by way of which the Regional Government of Emilia-Romagna annulled ex officio the previous decision of 10 August 2018 regarding extension of the Environmental Impact Assessment in relation to the expansion of the landfill located in Baricella.
- At the end of 2019, **Hera Spa and AcegasApsAmga Spa**, as well as the other major operators, challenged before the Regional Administrative Court of Lazio the statement of the Chairman of ANAC dated 16 October 2019 containing "Instructions on the obligation to acquire the CIG (Contract Reference Number) and to pay the contribution to the Authority for cases excluded from the scope of application of the Public Contracting Code" and the statement of the President of the Authority dated 18 December 2019 containing "Instructions on the obligation to acquire the CIG, to submit the data and pay the contribution to the Authority for the special procurement regimes referred to in Part II, Title VI of the Public Contracting Code". A hearing is yet to be scheduled.

Sanctions imposed on the Group

[419-1]

In 2019, **no sanctions were imposed** on Hera Spa or other Group companies.

- With reference to the **sanction** imposed by the **Italian Antitrust Authority (AGCM)** on Hera and Herambiente for alleged abuse of a "dominant position", the two companies paid a total amount of approximately Euro 1.9 million. This decision was then challenged before the Regional Administrative Court of Lazio. The date of the trial hearing is yet to be scheduled.
- In November 2015, the **Italian Antitrust Authority (AGCM)** imposed a **sanction** of Euro 366 thousand on Hera Comm for violation of the Consumer Code with regard to customer contracts. According to the opinion of the Authority, Hera Comm and other companies in the sector, concluded a number of supply contracts without the consumer's explicit consent and using methods that altered the consumer's freedom of choice because insufficient information had been given on the offers and on the nature of the contracts. Specifically, certain methods used for concluding the contracts through phone and sales agent channels were criticised and accused of increasing the pressure on customers and preventing them from making free and informed choices. During the proceedings, the companies submitted proposals for improving the procedures: for example, making the contractual documentation available to customers before binding them to the contract and making a second phone call to check the customer's consent. Moreover, Hera Comm challenged the sanctioning measure before the Regional Administrative Court of Lazio. The Authority Board decided "to refer to the EU Court of Justice the matter relating to the interpretation of art. 27, paragraph 1 *bis*, of the

Consumer Code in relation to the Euro-unitary measures applicable to the electricity and natural gas supply sector, as already implemented by the Council of State, for the telecommunications sector".

The Court of Justice joined Hera Comm's prejudicial case with other similar cases and, by order dated 14 May 2019, confirmed AGCM's competence (instead of Arera's) in sanctioning the conduct covered by the proceedings pending before the Regional Administrative Court of Lazio. Following Hera Comm's application for continuation of the proceedings, the Regional Administrative Court of Lazio set the hearing for 20 July 2020 to deal with the case.

- With reference to the sanction of December 2016 imposed by the **Italian Antitrust Authority (AGCM)** against Hera Spa for an alleged abuse of "economic dependence" consisting of violation of the regulations set forth in Italian Legislative Decree no. 231/2002, as amended and supplemented, regarding payment terms for the supply of latest-generation meters, Hera Spa paid a total amount of Euro 800 thousand. An appeal against this decision was lodged with the Regional Administrative Court of Lazio and we are waiting for the hearing to be scheduled.

Quality, cost, and safety of customer services

Objectives and performance

What we said we would do	What we have done	Geographic scope*		
<ul style="list-style-type: none"> 78% of installed gas meters were electronic at end 2022 (67% InRete, 100% AcegasApsAmga, 100% Marche Multiservizi); 43% at end 2019. 	<ul style="list-style-type: none"> 43.1% of installed gas meters were electronic at end 2019 (were 34% at end 2018). 	ER	T	M
<ul style="list-style-type: none"> Update the electricity grid resilience plan implemented in 2018 and implement the measures planned on primary/secondary substations to automate the network, improving the continuity and quality of service. 	<ul style="list-style-type: none"> The electricity grid resilience plan was updated, and the measures planned on primary/secondary substations to automate the network, were carried out, improving the continuity of the service. 			
<ul style="list-style-type: none"> Emergency gas services: maintain a much higher level than Arera's requirements for the percentage of calls answered within 120 seconds and arrival at call location within 60 minutes. 	<ul style="list-style-type: none"> The percentage of response within 120 seconds was 98.6% in 2019, while the percentage of arrival at call location within 60 minutes was 97.0% (against a 90% service obligation). 	ER	T	M
<ul style="list-style-type: none"> Ensure that call centre quality levels and average waiting times at branch offices are in line with those of 2018. 	<ul style="list-style-type: none"> 9.4 seconds average waiting time at the counters in 2019, 27.2 seconds average waiting time for the call center, less than in previous years. 	ER	T	M
<ul style="list-style-type: none"> Further improve compliance with commercial quality standards for gas, electricity, water, and district heating services. Further reduce the compensation paid to customers for non-compliance with standards. 	<ul style="list-style-type: none"> 99.5% of cases were compliant with commercial quality standards in 2019, in line with 2018. 	ER	T	M

What we will do	SDGs	Geographic scope*		
<ul style="list-style-type: none"> 82% of installed gas meters will be electronic by end 2023 (78% for InRete, 93% for AcegasApsAmga, 95% for Marche Multiservizi); over 40 thousand NexMeters will be installed by end 2020. 	9	ER	T	M
<ul style="list-style-type: none"> Continue the implementation of the resilience plan for the electricity grids in Modena: another 8 measures in 2020, in addition to the 2 carried out in 2019 (out of a total of 54 measures). 	9, 13			
<ul style="list-style-type: none"> Emergency gas services: maintain a much higher level than Arera requirements for the percentage of calls with arrival at call location within 60 minutes. 		ER	T	M
<ul style="list-style-type: none"> Ensure compliance with commercial quality standards for gas, electricity, water and district heating services, in line with 2019. 		ER	T	M
<ul style="list-style-type: none"> 10 minutes waiting time at help desk 30 seconds waiting time at the call centre (target 2020). 		ER	T	M

* Geographic scope of the improvement objectives: ER= Emilia-Romagna T= Triveneto M= Marche.

Customers

Energy services customers

Thousands	2017	2018	2019
Gas customers	1,400.0	1,462.5	2,049.5
Electricity customers	981.3	1,068.7	1,288.8
District heating customers	12.2	12.2	12.4

Integrated water service customers

Thousands	2017	2018	2019
Total customers	1,458.6	1,463.5	1,467.8

Municipal sanitation services

	2017	2018	2019
Municipalities served (qty)	187	174	187
Citizens served (thousands)	3,313	3,136	3,204

In 2019, the Hera Group again recorded an increase in its total number of customers. This result confirms the effectiveness of the growth strategy it adopted, i.e., the combined action of effective commercial initiatives and targeted corporate acquisitions.

The industrial operation concluded between the Hera Group and Ascopiave has supported an increase by almost 590 thousand gas customers. Even net of the Ascopiave operation, the development of new offers combined with commercial actions and an acquisition in the province of Ferrara, has made it possible to maintain a constant customer base in a context of strong competitive pressure.

Electricity customers increased by over 220 thousand: the partnership with Ascopiave and the commitment to commercial actions and the development of new offers contributed equally to this result.

In waste management services, the acquisition of Cosea Ambiente led to the addition of a further 15 new municipalities in the province of Bologna, amounting to about 70 thousand citizens.

Commercial policies

In 2019 the focus on environmental sustainability guided the development of Hera Comm's **business policies** with a new "green" offer, new innovative solutions, and entry into the sustainable transportation sector.

As to the organisation of **contact channels**, we confirmed and further expanded our **multi-channel strategy**: call centres differentiated by target with increasing service levels, self-caring web channels with new functions, and a network of branch offices that has been extended and renovated.

As far as the **digital channel** is concerned, in 2019 we added Apple Pay as an additional payment method, and made some changes to further improve the user experience of the My Hera app and Online Services, especially concerning the self-reading and billing area. In 2019, we also expanded the specific section dedicated to customers of the quantity-based tariff for waste collection and, with a view to further enhancing the digital channel, added telephone contact and a live chat.

The increase of customers is the result of commercial activity that is increasingly supported by the network of branches in the area. However, it is also the result of targeted **corporate acquisitions** based on achieving substantial synergies: in addition to the industrial partnership with Ascopiave, this year the energy customers

of CMV Energia & Impianti, a local business based in Cento (FE) and other municipalities in the province of Ferrara, also joined the Hera Group.

Our **offer portfolio** for mass markets maintains its dual orientation, with fixed-rate and variable-rate offers and we have enriched it with new tariffs (Hera Impronta Zero and Simply Hera), and new tools to support energy efficiency. Customers can, therefore, choose among the offers of a complete portfolio that addresses a range of needs:

- the **tranquillity of having a fixed price** for a variable duration selected by the customer (from 6 to 30 months), protected from market fluctuations, and the guarantee of electricity from renewable sources and gas with CO₂ emissions offsetting, thanks to the new Hera Impronta Zero rate plan;
- a **multilingual telephone sales support service** with the new Simply Hera rate plan;
- the certainty of a **fixed price** for 24 months and **insurance coverage for children** up to 3 years old in the family, thanks to the Hera Bebè rate plan;
- the tranquillity of having a **fixed price**, for 12 months, with a **welcome gift**, thanks to the Welcome Hera rate plan;
- the opportunity to **access the wholesale energy market**, as guaranteed by the Prezzo Netto rate plan.

2019 was also the year of the launch of Hera No Problem Acqua, the insurance against water system failures that goes alongside the coverage for home electrical and/or gas systems.

Lastly, we have consolidated our presence in the **sustainable transportation** sector: we have expanded our portfolio of charging stations and wall boxes for sale, we have launched an electric car rental service, and rolled out Hera Ricarica, a card that all customers can use to recharge their vehicles at public charging stations.

Hera Comm's Sales Network and Commercial Conduct

Hera Comm's commercial strategy for the sale of energy services to small and medium customers (households and companies) relies on **commercial partners that operate across various sales channels**.

In 2019, Hera Comm confirmed its fundamental guidelines, specifically:

- the **selection** of agencies according to the principles and methods defined in the Group's quality system;
- having all partners **sign** the agency mandate, which includes the Group's Code of Ethics;
- specific **training** provided to agency managers and their agents by Hera Comm staff;
- **identification** of door-to-door agents who must show their company identification to customers they visit;
- periodical **shadowing** at end customer premises by Hera Comm staff to assess the conduct of the sales network;
- **end customer monitoring** of the quality of the sales network's operations.

In 2019, we also strengthened quality controls to further ensure the proper conduct of our sales network. The proximity to our customers and their protection remain the fundamental principles of Hera Comm's sales activity. In addition to measures to handle unwanted activations and contracts, as required by Arera's resolution 153/2012/R/com as amended, Hera Group added other safeguards to those already required by Arera such as, for example, facilitated afterthought management by email, simple letter or fax (not just registered mail).

For Hera, it is fundamental to acquire the customer's consent clearly, responsibly, and unequivocally. To do so, we have added even more specific quality controls, in line with what is required by the Consumer Code:

- for **contracts offered by phone**, a second call must be made to check that the customer has received the contract and actually wants to accept it, and to monitor, at the same time, the quality of the sales

effort carried out by our teleselling channel. In addition, customers can retrieve the telephone recording of their conversation via the web portal or automated phone system;

- for **contracts proposed following a visit to the customer's home**, besides the welcome letter that is sent to them, a phone call is made that assesses the quality of the sales channel and, by doing so, gives the customer a chance to exercise their right to change their mind.

The continuous improvement of sales processes, together with the constant monitoring of sales channels, led to significant results in 2019 in terms of reducing complaints for unsolicited contracts. The number of complaints has further decreased: 39 in 2019 (against the 383 thousand contracts stipulated outside commercial premises) compared to 47 in 2018. All complaints for unsolicited contracts were accepted and remedial measures were applied in 100% of the cases.

Cost of services

Hera manages **services under concessions** and **free-market services**. For the services under concession (integrated water service, municipal sanitation, gas, and electricity distribution), the **tariffs** Hera applies are **set by the regulatory authorities** (Arera and the local municipal sanitation authorities), while Hera freely determines the tariffs for free-market services (waste disposal, sales of gas and electricity). Every quarter, Arera defines and updates the prices for the sales tariffs for customers that have not subscribed to a free market electricity service option and for residential gas customers that are under protective economic conditions.

The costs of Hera's services for an average customer (real consumption)

Euro	2018	2019	Ch. 2019/2018	Ch. % 2019/2018
Gas	717.31	658.43	-58.88	-8.2%
Electricity	362.54	380.52	17.98	5.0%
Water service	236.70	232.66	-4.04	-1.7%
Waste	237.87	242.73	4.86	2.0%
Total	1,554.42	1,514.34	-40.08	-2.6%
<i>of which attributed to Hera</i>	706.61	709.29	2.68	0.4%
<i>of which attributed to raw materials and generation</i>	429.32	402.61	-26.71	-6.2%
<i>of which duties, taxes, system charges, and other charges</i>	418.50	402.44	-16.06	-3.8%

The value of the water service bill for 2018 has been updated considering the amounts invoiced to customers in 2019 for that year.

The following table shows the average household expenditure in 2019 compared to the previous year for the four services provided by Hera based on the average consumption of gas, electricity and water over the two years considered: 769 m³ for gas in 2019 (-8.6% compared to 2018), 1,844 kWh of electricity (+2.3%) and 109 m³ of water (+0.9%). For the waste service, we considered a family of three members living in an 80 m² apartment.

In 2019, the average household spent a total of Euro 1,514 on the services supplied by Hera, 2.6% less than in 2018, amounting to about Euro 40. In particular, compared to last year, gas and electricity bills were lower due to lower costs for the raw material components of the bills (down by Euro 27 due to changes in the price of petroleum products). There was a reduction of Euro 16 in taxes, fees and charges, influenced in particular by the downward trend in electricity system charges. For the water service, on the other hand, there was a decrease of Euro 4 compared to 2018 following the introduction of the new tariff set by Arera. Lastly, the increase in the waste services bill was about Euro 5.

47% of overall spending, amounting to Euro 709 (45% in the previous year), was attributable to the components of bills attributable to Hera. In 2019, this share increased by around Euro 3, broken down as follows: Euro -1 for gas, Euro +2 for electricity, Euro -4 for water, and Euro +6 for waste.

Based on an analysis considering equal volumes used by an average Hera customer, for 2019, the overall cost of services increased by 0.7%, amounting to about Euro 15, compared to 2018. This result is due to:

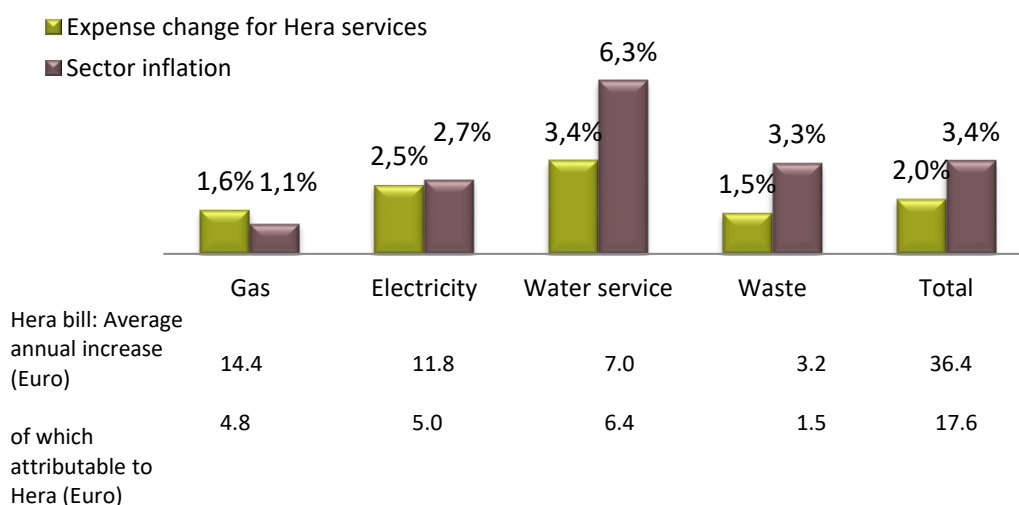
- an almost Euro 20 decrease of the cost of raw materials and generation, directly related to fuel price trends;
- a Euro 4 decrease of the bill components attributable to Hera. This decrease is equal to 0.2% of the total amount of the bills considered: it is due to reduction by Euro 9 for the electricity service and by Euro 6 for the water service and an increase of Euro 5 for the gas service and by Euro 6 for the waste service;
- an increase of Euro 38 in duties, taxes, system charges, and other charges not attributable to Hera related to the trend in system charges on the electricity bill after the reduction decided by Arera in 2018 to offset the increase in the raw material portion that year.

The costs of Hera's services for an average customer (constant consumption)

Euro	2018	2019	Ch. 2019/2018	Ch. % 2019/2018
Gas	1,000.84	1,009.04	8.20	0.8%
Electricity	545.10	552.61	7.51	1.4%
Water service	272.70	266.71	-5.99	-2.2%
Waste	237.87	242.73	4.86	2.0%
Total	2,056.51	2,071.09	14.58	0.7%
<i>of which attributed to Hera</i>	<i>779.50</i>	<i>775.97</i>	<i>-3.53</i>	<i>-0.5%</i>
<i>of which attributed to raw materials and generation</i>	<i>623.98</i>	<i>604.47</i>	<i>-19.51</i>	<i>-3.1%</i>
<i>of which duties, taxes, system charges, and other charges</i>	<i>653.53</i>	<i>690.65</i>	<i>37.62</i>	<i>5.8%</i>

Bill of a residential customer with an annual consumption of 1,200 m³ of gas, 2,700 kWh of electricity, 130 m³ of water, and for a household of three people in a house of 80 m², for waste disposal. For the other conditions considered, see the following pages. The value of the water service bill for 2018 has been updated considering the amounts invoiced to customers in 2019 for that year.

Comparison between the changes of bills from 2006 to 2019 and inflation (annual average increase, CAGR)



The long-term analysis shows that, between 2006 and 2019, the gas, electricity, water service, and waste management bills in the Emilia-Romagna area served by Hera had an average compound annual increase below the Italian national average: +2.0% compared to +3.4% for the whole of Italy (Source: Istat). This gap is even more markedly beneficial for Hera's water service and waste service customers. In the field of waste, Hera's share increased by 0.8% year over year (Euro 1.5 compared to the Euro 3 of total expense increase).

The gas bill [417-1]

Euro	2017	2018	2019
Raw material component	363.01	405.32	396.68
Retail sales charge	64.13	64.49	64.71
Distribution charge	118.67	121.65	126.00
System charges	28.52	28.85	41.80
Consumption tax	198.02	198.02	198.03
Regional tax	30.60	30.61	30.61
VAT 10%/22%	143.63	153.16	151.21
Total	946.59	1,002.10	1,009.04

19% of the bill's total
attributable to Hera

Bill of a residential customer with an annual consumption of 1,200 m³ of gas, and with direct debit and electronic billing. A customer of the market with the highest protection was considered; based on the economic conditions set by the Regulatory Authorities: 35% of Hera's residential customers are in this category. Cities considered: Bologna, Ferrara, Forlì, Imola, Modena, Padua, Pesaro, Ravenna and Trieste (weighted average of resident citizens). The grey areas show tariff components that are not attributable to Hera. The complete data on gas supply tariffs are available on the Group's website.

For the sale of gas, the Italian regulatory authority specifies the information that must be included in bills, including the sources of the gas sold and the service levels provided.

For the same consumption, on average, the 2019 gas bill of a Hera residential customer under market tariff protection conditions cost about Euro 7 more (+0.7%) than the previous year. The sales charge for raw materials decreased by about Euro 9, as a result of the decrease in gas prices during the year, while the retail component remained almost unchanged (+0.3%). The distribution charge increased by around Euro 4 and system charges rose by Euro 13 (+44.9% as a result of the increase in the cost-covering component for the promotion of energy efficiency and the equalising components linked to the distribution and marketing costs of the various operators). The consumption tax and the regional tax were unchanged, while VAT went down by about Euro 2 as a result of the above changes.

Gas **distribution charges** are set annually by Arera. Resolution 367/2014/R/GAS of July 2014 defined the regulation of the gas distribution and metering service charges for the 2014-2019 regulatory period. The charges change according to each of the country's six macro-regional areas, and are determined so as to ensure coverage at the macro-area level of the cost of capital and operating costs incurred by the distributors. The Consolidated text of regulations on the quality and charges of gas distribution and metering services for the 2014-2019 regulatory period (TUDG) establishes that, starting 1 January 2015, the fixed rates of the obligatory distribution charges shall be structured by metering unit class (meter class) while the G4 metering class has been taken as the reference for an average household that lives in the municipalities served. Specifically, the obligatory charge levels for the distribution services and natural gas metering for January-December 2019 were approved by resolution 667/2018/R/gas of December 2018.

The distribution charge impacted on average 12% of the total bill in 2019. Part of the distribution charge includes components to cover general gas system costs (such as energy saving promotion costs) which the individual distributors treat as contra-items, paying the resulting revenue to the Cassa per i Servizi Energetici e Ambientali (Energy and Waste Management Services Fund). These bill components are included in the "system charges" item. In 2019, system charges increased by Euro 13, in particular for the energy efficiency share and the share for offsetting the difference between distribution and sales charges paid by customers and the costs incurred by operators and recognised by Arera (equalisation).

The **sales charge** for the economic conditions of the supply for the protected service, set by Arera, is governed by ARG/gas resolution 64/2009 (Uniform Code Governing Retail Sales of Natural Gas). This resolution defines the protected service economic conditions for entitled customers. In 2011, Aeegsi started a reform of these conditions. Its implementation started with ARG/gas resolution 116/2012, which, by transposing the indications laid down in Italian Decree Law No. 1/2012, changes the previous indexing mechanism (bound to a basket of oil products to which the purchase formulas of the long-term procurement contracts entered into by leading Italian importers refer) with gradually increasing indexing based upon the gas wholesale market. In 2016, raw material costs were indexed according to the gas price of the Dutch hub TTF, which reflects the costs of the European market. The tariff components that together make up the raw material purchase costs in 2019 account for 39% of the total bill. In the event of payment of the amounts by direct debit and e-billing, Resolution 610/2015/R/COM introduced, for the economic protection conditions, a bonus that is worth Euro 6 for the year 2019.

Lastly, in 2019, taxes account for 38% of the total, on average. These taxes are due to the State and regional government authorities (consumption tax, additional regional tax, and VAT). Taxes are set by specific provisions by the Ministry of the Economy and Finance and the regional government authorities, and vary according to the use of the gas, whether for heating or only for cooking, or industrial uses. Since January 2008, 10% VAT is applied for up to 480 m³ annually, and above that, VAT is set at 22% under Italian Decree Law No. 76/2013.

The electricity bill [417-1]

Euro	2017	2018	2019
Energy generation share	161.42	188.73	174.22
Dispatching share	34.86	29.93	33.57
Distribution and sales share	146.44	152.42	143.59
System charges	104.21	102.68	129.20
Taxes	21.63	21.79	21.79
VAT (10%)	46.85	51.14	50.24
Total	515.42	545.10	552.61

Attributable to Hera: 26% of the bill's total

Bill for a residential customer with a 3 kW installed electrical capacity contract, whose yearly consumption totals 2,700 kWh, with direct debit and e-billing. A customer of the market with the highest protection was considered; based on the economic conditions set by the Regulatory Authorities: 11% of Hera's residential customers are in this category. Cities considered: Modena, Imola and Trieste (weighted average of inhabitants). The grey areas show tariff components that are not attributable to Hera.

For the sales of electricity, the Italian regulatory authority specifies the information that must be included in bills including the sources of the electricity sold and the services levels provided.

Considering equal consumption, the electricity bill of a residential customer to which the service subject to the highest protection is applied increased by 1.4% in 2019 compared to the previous year (Euro 7.5). The **energy share** decreased by Euro 14.5, due to the decrease in the cost of raw materials, partly offset by an increase in **dispatching** of Euro 3.6, but combined with a decrease of Euro 8.8 in the **sales and distribution** share. **System charges** increased by Euro 26.5 as a result of Resolution No. 359/2018/R/com of June 2018, which, in order to reduce the impact of higher energy commodity prices on the final cost of electricity for domestic users, had reduced system charges compared with what was necessary; the decrease in the cost of raw materials in 2019 made it possible to restore the correct level of charges and recover the 2018 revenue shortfall.

Only the distribution share and part of the sales share are paid to Hera for coverage of the management and maintenance costs of the power grid incurred by the distributor Inrete and of the costs for sales activities (billing, bill sending, etc.) which are incurred by the Hera Comm sales company. This portion accounts for 26% of the total bill.

The 2019 bill is calculated by using the twin rate tariff and the profile type defined by Arera (one third of consumption in the peak period, from 8 am to 7 pm from Monday to Friday, and two-thirds during off-peak periods), which causes no difference between the twin rate and single rate prices.

Electricity bills include the following costs: sales costs, costs incurred to purchase energy and for the dispatching service, which ensures a balance between electricity supply and demand at all times, costs to cover the service for transporting electricity on the Italian national transmission and local distribution grids through to the meters (transport, distribution and metering costs and system charges), and taxes. For payments of electronic bills using direct debit, resolution 610/2015/R/COM introduced a bonus for customers entitled to protective economic conditions, worth Euro 6 in 2019.

Starting from January 2016, implementing European Directive 2012/27/EU on energy efficiency, in resolution 582/2015/R/eel, Arera defined a programmatic framework to implement the reform of network tariffs and tariff components to cover general system charges for residential customers. The Directive requires a gradual adjustment of the tariff components to the costs of the service involved. The adjustment of the tariff structure must be such as to stimulate virtuous behaviour by the residents and encourage achieving energy efficiency objectives. The Reform is designed to be carried out in several steps. The fees for network services (transmission, distribution and metering), were redefined on 1 January 2016 to mitigate the effect of progressiveness on consumption (first step), while the definitive non progressive tariff structure called "TD" was adopted on 1 January 2017 (second step), and consists of network services fees that are the same for all residential customers and compliant with the criterion of consistency of the tariffs with the costs of the underlying services. The fees for general system charges were redefined on 1 January 2017 to mitigate the effect of progressiveness on consumption and to reduce the number of annual consumption brackets to two, and a fee expressed in Euro/year was introduced for non-resident residential customers only. The completion of the process (third step), initially scheduled for January 2018, was postponed by two years (initially by Resolution 867/2017/R/eel and then by Resolution 626/2018/R/eel). The reform will become fully operational on 1 January 2020. System charges will also be subject to a tariff structure that is not gradual but rather split according to resident customers (to whom energy shares will be applied in full) and non-resident customers (to whom shares will be applied in part fixed and in part variable).

The economic situation in the second half of 2018, with energy commodity prices rising sharply, had prompted Arera to suspend the adjustment and reduce to zero some of the system charges (Resolution No. 359/2018/R/com) to mitigate the increase in the cost of raw materials in household customers' bills. In 2019 this adjustment was made taking into account the margins allowed by reductions in procurement costs: Resolution 711/2018/R/com adjusted the rates of the ASOS and ARIM tariff components as of 1 January 2019, confirming the value of the rates of the ASOS tariff component for domestic users provided for by Resolutions 359/2018/R/com and 475/2018/R/com and reactivating the ARIM tariff component, which had previously been forced to zero, setting its level significantly higher (+57.8%) compared with the second quarter of 2018, in order to allow a recovery of the previous year's revenue shortfall. For the second quarter of 2019, as stated in Resolution no. 107/2019/R/com, the Regulatory Authority deemed it appropriate to increase the variable rates of the ASOS tariff component for domestic users, so as to absorb, by the end of 2019, the effects of the difference in treatment between domestic and non-domestic users in 2018 and taking into account the worsening economic needs in the A3 account and to adjust the elements of the ARIM tariff component upwards. As of 1 July 2019, the Authority completed the adjustments necessary to recover the revenue shortfall from the measures taken in the second half of 2018; as of the third quarter of 2019, therefore, ordinary updates could be made following the analysis of the comparison between revenue and expected needs. Resolution 262/2019/R/com, in particular, made some downward adjustments in relation to the provisions of the previous resolutions.

The water service bill

Euro	2017	2018	2019
Aqueduct	115.52	110.82	109.83
Sewage network	34.05	34.45	33.73
Purification	86.35	84.81	83.36
Fixed share	21.25	17.82	15.58
VAT (10%)	25.72	24.79	24.21
Total	282.89	272.69	266.71

Attributable to Hera:
91% of the bill's total

Bill of a residential customer (household of three) with a yearly consumption of 130 m³. Cities considered: Bologna, Ferrara, Forlì, Imola, Modena, Padua, Pesaro, Ravenna, Rimini, and Trieste (weighted average of resident citizens). The grey areas show tariff components that are not attributable to Hera. The value of the water service bill for 2018 has been updated considering the amounts invoiced to customers in 2019 for that year.

The average bill of a residential customer with consumption of 130 m³ per year went from Euro 272.69 in 2018 to Euro 266.71 in 2019: the decrease was 2.2% in the last year following the application of the new tariff method set by Arera.

Since 2012, Arera has been responsible for the regulation of the water service. It initially set up a transitional tariff method for the 2012-2013 period and later a permanent tariff method for 2014-2015, subsequently updated for 2016-2019. The 2019 tariffs were approved by Arera for each of Hera's service areas and also include adjustments for previous years, determined in accordance with the rules of the tariff method.

It should be noted that the new tariff structure has been applied in accordance with Resolution 665/2017/R/IDR of 28 September 2017 for the 2018 and 2019 tariffs. For a correct representation of the development of the bill for a "typical" customer in the 3 years under consideration, the amounts pertaining to the year 2018 and invoiced in the following year have been taken into account in the relevant year. This is why the value of the bill for 2018 has been updated considering the amount invoiced to customers in 2019 for that year.

Average expenditure for the integrated water service varies among the areas Hera serves since it depends on the specific structure of the water supply sources of the various areas, due to the availability of water resources and to the distance from the withdrawal source.

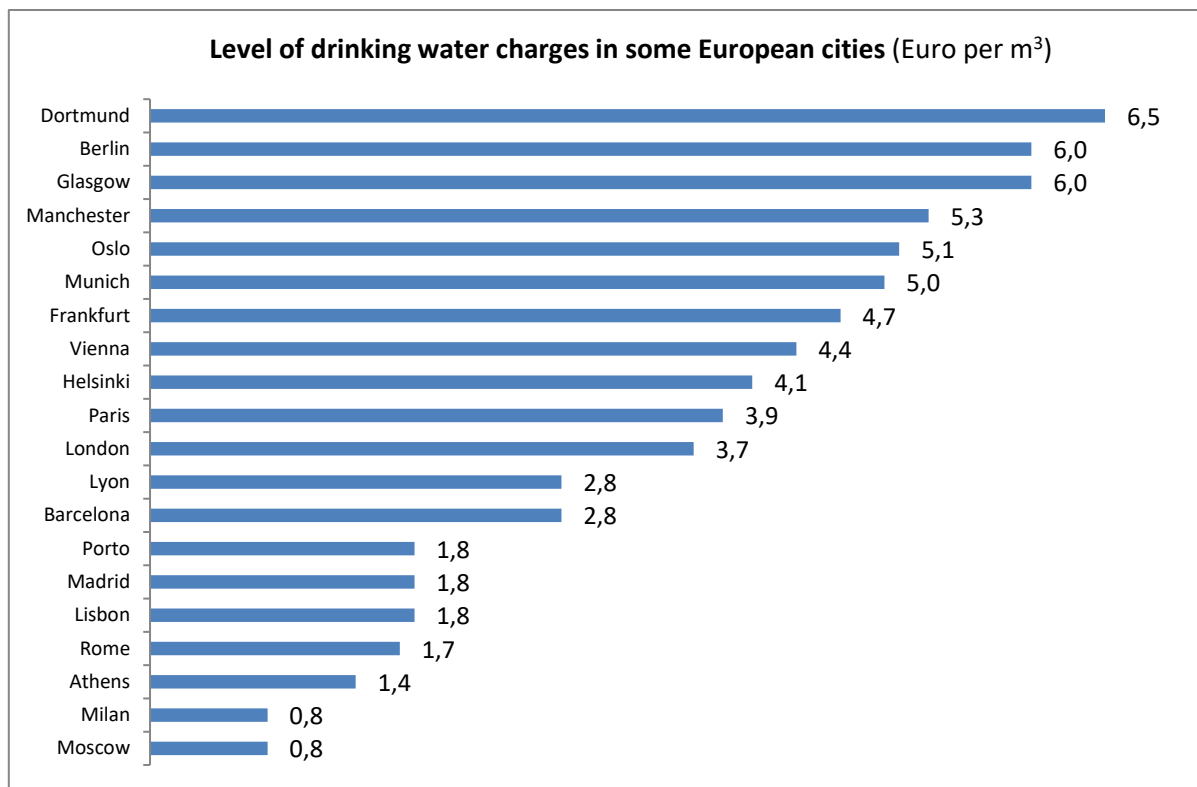
The tariff mechanisms developed by Arera since 2012 helped us continue to make considerable investments, particularly for those sectors with a higher environmental impact, such as reclamation from sewage-purification.

How much water costs

As well as benefiting the environment, drinking tap water instead of mineral water also saves money: considering an average daily consumption of 1.5 litres for a household of three people and an average price of Euro 27 cents per litre for certain retailed mineral waters, yearly spending on mineral water comes to around Euro 440 a year. The cost for the same quantity of aqueduct water, meanwhile, would be Euro 2.05 a year (calculated as the 2019 average of the bills in the nine main cities served by Hera). Italy is third in the world for consumption of bottled water with 190 litres of water consumed per-capita in 2018, after Mexico and Thailand (Source: Bottled Water Reporter 2019).

The cost of water in Europe

The European House – Ambrosetti conducted research on water pricing in 2018 in some European countries. In Italy, the cost of water is Euro 1.87 per m³ compared to Euro 3.67 in France, twice as much, and Euro 4.98 in Germany, just under three times as much. There are even higher imbalances for data of individual cities: for example, in Rome the cost is Euro 1.7 per m³ while in Berlin it is Euro 6 per m³.



Source: The European House – Ambrosetti: Value of Water Observatory 2019

Regulation of the water service

Arera has been the Italian regulatory agency for water services since 2012. Its initial objective was to define a tariff method capable of supporting (efficient) coverage of costs, of increasing investments and also promoting the quality of service-oriented mechanisms.

The measures that followed, from 2012 onwards, were all focused in this direction. In particular:

- from a tariffs point of view, 2019 is part of the second, current, regulatory period (2016-2019) which, in addition to confirming the criteria outlined above, initially with the 2012-2013 transitional tariff method and then with the first regulatory period (2014-2015), introduced important new factors concerning regulatory and incentive aspects of contractual quality, requiring minimum service levels but also forms of recognition of levels higher than the minimum required;
- in 2019, Arera adopted the following measures, which will apply from 2020: an integrated text that governs payment delinquencies, an update of the contractual quality discipline that requires a mechanism of incentives and penalties also at Italian national level, and lastly the tariff method for the third regulatory period 2020-2023.

The bill for waste collection and disposal

Euro	2017	2018	2019
Fixed share	103.55	103.38	105.90
Variable share	92.02	89.66	93.27
Fixed and variable share not attributable to Hera	34.70	31.91	32.57
Additional provincial charges	11.52	12.92	10.99
Total	241.79	237.87	242.73

Attributable to Hera: 87% of the bill's total

Bill of a residential customer (family of three people in a house of 80 m²). Cities considered: Bologna, Ferrara, Cesena, Imola, Modena, Padua, Pesaro, Ravenna, Rimini and Trieste (weighted average of resident citizens). For Ferrara, which from 1 January 2018 introduced quantity-based tariff, the respect of the limit of 52 disposals per year of 30 litres each of mixed waste was also considered. The grey areas show tariff components that are not attributable to Hera.

A family of three people, living in an apartment of 80 m², paid approximately Euro 243 for waste collection and disposal, a decrease of about 2.0% (about Euro 5) compared to 2018. The decrease in the total bill is partly due to the effect of the introduction of quantity-based tariff in the municipality of Ferrara (approximately Euro -26 compared to 2018 and Euro -64 compared to 2017) and partly to the reduction in the areas of Cesena and Trieste (-5.8% and -6.0% respectively). 13% of the amount of the bill is not attributable to Hera and is for the additional provincial charge and other TARI tax items, mainly the coverage of uncollected amounts (unpaid portion).

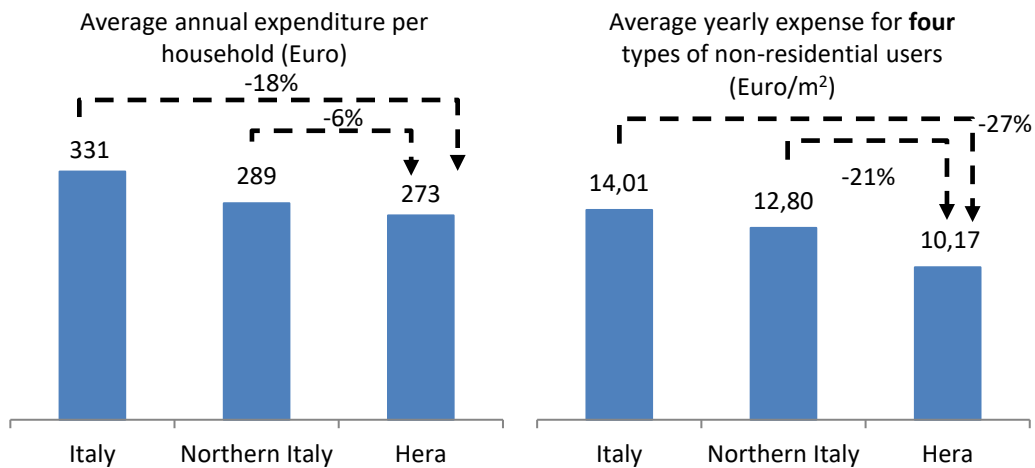
A waste tax (TARI) was introduced in January 2014 in both the municipalities where the sanitation tariff (TIA) was applied and those where the tax on waste and services (TARES) was applied. The new tax was added to ensure full coverage of costs for the waste management service, which includes sweeping and washing roads, waste collection and transportation, separate waste collection, waste treatment and disposal, and administrative costs. Municipalities can appoint the waste service operators to collect the fee; for 2019 this choice was made by 33 municipalities. At the same time, 16 municipalities have changed their collection charging method from TARI to quantity-based tariff.

