a2a
LIFE COMPANY

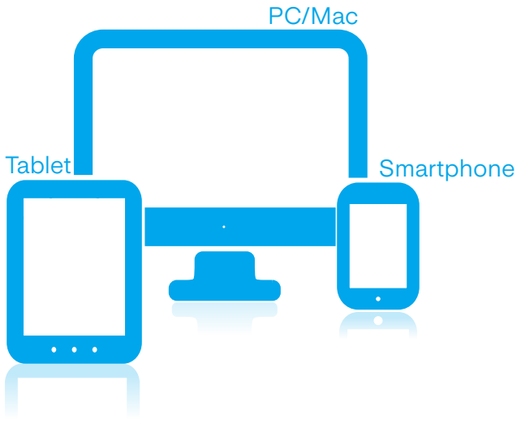
2022
Integrated Report

Consolidated
Non-Financial Statement
pursuant to Italian Legisla-
tive Decree 254/2016

2022 Integrated Report

Consolidated Non-Financial Statement pursuant to Italian Legislative Decree 254/2016

This Report can be browsed interactively on various devices, with multimedia insights, on the website gruppoa2a.it and it is compatible with Apple and Android systems.

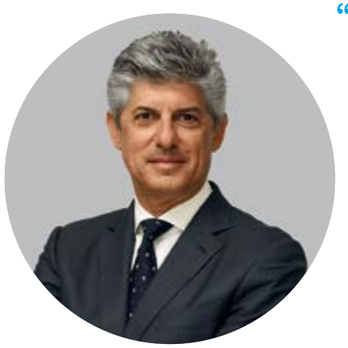


This Report can be viewed on the website gruppoa2a.it

Contents

Letter to stakeholders

The letter to stakeholders is a moment for our Group to take stock and plan. Once again this year, we were forced to face an emergency context and learn important lessons, achieving a new vantage point from which to look at our more distant goals.



> “ The relationship of **trust** with our stakeholders is strong because it is cultivated daily, and it been essential in dealing with market volatility and geopolitical changes”

Marco Patuano

The letter to stakeholders is a moment for our Group to take stock and plan. Once again this year, we were forced to face an emergency context and learn important lessons, achieving a new vantage point from which to look at our more distant goals.

In a world recovering from a two-year pandemic, a war has arrived in the heart of Europe, bringing uncertainty and instability. The geopolitical events of 2022 highlighted the EU's energy dependency and raised inflationary pressures, fuelling the risk of a global recession. The energy sector was one of the hardest hit; right after a global, cross-cutting emergency like the pandemic, we found ourselves at the centre of a crisis strongly focused on our business. Faced with this phenomenon posing crucial challenges for our business - from the development of new energies, to the cost of raw materials, to customer relations - we chose to focus on the essentials, on what really counts for a business with the identity of a Life Company: **trust** and **consistency**.

Credibility with customers, loyalty with partners, reliability with shareholders, and respect for communities have been our cornerstones. In the urgency of difficult times, it is important to be able to recognize which aspects must be protected. The relationship of **trust** with our stakeholders is strong because it is cultivated daily, and it has been a priority in dealing with market volatility and geopolitical changes.

We have chosen to **be consistent** with our commitments in order to achieve the sustainability targets set out in our Strategic Plan, with 16 billion in planned capital expenditure to 2030, and in November 2022 we updated the roadmap to adapt it to the new external conditions, without losing sight of the goal and safeguarding the targets we set ourselves.

On the **Circular Economy** front, we invested over 1 billion euros in the two-year period 2021-2022, confirming the soundness of our Plan and focusing on closing the waste cycle, recovering materials, energy and heat, and developing bioenergy. In 2022, we inaugurated two plants for the treatment of the organic fraction of municipal solid waste (OFMSW) in Lacchiarella and Cavaglià, for the production of 13 million cubic metres of biomethane per year. The material treatment and recovery plants produced more than 392,000 tonnes of secondary raw material to be put back on the market. There was a contraction in the waste sorting service in the municipalities served in 2022 (-6% of municipal waste collected compared to 2021), but the proportion recovered as material or energy remained unchanged, respectively 70% the former and 30% the latter.

In the context of the **Energy Transition**, on which 11 billion euros of capital expenditure have been earmarked in the 2021-2030 Plan, 2022 will surely go down in history as the black swan of the path towards sustainability of the national energy system. In this context, the decarbonization process undertaken by the Group (such as the closure of the Monfalcone coal-fired power plant in 2020) clashed with the need to ensure a stable and constant supply of energy to the Country; for this reason, we had to reactivate the plants in San Filippo del Mela and Monfalcone in 2022. This obviously led to an increase in direct emissions generated by the Group (+21% compared to 2021), while the indirect emissions related to energy purchases were almost zero thanks to the confirmation of renewable energy purchase contracts at Group sites. Despite this context, when updating the latest Strategic Plan, we wanted to reaffirm our commitment to the ecological transition by declaring our **intention to achieve Net Zero Scope 1 and Scope 2 emissions by 2040**, and we initiated an internal working group focused on identifying strategic and technological solutions to achieve this goal. In particular, we consolidated our position among the leading operators in the generation of electricity from renewable sources in Italy in 2022 through the acquisition of new wind and photovoltaic portfolios located in Apulia, Sicily and Sardinia, and in Spain.

> “ It is essential to pursue a transition that is not only ecological, but also **equitable and shared. This is what our Strategic Plan is all about**”

Renato Mazzoncini

Also in this area, we continued to invest in supporting the electrification of consumption, which will see the construction of 16 new primary substations and 2,500 km of new grids laid by 2030.

We also wanted to emphasise in the Strategic Plan how crucial it is to pursue a **transition that is not only ecological, but also fair and shared**. More than 1,500 people joined our Group, 41% of them under 30, giving many young people the chance to have a secure job (more than 97% of contracts are permanent), with a net increase of 307 new colleagues.

Engagement was at the heart of employee relations in 2022: the first Group Engagement Survey was carried out to measure the level of well-being and engagement of A2A's employees, and the Group's first in-person Convention was held, a fundamental moment of sharing. We also launched our second Corporate Intrapreneurship initiative: the Call For Sustainability, which saw the voluntary participation of over 3,000 colleagues and the submission of 342 innovative ideas for the ecological transition.

Bearing in mind the complex macroeconomic context, throughout 2022 we strived to support our customers not only by offering different solutions according to the type of customer and the service rendered, but also by actively engaging with them, including being the first to produce communication campaigns aimed at raising awareness of good practices and responsible behaviour in terms of energy efficiency and resource conservation.

We also strengthened engagement with the main stakeholders in the territories where we operate by holding 9 listening forums; moments for discussion with our local stakeholders organised with the aim of creating synergies on the actions necessary for the ecological transition. The meetings, held in 6 regions, resulted in 30 project proposals, contributing to the development of shared value ideas and initiatives in line with the Group's goals.

We are the first utility in Italy to achieve ISO 22301 certification in 2022 on the ability to invest in continuous improvement of business resilience and corporate processes.

Consistency, coupled with strategic thinking, has guided us in the decisions to be made during the complex times that the energy sector has faced during the past year, and like every year, this document allows us to analyse and recount the results, both positive and negative, achieved by our Group, but above all, it allows us to highlight the commitment that all our colleagues and we ourselves put into making it a Life Company every day.

To them, to the citizens, to the customers, to our shareholders, to the institutions, from our side and on behalf of the entire A2A's Board, our most sincere thanks.

Chairman
Marco Patuano

Chief Executive Officer
Renato Mazzoncini

Note on Method

As a Public Interest Entity, in accordance with Italian Legislative Decree 254/16, the A2A Group publishes the Consolidated Non-Financial Statement (NFS) on an annual basis. This document represents that Statement for the year 2022.

The document (including its Supplement) represents the 15th edition of the Report that outlines A2A's activities for its material sustainability topics, for the companies included in the scope of consolidation for the year ended December 31, 2022. The Report has been prepared in accordance with the **GRI Standards** of the Global Reporting Initiative (GRI) and, for some indicators, it refers to the GRI G4 Electric Utilities Sector Supplement. The document also takes as a reference the Integrated Reporting Framework (IR Framework), outlined by the International Integrated Reporting Council (IIRC).

Adopting the principles of the Integrated Report requires presenting the way in which an organization creates value over time. Therefore, the document follows the logic of capital, i.e., the variables that determine value creation:

- **Financial Capital:** set of economic resources involved in the production processes;
- **Manufacturing Capital:** real estate, infrastructure and physical means (plant, machinery, etc.) used for the production of the services offered by the company;
- **Natural Capital:** all the processes and environmental resources that contribute to the production of services offered by the company;
- **Human Capital:** all the expertise, skills and experience of the people that work at the company;
- **Intellectual Capital:** intangible resources represented by organizational knowledge and intellectual property of the Group;
- **Relational Capital:** the company's ability to create relations with external stakeholders and share values in order to increase individual and collective well-being.

Through the analysis of the types of capital that influence, and are in turn influenced by, the Group's activities, A2A aims to provide a clear account of the existing, necessary integration between economic and social and environmental aspects in corporate decision-making processes, but also in the definition of the Group's strategy, governance and Business Model.
The initial chapters of the document describes the Group's **Business Model** and the **management tools applied**, through which the various capitals are used to create value over time.

Following the recent prospective regulatory changes concerning Sustainability Reporting (i.e.,Corporate Sustainability Reporting Directive - CSRD), as well as in order to meet the requirements of the new GRI 2021 Standards, the A2A Group has embarked on a path to **annually update the materiality analysis**. The goals of the new GRI materiality (**Impact Materiality**) **is to identify what effects (positive and negative) a company causes on society and on the environment (generated impacts)**. The topics reported as material must represent the organization's most significant impacts on the economy, the environment and people, including their human rights. Therefore, the topics must be defined and updated according to an "impact-oriented" logic in order to provide a representation of the possible impacts, both positive and negative, that the Group and its value chain generates vis-a-vis stakeholders. In addition, in view of the CSRD coming into force in the coming years, the Group carried out an initial impact assessment exercise (Financial Materiality). This process was carried out taking as a reference the standards drawn up by the European Financial Reporting Advisory Board (EFRAG) which are in the process of being approved by the European Commission. They will become mandatory for A2A and for the other companies already subject to the non-financial reporting obligation starting from 2024, following a gradual approach. The analysis of material topics according to the double materiality method is not subject to the limited assurance engagement by EY Spa. More information on the new process of updating material topics can be found in section 4.3.
On the basis of the topics that emerged as material, the GRI standards and the related qualitative and quantitative disclosures to be presented in the NFS and its Supplement were selected.

A **description of the material topics**, **associated risks/ opportunities**, and **how they are managed**, including **policies implemented** by the company, are provided at the beginning of each capital.

In addition, in order to give a clear view of the context in which the company operated during 2022, at the beginning of each capital a description of the national, European and international context on the subject of reference has been included.
Within each chapter, the **actions** implemented by A2A and the **KPIs** (Key Performance Indicators) relative to the specific capital are therefore described.
According to the coverage of the **GRI Standards** and the **Topic Standards** associated with the material aspects and summarised in the **GRI Content Index**, the NFS was prepared "**In accordance with the GRI Standards**".
For the third year, the document is also aligned with the **Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) to ensure dialogue on climate-related topics with the financial community, which is increasingly demanding reporting according to this logic**. The reporting has been further enhanced with new insights dedicated to climate change. The **TCFD Content Index**, shown on page 221, indicates the relevant sections of the document in which the information required by the Framework is reported.
In order to comply with the requirements of Italian Legislative Decree 254/16, in 2017, the A2A Group equipped itself with an internal procedure aimed at drafting the **NFS - Procedure 201.028 "Non-Financial Declaration Reporting Flow"** - which defines the organisational structures involved, the methods used to collect, process and control the non-financial data included in this document. This procedure was updated with effect from 1 January 2023, following the implementation of the new materiality process.
The **data collection, processing and control process** was handled through the implementation of a specific **software** managed by the Sustainability Planning & Reporting structure, which allows for the definition, for each section of the NFS, of the data owner and various approval levels, through to the corporate senior management. The financial capital figures are aligned with the Consolidated Financial Statements, while those for the other capitals reflect the reporting scope of this document (specified in the section below). In this document and in its Supplement, where necessary, a specific note has been included to indicate changes in the 2020 and 2021 performance data with respect to that reported in the 2022 Integrated Report.

This document, submitted to the Board of Directors of A2A S.p.A. on March 16, 2023, was then **subjected to a limited assurance engagement**, with regard to the aspects relating to GRI reporting, by an external company, in accordance with the criteria laid down by the "International Standard on Assurance Engagements 3000 Revised" (ISAE 3000 Revised), which at the end of the work carried out issued the report attached to this document.

The quantitative indicators that do not relate to any general or topic-specific disclosures of the GRI Standards, which are reported on the pages indicated in the Content Index, are not subject to the limited assurance engagement by EY S.p.A.

For any restatements concerning previous years' data and information, please refer to the specific notes in the document, as per GRI-2.4.
Contacts: Manuela Baudana 0277204308
manuela.baudana@a2a.eu

Scope
The NFS includes all full subsidiaries consolidated on a line-by-line basis in the Consolidated Financial Statements, to which, however, a criterion of relevance and significance is applied. Indeed, companies can be excluded from the social and environmental performance data, with business that is not relevant or companies purchased/sold/liquidated during the year. Consequently, with the exception of "Financial Capital" and the chapter entitled "The A2A Group", for which the scope coincides with that of the Consolidated Financial Statements, the following companies in liquidation are excluded from the list of consolidated companies in the remaining Capitals and also:

- R2R, a new company resulting from an M&A transaction in 2022 and only fully integrated in February 2023;
- the Acinque Group (formerly ACSM-AGAM) which, although fully consolidated in the Consolidated Financial Statements, will draw up its own NFS as an obligated party pursuant to Italian Legislative Decree 254/16. The main KPIs of the Group's performance will in any case be represented in the Supplement and aggregated on page 14. The Non-Financial Statement was approved by the Board of Directors of Acinque on March 15, 2023.

The AEB Group was included in the KPIs of the 2022 NFS, in continuity with last year. The 2020 performance - for comparability and completeness - remains, as last year in the Supplement, in a dedicated section. The consolidation transaction, which was completed in the second half of 2020, did not make it possible to integrate all of the AEB Group's indicators right away.

It is also noted that the plants – owned or leased – are consolidated 100% if they are included in the assets of the consolidated companies. In this sense, the data on the activity of the Acerra waste-to-energy plant, the Caivano plant and the thermoelectric plant of Scandale, is not considered. The Group's jointly owned material plants are consolidated proportionally. According to this principle, for environmental data, the Mincio thermoelectric plant was 45% consolidated.

Finally, as required by EU Regulation 852/2020 (EU Taxonomy Regulation), as of this year, reporting is given in the dedicated section on the Group's activities that are considered eligible and aligned with respect to the Climate Delegated Act, and the related performance KPIs (percentage of turnover, capital expenditure and operating expenditure).

1

The A2A Group and its Business Model

1.1

The Group

The A2A Group is a Life Company, as it takes care of life, its most precious capital. Every day, it deals with the environment, water and energy which, thanks to the circular use of natural resources, are the necessary conditions for life and the quality thereof. It does so with the most advanced technology, because it looks far ahead. It promotes the Country's sustainable growth through a long-term strategy, with capital expenditure dedicated to the development of the circular economy and energy transition: businesses that, more than others, are crucial to preserving everyone's future.

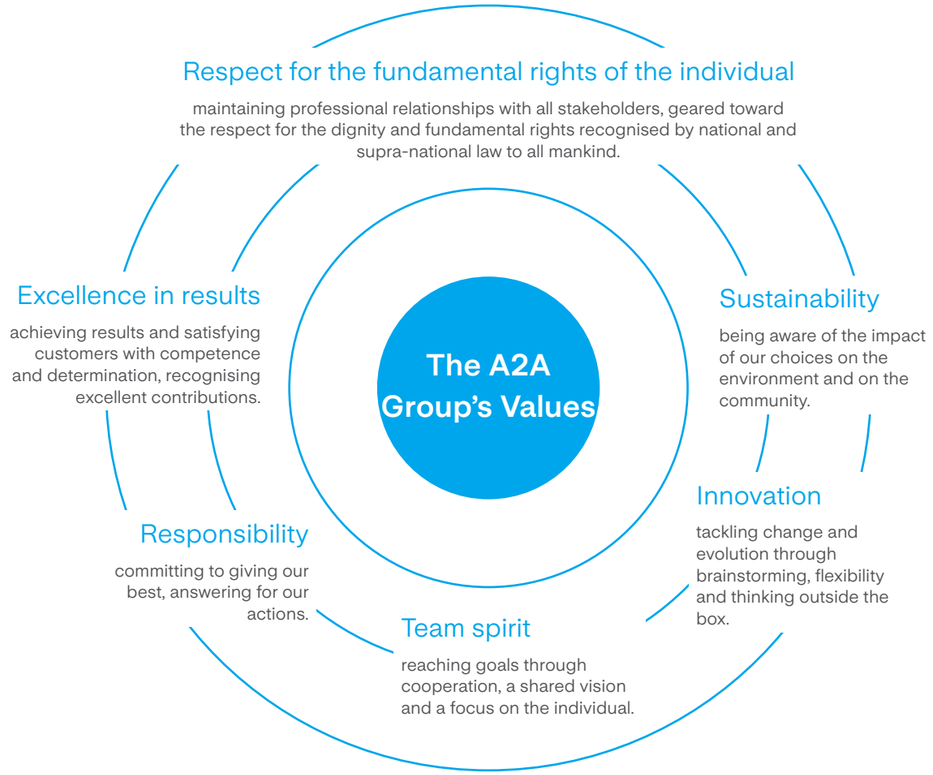
Its business areas are attributable to the Business Units (BU) illustrated below.

Business Units		Main activities covered	
Energy	Generation and Trading	• Electricity generation • Wholesale & Trading	2 **Second largest energy operator** in Italy for installed capacity, fourth among industrial renewables operators (for wind and solar)
	Market	• Sale of electricity and natural gas • Energy Efficiency and VAS (Value Added Services)	
Waste	Collection	• Waste collection	1 **First waste operator** in Italy per tonne treated
	Treatment	• Material recovery • Energy recovery	
Smart Infrastructures	Networks	• Electricity and gas distribution • Integrated water service	2 **Second largest operator** of electricity grids in Italy for electricity distributed
	Heat	• Cogeneration and heat recovery • Distribution and sale of heat (district heating)	
	Other services	• Smart City • Public lighting • E-mobility	

All these Business Units, where possible, operate in coordination to offer integrated services to citizens, as evidenced by the A2A value chain, in which the Group's main activities are represented throughout their supply chain, from the raw material to the end customer.

Group Values

The Group's **values** represent the cultural identity of A2A and the rules of conduct that guide people in their daily activities. Thanks to an industrial project that allows to identify development opportunities for the business and for its stakeholders, together with the mission, the values are the foundation of the Group's Business Model, which consolidate and stimulate an increasingly strong integration with the territories and the people who live there.



Mission

A2A aims to be a Life Company committed to generating a positive impact on the quality of people's lives and protecting the planet, for which it makes its technology and skills available. By working to constantly regenerate the potential of every natural resource, A2A wants to become a protagonist in the sustainable growth of the Country, applying an economy that always creates new value, to help improve the lives of everyone. It works so that human, technological, financial and natural capital can grow together, in balance.

1.2

Geographic Location and Organization Size

In the following sections regarding the size of the organization and location of the geographical areas of activity, the information includes the Acinque Group, in order to provide complete information on the structure of the A2A Group, in line with the economic results of other corporate documents. For further details on the results of the Acinque Group, see the Supplement to this document.

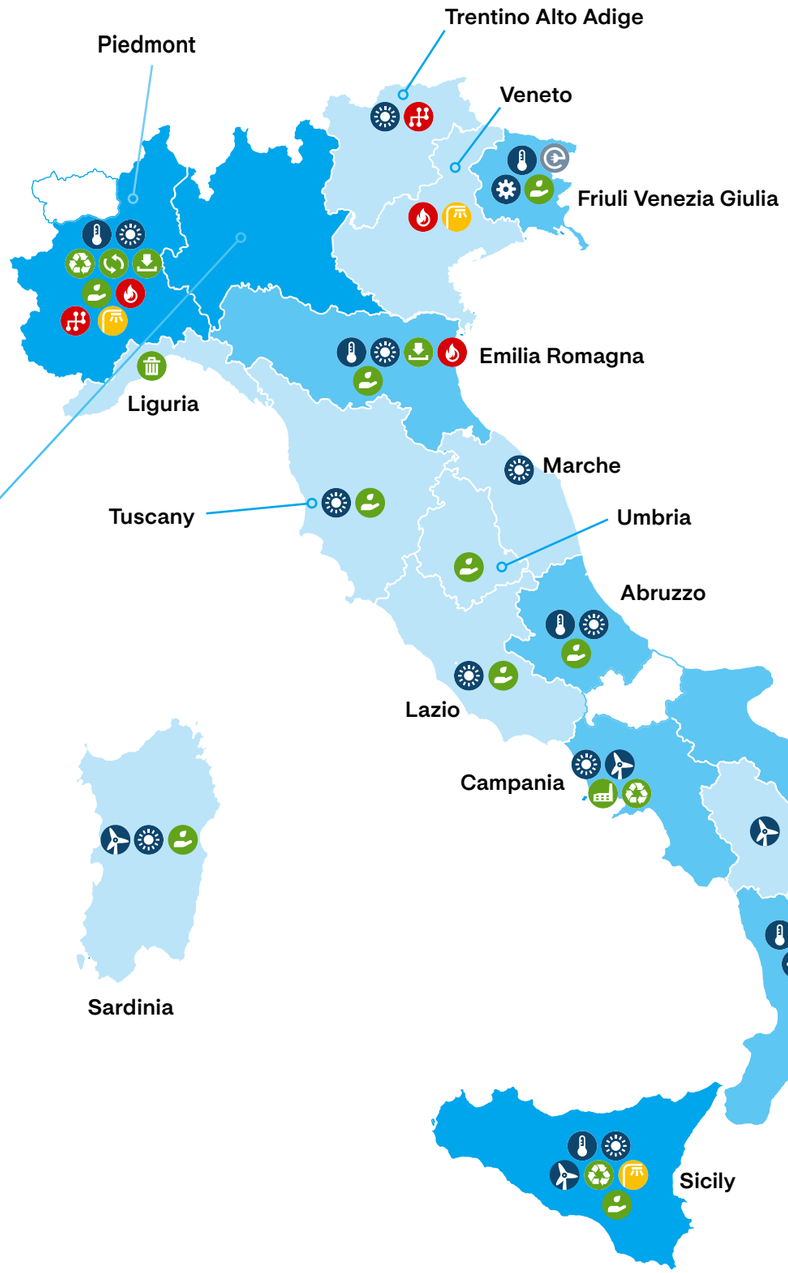
A2A Group plants and services

Plants

Energy	Thermoelectric	
	Hydroelectric	
	Photovoltaic	
	Wind	
Waste	Biomass	
	Waste-to-energy plant	
	Waste treatment plant	
	Material recovery plant	
	Landfill	
	Biogas production	

Services

Waste	Waste collection	
Distribution and transport	Electricity distribution	
	Gas distribution	
	Gas transport	
District heating	District heating	
Water	Integrated water service	
Public	Public lighting	
Electric mobility	Recharge stations e-Moving	



Lombardy

Milan

Brescia - Head Office

Sondrio

Bergamo

Pavia

Varese

Como

Mantua

Lodi

Cremona

Monza

Lecco

Figure 1 Organization size

Revenues (M€)	
2021	**2022**
11,549	**23,166**

Economic value distributed (M€)	
2021	**2022**
10,732	**22,460**

Water distributed (Mm^3)	
2021	**2022**
84	**80**

Waste collected (Kt)	
2021	**2022**
1,861	**1,785**

Total ordered (M€)	
2021	**2022**
2,320	**2,541**

Percentage ordered from Italian suppliers (%)	
2021	**2021**
96%	**98%**

Waste treated (Kt)	
2021	**2022**
3,423	**3,368**

Waste sorting index (%)	
2021	**2022**
71%	**70%**

Electricity produced (GWh_e)	
2021	**2022**
18,241	**19,549**

Electricity produced from renewable sources % of total	
2021	**2022**
30%	**21%**

Scope 1 emissions (kt CO_{2eq})	
2021	**2022**
7,298	**8,800**

Scope 2 emissions Market based (kt CO_{2eq})	
2021	**2022**
21.0	**21.6**

Heating energy produced (GWh_t)	
2021	**2022**
3,275	**2,983**

Electricity distributed (GWh_e)	
2021	**2022**
11,422	**11,238**

Emissions avoided (kt CO_{2eq})	
2021	**2022**
3,700	**2,380**

Total number of employees	
2021	**2022**
13,267	**13,655**

Gas distributed gas (Mm^3)	
2021	**2022**
3,132	**2,704**

Electricity sold to end customers (GWh_e)	
2021	**2022**
18,426	**20,737**

Number of hires	
2021	**2022**
1,368	**1,531**

Number terminated	
2021	**2022**
1,083	**1,218**

Green energy sold (TWh)	
2021	**2022**
5.0	**7.0**

Gas sold to end customers (Mm^3)	
2021	**2022**
2,711	**2,677**

Turnover rate (%)	
2021	**2022**
10%	**8.9%**

Accident frequency index	
2021	**2022**
20.30	**19.77**

Heat/cold sold (GWh_t)	
2021	**2022**
3,178	**2,877**

Water treated (Mm^3)	
2021	**2022**
51	**44**

Accident severity index	
2021	**2022**
0.49	**0.54**

Contributions to communities (M€)	
2021	**2022**
5.8	**7**

1.3
A2A's value chain

1.4

A2A's Business Model

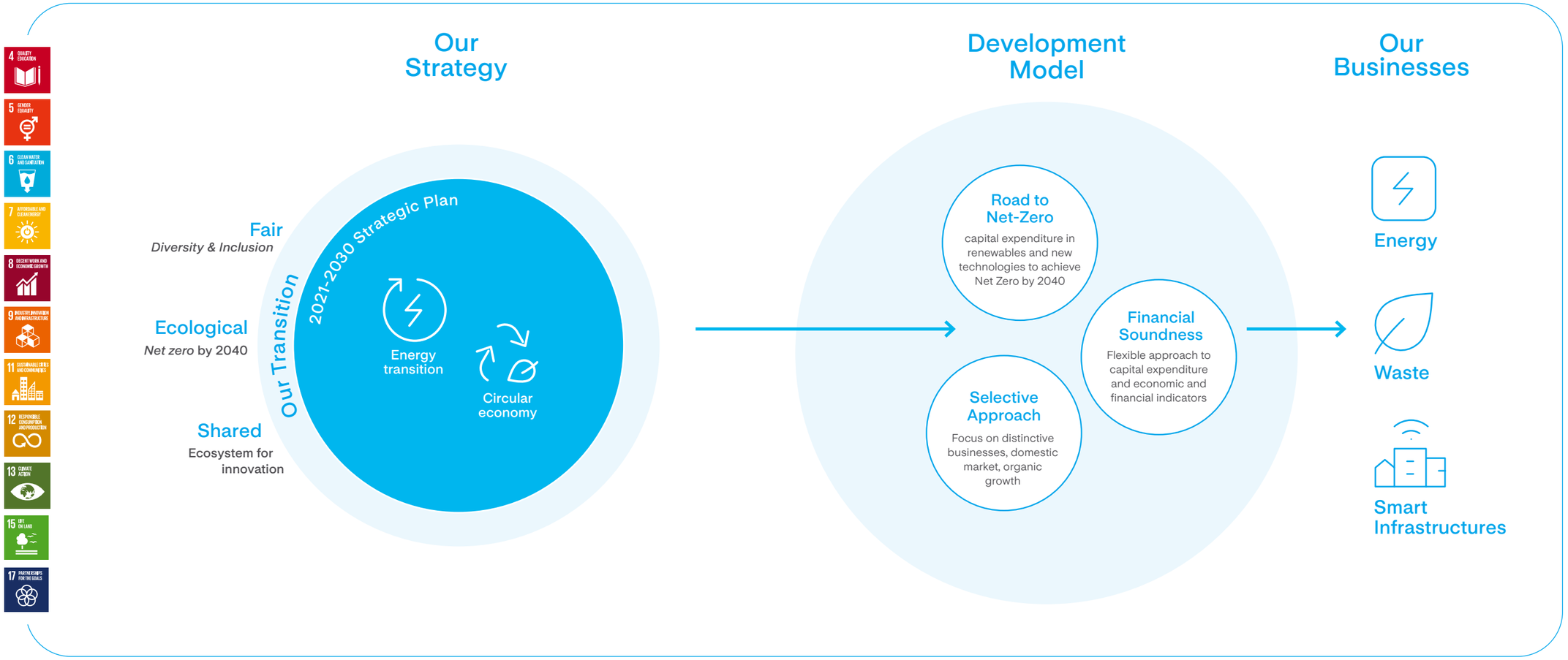
A2A's *Business* Model seeks to create shared sustainable value for the company over time and for its reference community. As a Life Company, the Group is oriented to improving the quality of life of local residents and businesses operating in the reference territories by offering essential services, guaranteed by the highest quality and efficiency standards: waste collection and treatment, production of electricity, sale of electricity and natural gas, distribution networks and district heating, water treatment, public lighting, charging infrastructure for electric mobility and IoT (Internet of Things) technologies for smart cities. The solidity of A2A's presence meets the change of sectors that evolve constantly, giving rise to a constant path of sustainable growth.