The cost of waste management services for residential and non-residential customers

In 2019, Hera charged its residential customers waste management service costs that were 18% below the Italian average and 6% lower than the Northern Italy average: these were the findings of the Cittadinanzattiva Price and Tariff Study (Osservatorio prezzi e tariffe), which covered 112 province capitals. The study based its findings on a standard customer consisting of a family of three living in a 100 m² apartment.

Also, a new REF Ricerche study on the cost of the TARI waste tax in 2019 considered four types of non-residential users in 99 provincial capitals. In Hera's service area, hotels spend 21% less than the Italian average, and the savings was 29% for restaurants, 39% for the food industry and 23% for supermarkets. For non-residential users of restaurants, supermarkets and food industry in Hera's service area, they are cheaper respectively by 27%, 27% and 16% compared to the average for northern Italy: for hotels Hera charges more than the average for northern Italy by 6%. The average of the four types of users considered by the research shows therefore that Hera's area is more competitive, with costs 27% below the Italian average and 21% below the average of northern Italy.

The cost of waste management services for residential and non-residential customers

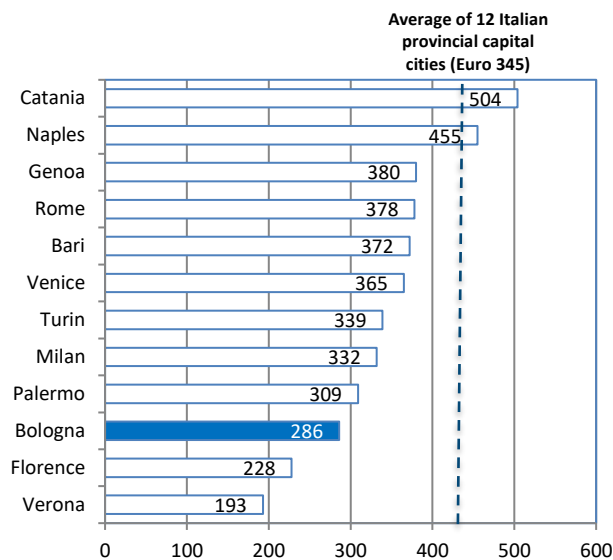


2019 data, 3 persons in 100 m², Cittadinanzattiva.

2019 data, REF Ricerche.

Cittadinanzattiva's 2019 report also compares the 2019 cost for the municipal sanitation service in the Italian provincial capital cities. With regard to the 12 large-sized municipalities (over 250 thousand inhabitants), Bologna with a TARI waste tax of Euro 286 ranks among the cities with the lowest cost, together with Florence and Verona, and a level 17% below the average of the 12 provincial capital cities.

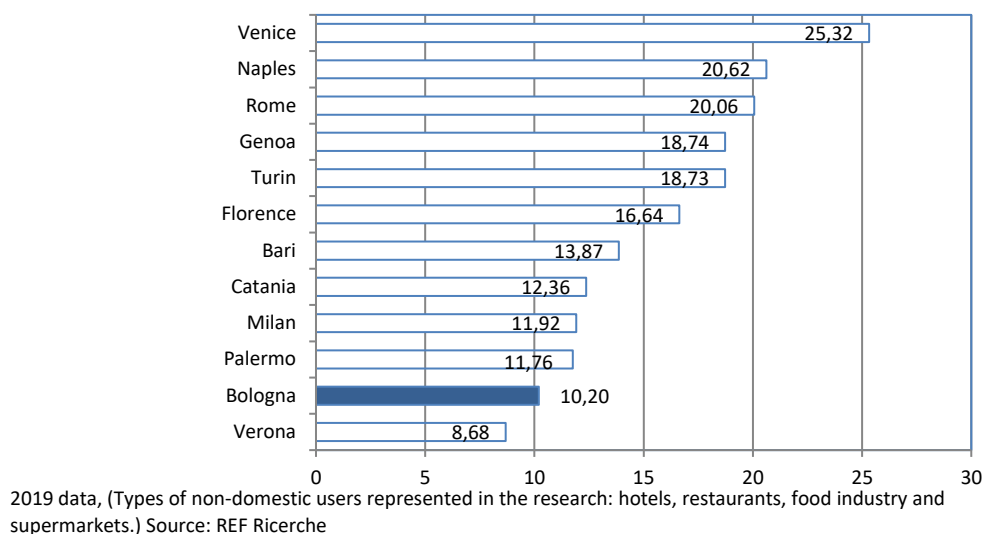
Total cost per user in cities with over 250,000 inhabitants (3 occupants, 100 m², Euro)



2018 data, 3 persons 100 m², Source: Cittadinanzattiva

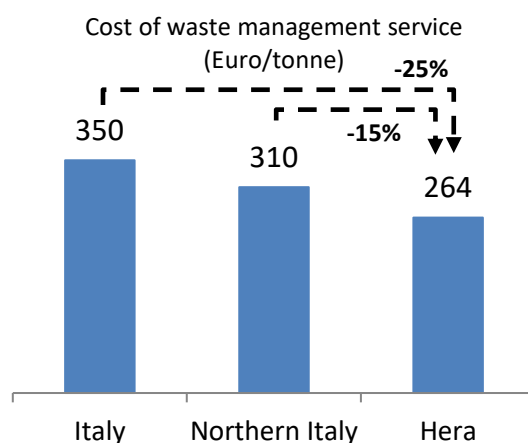
The 2019 REF Ricerche report also compares the cost of the municipal sanitation service for non-residential customers in Italian provincial capital cities with over 250 thousand inhabitants. Among them, Bologna ranks as one of the cities with the lowest average costs for the four types of non-residential users considered by the study (restaurants, hotels, food industry, and supermarkets), with Euro 10.20 per m².

Waste management expenditure for non-residential users in cities with over 250 thousand inhabitants (Euro/m²)



The cost of the waste management service

Hera has lower costs than the rest of Italy, also considering the cost per tonne of waste treated: 25% lower than the Italian average and 15% lower than Northern Italy (Source: Ispra, 2019 Municipal Waste Report, 2018 data). This result is also due to the higher amount of the waste of non-residential customers being similar to municipal waste, which allows the fixed costs of the service to be spread over a higher quantity of waste.



Source: Ispra, 2019 Municipal Waste Report, 2018 data

The district heating bill

Euro	2017	2018	2019
Meter rental	26.64	26.64	26.64
Variable share	961.99	1,017.35	1,027.18
VAT 10%/22%	98.86	104.40	105.38
Total	1,087.49	1,148.91	1,159.20

Bill for a residential customer with a natural gas consumption of 1,200 m² as measured by the meter and of 8,926 kWh of electricity under a residential monomial tariff (81% of Hera's customers falls within this tariff type and accounts for 20% of the residential volumes sold). Cities considered: Bologna, Cesena, Ferrara, Imola, and Modena (weighted average on the basis of the volume served). The bill for Ferrara was calculated excluding the tax incentives recognised due to the prevalent use of geothermal sources. The grey areas show tariff components that are not attributable to Hera.

Below is a reconstruction of the average cost of Hera's "household monomial" tariff for the supply of district heating to its domestic customers. This rate varies quarterly according to the trend in the cost of natural gas, and is published on the www.gruppohera.it website.

The average expense for a typical household in 2019 for district heating service is on average about 1.0% higher than in 2018, due to the increase in the wholesale cost of gas, which is a factor of the tariff.

In 2016, the Hera Group launched a new rate plan for the district heating service, aimed at families with individual heat meters and with an annual consumption under 25,000 kWh. The new rate plan, called "Nuovo Teleriscaldamento Hera", offers a price for district heating that is fixed for 30 months, and a monthly fee for the meter rental (free for the first months of activation thanks to a special promotion when it was initially offered on the market). This rate plan is designed to protect customers from possible increases in energy costs, with a price that does not change for 30 months, while providing them with a simple and effective way to understand their consumption. Customers who chose the rate plan at the end of 2016 or during 2017 and 2018 thus saw their expenditure "protected" during 2019, a year in which energy prices rose. Households who chose this offer from the end of 2016 to the end of 2018, in many cases, thus benefited from a lower cost than the residential monomial tariff. For the average customer as identified above, with an annual consumption of 8,926 kWh, the versions of the offer sold in the specified period determined a total expense for 2019 ranging from Euro 1,008 to Euro 1,134 per year: an estimated saving of between Euro 151 and Euro 25 per year compared to the monomial tariff, i.e. between 7.4% and 2.1%.

The offer also includes, free of charge, an innovative consumption analysis service that helps customers understand their consumption habits better, through an easy-to-read report sent to them by email.

Service quality

Electricity and gas

The quality regulation divides the standards to be met into "general" and "specific": failure to meet the latter due to causes attributable to the Distributor requires the payment of indemnities directly to customers or through the sales company requiring the service from the distributor, which may vary depending on the type of customer (low or medium voltage for electricity, meter category for gas), the delay in executing the service, and the time required to pay compensation. Automatic compensation ranges from Euro 30 to Euro 140 based on the type of customer and supply, and can increase based on the delay in the provision of the service or the fulfilment times.

The specific quality standards for the distribution service include, in particular, the time for executing works, activating supply, and the failure to comply with the punctuality bracket for appointments scheduled with customers.

The reference resolutions of the regulatory authority are Resolution 574/2013/R/Gas and 646/2015/R/Eel.

Water and waste management

When managing the integrated water service and the municipal waste management service, the operator is committed to compliance with specific minimum quality standards required by the Service Charter. This document is drawn up on the basis of a template prepared by the Regulatory Authorities and annexed to the signed agreements.

Arera's resolution 655/2015 has governed the contractual quality of the water service since 1 July 2016, defining minimum service levels that operators must respect for activities related to the requests of users, emergency services, billing, access to branch offices and to the call centre and the management of complaints. The resolution also introduced the payment of an automatic indemnity of Euro 30 to be paid if the operator fails to comply with the specific quality standards.

It also allowed operators to access incentives for their commitment to pursue quality levels that improve on the minimum levels required by said resolution 655/2015. Hera Spa achieved the incentive for the Bologna and Modena areas, applying the improved levels set by ATERSIR for 32 standards. The most significant standard parameters include: the execution time for **contract transfers** (improved from five to three days), the time to provide **quotes** for works involving inspections (improved from 20 to 12 days), and the **response time** for meter checks (improved from ten to seven days).

For the Ferrara, Ravenna, Forlì-Cesena and Rimini areas, branch offices are now open to customers on Saturday mornings, as an added convenience for users. The requirements of the contractual quality objectives must also be adequately monitored and reported to the national regulatory authority, to ATERSIR and to users by publishing them in the bills. The service charters were published with the update of resolution 655/2015.

In addition, a new resolution, 547/2019/IDR, was issued on 17 December 2019 to supplement the current regulations governing the contractual quality regulation of the integrated water service, which will apply from 2020. This resolution includes an incentive/penalty system at the Italian national level, through an equalisation fund that will be distributed among the best-performing operators, identifying a mechanism that evaluates the performance of contractual quality, by grouping them into two macro indicators, weighted by the number of services; the performances provided in the reference year will be verified within the respective minimum standard specified by Arera (compliant services) with respect to all the services provided (compliant and non-compliant services). It also establishes that where improvement standards have been envisaged (as in the case of the Bologna and Modena ATOs), the minimum standards set out in the Arera resolution apply for the national incentive mechanism in question.

Since 1 January 2019 the Service Charter for the Municipal and Similar-to-Municipal Waste Management Service applies in all municipalities where Hera Spa provides the sanitation service.

The Service Charter is an instrument to protect citizens, as it sets the quality standards of the service, i.e., the characteristics of the main services provided by the operator and the timing within which they must be performed.

District heating service

In July 2019, the Arera commercial quality discipline came into force, also for the district heating market, under Resolution 661 of 2018. This resolution thus also included the services previously monitored by Hera on a voluntary basis, since 2008, and governed by the "District Heating Service Quality Charter" which also required the payment of automatic compensation to customers in the event of non-compliance with the commitments concerning "key services". Arera's resolution amended the economic values of the automatic indemnities set for the various categories of customers, as well as some of the quality levels covered by the regulations, within an overall framework that, however, confirmed the main quality indicators that Hera had already adopted on a voluntary basis, such as, for example, the time taken to activate the supply, to terminate the supply, to reactivate it in the event of suspension due to payment delinquency, or the times for providing quotes.

Compliance with quality standards

%	2017	2018	2019	Number of services provided (2019)
Gas	99.9%	99.7%	99.6%	2,819,849
Electricity	97.7%	98.6%	98.1%	63,287
Integrated water service	98.2%	97.7%	98.2%	224,157
District heating	97.8%	96.0%	95.6%	1,556
Total	99.7%	99.6%	99.5%	3,108,849

Includes the services for which customers must be automatically compensated if the company does not comply with the standard. The data on sales quality standards do not include EstEnergy.

The overall data are in line with 2018: in 2019, in 99.5% of cases, the Group provided the service requested by the customer within the timeframe set by Arera. This percentage has increased, on a like-for-like basis, from 95.8% in 2008 to 99.4% in 2019. Quality standards are close to full compliance for the gas services of Marche Multiservizi (99.9%) and those of AcegasApsAmga (99.8%).

Compliance with specific gas and electricity quality standards

%	2017	2018	2019	Number of services provided (2019)
Gas sales	92.7%	99.1%	99.7%	18,035
Gas distribution (end customers and sales companies)	99.9%	98.5%	99.6%	2,801,814
<i>Total gas</i>	<i>99.9%</i>	<i>99.7%</i>	<i>99.6%</i>	<i>2,819,849</i>
Electricity sales	95.6%	99.0%	99.7%	15,953
Electricity distribution (end customers and sales companies)	98.2%	99.7%	97.6%	47,334
<i>Total electricity</i>	<i>97.7%</i>	<i>98.6%</i>	<i>98.1%</i>	<i>63,287</i>
Total	99.8%	99.7%	99.6%	2,883,136
<i>Of which gas and electricity distribution</i>	<i>99.9%</i>	<i>99.7%</i>	<i>99.6%</i>	<i>2,849,148</i>

Includes the services for which customers must be automatically compensated if the company does not comply with the standard. The data on sales quality standards do not include EstEnergy.

In almost all cases, the individual services consolidated their good results compared with the times recorded in 2018. In particular, this year there was a confirmation of the highly frequent services provided: frequency of collection of meter readings for billing purposes (99.7% compared to 99.8% in 2018), punctuality range for appointments (100%, as in 2018) and activation of gas supply (99.8%, as in 2018). For the supply of electricity, most provided service, activation of the electricity supply, rose from 99.3% to 98.6%.

For the water service, the high standard of the most provided services was confirmed: compliance with the punctuality range for appointments (98.9%), transferring (98.8%), activation of the supply (94.4%) and deactivation of the supply (99.1%).

Initiatives for improving the quality of meter readings

As regards the **gas service**, Arera's resolution 117/2015/R/gas changed the frequency of readings, including a reading every four months, and the concept of periods relevant for meter reading. In response to this resolution, Hera Group has presented an improvement plan, approved by Aeegsi, to maintain the benefits added by the new regulation and, at the same time, optimise meter-reading workloads throughout the year. Starting 1 January 2016 a new meter reading plan is therefore operational, that includes:

- twelve attempts per year for customers with a consumption of more than 5 thousand m³;

- four attempts per year to take a meter reading for all customers with annual consumption between 501 and 5 thousand m³ instead of the two required for customers with annual consumption between 501 and 1,500 m³ and the three required for customers with annual consumption between 1,501 and 5 thousand m³;
- two attempts per year to take a reading for all customers with annual consumption between 0 and 500 m³, instead of the single meter reading required.

The improved meter reading plan adopted by the Hera Group makes it possible to increase the number of meter readings collected by the distributor, optimise the reading workloads and reduce the number of estimated readings.

From 2017, gradually in all the service areas, the reading plans for the various product sectors have been redetermined, with the aim of synchronising the schedules and thus achieving significant synergy between the various businesses. This new system has reduced the number of visits required at customer meters to obtain the readings required by the improvement plans previously introduced.

As regards the **water service**, Arera's resolution 218/2016/R/idr added new meter reading frequencies, and the concept of a minimum time between readings. In the face of this resolution, and thanks to Hera Group's orientation that had already gone in the direction of maximising the collection of measurement data, the new meter reading plan, initiated on 1 July 2016, includes:

- twelve attempts per year to take a reading for all customers with annual consumption above 1,800 m³ instead of the two required for customers with an annual consumption between 1,800 and 3 thousand m³ and the three required for customers with annual consumption above 3 thousand m³;
- four attempts per year to take a reading for all customers with annual consumption between 500 and 1,800 m³, instead of the two required;
- two attempts per year to take a reading for all customers with annual consumption between 0 and 500 m³, in line with the requirements of the resolution.

Two reading attempts are also made on meters off contracts in order to identify potential irregular withdrawals or other losses.

By doing so, the meter reading plan has made it possible to increase the number of readings actually taken, making it easier to identify leaks, and improve the quality of the billing (a smaller percentage of consumption is estimated).

During 2018, the provisions of Arera's Resolution 218/2016 were also followed up with regard to the advanced notification of a second pass to read meters for non-accessible water meters, when the first pass failed. For those who have not opted for a specific notification system, the reading companies have implemented preventive notification with leaflet distribution using stickers, which also give users the opportunity to leave a self-meter reading if they expect to be absent.

Moreover, from 2019, at the end of each monthly collection campaign, an SMS is sent to customers of meters for which the reading attempt has failed, reminding them how to provide the reading independently.

At the end of 2019, devices to allow remote reading were installed on a limited number of meters on a trial basis and on a limited number of meters also for the water service.

Also in the **field of remote readings**, intense operational and control and monitoring activities were carried out during the year from the remote reading systems control room, which is also fundamental for optimising maintenance activities in the field, thus ensuring an excellent availability of meter reading data. An optimisation introduced during the year was the systematisation of the management of the electronic meters undergoing temporary maintenance, by means of a manual reading run, always with the aim of minimising the use of estimated readings.

At the end of 2019, the Hera Group achieved the targets it had set for that year, with over 710 thousand electronic gas meters in operation, 43.1% of the total. If electronic meters for the electricity service are also taken into account, this percentage rises to 54.1%. We plan to pursue the plan to install electronic gas meters so as to reach 82% of electronic gas meters installed by the end of 2023, thus reaching 85% of electronic gas and electricity meters, and to install over 40 thousand NexMeter meters by the end of 2020.

In 2019, the new meter with advanced safety functions designed and developed by Hera began to be fully part of the Group's equipment pool. The presentation of the electronic counter was made in November during the prestigious European Utility Week event.

As in 2018, again in 2019, investments in smart metering gas benefited from the "Industry 4.0" hyper-amortisation incentives for investments in the high-tech sector. During 2019, the operating tools used to manage equipment for mass-market remote meter reading (meter classes G4-G6) were further consolidated. The radio network used for remote meter reading has been extended to more towns and in 2020 it will cover almost all the major city centres the Group serves. Furthermore, work is continuing for recovery and enabling communication for the equipment installed in the years in which the central communication and acquisition systems were not yet active.

Initiatives for improving billing quality

In 2019 we launched a project that aims to profoundly change the Group's billing model.

The technological development of the new generation of meters, which offers the opportunity to access almost in real-time to detailed information on customer consumption, becomes the enabling factor to define a new billing model, linked to reading cycles, and based on automation and integrated control management.

In this context the project, in the first steps, will change the billing frequency from bimonthly to monthly (or seasonal) for a selected set of customers to increase customer satisfaction by using real data more frequently.

With this project, attention to customers is expressed by an increasingly frequent use of real readings to calculate bills and a better distribution of the cost over time that makes it easier for customers to manage their financial deadlines, and reduces any need for instalments. No other contractual conditions are changed and the multi-service bill is maintained.

To achieve these objectives, in 2019 the project was divided into the following phases:

- identification of a sample of about 50 thousand customers to change the billing frequency of;
- sending contract amendment letters to selected customers to inform them of the switch to monthly billing and the possibility of remaining billed on a bimonthly basis (only about 10% of customers asked to maintain the previous frequency);
- switch-over of the billing systems and start of billing on a monthly basis.

Given the positive result, the number of customers affected by the change in billing frequency will continue to grow in 2020 and the development of advanced offers based on actual customer consumption curves will continue.

Quality of drinking water

[416-1] [416-2]

In 2019, to ensure control of the quality of water supplied, the Group's laboratories in Emilia-Romagna, Triveneto and Marche performed **406,957** analyses on drinking water, including all the analyses performed for the aqueduct process as a whole (tanks, networks, wells, plants, etc.). Of these, 63% were carried out on samples collected in the **distribution networks**. Substantial stability continues in the relationship between the analyses carried out on the distribution network and those carried out on the plants, aimed at effectively preventing non-conformities.

Quality checks on the water used to produce water for drinking and for human consumption are governed by Italian Legislative Decrees Nos. 152/2006 and 31/2001, respectively.

The checks are carried out by the water service operator and the local health authorities at the **source sampling** points, at the water purification and accumulation plants, and along the **supply** and **distribution networks**.

Hera has consolidated a Group Control Plan which describes the **sampling points** and the **analysis methods used** (parameters and frequencies of the analyses). The Control Plan is developed on the basis of guidelines that focus on the water's chemical, **physical** and **bacteriological** characteristics, so as to fully comply with legal requirements and ensure a top-quality product. In 2018, AcegasApsAmga revised its water quality monitoring programming to improve the monitoring of the most critical parameters.

Water quality also means monitoring the effectiveness of the **treatment processes**. For example, the water is checked for chlorites and trihalomethanes, which come from, respectively, the use of chlorine dioxide and sodium hypochlorite as disinfectants. The **concentration of chlorites** and **trihalomethanes** in the distribution network is kept under constant control in line with the **regulatory limits**.

Since 2008, the average data recorded for the **pH, total hardness, dry solids at 180 °C, chloride, fluoride, sodium, nitrate, nitrite, and ammonium** has been published on the Group's website, listed by individual municipality, and updated every six months. Since 2012, this set of parameters has been extended to include four others: **calcium, magnesium, sulphates, and total alkalinity**. These 13 parameters are considered to be representative of the quality of the **drinking water distributed** and can be used to draw comparisons with the quality of bottled water on the market.

Starting from the second half of 2014, the set of parameters was further expanded with six additional parameters as required by Arera: **conductivity, potassium, arsenic, bicarbonate, residual chlorine, and manganese**. As such, 19 parameters are published, one more than the number determined by the regulatory authority.

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Since 2012, the **tap water label** has been present in Hera's bills as well as on its website. Customers can find the data on the quality of the water distributed by Hera in their municipality (updated every six months), directly on their bill. The report concerns 165 municipalities in Emilia-Romagna where Hera manages the water distribution service and includes the values of 19 water quality parameters, compared with the regulatory limits (alkalinity from bicarbonates, total alkalinity, ammonium, arsenic, calcium, free chlorine, chloride, conductivity, pH, hardness, fluoride, magnesium, manganese, nitrate, nitrite, potassium, dry residue at 180 °C, sodium, and sulphate). The AcegasApsAmga website includes water quality data for the municipalities served in the Padua and Trieste areas, which are updated constantly.

Since January 2009, all drinking water production plants in Romagna have been operated by **Romagna Acque – Società delle Fonti**, the company set up for this purpose by the local regional administrations of Romagna. As a result, the water distributed in the Forlì-Cesena, Ravenna and Rimini areas is in large part purchased wholesale from that company, and Hera's involvement in quality is limited to **operating the networks and the supplementary disinfection stations** along the distribution networks.

The assessments of the quality of distributed drinking water, as compared to the quality of mineral water, are carried out based on the analytic parameters which are commonly surveyed at the representative sampling points of the aqueduct networks: pH, total hardness, dry residue at 180 °C, sodium, fluorides, nitrates, nitrite, chlorides, calcium, bicarbonate alkalinity, manganese, potassium, sulphate. The parameters chosen are largely indicative of the saline components the drinking water should have.

Once again in 2019, the average values for Hera's water are comparable with those of commercial mineral waters and no exemptions were granted from compliance with the limits set by Italian Legislative Decree No. 31/2001. The only average result found by Hera, higher than that found on the labels of 17 mineral waters

on the market, is nitrates in the areas of Modena and Padua; the average value found in 2019 in the water distributed by Hera is in these cases below the regulatory limit of 70-72%.

Quality comparison between water distributed by Hera and mineral waters on the market

	Mineral waters (min-max)	Tap water limits Leg. Dec. 31/2001	Bologna	Ferrara	Forlì-Cesena	Modena	Padua	Pesaro-Urbino	Ravenna	Rimini	Trieste
pH	6,5-8,1	6,5-9,5	7.5	7.6	7.7	7.5	7.6	7.7	7.7	7.6	7.8
Hardness (°F)	1-88	50*	30	21	24	33	25	29	22	27	20
Dry solids at 180°C (mg/l)	22-987	1.500*	441	356	369	564	310	399	404	441	248
Sodium (mg/l)	0,3-67	200	26	22	16	57	5	24	27	27	9
Fluorides (mg/l)	0,03-1	1.5	<0.10	<0.10	<0.10	<0.10	<0.10	0.2	<0.10	<0.10	<0.10
Nitrates (mg/l)	1-9	50	7	6	6	15	14	6	5	9	7
Chlorides (mg/l)	0,2-80	250	34	29	20	91	9	30	35	35	14

* Recommended value.

Comparison carried out with the data provided on the labels of 17 widely available mineral waters. The data on drinking water express the averages of the analyses carried out according to the frequency and withdrawal points on the distribution network outlined in the control and monitoring plan for the water cycle.

If even a single parameter is not compliant with regulatory limits, **Hera takes immediate action to restore compliance of the water** (by washing pipes, checking disinfection, etc.), also based on the instructions of the local health authorities. For hygiene, health, and public safety reasons, municipalities may issue orders declaring that the water is not fit for drinking for specific periods. In these cases, it may be prohibited to use water for cooking and drinking, or particular precautions will need to be adopted (e.g., boiling in case of microbiological non-compliance), while in general, the water can continue to be used for all other purposes.

In 2019, 37 orders were issued, involving about 13 thousand users:

- one order concerned an area of the Novafeltria (RN) municipality and affected 694 users for 5 days;
- one order concerned an area of the Verucchio (RN) municipality and affected 12 users for 4 days;
- one order concerned an area of the Camugnano (BO) municipality and affected 8 users for 14 days;
- 34 orders involved municipalities in the province of Pesaro-Urbino and affected about 12 thousand inhabitants for an average of three days.

Two orders (one issued by the municipality of Verucchio and one by the municipality of Camugnano) were issued as a result of the detection of microbiological contamination indicators, a phenomenon that disappeared when disinfection resumed. The order issued by the municipality of Novafeltria, following an increase in turbidity due to weather phenomena, was resolved by carrying out mains washing and disinfection.

In AcegasApsAmga's service area, no orders were issued by mayors on the unsuitability of drinking water.

As to the presence of **cement-asbestos** pipes in the aqueduct network (see paragraph "Sustainable management of the water resources" for more data), note that asbestos was used in construction and other industrial sectors until the end of the 1980s, and was definitively banned in 1992. While it has been recognised that the inhalation of asbestos fibres causes serious respiratory illnesses, there is no evidence of toxicity linked to the ingestion of asbestos. In fact, current regulations on the quality of water for human consumption (Italian Legislative Decree No. 31/2001) do not set limits for the presence of asbestos fibres. In

particular, Ministerial Decree of 14 May 1996, Annex 3, references a WHO (World Health Organization) document which states that "There is, therefore, no consistent, convincing evidence that ingested asbestos is hazardous to health". The WHO reiterated this stance in the 2011 update of its Guidelines on drinking water quality (fourth edition - World Health Organization 2011). European and Italian legislation is aligned with the position of the WHO and does not set limits for the presence of asbestos in water destined for human consumption. In 2015, the Italian National Health Institute (Istituto Superiore di Sanità) reiterated these positions once again in one of its statements in which, among other things, it states that: "On the basis of our current knowledge and the conclusions of the international institutions of reference, the water situation must not be regarded as an imminent risk for public health either in terms of eventual fibres ingested or as regards concentrations potentially transferred from the water media to the air media".

In the same communication, the Italian National Health Institute specifies, as the only reference limit, (not a parameter value) the one defined by the US EPA (Environmental Protection Agency) as seven million fibres/litre for fibres longer than 10 µm.

In terms of monitoring, Hera carries out regular checks to determine if asbestos fibre is present in the water it distributes and the level of maintenance of the pipes. Every year since 2003, Hera has prepared and applied a specific Asbestos Control Plan, which outlines the details of the sampling points that are most representative for the presence of asbestos cement, the frequencies and the analytical parameters to analyse. Over 253 inspections were carried out during 2019 and they confirm that most of the samples (over 97%) contain no asbestos fibres. In no case has the EPA limit of seven million F/L been exceeded and even the highest value found in 2018 was one thousand times lower than this limit. The water distributed by Hera has aggressiveness levels generally above 12 (non-aggressive with respect to the cement base).

For further details on the quality of the tap water distributed by Hera, see the "In Buone Acque" (In Good Waters) report, a publication entirely dedicated to the quality of tap water that Hera has been publishing annually since 2009 with the collaboration of local health authorities and Romagna Acque.

The new technical quality of the water service

Arera introduced the Integrated Water Service Technical Quality Regulation in its Resolution 917/2017. The resolution requires monitoring:

- **Three specific indicators** concerning interruptions of aqueduct services; exceeding the corresponding standard values will result in automatic compensation being paid to users;
- **Six macro-indicators** to which an incentive/penalty system is associated, three of which relate to the aqueduct service, one to the sewage service, and two to the purification service.

The incentive/penalty system will become operational from 2020. For access to this system, Resolution 917 requires the possession of certain prerequisites: a drinking water quality control system, no urban areas included in European infringement procedures, and minimum quality levels of metering data (process and user data). The existence of all the prerequisites has been recognised for all Hera Spa operations.

During 2019, we continued to pursue the improvement objectives set out in 2018 concerning the class positioning in the 2016 reference year. At the date of preparation of these financial statements, Arera has not yet activated the 2018 reporting process.

The operating actions, both in terms of specific investments and in terms of management actions, concerned in particular countering both physical and administrative water leaks with a related programme to renovate the user meter inventory, improving water quality parameters (drinking water and wastewater), and certain aspects of sewage network management.

We also started a complex project with the IT Systems Department to automate as much as possible the registration and subsequent reporting to Atersir and Arera of all the required technical quality data, integrating into the SAP environment also data previously managed in other company modules/applications. We will complete the IT project in 2020.

We have also set up a specific Quality System procedure to handle this data.

Application of the new Water Safety Plans

In October 2015 Annexes II and III of directive 98/83/EC were amended by EU Directive 2015/1787 that introduced the Water Safety Plans methodology. More specifically, Annex II introduces a certain degree of flexibility in the execution of checks, also allowing for a reduction in frequency if risk management/assessment is performed as per international standards, namely EN 15975-2 concerning water supply safety and WHO guidelines (Water Safety Plan). In June 2017 the Italian Ministry of Health issued a decree implementing the directive.

During 2019, the Water Safety Plans for two water supply zones in the province of Ravenna were completed: Casola Val Senio and Massa Lombarda. Such plans are in addition to four water supply zones for two aqueducts in the province of Bologna: San Giovanni in Persiceto, industrial aqueduct of Imola, Imola and Dozza.

In 2020, the permitting process is scheduled to start for the first six plants, and include:

- reporting by computer (by access to the cloud portal) to the Italian National Health Institute and to the Ministry of Health;
- investigation by the Italian National Health Institute, possibly requesting changes or additions;
- final approval by the Ministry of Health after the successful conclusion of the Italian National Health Institute's investigation.

This procedure, informally specified by the Italian National Health Institute, should be defined in a forthcoming decree of the Ministry of Health not yet published at the date of approval of this report.

European and Italian regulations have not currently set a deadline for the definition and approval of Water Safety Plans. At present, a target date of around 2028 is expected, taking into account the contents of the new European Drinking Water Directive and the related approval and transposition times. In any case, taking into account the high number of supply zones (about 400) of the aqueducts operated by Hera Spa, we have had to work for structures of typological plans automating, as far as possible, the completion of check-lists and risk matrices. In terms of priorities, we envisage gradually implementing the plans for the most densely populated supply areas. In 2020, we expect to complete the plans started in 2019 (supply zones of Modena, Castelfranco, Piumazzo, Spilamberto, Bondeno-Stellata, Castel del Rio, Castel del Rio Belvedere-Casoni, Borgo Tossignano) and start the supply areas of Pontelagoscuro and Romagna (in collaboration with Romagna Acque Società delle Fonti) in the second half of 2020.

In 2019, in **AcegasApsAmga's** area we identified the water systems of Padua and Trieste, collected the documentation on the water supply chain and prepared the business intelligence model used to process risk data. The main hazard classes identified were: microbiological hazards, chemical hazards, physical hazards, radiological hazards, and acceptability hazards.

To process the risk model, AcegasApsAmga prepared a business intelligence model that will support it in processing the risk matrices. During 2020 AcegasApsAmga plans to:

- identify the hazards and dangerous events;
- implement the business intelligence model;
- define new criteria for safeguard areas;
- evaluate the historical and statistical data collected;
- severity assessment for chemical and microbiological risks;
- identification of control and monitoring measures;
- risk reassessment and identification of priorities.

Safety and continuity of the service

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Safety and continuity of the electricity service

In 2019, the distribution networks operated by Inrete distributed approximately 2,240 GWh of electricity to around **262 thousand users** in 24 municipalities of the provinces of Bologna, Modena, and Ravenna in Emilia-Romagna. Also, we distributed about 847 GWh of electricity to **more than 163 thousand users** served by AcegasApsAmga, in the municipalities of Gorizia and Trieste.

The electricity grids operated by **Inrete** at 31 December 2019 are 10,389 kilometres long, 73.2% of them carry low voltage, 26.4% medium voltage, and 0.3% high voltage. 41.6% of the lines are underground, and the rest are overhead lines.

In the **Triveneto** region, AcegasApsAmga operated 2,286.6 kilometres of network, 65.4% of them carry low voltage, 34.4% medium voltage, and 0.2% high voltage. 69% of the lines are underground.

Arera's provisions on the service quality of distribution, metering and sales of electricity (approved by Resolution 646/2015/R/eel) govern the continuity of the electricity distribution service for the 2016-2023 regulatory period. That resolution also identifies the indicators to use to measure power cuts, the monitoring systems, and the reference standards.

The indicators related to power cuts originating in the medium and low voltage grids express:

- the total annual duration of long power cuts without advance notice, for low voltage customers;
- the total annual number of long and short power cuts without advance notice, for low voltage customers.

For the 2016-2023 regulatory period, **Inrete** and **AcegasApsAmga** have approved the reduction of power cuts originating from the medium and low voltage grids attributable to external causes. The above indicators, therefore, are calculated inclusive of external causes. Target levels and trend levels for these indicators have been set for each area served by Inrete by Arera's 702/2016/R/eel resolution, applicable to this regulatory period (2016-2023). In 2016 we complied with the trend levels set by Arera.

For 2017, Resolution 605/2018 awarded about Euro 1 million overall as incentives to **Inrete** Distribuzione Energia for electricity distribution service continuity recoveries. For 2018, as a result of the investigation on Inrete in the proceedings for the definition of the measure on service continuity for 2018, Inrete Distribuzione Energia was awarded total incentives of about Euro 1 million for electricity distribution service continuity recoveries.

AcegasApsAmga also takes part in the incentive/penalty system for continuity recoveries for the electricity distribution service, set out in resolution ARG/elt 646/15. In 2019, based on the quantity and duration of outages without advance notice in 2018 as a reference, we were entitled to two incentives for the two areas for a total of about Euro 277 thousand.

Continuity of the electricity service

	2018	2019	2018-2019 average	2019 trend
Average number of power cuts per customer in high concentration areas	1.11	1.42	1.22	1.22
Duration of power cuts (minutes) per customer in high concentration areas	11.66	13.32	13.65	28.00
Average number of power cuts per customer in medium concentration areas	2.81	1.52	1.58	2.78
Duration of power cuts (minutes) per customer in medium concentration areas	38.03	16.21	17.49	45.00
Average number of power cuts per customer in low concentration areas	5.39	4.93	4.24	5.01
Duration of power cuts (minutes) per customer in low concentration areas	66.24	47.11	40.95	68.00

The average figure applies to power cuts of the low voltage service, without advance notice and due to causes for which the operator is responsible. The power-cut duration minutes apply to power cuts that last more than three minutes. The 2019 trend is the objective of the indicator for 2018-2019.

The 2019 figure confirms the good level of continuity of the electricity distribution service and, for all the reference indicators, is below the trend and/or target levels set by Arera.

The increase in active connection requests for 2019 is mainly due to a regulation that simplified access to the Distributor's network, as specified by Italian national and regional laws that require the installation of renewable source systems, the publication of a new incentive season on renewable sources, and a reduction in the unit price of production plants considered as components, both for new buildings and for major refurbishing/rebuilding.

Gas distribution service safety and continuity

The Hera Group manages the gas distribution service with the objective of ensuring high safety and service continuity levels.

The network, classified as having a high probability of leakage, is defined as the sum of:

- the high-pressure network;
- the network made of materials that are not compliant, according to Arera's Resolution;
- the network laid in areas subject to hydro-geological instability;

For this type of network, 100% of the network must be inspected annually.

The resolution mentioned above governs the quality of the gas distribution service and has further increased the safety standards for the current regulatory period (2014-2019). This increase was substantially in line with the previous standards observed by Hera and with the company's mid- and long-term objectives. The changes to the regulations did not therefore have any particular impact on Hera or any significant negative impact on the continuity of its objectives and activities. Specifically, the resolution added more stringent requirements on the inspection of networks, on odorising and on incentives to upgrade the odorising systems.

Since 2010, gas distribution companies have been required to participate in a system of incentives for safety improvements in the service defined by Arera, which assesses four aspects:

- compliance with **service level requirements**, **no gas-related accidents** falling under the responsibility of the operator, **no breaches** in this area related to Arera's controls or inspections;
- the number of measurements of the **level of gas odorising** compared to the required minimum;

- the number of conventional **leaks** reported by third parties compared to the objective set by Arera for the period;
- the number of upgraded **odorising plants** (flow-proportional, remote-controlled injection-type odorising plants).

For 2019, the regulatory authority has not yet approved the economic values of **incentives and penalties** for Inrete. The balance between incentives and penalties for the gas distribution service for the provincial areas served in Emilia-Romagna is expected to amount to approximately Euro 1.8 million. In particular, we obtained positive results both for the component relating to odorising and for the component regarding leaks reported by third parties. In 2020, the Italian regulatory authority is expected to publish the measure that determines these values as well as the results obtained by the distribution companies in 2018. For 2019, for AcegasApsAmga, incentives for odourisation and leaks are estimated at Euro 1.1 million, and penalties are estimated at Euro 25 thousand.

Gas emergency services

	2017	2018	2019
Average arrival time at the call location (min)	37.4	36.5	32.6
Calls with arrival time at the call location within 60 minutes (%) (service requirement 90%)	96.2%	96.7%	97.0%

Arera's Resolution 574/2013 "Consolidated Law for the regulation of the quality and rates of gas distribution and metering services for the regulatory period 2014–2019" (TUDG) establishes that the distribution company must comply with the minimum annual percentage service requirement of 90% of calls with arrival time at the call location for emergency services within no more than 60 minutes.

Our gas emergency services reports confirm full compliance with the regulatory requirements, as 97.0% of all calls arrived on site within 60 minutes (compared to Arera's service requirement of 90%). It should also be noted that, also pursuing a logic of industrial effectiveness and efficiency, the decrease in reports from third parties, including those related to the planned optimisation of the leakage research project, has reduced the average on site arrival times, even in the face of broad compliance with the service requirement. In 2019, **97.0% of the approximately 21 thousand calls** made by the Group was complied with in **less than 60 minutes**, against Arera's service requirement of 90%. For this indicator, Inrete recorded 96.1% while AcegasApsAmga recorded 99.7%, and Marche Multiservizi recorded 96.9%.

Inspections and leaks in the gas network

	2017	2018	2019
Percentage of total high and medium-pressure network inspected (service requirement 100% in three years)	58.0%	60.5%	62.4%
Percentage of total low pressure network inspected (service requirement 100% in four years)	74.7%	78.9%	85.0%
Number of leaks on distribution network located upon inspection, per kilometre of network	0.059	0.071	0.105
Number of leaks on distribution network located upon notification by third parties, per kilometre of network	0.037	0.035	0.031

In 2019, **the percentage of the network that was inspected was significantly above the minimum standard** required by Arera (100% for the high and medium pressure network in three years and 100% of the low pressure network in four years). In fact, at Group level, more than 62% of the high and medium pressure network and 85% of the low pressure network was inspected.

In 2019, we launched the **new system for planning and managing the scheduled leakage detection** for the gas network; the work is scheduled using machine learning algorithms aimed at optimising the effectiveness of the checks (maximising the number of leaks found) and minimising inspection routes in order to maximise daily productivity.

The actual figures after the first year of operation of the new management system used to manage scheduled gas network leakage detection show the consistency between them and the objectives of the scheduling tool. In fact, compared to a quantity of network inspected in 2019 that was about 4% less than the previous year, the number of leaks detected increased by about 46% compared to 2018. In addition to pursuing industrial efficiency objectives, this performance aims at constantly improving the company's safety standards, which are already in themselves better than the reference values stated in the sector's technical regulations, as can be seen in the decrease of about 18% in leaks reported by third parties.

In 2019, in the Group's entire gas distribution network, **31 leaks were reported by third parties**, per thousand kilometres of network, compared to 35 in 2018. On the other hand, **in 2019, 105 leaks** were identified by means of inspections on the Group's distribution network per thousand kilometres of network, compared to 71 in 2018.

In 2019, the new system for scheduling and managing scheduled inspections of the gas distribution network went into full operation. The system is made up of an artificial intelligence platform with machine learning models to schedule and optimise inspections, complemented by a web service for the operational management and reporting of the activities performed. The aim of the system is to maximise inspection activities to ensure an ever-increasing level of safety and quality of the distribution service. The criteria for planning and carrying out gas network inspections are confirmed as set out in the Group's operating instructions that implement Arera's Resolution 569/2019. As in 2018, the work is carried out entirely by internal staff, the scheduling is defined by maintenance algorithms that dispatches schedules to the teams with mapping support as optimised road routes to minimise mileage and inspection times so as to increase effectiveness and reduce the environmental impact of the operations.

In 2019, Hera's distribution company, Inrete, continued to plan and execute a series of inspection campaigns for underground and above-ground connections.

Scheduled searches for gas leaks continued throughout 2019, also applied to above-ground system components, in particular:

- the **systematic check to ensure there are no leaks** on network elements (valves, vents, crossings, etc.) is carried out during scheduled periodic operating/maintenance activities;
- concurrent with routine operations on meters, (e.g., activations, closures, checks on metering assemblies), a **check using instruments is carried out on the above-ground connection and on the meter being worked on to ensure that there are no leaks.**

The technical call centre

Receiving and diagnosing the telephone calls made to the toll-free emergency services numbers is of key importance, since the calls can be used as actual reports of disruptions to the service being provided.

The technical call centre service has toll-free numbers for each service (gas, integrated water service, and district heating), and area (Emilia-Romagna and Triveneto) in addition to a joint toll-free number for the entire Group for public bodies (fire service, municipalities, provincial administrations, prefectures, police stations, AUSL local health authorities, ARPA environmental protection agency, law enforcement agencies, port authorities, etc.).

Percentage of calls received by the technical call centre and answered (within or after 120 seconds) or abandoned within 120 seconds

	2017	2018	2019
Gas	98.8%	98.7%	98.6%
<i>of which for the gas emergency services (minimum percentage required by Arera is 90%)</i>	97.5%	97.4%	97.4%
Water service	96.9%	98.1%	98.0%
<i>of which for water emergency services (general level 90%)</i>	93.1%	94.7%	95.0%

Excluding Marche Multiservizi. The percentage of calls for emergency services for gas and water is calculated according to criteria defined by Arera, considering the calls received, answered, or abandoned within 120 seconds.

Average technical call centre waiting times

s	2017	2018	2019
Gas	49.4	54.5	54.6
Water service	67.8	60.2	69.9
Number of calls	354,424	339,361	317,956
<i>of which for the gas emergency services</i>	98,942	104,579	100,006
<i>of which for the integrated water emergency services</i>	255,482	234,782	217,950

Excluding Marche Multiservizi.

In 2019, the technical call centre in Forlì received about 318 thousand calls, slightly down compared to 2018. The percentage of calls answered by the technical call centre within 120 seconds in the water service remains substantially stable for both the gas and the water service.

During 2019, we undertook an evolutionary development process for the technical call centre, in the light of the new technologies available, aimed at improving its performance, the quality of the services provided, and maximising internal efficiencies. In particular, in this project, by extracting information from the large amounts of data available in the recording infrastructure, and by using innovative automatic or semi-automatic methods, it is possible to convert audio recordings into unstructured documents to extract the implicit information contained in the conversations.

The safety downstream of the meter

As a result of Arera's Resolution 40/2014/R/gas, when a request is made to activate a gas supply, and in some cases to reactivate a gas supply, the safety of the gas system must be checked. The scope of application of the inspection applies only to user systems with non-technological use of gas (e.g., domestic use, boilers for heating, etc.).

In 2019, a total of 5,269 safety inspections were carried out for **Inrete**, of which 4,186 were for new systems, and 1,083 were inspections of modified or transformed systems. Of the 5,269 inspections, 4,225 passed and 1,044 did not pass. In addition to the work done by the assessment department, 187 cases were also found to not be subject to assessment (e.g., Tariff T1 – Production) and were cancelled by the seller dealing with the case.

AcegasApsAmga handled 2,686 inspections of which 2,371 on new user systems and 315 on modified or transformed user systems. Of the 2,686 inspections, 2,141 passed, and 545 did not; in addition to the inspections, 141 cases were not subject to inspection and were subsequently cancelled by the seller dealing with the case.

When activating gas supplies, Inrete carries out another key safety check: the inspection of the actual integrity of the user's system (downstream of the meter) to ensure that there are no gas leaks from the customer's system, before activating the gas supply. Also, if a fault occurs downstream of the meter, and

Inrete's emergency services locates a gas leak in an end customer's system, it immediately suspends the supply in order to eliminate the dangerous situation. The supply is then reactivated only after a qualified installer fixes the system so that it no longer leaks and issues the resulting technical documentation that proves the integrity of the user's system.

Since 1 January 2017, a new enhanced insurance policy for end customers is in force to cover accidents caused by the use of natural gas and LPG supplied through the network. The new policy lasts four years (from 2017 to 2020) and has higher limits for fires and injuries. The changes were introduced by Arera's resolution 223/2016/R/gas. In particular, under the policy, anyone using combustible gas (natural gas or LPG) provided by urban distribution or transport networks, automatically receives insurance coverage against accidents that is valid throughout Italy. End customers other than residential or condominium customers using meters above G25 class and users of automotive methane are not covered. Coverage is provided for civil liability toward third parties, fires, and injuries that originate in the systems and/or devices downstream of the meter. The insurance policy is stipulated by Comitato Italiano Gas [Italian Gas Committee].

The continuity of the water service

The water network control activity index is expressed as a percentage of the network inspected for leaks.

In 2019 a total of 10,816 kilometres of network were inspected by the Group, corresponding to 31.1% of the total. In Emilia-Romagna the organisation of the leak detection activity was based on a criticality analysis in terms of network losses, breakage indexes of the pipes, and possible issues concerning the availability of water resources (in particular during the summer).

The continuity of the water service

	2017	2018	2019
Percentage of network subject to active leak detection	26.8%	27.7%	31.1%

Customer relations

The call centre

The increase of informative and commercial contacts confirms our customers' appreciation for this channel, which they use to resolve their needs practically and effectively. The growing number of customers that call the call centre from a mobile phone testifies to the success of the company's decision in 2016 to make this method free of charge.

Quality of the call centre for residential customers

	2017	2018	2019
Average waiting time at the call centre for residential customers (s)	34	36	27
Calls with satisfactory outcomes for residential customers (%)	95.7%	95.6%	95.9%
Number of residential customer contacts at the call centre (thousands)	4,268	4,496	4,859

The average waiting time, based on a telephone call by a customer that wishes to speak to an operator, is the time between the moment a request is made to talk with an operator and the beginning of the conversation. It does not take into account the initial information provided by the automatic answering system. The data refer to the call centres of Hera Comm, AcegasApsAmga, EstEnergy, and Marche Multiservizi.

For the **residential call centre for the household market**, 2019 shows an improvement in technical indicators despite the 8% increase in calls handled by call centre operators. The level of service improved by 0.3 percentage points (from 95.6% to 95.9%), while the average waiting time decreased by 9 seconds (from 36 to 27), and the waiting time decreased by over 2 minutes, almost 3 percentage points (from 8.9 to 6.1). The increase in contacts was particularly notable in the first half of 2019 and is mainly due to the substantial change in the application of water rates together with other issues related to billing. For 2020, the objective is to ensure the improvement trend of the indicators by improving the forecasting tools for calls.

Starting in May, following the acquisition of the CMV Energia&Impianti business unit, the call centre service was extended to customers in the upper Ferrara area. The first step was to ensure continuity with the previous service and then, during 2019, to provide all the services planned for Hera Comm's customers.

The improvement trend in customer satisfaction indicators continued, with an increase of 1.3 points in customer satisfaction to 88.1 points, and a decrease of one percentage point in dissatisfied customers (from 7.8% to 6.8%).

Among the actions identified to improve customer satisfaction in 2020, there is a project aimed at improving the **handling of information requests on bills, payments, and contracts**, which account for 60% of customer contacts. The aim is to provide increasingly precise and targeted answers to satisfy the customer on their first contact. The project involved an initial part to survey the requirements, by shadowing operators and analysing requests with text mining tools, followed by a second part to analyse the results and prepare specific integration modules on the internal knowledge management system, and training modules for operators.

The **Paperless project**, designed to dematerialise bills and contractual documentation sent to customers was particularly noteworthy in 2019. The involvement of all the call centre staff, external suppliers and the collaboration with the back office structures made it possible to reduce to a physiological minimum the bills sent on paper, increase e-billing, and significantly reduce the paper used to send contractual documentation.

Quality of the business call centre

	2017	2018	2019
Average waiting time at the call centre for business customers (s)	38	31	24
Calls with satisfactory outcomes for business customers (%)	94.7%	95.5%	96.0%
Number of business customer contacts at the call centre (thousands)	393	379	348

The average waiting time, based on a telephone call by a customer that wishes to speak to an operator, is the time between the moment a request is made to talk with an operator and the beginning of the conversation. It does not take into account the initial information provided by the automatic answering system. The data applies to the call centre of Hera Comm.

The technical indicators improved also for **businesses**, in 2019. The Service Level improved by 0.5 percentage points (from 95.5% to 96.0%), the average waiting time decreased by 7 seconds (from 31 to 24) and the waiting time decreased by over 2 minutes, almost 2.5 percentage points (from 7.6% to 5.2%). Satisfaction indicators for the call centre business also improved (from 82.1 to 84.4) with a 1.8-point drop in dissatisfied customers (from 11.8% to 10%).

As regards Hera Group's commercial call centre, calls are handled by the staff of specialised Italian companies whose operations are located mainly in Italy and in particular in the provinces of Bologna, Padua, Venice, and Turin.

Our trade promotion is carried out by Italian-based and Italian-owned sales agencies, that rely on operating units both in Italy (predominantly) and abroad. Their staff is employed directly by these sales organisations, who have signed a standard agency mandate with Hera Comm.

Considering also the operations of the emergency services call centre for gas, water, and district heating services, which is always staffed to respond to breakdowns, and is located in Forlì, in 2019, over 98% of calls were handled from Italy.

The branch offices

The average waiting time at branches has improved compared to 2018 both at Group level and in each individual company.

Average waiting times at branch offices

Min	2017	2018	2019
Hera	9.7	8.2	8.0
AcegasApsAmga	16.0	12.3	11.4
Amga Energia&Servizi	7.7	-	-
Marche Multiservizi	12.5	9.4	13.2
Weighted average on contacts	10.6	9.6	9.4
Number of contacts	764,640	915,921	998,358

The performance of the Group's branches improved overall and the higher number of customers compared to 2018 in all areas did not adversely affect the results achieved.

Overall, inflows to the branch offices increased by around 9% during the year. The increase in inflows was mainly concentrated in the first part of the year and mainly concerned issues such as water pricing and e-billing. In order to continue to provide high service levels, we upgraded the branch offices, and at the end of 2019 the average waiting time was even slightly shorter than it was in 2018. The percentage of customers waiting more than 40 minutes also decreased further: from 2.4% to 2.2%. These service levels have also been achieved by implementing a new reception model that directs customers better and takes care of the simplest procedures quickly. Customer satisfaction also increased from 88.1 to 88.7, as measured by an independent agency.

The branch offices also contributed to the process of dematerialisation of contracts and invoices, expanding the use of digital signatures on tablets, and suggesting that customers switch to e-billing.

Hera Comm has also pursued an investment strategy on a new, more functional and welcoming layout for the Hera Comm branch offices. In 2019, several contact points throughout the service area were renovated: the branch offices in Faenza, Sassuolo, Maranello, Massa Lombarda now have renovated their premises, with larger spaces, a greater number of desks to minimise waiting time, new sound-absorbing materials to protect privacy, and a new reception desk to welcome and give faster and more targeted answers to customers' needs.

The acquisition of CMV Energia&Impianti at the beginning of 2019 led to our expansion into the Upper Ferrara basin, with energy services and thus contributed to increase our customer base. Thanks to this acquisition, we have been able to quickly adapt the branch office in the city centre of Ferrara to Hera Comm's model and offer an additional reception point for Ferrara's customers, also to handle quantity-based tariff for waste collection services.

In total, considering Hera's entire service area and those of its subsidiaries AcegasApsAmga, Marche Multiservizi and EstEnergy, there are 117 branches. Adding those outside the area brings the total to 159 branches throughout Italy.

Complaint management

In 2018, there was an increase compared to the previous year: about 6,088 more complaints, about 12% more than in 2017. The increases, however, vary by type of service: waste management (+24%) water (+12%), electricity (+11%), and gas (+1%).

Despite the complexity of the situations of the grievances, the time taken to manage the procedures improved significantly compared to 2017: **the average response times decreased to around 14 calendar days** compared to 18 days in 2017 and the **percentage of complaints handled within the standard time increased by almost five percentage points**, reaching 98.9%.

Complaints received

	2017	2018	2019
Average complaint response time (days)	18.3	13.7	13.0
Percentage of complaints that were dealt with within the standard timeframe (%)	94.1%	98.9%	99.8%
<i>of which electricity and gas complaints relating to sales</i>	<i>89.6%</i>	<i>95.3%</i>	<i>99.7%</i>
Number of complaints received	50,773	56,861	57,449

Excluding AcegasApsAmga and Marche Multiservizi. The complaint response time is specified in calendar days, with a reference standard of 40 days.

Excluding AcegasApsAmga and Marche Multiservizi, in 2019, the volume of complaints increased to more than 57 thousand cases, +5% compared to 2018. Despite the increase, the complaints rate (the ratio of complaints to contracts managed) remained constant at 1.6%. The average response times improved further compared to 2018, decreasing from an average of 14 calendar days, to 13 in 2019. The trend in complaints in the waste management sector was very positive, with a decrease of 27%.

In 2019, we continued to improve our communication style towards end customers, by implementing a "new language" project for handling both written requests and direct customer contacts (call centre and branch office). Moreover, for almost all of 2019, Arera promoted a survey on energy-related complaints to assess the quality and validity of the responses provided to customers. For **AcegasApsAmga**, the average time required to respond to complaints was 10 days, down compared to the 18 days of last year and 99.8% of complaints were answered within the standard time, as in 2018. In **Marche Multiservizi's** area, the average time required to respond to complaints was nine calendar days (as in 2018) and all complaints were answered within the standard time.

Dispute Resolution

The **Alternative Dispute Resolution (ADR)** tool is increasingly used to solve problems without resorting to ordinary courts. This method is not costly for clients, who can participate in the resolution of disputes either in person or by delegating a representative. Most of the meetings take place by computer on IT platforms, thus avoiding the need to travel. The high percentage of positive outcomes proves the success of this procedure, which is increasing more and more every year and proves to be a tool that satisfies the vast majority of those who have experienced it.

Since January 2017, the sector's regulations make it compulsory for the gas and electricity sectors to attempt to resolve disputes. The attempt is a prerequisite for the admissibility of any subsequent legal action. The arbitration bodies must have the requisites set out in the Code of Commerce and be registered in the Register kept by Arera. Since July 2018, arbitration has been extended to the integrated water service, and the participation of the operator became mandatory on 1 July 2019. The last step towards a complete equalisation with the other gas and electricity services will take place on 1 July 2020, when it will be considered a condition required for prosecution also for the water service.

In 2019, we received a total of 460 ADR arbitration requests (twice as many as in 2018); 249 of them were for the gas service, 109 for electricity, 39 for both services, and 63 for the water service. Of the 411 arbitration requests concluded during the year, 338 (82% of the total) ended with a settlement, 59 (14%) without a settlement, eight were terminated due to inadmissibility, and six for a withdrawal of the request.

In addition to ADR arbitration, there is also **joint arbitration**, an instrument based on an agreement between Hera and the main consumer associations, which also aims to resolve disputes out of court. In 2019, we received 42 requests for equal settlement, 12 of them were for the water service, 4 for electricity, and 25 for gas. Twenty-seven have been concluded, 24 of them with an agreement, and three with a failure to reach an agreement.

Litigation with customers

[307-1] [419-1]

At the close of 2019, there were 477 disputes pending with customers (227 of which initiated during the year) mainly on the application of the tariffs applied to the services we provide, and on the recovery of payments. Of these 227 disputes, 154 concern the gas, electricity, and district heating service, 32 the water service, and 17 the waste management service. The remainder of the disputes concerns the supply of energy linked to the operation and modernisation of a cogeneration plant. Litigation with customers mainly concerns the energy sector, and in particular objections to the protective system which customers are assigned to by the competent distributor, to billing, and complaints requesting the reactivation of electricity or gas supplies that had been suspended due to the customer paying late. In the water sector, instead, disputes mainly concern customers objecting to injunctions.

During 2018, 228 disputes were settled.

The security of information

The management of information security right from the design phase, for security by design is a consolidated asset within the Hera Group. It makes it possible to protect all the data relevant to the business and, in particular, the personal data of the persons involved, in an increasingly effective manner, pursuing privacy by design in a synergistic manner.

The governance of information security has been consolidated by means of a complex document management system consisting of the "Information Security Policy Guideline" and a "Policy for the protection of personal data" and a set of information security policies that establish the guiding principles for all information security activities, including the attribution of responsibilities, both general and specific, to clearly defined organisational roles.

The Top Management is involved in the definition of an acceptable level of risk, through meetings of the Risk Committee focused on the results of annual information security risk assessment processes, which identify the most effective mitigation and security improvement initiatives, in the face of an increasing level of external threats, the implementation of which is constantly monitored.

Compliance with policies and the level of maturity of countermeasures is ensured by annual technology assessment programmes and periodic audits of the security vulnerabilities of systems and networks.

Case study

All the quality of tap water in a single report: In Good Waters

In 2019, for the eleventh consecutive year, Hera published the "In buone acque" (In Good Waters) report, dedicated to telling users about the quality and transparency of the process that brings tap water into our

homes every day. The report is still the first and only Italian report published on the subject of tap water and the benefits of drinking it instead of bottled water, in both environmental and economic terms.

On the basis of the new data for 2018, it has once again been shown that the mains water in Hera's service area is a good, convenient, easily available, safe and inexpensive resource, as well as being rich in trace elements and low in sodium, and comparable in quality to the leading bottled waters on the market. These are reassuring results, guaranteed by **2,800 analyses per day** (including those done by the local healthcare offices) on tap water (carried out by Hera, by the local healthcare offices, and by Romagna Acque) and proven by the fact that **99.9% of the checks carried out** showed the water is compliant with the water quality standards set by law.

The same water can be drunk in the 95 urban springs available throughout the service area, which, in 2019, delivered a total of over 17.2 million litres of water, of which about 30% was sparkling water. This resulted in significant savings in terms of plastic, amounting to over 11.4 million bottles, thus avoiding the release of over 2,100 tonnes of CO₂. The savings for families, of the average expense to purchase mineral water, was Euro 3.1 million.

The report also contains, area by area, the data of the analyses of all the **29 parameters**. The analyses also concern pesticides and parameters not required by law, such as emerging pollutants and asbestos fibre: again, the results confirmed the quality and safety of the mains water distributed by Hera.

The report, with extended contents in its online version, shows that besides being a safe choice for health, and sustainable for the environment, drinking tap water is also good for our customers' wallets. In fact, using tap water in Hera's service area makes it possible to avoid the production, transport and disposal of almost **250 million plastic bottles** that would fill over **three million bins** and save on average almost Euro 440 per year, for a household of three people.

To ensure maximum transparency and reliability of the data reported, the report was examined and certified by DNV GL.

The extended contents of the report are available at www.gruppohera.it/report.

Publishing the "In good waters" report contributes to achieving **target 12.8 of the UN's 2030 Agenda**.

Safer electricity grids

We developed the work plan to increase the resilience of Inrete's electrical system according to Arera's guidelines. The plan takes into account the risk factor arising from the formation of ice and snow sleeves. The scope of the plan was defined on the basis of the mechanical stress and the mechanical characteristics of the conductors, the geometric characteristics of the lines and their geographical and altimetric location. It includes the municipalities of Fanano, Fiumalbo, Guiglia, Lama Mocogno, Montecreto, Montese, Pavullo nel Frignano, Pievepelago, Polinago, Riolunato, Sestola and Zocca.

The secondary substations included in the scope of the plan have been identified as those that supply the most critical disadvantaged users, for whom the measures are necessary to reduce the risk of service disruption to acceptable levels by upgrading the power supply lines.

The type of measure adopted to address such critical issues consists in replacing the sections of bare overhead conductors whose sections are not suitable to withstand the stresses considered, with overhead cables with spiral reinforcements of an appropriate section, initially expected to follow the same route of the existing lines.

We analysed the medium-voltage distribution network to identify the measures, considering the best power supply route for the most critical substations, along which all the sections of overhead conductors with an

unsuitable section were identified and which must therefore be replaced with overhead cables with spiral reinforcements.

The plan consists of 54 measures to optimise activities, prioritising the most critical areas and minimising the impact on the distribution service. To date, the planned measures have been implemented on the primary/secondary substations, increasing the possibility of improving service continuity. A further 8 measures are planned for 2020.

Work to improve the resilience of electricity grids contributes to achieving **target 13.1 of the UN's 2030 Agenda**.

At Hera we drink tap water

The Hera₂O project, launched in 2008, encourages Hera's employees to drink tap water. By drinking 530 thousand litres of tap water in 2019 from the 122 dispensers installed in Hera's canteens and offices, its workers avoided the production of more than 13 tonnes of plastic, equivalent to around 160 bins, and over 590 plastic bottles (0.5 litre bottles were considered for canteens and individual use, and 1.5 litre bottles for offices and meeting rooms). This virtuous behaviour generated an energy savings of approximately 54 tonnes of oil equivalent and reduced GHG emissions by 152 tonnes.

People

Objectives and performance

What we said we would do	What we have done	Geographic scope*		
<ul style="list-style-type: none"> Continue to promote the third edition of HeraSolidale in 2019 and support the pursuit of the objectives of the 5 non-profit partner organisations through donations from employees and customers. 	<ul style="list-style-type: none"> Around Euro 370 thousand donated to the 5 HeraSolidale non-profit partner organisations from workers, customers and company in the two years of the project concluded in 2019. 	ER	T	M
<ul style="list-style-type: none"> Continue to promote Hextra, the Hera Group welfare system, by enhancing related opportunities in terms of knowledge, dissemination and usability of the services offered, with a view to increased support to employees when choosing how to use allocated shares (e.g. flexible share, instruction shares, performance bonus share, etc.). 	<ul style="list-style-type: none"> The offer of Hextra services was increased across all categories, new methods for allowing employees to use Hextra and take part in the growth of the welfare plan were developed with over Euro 4.5 million allocated. 	ER	T	M
<ul style="list-style-type: none"> 24.4 training hours per capita in 2019 for HerAcademy. 	<ul style="list-style-type: none"> In 2019, an average of 28.6 training hours per capita were delivered. 	ER	T	M
<ul style="list-style-type: none"> -3% reduction in the accident frequency index in 2019 (18.2) compared to the average for 2014-2018. Increase the culture of health and safety for workers at all levels of the company through initiatives such as "Guido come vivo" and "Hera cardioprotetta". 	<ul style="list-style-type: none"> The accident frequency index was 14.1 in 2019 (-23% compared to the average of the year period 2014-2018). The culture of health and safety in workers increased at all company levels through strengthening of the «Guido come vivo» learning magazine, and the installation of new defibrillators in company areas not yet covered by the «Hera cardioprotetta» project continued. 	ER	T	M
<ul style="list-style-type: none"> Involve all workers in the fourth updating of the Hera Group's Code of Ethics. 	<ul style="list-style-type: none"> Fourth update of the Code of Ethics approved in December 2019 and implemented thanks to the involvement of workers. 	ER	T	

What we will do	SDGs	Geographic scope*		
<ul style="list-style-type: none"> Increase the number of people involved in smart working: 50% of workers involved in 2023 (excluding blue-collar workers) 	5, 8			
<ul style="list-style-type: none"> Launch the fourth edition of HeraSolidale in 2020 to support the achievement of the goals of Non-Profit and Partner Organisations through donations from employees and customers. 	17	ER	T	M

What we will do	SDGs	Geographic scope*		
<ul style="list-style-type: none"> Continue to develop Hextra by making best use of related opportunities in terms of knowledge, dissemination and application of the services offered; incorporating education and family support services; and further strengthening the health and well-being proposal. 	4	ER	T	M
<ul style="list-style-type: none"> 24.7 training hours per capita in 2020. 	4	ER	T	M
<ul style="list-style-type: none"> Internal mobility project: 30% of workers changing roles or organisational structure in a year in 2023 (excluding blue-collar workers) 				
<ul style="list-style-type: none"> -4% reduction in the accident frequency index in 2020 (16.3) compared to the average for 2015-2019 (≤ 15 in 2023). Launch a "Safety Culture" training project in 2020 to promote a culture of health and safety at all corporate levels. 	8	ER	T	M
<ul style="list-style-type: none"> Continue to raise awareness on the enhancement of diversity and inclusion through training events and initiatives. Monitor Hera Group's positioning in leading diversity stock indexes. 	5	ER	T	M

* Geographic scope of the improvement objectives ER: Emilia-Romagna T: Triveneto M: Marche.

Planning of roles and skills, selection and onboarding

Strategic planning of sought-after and future skills and roles

The five strategic levers of the Business Plan steer the action of the Central Personnel and Organisation Department towards building a corporate environment supporting business strategy.

The rapid changes in the competitive context, in technology and in the regulatory framework require that organisations adapt and respond in an ever faster way. The diffusion of **agility** is a goal shared by several areas of intervention and also extends to relations with the ecosystem.

The current and constantly evolving market scenario, therefore, also leads the Hera Group to adopt systemic intervention models that are able to support the implementation of the strategies of individual businesses and to identify the offer and demand for both current and future roles and abilities.

In this context, as part of the 2019 business planning cycle, the **approach to the workforce planning process** was continued. Drawing on greater integration between the business strategy and the strategy for roles and skills, the approach examines HR numbers and costs, and steers the development of the personnel management strategy in the long term, supporting Group strategy implementation. This is achieved by analysing workforce dynamics both from an internal and external viewpoint. The goal of strategic workforce planning is to identify and bridge the gap between the current and future situation by finding the best solutions in terms of quality, quantity, timing and location of the workforce, through an integrated action plan.

Within the context of this approach, reflection and analysis involve five main aspects:

- **Dimension** - is workload rising or falling? Will there be roles that will no longer be necessary or will be able to be replaced by automation? Will there be emerging roles that will be included in the organisation?
- **Cost**: will cost change in line with the increase in results?

- **Geographical location:** are the various professional families located where they are really needed? How does the external context influence the current geographical location of resources?
- **Skills:** Do we have the right skills to implement key processes in the future? Are there any obsolete skills? Do we need to develop new skills?
- **Configuration:** Is distribution by seniority and position consistent with the organisation's demands? Will the demographic structure be appropriate? Is the balance between operational/management positions consistent with future challenges?

Hera Group's workforce

2018 confirmed the consolidation of the Group's organisational and corporate structure, both through expansion of the scope of reference and through ongoing attention towards simplifying the operating mechanisms.

More specifically, the following companies were added to the scope of the Group during the year: Sangro Servizi, CMV and Ascopiave operating in the sales area and Cosea Consorzio and Pistoia Ambiente operating in the waste management services sector. Instead, around 100 employees of AcegasApsAmga related to the gas distribution of Padua left the Group's scope.

[102-7]

As at **31 December 2019**, the total workers with **open-ended contracts** in Group companies amounted to **8,982**, while workers with **fixed-term contracts** amounted to **189**.

Staff figures at year end

qty	2017	2018	2019
Managers	154	149	156
Middle managers	537	536	565
White-collar workers	4,612	4,648	4,929
Blue-collar workers	3,380	3,289	3,332
<i>Open-ended contract employees</i>	<i>8,683</i>	<i>8,622</i>	<i>8,982</i>
Fixed-term contract workers	137	129	96
Job training and entrance contracts, apprenticeships	2	0	1
<i>Fixed-term contract employees</i>	<i>139</i>	<i>129</i>	<i>97</i>
Staff leasing contracts	25	26	92
Total	8,847	8,777	9,171

Data as at 31 December.

The increase in managers (seven units) is due to seven moves from the role of middle manager to manager, seven additions to the scope and the exit from the scope of seven managers during 2019. The number of middle managers increased by 29 units, which is the result of ten new entries, 26 promotions to manager, 19 changes in scope and 26 exits. The increase in white-collar workers is due to the entry of 574 new workers (308 of whom as a result of changes in scope) and nine level changes, offset by 284 exits. The number of blue-collar workers has increased by 43 units since 2019 due to the entry of 327 blue-collar workers (66 of whom as a result of changes in scope) and to the exit of 260 blue-collar workers and 24 moves from the role of blue-collar worker to white-collar worker.

Workforce by function

qty	2017	2018	2019
Grid services	2,793	2,661	2,648
Waste management services	2,805	2,726	2,839
Other services	800	832	812
Sales	848	891	1,117
Coordination activities	1,601	1,667	1,755
Total	8,847	8,777	9,171

Data as at 31 December.

Of the workforce, 29% operated in grid services (gas, electricity, water service and district heating) and 31% operate in the waste management sector. 12% of the workforce were employed in the commercial structure and a further 9% in other services (information technology systems, fleet management, laboratories and public lighting):

Workforce by type of contract and gender (2019) [102-8]

qty	Men	Women	Total
Open-ended contract	6,613	2,369	8,982
Fixed-term contract and other	117	72	189
Total	6,730	2,441	9,171

Data as at 31 December

Workforce by type of contract and geographical breakdown (2019) [102-8]

qty	Italy	Abroad	Total
Open-ended contract	8,812	170	8,982
Fixed-term contract and other	189	0	189
Total	9,001	170	9,171

Data as at 31 December

The 170 foreign workers refer to Aresgas, which distributes natural gas in Bulgaria, and three companies that run plastic selection plants in France, Poland and Spain (Aliplast France Recyclage, Aliplast Polska and Aliplast Iberia).

Workforce by workplace

qty	2017	2018	2019	% 2019
Emilia-Romagna	5,733	5,686	5,867	64%
Triveneto	1,805	1,780	1,723	19%
Marche	576	511	527	6%
Other	733	800	1,054	11%
Total	8,847	8,777	9,171	100%

Data as at 31 December.

Open-ended contract employees by educational qualification and position (2019)

qty	Managers	Middle managers	White-collar workers	Blue-collar workers	Total
Primary education	0	0	7	35	42
Junior secondary education	1	8	599	1,804	2,412
High school diploma	21	173	2,741	1,519	4,454
University degree	135	384	1,707	37	2,263
Total	157	565	5,054	3,395	9,171

Data as at 31 December

The overall percentage of employees holding high school diplomas and university degrees is equal to 73%, two percentage points higher compared to 2018.

Workforce by gender and type of contract (2019) [102-8]

qty	Men	Women	Total
Full-time	6,681	2,090	8,771
Part-time	49	351	400
Total	6,730	2,441	9,171

Data as at 31 December

Average age and average seniority of total employees by role (2019)

Years	Age	Years of service
Managers	52.8	17.5
Middle managers	50.3	19.7
White-collar workers	46.6	17.3
Blue-collar workers	48.7	17
Total	47.7	17.3

Data as at 31 December

The average age of employees is 47.7 years (lower than 2018 when average age was 48.3). Average seniority is 17.3 years.

Hours of absence and hours worked per capita for employees with open-ended contracts (by type)

Hours	2017	2018	2019
Illness	62.4	65.0	61.2
Maternity/paternity and parental leave	13.2	11.3	12.2
Accidents	4.9	5.4	4.5
Strikes	1.7	1.0	0.1
Union meetings	0.8	0.3	0.3
Union leave	6.6	5.3	5.4
Other	36.3	33.4	33.5
Total absences (h)	125.9	121.6	117.2
Regular hours worked	1,546.2	1,534.8	1,555.79
Overtime hours worked	38.3	31.9	34.5
Total hours worked	1,584.5	1,566.7	1,590.3

The data apply to the following companies: Hera Spa, Acantho, AcegasApsAmga, Fea, Herambiente, Herambiente Servizi Industriali, Heratech, Hestambiente, Hera Comm, Hera Luce, Hera Trading, Inrete Distribuzione Energia,

Marche Multiservizi, AcegasApsAmga Servizi Energetici and Uniflotte. The hours worked are calculated net of overtime hours for recovery.

Hours of absence per capita are basically in line with the constant decrease of the past three years. A reduction in the hours of accidents, illness and strikes was recorded. The "other" item in the table mainly refers to leave requested to assist family members with disabilities or illness, leave for medical check-ups and therapy, and leave for academic purposes.

The selection and onboarding process

Changes in business models, technological development and socio-demographic and economic factors are altering the employment scenario with consequences that are not always predictable, but that a company is forced to handle. This is why, over the next years, we expect new jobs to be created, others to disappear, the skills required in existing jobs to evolve and, more generally, a new way of working.

Compared to the past, the search for challenging and appealing environments that offer positive **human relations** is more important to the people than the need for employment and wage stability.