Sustainability is at the heart of our strategy, which focuses on a fair, ecological and shared transition, and it is divided into the two pillars of circular economy and energy transition. A great deal of attention is paid to environmental sustainability, to the development of territories and communities, and to the empowerment of the Group's people by building and spreading an inclusive approach in the corporate culture.

Our development model includes a selective approach on capital expenditure, aimed at achieving carbon neutrality, focusing on distinctive businesses and the domestic market, and with a more organic growth. Adopting a flexible approach on capital expenditure and economic/financial indicators will be crucial in ensuring stability for the Group

The goal of the model is to make a concrete contribution to the achievement of 11 of the 17 Sustainable Development Goals of the UN 2030 Agenda, enhancing the six capitals (**Financial**, **Manufacturing**, **Natural**, **Human**, **Intellectual**, **Relational**) on which the organization depends to ensure its services. In fact, 85% of the capital expenditure made in the plan's time frame (2021 - 2030) will be in line with the SDGs.

Financial Capital · Natural Capital · Manufacturing Capital · Intellectual Capital · Human Capital · Relational Capital



2

Governance

2.
Governance

On May 13, 2020, the Shareholders' Meeting used the list vote mechanism to appoint the Board of Directors (BoD) consisting of 12 members for three financial years, as indicated in the table below:

Role	Name	Year of birth	Executive (E) - Non Executive (NE)	Man/ Woman	Independence code	Independence CFA	Control and Risks Committee	Appointments and Remuneration Committee	ESG and Territory Relations Committee	Training/ professional area
Chairman (C)	Marco Emilio Angelo Patuano	1964	E	M	_	_	_	_	C	Economic
Deputy Chairman (DC)	Giovanni Comboni	1957	NE	M	_	X	_	M	_	Economic
Chief Executive Officer/General Manager (*)	Renato Mazzoncini	1968	E	M	_	_	_	_	_	Scientific
Director	Stefania Bariatti	1956	NE	W	X	X	_	M	_	Legal Academic
Director	Vincenzo Cariello	1965	NE	M	X	X	_	_	M	Academic
Director	Federico Maurizio d'Andrea	1959	NE	M	_	_	M	_	_	Legal
Director	Luigi De Paoli	1949	NE	M	X	X	C	_	_	Academic
Director	Gaudiana Giusti	1962	NE	W	X	X	M	_	_	Legal
Director	Fabio Lavini	1954	NE	M	_	X	_	_	M	Scientific
Director	Christine Perrotti	1971	NE	W	X	X	M	_	_	Economic
Director	Secondina Giulia Ravera	1966	NE	W	X	X	_	C	_	Scientific
Director	Maria Grazia Speranza	1957	NE	W	X	X	_	_	M	Academic

Note: C: Chair - M: Member
(*) Mr Mazzoncini was appointed Chief Executive Officer and General Manager by the Board of Directors at the meeting held on May 14, 2020.

In the Board of Directors, the female component, today equal to 41% of the members, is well above the Italian and sector average, thus aligning itself with the regulations of the New Corporate Governance Code.
It should be noted that the Chair does not hold any other office within the organisation.

The average age of the members is 61.3.
In compliance with the provisions of the Corporate Governance Code, the Board of Directors conducted its assessment on the size, composition and functioning of the Board and on its Committees.

The results of the Board Review were presented and discussed during the session of the Board of Directors of December 22, 2022.

In order to bring A2A in line with the best practices on transparency and good international governance, in July 2022 the members of the Board of Directors answered a self-assessment questionnaire structured in 2 sections: "Sector expertise" using the **MSCI GICS Framework** as a reference framework and "Soft skills".

During 2022, the Board of Directors was engaged in 3 Induction sessions related to ESG topics (macroeconomic environment, geopolitical environment, impacts of climate change on business).

Figure 2 Industry experience

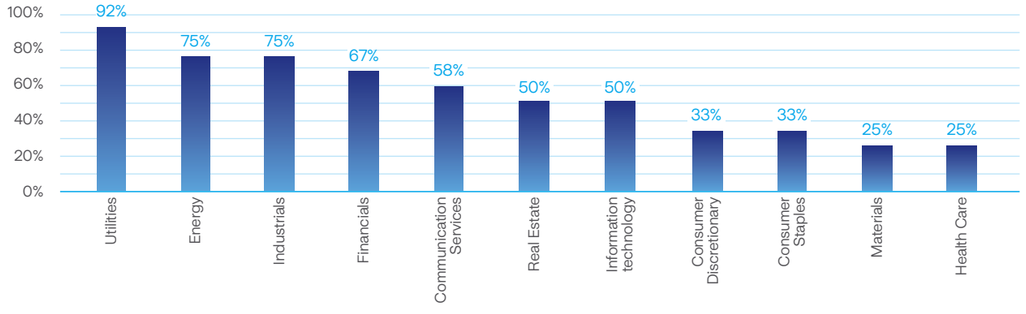
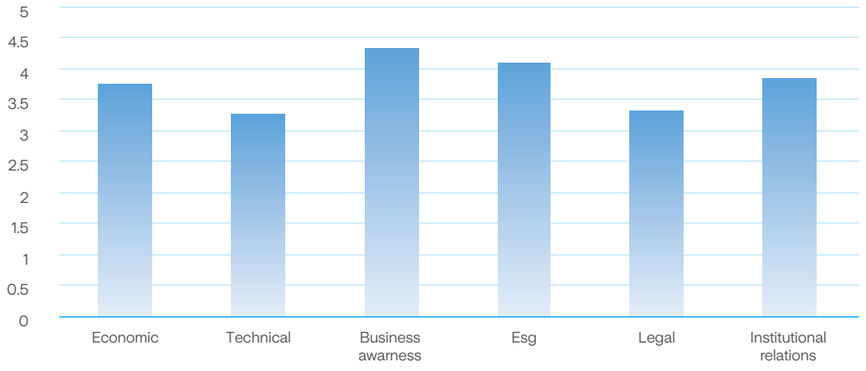


Figure 3 Cross-cutting skills



A description of the appointment and selection processes of the BoD and its Committees and the criteria used to appoint and select BoD members (such as stakeholder interests represented, diversity, independence, and relevant expertise) is given in the Report on Corporate Governance and Ownership Structures published together with this document and available on the website **www.gruppoa2a.it**.

2.1
Sustainability governance

The ESG and Territory Relations Committee is responsible for assisting the Board of Directors with information, advice and proposals and, to the extent applicable, the Group's Chair and Chief Executive Officer, in defining guidelines, orientations and initiatives regarding sustainability, the creation of long-term value for the territories and Corporate Governance. In addition, the Committee is informed on a monthly basis regarding Stakeholder Engagement initiatives. For further information please refer to the Regulations published on the **website**.

The Committee must be composed of no fewer than three Directors and at least one member must have an adequate experience in the field of the environment, sustainability and corporate social responsibility, to be assessed by the BoD upon appointment. The Chair of the Board of Statutory Auditors or another Statutory Auditor designated by the Chair of the Board of Statutory Auditors attends the Committee's meetings.
During the 2022 financial year, the ESG and Territory Relations Committee met 9 times and carried out its proposal and advisory activities regarding, among other things:

a) the definition of the three-year guidelines of the AEM Foundation and of the ASM Foundation for annual activity programmes and the reporting of the activities carried out;

b) the development and progress of the activities of Banco dell'Energia Onlus;

c) the creation of the new LGH Foundation;

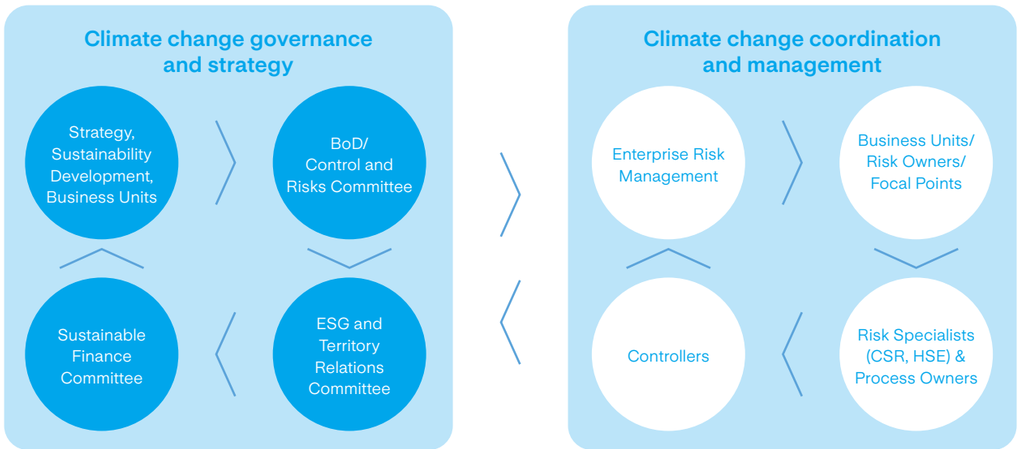
d) the development of the Sustainability Development Plan through: (i) the promotion of a strategy that integrates sustainability into business processes, in order to ensure the creation of value over time for shareholders and all the other stakeholders; (ii) monitoring of the Sustainability Plan, which sets out the commitments and goals, also of a quantitative nature, for the advancement of the company's economic, environmental and social responsibility; (iii) the preparation of the 2021 Integrated Report for the purposes of non-financial disclosure (pursuant to Directive 2013/34/EU and Italian Legislative Decree 254/16), and of Sustainability Reports on a territorial basis, including preparatory activities for drafting the 2022 Sustainability Report; (iv) the definition and analysis of material topics for the Group and stakeholders relating to the areas of sustainability reported in the Sustainability Report (v) spreading the culture of sustainability among employees, citizens, schools and, more generally, stakeholders; (vi) implementing and promoting structured methods for dialogue with the territories in which the Group operates, including through the implementation of initiatives for engaging all stakeholders (Multi-stakeholder Forum or Listening Forum); (vii) implementing and monitoring the actions proposed during stakeholder engagement; (viii) promoting a programme to develop the Group's ESG positioning with the financial market; (ix) analysing the evidence emerging from the assessments of ethical rating agencies; (x) analysing the regulatory developments on ESG topics at a European and Italian level; (xi) defining the Group's Net Zero strategy to 2040 with regard to the entire Group's value chain.

The Committee also assessed the performance of the Group's sponsorship and image promotion activities.

Roles and Responsibilities for Climate Change Mitigation

A2A's commitment to maintaining and strengthening its governance system in support of the Group's strategy to combat climate change is implemented with the continuous and constant collaboration between the Board Committees and internal structures. In fact, the governance process for climate change-related topics described consists of a strategic and governance level and of a more operational level of coordination and management. Information flows between the committees, the Enterprise Risk Management, Sustainability Development, HSE corporate departments and the Business Units ensure alignment and synergy between the two levels of the process (as defined by the Internal Control and Risk Management Guidelines).

Figure 4 Process and key players for governing risks and opportunities related to climate change in the A2A Group



In addition to the role played by the ESG and Territory Relations Committee, some of the key processes for monitoring climate change within the Group are described below.

The **Control and Risk Committee**, in accordance with the Guidelines of the Internal Control and Risk Management System and with the Enterprise Risk Management Policy, is **informed about climate risks on a six-monthly basis** simultaneously with the presentation of Risk Assessment results. Once again this year, the process of approving the Group materiality matrix saw the engagement of the Committee, together with the ESG and Territory Relations Committee, with the aim of verifying that all the topics were covered by the analyses and assessments contained in the Enterprise Risk Management risk sheets.

As part of the activities to combat climate change, the **Sustainable Finance Committee** has established itself as a strategic and indispensable player both inside and outside the Group. The interaction between this Committee, the ESG and Territory Relations Committee, the Capital Expenditure Committee and the heads of the Business Units engaged in the various projects **ensures that all capital expenditures are fully aligned with the Group's commitment to promote a low-carbon business model** and that the best opportunities in the sustainable finance market are exploited (see page 84).

This constant alignment also took the form of continuous sharing between the Chief Executive Officer, the strategic planning departments, the Business Units and the Sustainability Development department, during the definition of the 21-30 Strategic Plan, in order to **regularly monitor all the implications in terms of the sustainability of the goals over the term of the Plan.** A central role is played by the **CEO, who promotes sustainability within the Group, and more specifically the fight against climate change, identifying it as one of the drivers behind the Strategic Plan** (see page 42).

Periodic meetings are also scheduled throughout the year to monitor the progress of the targets and their status. **Sustainability indicators are in fact an integral and qualified part of the 21-30 Strategic Plan**, and the process for defining and monitoring them, as well as for drafting the integrated document, engages all the business controllers of the Group BUs. In this regard, several annual meetings are scheduled, where topics related to climate change are discussed and there is coordination of all related activities, such as periodic meetings of the Quality, Health and Environment Committee (both at company and Business Unit level) or during the steering committee.

All Group's employees have a significant responsibility to achieve the goals of the Strategic Plan. In fact, this is also reflected in the Remuneration Policy, starting with the CEO and cascading down to all his/her first reports, and a target linked to the decarbonization and climate change path undertaken by the Group has been set for 2022. Overall, about 30% of the Group's executives have been assigned specific targets within their remuneration scheme.

The methodology and the process for assessing climate risks are integrated into the Enterprise Risk Management process in place within the Group. For the in-depth analysis of climate risks, the internal interlocutors were identified (Risk Owner, Process Owner, Risk Specialist and Controller) with whom to share the topics, as well as the main assumptions for the economic and financial assessment of the impacts. The Group's management also plays a fundamental and decisive role in the process of identifying and assessing risks and defining response strategies, which are articulated in mitigation actions as discussed in greater detail in the section "Analysis and Management of Risks and Opportunities" on page 54.

The climate risk assessment is updated semi-annually during the periodic assessments envisaged by the Enterprise Risk Management Policy and it is examined by the Control and Risk Committee. The Enterprise Risk Management organisational structure coordinates the entire process.