To be effective when selecting the best talents available on the market, two distinct yet strongly interlaced aspects need to be considered: the **attractiveness of the Hera brand** and the **quality of the selection process**. From this point of view, the effectiveness and efficiency required to cover personnel needs must include a good experience offered to candidates by the individuals in charge of selection.

The levers to strengthen both these aspects are: **digitalisation, simplification, agility** and **people analytics**.

The new application management system also known as ATS (Applicant Tracking System) became operational in 2019: in terms of "candidate experience", the new system was recognised as an accessible and complete tool, with **over 20,000 applications**. For the second consecutive year, the system earned **1st place in the "Applying Online" section** of Potentialpark, the international survey that rewards the best Italian companies for communication with talents who have left the academic world.

Over 2,500 candidates were interviewed, with an average of about 5 interviews per selection. The introduction of the new system allowed the company to optimise the process also because of the extensive use of digital solutions during all process stages:

- when **receiving applications**, a **multi-channel approach** needs to be taken: this means setting up multiple channels that are differentiated on the basis of specific needs. Again this year, a key role was played by **LinkedIn**, which generated almost 100 thousand views of our ads and about 10 thousand applications;
- during **screening**, the semantic search and filters makes it possible to distinguish applications in line with expressed requirements;
- during **assessment**, in addition to the aptitude tests and the Her@futura digital skills survey (introduced in previous years), we adopted new **digital video interview** tools to get a better knowledge of candidates from both a relational and motivational point of view;
- during the **interview** phase, **video calls** are increasingly used thanks to the many tools available, making remote interaction possible and allowing candidates great savings on travel time and costs.

The result of these initiatives was that the **use of internal tools accounted for around 93% of selections**, achieving significant savings on the costs incurred for entrusting this task to external companies (remaining 7% of selections). Our **careers page**, which contributed to cover 64% of needs, continued to be our leading channel, followed by **social channels (11%)** and the solid **network with schools, universities and business schools (10%)**.

Selections contributed to a significant **generational change** (average age of 33 years for new hires) of the company workforce, to the increase in the **number of women** (45% of hiring excluding blue-collar workers regarded women) and the percentage of **graduates** (77% excluding operating profiles).

With regard to the **areas of recruitment**, the majority of the selections were recorded in the Operations area, particularly in the waste sector (37% of total), followed by the water sector (13%) and the energy sector (11%). Staff areas accounted for about 16% of needs, the Market area 9% and the Innovation area 4%.

Strategically speaking, another important initiative recorded in 2019 was the introduction of a new **business intelligence** tool used for **analysing the labour market: LinkedIn Talent Insight**, a solution that analyses and organises in real time the data of the over 600 million LinkedIn profiles through artificial intelligence, making it possible to **make decisions during the workforce planning phase** and **identify the catchment areas** for specific selections. Our innovative tool was recognised by LinkedIn, which awarded us as **Most Data Driven HR Organisation**.

Management of the skills and training

The **Group's value proposition relating to Group learning** is applied using a process that starts by understanding the context of reference and interest trends (global macro-trends, Business Plan, personnel management strategy) and takes shape by reviewing the main features resulting from company management's listening activities and by subsequently achieving strategic training goals for the current year.

Training initiatives

[404-1] [404-2] [403-5]

In the area of **institutional and managerial training**, of note are the **Leadership Model** initiatives and the organisation of the **HerAcademy Workshop** "In search of Purpose. The sense of organisations including stakeholder expectations, macro-trends and business implications", which will be discussed in the section dedicated to **Heracademy's** initiatives, Hera Group's corporate university.

With regard to **information systems**, training sessions were developed in particular on **Geocall** dedicated to resources operating in the General Operations Department, District Heating Department and AcegasApsAmga, to learn the operation of the new system supporting on-field emergency response; furthermore, as part of the change management plan connected to the **Salesforce** project, training sessions were held on the "Salesforce enablement" platform, addressing about 60 Hera Comm resources and preparatory to the subsequent new platform design and development phase.

With regard to **technical-professional training**, specifically the initiatives planned and implemented within the training activities of the **professional Academies** continued, such as the training sessions on understanding the distinctive aspects of **goods and services procurement processes** in the Engineering area, and **digital culture** training activities (**Blockchain** and **Digital Payment**) which involved the professional Administration, Finance and Control Academy.

In the **quality, safety and environmental** area, the **Culture of Safety** project was launched, which aims to increase the culture of health and safety at all company levels by designing a training model with more innovative and engaging communication tools.

As part of the **HER@futura** programme, the overall change management plan continued with further developments. Specifically, initiatives to develop basic digital skills continued by providing training pills and specific training activities to Managers and Middle Managers (4 Digital Labs and Digital&Analytics for Manager platform), in addition to a specific change management programme for the implementation of the **Digital Workplace** and of the **Office 365** suite. The structured and comprehensive approach included classroom and online workshops and use of the **Productivation** support platform in order to gradually reach the entire corporate population.

Total training hours per area of intervention

hours	2017	2018	2019
Sales and market	15,728	14,874	9,638
Managerial	30,320	32,338	27,138
Quality, safety, environment and SA 8000 social responsibility	66,741	67,612	74,459
Information systems	13,044	23,937	30,813
Technical-operational	87,168	88,388	81,407
Ethical values and corporate culture	24,587	23,907	20,820
Total	237,588	251,055	244,275

The indicator does not include Aresgas (Bulgaria). The workers of these companies account for 1.5% of the total.

With regard to **ethical values and corporate culture**, the Corporate Social Responsibility and Code of Ethics in day-to-day management seminar continued in 2019, now in its seventh edition, involving 25 individuals including managers, middle managers and management employees. The aim of the training seminar is to explain the importance of ethical aspects in day-to-day activities and to involve an increasingly larger group of experts who are "aware" of the Code. The initiative focused on the discussion of the cases of "ethical dilemmas" through considerations with the colleagues of the various Companies and Group units which cover roles of responsibility and co-ordination. Group colleagues involved in previous editions took on the role of testimonials and facilitators and brought their experience within the four teams that exchanged views on how the dilemmas dealt with are specifically transferred into their everyday life. Evidence from outside of Hera made it possible to share different experiences and perspectives and allowed these issues to be viewed in a new way, thus generating value. Two days of training were organised and the satisfaction level of the sessions was appraised, reaching a very positive score (4.5 out of 5):

In the **quality, safety and environmental** area, around 35,400 training hours for employees on **occupational health and safety** were delivered in 2019, mainly traditional classroom training.

Training hours (average, per capita)

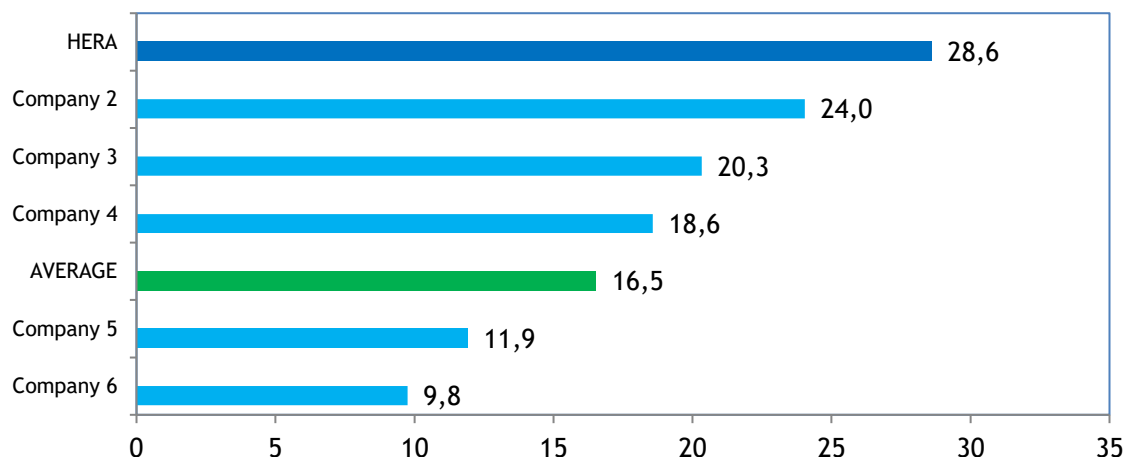
Hours	2017	2018	2019
Managers	61.4	50.4	40.0
Middle managers	46.6	63.3	50.4
White-collar workers	27.5	28.4	28.0
Blue-collar workers	25.1	26.2	25.4
Average	28.6	29.8	28.6

The indicator does not include Aresgas (Bulgaria). The workers of these companies account for 1.5% of the total.

There were 28.6 training hours per capita in 2019, 29.2 delivered to men (29.9 in 2018) and 26.7 to women (29.5 in 2018). The 2020 target will be to maintain the level of hours per capita at a minimum level of 24.7 hours.

Professional training in the main Italian utility companies

Hera is in first place among the six leading Italian multiutilities considered in the comparative analysis between the main Italian utility companies carried out by Utilitatis in terms of training hours per capita delivered to workers.



Source: Utilitatis, 2019 Sustainability Benchmarking

Percentage of workforce attending at least one training course

%	2017	2018	2019
Managers	100.0%	100.0%	100%
Middle managers	100.0%	100.0%	100%
White-collar workers	99.4%	99.6%	99.6%
Blue-collar workers	95.1%	98.5%	98.5%
Total	97.9%	99.4%	99.4%

The indicator does not include Aresgas (Bulgaria). The workers of these companies account for 1.5% of the total.

99.4% of workers were involved in at least one training event: the reason for this good result this year was the development of widespread initiatives among workers, including the extraordinary training activities mentioned above.

Assessment of training

%	2017	2018	2019
Degree of satisfaction of trainees (quality perceived on a scale from 1 to 5)	4.43	4.36	4.39
Outcomes (correspondence with needs) (% of replies with assessment score of 4 or 5)	75%	73%	75%

Excluding AcegasApsAmga and Marche Multiservizi.

Training, including hands-on training, is planned based upon a needs analysis in accordance with the Group's roles and competences model. This analysis is followed by detailed planning which includes related cost forecasts. The activities are monitored and assessed during the year and downstream the training delivered.

Hera uses a training assessment system that considers the degree of satisfaction expressed by the workforce attending the courses, alongside the assessments of the department managers with respect to the impact of training actions on the skill profile development of co-workers and their application in the performance of the working activities.

The degree of satisfaction is generated by assessments conducted by trainees once the course is over, on a scale of 1 to 5. The above table shows the overall average assessment measured: the degree of satisfaction is in line with 2016. The outcomes are the result of the assessments carried out by managers in terms of

collective impact of the training provided for each role. The reported percentage values indicate assessment scores of 4 or 5 (on a scale of 1 to 5).

Total training cost per area of intervention

Thousands of Euro	2017	2018	2019
Sales and market	44	81	27
Managerial	606	552	534
Quality, safety, environment	448	580	567
Information systems	28	46	75
Technical-operational	499	486	447
Ethical values and corporate culture	3	25	8
Other	189	80	93
Total	1,817	1,849	1,751

The indicator does not include Aresgas (Bulgaria). The workers of these companies account for 1.5% of the total.

The financial investment made by the Group in 2019 was around Euro 1.8 million, net of costs for personnel undergoing training and internal teachers.

Scuola dei Mestieri and knowledge management system

[404-2]

The **Scuola dei Mestieri** is a consolidated system that for over ten years has developed, strengthened and enhanced the technical and operational skills of the Hera Group, also with a view to knowledge management. The purpose is to raise the level of awareness of professional conduct and of know-how transfer within the company.

Since its creation, the Hera Group has felt the need to arrange the distinctive skills of the various operational trades which are typical of the company (for example workers dealing with network services and workers dealing with remote control and management) in **trade notebooks**. Seventeen notebooks have been created to share and preserve the Group's distinctive know-how over time: in 2015, they became available in digital format and are updated continually. During 2018, the Group's most recent notebook "Regulated Services Tenders" was created. In 2019, the activities related to professional Academies (Purchasing and Procurement, Engineering, Administration, Finance and Control, Water and Energy Distribution) were continued and consolidated.

HerAcademy: Hera Group's corporate university

[404-2]

In 2019, the process continued for consolidating **HerAcademy** as a **University Stakeholder**, capable of interacting with all partners of the national education system in order to set up Public Private Partnership projects and to define projects seeking to support innovation processes within the ecosystem of reference.

In 2019, the **workshop** "In search of purpose: the sense of organisations including stakeholder expectations, macro-trends and business implications" was held in Bologna. The aim of the workshop was to reflect on the idea of searching for the sense of organisations by analysing them from stakeholders' multiple points of view, through the perspective of scientific research, long-term trends and practical cases. The results of the research "Rottura e ricomposizione degli equilibri ("Breaking and rebuilding balances") carried out by Harvard Business Review Italia and The Ruling Companies were also disclosed. Furthermore, the eighth edition of the **university orientation** initiative for the children of employees approaching university enrolment was carried out at the University of Bologna with the participation of academic guests and H-Farm. Finally, the sixth

edition of the **job orientation initiative** was organised to support the children of employees approaching the employment market.

In 2019, the Group continued its activities with the **Hera Educational** system by creating pathways for **transversal skills** and **orientation** (previously called school-work alternation), based on the joint planning of company skills and teaching plans of the individual courses of study. In 2019, a total of 95 pathways were developed, 73 in Emilia-Romagna, 18 in Triveneto and 4 in Marche. Furthermore, the "Hera teaches you a trade...at school" initiative continued and focused on planning and developing educational activities, with the participation of Group employees acting also as teachers, at technical institutes based in the local area of reference (currently implemented in the areas of Forlì, Modena and Ravenna). In 2019, Ferrara saw the development of the first year of the experimental project for the curvature of educational paths with a view to strategic workforce management for the entire three-year period of the "Meccanica Energia" initiative, which focuses on technical and operational trades in the field of operation and maintenance of gas networks and plants. The course includes a teaching phase conducted by Hera staff at the school; then, from the second year of the project, the creation of pathways for transversal skills and for orientation which are designed in keeping with the topics addressed during the teaching phase.

Also as part of HerAcademy, the cooperation and initiatives set up with **H-Farm** continued. H-Farm is the largest European innovation centre, designed to develop partnerships for implementing innovation, digital and circular economy projects especially for students, employees and employees' children.

Agreements with universities, business schools and research centres

The Hera Group - through its Corporate University HerAcademy - has entered into several framework agreements over the past years with leading universities in the Emilia-Romagna area, such as the University of Bologna, the University of Modena and Reggio Emilia, and the University of Ferrara, which provide training incentives including the assignment of six-monthly scholarships for final year students and for recent graduates. The Group also works actively with various business schools including the Bologna Business School (BBS), the Consorzio MIB School of Management in Trieste, ISTAO (Adriano Olivetti Institute), the MIP-Polytechnic in Milan and the SAFE Study and Research Centre; it is also a member of the Assoknowledge-Confindustria scientific committee - Innovative and Technological Services.

With regard to the University of Bologna, a Framework Agreement was renewed which further focuses on the need to give continuity to a broad partnership aimed at fostering multidisciplinary activities and projects in the following areas: research, development and innovation; education, advanced training and lifelong learning; job orientation and placement; internationalisation; technology transfer; development cooperation, sustainability and social innovation.

Furthermore, scientific cooperation with the University of Milan – Bicocca and CRISP (Inter-university Research Centre for Public Utility Services) continued, with the general aim of supporting the development and implementation of activities within HerAcademy. During 2018, the Group also took part in the Industry 4.0 Competence Center coordinated by the University of Bologna and aimed at carrying out research, development and technology transfer projects through a partnership between public and private entities, as well as the development of orientation and training activities on innovation. Finally, also as part of HerAcademy, a memorandum of understanding was signed with H-Farm, the largest European innovation centre, designed to develop partnerships for implementing innovation, digital and circular economy projects especially for students, employees and employees' children.

In 2019, the Group commenced the initial activities for the international project "**GrEnFin** - Greening Energy Market and Finance", funded by the European Commission and involving a large international partnership of Universities and companies, coordinated by the University of Bologna. The aim of the project is the development of skills to support the transition to renewable energy sources and the decarbonisation of the European economy. Specifically, Hera will provide its expert contribution to the project in terms of content, methodologies and application experimentation. It will be directly responsible for implementing the work

package "Professional module targeted to the Energy sector professionals" within the scope of the partnership, and will participate by carrying out teaching activities in the international summer schools.

Development of individuals

The development process

[404-3]

People are the true asset to achieve differentiation and competitive advantage: the quality and efficiency of both internal processes and results depend on people. Effective personnel management and human capital enhancement is therefore of strategic importance for the Group.

The development process is based on the evaluation of performance and managerial skills. It is applied consistently throughout the company: it involves over **5 thousand people** including employees, management employees, middle managers and managers. A distinguishing aspect is the **dialogue on performance**: a "two-way" exchange between manager and employee, where the duty to provide clarity and effectiveness by managers is accompanied by the commitment of each individual to use the feedback as an ongoing learning tool. This experience has led to a growing ability to assess oneself and others, while also showing the desire for reciprocal listening and the request for feedback for individual and professional growth.

In 2019, over **5,200 Group workers** were assessed.

Within the development process, the definition of individual development actions is of key importance. Starting from dialogue between manager and employee, they are defined on the basis of a portfolio of carefully planned and developed initiatives which are subsequently monitored and updated.

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Career progress

Career progress during the year (breakdown by position for workers with open-ended contract)

Qty	2017	2018	2019
Managers	8	7	7
Middle managers	21	27	35
White-collar workers	403	279	309
Blue-collar workers	196	176	193
Total	628	489	544

In 2019 there were 544 career progress. **Career progress** involved 149 **female personnel**, totalling 27.4% of all cases (increasing compared to 2018 - 26%).

Internal mobility

The speed of changes combined with digital transformation is deeply changing the way we work. Many roles will change and it will become increasingly important, for organisations, to promote the **updating of skills** and, for workers, to step up their game and take charge of their professional growth.

Hera's multi-business nature is the ideal for accessing a wide range of professional opportunities; the variety of our activities allows us to enhance our professional expertise in different sectors and areas.

Internal mobility, therefore, is a **key development lever** for the growth of our people and it is exactly for this reason that at the end of 2019 we began a process for the renewal of the tools used to support the process. The first application step that will be taken in 2020 will be to listen to people who will have the opportunity to express their professional development interests.

It is important to put ourselves on the line and forcefully address new challenges, where the contribution of each of us is essential if we wish to take a further step forwards. In the course of 2019, there were a total of **182 intragroup transfers** between different companies or business units, which made it possible to fill approximately **34% of open positions** in the year. This was possible also thanks to the Job Posting tool, which has been available since 2008 in the internal mobility section in the company's information portal and which, since its creation, has registered **more than one million hits** on the relevant page, around **400 ads** published and **more than 200 positions filled**, allowing all employees to be actively involved in their own growth path and to be the first-hand promoters of change.

The goal is to further extend internal mobility through to 2023 reaching a 30% share of workers who change roles or organisational structure in a year (excluding blue-collar workers).

The leadership model

Since 2011, the Group has been provided with a **leadership model**: a compass that steers our behaviour and describes the skills we need to develop our mission and values and to achieve strategic results.

In 2016, a shared and participatory process was launched involving over 700 employees, to review the model as a result of the new challenges. The new model has inherited exemplary leadership from its predecessor, in terms of style, and has included agility as its approach. It follows two lines, a temporal today-tomorrow line and another line involving I-us, thus defining four areas of objectives each containing two skills.

The process for spreading and further examining the new contents of the model continued in 2019. The process involved around **650 people** including managers and middle managers for about **4 thousand training hours**. Multimedia and interactive content (contests, articles, videos, e-learning courses, slides and tests) were made available to the entire **workforce** (over 5 thousand employees, middle managers and managers) through the specific e-learning platform. Of particular note are the leadership development initiatives which continued in line with the **2030 UN Agenda** goals. In 2019, the participants in the training course had the opportunity to gain first-hand experience: they were able to help serve meals at the Antoniano canteen in Bologna and they gave their assistance during the basketball training of the Overlimits, a sports project involving "special athletes" in the areas of Bologna, Pesaro and Treviso.

Hera, therefore, continued to promote the knowledge and daily implementation by all employees of the conduct defined in the model.

Other development initiatives

In a context that requires great agility, interconnection, speed and ability to achieve innovation both at system level (enabling factor) and at individual level (central player for individual professional growth and for creating value for the company), the **Virtual Factory** process continued in 2019, in which multi-functional teams focused on developing innovative and effective solutions in a short time. Participation in the team is an exclusive development opportunity for selected people and allows the spread of technological knowledge and innovation awareness-raising. Overall, 5 projects were launched with the participation of 27 employees in the following areas:

- **Mobility**: reconsidering **home-work travel** to encourage the adoption of low environmental impact behaviour. The goal is to integrate the adoption of sustainable tools and behaviour inside and outside the company (e.g. how to encourage the use of electric mobility);

- **BSC:** expressing the **requirements for the development of the new IT system** in support of balanced scorecard management by making use of any process **simplification and operational improvement opportunities**, in full compliance with the current logics of the Group's BSC system;
- **Circular economy:** creating a platform inside the Group to develop sharing opportunities;
- **Rinnowatt a km 0:** developing a modular system for the self-production of photovoltaic energy at the company premises of Marche Multiservizi with "zero-mile watt" self-consumption;
- **Fleet management:** installing black boxes on light vehicles to monitor diagnosis data, mileage, fuel consumption and vehicle use. The project also includes the creation of a shared car pool that can be booked in all the Group's main offices.

Remuneration and incentives

[102-37]

The Hera Group defines and applies a remuneration policy aimed at attracting, motivating and retaining resources having the professional qualities requested to achieve the Group's objectives.

The policy is defined so as to align the interest of various stakeholders and to achieve the priority objective of creating value in the medium-long term period and increasing the shared value generated, through consolidation of the connection between remuneration and performance, both individual and Group-related.

[102-41]

All Group employees are hired through national collective labour agreements.

With reference to the labour agreements that govern the employment relationships of all Group workers, the table illustrates the gaps between gross monthly remunerations (net of accrued 13th and 14th monthly pay and of performance bonus) and those specified by the labour agreement. Comparison between the minimum pay/salary conditions of all the national collective labour agreements applied in the company and the minimum ones actually applied in the company was conducted by considering the minimum classification conditions for the three employment classes.

Ratio between minimum monthly pay and salary conditions according to labour agreements and Hera monthly pay and salary levels (2019)

Euro	Minimum monthly salary according to labour agr.	Minimum monthly Hera salary	Average monthly Hera salary
Middle managers	3,065	3,248	4,807
White-collar workers	1,506	1,669	2,851
Blue-collar workers	1,229	1,382	2,335

The data apply to the following companies: Hera Spa, Acantho, Fea, Hera Comm, Hera Luce, Hera Trading, Herambiente, Herambiente Servizi industriali, Heratech, Inrete Distribuzione Energia, Uniflotte, AcegasApsAmga, AcegasApsAmga Servizi Energetici, Hestambiente and Marche Multiservizi where around 90% of Group employees work.

The average salary applied is higher than the minimum labour agreement conditions for all three classes: +57% for middle managers, +89% for white-collar workers and +90% for blue-collar workers. Even the minimum salary applied is 6% higher than that envisaged by the national labour agreement for middle managers, 11% higher for white-collar workers and 4% for blue-collar workers.

These differences are directly related to the average age level of the corporate population and to seniority, and are connected to the policies aimed at favouring internal professional growth.

Ratio between top management minimum monthly pay and salary conditions according to labour agreements and Hera monthly pay and salary levels (Utilitalia contract)

Euro	2019
Monthly minimum according to labour agr.	5,308
Monthly minimum Hera Group	5,769
Average monthly Hera Group salary	10,370
Average monthly market salary for managers	10,766

The table illustrates the gaps between average gross monthly salary levels for managers in Hera (net of the accrued 13th monthly pay and variable remuneration) and those envisaged by the national collective labour agreement. The agreement of reference for this qualification is the Utilitalia labour agreement. The minimum salary applied by Hera is 8.6% higher than the Utilitalia agreement, while the average salary of Hera managers is 95.3% higher than the minimum salary stipulated in the contract, yet 3.7% lower than the average market salaries for managers, as reported in the Hay Compensation Report – Total Cash Italia 2018.

For this position also, the differences between the salaries applied and labour agreement references are the result of the application of previous economic schemes, also with regard to age (on average 52.8 years) and of years of stay in the Group (on average 17.5 years) for the category of managers.

Average monthly salaries by gender (2019) [405-2]

Euro	Men	Women
Managers	10,786	8,485
Middle managers	4,847	4,726
White-collar workers	2,934	2,727
Blue-collar workers	2,336	2,309

The data apply to the following companies: Hera Spa, Acantho, Fea, Hera Comm, Hera Luce, Hera Trading, Herambiente, Herambiente Servizi industriali, HERAtech, Inrete Distribuzione Energia, Uniflotte, AcegasApsAmga, AcegasApsAmga Servizi Energetici, Hestambiente and Marche Multiservizi where 90% of Group employees work.

The **salary gap between men and women** within the management class is significant (Euro 2,301): this figure is influenced by the number of female directors (5 out of 44). Much lower salary gap for middle managers, white-collar workers and blue-collar workers. The salary gap between men and women is due to the fact that 66% of management employees are male. Regarding middle managers, white-collar workers and blue-collar workers, the ratio of the remuneration of women to that of men is equal to 97%, 93% and 99%, and is higher than the national average of the energy, water and waste management sectors - 92% in 2014 (Source: Eurostat 2014, most recent figure available). The gap is obviously influenced by the level of seniority as well as - as regards the qualifications of the blue-collar and white-collar workers - by the level of classification.

The Group's remuneration policy system is based on the ability to recognise the most appropriate remuneration package depending on the individual performance achieved, skills put into practice, organisational position held and specific comparison on the market. Any remuneration gap between individuals can be attributed exclusively to these factors and is in no way influenced, except as provided for by the relevant NCLA, by other elements (age, gender, culture, etc....).

In 2019, the ratio in the Hera Group between the gross annual salary (excluding performance bonuses and variable remuneration) of the person with the highest salary and the median value of workers was equal to 10.0. The remuneration of the person with the highest salary did not vary compared to the previous year.

Gross performance bonus (per capita)

Euro	2017	2018	2019
Middle managers	2,015	2,137	2,314
White-collar workers	1,743	1,851	1,999
Blue-collar workers	1,602	1,699	1,840
Weighted average on workers	1,706	1,812	1,959

The figures refer to the following companies: Hera Spa, Fea, Hera Comm, Hera Luce, Hera Trading, Herambiente, Herambiente Servizi Industriali, HERAtech, Hestambiente, Inrete distribuzione energia, Uniflotte, AcegasApsAmga, and Marche Multiservizi

The performance bonus of middle managers, white-collar workers and blue-collar workers is defined within the Group supplementary collective labour agreement and is based on profitability, productivity, sustainability and sector-specific indicators.

Starting from 2018, as required by current legislation, employees have the opportunity, on a voluntary basis, to convert their performance bonus paid in cash into corporate welfare services up to a maximum value of 50% of the yearly bonus, with significant tax advantages for workers.

Bonus system related to short-term variable remuneration

Starting from 2006, the bonus system of the Hera Group has been linked to the balanced scorecard system: according to this system, the variable annual remuneration component of each manager and middle manager is calculated as a percentage value of gross annual salaries and is defined on the basis of results obtained relative to the objectives defined at the start of the year. The balanced individual scorecard is structured in three parts:

- the first consists of specific **target projects** deriving from translation in operating terms of the objectives contained in the Group's strategic map;
- the second contains the **economic objectives** defined in the budget for the year;
- the third involves an assessment on the behaviours set forth in the Group leadership model.

The structure of the balanced individual scorecard, or the weights assigned to the three areas, vary according to the seniority of the employee and the department he/she belongs to.

The final assignment of the bonus is weighted, furthermore, according to the results reached insofar as certain Group parameters: financial-economic business results and customer satisfaction index for residential customers.

The assignment of the objectives to employees and the assessment of their achievement take place through a clearly defined process which is based on the decision of top management for the individual balanced scorecards of directors and managers and of the directors for the individual balanced scorecards of middle managers. The activity takes place with the coordination of the Balanced Scorecard System Management unit of the Shared Value and Sustainability Department.

In 2019, 51% of the variable remuneration of Hera Group managers was linked to the completion of the target projects planned in the balanced scorecard system: 32% was linked to the achievement of the economic and financial budget objectives and the remaining 17% to compliance with the behaviours set forth in the leadership model. The balanced scorecard system involves 98.5% of Group middle managers and managers.

For middle managers, 70% of variable remuneration was linked to the completion of the target projects planned in the balanced scorecard system and/or achievement of the economic and financial budget objectives, while the remaining 30% to compliance with the behaviours set forth in the leadership model.

In 2019, application of the **incentive policy for the Hera Group sales staff** continued, to enhance the effectiveness of the offer for customers. The purpose of these dedicated tools is to ensure a competitive commercial incentive offer and to steer sales staff towards working more by goals.

Pension funds

The number of employees participating in the pension funds as at December 2019 is 5,502, or 63% of total Group employees. The main contractual pension funds are: Pegaso for employees under the gas-water and electricity national collective labour agreements; Previambiente for employees under the Federambiente national collective labour agreement; and Previndai for managers.

Yield of the main pension funds (balanced sub-fund)

%	2017	2018	2019
Pegaso	2.8%	-2.0%	8.1%
Previambiente	2.3%	-0.8%	8.2%
Previndai	6.5%	-5.3%	12.3%

Welfare

The Hextra experience continued in 2019, Hera Group's welfare system offering a wide range of initiatives and services tailored to meet workers' needs and to increase individual and family well-being in economic and social terms. A flexible welfare share of Euro 385 was assigned to each employee, to be used for the Hextra offer. Furthermore, all employees were offered the option to **convert part of their 2018 performance bonus** paid in 2019, into a further welfare quota. This option is convenient also from a tax viewpoint and in terms of increased purchasing power for each employee.

This extremely positive experience counted on **8,851 members** in 2019, equal to **98.8%** of the potential population, with over **Euro 4.5 million** used by employees. This result was achieved thanks to clear information and presentation of the services, to the usefulness attributed to each of them and to the positive impact on work-life balance. Increased purchasing power, customisation, easy to use and quick service: a winning combination for a fully comprehensive welfare experience. This can all be achieved digitally, with low environmental impact, both from the office, smartphone or comfortably from home.

The main Hextra initiatives in 2019 included: the third edition of university **scholarships** offering 43 scholarships worth Euro 750 each (three assigned ex-aequo); the third edition of the language study courses A summer in the world with Intercultura, which in addition to ten scholarships worth Euro 2 thousand each for summer programmes, also included three scholarships worth Euro 7,500 each for an entire school year abroad. The management of the VI edition of the **summer camps** with the opportunity for each employee to choose the summer camp best suited to their family needs. Furthermore, in line with the previous year, the allocation of an instruction quota for employees who have school-age children for a total investment of over **Euro 615 thousand**. In detail, among all the projects set up to support the education of employee's children, **3,660 applications** were received. Of these, **204 shares** were used by employees for **crèche** services. Fifteen applications for attending crèches with which the Group has agreements (in Bologna, Cesena and Imola) must be added, for a total of **219 children**.

An education campaign was launched to raise awareness and provide information about the development of digital culture for children: the **Corporate Digital Day** involved employees' children in an amusing training course, at exciting robotics workshops with Lego WeDo, allowing them to build and programme a small robot, to make scribbling machines realised with recycled materials and capable of moving on their own and drawing creative designs and shapes. The Corporate Digital Day also involved parents in an interesting workshop on being parents in the digital age.

[403-6]

In the **health and prevention** area, important partnerships were set up with ANT and LILT to provide employees and their families with free or special priced **prevention check-ups**. In detail, with the Non-Profit Foundation ANT, a leading foundation in the field of prevention, training and medical assistance, two

important prevention projects were implemented: melanoma, consisting of skin tests conducted with the help of a video-dermatoscope; thyroid, consisting of an ultrasound test to detect nodules. More than **2,000 preventive check-ups** were booked and carried out **for employees and their families** against a small donation of Euro 18 to ANT. With LILT (Lega Italiana Lotta Tumori - Italian Association for the Fight Against Cancer), two **pilot projects** were developed in the areas of Bologna and Ferrara: Rosa, consisting of breast examination with bilateral breast ultrasound exam, if necessary; Azzurro, consisting of a urological preventive examination and investigation on papilloma virus infection. In this case, **130 visits** were booked and carried out in addition to a presentation workshop on correct lifestyles.

In addition, the **flu vaccination campaign** for Group employees was also organised in 2019. All employees could apply for reimbursement of the flu vaccine.

Additionally, Hextra offers employees access to an orientation and guidance network and provides a personalised response to whoever is seeking **family care** services: from basic home caregivers to accommodation in healthcare facilities. This counselling and orientation service connects employees with a network of public, private and voluntary services, offering information on services and on the procedures to be followed. Lastly, Hextra also offers services for the reimbursement of **health and/or welfare expenses** incurred as well as **additions to supplementary health funds**.

As part of the activities managed by **mobility management**, it was once again possible this year to include in HEXTRA the reimbursement of the expenses incurred by all employees or their family members who travel using the regional or interregional public transport service.

Once again in 2019, with 'In Hera Energy is Worth More' users could have access to a promotion for the **gas and electricity supply** of free market and could benefit directly from the value that all employees, day after day with their jobs, help create with a view to reaching an increasingly shared and participated welfare. A call to action for all employees which during the year, once again, led to significant use of the **Welfare Voucher service**. Thanks to a local map of the area, each employee can identify with which partner they can carry out their welfare activity among those available: sports, wellness, culture and leisure, and medical check-ups. With just a few clicks and no waiting time, employees can request vouchers and use them at the centre they have chosen. This service was highly appreciated and was undoubtedly one of the Hextra services most used by employees. Yet there is more: travel, tailor-made holidays and leisure. Hextra offers travel agencies, water and theme parks, museums, exhibitions and galleries. Whatever you need for booking and purchasing a package, whether it's a quick weekend or a fortnight, Hextra offers solutions that are personalised and tailored to your individual needs.

This all-embracing and continuous path of combined, shared and highly felt development of the welfare plan makes us national leaders in the field of corporate welfare and well-being. The Group's commitment is also confirmed by the **Top Employers Italia 2020** certification, achieved by the Group for the eleventh consecutive year and which ranks us in first absolute place. The Group confirms its place as a leading company in terms of working conditions and best practices focused on the development and well-being of its people. Its commitment and constant focus on the ongoing improvement of its strategies in the field of human resources is also recognised.

Our 2020 goal will be to **continue to develop** the Hextra welfare system by making best use of opportunities in terms of knowledge, diffusion and application of the services offered. Education and family support services will also continue to be added, further strengthening the services we offer in the area of health and well-being.

[403-6]

In addition to the **Hextra** corporate welfare measures (see paragraph Corporate Welfare), the Hera Group offers several forms of supplementary healthcare for workers in compliance with the collective bargaining agreement applied. In particular:

- employees to whom the **Gas/Water National Collective Labour Agreement** applies: with effect from 1 January 2012, supplementary healthcare has been provided by the FASIE fund;

- employees to whom the **Electricity National Collective Labour Agreement** applies: with effect from 9 July 1996, supplementary healthcare has been provided by funds managed by corporate CRAEMs;
- employees to whom the **Waste management services National Collective Labour Agreement** applies: with effect from 1 October 2014, supplementary healthcare has been provided by the FASDA fund;
- employees to whom the **Chemical Industry National Collective Labour Agreement** applies: by National Agreement dated 29 July 2003, between Federchimica and the National Industry Trade Unions, supplementary healthcare has been provided by FASCHIM;
- employees to whom the **National Collective Labour Agreement for Managers of Public Utility Services Companies** applies: with effect from 1 October 1996, supplementary healthcare has been provided through registration with FASI and Unisalute. The FASI Fund and FASI Supplementary Policy may be extended to the family members of managers.

In 2017, upon renewal of the National Collective Labour Agreements, insurance policies were also set up in case of premature death (Electricity National Collective Labour Agreement) and of premature death and permanent disability (Gas/Water National Collective Labour Agreement).

Diversity and inclusion

Hera Group's commitment in the area of inclusion policies and protection of diversity started way back and was strengthened in 2009 with the signing of the **Charter for equal opportunities** and equality at work, through which the company committed itself, together with other public and private parties, in the fight against workplace discrimination. Furthermore, the introduction in 2011 of the **Diversity Manager** was essential, aimed at further encouraging processes for developing inclusion and diversity enhancement policies. A working group was also set up in 2011 composed of Group company employees of different ages, roles, professions and training which under the coordination of the Diversity Manager deals with diversity and inclusion projects, activities and initiatives.

Workshops were planned and organised over the years across the Group's offices with top-level spokespersons on topics of interest such as: "From CV to happiness", to support the professional development of women who tackle the difficulties of the labour world on a daily basis. In 2017, the meetings focused on the topic "Beyond gender culture, what kind of culture", regarding gender stereotypes; the meetings had great success, especially the satirical monologue by Alessandra Faiella "Barbie's Version".

Furthermore, in 2018, the **"Sconfinate Energie"** (Boundless Energy) event was organised to promote the culture of disability and inclusion in the Group, with the participation of the dancer Simona Atzori, the band Rulli Frulli and the storyteller Matteo Bortolotti who ably told the stories of some Group colleagues.

In 2019, cooperation with the associations involved in the Herasolidale project led to an event to raise awareness of all types of short- and long-term diversity, **Who is more different? Let's work on it together**. The event greatly involved the workforce and also included a speech by Prof. Stefano Zamagni on innovation linked to diversity: companies that pursue the ideal of innovation cannot ignore the fact that people need highly stimulating work environments full of different and diversified social relationships.

The topic is linked to the percentage of female employment in the company, which has a great impact on the company as a whole and emphasises what has already been mentioned about the quality of Hera Group's innovative development. The **enhancement of differences**, in this case of gender, has qualitatively helped the development of the company's key values.

In order to raise awareness in all employees of increasingly inclusive behaviour, Hera put a game called **Diversity@Work** on the company intranet, which provides feedback on possible everyday situations in which the player has to make behavioural decisions. The seminar **Meglio fidarsi - workshop on trust at work and gender differences**, which was held by Anna Simioni, Advisor at Boston Consulting Group (BCG), was also organised.

The attention to spreading inclusive culture also took the form of training and study initiatives for local schools, which had already been started in previous years. Among these, "**InspirinGirls**" stands out, a project aimed at fighting gender stereotypes and designed for lower secondary school boys and girls: an opportunity for students to discuss "role models", i.e. leading and successful female managers and professionals who share their daily experience and bear witness to how hidden gender-related prejudices can actually be overcome and how it is possible to build a satisfactory life both professionally and personally. In 2019 the project was divided into 4 meetings held at the A. Bertola Lower Secondary School in Rimini, in addition to the 10 meetings organised between 2017 and 2018.

The revision of the **Code of Ethics** in 2019 implemented the principles of respect for diversity and inclusion with an even broader view and cutting across the various articles.

In the previous year, Hera also signed the "**Patto Utilitalia - Diversity makes the Difference**", a programme of principles and tangible commitments to promote inclusion in corporate activities. Promoted by Utilitalia (the Federation of Water, Environmental and Energy Companies) to its associates, the agreement supports: inclusive policies at all levels of the organisations; work/life balance measures; transparent management of merit that is neutral with respect to gender, age and culture; the adoption of progress monitoring systems; and internal and external awareness-raising policies.

The Group has always been careful that its communication is free of gender stereotypes and in 2019 it took a further step towards inclusion. Since there is an increasing number of non-native Italian speakers among Hera Comm's customers, a simple and convenient electricity-gas offer was designed for them, accompanied by a multi-lingual (Italian, English, French and Albanian) pre- and after-sales service to make it even easier to use this offer.

Since last year, the free assistance (upon request) of a sign language interpreter for **hearing impaired customers** is available during visits at branch offices.

Women staff (breakdown by position) [405-1]

%	2017	2018	2019
Managers	18.8%	19.5%	19.7%
Middle managers	30.7%	32.4%	32.7%
<i>Total managers and middle managers</i>	<i>28.0%</i>	<i>29.6%</i>	<i>29.9%</i>
Management employees	32.9%	33.6%	34.2%
<i>Total managers, middle managers and management employees</i>	<i>31.3%</i>	<i>32.3%</i>	<i>32.8%</i>
Non-management employees	42.0%	41.9%	45.2%
<i>Total employees</i>	<i>39.2%</i>	<i>39.4%</i>	<i>42.1%</i>
Blue-collar workers	3.2%	2.9%	2.9%
Total	24.3%	24.7%	26.6%

Data as at 31 December.

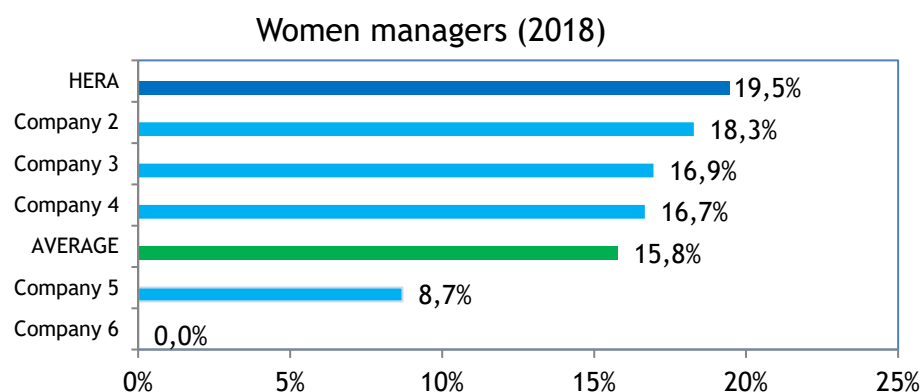
Women staff levels among open-ended contract workers reached **26.6%** in 2019, compared to a national average in the energy-water-waste management sector of 15.9% (Eurostat 2014, most recent data available).

The impact of female personnel among managers and middle managers settled at **29.9%**, improving compared to 2018. Considering all contractual qualifications that provide for a managerial role (managers, middle managers and management employees), women comprise **32.8%** rising also compared with 2018. To complete the picture regarding roles of responsibility, 36% of women were involved in career advancements (middle managers and managers) in 2019 and almost 41% in the career advancements of managers, middle managers and employees. Finally, with regard to the composition of the Board of Directors, members are appointed in full compliance with the equal balance of gender required by Italian Law No. 120/2011: the share reserved to women is 1/3 of the Board of Directors in office.

Of the 544 career advancements in 2019, 149 involved female workers; excluding blue-collar workers where female workers account for around 2.9% of the total, career advancements involving female workers accounted for 40.7% of the total. 35.7% of new middle managers and managers are women.

Women holding roles of responsibility in the main Italian utilities

In a comparative analysis between the main Italian utilities, Utilitatis compared the percentages of female managers: Hera ranks first among the six multiutilities taken into consideration.



Source: Utilitatis, 2019 Sustainability Benchmarking

Personnel by age group

%	2017	2018	2019
Under 30 years of age	4.0%	4.2%	5.0%
between 30 and 50 years of age	47.6%	44.5%	48.1%
between 50 and 60 years of age	43.4%	46.1%	41.8%
over 60	5.0%	5.1%	5.1%
Total	100%	100%	100%

Data as at 31 December. The figures for 2017 refer to workers with open-ended contracts.

There are 4,299 workers who are over 50 years of age: 472 of these are over 60 years of age. The portion of over 50-year olds amounted to 46.9%, decreasing compared to 2018 (51.3%) and confirming going against the trend of the last two years.

Part-time contracts

Qty	2017	2018	2019
Men	39	47	49
Women	308	320	351
Total	347	367	400

Data as at 31 December.

Workforce by gender and type of contract (2019)

qty	Men	Women	Total
Full-time	6,681	2,090	8,771
Part-time	49	351	400
Total	6,730	2,441	9,171

Data as at 31 December

Part-time arrangements, as regulated by current labour agreements, are considered a valid tool for responding to labour **flexibility** needs both in terms of organisational and employee needs. They are characterised by the voluntariness, reversibility and compatibility with the technical, organisational and productive needs of the company and the needs of workers. Family and health needs, the need to help others with disabilities, and cases of serious illness (duly certified as such) are our priority considerations in assessing applications. The persons to whom staff members report must consider how viable the contracts the applicants seek are in terms of corporate needs: if it is concluded that the contract is viable, the changes will be made.

In 2019, 30 requests for part-time arrangements were submitted; all were accepted. Preference towards part-time work among female workers continued to be strong.

Maternity, paternity and parental leave

	2017	2018	2019
Maternity leave taken (no.)	35	142	138
Paternity leave taken (no.)	257	259	267

The number of mandatory maternity and paternity leaves taken in the Group amounted to 138. The number of paternity leaves taken amounted to 267 and the average duration per capita was 11 days for men and 34 days for women.

Health and safety

Ever since its establishment, prevention and safety at work have been among Hera's founding principles; improving conduct and strengthening corporate awareness at all organisational levels towards health and safety is an ongoing target for the Group.

Preventing and minimising health and safety risks is one of the commitments of the Hera Group's Policy that is inspired by the values for sustainable development expressed in the 2030 UN Agenda.

Working to make the workplace safer and healthier is essential to **improve quality and working conditions**, but also to promote the Group's competitiveness.

Throughout these years, various occupational health and safety projects have been implemented, especially with regard to the culture of safety and to risk awareness. These initiatives - together with ongoing training and coaching of staff, specific actions for the improvement of vehicles and equipment, and timely analysis and investigation of accidents and near misses - have allowed us to achieve important results. The specific indicators, reported below and illustrated, are a tangible sign of the improvements attained by the Group in this important field.

[403-2]

The **process for identifying hazards and assessing health and safety risks** is carried out within the Group in accordance with the requirements of articles 17 (non-delegable obligations of the employer), 18 (employer's and managers' obligations), 28 (risk assessment purpose) and 29 (procedures for carrying out risk assessment) of Italian Legislative Decree No. 81/2008 "Consolidated Law on Occupational Safety". More specifically, according to art. 17 of Italian Legislative Decree No. 81/2008, the employer has the non-delegable obligation to assess all occupational health and safety risks. To perform this process, the employers of the Group's various companies and Organisational Units rely on the help of the **prevention and protection service** and the **company physician**, providing them with all necessary information about the nature of the risks, work organisation, and the description of the production processes.

The prevention and protection service is used by the employer to develop the **process for identifying hazards, assessing risks and identifying prevention and protection measures**.

In the Hera Group, specific occupational health and safety management system procedures are adopted to define the roles and responsibilities of the hazard identification and risk assessment process. The risk assessment goals are the following:

- **identify all sources of hazard** and **assess the possible impact on workers** in order to remove the hazards at source or at least reduce them as much as possible;
- if the hazard cannot be removed, adopt **appropriate prevention** and **protection measures**, giving preference, where possible, to collective measures over individual ones;
- **plan** and **implement** the necessary information and training courses on risks.

In order to effectively conduct the risk assessment process, the **likeliness of occurrence of the event** and the **seriousness of its consequences** also need to be estimated. Criteria for estimating likeliness and severity indices were identified to limit any uncertainties when assigning the values and are shown below in the table. Prevention measures aim at lowering the **likeliness** of an unfavourable event **occurring**, while **protection measures** lower the severity of the consequences of the event.

The company is strongly committed to reinforcing workers' **awareness** of the risks associated with their job and to **encouraging** them to report dangerous situations.

For this reason, Hera identifies training courses that encourage people to develop greater self-awareness by changing their own behaviour in the way they perceive risk and by being a good example for other workers. The project "**safety in the field**" aimed at achieving this goal and was also designed to correctly implement the company procedure "**Management of accidents, near misses and occupational diseases**". This procedure provides that "employees who become aware of a near miss, in the event of serious and immediate danger and should it not be possible for them to contact their direct superior, shall take measures to avoid the consequences of such danger". All company figures are responsible for enforcing this procedure. All accidents and near misses are recorded via user ID and personal password on the company's IT system. The aim of the IT system used by Hera Group's main companies is to manage all relations with INAIL in a timely and complete manner. The Prevention and Protection Service is quickly provided with the information included in the first medical certificate and with an exhaustive description of the event, which is automatically notified via the system. A first analysis of the event is carried out just as quickly and leads to **identifying** the cause of the event; if necessary, a second level analysis is carried out to establish the **corrective actions**. The system ensures that information is fully shared, tracks the entire process and keeps its history. To gradually promote the active reporting of hazards, Hera is seeking to develop "**The culture of reporting**": an integral part of a full-fledged system that excludes, due to its intrinsic value, the **punishability** of whoever may have made a mistake and whoever has reported errors committed by third parties. The system makes sure that replies are given and it adopts effective prevention and protection measures, provides information and enhances the process.

The **persons to whom staff members report** are responsible for recording the accidents. A manual on the use of the system, which is published in the Corporate Portal (PIA), is also available for all those involved. System updates are followed by revisions of the manual and training meetings.

Accident indices

	2017	2018	2019
Frequency index	17.1	15.7	14.1
<i>of which for ongoing accidents</i>	3.3	4.1	2.9
Severity index	1.04	0.52	0.43
Rate index	2.8	2.6	2.3
Average accident duration (days)	62.2	32.9	30.7
Number of accidents	240	223	206
<i>of which for ongoing accidents</i>	48	58	42

The frequency index is the number of accidents per million hours worked. The severity index is the number of days of absence per accident divided by thousands of hours worked. The rate index is obtained by dividing the number of accidents by the number of workers, multiplied by 100. The data referring to accidents reported to INAIL which lasted more than three days were considered.

The accidents recorded in 2019 show a constantly improving trend compared to the already positive results achieved in previous years. The accident frequency index at Group level further improved by 11% compared to 2018 (15.7%). The overall Group value improved thanks to the result of Hera Spa, the Group's parent company (accident frequency index of 13.7 in 2019, down 20% compared to last year), of Herambiente (16.1 in 2019, falling by 20% compared to 2018) and of AcegasApsAmga and Marche Multiservizi (down 2% and 4%, respectively, compared to last year). If we consider only ongoing accidents, the frequency index falls from 4.1 to 2.9 (-30%).

The overall number of accidents for the Hera Group declined further (-8% compared to 2018). The number of days of absence due to accidents fell by approximately 1,000 days compared to last year (-14%). This result is better compared to the percentage of female employees in the company and is partly due to the fact that the majority of blue-collar jobs are carried out by men (female blue-collar workers account for 2.9% of total blue-collar workers employed by the Group).

The number of ongoing accidents (while travelling to/from work) accounted for 20% of the total, dropping in absolute terms and as a percentage compared to the figure of the previous year. In 2019, the number of days of absence due to accidents attributable to ongoing accidents (while travelling to/from work) accounts for 19% of the total days of absence. The perimeters most affected are Hera Comm (84% of the total), Heratech (28% of the total) and Inrete (21% of the total).

The objective for 2020 is to keep an accident rate at least 4% (16.3) lower than the average for years 2015-2019 (≤ 15 to 2023) and to launch the training project "Safety culture" in 2020 to promote a culture of health and safety at all company levels.

If we analyse the single accidents that occurred during 2019, there were no critical situations as regards how they occurred or their consequences.

With regard to the mortal accident that occurred at the incinerator of Bologna in December 2010, following the request for committal to trial of a Hera Spa employee, a Frullo Energia Ambiente employee and a Herambiente employee notified in January 2014, the judge acquitted all three defendants of the crime charged by way of judgement of 24 October 2014 "since the fact does not constitute an offence". In October 2015, the public prosecutor challenged the decision. At the hearing of 13 February 2020, the Court of Appeal of Bologna rejected the appeal of the Public Prosecutor's Office, confirming the acquittal judgment of the Court of First Instance.

With regard to the mortal accident in 2009 that occurred at the waste-to-energy plant of Forlì, following the committal to trial of three Hera Spa employees and one Herambiente employee, the preliminary hearing was held on 3 April 2014. At the hearings of 13 May and 30 May 2016, the witnesses and experts were examined. On 31 March 2017, the judge ordered the conviction of the defendants granting suspension of the sentence. On 28 June 2017, the convicted employees filed an appeal against the first instance ruling. The date of the hearing is yet to be scheduled.

[403-3]

An **occupational health service** is provided within the Hera Group in accordance with the requirements of Section V (Health Surveillance) of Italian Legislative Decree No. 81/08. In particular, several **company physicians** operating in the various local areas have been identified and appointed. They have drawn up a **health protocol**, on the basis of the information set out in the health and safety risk assessment document. This document establishes, for each organisational role, which health checks are necessary for monitoring workers' health status and for expressing an opinion on their fitness to carry out the specific task assigned to them.

Medical check-ups are carried out periodically for all workers during **working hours**. The **employer** is responsible for the planning and for the costs of the check-ups and of any clinical and biological examinations considered necessary by the company physician. In the cases provided for by current legislation, medical exams are also conducted to make sure that there is no alcohol dependence and that psychotropic substances and narcotic drugs are not used.

The Group's **health monitoring service** is assigned following a public tendering procedure with awarding of the most economically advantageous bid, i.e. technical and economic evaluation of the offers received from the market with the technical part accounting for 70%.

The Hera Group periodically assesses the quality of the service provided by the supplier via specific checklists and organises special technical coordination meetings with the company physicians as well as with the coordinating physician specifically identified for this purpose. During 2019, **all employees for whom a medical check-up had been scheduled** were subject to health monitoring in accordance with the relevant health protocol.

The "**Hera cardioprotetta**" project also continued during 2019, with the installation of new automated external defibrillators (AED) extended to new Group company offices. The project involved volunteer employees who were trained to use them. Currently, **28** automated external **defibrillators** have been installed in Hera Group's offices and a new installation is planned for 2020 in the operating sites of Sasso Marconi (BO).

[403-4]

Italian legislation (Italian Legislative Decree No. 81/2008) requires that workers be represented by Workers' Safety Representatives. There are 60 Workers' Safety Representatives in the Hera Group. The Workers' Safety Representatives (WSR) are individuals chosen by the employees of a company according to the procedures established by law, who are required to monitor compliance with the rules on workers' safety. Their task is to create a liaison with the employer, in order to report any non-compliance with the rules on health and safety and potential risks. With regard to suppliers, periodic checks on health and safety at work are carried out as set out in internal procedures.

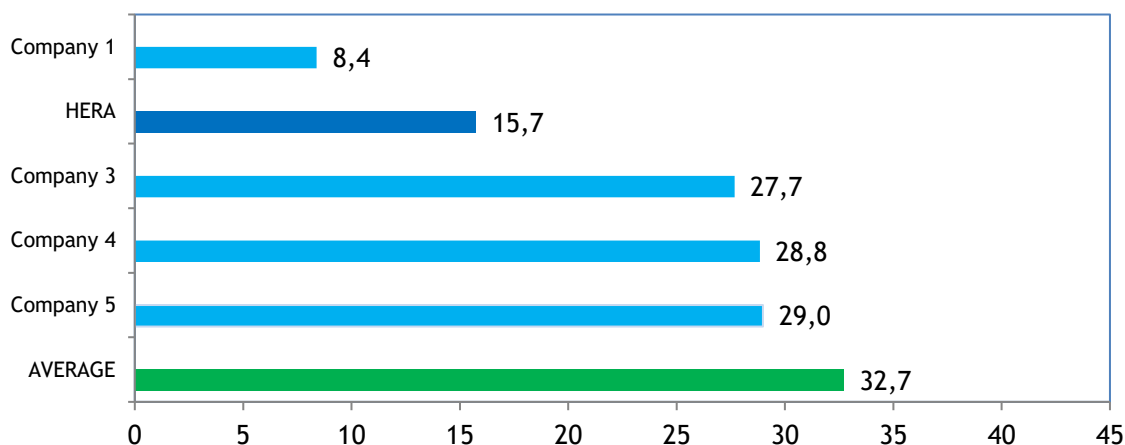
A safety management system is effective when it can count on the **support** and **commitment** of all participants in the company's activities. Employees often have detailed knowledge of their work and of how to make it safer. Workers' Representatives involve staff so that employees can constructively contribute to the application of effective safety management and to its continuous improvement, by providing suggestions and observations. Consultation is understood by the Company as an opportunity for employers, managers and safety officers to obtain and receive opinions from workers and Workers' Representatives about their occupational health and safety decisions.

Hera perimeter workers are involved in the hazard identification and risk assessment process through prior consultation with their representatives (workers' safety representatives). The representatives are convened periodically when occupational health and safety information is shared (e.g. accident trends, safety improvement projects).

Occupational safety in the main Italian utility companies

In a comparative analysis between the main Italian utilities, Utilitatis considered frequency index of accidents lasting more than three days: Hera ranks second among the five multiutilities taken into consideration.

Occupational safety, frequency index (2018)



Source: Utilitatis, 2019 Sustainability Benchmarking

Accident frequency index (by blue-collar workers)

	2017	2018	2019
Total	38.2	29.2	28.6
Of which grid services	26.1	26.4	18.0
Of which waste management services	55.1	43.3	47.5

Data refer to Hera Spa, AcegasApsAmga and Marche Multiservizi.

Accident indices are higher for workers, since they are more at risk of accidents occurring given the nature of the activities they perform. With regard to blue-collar workers, waste management services show a higher frequency index compared to other services (47.5).

Accident indexes of some subsidiaries (2019)

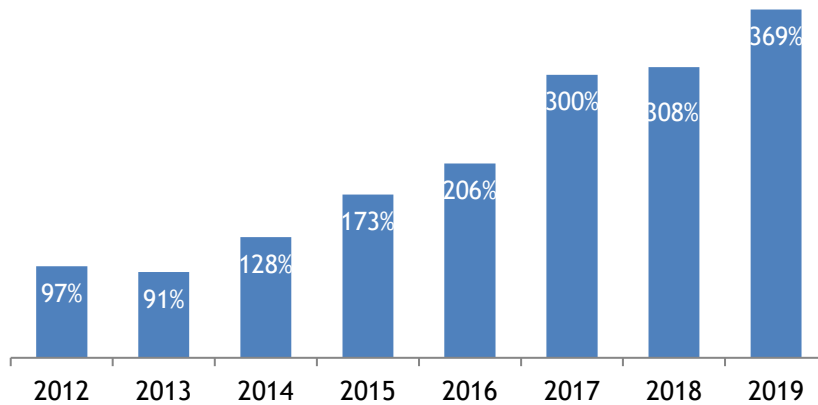
	AcegasApsAmga Group	Herambiente Group	Marche Multiservizi	Hera Comm	Uniflotte
Frequency index	12.2	16.2	33.0	11.9	23.9
Severity index	0.36	0.57	0.93	0.49	0.70
Rate index	2.1	2.7	5.4	1.9	3.0
Workforce	1,765	1,430	592	743	166

Regarding accidents in some companies within Hera Group's perimeter, considerable improvements may be seen in the frequency indices for Herambiente Group companies (from 20.3 to 16.2) and for Uniflotte (from 30.3 to 23.9). There was also a significant improvement in the severity index for AcegasApsAmga Group companies falling from 0.54 in 2018 to 0.36 in 2019.

A key topic for the purpose of preventing accidents and improving workplace health and safety conditions is the ability to report, collect and analyse accidents and near misses. Near misses are accidental events that could have potentially generated an accident. Their correct analysis and examination prevents the occurrence of accidents. The Hera Group places great emphasis on correctly reporting, analysing and

examining near misses. The trend of near misses is monitored on a monthly basis to check compliance with the specific objectives assigned to the various departments and business units.

Change in the ratio between near misses and accidents (near miss)



The data apply to the following companies: Hera Spa, AcegasApsAmga, Gruppo Aliplast (Aliplast, Alimpet, Aliplast France, Aliplast Polska, Aliplast Iberia), Fea, Hera Comm, Hera Luce, Herambiente, Herambiente Servizi Industriali, Hestambiente, Inrete Distribuzione, HERAtech, Marche Multiservizi, AcegasApsAmga Servizi Energetici and Uniflotte.

In 2019, the ratio between near misses reported and accidents that occurred for Hera Group's scope of reporting was 369%. The indicator shows a constant rise. Of note in the Group's overall result are the results achieved by Hera Spa (291%), AcegasApsAmga (426%) and by the companies of the Herambiente Group (816%). The level of accidents reported in Marche Multiservizi reached 56%.

The main types of near misses analysed by the prevention and protection service regarded road accidents, falling or slipping to the ground, collisions and crushing.

[403-5]

A structured process within the Hera Group ensures that all workers receive adequate health and safety **training**. Safety training particularly focuses on the following pillars:

- **General concepts** of risk, damage, prevention;
- **Rights and duties** of various corporate individuals and supervisory bodies;
- **Specific risks** related to the various tasks and to possible damages and resulting **prevention** and **protection measures**.

The training activity is specifically provided to **new hires**, after **job changes** or following **technical and organisational changes**. Training is also periodically repeated if there are any changes in the existing risks. Training content and duration for workers, supervisors and managers are based on the timescales and methods set out in the **State-Regions agreement** of 21 December 2011. Training is planned and delivered with the cooperation of the company's Personnel Department and the prevention and protection service, and also with the help of experienced external professionals.

The workers who receive periodic and repeated training are mainly:

- workers **in charge of fire prevention and fighting**, first aid and emergency management;
- **workers' safety representatives**;
- workers involved in the **culture of safety** project.

To strengthen the health and safety results and further contribute to reducing accidents, projects that have an impact on the company's culture of occupational safety were launched. Given their structure, these projects require medium-long implementation times in order to appreciate their results.

Aware of the need to bring about **cultural change** in people, projects having this common purpose and evolving in different directions had already been introduced in previous years.

The teaching methods chosen to train workers will no longer be of a simply technical and regulatory nature, but will address the development of self-awareness in **perceiving risk** and in setting up **safe** and **informed behaviour**.

To specifically address the topic of distracted behaviour at work, including road behaviour, not taking safety and prevention for granted, and regarding near misses as the best way to ensure a true preventive approach, the first steps of the project "**Safety in the field**" and of the project "**Guido come vivo**" (I drive like I live) focused on road safety, were completed. The latter project will be resumed in 2020.

Two important training and cultural initiatives were introduced in 2019:

- "**The culture of safety**" to reinforce the approach successfully tested with "Safety in the field" within the training provided to almost all Group workers over the three-year period 2019-2021. This training course uses innovative ways of involving participants. The project will continue throughout 2020;
- "**Hera si muove sicura**" (Hera moves safely) which, starting from a road risk assessment based on a new method according to **ISO 39001** standard, leads to implementing the initiatives proposed in the Heureka+ safety challenge and updating the learning magazine of «**Guido come vivo**».

Industrial relations

On 5 April 2019, the Group trade union agreement was signed regarding the application of the system known as "**Black Box**". This system significantly increases driving safety, ensures the effective management of any emergencies or accidents that may occur, guarantees greater protection of corporate assets and makes the management and maintenance of company vehicles more efficient and effective.

On 7 and 24 May 2019, again at Group level, agreements were signed for all Hera Group personnel regarding the finalisation of the performance bonus indicators for 2018 and the identification of the new performance bonus indicators for 2019.

On 7 May 2019, the **2019 Training Plan** was presented to the Trade Unions, as included in the Group's Industrial Relations Protocol, and agreements on the 2019 Funded Training Plan were signed.

On 14 September 2019, with reference to the **partnership** between the Hera Group and the Ascopiave Group, a Memorandum of Understanding was signed between the national Trade Unions and company Management aimed at setting up an in-depth study in preparation for the new company structure. As a consequence, the trade-union procedures required by law were carried out and talks were organised concerning the commercial companies of Ascopiave Group which, as of 1 January 2020, became part of EstEnergy Spa.

On 24 September 2019, a **Memorandum of understanding on company training 4.0** was signed with the national sector Trade Unions. This agreement makes it possible to use the tax credit of expenses relating solely to the cost borne by the company for employees for the period in which the employees are involved in training conducted to acquire or strengthen knowledge of the technologies set out in the **National Industry Plan 4.0**.

In November and December 2019, trade union agreements were signed with the Trade Unions for the Confindustria National Collective Labour Agreement, for the employees of **AcegasApsAmga Servizi Energetici, Aliplast, Acantho** and **Hera Servizi Energia**, to whom the National Collective Labour Agreements for the Rubber, Plastic, Mechanical Engineering and Telecommunications Industry apply. The agreements regarded the implementation of a model of trade union relations structured according to the talks and issues already laid down in Hera Group's Industrial Relations Protocol of 28 July 2015 and already existing for Group employees to whom the Confservizi National Collective Labour Agreements apply.

On the basis of the Hera Group Supplementary Labour Agreement of 25 May 2017, regarding the experimental establishment of a participatory system, the projects for the 2019 working groups were defined.

The Hera Group continued to cooperate with employers' associations by taking part in commissions and delegations to prepare the Electricity, Gas/Water and Waste Management Services National Collective Labour Agreements. Specifically, the negotiations that during 2019 led to renewing the Electrical National Collective Labour Agreement and the Gas/Water National Collective Labour Agreement in which the Hera delegation took part actively.

In the **Emilia-Romagna area**, the shared examination procedures, provided for by law, were carried out during 2019 with regard to:

- the merger by incorporation of **Waste Recycling** into **Herambiente Servizi Industriali**. This transaction was aimed at reorganising and rationalising the activities of Herambiente's Industry Market Department and made it possible to incorporate the activity into a single legal entity, generating opportunities for further synergies and business development; from the date of the merger (1 July 2019), the Utilitalia National Collective Labour Agreement for Environmental Services has been applied to the personnel concerned, as well as the Supplementary Collective Bargaining Agreement in force within the Group;
- the transfer to **Uniflotte** of **AcegasApsAmga's** business branch responsible for managing the corporate vehicle fleet. This transaction will make it possible to create a single management hub for Hera Group's corporate fleets and pave the way for the generation of important synergies in terms of procedures, methods and skills;
- the transfer of the corporate fleet management business branch of **Cosea Ambiente** to **Uniflotte**, including vehicle and equipment maintenance personnel. This transaction will allow for further industrial growth, which has already started in the Hera Group, and will further optimise the Group's presence in the Province of Bologna;
- the transfer of **Cosea Ambiente's** business branch to **Hera Spa**, relating to all direct and indirect activities carried out for the management of separate and non-separate waste collection and transport services, sweeping and collection of bulky waste in the member municipalities of the Province of Bologna, with the exclusion of the corporate fleet management branch (including vehicle and equipment maintenance personnel) and the activities subcontracted by ALIA Servizi Ambientali;
- the concession granted by **Cosea Consorzio Servizi Ambientali** to **Herambiente**, of the landfill located in Gaggio Montano (BO), in the context of the redefinition of the activities and services of interest to the relevant local communities, and following the awarding of the above concession to Herambiente via a public tendering procedure;
- the contribution in kind of the business branch related to the sale of electricity, natural gas and energy-related value added services in the north-east of Italy by **Hera Comm** to **EnergiaBaseTrieste**. This transaction is part of a major commercial partnership project between the Hera Group and the Ascopiave Group and will lead to the creation of a leading business in the energy sector in north-eastern Italy, with over 1 million customers served in Veneto and Friuli-Venezia Giulia;
- the merger by incorporation of **Alimpet** into **Aliplast**. This transaction will make it possible to reorganise and rationalise Herambiente Group's activities by incorporating them in a single legal entity and will lead to opportunities for further synergies and business development;
- the merger by incorporation of **A Tutta Rete** into **Inrete Distribuzione Energia**. This transaction is consistent with the process of expansion that Inrete Distribuzione Energia Spa has achieved so far and will optimise the company's presence in the Province of Ferrara by broadening its industrial platform.

In January 2019, in accordance with the terms of the renewal of the Gas/Water National Collective Labour Agreement of 18 May 2017, an agreement was signed concerning the **consolidation of the wastewater purification allowance**.

On 11 November 2019, a Meeting Report was signed with the Local Trade Unions of Forlì-Cesena - Energy Division, regarding the regulation, in the area of Forlì-Cesena, of the '**leaving home for the worksite**' mode of operation for Group companies. Taking into account the new understanding on the same topic signed at national level, which introduced new rules for the abovementioned mode of operation, the Parties agreed to sign, by way of adhesion and acceptance, the application and modification contents of the aforementioned understanding.

In January 2019, Meeting Reports were signed with the Local Trade Unions of Modena and Rimini - Energy Division concerning the introduction of a new **on-call model**, which was more in keeping with the company's organisational needs, within the Emilia Aqueduct - Modena Area - Plants area and in the Romagna Sewage and Purification - Rimini Area - Plants area.

On 7 February 2019, following completion of the trade union procedure (in December 2018) concerning the partial and proportional demerger by incorporation of **CMV Energia & Impianti** into **Hera Comm**, an agreement was signed concerning the application of remuneration and contract terms in keeping with the second-level bargaining in force at the Hera Group for employees who moved from CMV Energia & Impianti Srl to Hera Comm.

Also on 7 February 2019, following the intention to acquire the entire shareholding in **A Tutta Rete** by Inrete Distribuzione Energia, an agreement was signed regarding the application of remuneration and contract terms in keeping with the second-level bargaining in force at the Hera Group for employees of A Tutta Rete Srl.

On 1 March 2019, a Meeting Report was signed with the Trade Unions of Ferrara - Energy Division concerning the introduction of a new on-call model during the summer period, within the Emilia Aqueduct - Ferrara Area - Networks area, with different subdivision of the operating areas of Ferrara. This operation allowed a more even distribution of on-calls and lower average mileage covered by single operator per call.

On 4 April 2019, a Meeting Report was signed concerning the renewal of the **Performance Bonus** for year 2019 only, for Hera Servizi Energia personnel, thus aligning the expiry of the Performance Bonus for Hera Servizi Energia employees with the expiry of the Group Performance Bonus.

On 2 May 2019, a Memorandum of Understanding was signed with the Regional Trade Unions of the Energy Division concerning changes during the summer period of the working hours currently applied to operating personnel and office personnel included in the on-call calendars in the Romagna Aqueduct - Networks (Forlì-Cesena, Ravenna and Rimini) areas. This transaction will lead to a smoother and more effective structure.

On 11 June 2019, following acquisition of the entire shareholding of **Cosea Ambiente** by Hera Spa, an agreement was signed concerning the application with effect from 1 January 2020 of remuneration and contract terms in keeping with the second-level bargaining in force at the Hera Group for Cosea Ambiente employees.

Also on 11 June 2019, following the trade union procedure concerning the concession granted by **Cosea Consorzio** to **Herambiente**, of the landfill located in Gaggio Montano (BO), an agreement was signed concerning the application with effect from 1 January 2020 of remuneration and contract terms in keeping with the second-level bargaining in force at the Hera Group for the personnel who will be employed by Herambiente.

On 13 November 2019, a Memorandum of Understanding was signed with the Local Trade Unions of Bologna - Energy Division concerning the experimental activation of **new access control devices** at the Borgo Panigale drinking water plant in the Bologna area. The purpose of this operation is to improve the physical security of the plant and prevent unauthorised access. At the end of the testing phase, if no critical technical issues are found, the system will be implemented on other aqueduct service plants.

On 20 June 2019, a Meeting Report was signed with the Local Unions of Ravenna - Environmental Division and the Single Trade Union Representation of Hera Spa - National collective labour agreement for Environmental Services, which introduced, in addition to the current working hours, a new working schedule

for Saturday only, following the Municipality of Ravenna's request to extend the opening hours of the collection centre in Via Romea Nord.

On 10 July 2019, a Memorandum of Understanding was signed with the Local Unions of Bologna - Environmental Division and the Single Trade Union Representation of Cosea Ambiente, which defines, for year 2019 only, the Performance Bonus for **Cosea Ambiente** personnel. With this operation, the expiry of the Performance Bonus is aligned with the expiry of the Group Performance Bonus.

On 5 November 2019, an agreement concerning the implementation of the Smart-Remote Working mode of operation was signed between **Acantho**, the Local Unions of Imola and Modena - Telecommunications Division and the Single Trade Union Representation of Acantho Spa.

On 11 November 2019, a Memorandum of Understanding was signed with the Local Unions of Ravenna - Environmental Division and the Single Trade Union Representation of Herambiente Spa - National collective labour agreement for Environmental Services, concerning the ending of the **redundancy procedure** pursuant to Italian Law No. 223/91, following the closure of the Ravenna waste-to-energy plant (IRE). The agreement became necessary following the notification received from the competent Authorities that the authorisation for the transfer of fuel from waste to the IRE in Ravenna had not been extended. This led to a process for relocating the staff to other available positions within Herambiente Spa.

Also on 11 November 2019, a Meeting Report was signed with the Local Unions of the Environmental Division and the Single Trade Union Representation of Herambiente Spa and Fea Srl, regarding the verification of the **new shift schedule** tested at the Bologna (Fea) and Rimini (WTE of Coriano) plants. The Parties mutually agreed on the basically positive outcome of the test and began talks to reach an agreement to extend the new shift schedule to the remaining waste-to-energy plants.

On 29 November 2019, a Meeting Report was signed with the Local Unions of Forlì-Cesena and the Single Trade Union Representation - Water/Gas National collective labour agreement - Board of Forlì-Cesena, concerning a new working hour schedule for **Heratech** personnel operating in the Fluids Remote Control - Control Room, Forlì area. This guaranteed greater and more practical hourly work from Monday to Thursday by the 5 "daily" Room operators in charge of answering phone calls.

In the **Marche area**, on 4 March 2019, an agreement was signed regarding "**2019 closing of facilities**". It was agreed that the facilities would close for five days during 2019 in order to recover untaken holidays of all personnel.

On 7 May 2019, Group agreements on the Performance Bonus were signed with regard to the final balance of 2018 and the goals for 2019.

[403-4] [403-6]

With regard to the **participation** and **consultation** of workers on occupational health and safety, the **Labor Hera (Technical Observatory for Organisational Innovation and Quality of Work)** project set out in Hera Group's Industrial Relations Protocol of 28 July 2015, continued its activities. In addition, for the Gas/Water National Collective Labour Agreement, the parties set up a **Joint National Health, Safety and Environmental Body for the sector**, made up of three members representing the business and three representing the National Trade Unions.

Open-ended contract workers that are members of unions (breakdown by trade union)

Qty	2017	2018	2019
CGIL	2,331	2,265	2,122
CISL	727	700	742
UIL	595	600	555
CISAL Federenergia	42	28	27
FIADL	232	206	169
RDB	1	0	0
ADL	0	14	8
UGL	8	18	13
USB	12	3	16
FESICA CONFISAL	2	2	1
FEDERMANAGER	13	10	11
CIU MIDDLE MANAGERS	1	0	0
SNALV	8	6	4
CONFIAL	1	1	1
Basic confederation	1	1	1
Basic trade union	12	11	10
Total	4,007	3,865	3,680
Percentage of workforce as at 31/12	48%	45%	41%

Figures refer to 31 December 2019 and to Hera Spa, Hera Comm, Acantho, Asa, Hera Comm Marche, HERAtch, Inrete Distribuzione Energia, Fea, Herambiente, Aliplast Group, Hera Servizi Energia, Hera Trading, HASI, Uniflotte, AcegasApsAmga, AcegasApsAmga Servizi Energetici, Hera Luce and Marche Multiservizi.

41% of the Group's open-ended contract workers are members of a union: the percentage value is around 5 points less than in 2018. In relation to the worker's role, the rate of union membership of blue-collar workers (-4 percentage points), of white-collar workers (-3 percentage points) and of middle managers (-3 percentage points) decreases.