2.2
Corporate governance guidelines

A2A has equipped itself with various tools aimed at supporting the company in guaranteeing an effective, efficient and transparent management, namely:

- **Code of Ethics**;
- **Organization, Management and Control Model pursuant to Italian Legislative Decree 231/01**;
- **Anti-corruption Policy**;
- **Human Rights Policy**;
- **Stakeholder Engagement Policy**;
- **Responsible Procurement Policy**;
- **Group Tax Strategy**;
- **Quality, Environment and Safety Policy**;
- **Quality, Environment and Safety Management Systems**.

↗ **All the documents mentioned above are available at www.gruppoa2a.it.**

Code of Ethics

All of the Group's activities and relations, both internal and external, are inspired by the observance of the principles, values and rules of conduct set out in the **Code of Ethics**. The A2A Group's Code of Ethics, approved by A2A's Board of Directors and implemented by the respective Administrative Bodies of the Group Companies, is an integral part of the **Model pursuant to Italian Legislative Decree 231/01** and it defines the fundamental ethical principles, rules of conduct and responsibilities that the Group recognizes, respects and assumes as a binding value and imperative that all the recipients of the same are required to comply with (members of the administrative body, members of the control body, managers and executives, employees, collaborators on an ongoing basis, suppliers and business partners).
The document makes **explicit reference to the UN Universal Declaration of Human Rights, the ILO Fundamental Conventions, the OECD Guidelines and the principles of the Global Compact**, to which the Group adheres. The Code identifies the requirements aimed at ensuring that the enterprise's activities are inspired by the following principles:

- recognition and protection of the dignity, liberty and equality of human beings;
- protection of workers and freedom of union association;
- protection of health, of safety, of the environment and of biodiversity;
- integrity, transparency, honesty and loyalty in action.

In 2022, the awareness activity on the topic of compliance culture was continued through the provision of an on-line training course dedicated to the Code of Ethics.

Organization, Management, and Control Model pursuant to Italian Legislative Decree 231/01

On December 22, 2022, the A2A S.p.A.'s **Organization, Management and Control Model pursuant to Italian Legislative Decree 231/01** was updated. Among the companies subject to A2A's management and coordination, 93 (ninety-three) companies, which are also consolidated, have adopted their own Organization, Management and Control Model pursuant to Italian Legislative Decree 231/01 as a tool to prevent the commission of the offences envisaged in Italian Legislative Decree 231/01. The Administrative Body of each company with a Model has appointed a Supervisory Body entrusted with the task of supervising the functioning and compliance of the Model and its constant updating. Each Supervisory Body annually defines the plan of monitoring the activities that it shall carry out in the year of reference, also taking into account the audits planned by A2A S.p.A.'s Internal Audit Department relating to the checks pertaining to the relevant profiles pursuant to Italian Legislative Decree 231/2001 and their results, as well as the checks planned by A2A S.p.A.'s HSEQ Compliance Review and Improvement department on the subject of the Environment, Health and Safety.
All Group's stakeholders can report any violation or suspected violation of the Code to the Supervisory Body or Internal Audit organisational structure through the appropriate channels for communicating confidential information.
In order to facilitate the receipt of reports, including anonymous ones, the A2A Group **has implemented a specific IT platform called "A2A Reporting"** (Whistleblowing), which constitutes an alternative channel to those already existing and it is accessible from the corporate intranet and from all the Group websites.
The communication channels set up for sending reports are described in the **"A2A Group's Guideline for Reports, including in anonymous form (Whistleblowing)**" published on the A2A'a website. Employees can also report illegal conduct or violations of the 231 Model of companies of which they have become aware in the context of their employment relationship. The reports are handled by the corporate Whistleblowing Committee or, if the facts reported are relevant pursuant to Italian Legislative Decree 231/2001, by the competent Supervisory Body. The Group guarantees the protection of the whistleblower's identity and the confidentiality of the information received, and penalties are envisaged for those who violate the measures to protect the whistleblower and for those who make unfounded reports.
In 2022, the awareness programme on the topic of compliance culture was continued with the provision of an on-line training course dedicated to the Whistleblowing system.

Anti-Corruption Policy

All Group companies are systematically monitored in terms of risks connected with corruption.
In line with what is outlined in the Group Code of Ethics and the specific regulatory document **"A2A Group's Anti-Corruption Policy", the Group bans all forms of corruption, unlawful favours, collusive conduct, requesting of advantages, conferral of material and immaterial benefits and other advantages aimed at influencing or remunerating representatives of institutions or their relatives, and Group's employees.** The Anti-Corruption Policy adopted by the A2A Spa's BoD and implemented by the respective Administrative Bodies of the Group companies provides a systematic reference framework in the fight against corruption and **it applies to Group's staff and to all those who work for or on behalf of Group companies,** within the scope of their activities and within the limits of their responsibilities, including the Corporate Bodies.
In 2022, the awareness programme on the topic of compliance culture was continued with the provision of an on-line course dedicated to the Anti-Corruption Policy.
With reference to criminal proceedings concerning corruption allegations engaging A2A Group companies and/or their employees, it should be noted that

- in 2019, the Group became aware of a proceeding engaging the company Linea Ambiente S.r.l.: the trial was against the director of the company at the time of the facts and relates to the issue, by the Province of Taranto, of the authorisation for the expansion of the landfill managed by the company itself, which was concluded in the first instance in 2022 with a sentence by the Court of Taranto convicting the individual. The filing of the reason statement is pending. While the proceedings against the Company for bribery offences pursuant to article 25, paragraph 2, of Italian Legislative Decree 231/01 is in the preliminary hearing stage;
- In 2019, the Group further became aware of the proceedings concerning a corruption hypothesis contested by the Milan Public Prosecutor's Office, in relation to some tenders called by AMSA S.p.A. and of which the Group became aware in 2019: this trial is still pending before the Court of Milan and AMSA, as the offended party is a "civil party";
- In 2021, the Group became aware of two proceedings related to the alleged offence of corruption engaging senior management of A2A Group companies: (i) one proceeding concerns alleged bribery for facts dating back to 2015-2017 in relation to certain tenders by Gelsia Ambiente S.r.l., which is the offended party; the case before the Court of Monza, in which Gelsia Ambiente, as the offended party, made itself a "civil party", was settled in the first instance in 2022 with a plea bargain for the defendants who requested it, while the former director was acquitted of the offence of bribery, but found guilty of the other alleged violations; (ii) the other proceeding concerns the merger between A2A and AEB and an alleged over-assessment of the assets contributed by A2A. Preliminary investigations are currently underway;
- In 2022, a bribery case came to light concerning an employee of AMSA S.p.A. at the time of the events, who later resigned, who was responsible for collecting and transporting municipal waste. For a fee, this individual recovered and disposed of waste on behalf of third parties without making the necessary reports and abusively using the vehicle assigned to him by AMSA. The latter is an offended party to the crime and will be a "civil party" in the trial whose preliminary hearing has been set for 2023.

Human Rights Policy

The A2A Group's commitment as a Life Company has led to the adoption by the A2A S.p.A.'s BoD and the subsequent transposition by the respective Administrative Bodies of the Group Companies, of a policy aimed at **protecting and promoting the recognition and safeguarding the dignity, freedom, equality of human beings, the protection of work, trade union freedoms, occupational health and safety**, also with reference to its external collaborators, partners and suppliers. This tool identifies the groups of people most at risk of being impacted by the corporate activities and it promotes a commitment to respect human rights throughout the value chain adopted and in the implementation of projects aimed at supporting those in particular situations of economic and social vulnerability.
The Human Rights Policy has been adopted, in addition and complementary to the Code of Ethics, in order to reaffirm the commitment of all the companies belonging to the Group to the promotion and support of all the values and principles affirmed by the Institutions and International Conventions on the subject of human rights, to which the A2A Group adheres. The Policy **applies to Group's staff and to all those who work for or on behalf of Group Companies,** within the scope of their activities and within the limits of their responsibilities, including the members of Corporate and Supervisory Bodies pursuant to Italian Legislative Decree 231/2001. A training course on the A2A Group's "Human Rights Policy" will be provided in 2023.
As part of the Enterprise Risk Management process, the A2A Group periodically monitors the risk relating to any failure to comply with the principles of ethical and social responsibility envisaged by the standard SA8000, as well as any engagement in investigations and/or criminal proceedings for non-compliance or misconduct on the part of management and/or employees. With reference to the supply chain, the A2A Group periodically monitors a risk relating to the lack of ethical requirements of contracted suppliers, also by means of a reputational analysis tool.
To date, no episodes of human rights violations have been recorded; the A2A Group intends to initiate assessment activities as part of which any remedial action may be identified.

The 231 Model, the Code of Ethics, the Anti-Corruption Policy and the Human Rights Policy are published both on the corporate intranet and on A2A's website, which can also be accessed by external stakeholders.
The principles and the rules of conduct contained therein are incorporated within the corporate procedures that describe and regulate the operation of corporate processes and which employees must adhere to in carrying out their corporate activities.
In 2022, 7,329 hours of training were provided on the subject of Italian Legislative Decree 231/01, engaging 35% of employees. With reference to training on the principles of the Code of Ethics and the other A2A Group documents related to ethical/ behavioural principles (i.e., the general section of the 231 Model, the Anti-Corruption Policy and the Whistleblowing system), as at December 31, 2022 a total of 84% of employees had been trained.

It should also be noted that in 2021, the new **Sustainable Procurement Policy** (see page 203) and the **Stakeholder Engagement Policy** (see page 70) were also published.

International Trade Compliance

The A2A Group is **subject to International Trade Compliance regulations** issued by the Italian Government and the European Union and it applies, for contractual commitments with funding bodies, the provisions of specific laws and regulations issued by some other Countries and intergovernmental organizations of an international nature.
In this sense, the A2A Group has adopted a **specific procedure to regulate information flows, the methods of verifying counterparties and the standards of the clauses to be used in commercial contracts and agreements and it has provided additional training sessions, via webinars, to staff working in areas subject to ITC regulations.** The Group uses a special IT tool for the **automatic daily verification of the relevant counterparties** under the ITC regulations to which it is subject or which applies voluntarily.

Tax Compliance

In addition, in order to guarantee a correct tax management process, the Group is continuing to implement and include in the context of the Internal Control and Risk Management System (ICRMS), the **Tax Risk Management and Control Model (Tax Control Framework - TCF)**, in line with the OECD guidelines and with the domestic regulations that implement them. The Tax Control Framework was implemented in 2017 in A2A Energia S.p.A., in 2018 in A2A S.p.A. and in UNARETI S.p.A., in 2020 in A2A Ciclo Idrico S.p.A., in 2021 in A2A Ambiente S.p.A and in 2022 in A2A Smart City S.p.A. In 2019, **A2A and UNARETI were admitted to the Collaborative Compliance Scheme with the Revenue Agency.**
This Regime, based on a **relationship of collaboration and transparency between the taxpayer and the Financial Administration**, provides for constant and preventive dialogue and favourable and rewarding measures for taxpayers who adhere to it. The implementation of the Tax Control Framework required the **adoption of the Group's Tax Strategy**, a document approved by the Group BoD, the purpose of which is to set out the principles and guidelines for the uniform management of taxation, in order to guarantee the correct and timely settlement of taxes and tax obligations. It should be noted that the Group operates mainly in Italy in terms of: number of employees, revenues and taxes. It should be noted that the Group acquired some photovoltaic and wind power plants in Spain in 2022, where taxes in the amount of 2.4 million euro were paid. No controlled entity resides in blacklisted Countries or in tax havens, except for a small entity residing in a Country with a privileged tax regime.

Data Privacy

As part of their activities and/or services, the Group companies may become aware of and manage personal data, i.e., information relating to identified or identifiable individuals.
Therefore, the Group considers it of fundamental importance to comply with current privacy legislation (e.g., Privacy Regulation (EU) 679/2016 and Italian Legislative Decree 196/2003) and to correctly and securely process any personal data of which it becomes aware.
To this end, the Group has equipped itself with a **Personal Data Organisation and Management Model** in which the roles actively engaged in the management of data protection topics within the Group are identified and their tasks and responsibilities are outlined; in particular, in addition to the figures envisaged by current legislation (e.g., Data Controller, Data Protection Officer, etc.), the Group has identified further roles of oversight at corporate level.
In addition, the Group has implemented a series of **procedures** to regulate key privacy topics, such as personal data retention, risk analysis and impact assessments, and the management of data breaches.
Both the aforementioned Model and the relevant procedures are always available to workers on the corporate intranet.
Awareness-raising **training** and communications are envisaged for staff specifically authorised to process personal data, and targeted training courses are provided for those who hold privacy roles or perform activities relevant to data protection.
The protection of personal data also takes place through the precise **mapping of processing operations** in special registers.
The associated **risks** of such processing are assessed, and in the event of a high impact of the processing on the freedoms and rights of the data subjects, an assessment is also made of the adequacy of the security measures adopted. If the security measures are not completely adequate, an action plan is drawn up to implement solutions to mitigate the risks of unauthorised access or unwanted loss or modification of personal data.
In the event of any data violations (data breach), an internal communication flow will be promptly activated in accordance with a specific corporate procedure to collect essential information and analyse the importance of the violation.
In addition, Group companies provide the persons to whom the processed data refer (**data subjects**) with information on such processing by providing **privacy policies**. The main policies are also published on the websites of the Group companies.
Requests and complaints from data subjects relating to privacy topics (e.g., requests for deletion or access to data, etc.) are handled according to a specific procedure issued at Group level. The data subject may request information on the processing of their data at any time by contacting the Data Controller or the Data Protection Officer at dpo.privacy@a2a.eu.
The requests are subject to timely verification by the competent organisational structures, which then proceed to draft the response, after discussion with the Data Protection Officer and/or the internal structure providing specialist support in the field of privacy.
As a general rule, any remedial actions are identified as a result of the verifications which served to prepare the feedback and implemented within a short period of time.
With reference to **third parties (e.g. suppliers)** who process personal data on behalf of the Group companies, it is foreseen that specific **agreements will be signed appointing them as data processors**, containing the obligations and instructions that the third parties undertake to comply with, and the possibility for the Data Controller companies to carry out verification activities on the correct operation of the suppliers from the point of view of privacy.
dpo.privacy@a2a.eu.

HSEQ Organizational Model

The Group has defined an organizational model for Environment, Health, Safety and Quality, in order to:
- identify HSEQ roles and responsibilities in positions close to the sources of risk to ensure their effective management, attributing the necessary powers to the figures who operationally manage the activities;
- identify, at the various levels, figures and corporate structures responsible for guidance, coordination and control tasks and others to support the business in the pursuit of strategies and corporate goals;
- guarantee systematic and documented verification of compliance with the applicable regulations and with the requirements and standards adopted;
- ensure the traceability of activities and documents relating to environmental, health, safety and quality processes.