Open-ended contract workers that are members of unions (breakdown by position)

%	2017	2018	2019
Middle managers	22%	20%	17%
White-collar workers	45%	41%	38%
Blue-collar workers	61%	56%	52%
Total	48%	45%	41%

Figures refer to 31 December and to Hera Spa, Hera Comm, Acantho, Asa, Hera Comm Marche, HERAtch, Inrete Distribuzione Energia, Fea, Herambiente, Aliplast Group, Hera Servizi Energia, Hera Trading, HASI, Uniflotte, AcegasApsAmga, AcegasApsAmga Servizi Energetici, Hera Luce and Marche Multiservizi.

Time on strike

Hours	2017	2018	2019
Total time on strike (hours)	14,204	8,324	1,225
Time on strike (per capita)	1.7	1.0	0.1

The data, at 31 December, apply to the following companies: Hera Spa, Acantho, AcegasApsAmga, Fea, Herambiente, Herambiente Servizi Industriali, Heratech, Hestambiente, Hera Comm, Hera Luce, Hera Trading, Inrete Distribuzione Energia, Marche Multiservizi, AcegasApsAmga Servizi Energetici and Uniflotte. The hours worked are calculated net of overtime hours for recovery.

Four strikes were announced in 2019 by national independent trade unions, for overall 32 hours, regarding political, economic and social issues.

Litigation with the workforce [419-1]

Qty	2017	2018	2019
Litigation pending at the close of the year	32	30	23

As at 31 December 2019, 23 **cases of litigation** against workers were **pending**.

In 2019, 220 **disciplinary measures** were taken against Group employees, in compliance with applicable national labour agreements: they involved oral or written reprimands (53 cases), withholdings on salary and temporary suspensions from work (65 cases). In 15 cases, it was necessary to resort to termination, one with notice and 13 without notice.

Case study

Smart working project further extended

Following the start of the pilot project at the end of 2017, the Smart Working project was extended to over **1,500 people** in January 2019, bringing the percentage of employees involved in the project out of the total number of employees with open-ended contract, excluding blue-collar workers, to about 26% (8% in 2018).

The Group's distinctive model focuses on four aspects: **culture and processes, technologies and systems, time and performance and space**.

During 2019, a number of training initiatives (mainly online) were implemented to further spread an "agile culture" within the Group and encourage the dissemination of a common language on this topic. With regard to "technologies and systems", we focused on raising awareness and knowledge about available technologies and main cooperation and planning tools. **Remote working**, i.e. working for one day a week from a place other than the assigned location (including from home) was the main project carried out within the time and performance area. It was further developed and disseminated in 2019, involving 945 people who completed the process to join the company agreement. Furthermore, with regard to "space", smart points were widely used: these multi-purpose spaces (set up on an experimental basis during 2018) respond more effectively to the need to find a place to cooperate and exchange views (with internal or external colleagues), or the need to have more reserved areas to better concentrate.

In 2019, highly satisfactory results were obtained both in terms of improved productivity (for colleagues involved and managers) and improved satisfaction. We will continue to invest in communication towards all employees and in specific training on specific skills to make smart working more effective. The aim will be to continue measuring both collective and individual benefits, enhancing new opportunities and creating conditions to jointly increase productivity and well-being. A further goal is to extend the population involved in the smart working project by increasing the number of staff involved to 50% by 2023, as specified in the goals of the Group's Business Plan.

As part of this process, company management is required to further develop resource management skills in a context where performance grows in importance compared to the time and physical place of work. The Group's leadership model plays a leading and decisive role in ensuring effective application.

The smart working project, as a whole and with reference to remote working, contributes to achieving target 8.2 of the **UN 2030 Agenda**.

Incentives and performance bonus also depend on sustainability

Aspects that refer to sustainability are present in the bonus system for managers and middle managers and the systems for the determination of the performance bonus used by the Group. The performance bonus is

influenced by indicators that are associated with quality, with work and service safety and with the environment, while the bonus system, which is connected to the balanced scorecard, ever since 2006 has provided for a part of the incentive to be connected also to the achievement of sustainability targets.

In 2019, 34% of the variable remuneration of Group managers and middle managers was linked to sustainability target projects (improvement of quality, environmental impact, image, personnel involvement, professional development and involvement of stakeholders), with target projects aimed at creating shared value accounting for 20% (target projects associated with the "smart use of energy", "efficient use of resources", "innovation and contribution to development" CSV drivers).

Balanced scorecard 2019: breakdown of variable remuneration in sustainability and CSV areas

Area	% variable remuneration	No. of target projects	No. of managers/middle managers involved
Smart use of energy	2%	20	46
Efficient use of resources	10%	40	192
Innovation and contribution to development	10%	44	222
Total CSV areas	20%	104	338
Other sustainability areas	14%	89	340
Total CSV and sustainability	34%	193	505

As may be seen in the table, the managers and middle managers involved in CSV and sustainability target projects in 2019 amounted to 505, that is, 76% of the total. Restricting the analysis to CSV areas only, specifically there were 338 middle managers (more than half of the total) involved in target projects aimed at creating shared value. This confirms the Group's widespread CSV approach in its strategy and short-term bonus system (Balanced scorecard) which in 2019 involved 662 workers, including managers and middle managers. The CSV areas of "smart use of energy" and "efficient use of resources" include numerous climate change mitigation and adaptation projects.

Up to 32% of the performance bonus for middle managers, white-collar workers and blue-collar workers is related to shared objectives related to quality, environment and occupational safety.

The opportunity to convert up to 50% of the company's performance bonus into goods and services within the company welfare plan has also been possible since 2018.

Sustainability was also included in the deferred incentive plan for management retention redefined by the Board of Directors in the meeting of 19 December 2018, on the proposal of the Remuneration Committee. The Plan is reserved to a small number of managers selected by taking into account the weight of the organisational position, the evaluation of the performances achieved in the development process and the "market risk". The development introduced for the three-year period 2019-2021 includes "shared value" EBITDA among the three indicators used to quantify the bonus to be paid in 2022. The target to be achieved is set out in the Business Plan for 2021.

As a result of the third edition of HeraSolidale, around Euro 370 thousand collected for five Non-Profit Organisations

HeraSolidale seeks to promote solidarity and support social projects by involving Hera Group's workforce, its customers and the company itself.

The third edition of the project launched in 2018 was completed in 2019. In 2018, the Group's workforce voted for five out of the fifteen non-profit organisations chosen by the company, according to the following

criteria: reputation and transparency of activities, contribution to one or more goals of the UN 2030 Agenda, and intervention areas of relevance to Hera services (accessory criterion).

The list of the non-profit organisations and of the projects and objectives achieved thanks to HeraSolidale are detailed below:

- **ANT Italia Non-Profit Foundation:**
 - "**Solidarity rhymes with sustainability**" allowed a hybrid car to be purchased for providing home care services to cancer patients;
 - "**Children in ANT**" project that offered assistance to 18 young cancer patients and their families, six months of psychological support activities for children who had a sick loved one and around 160 hours of training in schools through specific meetings, developed by ANT psychologists and trainers;
 - "**Adopt a Sick Person**" is a social and healthcare project that was developed throughout Emilia-Romagna to provide assistance to 22 cancer patients.
- **Save the Children:**
 - "**The Za'atari camp in Jordan**" is an educational project for the construction of three kindergartens in prefabricated buildings to help refugee children in Syria. HeraSolidale distributed snacks to 200 children for one year, supported two kindergarten teachers for one year, distributed 2 thousand school kits and books to children, and supplied furniture (chairs, desks and blackboards) and toys.
- **Butterfly Non-Profit Organisation:**
 - "**Donate water**" has allowed the rehabilitation of nine water wells in Ethiopia that guarantee the supply of water to 8,100 beneficiaries. The project also set up Water & sanitation Committees for the management and maintenance of the wells and for the training of the beneficiary communities through health and sanitation courses.
- **AISM - Italian Multiple Sclerosis Association:**
 - "**Research for Severe Multiple Sclerosis**" funded 15 months of work for a researcher;
 - "**AISM Rehabilitation Services**" consisted of the purchase of new medical equipment to provide the best possible rehabilitation to people suffering from Multiple Sclerosis in five Rehabilitation Services in Como, Genoa, Aosta, Vicenza and Padua: a stabilometric platform, two portable electro-stimulators, an ultrasound machine, an electro-stimulator for outpatient care, two bladder scans and an electric bed.
- **Network of Women against violence:**
 - "**Work experience grants: together against violence**" provided five women with six months of on-the-job internships and a six-month grant.

Over **880 workers** joined the project, accepting to donate one, three or five Euros (or another amount) every month which was withheld directly from their payslip.

An important new aspect of this last edition was the involvement of an external stakeholder: Hera's new customers were able to donate 1 Euro to one of the five non-profit organisations when signing a contract with Hera.

But there is more; the company, as usual, wished to play its part: HeraComm and HeraComm Marche donated one Euro to every new customer during the two years of the project.

Between 2018 and 2019, approximately **Euro 370 thousand** were collected: over Euro 126,400 donated by employees through withdrawal from their payslip and Hextra, the integrated corporate welfare system, and over Euro 243,000 donated by Hera Comm, Hera Comm Marche and new customers.

Thanks to the partnership with the Non-Profit Organisations involved, the HeraSolidale project contributes to the achievement of **target 17.17 of the UN 2030 Agenda**.

The **fourth edition** of the project was launched in 2019. Between the end of 2019 and the beginning of 2020, Group workers were involved in choosing **five Non-Profit Organisations** and **Organisations** out of the 15 proposed organisations selected according to the same criteria of the previous edition.

A new feature of the fourth edition of HeraSolidale is the identification of **two Non-Profit Organisations** dealing with environmental sustainability, in line with the commercial offering of the Group and of Hera Comm - a key partner for the success of HeraSolidale, in addition to the **five Non-Profit Organisations** and **Organisations** voted by workers, for a total of **seven Non-Profit Organisations and Organisations**. Unlike the previous editions, the fourth edition of HeraSolidale will last three years.

Diversity and inclusion index: Hera in the top 100 world ranking

The issue of enhancing diversity and inclusion has gained key importance also for Italian and foreign investors, who are increasingly careful to allocate resources in listed companies that implement approaches based on ESG (environmental, social and governance) principles. In this reference context, the Hera Group is among the most interesting companies for investors who welcome and regard the respect for diversity and inclusion as a lever for improvement. Hera's performance is reflected in the result achieved in the "**Diversity & Inclusion Index**", a structured index of **Refinitiv** (formerly Thomson Reuters), which examined over 7,000 globally listed companies. It focuses primarily on four areas: **diversity, inclusion, people development** and **controversies** published in the media. The 2019 ranking of the companies included in the index gave a score of 75/100 points to Hera, allowing the Group to rank third in Italy and 14th in the world and confirming its position as leading global multiutility company.

These awards bear witness to the highly effective journey that Hera has embarked on over the past several years, focusing on issues and challenges of key interest today for the investment community. In this regard, it is worth remembering the guidance letter sent to the CEOs of the largest globally listed companies from Larry Fink, chairman and CEO of the leading investment fund, BlackRock. In his letter, Fink invites the CEOs to think about the meaning of the "purpose" of their business, so that it may become a driver to achieve goals of common interest, including those related to inclusion and diversity.

The Group also came fourth absolute in the ranking of the **Integrated Governance Index** furthered by Etica News (compared with fifth place in 2018) and first absolute place in the ranking for green finance.

Hera was invited for the first time in 2019 to take part in the questionnaire for inclusion in the **Dow Jones Sustainability Index**, aimed at listed companies included in the FTSE MIB40 index and which considers the role of diversity and inclusion in the companies examined among the pillars that it assesses. On the first attempt, the industry average (48) was exceeded with a significant outperformance in the environmental aspect.

Hera water challenge: the quiz to make employees more aware and sustainable

Better a salad today or a fried grasshopper tomorrow? Do you need more water to make a coffee or to take a shower? These and other questions were put to Hera workers who took part in the **Hera Water Challenge**, the campaign for sustainable water resources management. The challenge consists of an interactive quiz that is available on the company portal. It is structured to make all Hera workers participating in the Challenge become more "water-aware". The quiz lasts no longer than 15 minutes and all the answers given in the quiz are based on **official data** to better examine this important topic.

According to the "Water Development Report" published by the **United Nations**, a third of the world's biggest groundwater systems are at risk of drying out. As a result, the **number of people living in conditions of severe water scarcity will increase to 3.2 billion by 2050**. These people will not only live in poor countries, but also in Australia, Italy, Spain and even the United States will have to address severe water shortage.

If we just take a glimpse at the water facts on the UN website www.unwater.org, we can see how much water affects all major human development topics: from the condition of women to armed conflicts and from health to migration. We all need to be aware of this. This is why UN Sustainable Development Goal six is to **ensure the availability and sustainable management of water and sanitation for all**: Hera is striving to help achieve this goal through a four-year plan of which this campaign is a part. Are we ready to rise to the challenge?

Suppliers

Objectives and performance

What we said we would do	What we have done	Geographic scope*		
<ul style="list-style-type: none"> Monitoring of the corporate social responsibility of the suppliers vis-à-vis their workers: collect an additional 90 assessment questionnaires and perform 20 audits care of the suppliers (headquarters and worksites) in 2019. 	<ul style="list-style-type: none"> 20 audits for the monitoring of corporate social responsibility carried out care of the headquarters and worksites of the suppliers and more than 90 assessment questionnaires collected in 2019. (see page 319) 	ER	T	M
<ul style="list-style-type: none"> Continue to assign a relevant score to the environmental and social sustainability aspects in tenders held with the most economically advantageous bid method. 	<ul style="list-style-type: none"> 34/100 average score reserved for sustainability aspects in tenders held in 2019 with the most economically advantageous bid method. (see page 311) 	ER	T	M
<ul style="list-style-type: none"> 75% the value of supplies of services and work in 2019 with monitoring of accidents in the workplace. 	<ul style="list-style-type: none"> 77% the value of supplies of services and work from suppliers with monitoring of accident rates in 2019. (see page 318) 	ER	T	M
<ul style="list-style-type: none"> Continue with the development of the quality, safety, environmental and social responsibility management systems in the choice of suppliers. 	<ul style="list-style-type: none"> Valorisation of the management systems certified continued in 2019. 87% of the value of supplies from Iso 9001 suppliers, 62% Emas/Iso 14001, 57% Ohsas 18001, 38% Sa 8000. (see page 308) 	ER	T	M

What we will do	SDGs	Geographic scope*		
<ul style="list-style-type: none"> Monitoring of the corporate social responsibility of the suppliers vis-à-vis their workers: collect an additional 40 assessment questionnaires and perform 20 audits care of the suppliers (headquarters and worksites) in 2020. 	8	ER	T	M
<ul style="list-style-type: none"> Continue to assign a relevant score to the environmental and social sustainability aspects in tenders held with the most economically advantageous bid method. 	8, 12	ER	T	M
<ul style="list-style-type: none"> 75% the value of supplies of services and work in 2020 with monitoring of accidents in the workplace. 	8	ER	T	M
<ul style="list-style-type: none"> Continue with the development of the quality, safety, environmental and social responsibility management systems in the choice of suppliers. 	8, 12	ER	T	M

* Geographic scope of the improvement objectives ER: Emilia-Romagna T: Triveneto M: Marche.

Suppliers

[102-9]

At the end of 2019, the **companies supplying goods, services, professional activities and works** to the Hera Group included in the pool numbered 5,401. The presence of a single list of qualified suppliers for the entire Group represents an opportunity in terms of growth for the suppliers themselves, as they are given the opportunity to expand their business relationships on all the commodity groups with which they are associated. This translates into the possibility for each business operator to qualify themselves for several product categories.

The data provided in this section, unless otherwise indicated, refers to the companies Hera Spa, AcegasApsAmga, AcegasApsAmga Servizi Energetici, Hera Luce, Herambiente, Fea, Herambiente Servizi Industriali, Hestambiente, Hera Comm, Inrete Distribuzione Energia, Heratech, Marche Multiservizi, Marche Multiservizi Falconara and Uniflotte; the data does not include intercompany purchases.

In 2019 Marche Multiservizi completed the process for complete compliance with the Group procurement policy.

Pool of suppliers

number	2017	2018	2019
Goods	2,331	2,431	2,552
Services	3,359	3,662	3,871
Works	819	890	922
Total	4,765	5,110	5,401
of which suppliers who received at least one order during the year	2,935	3,250	3,644

The table provides a breakdown of suppliers by product class. Some suppliers may belong to more than one class and, consequently, the sum of the individual items does not tally with the total number of suppliers. The 2017 and 2018 figures do not include Marche Multiservizi.

72% of the total suppliers on the list are qualified for the supply of services, while more than 67% (3,644 suppliers) had at least one contract active in 2019.

The **main activities outsourced** by the Hera Group within the sphere of waste management services concern the waste collection services using rear-loading or small-load compactors, the door-to-door waste collection service, street sweeping and washing (manual and mechanised), the cleaning of street waste bins and the management of the separate waste collection centres. With regard to the grid services, the company mainly resorts to outside suppliers for the activities concerning highly specialised maintenance, plant engineering activities and meter services (readings, closures, initialisations, etc.). Furthermore, facility management (global service), commercial and contact individuals call centre activities are outsourced.

In terms of economic value, in 2019 the Hera Group commissioned purchases for more than Euro 1 billion, of which over Euro 13 million for purchases in other European nations.

The **impacts generated by the supply chain** of the Hera Group mainly concern the observance of the health and safety in the workplace standards, the social sustainability aspects and the environmental impacts of the outsourced activities.

Raw material supplies

In 2019, **natural gas** sold by the Group companies was purchased for around 19% from Eni Gas & Power, approximately 12% was purchased from Edison, around 11% from Axpo Italia, around 3% from Enel Trade and 55% via Hera Trading (which, in turn, purchased spot gas on the main European hubs and at the virtual exchange point).

With regard to the **electricity market**, 16% of sales to end customers on the free and protected market were covered by bilateral purchases from other operators, and 84% sourced on the electricity exchange. The methods for trading electricity, both via sourcing on the electricity exchange and, in particular through bilateral agreements, do not allow for the tracing of the physical sources of energy in order to be able to certify the type of production upstream.

The composition of the **energy mix** used for the generation of electricity sold by Hera Comm in 2018 is calculated according to the matters established by the decree of the Ministry of Economic Development dated 31 July 2009, and involves a portion from renewable sources equal to 26% (up compared with the 9% of the previous year further to the increase in purchases of renewable electricity by Hera Comm) for the customers of the free market and 4% (from the 3% of the previous year) for customers of the non-eligible market.

Qualification, selection and assessment of suppliers

The supplier qualification and assessment system makes it possible to check the technical, economic, and organisational quality requirements, as well as the compliance with environmental and safety regulations and corporate social responsibility requisites, and the acceptance of the Group Code of Ethics.

The vendor management system

Since 2012 the **vendor management** system has represented the model for the self-registration and qualification of suppliers and addresses all the companies interested in spontaneously proposing themselves in the Hera Group suppliers list, for any product category. The "**e-Procurement**" vendor management portal allows the suppliers to use a transparent, equal and tracked tool to qualify themselves and participate in tenders announced by the Hera Group.

Within the qualification area of the supplier portal, the companies can access the procurement product categories, making it possible to use the following services:

- independently update the profiles of interest, putting oneself forward for any new product groups within the accredited suppliers system;
- independently keep ones details up-to-date, as well as the schedule of the supplier qualification documents;
- check one's qualification and periodic assessment status;
- gain the possibility of being called more frequently to present bids;
- gain the possibility of receiving information relating to the awarding of a contract;
- being updated on the Group's initiatives of economic interest.

Inclusion in the Hera supplier qualification system is handled on-line by means of the **e-procurement platform**, which also represents a useful communication instrument between the Group and the suppliers. This platform envisages an annual membership fee in keeping with the number of product sub-categories of good groups which the supplier shows interest in, which varies from Euro 50 to 250. Having extended this instrument to public tenders as well as from 2011, the Hera Group confirms it as a best practice at Italian level in the use of evolved tools in the e-commerce sphere.

During 2019, the Hera Group traded 94% of the total volumes on the e-procurement platform. On a like-for-like basis with the previous year (excluding Marche Multiservizi) the percentage remains stable at 99%. When using this platform, suppliers are supported by a dedicated help desk service. In 2019, 11,575 requests for information were received, all of which were resolved within the timeframe established by company procedures.

Another important aspect of the vendor management system is the **monitoring of the companies** who jointly take part in the performance of the contracts for the Hera Group in the role of subcontractors and the like, consortium executors or principals in temporary joint ventures. By means of the reporting generated by the

monitoring activities, it is possible to improve the governance of the purchases, as well as extend the mechanisms for valuation and control envisaged by the Group procedures to all the companies involved in the execution of the tender, overseeing the entire chain of the economic parties involved in the service for various reasons.

In September 2018, within the sphere of the process innovation projects, the **new supplier qualification portal** was inaugurated, with the purpose of simplifying the qualification process, the up-dating of the data and the usability of the information, guiding the uploading of the data to be input in the system. The new portal, permitting direct access for the supplier to each of the individual questions of the qualification document, considerably reduces both the data input timescales for initial qualification and the timescales for updating the data in the event of changes. The response of the supplier pool was positive: at the end of December 2019 **90% of the supplier pool** requalified themselves via the new portal. During 2019, **Marche Multiservizi** completed the process of adopting the Group's supplier qualification, selection and assessment platform and 45% of traditional suppliers qualified on the new portal.

Since 2017, an **automatic and traceable system** has been active for the **alternation of the invitations** to the suppliers to participate in private tenders which, basing itself on a series of parameters including the number of invitations received, their distribution over time and the vendor rating score, further guarantees the supplier selection process and the rotation of the same, with the utmost transparency and on a consistent basis with the Hera Group guidelines. In the same way, this system permits greater communication between the suppliers and the company and absolute exactitude in the documental management. For the purpose of increasing the rate of participation of the suppliers in the tenders, the rotation system was **integrated, during 2019, with the new supplier qualification portal** so as to assimilate within the rotation also the desire of the suppliers to operate solely in specific geographic areas, as specified by said suppliers in the qualification document. By means of this integration, the intention is to increase the efficiency of the tenders, avoiding that the automatic rotation system selects, by means of invitation in a specific geographic area, suppliers who do not desire to work in the same.

The supplier qualification procedure

Supplier **qualification** and **assessment** is regulated by the checking of the technical, economic, and organisational quality requirements, compliance with environmental and safety regulations and corporate social responsibility requisites, as well as acceptance of the Group Code of Ethics. Furthermore, the supply contracts drawn up by the Group companies include termination clauses linked to the failure of suppliers to comply with the principles of the Code of Ethics. Therefore, **all the qualified suppliers are subject to this assessment system**.

The Hera Group's supplier qualification process has been formalised within a specific procedure, by means of the establishment of a single **list of reliable economic operators**, handled by the Procurement and Tenders Department of Hera Spa. **The suppliers to be invited** for the performance of the negotiated procedures are **selected** from this list, as and when necessary. Therefore, the suppliers are selected for all the Group companies on the basis of **qualification requirements** divided up into:

- standard requirements: identical for any product category;
- specific requirements: linked to a specific product category.

Among the various **criteria** identified by the Group for the qualification and selection of new suppliers, of particular importance are those of an **environmental and social nature**, for example:

- declaration of acknowledgement and acceptance of: **Code of Ethics; Corruption prevention model; General Quality-Safety-Environment-Energy and Social Responsibility Regulations** for contractors and/or autonomous workers operating within the sphere of the Hera Group; **Quality and sustainability policy; Personal data protection policy;**
- fulfilment of the **workplace safety obligations** envisaged by Italian law;
- observance of the current legislation referring to the **right of the disabled to work;**

- presence of **employees facing social hardship** within the company workforce with respect to the total;
- enrolment in the regional register of **social cooperatives**;
- declaration of full knowledge of the principles and the **rules on Corporate social responsibility**, and of commitment to comply with the principles and requirements included in the same and with the participation in monitoring and audit activities envisaged by the Hera Group, as well as the assessment of any corrective measures required;
- possession of the following **system certifications**: Iso 9001; Iso 14001; Ohsas 18001; Sa 8000; Iso 50001;
- possession of the certificate of enrolment in the **national register of environmental operators**, pertinent to the precise activities of the product group;
- possession of enrolment with current validity, care of the pertinent Prefecture for the sectors of interest identified by the Prime Minister's Decree dated 18 April 2013, in the list of the suppliers not subject to mafia infiltration attempts (so-called **white list**), otherwise presentation of a formal commitment to request the same.

Furthermore, for the purpose of ensuring the business operations and only in **exceptional cases**, the Group foresees the possibility of making **exceptions**, in the following cases:

- **casual** suppliers: in the event of needs motivated by reasons of experimentation, it is possible to issue just one purchase document vis-à-vis an uncertified supplier. These "casual" suppliers, in order to be able to receive additional purchase orders, will have to obtain qualification in observance of the Hera Group rules;
- **exclusive** suppliers: in the event of indispensable needs, it is possible to issue purchase documents vis-à-vis a qualified supplier, on an exclusive basis;
- procedure for **purchases using order vouchers**: purchase of goods on a case by case basis for a modest economic value, issuing order vouchers on suppliers with which there are specific agreements or even lacking specific agreements;
- procedure for **other purchases which**, having considered their nature (for example: legal, notarial, courier or translations costs) **do not require the prior qualification** of the suppliers. Otherwise the purchase must be appropriately registered in accordance with the rules established by the Group.

Suppliers: breakdown by type of certification

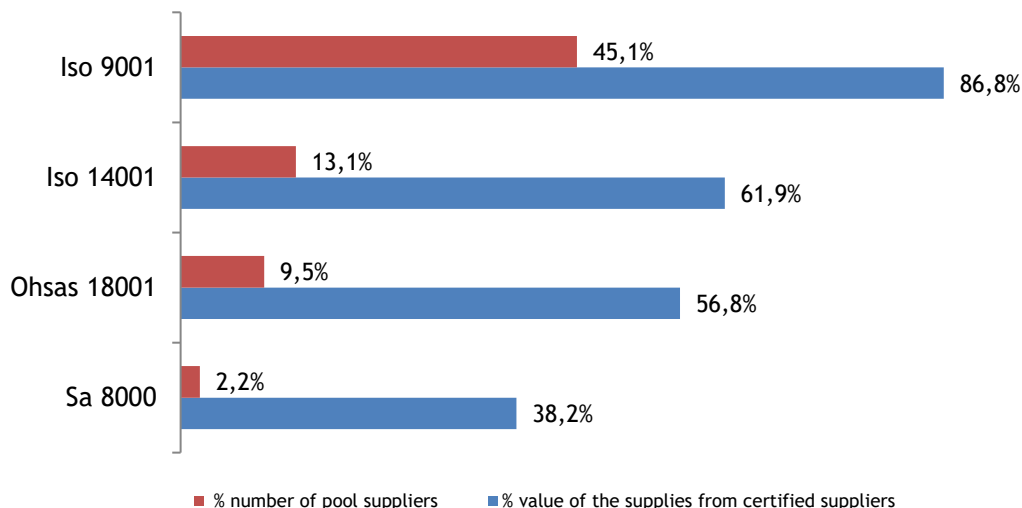
The portion of purchases from Sa 8000 certified suppliers increased by five percentage points compared to 2018, the value of supplies from Iso 9001 and Ohsas 18001 certified suppliers was stable, while the volume of purchases from Iso 14001 certified suppliers decreased slightly, but was still higher than the figure for 2017. These results are the consequence of both direct action taken by the Group companies, which systematically include indication of the possession of certification in the calls for tenders or in the supplier qualification stage as a requirement for participation and/or incentive for the tender, and of the greater sensitivity acquired by the companies in considering the certification as a component of greater competitiveness.

Procurement from suppliers - value breakdown by type of certification (% of total supplies)

%	2017	2018	2019
Quality certification (Iso 9001)	88.9%	87.4%	86.8%
Environmental certification (Iso 14001-Emas)	60.6%	65.7%	61.9%
Occupational safety (Ohsas 18001)	51.8%	56.8%	56.8%
Social certification (Sa 8000)	24.1%	33.2%	38.2%
<i>Total supplies (millions of Euro)</i>	<i>888.6</i>	<i>911.8</i>	<i>1,010.1</i>

The percentage in value terms of the tenders awarded to certified suppliers is always greater than the percentage of qualified suppliers in possession of certification. This view also highlights the effects of the systematic request for possession of certification in the supplier qualification and selection stage.

Quotas of supplies with respect to the number of suppliers on the list (2019)



Supplier assessment and checking

[403-7]

In 2019, the **automated system for checking Inps/Inail contribution payment regularity**, care of the competent One-stop Social Security Point, was consolidated in order to facilitate the monitoring and management of suppliers, along with that for Cassa Edile for all suppliers active and present in the Hera Group's list, including parties grouped together in temporary joint ventures (representative and principals), consortiums and specific contractors, subcontractors and the like relating to the individual service purchase document (order and/or contract).

The periodic assessment makes it possible for the active supplier to receive an up-date of their **scoring** for each individual qualifying product **in the vendor rating system**, with an increase in the event of total absence of anomalies, or with a decrease in relation to the seriousness of the anomalies detected. The assessment can always be consulted and assessed autonomously by the supplier in their specific reserved area of the supplier portal.

The scores have been divided up into **three categories** which contribute towards **channelling the rotation, selection and invitation** - by the individual buyers - of the qualified suppliers by specific product class affected by the private tenders carried out by the Hera Group. The score assigned to each supplier via the rating system influences the list of the firms invited to participate in tenders. Problematic suppliers are excluded from the under-threshold invitations unless they fall within the qualified brackets, via suitable corrective action and/or accurate improvement plans.

Area type	Scoring interval	Level of reliability
Green area	Between 75 and 100 points	from averagely reliable to very reliable
Yellow area	Between 60 and 74 points	from sufficiently reliable to averagely reliable
Red area	Under 60 points	critical

The **supplier assessment management and monitoring model** continues to ensure, via the maintenance of the reporting, the quarterly frequency for the concession of the **bonuses**. By contrast, the methods for the calculation of the decreases takes place by means of the closure of the analysis of the **anomalies** and the definition of specific corrective actions. By means of the formalities introduced it is therefore possible to assign in a standardised manner the decrease in the score over the specific supplier firms (included subcontractors and the like) responsible for the anomaly, who can be inferred from the field monitoring documentation (check list) compiled by the contact individual or their appointee. This allows the company contact individual/Director of works to check the contractual performances of suppliers in the fundamental areas of quality, safety, the environment and corporate social responsibility. In the event of **serious or very serious non-compliance** of the supplier, there is also the possibility of **temporary suspension** from new invitations to private tenders for a period which ranges **from three to six months**. In 2019, suspension was activated for seven suppliers due to very serious non-compliances. In six of the cases, the suspension was for six months; for the remaining case the months of suspension were three.

The **control of suppliers** takes place by means of the checks carried out by the company contact individuals (in turn subject to internal audits on the observance of the procedures) and via inspection visits care of the premises of the companies carried out by a certified third party so as to check the observance of the safety and social responsibility requirements. This monitoring by the company contact individuals takes place for the **deliveries of goods** on their receipt, while for the **services and works** it takes place during the progressive execution of the service, for each related quarter. Specifically, the check is carried out by means of compiling and signing specific monitoring check lists, compiled and signed also in relation to checks carried out on all the parties present, including subcontractors and the like, if present.

During 2019, **a further seven check lists were standardised** of which one specific for goods and the others for services, for the purpose of ensuring an increasingly greater coherence and equity of the assessments. Once streamlined, agreed on and standardised, the check lists were made available on the company information portal to the contract managers, together with the specific instructions for use and the standardisation table of the various anomalies (specific non-compliances). In addition, since February 2020 the generic check lists for monitoring services and works have been reviewed, introducing control elements related to Iso 50001.

The policies and activities described make it possible to ensure increasingly **greater coherence and equity** in the assessments made at Group level.

The **number of checks** on services and works is defined on the basis of the contractual amount, the duration of the contract, and the impact on quality, safety, the environment and on the corporate social responsibility of the services monitored.

The classification of the "**quality warnings**", always sent to the supplier, as a consequence of the detection, also makes it possible to ensure the prompt and correct periodic evaluation of the qualified suppliers. The three categories identified essentially reflect the main certifications present in the Hera Group: Iso 9001, Iso 14001, Ohsas 18001 in addition to the guarantee on Corporate Social Responsibility.

In 2019, the joint **internal audits** of the Quality, Safety and Environment Department and the Procurement and Tender Contracts Department of Hera Spa were maintained, for checking, on a rotation basis, the procedures adopted care of several contract contact individuals: these audits were 12 and, on the basis of the problematic elements detected, a new training plan was developed for the company contact individuals. The plan illustrated, to almost 350 parties, the innovations introduced in the accurate monitoring of suppliers (including subcontractors and the like) as well as in the field of data loading in the company information system, with the introduction of automation and standardisation of the final communication phase, of anomaly management, to suppliers. On-the-job training sessions were also carried out, aimed at the correct and consistent compilation of the checklists on site.

In 2019, furthermore, **inspections** on Corporate social responsibility continued in the facilities of suppliers: in some cases, partially non-compliant conduct was noted which was promptly highlighted, with consequent launch of corrective action and prompt verification of the same. There were eight inspections in total.

Non-compliances found

	2017	2018	2019
Observation	74	113	94
Fairly unserious non-compliance	198	115	74
Serious non-compliance	345	338	299
Very serious non-compliance	200	211	228
Total	817	777	695

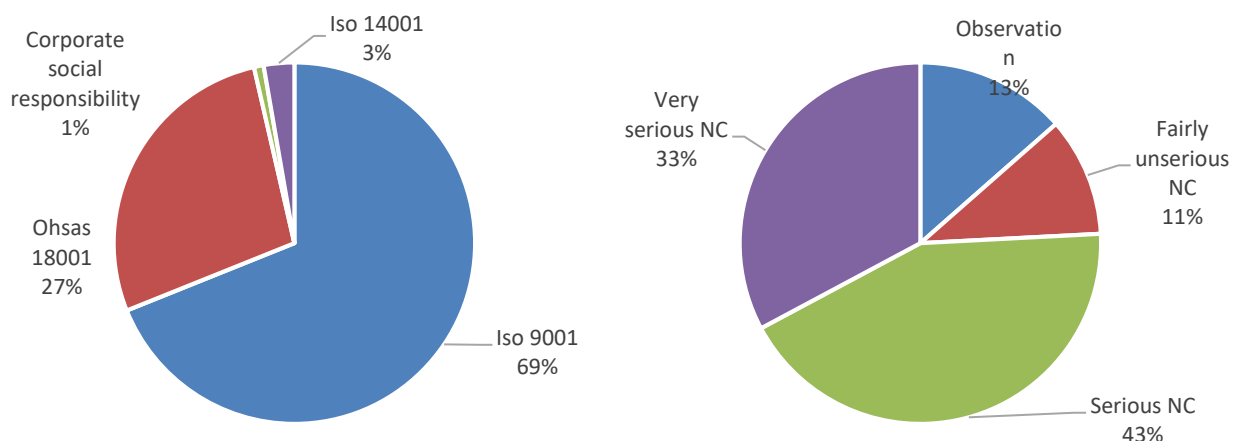
The 2017 and 2018 figures do not include Marche Multiservizi

	2017	2018	2019
Iso 9001	470	519	479
Ohsas 18001	306	214	191
Corporate social responsibility	25	16	6
Iso 14001	16	28	19
Total	817	777	695

The 2017 and 2018 figures do not include Marche Multiservizi

At Group level (including Marche Multiservizi) 695 non-compliances were reported in 2019. On a like-for-like basis with the previous year (excluding Marche Multiservizi) 686 non-compliances were reported (-12% compared with 2018). Of the total, 583 were closed as at 31 December 2019.

Non-compliances found (2019)



The selection of suppliers: tenders awarded adopting the most economically advantageous bid method

The Hera Group **Guidelines on procurement**, since 2008, favour the most economically advantageous bid method as the approach for assessing bids, using sustainability criteria consistent with the principles of the Code of Ethics.

In the specific areas identified by the Guidelines, and in detail "**respect for the environment**", "**social commitment**", "**quality of services**" and "**economic value**", sustainability criteria have been defined on the basis of the experience acquired in managing calls for tenders awarded adopting the most economically advantageous bid method, of doctrine, of regulations on the matter and in line with Group objectives. A **minimum number of sustainability criteria** to be considered for choosing suppliers were established for each area, based on the amount and importance of the tender (if it is a tender with a significant impact on the

environment, occupational safety, the quality of services provided to customers, the term or amount of the contract). Among the main criteria, mention is made of: the management of atmospheric emissions and sound; prevention, reuse and recyclability of waste; energy efficiency; reduction of the hazardous nature of substances used; reduction of water consumption; supplier's adoption of their own Code of Ethics; hiring of persons with disabilities and persons facing hardship; accident prevention and safety training (the social commitment criterion); quality of materials, equipment and instruments; professional qualifications and skills and technical services and performance. In 2019, said criteria were joined by others related to the **circular economy** as highlighted further on in this section and in the case study dedicated to the dissemination of circular economy principles in the supply chain.

Within the **Iso 50001** certification process for Hera Spa a clause was envisaged in the standard specifications which obliges the technical contact individual - if they detect that the subject matter of the purchase has a significant impact on the energy consumption of the Group - to proceed with the assessment of the energy efficiency requirements on the basis of an Energy Management document useful for the assessment of the energy impact.

The Procurement and Tenders functions are responsible for **selecting the sustainability criteria** in agreement with the company contact individuals concerned. They chose the criteria to be used for the type of tender, the importance of the sustainability criterion in relation to said tender, and assessments in respect of previous tenders assigned and their results. The Procurement and Tenders functions can also use the technical support of the Shared Value and Sustainability Department and the Quality, Safety and Environment Department for the choice of the criteria and the assessment of bids in the tender phase.