The model is described in a Group Guideline covering its implementation at individual companies through the regulation of corporate processes relevant to HSE topics, at all levels of the organization and the definition and implementation of conceptual and IT tools for managing these processes. In the regulation of processes, particular attention is paid to the definition of methods for the identification, assessment and management of risks, to support businesses in guaranteeing and maximizing the sustainability of their activities. The adoption of these methods by the activities managed directly by the Group is the subject of a specific goal within the 2030 Sustainability Plan. The governance of HSE topics is also extended to activities that are not directly managed by individual companies and it engages parties who, for various reasons, collaborate with Group companies. For example, appropriate HSE risk identification and management tools are also applied to suppliers. The Group Guideline will be integrated with the Quality domain during 2023.
A2A has adopted a growing number of corporate policies extended to the entire Group, aimed at regulating governance, environmental and social topics in a homogeneous way, such as the **Biodiversity Policy** adopted in 2022 (see page 130).
In order to implement these reference principles, A2A has also prepared guidelines and internal procedures on sustainability aspects, also referring to and outlining the reference standards laid down by the OMCs (Organization, Management and Control Model). These documents are adopted at Group level and articulated by its companies in relation to the specificities of their respective businesses.

Figure 5 Total number of certificates issued

	Quality ISO 9001	Environment ISO 14001	Safety OHSAS 18001	Safety ISO 45001	Energy Efficiency ISO 50001	EMAS	Remade in Italy	SA 8000
2020	28	27	2	24	4	28	3	
2021	33	30	0	29	6	27	4	1
2022	33	32	0	30	6	27	4	2

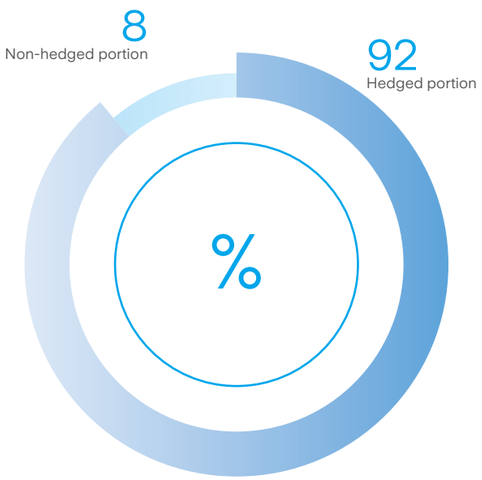
OTHER CERTIFICATIONS:
Road Safety ISO 39001 (3 A2A Group + Gelsia Ambiente)
UNI EN ISO 17020
UNICEI 11352 (5 A2A Group + 1 Retipiù)
F-GAS FLI Company Certificate 00554 National FGAS Register IR080372 (3 A2A Group + Agripower)
UNI EN ISO 17025: 2018

In 2022, all the companies that were ISO45001-certified as at 12.31.2021 maintained this certification, subject to scope changes, such as mergers or company transfers.

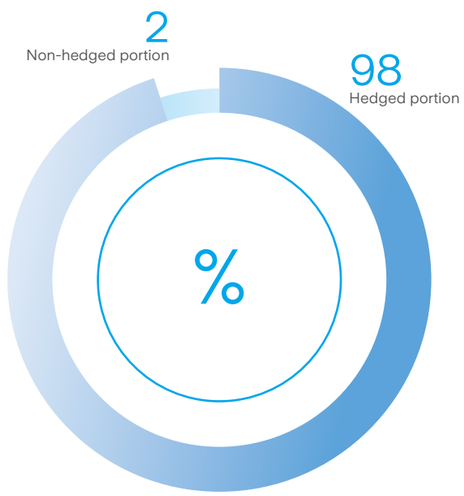
The implementation of these policies is also operated through the adoption of certified management systems according to the major voluntary standards recognised at the international level, such as ISO 14001 for the environment, ISO 9001 for Quality and ISO 45001 for Occupational Health and Safety, or within the European Community, such as EMAS Registration, which refers to Regulation (EC) 1221/09. During 2022, the Parent Company obtained two new certifications in innovative areas: Information Security (standard ISO/IEC 27001 - Information Security Management System) and Business Continuity (standard ISO 22301 - Business Continuity Management System). Interest in Social Accountability certification in accordance with the international SA8000 standard was confirmed, and a second Group Company (A2A Calore & Servizi) obtained the certification. **To date, 51% of our plants are ISO 140001/EMAS certified**.

Figure 6 Certifications Coverage

Environment Management Systems (EMAS and ISO 14001) / Installed Group capacity



Safety (OHSAS 18001 and ISO 45001) / Number of employees



2.3
Analysis and Management of Risks and Opportunities

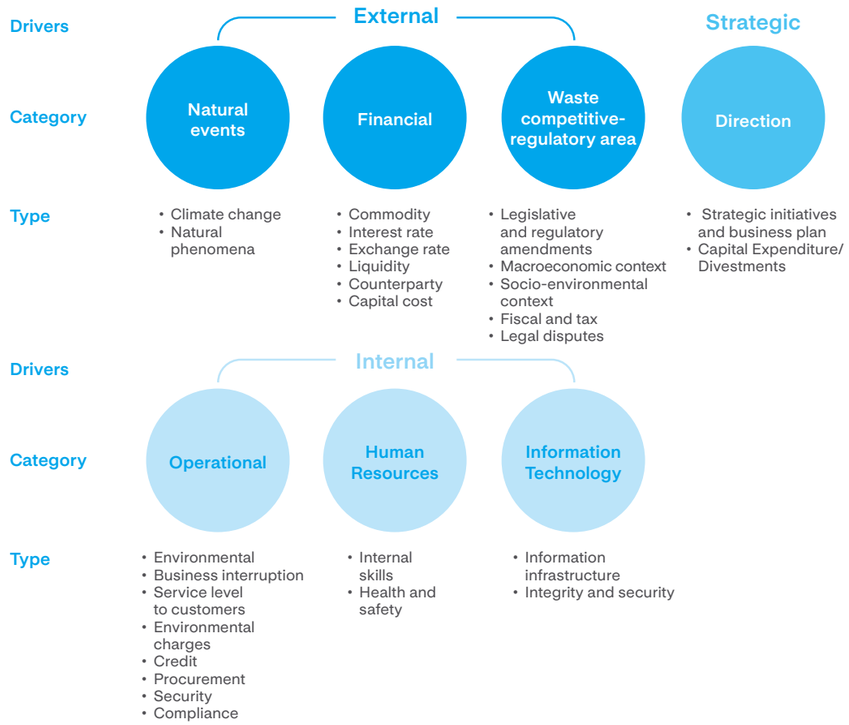
The Group has set up a Risk Management Department that uses a risk measurement and detection process on the basis of the Enterprise Risk Management (ERM) method, developed in order to make business risk management an integral and systematic part of the corporate management processes. Such activities are carried out in accordance with the "Guidelines for the Internal Control and Risk Management System" approved by the Board of Directors and adopted by Group companies. The ERM process and method are formalized in the internal regulatory document "Enterprise Risk Management Policy".

Through the engagement of all corporate structures, the risk measurement process is regularly activated, enabling the identification of the most significant critical issues, the measures to monitor them and the mitigation plans.

The risk profile of the Group and its companies, identified in the periodic (every 6 months) assessment process, is analysed by the respective BoD of the companies. In addition, ERM risk management integrates with the A2A Group's management systems for Quality, Environment, Health and Safety and supports the development and maintenance of the respective certifications in accordance with ISO 9001, ISO 14001 and ISO 45001, as well as in accordance with SA8000 (Social Responsibility), ISO 39001 (Road Safety), ISO 27001 (Information Security), ISO 22301 (Business Continuity Management), and in general with management system standards which include the identification and management of risks among their requirements.

The ERM process takes into account all possible risks and it assesses their impact on the company, as regards both the financial and reputational aspects. To this end, the main risk factors considered relate to the company's mission and to the relationship with the community, the nature and diversification of its business units, its growth plan, strategic goals, competitive, legislative and regulatory environment, macroeconomic and social-environmental scenario, topics related to climate changes, and the expectations of interested parties, characterized by increasing sensitivity towards climate change, environmental, health and safety topics, and sustainability topics more generally. In fact, during each periodic assessment, there are information flows with the Sustainability Development organizational structure, as well as with the Group's Environment, Health and Safety structure. This comparison aims to share any changes in context and to further investigate risk/opportunity topics related to sustainability goals and it allows for a synergistic management of risk management activities and the results of stakeholder engagement activities. All of the above has highlighted a strong correlation between material sustainability topics and risks: in fact, all material sustainability topics are linked to one or more risks identified in ERM.

Figure 7 The A2A Group's risk model



The Enterprise Risk Management methodology and process implemented by the Group also include the identification and management of opportunities, understood as scenarios with positive uncertainty that are linked to a risk scenario and whose expected benefit exceeds the mere elimination of potential negative impacts of the risk or that constitutes a possible positive (favourable) change in a parameter, compared with what was planned. To date, the opportunities identified mainly cover the following types: "strategic and plan initiatives", "climate change", "socio-environmental context", "health and safety", "commodity", "cost of capital" and "fiscal and taxation"; the expected benefits are both for the Group's reputation and economic and financial.
In addition, an analysis of the associated risks and opportunities and safeguards in place for material topics was conducted, and the details are illustrated in the tables presented at the beginning of each capital, apart from those linked to governance topics, which are given in the table below.

Group's Ethics and Integrity

The Group promotes the ethical conduct of its business, adopting specific prevention measures and standards (such as the Code of Ethics, the 231/01 Model, the Anti-Corruption Policy and other procedures to protect the corporate activities, also to protect human rights throughout the value chain), in order to prevent cases of corruption and money laundering that could create damage for the territory, for the market and for the Group's stakeholders. At the same time, A2A encourages the spread of an ethical corporate culture based on the principles of integrity, honesty and respect for human rights, launching specific information and training activities, as well as providing suitable systems for reporting irregularities and unlawful conduct.

#Anti-corruption #Compliance #Human Rights #Whistleblowing

Management approach (MA)

Mitigate

Adoption of a new Code of Ethics, valid for all Group companies.

Adoption of the Quality, Environment, Health and Safety Policy and of the related system of internal procedures.

Risk monitoring policy through organizational models pursuant to Italian Legislative Decree 231/01.

Adoption of the Reporting procedure for the preparation of the NFS.

ISO 9001, (Quality) ISO 14001 (Environment) and ISO 45001 (Health and Safety) certifications.

Models and procedures for integration following M&A transactions.

Internal training.

Monitoring the main KPI subject to regulatory compliance.

Adoption of the TCF - Tax Control Framework.

Seize

Risk factors

Any incompleteness of accounting and non-financial disclosures.

Any "compliance" failures with regulations (e.g., in the areas of privacy, antitrust, bribery, business practices, tax, environment, health and safety, etc.) and/or authorisations may result in negative image impacts or fines or disqualifications.

Any critical organisational and management issues resulting from M&A transactions.

Opportunity factors

Adherence to the Cooperative Compliance regime in the tax field.

What we have done

2022 Actions

- We updated the A2A S.p.A.'s Organization, Management, and Control Model pursuant to Italian Legislative Decree 231/01.
- We delivered a dedicated training course on the Code of Ethics, Whistleblowing, Anti-Corruption Policy and 231 Model
- two new certifications in innovative areas, such as Information Security and Business Continuity

What we are doing

Sustainability plan actions

Compliance/ business ethics

Management approach (MA)

Mitigate

Responsible management of the supply chain, for example:

- investigation activities to counter contracting suppliers that do not comply with the A2A Group's ethical requirements
- obligations for the supplier to sign an ethical pact and a declaration of compliance with the legality protocol.
- progressive extension of ESG ratings to the A2A Group's vendor list .

Compliance with rules governing human rights by Group's employees, by adopting the Code of Ethics.

Creation of a non-profit organization to combat poverty and social vulnerability.

Seize

Risk factors

Topic of ethical conduct of suppliers or sub-suppliers.

Failure to respect human rights by employees, suppliers, customers and partners..

Opportunity factors

Development of SA8000 certification for certain Group Companies.

What we have done

2022 Actions

- SA8000 Certification for A2A Calore e Servizi
- We carried out an initial assessment of respect for human rights, taking into account the indications of the new GRI Standards

What we are doing

Sustainability plan actions

Compliance/ business ethics

Sustainability in Governance

The Group adopts a holistic approach which, starting with the assessment of risks and opportunities on sustainability topics and the constant monitoring of regulatory developments in the ESG area, allows for the sustainable and responsible management of corporate activities, and at the same time, to respond promptly to the demands of legislators. The Group is also committed to achieving the sustainability goals of the United Nations' 2030 Agenda through the adoption of specific measurable ESG KPIs and the integration of these into the corporate Management MbOs.

Risk factors

Possible insufficient integration of ESG topics into corporate governance.

The risk of change: possible resistance to change in processes, systems, activities, models, tools, etc. in implementation of the integration of ESG policies in governance (e.g., diversity and inclusion).

Possible insufficient analysis of environmental and social impacts in the management of new acquisitions.

Opportunity factors

Training, internal communication, and projects to enhance ESG policy integration at all levels of the organization.

Management approach (MA)

Mitigate

Programmes to increase the awareness of the BoD with regard to sustainability topics.

Adoption of an Internal Board Committee dedicated to ESG topic and relations with territories.

Adoption of a Board Committee dedicated to risk control, which also reviews climate, environmental, social and compliance risks.

Progressive integration of ESG topics into due diligence processes.

Seize

What we have done

2022 Actions

- the ESG and Territory Relations Committee met 9 times
- We carried out 2 questionnaires on “Sector experience” and “Soft skills” of the BoD
- We conducted 3 Induction sessions in the Board of Directors on ESG topics

What we are doing

Sustainability plan actions

Sustainability governance

Risk factors

Possible failure to identify significant risks related to sustainability topic.

Opportunity factors

Group ERM method also aimed at identifying and managing uncertainty scenarios related to ESG topics.

Management approach (MA)

Mitigate

Adoption of the Internal Control and Risk Management System Guidelines.

Adoption of the Enterprise Risk Management Policy procedure.

Integration of sustainability topics in Group's Enterprise Risk Management (ERM) activities.

Constant updating processes and alignment between the Group's ERM, SUD and HSE Departments.

Adoption of a risk model that includes risk types related to all A2A Group's material topics.

Seize

What we have done

2022 Actions

- Semi-annual assessment of the Audit and Risk Committee on climate change topics
- Coverage of all the material topics identified through risk and opportunity analyses
- Periodic alignment meetings between structures for sustainability context assessment

What we are doing

Sustainability plan actions

Risk Management

3

A2A's Sustainable Strategy

3.
A2A's Sustainable Strategy

The founding elements of A2A's business - energy, water and environment - represent the levers through which the Group intends to stimulate a change towards a true ecological transition that represents an opportunity for everyone.

For this reason, in 2021 the Group decided to include its own purpose in its name - Life Company. In fact, being a Life Company means aiming at a sustainable quality of life for the land, the environment and people, preserving resources and combating climate change. This concept is at the heart of A2A's strategy and of the services it brings to its territories every day.

Main national and international networks and associations on sustainable development topics of which A2A is a member

UN Global Compact	Since 2013, A2A has been a member of the United Nations Global Compact, subscribing to the 10 founding principles relating to human rights, working conditions, the environment and the fight against corruption. As part of the network, every year A2A publishes its own Communication on Progress (CoP), which coincides with this document.
We Mean Business	Since 2017, A2A has been a member of We Mean Business, a global non-profit association that fights climate change. As part of this association, A2A is committed on two fronts: responsible environmental policies and improved access to and quality of water.
Climate & Clean Air Coalition	The Climate and Clean Air Coalition (CCAC) aims to construct, share and foster the implementation of policies and practices aimed at reducing climatic pollutants over the next decades. More specifically, the Coalition supports action in the field through 11 initiatives. Since 2017, A2A has been one of the players engaged in the initiatives aiming to mitigate climatic pollutants in the municipal solid waste sector.
Sustainability Makers	Since January 2018, A2A has been a member of the Sustainability Makers, the national association that brings together professionals in all types of organizations who are dedicated to the management of social, environmental and sustainability issues related to corporate activities.
Utilitalia	A2A is an active member of the CSR and Sustainability Working Group of Utilitalia. Within this group, A2A participated in the preparation of the Sustainability Report of the Utilities Sector.
ASVIS	In 2016, the A2A Group's AEM Foundation adhered to the Italian Alliance for Sustainable Development and it has since played an active part in its activities and working parties.
Valore D	A2A, in partnership with Valore D, promotes change towards gender balance through the development of a new corporate culture on gender balance topics.
Corporate Forum on Sustainable Finance	Since 2019, A2A has been among the European companies that have signed the "Corporate Forum for Sustainable Finance", a document supporting the implementation of sustainable financial tools through a network of companies promoting a low-carbon society.
Fondazione per lo Sviluppo Sostenibile	In 2022, A2A joined the Foundation for Sustainable Development. In line with the goals of promoting a green economy, the Foundation acts as a national and international reference point on climate and energy topics and works to stimulate and support the transition of all sectors of the economy towards climate change goals.
Italy for Climate	A2A has been a promoter of Italy for Climate since 2022, the initiative of the Foundation for Sustainable Development with the aim of promoting the implementation of a climate roadmap for Italy, in line with the European indications of the Green Deal and the goals of the Paris Agreement.

3.1
Background information and scenarios

Reference energy scenarios

The new report "***Climate Change 2022: Impacts, Adaptation and Vulnerability***"[1] of the Intergovernmental Panel on Climate Change - IPCC[2] again confirms that the extreme climate events this year, mainly caused by human activity, have led to irreversible impacts on nature and people, and it emphasises the need to limit global warming to below 1.5°C in order to achieve a just, equitable and sustainable world. The report also highlights the importance of increasing ambition in both adaptation and mitigation and placing these topics at the centre of political agendas and public attention.

2022 was a particularly difficult year for the energy sector. The International Energy Agency (IEA) points out in its ***World Energy Outlook (WEO) 2022***[3] how Russia's invasion of Ukraine has triggered one of the most complicated global energy crises - an unprecedented shock in complexity due to Russia's primacy as a fossil fuel exporter. With the energy commodity prices reaching historic highs and the resulting inflationary pressure, the number of people without access to modern means of energy is increasing for the first time in a decade.

The IEA illustrates three main scenarios showing different potential evolutions of the global energy system depending on underlying assumptions. Simulated through a framework reflecting the interactions between policy, cost and capital expenditure choices, these scenarios take into account the latest market and cost data that have emerged due to the current international environment. The common point of each scenario is the **growing global demand for energy**, driven by economic trends and demographic forces.

The Announced Pledges Scenario (APS) assumes that governments will fully achieve their climate targets on time. The scenario shows how the combined implementation of all the announced net-zero ambitions and those stemming from the COP26 Global Methane Pledge could lead to a global CO_2 emission reduction compatible with a temperature increase of +1.7 °C by 2100 (with 50% probability).

In the Stated Policies Scenario (STEPS), the IEA illustrates the evolution of the energy markets on the basis of the actual measures implemented by governments in order to achieve their targets. This scenario presents growth in energy demand to 2030 at an annual rate of about 1%. Almost all of it is met by renewable technologies, especially in advanced economies. The cost advantages of mature renewable technologies and the prospects for new technologies, such as green hydrogen, are driven in this scenario by the US Inflation Reduction Act. In the STEPS scenario, the IEA sees a definitive peak in global demand for fossil fuels for the first time, despite the scenario being based on the current policy framework. The STEPS scenario takes global CO_2 emissions towards a trajectory compatible with an increase in planetary temperatures to +2.5 °C by 2100 (with 50% probability).

The Net Zero Emissions by 2050 (NZE) scenario represents the normative scenario produced by the IEA that demonstrates a possible path for stabilising global temperatures at +1.5 °C compared to the pre-industrial era. In contrast to the analysis produced in its previous publication, the IEA notes that the efforts required to achieve this goal have increased. In this scenario, the advanced economies show that they achieve this goal earlier than emerging economies actually could. The scenario integrates the achievement of the UN Sustainable Development Goals related to energy.

According to the "***Renewable Energy Market Update 2022***"[4], in many Countries, governments are devising actions to limit rising energy prices, reduce dependence on Russian gas supplies and accelerate the transition to renewable energies, focusing mainly on wind and solar energy. In fact, compared to 2020, the total cost of capital expenditures in onshore photovoltaic and wind power plants is estimated to rise from 15% to more than 25% in 2022.

[1] 2021, IPCC Climate Change 2022: Impacts, Adaptation and Vulnerability, *https://ipccitalia.cmcc.it/impatti-adattamento-e-vulnerabilita/*
[2] Intergovernmental Panel on Climate Change - IPCC is the scientific forum formed in 1988 by two United Nations bodies, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) with the purpose of studying global warming.
[3] IEA, World Energy Outlook 2022, *https://www.iea.org/reports/world-energy-outlook-2022*
[4] Renewable Energy Market Update, Outlook for 2022 and 2023, *https://iea.blob.core.windows.net/assets/d6a7300d-7919-4136-b73a-3541c33f8bd7/RenewableEnergyMarketUpdate2022.pdf*

Expected Physical Climate Scenario

In order to have a clear understanding of climate risks and possible business opportunities, it is imperative to have an excellent knowledge of the current and projected physical climate scenario. The latter consists of the recorded and predicted trends in climate variables and the so-called "transition" scenario, which identifies, among others, the set of policies, regulations or consumer orientations aimed at achieving a low-carbon economy with a lower environmental impact.

The increase in the average global temperature has already caused concrete and tangible effects all over the world, which differ depending on the geographic area: some regions are experiencing an increase in heavy rainfall, while others are affected by unprecedented droughts and heat waves, sea levels are rising along the coasts, and forests and woodlands are subject to numerous fires caused by the increase in heat.

The temperature has risen by almost 1°C in the last century. As things stand, a further increase is expected in the near future, which will bring with it numerous risks of varying magnitude, not only for the environment, but also for people and companies. The severity of these risks will depend on the actions that will be taken and how much Countries and governments will be able to put in place to limit the rise in temperatures.

At international level, the future climate scenario is estimated through the use of climate models that allow to obtain projections based on the assumption that future climate conditions depend on the evolution of climate-altering gas concentrations in the atmosphere which, in turn, depend on the implementation or otherwise of mitigation and reduction policies on a global scale.

For Italy, the document "Risk Analysis - Climate Change in Italy" prepared by CMCC (Euro-Mediterranean Centre for Climate Change) reports data from multiple simulations carried out using regional climate models which, starting from global-scale simulations, derive information on expected climate parameters on a local or regional scale under different scenarios of greenhouse gas concentration and emission levels, known as Representative Concentration Pathways (RCP)[5]:

- "Aggressive Mitigation" (RCP2.6), scenario with less concentration of greenhouse gases, characterized by peak emissions in 2020, steadily decreasing until reaching "zero emissions" by 2100;
- "Stabilization" (RCP4.5), a scenario with intermediate concentrations, characterized by peak emissions in 2040, decreasing over the years, reaching levels below current levels by 2070. Atmospheric concentrations will stabilize at about double pre-industrial levels by 2100;
- "Business as usual" or "No mitigation" (RCP8.5), scenario with the highest concentration levels of greenhouse gases, characterized by growth in emissions at current rates that will lead to atmospheric CO_2 concentrations triple or quadruple pre-industrial levels (280 ppm) by 2100.

The main atmospheric variables and the influence on them by climate change are studied in terms of both average and extreme values. The Group's attention has thus been focused on those climatic parameters, both average and extreme, that have a close correlation with its businesses.

Analysing the long-term projections for **average indicators**, all scenarios predict an **increase in temperature** and a **decrease in precipitation events** over the whole Italian territory, with a greater seasonal variation. Aware of this perspective, through proper planning, companies potentially have the ability to define effective mitigation actions against the effects of climate change, paying particular attention to the risks and impacts resulting therefrom. However, the real effectiveness of the mitigation actions defined and implemented by companies is subject to the unpredictability of extreme weather events.

The assessment of the variation in frequency, intensity and persistence of the same is carried out through the calculation of specific indices and indicators that take into account the main atmospheric variables, capable of supporting the assessment of the climatic hazard in a given area. The projections for the **heat wave** indicator (TN - Tropical Nights)[6] show a marked increase on an annual scale (up to 18 days on average) for the summer season for both scenarios RCP4.5 and RCP8.5 over most of the Italian territory. **Intense precipitation** events, on the other hand, are defined by the indicator characterizing the change in maximum daily precipitation event values (RX1DAY). An increase in heavy rainfall can lead to important effects on the ground, such as an aggravation of hydrogeological risk. The projections for both RCP4.5 and RCP8.5 scenarios show a general upward trend in maximum daily precipitation events. Another particularly significant indicator is the **maximum number of consecutive days without rain** (CDD - Consecutive DryDays), where the variation in the number of consecutive days without rain or very little rain (less than 1 mm) is considered. This indicator highlights the correlation of climate change impacts on agriculture and other productive sectors (e.g., hydropower production), and it forces a continuous effort of resilience and adaptation of the drinking water distribution service in order to ensure a constant supply even during periods of water scarcity. Finally, this indicator is also significant of the trend of hazardous events.

The UN Climate Change Conference and the European and National Strategies

Also for 2023, **the latest edition of the Global Risk Report[7] places climate change-related risks on the podium of the top risks for the next 10 years**: ***Failure to mitigate climate change***, ***Failure of climate-change adaptation***, **Natural disasters and extreme weather events**.

[5] The number associated with each RCP refers to the Radiative Forcing (RF) expressed in units of watts per square meter (W/m^2) and it indicates the magnitude of anthropogenic climate change by 2100 relative to the pre-industrial period.
[6] The indicator is Tropical Nights (TN) and it defines the number of days with a minimum temperature greater than 20°C.
[7] 2023, World Economic Forum, The Global Risks Report 2023, *https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf*

The fact that the failure risk of climate mitigation actions retains first place as the most serious risk is illustrative of the fact that the current climate commitments of States will not be sufficient to limit the temperature increase below 2°C by 2050. **COP26**, the United Nations Climate Change Conference, held in November 2021 in Glasgow and concluded with the definition of the **Glasgow Climate Pact**[8], certainly marked a change of course in national and international policies supporting the ecological transition and the fight against climate change. However, according to an analysis conducted by the International Energy Agency - IEA, current commitments cover less than 20% of the gap in emission reductions that needs to be closed by 2030 for the 1.5°C target to still be achievable[9].

Nonetheless, COP26 was the most attended conference by the business world, marking a shift from top-down reliance on governments to bottom-up action, encouraging the growth of initiatives in this regard, such as the **Glasgow Financial Alliance for Net Zero**[10].

Moreover, coal and fossil fuels were explicitly referenced for the first time, outlining that commitments should converge on progressively reducing coal power and moving away from subsidies for inefficient fossil fuels. Additionally, the governments of 153 Countries were asked to update and strengthen their Nationally Determined Contributions - NDCs[11] and the **Paris Rulebook** for implementing the Paris Agreement was finalized, containing rules for reporting and monitoring emissions and rules establishing **new carbon markets**.

Following COP26, **COP27 was held in Sharm El Sheik** in November 2022. The participating Countries did not reach a final agreement on reducing emissions and phasing out fossil fuels. However, one of the milestones achieved was the establishment of the **Loss and Damage** fund, dedicated to the poorest and most vulnerable Countries that have suffered the most severe effects of climate change.

The European and National Strategies

The European Union has assumed a key role in the fight against climate change and it firmly supports the transition to a clean, more efficient and sustainable economy, placing itself as a leader thanks to its considerable efforts and highly ambitious legislation, in which multiple sectors and players are engaged.

Already in 2019, the European Union approved the **Green Deal**, the EU strategy to achieve carbon neutrality by 2050, which included a target to reduce CO_2 emissions by at least 55% by 2030 compared to 1990. The Green Deal was then reinforced in 2021 with "***Fit for 55***"[12], a new package updating climate, energy and transport regulations. The main goals of Fit for 55 include a 40% share of energy from renewable sources in the energy mix by 2030, a 36% reduction in energy consumption for primary final energy consumption and a 39% reduction in primary energy consumption. The European legislators are also working on an update of these targets, with the approval in September 2022 of a revision of the Renewable Energy Directive that envisages an increase of the share of renewables in the energy mix by 45% by 2030, a reduction of final energy consumption by at least 40% and a reduction of primary energy consumption by at least 42.5% compared to 2007 figures[13]. In addition to decarbonization, the circular economy is key to achieving the ecological transition in a systemic way. In fact, 55% of climate-changing emissions are attributable to the energy sector and the remaining 45% to production[14].

In order to ensure the achievement of the European goals, the European Commission has developed further specific measures and plans. Among them, the "***REPowerEU Plan***"[15]was approved in 2022 to make Europe independent of fossil fuels before 2030, following the effects of the Russian invasion on Ukraine. **The plan is based on 3 main points: diversifying sources of supply, saving energy use and accelerating the spread of clean energy**. In addition, the new plan has increased the European energy efficiency target to +13% compared to 2020.