The **main innovations of the Tenders Code**, published by means of Italian Legislative Decree No. 50/2016, assimilating the EU directives issued on the subject and establishing the new rules to apply to public contracts and tenders, as subsequently amended by Italian Legislative Decree No. 56/2017, by the so-called "Sblocca cantieri" Decree (Italian Decree Law No. 32/2019), subsequently converted into Italian Law No. 55/2019, include the provision of the **awarding criterion according to the most economically advantageous bid method as mandatory and exclusive in certain cases** (Art. 95) such as for example services with a high intensity of manpower (such as cleaning services or scholastic services), or engineering, architecture services or those of another technical or intellectual nature for amounts of or greater than Euro 40 thousand.

The Hera Group Procurement guidelines in fact **anticipated** these virtuous practices in the selection of suppliers **by around ten years**.

Public tenders for contracts adopting the most economically advantageous bid method

	2017	2018	2019
No. of public invitations for tenders published	65	55	68
No. of public invitations for tenders published with economically advantageous bid method	54	47	44
Value of the public invitations for tenders published (millions of Euro)	260.7	183.5	612.4
Value of the public invitations for tenders published with economically advantageous bid method	238.9	171.5	516.0
% of tenders with economically advantageous bid method out of total (value of the calls)	91.6%	93.5%	84.3%
Average score assigned to aspects relating to sustainability of public tenders awarded during the year	27.2	32.1	34.8

In the three-year period considered, the incidence of the most economically advantageous bid method was on average around 90% of the total value of the public tender invitations issued by the Group.

In particular, during 2019, a total of 68 public invitations for tenders were announced, for a total starting price of Euro 612.4 million: of these Euro 516 million, or 84.3% of the total value of the invitations issued in 2019, envisaged the **awarding criterion according to the most economically advantageous bid method**.

The value of calls for tenders compared to the previous year has tripled as the scope of the tenders has in fact been extended to more Group companies and, as a result, many adjudications that were previously managed without a public tender have been managed via the same. The slight decrease in the value of public invitations for tenders with economically most advantageous bid method compared to 2018 is consistent with the legislative provisions mentioned above.

The **average score assigned to the sustainability aspects** came to **34.8** (+8.4% compared with 2018).

In 2019, 24 public tender invitations were issued with awarding to the largest discount for around Euro 96 million, equal to 15.7% of the total value of the public tender invitations issued in the year. Furthermore, one public tender for the qualification system was held, which was not included in the total: the legislation in fact requires that the tender amount and the award method be defined as and when in the subsequent negotiation procedures.

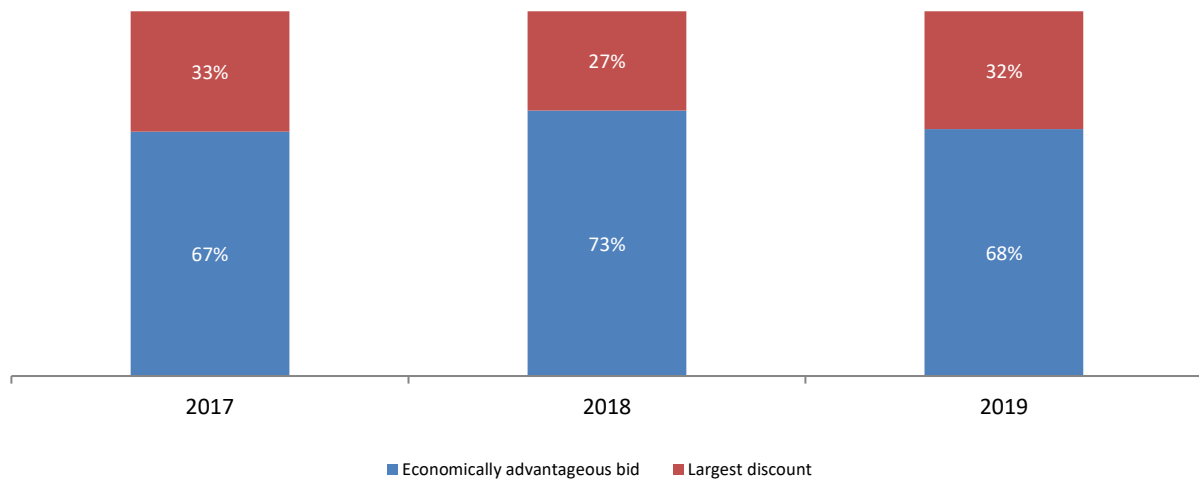
Total awards adopting the most economically advantageous bid method

	2017	2018	2018
Value of the total awards to which the most economically advantageous bid award method is applicable (millions of Euro)	541.0	788.4	844.9
% of the value of the awards adopting the most economically advantageous bid method	67.4%	72.8%	67.7%
% of the value of the awards adopting the most economically advantageous bid method with environmental and/or social criteria	94.2%	95.4%	91.4%
<i>of which: % of the value of the awards adopting the most economically advantageous bid method with circularity criteria</i>	-	-	5.7%
Average score assigned to the sustainability aspects in the adjudications adopting the most economically advantageous bid method	25.3	31.8	34.4
<i>of which: Average score assigned to the circularity aspects in the adjudications adopting the most economically advantageous bid method</i>	-	-	1.8

Extending the analysis to all the adjudications and not just to the public tenders, at Group level in 2019 **67.7% of the adjudications envisaged the most economically advantageous bid award method**. Indication is made of the increases of AcegasApsAmga and Marche Multiservizi, where the total adjudications with most economically advantageous bid method in 2019 for the first were equal to 64.1% compared with 45.1% in 2018, while in Marche Multiservizi the figure came to 30.2% (24.0% in 2018).

Again at Group level, **91.4%** of the value of the adjudications using the most economically advantageous bid method was carried out in 2019 using the **environmental and/or social assessment criteria**.

Total awards with economically advantageous bid method

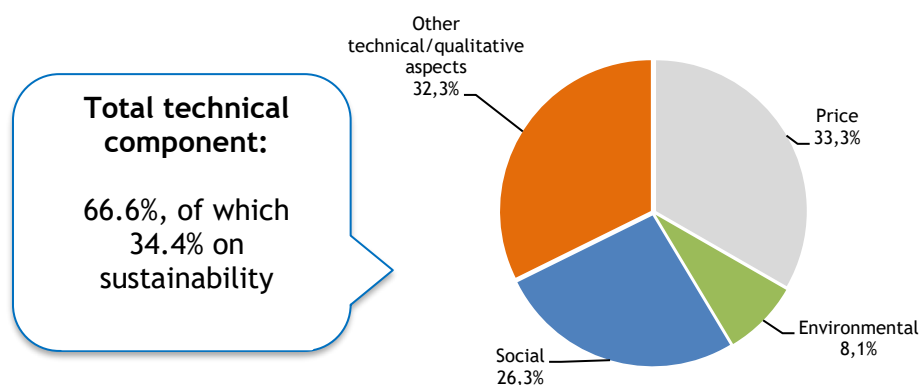


With regard to orders/contracts awarded during 2019 via the most economically advantageous bid award method, the average score assigned to the technical component was 66.6 points out of 100 (in line with 2018): of which **34.4 points relating to sustainability criteria (8.0 pertaining to environmental aspects and 26.4 to social aspects)** revealing a change of +2.6 points with respect to 2018.

Excluding AcegasApsAmga and Marche Multiservizi the average score assigned to the sustainability criteria came to 35.6 points (+2.5 points with respect to 2018). With regard to AcegasApsAmga this value came to 25 points (-1.6 points compared with 2018), while with regard to Marche Multiservizi the value came to 25.3 points (+2.8 points compared with 2018).









From 2019, also the percentage of the value of adjudications consistent with the principles of circular economy is also calculated along with the average score assigned to the "circularity" criteria identified. Please refer to the case study in this section for more information on this topic.









Total awards adopting the most economically advantageous bid method: scores assigned to the various components (weighted average on the amounts) (2019)



The Group sets itself the objective of continuing to assign a **relevant score to the environmental and social sustainability aspects** in the tenders held with the most economically advantageous bid method.

With regard to the importance and significance assigned to sustainability criteria when assessing the bids, the following tenders awarded in 2019 are indicated:

Type	Description	Area	Amount (millions of Euro)	Duration (years)	Technical component	Sustainability score
Negotiated procedure public tender	Road surface repair services	ER	33.7	5	70 	Environmental (5): Iso 14001 Social (53): health and safety training, legality rating, accident trend, Ohsas 18001 and Sa 8000 Other technical aspects (12)
Negotiated procedure public tender	Specialist mechanical maintenance work to be carried out at the plants operated by the Hera Group	ER T M	30.0	5	70 	Environmental (5): Iso 14001 Social (53): health and safety training, legality rating, accident trend, Ohsas 18001 and Sa 8000 Other technical aspects (12)
Qualification system	Mass replacement of gas meters	ER	16.0	2	70 	Environmental (11): Iso 14001, environmental impact of vehicles Social (22): Ohsas 18001, Sa 8000, legality rating, accident rate trend, health and safety training Other technical aspects (37)
Restricted procedure tender	Manual and mechanised road sweeping	T	9.3	2	70 	Environmental (18): environmental impact of vehicles, training and Iso 50001 Social (17): Ohsas 18001 and Sa 8000 Other technical aspects (35)
Restricted procedure public tender	Electrical and electro-instrumental industrial maintenance care of plants	ER T M	7.1	2	70 	Environmental (6, of which 3 points on circularity): Iso 50001 and Iso 14001 Social (49): health and safety training, accident trend, visits to plants, Ohsas 18001 and Sa 8000 Other technical aspects (15)
Negotiated procedure public tender	Rental of new clothing, or that in replacement of worn out clothing	ER T M	7.0	6	70 	Social (34): continuity of the service, Ohsas 18001 and Sa 8000 Other technical aspects (36)
Public tender	Ancillary activities on gas, water, heat meters	ER T M	6.3	3	70 	Environmental (11): environmental impact of vehicles and Iso 14001 Social (23): health and safety training, accident trend, legality rating and Ohsas 18001 Other technical aspects (36)
Negotiated procedure public tender	Refractory maintenance to be carried out at waste-to-energy plants	ER T	5.9	2	70 	Environmental (4): Iso 14001 Social (54): health and safety training, visits to plant, legality rating, accident trend, Ohsas 18001 and Sa 8000 Other technical aspects (12)

Type	Description	Area	Amount (millions of Euro)	Duration (years)	Technical component	Sustainability score
Public tender	Supply and setting up of furnishings, partitions and equipped walls	ER T M	5.0	-	70 	Environmental (39, of which 9 points on circularity): <u>use of recycled material, sustainability and legality of the timber</u> and Iso 14001 Social (5): Ohsas 18001 and Sa 8000 Other technical aspects (26)
Private tender	Service for the complete construction of a new primary station	ER	5.0	-	60 	Environmental (28, of which 18 points on circularity): <u>acoustic emissions reduction, use of eco-compatible material, reduction in value of the no-load and full load losses</u> and Iso 14001 Social (16): legality rating, accident trend and Ohsas 18001 Other technical aspects (16)
Restricted procedure public tender	Handling and screening of waste for anaerobic digestion	ER	3.0	4	70 	Environmental (19, of which 6 points on circularity): <u>use of biodegradable material</u> and Iso 14001 Social (38): legality rating, safety audit, accident trend, Ohsas 18001 and Sa 8000 Other technical aspects (13)
Restricted procedure public tender	Mechanical/manual valorisation and selection of waste	ER	2.9	2	70 	Environmental (5): environmental training and Iso 14001 Social (44): Accident rate trend, safety audit, legality rating, Ohsas 18001 and Sa 8000 Other technical aspects (21)
Restricted procedure public tender	Operating activities for waste handling, screening and processing and control of conferrals	ER	2.1	2	70 	Environmental (18, of which 3 points on circularity): <u>use of biodegradable material</u> and Iso 14001 Social (46): accident trend, safety audit, Ohsas 18001 and Sa 8000 Other technical aspects (6)
Negotiated procedure public tender	On-line cleaning of steam generators installed care of waste-to-energy plants	ER T	1.4	3	70 	Environmental (4): Iso 14001 Social (36): legality rating, health and safety training, accident trend and Ohsas 18001 Other technical aspects (30)
Negotiated procedure public tender	Handling, crushing and screening of waste for biomass production	ER	1.2	4	70 	Environmental (19, of which 6 points on circularity): <u>use of biodegradable material</u> and Iso 14001 Social (38): legality rating, safety audit, accident trend, Ohsas 18001 and Sa 8000 Other technical aspects (13)
Restricted procedure public tender	Activities for valorisation of waste by means of mechanical/manual selection and sorting and mechanical handling	ER	1.2	2	70 	Environmental (6): training and Iso 14001 Social (58): accident trend, monthly and two-monthly audit, legality rating, Ohsas 18001 and Sa 8000 Other technical aspects (6)

The pie charts in the table show the points assigned to the price in grey, those assigned to environmental sustainability in green, those to social sustainability in blue and those to other technical aspects forming part of the technical components in orange. The circularity score and the criteria used have been highlighted in the "Sustainability score" column.

In the **private tenders** the Hera Group, excluding Marche Multiservizi, invited an average of 21 suppliers for each set of negotiations (weighted average on purchase volumes) confirming the approach of the Group based on an open and transparent competition between the suppliers on a consistent basis with the guidelines of current legislation.

Contract management

The **Guidelines with regard to procurement** in accordance with the Group's Code of Ethics and the organisational model pursuant to Italian Legislative Decree No. 231/2001 and the related "**procurement protocol**" determine the underlying principles of the Group's procurement activities in the event of acquisition of goods, services and work necessary for the performance of activities carried out under free market conditions and subject to public works contracts (Code of the public contracts, Italian Legislative Decree No. 50/2016, as amended by the corrective Italian Legislative Decree No. 56/2017 and Italian Decree Law No. 32/2019 converted into Italian Law No. 55/2019).

It should be noted that in 2019 Hera Spa obtained Iso 37001:2016 certification, which involves the adoption of a **management system aimed at preventing and dealing with possible cases of corruption and furthering an ethical corporate culture**. This certification has led to a number of amendments to the standard specifications adopted in the tender procedures, aimed at making this management system operational from a procurement standpoint. In particular, during its meeting on 25 September 2019, the Board of Directors of Hera Spa adopted the Corruption prevention model integrated into the Organisation and Management Model pursuant to Italian Legislative Decree No. 231/2001, whose foundation lies in the principles and values expressed in the Code of Ethics and the Quality and Sustainability Policy adopted by the Hera Group.

Finally, it should be noted that in 2019 the **Regulations for the execution, implementation and integration of the Tender Code** were expected to be issued, aimed at overcoming the so-called "soft law" model introduced in April 2016 with the entry into force of the Tender Code. In fact, it was expected that within 180 days of the entry into force of the conversion Law of the Sblocchi cantieri decree (18 June 2019) this Regulation (Art. 216, paragraph 27 *octies* of the Code) would come into force, but this did not happen and its enactment was extended to 2020. What can already be observed from a reading of the draft Regulation made available by the Ministry of Infrastructure and Transport (M.I.T.) in December 2019, is a clear overriding of the so-called "soft regulation", via a single Regulation implementing the Code, which streamlines the regulatory framework in the field of procurement, unifying some of the Guidelines of Anac and some Ministerial Decrees already adopted after the issue of the Tender Code.

The use of subcontracts

With regard to subcontracting and the like, the **procedure** introduced was further **up-dated and consolidated in 2019** and saw the full compliance of AcegasApsAmga as well, but not Marche Multiservizi.

The **authorisation to subcontract** makes the works Directors and the company contact individuals responsible for documental check activities, and Vendor Rating and Hera Spa Assurance responsible for the validation of the process, the checking of the social security contribution regularity, the control of the list of qualified suppliers and their rating, the search of the Anac electronic records and, if necessary, the request for Prefectural anti-mafia information with direct access to the National bank of anti-mafia data, as well as the request of the Criminal Records Office. All the documentation regarding the request, checking and authorisation has been fully standardised at Group level and reviewed for up-dates with the reference legislation, by the Group Regulations and Tender unit. All the documentation is made available in the documental area of the supplier portal, to the companies and via the Company Information Portal, to all the employees.

The fulfilments necessary for **monitoring the activities of the subcontractor companies and the like at the worksite** have been consolidated (supplier monitoring check list), together with the obligations for permitting facilitated, correct and accurate monthly administrative reporting, inclusive of the accurate checking of the payments to employees used in the execution of the subcontracting.

The **Group standard specifications**, on a consistent basis with the reference legislation, envisage that the contractor pays the subcontractors and the like and that the former provides the works director, on request, with suitable proof of payment with regard to the various Progress Reports (SALs) and/or Performance Certification Forms (MAPs) issued. In the absence of proof, the works director/company contact individual informs the competent administration unit of the suspension of the payment of the quotas not indicated in the subsequent SALs/MAPs until payments are up-to-date. This method is alternative to the direct payment of the subcontractors which can be activated during the course of the work.

In 2019 just over Euro 47 million was subcontracted out, equal to 6% of the amount of work and services outsourced by the Group, while the amounts disclosed for the subcontracting handled came to almost Euro 14 million (1.7%).

Times of payment as per contract

The **contractual average payment times** of the supplies decreased progressively standing at the end of 2019 at 65 days (79 average days in 2018), further to the contractual standardisation which defines average payment times of 60 days for the Hera Group.

The monitoring of work accidents at suppliers

So as to have a complete picture of the accident/injury impact relating to the activities carried out directly and indirectly, as from 2009 Hera has set itself the objective of monitoring the accident and injury indexes for the main suppliers of work and services. Their specifications and tender contracts envisage the forwarding of the "Annual summary of the accidents or injuries occurring care of the contracting companies during the performance of activities on behalf of Hera" form, via which each supplier is required to communicate its accident/injury indexes annually or at the end of the contractual period. As from 2015, this phase for the collation and analysis of the data was computerised using the Sap Srm platform.

Monitoring of supplier accidents

	2017	2018	2019
Value of supplies of services and work (millions of Euro)	727.5	745.2	826.9
Value ordered from suppliers under monitoring (millions of Euro)	637.1	652.2	726.0
Value ordered from suppliers under monitoring (%)	88%	88%	88%
Value ordered from suppliers who have forwarded the monitoring	467.7	491.5	560.9
Value ordered from suppliers who have forwarded the monitoring on the value ordered from suppliers involved in the monitoring (%)	73%	75%	77%

A selection of suppliers was made with commodities groups relating to activities with little significance from the standpoint of safety, the related amounts were excluded from that consumed and therefore from the calculation base for the objective fixed at 75%. The contractual obligation for the forwarding of the accident data does not lapse for these suppliers.

1,352 suppliers answered the survey in 2019 (833 in 2018) for a total of Euro 561 million in terms of value of contracts (Euro 492 million in 2018). **77% of suppliers involved** in the monitoring **were monitored** in 2019.

Overall, **319 accidents were monitored**, the calculation of the data identified an average frequency index of 27.9 and a severity index of 0.66, up with respect to the previous year (the 2018 values were 24.1 and 0.58 respectively).

An analysis of the data relating to the **most significant products from an accident standpoint** shows the following indices: for the works category ("general works") the frequency index is 14.7 and the severity index is 0.52 (in 2018 the indices were 19.6 and 0.66 respectively), while for the waste management services category the frequency index is 42.95 and the severity index is 0.95 (in 2018 the indices were FI 46.0 and SI 1.07).

Supplier relations

Hera participated in 2019 in **meetings with the main trade associations**, such as the meetings organised by Confindustria Bologna and Modena and Confindustria Ravenna. A report on the impact of the Hera Group on local businesses was presented and the functioning of the e-procurement platform was illustrated during these meetings.

In conclusion, as usual, at the end of the year the customary **meetings were held with representatives of social cooperatives** working in the areas served by the Hera Group, to discuss the 2019 results. On the basis of the analysis of the data collected, the work group active in the meetings confirmed the validity of the procedures defined for monitoring. The encounters also pertained to the ways to promote employment projects, illustrated in the section "Economic development and social inclusion".

Litigation with suppliers

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The number of disputes fell: at the end of 2019, there were 28 disputes pending with the suppliers, compared with 36 at the end of 2018. The proceedings activated in 2019 came to 14 and mainly concerned tender aspects.

Case study

The supplier monitoring plan with a focus on social responsibility

During 2019, more than **90 questionnaires for Corporate Social Responsibility assessment** were received from suppliers deemed as critical in terms of activities and contractual amounts. The documents were examined and steps were taken to request clarification and additions for incomplete or missing parts. Furthermore, 201 disclosure measures on the legislation were reported on, by the companies, vis-à-vis their workers.

In addition, in 2019, **eight audits were carried out with a focus on social responsibility**, all care of the suppliers' premises: in several cases, further audits were necessary to check that the agreed improvement process had actually started and that corrective action had been taken. **12 additional audits** were carried out directly at the Hera Group worksites, jointly with the Quality, Safety & Environment Department. The audits at the premises of suppliers were carried out by certified external personnel with references, selected by means of private negotiation, so as to ensure a transparent and independent process adopted by the Group.

These monitoring activities supplement the periodic checks of the company contract contact individuals, also with regard to the correct handling of subcontracting and the like, where present.

The circular economy in the supply chain

In 2019, a project was launched to include in the Group's procurement guidelines criteria consistent with the principles of the circular economy. The project took into account the Resolve model proposed by the Ellen MacArthur Foundation, which defines 6 areas of action for the transition to the circular economy.

All the types of goods and services purchased by the Group were **analysed** and for each of them the current level of maturity of the "circularity" in the selection of suppliers was defined (measured on the basis of negotiating power, maturity of demand, the market and regulatory and sector constraints) along with the future potential (measured on the actual economic weight of the sphere of action on the total cost of the supply), also taking into account the complexity of implementing any action to be taken. The analysis of the current expenditure from a circular economy perspective, carried out also with the involvement of the operating structures, has led to the highlighting of 43 purchasing product types for which "circular" purchases already exist or can potentially be activated.

The **initiatives already in place** have therefore been mapped and some **pilot projects** for 2020 have been defined, which will concern the management of construction sites, the purchases of meters, tyres and plastic products for waste collection (small bags and containers).

On a parallel, a **reporting model** has been developed to monitor the impact of the initiatives activated in a timely manner. On a consistent basis with that which has already been carried out for monitoring of the use of sustainability criteria in the awarding of contracts, an initial list of 20 criteria that can be used in the selection of suppliers and that can be traced back to the principles of circular economy has been identified. These criteria include, for example, the use of recycled or biodegradable materials, the reduction of waste produced by suppliers and its recycling, the use of fully loaded means of transport, and an increase in the recovery quota of waste produced. Among the tenders in which these criteria were used are the supply of furnishings made from recycled material, the purchase of 100% recycled paper for the offices, the purchase of bins and skips made in part with recycled plastic, the construction of primary stations with eco-compatible material.

The **value of the adjudications** made in 2019 using the most economically advantageous bid method, which envisaged "circularity" rewarding criteria, was equal to 5.7% of the total value of the adjudications and the score dedicated to these criteria averaged 1.8 points.

The plan is to extend this reporting also to the tenders featuring largest discount adjudications via the enhancement of the "circular" technical requirements (e.g.: recycled or recyclable material component of an asset). In addition, the plan is to periodically update the list of "circular" evaluation criteria and to extend the methodology adopted for the pilot categories to the other product categories identified.

Focus on shared value, area by area

Bologna

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 21% of customers use energy efficiency services. 129 thousand. "Green" energy 11% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 40 thousand tonnes of CO ₂ avoided thanks to 101 energy efficiency measures in the area (Hera and other companies) from 2007 to date	Recycling 64% separate waste collection, of which 88% recycled* 2% of municipal waste in landfills Reuse Euro 360 thousand of medicines that have not yet expired and 159 tonnes of bulky waste collected and reused Wastewater purification 100% of urban areas with >2,000 pe have achieved compliance 70% of urban areas with 200-2,000 pe have achieved compliance (100% by 2021)	Digitalisation 56% of the gas meters are already electronic Employment 2,636 employees in the Bologna area and 169 hires in 2019 Social inclusion Euro 22 million value of bills paid in instalments, 19 thousand households are involved

* Excluding green waste

CSV Investments Sewage network and purification plant in San Benedetto Val di Sambro A new separate sewage system for foul and storm water and a new purification plant have been inaugurated in the municipality of San Benedetto Val di Sambro. The new plant is fed by the drains that previously ended up in the lake the town overlooks, thus providing benefits for the environment in an area with a strong tourist vocation.	CSV Case Study In Bologna buses and taxis are powered by Hera Group's biomethane Thanks to the collaboration with Tper and Cotabo, the biomethane produced in the Sant'Agata Bolognese plant, using waste from the separate waste collection of the area, powers four city buses and about twenty taxis in Bologna. The same biomethane also powers four service stations for the general public.	New waste collection in the city centres of Imola and Bologna In 2019, the separate waste collection in the city centre of Imola changed: door to door for the mixed waste and road bins that can be opened with a card for organic waste. Thanks to this, separate waste collection has reached 75%, almost 4 percentage points more than in 2018. In the city centre of Bologna, separate waste collection has reached 68% thanks to the mini underground drop-off points and the new Smarty bins.
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The bases and the organisational levers

Economic value distributed to the Bologna area Euro 366 million, of which: 161 million workers 31 million shareholders 19 million PA 155 million suppliers 1,294 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Bologna area: 74/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -14% compared to the Italian average Euro 286 in Bologna, Italian average is 331 Waste collection service expense for non-residential users** -36% compared to the Italian average (Source: Ref Ricerche) Euro 10.20/m ² for Bologna, Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

Ferrara

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 18% of customers use energy efficiency services. 27 thousand "Green" energy 12% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 7 thousand tonnes of CO ₂ avoided thanks to 23 energy efficiency measures in the area from 2007 to date	Recycling 86% separate waste collection, of which 85% recycled* 0% of municipal waste in landfills Reuse 27 tonnes of bulky waste collected and re-used Wastewater purification 100% of urban areas with >2,000 pe have achieved compliance 64% of urban areas with 200-2,000 pe have achieved compliance (100% by 2021)	Digitalisation 19% of the gas meters installed are electronic Employment 494 employees in the Ferrara area and 19 hires in 2019 Social inclusion Euro 9 million value of bills paid in instalments, eight thousand households involved

* Excluding green waste

CSV Investments Greener district heating In Ferrara the district heating network continues to grow. With the expansion carried out in 2019, 25 thousand equivalent housing units have been reached by a safe and clean source of thermal energy. Thanks to the presence of a geothermal source, now acquired and managed directly by Hera, in 2019, 87% of the heat is produced by geothermal energy and the recovery of heat from waste-to-energy processes.	CSV Case Study Ferrara, first in Italy for the separate waste collection Ferrara is the leading city in Italy for separate waste collection. This is certified by Legambiente's annual report on the urban ecosystem. Thanks to the collaboration of citizens, businesses and local bodies, separate waste collection reached 86% in 2018. In addition, Ferrara and Hera showcase best practices for waste management according to the latest "Cities and Circular Economy for Food" report by the Ellen MacArthur Foundation.	New public lighting for Ferrara The Hera Group was awarded the tender for the renovation and operation of the city's public lighting. Smart services and high efficiency systems will reduce electricity consumption by 70%. In addition, all the new infrastructure is designed to maximise the material circularity and 97.6% of everything installed will be recyclable at the end of its life.
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The bases and the organisational levers

Economic value distributed to the Ferrara area: Euro 96 million, of which 30 million workers 3 million shareholders 9 million PA 54 million suppliers 446 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Ferrara area: 73/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -24% compared to the Italian average Euro 253 in Ferrara, the Italian average is Euro 331 Yearly expense for waste collection service for non-residential customers*** -34% compared to the Italian average (Source: REF Ricerche) Euro 10.52/m ² for Ferrara,**** Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

*** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

**** Considered as annual disposals of mixed waste amounting to 1,200 litres per hotel, 3,120 litres per restaurant, 9,360 litres for supermarkets and food industries

Forlì-Cesena

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 21% of customers use energy efficiency services. 42 thousand "Green" energy 11% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 17 thousand tonnes of CO ₂ avoided thanks to 39 energy efficiency measures in the area (Hera and other companies) from 2007 to date	Recycling 60% separate waste collection, of which 88% recycled* 0% of municipal waste in landfills Reuse Euro 20 thousand of medicines that have not yet expired and 105 tonnes of bulky waste collected and reused Wastewater purification 100% of urban areas with >2,000 pe have achieved compliance 67% of urban areas with 200-2,000 pe have achieved compliance (100% by 2021)	Digitalisation 78% of the gas meters are already electronic Employment 597 employees in the Forlì-Cesena area and 35 hires in 2019 Social inclusion Euro 13 million value of bills paid in instalments, 12 thousand households involved

* Excluding green waste

CSV Investments Energy efficiency with Hera Luce public lighting Two measures implemented by Hera Luce in the Cesena area: in Roncofreddo and Longiano. In the first municipality, thanks to the replacement of 1,000 LED lighting points, there will be an energy saving of about 40% and the emission of 39 tonnes of CO ₂ will be avoided. In Longiano, 1,589 lighting points have been replaced, with an average energy saving of 54% per year and 148 tonnes of CO ₂ emissions will be avoided.	CSV Case Study Fibre optics for the smart cities of the future The agreement between the Municipality of Forlì and Acantho, Hera Group's digital company, for the development of ultra broadband services will last 20 years and will make Forlì increasingly smart. Thanks to the synergy between the public and private sectors, cutting-edge services will be provided to citizens, businesses and institutions without any cost for the community.	WEEE for social purposes Two work training projects for prisoners are in place at the Forlì prison: Manolibera is an artisan paper factory that produces high-quality paper objects, while under the WEEE in Prison project detainees disassemble electronic waste and prepare it for recovery, a sector of the circular economy.
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The bases and the organisational levers

Economic value distributed to the Forlì-Cesena area, of which: Euro 129 million 37 million workers 7 million shareholders 16 million PA 69 million suppliers 571 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Forlì-Cesena area: 72/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -24% compared to the Italian average Euro 253 in Cesena, the Italian average is 331 Yearly expense for waste collection service for non-residential customers** -60% compared to the Italian average (Source: REF Ricerche) Euro 6.41/m ² for Cesena, Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

Modena

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 22% of customers use energy efficiency services. 83 thousand "Green" energy 11% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 11 thousand tonnes of CO ₂ avoided thanks to 52 energy efficiency measures in the area (Hera and other companies) from 2007 to date	Recycling 69% separate waste collection, of which 83% recycled* 0% of municipal waste in landfills Reuse Euro 116 thousand of medicines that have not yet expired and 154 tonnes of bulky waste collected and reused Wastewater purification 100% of urban areas with >2,000 pe have achieved compliance 48% of urban areas with 200-2,000 pe have achieved compliance (100% by 2021)	Digitalisation 39% of the gas meters are already electronic Employment 932 employees in the Modena area and 39 hires in 2019 Social inclusion Euro 16 million value of bills paid in instalments, 14 thousand households involved

* Excluding green waste

CSV Investments	CSV Case Study	
More resilient electricity grids A plan has been launched to improve the resilience, continuity and quality of Modena's electricity grid. In 2019, the planned measures on primary and secondary substations were implemented, increasing the possibility of improving service continuity. The plan involves a total of 54 measures involving 223 km of grids serving eight thousand customers.	Anti-waste initiatives and Modena In collaboration with the Albinelli Market, the historical covered structure of the city centre, we launched the Cibo Amico project to recover surplus food that now, at the end of the day, is donated to the needy. And also on the subject of anti-waste measures, a reuse area has been opened at one of the city's drop-off points, where citizens can sell goods that are still in good condition.	Purification plant 4.0 The Modena purification plant has implemented an advanced system, the first of its kind in Italy, which uses predictive logic to reduce energy consumption and improve the quality of the outgoing water. This innovation makes it possible to predict the needs of the plant and govern the purification process with great precision.

The bases and the organisational levers

Economic value distributed to the Modena area: Euro 146 million, of which 57 million workers 14 million shareholders 9 million PA 66 million suppliers 550 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Modena area: 72/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -12% compared to Italian average Euro 293 in Modena, the Italian average is 331 Yearly expense for waste collection service for non-residential customers** -39% compared to the Italian average (Source: REF Ricerche) Euro 9.72/m ² for Modena, Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

Padua

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 17% of customers use energy efficiency services. One thousand "Green" energy 10% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 2 thousand tonnes of CO ₂ avoided thanks to energy efficiency measures in the area (AcegasApsAmga, ASE, Hera Luce and other companies) from 2015 to date	Recycling 61% separate waste collection, of which 89% is recycled* 0% of municipal waste in landfills Reuse 12 editions of the "Ecological Saturdays" to fight dumping bulky waste and promote the culture of reuse (41 tonnes of bulky waste collected) Wastewater purification 100% of urban areas >2,000 pe achieved compliance	Digitalisation 65% of the gas meters are already electronic Employment 611 employees in the Padua area and 32 hires in 2019 Social inclusion Euro 0.8 million value of bills paid in instalments, one thousand households involved

* Excluding green waste

CSV Investments Sewage system upgrade to reduce the risk of flooding About Euro 1.5 million were invested in 2019 to carry out upgrades on the Padua sewage network. The anti-flooding plan put in place by AcegasApsAmga and Municipality is designed to provide structural responses to the fragility of the city's water system.	CSV Case Study A safer aqueduct in Padua Since 2018, an extensive project has been underway for the re-engineering and improvement of the water system in Padua to improve energy efficiency, hydraulic safety, reduction of water losses, and operational management of the systems. The total value of the investments is approximately Euro 1.2 million.	Padua will be greener thanks to the More Trees operation The project was created to encourage the use of waste collection centres and ensure a better quality of separate collection. Every three accesses to the AcegasApsAmga collection centres gives a new tree to the city. Thanks to this initiative, there are now 1,000 more trees in town and two new urban forests.
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The bases and the organisational levers

Economic value distributed to the Padua area: Euro 84 million, of which 37 million workers 5 million shareholders 2 million PA 40 million suppliers 334 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Padua area: 72/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -32% compared to the Italian average Euro 226 in Padua, the Italian average is 331 Yearly expense for waste collection service for non-residential customers** -38% compared to the Italian average (Source: REF Ricerche) Euro 9.82/m ² for Padua, Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

Pesaro-Urbino

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 16% of customers use energy efficiency services. 19 thousand "Green" energy 10% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 5 thousand tonnes of CO ₂ avoided thanks to 45 energy efficiency measures in the area (Marche Multiservizi) from 2007 to date	Recycling 70% separate waste collection, of which 83% recycled* 29% of municipal waste in landfills 115 thousand accesses to the 19 separate waste collection centres Wastewater purification 75% of urban areas >2,000 pe have achieved compliance (100% by 2021)	Digitalisation 29% of the gas meters are electronic, Employment 527 workers in the Pesaro-Urbino area and 50 hires in 2019 Social inclusion Euro 1 million value of bills paid in instalments, two thousand households involved

* Excluding green waste

CSV Investments Expansion of the Pesaro purification plant Work to upgrade the Pesaro wastewater purification plant continues, with an investment of over Euro 8 million. Work is currently at 40% completion, with the construction of the new pre-treatment section and of the tertiary treatment unit, and the demolition of two existing activated sludge lines that will be replaced by two new biological lines. The action will ensure full compliance and resolve the European Community infringement.	CSV Case Study The "Change the ending" initiative for bulky waste in Pesaro After its launch at the end of October on an experimental basis in the town of Pesaro, in collaboration with the Gulliver Association, the new project, created to promote the reuse of bulky waste is very successful: in two months over 300 pickups and 2,000 kg of recovered material.	No-dig technology for networks Marche Multiservizi continues to use technology that does not require digging to lay its networks. In 2019, over Euro 1 million worth of work was carried out. The no-dig technology reduces carbon dioxide emissions into the atmosphere, the time the construction sites are open, the consumption of materials and non-renewable resources, and the volumes of material to be transported to disposal.
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The bases and the organisational levers

Economic value distributed to the Pesaro-Urbino area: Euro 71 million, of which 32 million workers 5 million shareholders 7 million PA 27 million suppliers 227 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Pesaro-Urbino area: 73/100* Average yearly expense for the waste service for a household** (Source: Cittadinanzattiva) -20% compared to Italian average Euro 264 in Pesaro, the Italian average is 331 Yearly expense for waste collection service for non-residential users*** -52% compared to Italian average (Source: REF Ricerche) Euro 7.56/m ² for Pesaro, Euro 15.84/m ² for Italy
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* Data for Hera Comm Marche

** 3 persons in 100 m² Source: Cittadinanzattiva

*** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

Ravenna

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 18% of customers use energy efficiency services. 45 thousand "Green" energy 12% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 21 thousand tonnes of CO ₂ avoided thanks to 38 energy efficiency measures in the area (Hera and other companies) from 2007 to date	Recycling 59% separate waste collection, of which 88% recycled* 8% of municipal waste in landfills Reuse Euro 172 thousand of medicines that have not yet expired and 132 tonnes of bulky waste collected and reused Wastewater purification 100% of urban areas with >2,000 pe have achieved compliance 73% of urban areas with 200-2,000 pe have achieved compliance (100% by 2021)	Digitalisation 53% of the gas meters installed are electronic Employment 675 employees in the Ravenna area and 27 hires in 2019 Social inclusion Euro 11 million value of bills paid in instalments, 10 thousand households involved

* Excluding green waste

CSV Investments An environmentally-friendly public lighting system at Lugo With an investment of over Euro 5.4 million, 8,380 lighting points were replaced with LED lights and 27 new high-efficiency luminaires, and 15 traffic lights and dynamic lighting in the "Il Tondo" park were installed. The measure will determine an energy saving of 66% and avoid the emission of almost 1,000 tonnes of CO ₂ .	CSV Case Study New reuse area Thanks to the new reuse area, small furniture and objects that are still in good condition will find new uses. The circular economy initiative involves various stakeholders in the area to create a virtuous reuse cycle. The aim is to extend the life of goods and promote inclusion processes and fight against the culture of waste	Biomethane from the Ravenna landfill Ravenna is increasingly sustainable thanks to a new plant for the production of biomethane from landfill biogas that will be used to power some buses in the city, with consequential environmental benefits. The initiative is part of the Biomether project, co-financed by the European Commission's Life Programme.
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The bases and the organisational levers

Economic value distributed to the Ravenna area: Euro 154 million, of which 41 million workers 9 million shareholders 9 million PA 95 million suppliers 794 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Ravenna area: 72/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -25% compared to the Italian average Euro 247 in Ravenna, the Italian average is 331 Yearly expense for waste collection service for non-residential customers** -42% compared to the Italian average (Source: REF Ricerche) Euro 9.15/m ² for Ravenna, Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

Rimini

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 24% of customers with energy efficiency services "Green" energy 13% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 5 thousand tonnes of CO ₂ avoided thanks to 20 energy efficiency measures in the area from 2007 to date	Recycling 71% separate waste collection, of which 83% recycled* 0% of municipal waste in landfills Reuse 57 tonnes of bulky waste collected and re-used Wastewater purification 100% of urban areas with >2,000 pe have achieved compliance 73% of urban areas with 200-2,000 pe have achieved compliance (100% by 2021)	Digitalisation 3,100 photo-reporting from citizens to improve urban décor with the Rifiutologo app Employment 533 employees in the Rimini area and 18 hires in 2019 Social inclusion Euro 2 million value of bills paid in instalments, two thousand households involved

* Excluding green waste

CSV Investments	CSV Case Study	
Piazzale Kennedy is open to the public In July, Piazzale Kennedy, the heart of the optimised Seawater Protection Plan, reopened to the public. The Plan includes 14 measures, seven of which have already been completed, and was created in 2014 to eliminate the bans on bathing and reduce by 90% the polluting impact of water discharged into the sea in case of rain, and to ensure hydraulic safety.	More trees in town in Rimini The initiative, promoted by the municipality of Rimini and Hera, will plant 100 new trees in the Marecchia Park, thanks to the donation of one tree for every 50 new domestic users in Rimini who deliver their waste to the city's drop-off points.	Recycled plastic for the sewage of Bellaria-Igea Marina With an investment of Euro 900 thousand, Bellaria-Igea Marina was the first construction site to use recycled plastic for about 2 km of sewage network. Thanks to Aliplast, a Group company and an Italian leader in the treatment and recycling of plastic materials, the new pipes are made from 70% recycled plastic.

The bases and the organisational levers

Economic value distributed to the Rimini area: Euro 106 million, of which 33 million workers 6 million shareholders 13 million PA 54 million suppliers 449 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Rimini area: 69/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -14% compared to the Italian average Euro 286 in Rimini, Italian average is 331 Yearly expense for waste collection service for non-residential customers** -15% compared to the Italian average (Source: REF Ricerche) Euro 13.53/m ² for Rimini, Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

Trieste, Udine, Gorizia

The key numbers of shared value

Smart use of energy	Efficient use of resources	Innovation and contribution to development
Energy efficiency for households and businesses 25% of customers use energy efficiency services. 37 thousand "Green" energy 14% of customers use electricity from renewable sources and gas with CO ₂ emissions offsetting Emissions avoided 2 thousand tonnes of CO ₂ avoided thanks to energy efficiency measures in the area (AcegasApsAmga, ASE, Hera Luce and other companies) from 2015 to date	Recycling 45% separate waste collection, of which 88% recycled* 0% of municipal waste in landfills Reuse 12 editions of the "Ecological Saturdays" to fight dumping bulky waste and promote the culture of reuse (47 tonnes of bulky waste collected) Wastewater purification 100% of urban areas >2,000 pe achieved compliance 95% of urban areas with 200-2,000 pe achieved compliance (95% by 2021)	Digitalisation 39% of the gas meters installed are electronic Employment 1,112 workers in the area and 51 hires in 2019 Social inclusion Euro 4 million value of bills paid in instalments, five thousand households involved

* Excluding green waste

CSV Investments A smarter water network in Trieste At year end, the installation of a new valve on the Trieste water network was completed. The measure required an investment of about Euro 400 thousand and will enable water flow regulations independently, according to the city's water demand.	CSV Case Study Alice, the symbol of Barcolana51 With the "Dalla parte del mare" (On the sea's side) campaign, citizens collected 10 thousand plastic scraps that were used to make Alice, an enormous 10-metre sardine built in the Hera Group's Scart workshops. The installation, which has become the symbol of Barcolana51, brings with it a message of awareness of a limited and conscious use of plastic and its correct disposal when it becomes waste. The initiative also included measures to reduce the use of disposable plastics and raise awareness of the proper collection of waste, particularly for plastics.	More advanced meters in Friuli-Venezia Giulia In 2019 the installations of NexMeter, the new 4.0 gas meter developed by the Hera Group, began. The meter can independently cut off the gas supply if it detects a leak and ensures greater safety, especially in areas with high seismic risk. Also on the subject of innovation, the replacement of water meters with the new smart meters that allow remote reading has begun in Trieste.
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The bases and the organisational levers

Economic value distributed to the Friuli-Venezia Giulia area: Euro 149 million, of which 84 million workers 10 million shareholders 10 million PA 45 million suppliers 377 jobs created (lead-on employment of suppliers)	A high-quality service... at a lower price. customer satisfaction index in the Trieste area: 71/100 customer satisfaction index in the Udine area: 73/100 Average yearly expense for waste management for a household* (Source: Cittadinanzattiva) -6% compared to the Italian average Euro 312 in Trieste, the Italian average is 331 Yearly expense for waste collection service for non-residential customers** -24% compared to the Italian average (Source: REF Ricerche) Euro 12.00/m ² for Trieste, Euro 15.84/m ² for Italy
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* 3 persons in 100 m² Source: Cittadinanzattiva

** Hotel of 1,000 m², restaurant of 180 m², supermarket of 200 m² and food industry of 3,000 m². Source: REF Ricerche

Significant events after the end of the financial year: the Coronavirus emergency

In March 2020, the health emergency linked to the Coronavirus reached a widespread diffusion within the Group's service area. Since the beginning of the emergency, the Group has managed the situation proactively from several points of view. First of all, the Governance of the crisis, by activating an Extraordinary Risk Management Committee (the Crisis Committee), in which the Chairman and Chief Executive Officer participate, which immediately took concrete action and directed activities, organised into transversal working groups, in addition to the preparation of simulations of scenarios – in economic and financial terms – relating to the effects of the crisis and the measures taken by the Government. The Committee meets weekly in order to define operational plans, which are applied according to how the situation unfolds, and to prepare extraordinary measures to deal with the emergency and to prevent and contain the contagion. The Crisis Committee is supported by an Operating Committee, made up of more than 20 people, including Directors, the Health Manager and the Prevention and Protection Service Managers, also active 24/7: its task is to constantly monitor the situation, identify measures to support services and safety, and provide constant information to colleagues, both through institutional communication channels and with a dedicated e-mail address for staff questions.

Protection of workers – The actions taken to protect and safeguard the Group's employees, consistent with the guidelines of public health authorities, concern refraining from work of pregnant or breastfeeding women and people suffering from immune deficiency, the activation of remote working for a very broad range of workers to ensure continuity of service, reaching a pool of active users of almost 2,400 employees, about 50% of our workforce, and the extension of its use (from one day a week to all working days), the extension of departures directly from home for almost 900 workers, the drastic reduction of travel, the cancellation of internal events and classroom training, the use of holidays, the application of rules to maintain distance between people, especially in common areas such as canteens. Cleaning of premises and sites including those intended for contact with the general public has also been intensified. The methods used to carry out services in the field have been defined by introducing health and safety regulations for workers, including the reduction of travel (also by extension of "vehicle at home" mode for maintenance workers) and the elimination of the use of changing rooms or, if not possible, the revision of the shift schedules to reduce the overlap of operational teams. Lastly, with an additional investment fully borne by the company, Hera has activated a Covid-19 insurance policy to cover all employees who are infected by the virus. The policy provides, as an additional benefit, a package of guarantees and services and, in particular, provides hospitalisation allowances, convalescence allowances and post-hospitalisation assistance.

As of 19 March, 9 employees were infected, 57 were in "quarantine", 51 were in precautionary absence due to a particular state of health, and 117 had returned to work after their absence. A total of 234 employees are affected.

Suppliers and purchasing – Suppliers have been asked to follow the same measures to protect their employees as those adopted by the Hera Group, and the criteria for access to Hera offices have been reviewed. In order to support the small and medium sized companies that are creditors of supplies or services and to allow these companies to have an additional source of financing, Hera has granted them the possibility of accepting the release of their receivables, providing all the support necessary to finalise the related factoring operations. In order to give continuity to workers' protection actions, purchases of materials for cleaning and sanitising environments have been intensified, as well as increasing stocks of PPE (masks, goggles, overalls and disposable gloves).

Customers – Customers have been invited to prefer digital channels rather than going to the branch offices, where access has been staggered and plexiglas barriers have been installed to protect customers and staff. Following the worsening of the emergency, Hera has ordered the closure of all its branch offices from 13 to

25 March together with the drop-off points, except for those in the capital towns and Imola. Pending further specific measures by the Government and Arera, customers facing financial hardship were given the opportunity to request a thirty-day deferment of payment of their bills as an alternative to the already existing possibility to pay bills in three instalments over the subsequent three months. In addition, no interest will be charged on bills due until the end of April for late payment. Supply suspensions due to payment delinquency have also been stopped, from the initial days for the water service and from March 13 for electricity and gas, in compliance with the provisions issued by Arera.

Reporting to stakeholders – communication with the contact persons of the areas and stakeholders is continuous and constant, including through press releases published on the website.

Lastly, an operational plan has been prepared that takes into account a possible escalation of the situation, which envisages setting up continuity plans to provide public utility services and to update economic and financial sensitivity analyses.

As of the present date, based on the evidence found, Hera believes that it has taken all steps to mitigate the effects of the emergency.

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Independent auditors' report

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GRUPPO HERA SPA

**INDEPENDENT AUDITOR'S REPORT ON THE CONSOLIDATED
NON-FINANCIAL DISCLOSURE PURSUANT TO ARTICLE 3,
PARAGRAPH 10, OF LEGISLATIVE DECREE 254/2016 AND
ARTICLE 5 OF CONSOB REGULATION 20267 ADOPTED BY
RESOLUTION OF JANUARY 18, 2018**

FOR THE YEAR ENDED 31 DECEMBER 2019

**INDEPENDENT AUDITOR'S REPORT ON THE CONSOLIDATED NON-FINANCIAL
DISCLOSURE PURSUANT TO ARTICLE 3, PARAGRAPH 10, OF LEGISLATIVE
DECREE 254/2016 AND ARTICLE 5 OF THE CONSOB REGULATION 20267 ADOPTED
BY RESOLUTION OF JANUARY 18, 2018**

**To the Board of Directors of
Hera S.p.A.**

Pursuant to article 3, paragraph 10, of Legislative Decree no. 254 of 30 December 2016 (hereinafter the "Decree") and article 5 of CONSOB Regulation no. 20267/2018, we were appointed to carry out the limited assurance engagement on the consolidated non-financial disclosure of Hera S.p.A. and its subsidiaries (hereinafter the "Group") as of and for the year ended 31 December 2019, in accordance with article 4 of the Decree and approved by the Board of Directors on 25 March 2020 (hereinafter the "NFD").

Responsibility of the Directors and the Board of Statutory Auditors for the NFD

The Directors are responsible for the preparation of the NFD in accordance with the requirements of Articles 3 and 4 of the Decree and the "Global Reporting Initiative Sustainability Reporting Standards" issued by GRI - Global Reporting Initiative (hereinafter "GRI Standards") in 2016, which they identified as the reporting standard.

The Directors are responsible, within the terms provided for by law, for that part of the internal control they deem necessary to ensure that the NFD is free from material misstatement, whether due to fraud or unintentional behaviours or events.

The Directors are responsible for identifying the content of the NFD, within the matters mentioned in Article 3, paragraph 1, of the Decree, considering the activities and characteristics of the Group and to the extent necessary to ensure the understanding of the Group's business, its trends, its results and related impacts.

The Directors are responsible for defining the business and organisational model of the Group and, with reference to the matters identified and reported in the NFD, for the policies adopted by the Group and for the identification and management of risks generated or faced by the Group.

The Board of Statutory Auditors is responsible for overseeing, in accordance with the law, the compliance with the Decree.

Auditor's Independence and Quality Control

We are independent in accordance with the principles of ethics and independence disclosed in the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which are based on the fundamental principles of integrity, objectivity, competence and professional diligence, confidentiality and professional behaviour. Our audit firm adopts the International Standard on Quality Control 1 (ISQC Italy 1) and, accordingly, maintains an overall quality control system, that includes processes and procedures for the compliance with ethical and professional standards and with applicable laws and regulations.

Auditor's Responsibility

We are responsible for expressing, on the basis of the work performed, a conclusion regarding the compliance of the NFD with the Decree and the GRI Standards. We conducted our engagement in accordance with the principle "International Standard on Assurance Engagements ISAE 3000 (Revised) - Assurance Engagements Other than Audits or Reviews of Historical Financial Information" (hereinafter "ISAE 3000 Revised"), issued by the International Auditing and Assurance Standards Board (IAASB) for limited assurance engagements. The standard requires that we plan and perform procedures to obtain a limited assurance that the NFD does not contain material errors. The procedures performed in a limited assurance engagement are less in scope than those performed in a reasonable assurance engagement in accordance with ISAE 3000 Revised ("reasonable assurance engagement") and, consequently, do not provide us with a sufficient level of assurance to become aware of all significant facts and circumstances that could be identified in a reasonable assurance engagement.

The procedures performed on the NFD are based on our professional judgment and consisted of interviews, primarily with the company personnel responsible for the preparation of the NFD, in the analysis of documents, recalculations and other procedures aimed at obtaining evidence as appropriate.

In particular, we carried out the following procedures:

1. analysis of the relevant topics reported in the NFD relating to the activities and characteristics of the Group, in order to assess the reasonableness of the selection process used, in accordance with article 3 of the Decree, with the reporting standard adopted;
2. analysis and assessment of the criteria used to identify the consolidation area, to assess its compliance with the Decree;
3. comparing the economic and financial information reported in the NFD with the information reported in the Hera Group's Consolidated Financial Statements;
4. understanding of the following matters:
 - business and organisational model of the Group, with reference to the management of the topics specified by art. 3 of the Decree;
 - policies adopted by the Group with reference to the topics specified by art. 3 of the Decree, actual results, and related key performance indicators;
 - main risks generated or faced by the Group, with reference to the topics specified by art. 3 of the Decree.

With reference to such matters, we carried out some validation procedures on the information presented in the NFD and some controls, as described under point 5, letter a) below;

5. understanding of the processes underlying the preparation, collection and management of the qualitative and quantitative material information included in the NFD.

In particular, we held meetings and interviews with the management of Hera S.p.A. and with the personnel of Hera S.p.A., Herambiente S.p.A., AcegasApsAmga S.p.A., Hera Comm S.r.l., Aliplast S.p.A., Inrete Distribuzione Energia S.p.A., Marche Multiservizi S.p.A. and we performed limited analysis and validation procedures, in order to collect information about the processes and procedures that support the collection, aggregation, processing and submission of non-financial information to the Department responsible for the preparation of the NFD.

Moreover, for significant information, considering the activities and characteristics of the Group:

- at parent company's and subsidiaries' level:
 - a) with reference to the qualitative information included in the NFD, and in particular to the business model, the policies adopted and the main risks, we carried out interviews and obtained supporting documentation to verify its consistency with the available evidence;
 - b) with reference to quantitative information, we performed analytical procedures and limited tests, in order to assess, on a sample basis, the consolidation of the information.

- for the following companies and sites, which we selected on the basis of their activities, their contribution to the performance indicators at consolidated level and their location, we carried out on-site visits, during which we met local management and gathered supporting documentation regarding the compliance with procedures and calculation methods used for the key performance indicators: Hera S.p.A. Bologna Head Office, Granarolo dell'Emilia (BO) and Modena sites; Herambiente S.p.A. Bologna office, Frullo Energia Ambiente S.r.l. Granarolo dell'Emilia (BO) office, AcegasApsAmga S.p.A. Trieste office; Marche Multiservizi S.p.A. Pesaro office; Group industrial plants in Bologna, Granarolo (BO), S. Agata Bolognese (BO), Servola (TS).

Conclusion

Based on the work performed, nothing has come to our attention that caused us to believe that the NFD of the Hera Group as of 31 December 2019 and for the year then ended has not been prepared, in all material respects, in compliance with articles 3 and 4 of the Decree and the GRI Standards.

Bologna, 7 April 2020

Audirevi S.p.A.



Antonio Cocco
Socio

Annexes

GHG gases: metrics and objectives

Total GHG emissions	2017	2018	2019
Waste-to-energy plants (t CO ₂ e)	376,630	412,161	400,531
District heating (t CO ₂ e)	214,215	205,676	201,412
Landfills for municipal waste (t CO ₂ e)	252,429	222,242	224,138
Gas network leaks (t CO ₂ e)	475,110	369,289	455,857
Consumption of methane, diesel fuel, LPG and biogas (t CO ₂ e)	78,128	116,246	208,623
Vehicles (t CO ₂ e)	29,889	29,410	28,788
Direct emissions – Scope 1 (t CO₂e)	1,426,401	1,355,024	1,519,349
Indirect emissions from consumption of electricity (Scope 2 market-based) (t CO₂e)	193,746	148,433	94,183
Total of Scopes 1 and 2 (t CO₂e)	1,620,147	1,503,457	1,613,532
Sales of natural gas (t CO ₂ e)	5,433,000	5,469,000	4,862,352
Sales of electricity (t CO ₂ e)	4,989,000	4,381,000	4,121,946
Emissions from energy production and consumption (not included in Scope 1 and 2) (t CO ₂ e)	118,000	115,000	432,059
Emissions from services provided (t CO ₂ e)	806,000	777,000	735,990
Total indirect emissions – Scope 3 (t CO₂e)	11,346,000	10,741,000	10,152,347
Total emissions – Scopes 1, 2, and 3 (t CO₂e)	12,966,147	12,244,457	11,765,879

For more details on the composition of the individual items, the trend and the emission factors used, see the "Reduction of GHG emissions" section in the "Smart use of energy" chapter.

Emissions intensity	2017	2018	2019	2023
Carbon intensity index, by turnover (t CO ₂ e emitted Scopes 1+2/turnover in millions of Euro)	296	245	233	-
Carbon intensity index, by EBITDA (t CO ₂ e emitted Scopes 1+2/EBITDA in millions of Euro)	1,689	1,458	1,484	-
Carbon intensity index in energy production (t CO₂e from power plants*/MWh produced)	498	482	453	417

*Waste-to-energy plants, district heating, and landfills for municipal waste

Detail of atmospheric emissions of waste-to-energy plants

Concentrations of atmospheric emissions of waste-to-energy plants (2019)

mg/Nm ³	Regulatory limits pursuant to Legislative Decree 133/2005	Bologna (lines 1 and 2)	Faenza (Enomondo)	Ferrara (lines 2 and 3)	Forlì (line 3)	Modena (line 4)	Padua (lines 1 and 2)	Pozzilli (IS)	Ravenna (WDF)	Ravenna (integrated platform for special waste)	Rimini (line 4)	Trieste (lines 1, 2, and 3)
Particulates	10	0.2	0.6	0.3	0.5	0.4	1.1	0.5	0.6	0.2	0.5	0.1
Hydrochloric acid	10	0.2	3.3	0.7	3.6	2.5	0.8	6.2	1.2	0.1	2.3	0.6
Nitrogen oxides	200	85.5	46.9	41.9	46.0	60.3	48.4	154.4	134.3	78.4	56.9	150.5
Sulphur oxides	50	2.2	0.5	0.1	2.3	0.7	1.0	7.4	0.3	4.6	1.6	0.9
Carbon monoxide	50	16.3	13.3	7.6	2.4	8.5	5.5	3.4	4.1	3.2	9.5	10.0
Hydrofluoric acid	1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Organic Carbon	10	1.8	1.0	0.5	1.0	0.9	1.3	0.9	0.6	0.2	0.9	0.6
Total metals	0.5	0.01060	0.14000	0.00290	0.00540	0.00241	0.00399	0.00810	0.00560	0.01650	0.00159	0.00457
Aromatic polycyclic hydrocarbons	0.01	0.00001	0.00060	0.00000	0.00000	0.00001	0.00011	0.00003	0.00001	0.00155	0.00003	0.00007
Dioxins and furans	0.1	0.00051	0.00344	0.00068	0.00003	0.00114	0.00185	0.00211	0.03470	0.00131	0.00102	0.00273
Cadmium and Thallium	0.05	0.00043	0.00080	0.00047	0.00031	0.00025	0.00050	0.00244	0.00050	0.00051	0.00025	0.00050
Mercury	0.05	0.00159	0.00130	0.00008	0.00050	0.00051	0.00023	0.00020	0.00070	0.00300	0.00031	0.00017

The regulatory limits refer to Italian Legislative Decree No. 133/2005. For particulates, hydrochloric acid, nitrogen oxides, sulphur oxides, carbon monoxide, carbon monoxide, hydrofluoric acid, and total organic carbon, the values are the average continuously measured values and the limits are those for daily averages. For all other components, the values are the average of periodic measurements and the limits are for each individual measurement. In the new lines at Ferrara, Forlì, Rimini, and Modena, mercury levels are measured continuously.

Extract from the Green Bond Report 2019 (Report on the allocation of Green Bond funding 2019-2027 and on the environmental impact)

This section is dedicated to reporting on the funds allocated and the environmental performance achieved by the measures financed by the 2019-2027 Green Bond issued the 5 July 2019. This section has also been audited by the Sustainability Report auditors.

The **Green financing framework** is the policy document prepared by Hera that defines the categories of “green projects”, the project selection process and the criteria utilized in the selection, the process of managing the funding received, and the commitments in terms of reporting and external verification.

“Green projects” are projects designed to achieve five environmental objectives: climate change mitigation, adaptation to climate change, conservation of natural resources, preservation of biodiversity, and prevention and control of pollution.

The Green financing framework was drafted in line with the Green Bond Principles published by ICMA (2018 edition) and the Green Loan Principles published by the Loan Market Association (LMA) in December 2018.

This framework can be used by Hera to issue of various types of green financing instruments including:

- green bonds;
- green loans, including, for example, term loans, project finance loans, asset finance, and revolving credit facilities;
- any other financial instrument for financing green projects.

Eligible “green projects” may include new, ongoing or existing projects, as long as they are financed no more than two years before each green financing instrument is issued.

The definition of the projects financed was confirmed by a “Second Party Opinion”, drawn up by ISS-Oekom which awarded Hera “Prime” status in terms of ESG performance (sixth in a panel of 43 global companies) and pointed out its particular excellence in the water sector.

The following table shows the **allocation of funds received** with respect to the various categories identified in the Green financing framework. At 31 December 2019, all the funds received had been allocated to “green projects”. 71% of the funds were allocated to the refinancing of investments made in 2017 and 2018, and 29% of the funds were allocated to the financing of investments made in 2019.

Green Bond 2019-2027: allocation of funding

Thousands of Euro	2017	2018	2019	Total collection	% of total
Sewage and purification	44,277	33,980	67,345	145,602	29.1%
Aqueduct (adaptation to climate change)	6,978	35,843	-	42,821	8.6%
<i>Infrastructures in the water sector</i>	<i>51,255</i>	<i>69,824</i>	<i>67,345</i>	<i>188,423</i>	<i>37.7%</i>
Waste collection	10,545	8,279	12,653	31,477	6.3%
Waste recycling plants	91,726	3,765	5,178	100,668	20.1%
Waste-to-Energy Plants	5,168	5,087	6,993	17,248	3.4%
Anaerobic digesters and other waste treatment plants	14,533	17,185	7,479	39,197	7.8%
<i>Circular economy and sustainable waste management Total</i>	<i>121,972</i>	<i>34,316</i>	<i>32,302</i>	<i>188,590</i>	<i>37.7%</i>
Electronic gas meters installed (qty)	11,825	11,990	11,790	35,604	7.1%
Smart gas networks	10,250			10,250	2.1%

Thousands of Euro	2017	2018	2019	Total collection	% of total
<i>Energy efficiency and gas infrastructures Total</i>	22,075	11,990	11,790	45,854	9.2%
Smart grids electricity	12,165	10,572	12,767	35,503	7.1%
Electronic electricity meters	229	628	20	876	0.2%
District heating	5,051	4,102	6,281	15,434	3.1%
Public lighting and Smart cities	1,745	10,799	12,754	25,298	5.1%
Charging systems for electric cars	14	7	-	20	0.0%
<i>Total energy efficiency and electricity infrastructures</i>	19,203	26,107	31,821	77,132	15.4%
Total	214,505	142,237	143,258	500,000	100.0%

The following table shows the **indicators that measure the environmental benefits of the measures financed** with Green Bonds and the reference to the sections of this Sustainability Report.

Green Bond 2019-2027: indicators that measure the environmental benefits

		2017	2018	2019
Infrastructure in the water sector				
Citizens serviced by the integrated water service (thousands)	Pages 96 and 119	3,648.4	3,651.8	3,653.6
Length of the aqueduct network (km)	Page 96	34,641	34,928	35,056
Water withdrawn and injected into the network (thousands of m ³)	Page 96	430,076	421,749	418,155
Water distributed using tankers (m ³)	Page 97	-	-	726
Quality of purified water (%)	Page 103	39.0%	34.7%	35.1%
Urban areas >2,000 EI that achieved compliance with wastewater purification legislation (% of population equivalents)	Page 103	-	92.2%	97.3%
Circular economy and sustainable waste management				
Volumes of recycled plastic sold by Aliplast (thousands of tonnes)	Page 85	59.6	63.7	72.8
GHG emissions avoided by selling recycled plastic (thousands of t CO ₂ e)	Page 66	-	150	170
Compliance of atmospheric emissions of waste-to-energy plants with regulatory limits (%)	Page 165	14.5%	13.8%	14.1%
Energy produced by waste treatment plants (MWh)	Page 51 and 53	972,132	912,608	905,849
Waste treated (tonnes)	Page 93	6,802	7,293	7,175
Separate waste collection (%)	Page 71	57.7%	62.5%	64.6%
Percentage of waste sent for recovery at selection plants (%)	Page 84	76.2%	77.2%	83.3%
Energy efficiency and energy infrastructures				
District heating - Energy saved (toe)	Page 169	37,450	36,495	35,132
District heating – GHG emissions avoided (thousands of t CO ₂ e)	Page 169	125,684	121,022	119,639
District heating - Length of district heating network (km)	Page 169	261.1	261.1	264.6
Electronic gas meters installed (qty)	Page 248	371,561	627,953	710,072
Average number of power outages per customer (qty)	Page 255	2.10	1.54	2.00
Citizens served by the electricity distribution service (qty)	Page 255	632.3	632.7	634.2
Percentage of public lighting points using LEDs (%)	Page 46	14.2%	14.9%	27.4%

Glossary

Ambito Territoriale Ottimale (ATO - Water and Waste Regulatory Authority)

Pursuant to Italian Law No. 36/1994, the Water and Waste Regulatory Authority defines the local level of organisation of integrated water services to overcome the fragmentation of management and to reach suitable sizes for the areas served.

Ammoniacal nitrogen

The term ammoniacal nitrogen (NH_4) identifies the concentration of ammonia ions in water. It provides an index of biodegradation of nitrogenous organic substances. It is expressed in mg/l.

Autorità di Regolazione per Energia Reti e Ambiente (Arera - Regulatory Authority for Energy, Networks and the Environment)

A formally independent authority established under Italian Law No. 481/1995 to promote the development of competitive markets in the electricity and natural gas sectors, mainly by regulating rates, network access, market operation and protecting the interests of end users. In 2012, Arera was assigned functions concerning the quality, rates and costs of the integrated water services, and in 2018 functions concerning waste management services.

Biogas

The term biogas identifies a mixture of types of gas (mainly methane) produced by natural bacterial fermentation (in anaerobic conditions, i.e., in the absence of oxygen) of organic residues from waste.

BOD

The term BOD (Biochemical Oxygen Demand) is used to define the amount of oxygen consumed during a specific time period (5 days for BOD_5), at a given temperature, to biodegrade the organic matter present in the water via bacterial action (uptake of oxygen by micro-organisms). High biochemical oxygen demand indicates intense biodegradation of organic matter, and may highlight the presence of organic pollution. It is therefore an indirect measure of pollution levels. Its value is expressed in mg/l.

Bond

A listed financial instrument of indebtedness issued by a company. They are long-term loans: investors are guaranteed the right to annual interest payments at a fixed rate, with the return of the capital on a set date.

COD

The term COD (chemical oxygen demand) identifies the amount of oxygen required for the complete oxidation of organic and inorganic compounds present in a water sample. Thus, it is an index for measuring the degree of pollution, mainly organic, in the water by substances which can be oxidised. It is expressed in mg/l.

Code of Ethics

A document setting forth for all business activities a number of principles, and specifying conduct, commitments and ethical responsibilities to be put into practice by members of the Board of Directors, staff, and collaborators of the company. The Code may be described as a "Constitutional Charter" of a company, a charter of moral rights and duties that establishes the ethical and social responsibilities of all those who work within the organisation.

Cogeneration

Simultaneous production of electricity and thermal energy (in the form of steam).

Composting

Aerobic treatment (in the presence of oxygen) of biodegradable organic waste, the final product of which is compost, a soil improver, which can be used in vegetable cultivation.

Corporate Governance

The set of processes, policies, practices, laws and institutions which influence how a company is managed and controlled. Corporate Governance also covers the relations between the various players involved (stakeholders, those who have a vested interest of any type in the company).

Dispatching (electricity sector)

Activities that provide instructions for the coordinated use and operation of production plants, of the transmission grid and of auxiliary services (Bersani decree).

Dispatching (gas sector)

Activities that provide instructions for the coordinated use and operation of extraction and storage plants, the transport and distribution network and auxiliary services (Letta Decree).

District heating

Remote distribution of heat generated by thermoelectric power stations, cogeneration plants or waste-to-energy plants using an energy carrier (hot water, superheated water, or steam).

EMAS

EU Regulation 761/2001 which requires businesses to implement environmental management systems based on policies, programmes, procedures and objectives aimed at improving the environment, and to publish an Environmental Statement, to be validated by the Ecoaudit Committee.

Enterprise Value (EV)

The overall value of a company as the sum of its market capitalisation and its net financial indebtedness. When comparing a company's value to others of the same industry the Enterprise Value is in relation to economic indicators such as EBITDA and EBIT. Higher EV/EBITDA or EV/EBIT ratios mean higher value of one company over another.

Ethical Funds

Mutual investment funds whose choice of shares, bonds and government securities is inspired by ethical selection criteria. These parameters are defined as exclusion/inclusion.

Greenhouse gases

Gases that are transparent with respect to solar radiation, but prevent the dispersion of heat from the Earth, thus leading to the overheating of the atmosphere. Besides the greenhouse gases of natural origin, the main greenhouse gases produced by humankind are carbon dioxide, methane, chlorofluorocarbons and nitrogen oxides.

Green Certificate (GC)

GCs offer incentives to generate electricity from renewable sources. As required by Italian Law No. 244/07, GCs are issued by the Italian energy services manager (Gestore dei Servizi Energetici – GSE) and concern the production of electricity from renewable sources of the previous year or the production expected during the current year or during the following year. They represent one MWh of electricity. Each individual producer or importer must feed into the grid for 2012 a 7.55% share of electricity produced by renewable sources: this share decreases linearly starting in 2013 and reaches zero in the year 2015. The requirement can also be satisfied by purchasing GCs from other parties.

Geothermics

The science that studies the internal energy of the Earth and its practical applications as an energy source.

Heat Pump

A device capable of transferring heat from a body at a lower temperature to a body at a higher temperature, using electricity.

KPI

Key Performance Indicators are specific indicators selected on the basis of corporate information needs. They are used to carry out corporate monitoring. KPIs may be financial, production-oriented, commercial, environmental or social, or may span multiple aspects.

Leachate

The substance resulting from water and other liquid mixtures filtering through waste.

Mobility management

Mobility management identifies an internal corporate department in charge of managing staff commuting.

Nm³

Normal cubic metre, the volume of gas at 0 °C and 0.1 MPa.

Nitrogen oxides

Nitrogen oxides (mainly NO and NO₂), are gases produced by the combustion of fossil materials. Nitrogen oxides contribute to the formation of ozone in the lower atmosphere, and acid rain.

OHSAS 18001: 2007

The OHSAS 18001 (Occupational Health & Safety Assessment Series) standard is an internationally recognised benchmark for the certification of workplace health and safety management systems.

PCB (polychlorinated biphenyls)

Highly toxic organic compounds used in a wide range of applications, e.g., as fluids for capacitors and transformers. When managing and disposing of them careful attention must be paid to ensure they are not released into the environment, in accordance with applicable regulations.

PM₁₀

Particulate matter of a diameter of less than ten microns generated by a broad range of natural and man-made sources. PM₁₀ includes a diverse variety of solid or liquid particles that tend to remain suspended in the air, due to their small size.

Population Equivalent (pe)

The concept of population equivalent was developed to enable the comparison of various types of sewage (municipal, household, industrial) in terms of organic pollution. Using conversion factors, an estimation is made of how many inhabitants would be required to produce (with normal domestic sewage) the same amount of pollution. By definition, one population equivalent corresponds to 60 g of BOD₅ per day.

Primary energy

Primary energy is the energy potential presented by energy carriers in their natural form, for example oil, natural gas, coal, natural uranium, water and other renewable energy sources. In the majority of the cases, the primary energy must be transformed into secondary energy in electricity power stations, refineries, etc.

Primary treatment

Aims to remove mainly organic TSS (Total Suspended Solids) from the in-flowing liquid waste. The process can be facilitated by using special flocculants that increase the degree of aggregation of the particles and therefore their sedimentation.

Renewable Energy Sources

Renewable energy sources are: wind, solar, geothermal, wave motion, tidal, hydraulic, biomass, landfill gas, purification process residual gas and biogas. Biomass means the biodegradable part of products, waste and residues generated by farming (including vegetable and animal substances), forestry and related industries, as well as the biodegradable part of industrial and municipal waste.

SA 8000

An international certification standard regarding respect for human rights, respect for workers' rights, safeguards against the exploitation of minors, and guarantees with respect to workplace health and safety conditions.

Secondary treatment

Aims to remove biodegradable organic matter and remove solids in colloidal, non-sedimentable form and, therefore, not separable by physical treatments.

Similar-to-municipal waste

Italian Legislative Decree No. 152/2006 introduces the definition of similar-to-municipal waste. Under art. 184 "Classification", waste is classified into municipal waste and special waste according to its origin, and into hazardous and non-hazardous waste depending on its hazardous features. Specifically, the following are included among "municipal waste": a) domestic waste, even bulky waste, from premises and places used for civil habitation; b) non-hazardous waste from premises and places used for purposes other than those referred to in letter a), similar to municipal waste in terms of quality and quantity, pursuant to art. 198, paragraph 2, letter g). Art. 198 "Municipalities' responsibilities" states that municipalities govern the management of municipal waste by way of specific regulations which, among other things, establish the quality and quantity of special non-hazardous waste for being similar to municipal waste.

Social cooperatives

Cooperatives governed by Italian Law No. 381 of 8 November 1991. This law breaks cooperatives down into two types:
- type A: cooperatives that provide social, health and educational services;

- type B: cooperatives that operate within the production and labour sectors and which have, among their members or employees, at least 30% who are disabled or otherwise face hardship.

Stakeholder

Stakeholders are persons with vested interests. They may or may not belong to the company of which they are a stakeholder, have different interests and needs, and they may have a bearing on the decisions, conduct or success of a company.

Sustainable Development

"Sustainable development is development which meets the needs of current generations without compromising the ability of future generations to meet their own needs" (Brundtland Report, World Commission for Economic Development, 1987).

Tertiary treatment

Aims to improve purification by reducing the load of nutrients (phosphorus and nitrogen) in the secondary effluent. In some cases, tertiary treatment eliminates poorly biodegradable substances that have not been eliminated by the bacterial metabolic treatment.

toe

Tonnes of oil equivalent. The conventional unit of measurement of sources of energy defined as 10,000 Mcal, the amount of energy released by burning one tonne of crude oil.

TSS

The term TSS (total suspended solids), which are the cause of the turbidity of liquids, means the total of suspended solids and filterable solids. It represents the total amount of substances present in the sample following drying at 105 °C. Its value is expressed in mg/l.

Turboexpander

A machine that transforms a given kind of energy (e.g. potential energy) into mechanical energy, made available for use via a rotating shaft. The resulting energy may in turn be used to produce other energy (e.g., by coupling an alternator to the turbine to enable the alternator to exploit the mechanical energy to produce electricity).

UNI EN ISO 9001:2015

An international technical standard for the certification of quality management systems.

UNI EN ISO 14001:2015

An international technical standard for the certification of environmental management systems.

UNI CEI EN ISO/IEC 27001:2017

An international technical standard on the requirements to set up and manage information security management systems.

UNI EN ISO 45001:2018

An international technical standard on the certification of occupational health and safety management systems.

Waste

Italian Legislative Decree No. 22/1997 defines waste as "any substance or object which the holder discards or intends or is required to discard". This decree classifies waste based on its origin, as municipal or special, and, according to the level of hazardousness, as hazardous or non-hazardous.

Waste-to-Energy Plant

A plant that uses waste as a fuel to produce heat or energy.