[8] Reference programme for global policies to protect the planet and the ecosystems in the coming years, available at *https://unfccc.int/documents/310475*
[9] IEA, COP26 climate pledges could help limit global warming to 1.8 °C, but implementing them will be the key, 2021, *https://www.iea.org/commentaries/cop26-climate-pledges-could-help-limit-global-warming-to-1-8-c-but-implementing-them-will-be-the-key*
[10] Alliance of 450 banks, pension funds, and insurance companies that will invest over 130 trillion dollars of private capital in activities related to achieving net zero emissions.
[11] NDCs are the national-level mitigation actions to be submitted every five years with increasing ambition, specifying gases and sectors covered.
[12] Council of the European Union, Ready for 55%, 2021, *https://www.consilium.europa.eu/it/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/*
[13] European Parliament, the Parliament supports energy saving and increased renewables, 2022, *https://www.europarl.europa.eu/news/it/press-room/20220909IPR40134/il-parlamento-sostiene-il-risparmio-energetico-e-l-incremento-delle-rinnovabili*
[14] 2021, Completing the Picture - How the circular economy tackles climate change, *https://ellenmacarthurfoundation.org/completing-the-picture*
[15] *https://energy.ec.europa.eu/topics/energy-systems-integration/hydrogen_en#:~:text=EU%20hydrogen%20strategy,-The%20EU%20strategy&text=The%20strategy%20explored%20how%20producing,the%20first%20quarter%20of%202022*

Other tools include the adoption of the ***EU Methane Strategy***[16], which aims to reduce methane emissions and improve air quality by improving the measurement, reporting and verification of methane emissions from the energy sector and the immediate reduction of emissions through mandatory detection and repair of leaks in pipelines and a ban on venting[17] and flaring[18]; the ***EU Strategy on Energy System Integration***[20] which includes measures to build a new, flexible energy system capable of integrating different energy carriers with end-use sectors, including buildings, transport or industry; and also the Hydrogen Strategy in which green hydrogen becomes crucial for the decarbonization of the hard-to-abate sectors. In fact, the European Commission has proposed producing 10 million tonnes of green hydrogen and importing 10 million tonnes by 2030.

At the national level in 2021, the **National Recovery and Resilience Plan - NRRP** was presented, which is developed around three strategic axes - **digitalization and innovation, ecological transition and social inclusion** - with planned resources of 191.5 billion euro. The Plan could be updated to cope with the energy crisis of 2022 and incorporate the new provisions and targets laid down in REPowerEU.

The main capital expenditure lines focus on accelerating energy efficiency and aim to increase the reliability, security and flexibility of the energy system and the amount of energy produced from RES, encouraging greater electrification of consumption. As of December 31, 2022, all 55 targets of the NRRP have been met.

In line with the EuropeanHydrogen Strategy, the NRRP also envisages the development of **hydrogen valleys**, i.e., ecosystems where hydrogen is produced and used in rail transport and hard-to-abate sectors.

The targets of the NRRP fit into the broader framework provided by the "***Integrated National Energy and Climate Plan - INECP***[21]" and the "***Long-Term Strategy for Reducing Greenhouse Gas Emissions***[22]". Both are being updated to incorporate the ambitious European targets outlined in Fit for 55 and REPowerEU. The ***INECP*** of 2019 considers a timeline up to 2030, while **Italy's Long-Term Strategy for the Reduction of Greenhouse Gas Emissions** published in January 2021 seeks to achieve carbon neutrality by 2050, through the reduction of energy consumption by 40% compared to 2018.

Lastly, on December 28, 2022, the updated text of the "***National Climate Change Adaptation Plan***"[23]was published, which is the implementation of the 2015 "***National Climate Change Adaptation Strategy***"[24]. The NCCAP is a strategic tool that defines actions to mitigate the risks associated with climate change and to improve the adaptive capacity of natural, social and economic systems at national level. Furthermore, the plan highlights the need to establish a national reference governance structure involving public administrations, technical bodies and civil society in order to ensure its immediate implementation.

3.2 The 2021-2030 Strategic Plan

On November 22, 2022 A2A approved the 2021-2030 Strategic Plan, which renews the Group's commitment to decarbonization ahead of the EU goals. **The 2021-2030 Plan update confirms Circular Economy and Energy Transition as the pillars of A2A's strategy**, to which all the Business Units (Energy, Waste and Smart Infrastructures) contribute. The capital expenditure targets of the first ten-year plan presented in January 2021 remain unchanged, with their reshaping focused on development in the distinctive domestic market businesses mainly through organic growth.

Results of the First Two Years of the Plan

In the first two years of the ten-year Plan, infrastructure capital expenditures of 3.5 billion euro were made for the Country. As part of the circular economy, the Group has finalized strategic capital expenditures in plants for the treatment of organic waste and agro-food waste (Lacchiarella and Cavaglia), for the treatment of sludge (Corteolona), for purification (Gavardo, Alfianello and Val Trompia) and in the conversion of the Biofor plant for the production of biomethane. Lastly, two major M&A transactions were finalised. In the industrial waste sector, the acquisition of TecnoA, a leading treatment company in central and southern Italy, was completed. In heat recovery, the acquisition of Sea Energia, a company that supplies electric and thermal energy to the Milan Linate and Milan Malpensa airports, was finalized.

In order to support the energy transition, in the first phase of the Plan implementation, portfolios of green generation plants for 436 MW were acquired: the Octopus portfolio, exclusively photovoltaic for 173 MW, and the Ardian wind and photovoltaic portfolios for 263 MW. These transactions have enabled the Group to become the fourth industrial player in the renewable energy sector. An additional RES development platform was acquired in 2022, with a project pipeline of 800 MW, including the approximately 30 MW Matarocco wind plant, whose construction work has started. In order to develop new flexible energy to support renewables, the Chivasso and Cassano power stations have been upgraded. Two primary substations (Rozzano and San Cristoforo) were built to ensure the resilience of Milan's electricity grid. Finally, retail customer acquisition from digital channels exceeded expectations, with over 180,000 new customers in the first two years of the plan.

[16] European Commission, Methane Emission, *https://energy.ec.europa.eu/topics/oil-gas-and-coal/methane-emissions_en*
[17] Venting - intentional and controlled venting or release of gases into the atmosphere
[18] Flaring - practice according to which excess gas is burnt off
[19] European Commission, EU strategy on energy system integration, *https://energy.ec.europa.eu/topics/energy-systems-integration/eu-strategy-energy-system-integration_en*
[20] European Commission, Hydrogen *https://energy.ec.europa.eu/topics/energy-systems-integration/hydrogen_en*
[21] Integrated National Energy and Climate Plan (INECP), 2019 *https://www.mase.gov.it/sites/default/files/archivio/pniec_finale_17012020.pdf*
[22] Italian long-term strategy on the reduction of greenhouse gas emissions, 2021, *https://www.mite.gov.it/sites/default/files/lts_gennaio_2021.pdf*
[23] Ministry of the Environment and Energy Security, National Climate Change Adaptation Plan, 2022 *https://www.mase.gov.it/sites/default/files/archivio/allegati/clima/PNACC_versione_dicembre2022.pdf*
[24] Ministry of the Environment and Land and Sea Protection, Elements for a National Climate Change Adaptation Strategy, 2014 *https://www.mase.gov.it/sites/default/files/archivio/allegati/clima/snacc_2014_elementi.pdf*

Macroeconomic Context and Plan Update

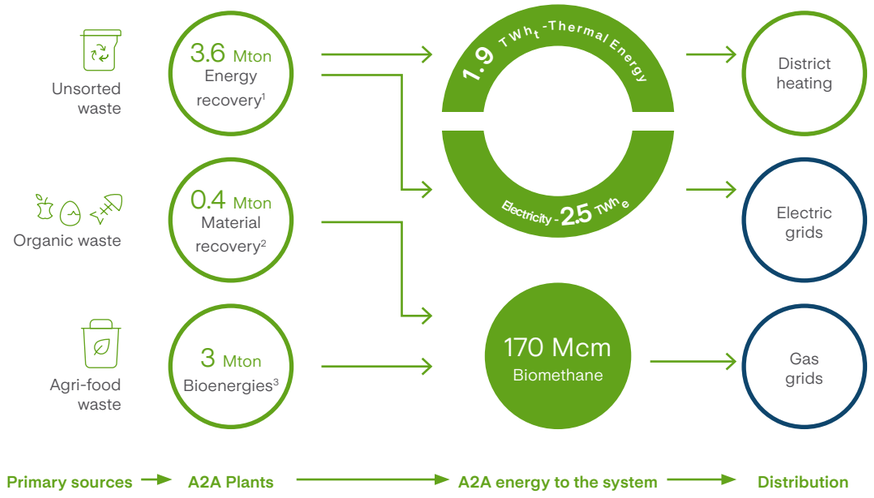
2022 was characterized by a complex geopolitical and economic environment and by a volatile energy scenario: the price of electricity reached 700 €/MWh in August, inflation in the EURO zone soared to 10% in July, and the 12-month Euribor interest rate exceeded 2% in September. While on the one hand the outlined framework generated great economic uncertainty, on the other hand it made the growth assets of A2A's Plan even more relevant. Indeed, a renewed push towards decarbonization and the need to increase the level of energy autonomy is emerging in Europe. We have also witnessed a renewed commitment to support the construction of plants in Italy aimed at contributing to the Country's energy independence: the strong focus on energy autonomy drives the enhancement of the resources available on the territory to unlock the potential of renewable sources, in line with the Group's main lines of development.

The uncertain economic environment and the impacts generated (e.g., increase in procurement costs, increase in the nominal value of receivables, accrual of customer payments and increase in the cost of debt) make it opportune to update the next few years of the Plan, with a greater focus on managing the risks arising from the changed environment, reshaping capital expenditures, while keeping the ten-year targets unchanged (16 billion euro cumulated between 2021 and 2030 in line with the first ten-year Plan).

Circular Economy

On the Circular Economy front, A2A has already invested more than 1 billion euro in the two-year period 2021-2222 and it envisages total capital expenditures of around 5 billion euro in the Plan, focusing on closing the waste cycle, recovering materials, energy and heat and developing bioenergy, achieving an EBITDA of 0.8 billion euro by 2030. With the Plan update, the Group will increase its waste treatment and enhancement capacity by consolidating its leading role in Waste-to-Energy and a significant position in the biomethane market segment. Thanks to its capital expenditures, by 2030 A2A will have plants capable of producing 1.9 TWh of thermal energy for district heating and plants for treating organic waste and agro-food waste to produce 170 Mm^3 of biomethane. Leveraging the Group's leadership in the circular economy, A2A will launch the lithium battery recycling business. Thanks to this new business, A2A will be able to process around 10 ktonnes of batteries each year.

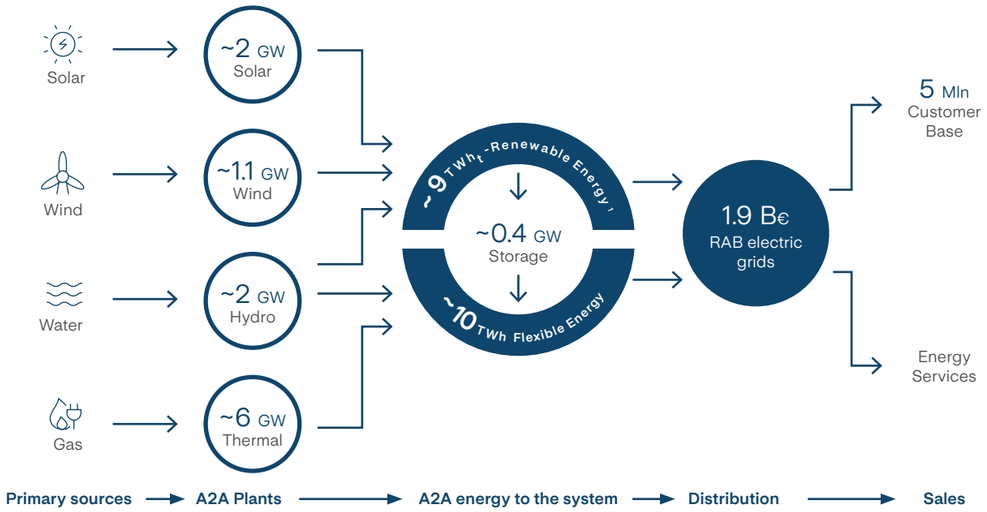
Figure 8 Circular Economy: the Value Chain of Planned Capital Expenditures to 2030



Energy Transition

A2A's Energy Transition Plan envisages total capital expenditures of around 11 billion euro, mainly focused on the development of renewable energies, consumption flexibility and electrification, with a target EBITDA to 2030 of around 1.7 billion euro. The Plan aims to build a 5 GW portfolio of hydro, solar and wind power, capable of producing around 9 TWh of green energy.

Figure 9 Energy Transition: the Value Chain of Planned Capital Expenditures to 2030



In order to ensure greater penetration of non-programmable renewables, it will also be necessary to invest in the flexibility of the electricity system. To this end, A2A will develop a combination of solutions that will contribute to the 1.7GW increase of new flexibility by 2030, thanks to a new gas-fired combined cycle enabled by blending[25] with hydrogen (winner of a Capacity Market auction[26]), a new gas peaker[27] (already authorised), electrochemical storage solutions and upgrades aimed at increasing the flexibility level of the plants (two of which have already been implemented). The Group's commitment to supporting the electrification of consumption also continues, which will be enabled by capital expenditures in strengthening and developing A2A's electricity grid, with the construction of 16 new primary substations, laying 2,500 km of new grids and more peak power managed. On the market side, the customer base will be expanded by proposing new VAS[28] solutions, promoting electric mobility and the development of distributed generation and self-consumption through small-scale solar and energy communities. In A2A's vision, the circular economy and energy transition complement each other, developing synergies between the Business Units.

By 2030, the Group will produce a total of around 13 TWh of green energy and energy recovery, combining the contribution of hydroelectric, photovoltaic and wind power with that of waste-to-energy and bioenergy.

Environment, Social and Governance

The commitment to ESG remains at the heart of the Business Plan, focused on a fair, ecological and shared transition. A great deal of attention is paid to environmental sustainability, to the development of territories and communities, and to the enhancement of the Group's people by building and spreading an inclusive approach in the corporate culture.

The update of the 2021- 2030 Plan confirms the decarbonization targets that see A2A reach net-zero by 2040, ten years ahead of EU targets, and the strategy focused on increasing energy production from renewable sources and the use of new technologies.

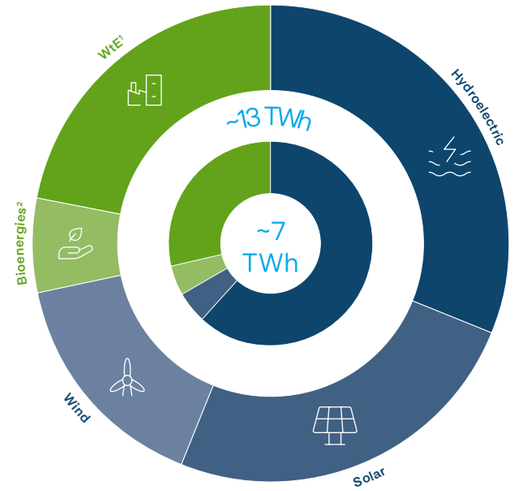
A2A's approach to diversity and inclusion is based on the principles of respect, integrity and protection of the individual within the working environment. In 2022, the presence of women on the Boards of Directors of Group companies stands at 48%, while 25% of managers are women. A2A continues to set itself challenging goals for the coming years (e.g., 90% BoD with women by 2030). 25% of employees with disabilities were included in enhancement projects and 12% of the Group's people had formally assigned targets: the target is to reach 100% for both KPIs by 2030.

Work also continued on making the Supply Chain sustainable, confirmed by the progress achieved in 2022 with 60% of orders awarded to suppliers with ESG scoring. The Plan confirms the commitment to achieve an incidence of sustainability criteria in the vendor rating process of more than 30% by 2030, with 90% awarded to suppliers with ESG scoring.

Engagement with the main stakeholders in the reference territories was strengthened in 2022: 9 multi-stakeholder forums were held, generating 30 shared-value proposals, and the promotion through ad hoc campaigns of awareness-raising initiatives to adopt responsible conduct in terms of energy efficiency and resource protection was continued.

[25] mix
[26] The Capacity Market is a mechanism by which Terna procures capacity through long-term procurement contracts awarded in competitive auctions. To learn more: *https://www.terna.it/it/sistema-elettrico/mercato-capacita*
[27] These are motors capable of covering peak loads, at times when production from renewables is low, due to their ability to come to a standstill in a short time
[28] Value-added service
[29] Companies that comply with the criterion of 1/3 female members, considering only A2A members.

Figure 10 Production of green and recovered energy | 2021 vs 2030



Notes:
[1] Given the production of electricity and electricity equivalent from WtE
[2] It includes solid biomass, biogas, biomethane and hydrogen. For solid biomass and biogas considered EE generation, for biomethane and hydrogen considered TWheq by conversion factor

3.3 The Sustainability Plan

In order to supplement the sustainability goals already included in the Strategic Plan, the 2021 - 2030 Sustainability Plan was subsequently updated as an addendum that allows all sustainability goals related to the Group's business and corporate activities to be defined, both on the pillars of the Plan and on the "enabling levers": Digital, People and Governance. The Supplement to this document includes the table showing all 108 KPIs of the 2021-2030 Sustainability Plan. Below is a summary of the main KPIs included in the Group Sustainability Plan.

Circular Economy

SDG	Action	KPIs	2021	2022	2026	2030
6 CLEAN WATER AND SANITATION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	**Water** Real actions to reduce water consumption in collection and distribution processes, decrease water dispersion and improve the quality of water returned to the environment	Linear water losses (cm/km/day) (average)	n.a.	19.2	16.7	15.1
		Districtization of the aqueduct grid - A2A perimeter Water cycle (% of total)	n.a.	33%	52%	69%
12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION	**Waste recovery and treatment** Improving the recovery process of collected waste (including through its energy enhancement) and promoting waste sorting	Municipal waste sorting rate (%)	71%	70%	74%	77%
		Waste sent for material recovery (Mt)	1.0	1.0	1.1	2.2
		Municipal waste collected sent to landfill (% of total)	0.5%	0.6%	0%	0%
12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION 17 PARTNERSHIPS FOR THE GOALS	**Waste production reduction policies** Reduce the production of waste through a policy of prevention, reduction, reuse	Partnerships launched for circular economy initiatives (number)	10	24	35	44
7 AFFORDABLE AND CLEAN ENERGY 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 13 CLIMATE ACTION	**District heating** Help to reduce the environmental impact of cities, placing particular emphasis on air quality, implementing district heating and district cooling	Energy from thermal/ renewables recovery (TWh)	1.6	1.6	1.9	2.0
		CO_2 avoided thanks to TLR (kt/y)	- 323	- 300	- 368	- 391

Energy Transition

SDG	Action	KPIs	2021	2022	2026	2030
7 AFFORDABLE AND CLEAN ENERGY 13 CLIMATE ACTION	**Renewables** Increase the proportion of energy produced from renewable sources	Total installed RES capacity (GW) - Italy perimeter	**2.2**	2.5*	2.9	**5.0**
		Percentage of renewable energy produced on the total - Generation BU	**30%**	19%	32%	**52%**
11 SUSTAINABLE CITIES AND COMMUNITIES 13 CLIMATE ACTION	**Emissions** Develop actions aiming to reduce the environmental footprint, like direct and indirect emissions of greenhouse gases	Emission factor (gCO_2eq/kWh) - perimeter aligned with SBTi approved target (Scope 1 + Scope 2)**	**332**	386	289	**226**
		Scope 2 emissions ($ktCO_2eq$) - energy purchase	**21**	21	0	**0**
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 11 SUSTAINABLE CITIES AND COMMUNITIES	***Smart Grid*** Develop solutions to offer a better information access infrastructure (Smart Grid) and improve the grid resilience and to contribute to the growing electrification of consumption	User interruptions in LV - SAIFI (#/year/POD)	**1.61**	1.84	1.26	**1.06**
7 AFFORDABLE AND CLEAN ENERGY 11 SUSTAINABLE CITIES AND COMMUNITIES	**Green energy – end-use energy efficiency** Contribute to the reduction of emissions of end customers through the sale of green energy and the development of energy efficiency measures for public and private real estate assets	Green energy sold to the market (TWh)	**4.7**	7.0	10.8	**17.4**
		Loyal customers with energy efficiency services of total	**1.9%**	3.9%	11.5%	**23.5%**

* KPI at Group level (Italy + Spain) is 2,504 MW.
** Note that the direct emissions component (Scope 1) accounts for 99.98% of the numerator of the emission factor approved by SBTi, which in 2022 results in 8.6 mln tons CO_2. The contribution of indirect energy emissions (Scope 2) is negligible, amounting to 1,919 tons.

Digital

SDG	Action	KPIs	2021	2022	2026	2030
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 11 SUSTAINABLE CITIES AND COMMUNITIES	**Quality** Maintain high quality standards of the services supplied by keeping high customer satisfaction levels	Number of supplies bollett@mail Market BU (thousands)	1,314	1,619	3,053	5,513
		Digital contacts of total customers	14%	18%	24%	28%
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 17 PARTNERSHIPS FOR THE GOALS	**Innovation and R&D** Develop capital expenditures in research and development, increasing the number of partnerships with international research centres and universities. Develop new technologies, patents for technological innovation.	Initiatives of crowd sourcing of ideas and solutions (e.g., scouting, innovation brokers, etc.) to address sustainability goals	8	13	15	15
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	**Cyber & O.T. Security** Infrastructure improvement projects, as well as of IT/OT/IoT/IIoT platforms and applications Adoption of defence mechanisms and protection against logical, viral attacks	Obtain Business Continuity ISO22301 certification	-	Achievement	Achieve UNARETI + A2A CICLO IDRICO + LD RETI	Achieve A2A Ambiente

Governance

SDG	Action	KPIs	2021	2022	2026	2030
8 DECENT WORK AND ECONOMIC GROWTH; 13 CLIMATE ACTION	**Sustainability in planning and capital expenditure processes** Adoption of sustainable finance tools to support the funding strategy	Sustainable debt of total (%)	44%	58%	79%	>90%
8 DECENT WORK AND ECONOMIC GROWTH; 13 CLIMATE ACTION	***ESG rating*** Participation in assessments to evaluate the Group's ESG performance, and implementation of activities to continuously improve the rating	Improve the score in at least 2 sustainability ratings/year	5	3	>2	>2
8 DECENT WORK AND ECONOMIC GROWTH	**Business Ethic** Proactively promote a culture of compliance and respect for the main national and international guidelines on ethical topics among the Group's stakeholders	ISO37001 certification (Anti-bribery management systems)	-	-	Achieve by 2025	
		Employees trained in privacy matters, Italian Leg. Decree 231/2001, Code of Ethics, Anti-Corruption Policy, Whistleblowing System and other group documents on ethical behavioural principles.	82%	84%	>80%	>80%
8 DECENT WORK AND ECONOMIC GROWTH; 5 GENDER EQUALITY	***Risk Management*** Verify that the system used to identify, manage and prevent corporate risks adequately covers sustainability risks (and, in particular, social-environmental risks), also in organizational terms	Identify ERM risks on all material topics	100%	100%	100%	100%

People innovation

SDG	Action	KPIs	2021	2022	2026	2030
8 DECENT WORK AND ECONOMIC GROWTH	**Health and safety** Consolidate the training and prevention plan to reduce injuries and develop new initiatives for worker health and safety	Accident Frequency Index (If) with gate on Severity Index (Ig) calculated taking into account only the first prognoses	**20.02** (0.21)	19.66 (0.17)	15.13 (gate Ig<=0.25)	**12.72** (gate Ig<=0.25)
		Number of accesses to health promotion initiatives	**5,100**	9,087	11,600	**15,000**
8 DECENT WORK AND ECONOMIC GROWTH; 13 CLIMATE ACTION	**MbO and Performance Management** Add sustainability goals to the MbO sheets (correlation between Management remuneration and Sustainability KPIs)	Employees with formally assigned goals (% of total employees)	**12%**	13%	50%	**100%**
5 GENDER EQUALITY; 17 PARTNERSHIPS FOR THE GOALS	***Welfare, diversity and equal opportunities*** Develop innovative welfare policies, also in connection with the promotion of gender equality, and enhance skills through a generational bridge that allows for the transfer of knowledge and experience between the junior and senior populations	Women in positions of responsibility (% of total managers)	**24%**	26%	29%	**35%**
		Disabled employees engaged in specific support/inclusion projects (% of total employees belonging to protected categories)	**10%**	27%	80%	**100%**
4 QUALITY EDUCATION; 17 PARTNERSHIPS FOR THE GOALS	**Training** Implement training courses aimed at enhancing and requalifying skills and professional development (including on topics such as sustainability, anti-corruption and human rights)	Employees engaged in training on sustainability, SDGs, Diversity and inclusion (% of employees to whom content is made available)	**60%**	100%	100%	**100%**
8 DECENT WORK AND ECONOMIC GROWTH; 13 CLIMATE ACTION	**Responsible procurement** Develop initiatives aiming to spread the culture of occupational health and safety amongst contractors and other suppliers. Develop Green Procurement policies	Incidence of sustainability criteria in the vendor rating process	**17%**	17%	>25%	**>30%**
17 PARTNERSHIPS FOR THE GOALS	**Transparency and Stakeholder Engagement** Develop integrated reporting and an adequate information system for planning and control. Develop external stakeholder engagement activities, strengthening the relationship with the territory	Territories engaged in multi stakeholder engagement initiatives/ year	**7**	10	11	**12**
13 CLIMATE ACTION; 4 QUALITY EDUCATION; 17 PARTNERSHIPS FOR THE GOALS	**Education** Consolidate and, where possible, improve the environmental education and promote the awareness of risks associated with climate change in public opinion	Stakeholders engaged in environmental education initiatives	**44,000**	63,410	35,000	**40,000**

3.4
Risk Management and Climate-related Opportunities

The A2A Group has a system in place for identifying, assessing and managing climate change risks and opportunities that is integrated into the Group Enterprise Risk Management process. The main features of the system with reference to climate risks are described below. The risks identified for the A2A Group are the result of the materiality analysis carried out based on the following references:

- **climate-related hazards** as classified by the **EU Taxonomy** and delegated acts issued in implementation of the EU Regulation 2020/852 on Green capital expenditures
- the risk categories outlined in the recommendations of the **Taskforce on Climate-related Financial Disclosure (TCFD)**
- the businesses operated and the services offered by the Group, as well as the risks already included in the Group's risk profile.

The analysis was also supported by the document "Climate Change, Infrastructure and Mobility" prepared by the Ministry of Infrastructure and Sustainable Mobility and presented at the conference with the same name held at the Milan Polytechnic University of Milan on September 28, 2022.

Climate Hazards and Critical Issues for the A2A Group

A systematic assessment has been underway since 2021 regarding the exposure of the A2A Group companies and assets to climate-related hazards as classified by the EU Taxonomy and the Delegated Acts issued in implementation of EU Regulation 2020/852 (see note). To this end, more than 25 ad hoc interviews have been conducted by the Enterprise Risk Management structure.
Figure 11 shows the main climate critical issues for each of the A2A Group's Businesses.

Figure 11 Climate-related hazards and major critical issues

		Hydroelectric production	Thermoelectric/ biomass production	Photovoltaic plants	Wind plants	Electricity and gas distribution	District heating	Integrated water service	Waste treatment plant	Collection and municipal hygiene	Market and trading	People
Temperature	Chronic changes	● Retreat of glaciers	○ Lower performance	✘	✘	● Thermal stress and failure/ Increased cooling days and grid congestion	● Lower heat sales for milder autumns and winters	○ Possible microbiological contamination of drinking water sources or grids	✘	✘	● Lower heat sales for milder autumns and winters	✘
	Extreme phenomena	◌ Excessive flow rates due to sudden glacier melting	● Critical issues in thermoelectric cycle cooling	○ Lower production during heat waves	✘	● Black-out for peak demand from air conditioners	○ Overheating of electrical equipment	◌ Freezing/broken pipelines and limited accessibility of mountain springs due to cold waves	○ Overheating of electrical equipment	○ Increased fire risk in waste deposits	● Unplanned deviations in commodity gas portfolio uses	◌ Welfare of outdoor workers during heat waves
Wind	Chronic changes	✘	✘	✘	◌ Lower production due to change in wind regime	✘	✘	✘	✘	✘	✘	✘
	Extreme phenomena	○ Impacts on the hydroelectric system following tornadoes	○ Falling trees on plants and grids	◌ Damage to assets from tornadoes	◌ Out of service due to excessive wind	○ Falling trees on plants and grids	○ Detachment of panels	◌ Lack of electricity due to damage to electricity grids Falling trees/ branches and sewer blockage	○ Dispersal of waste from deposits or storage facilities	○ Dispersal of waste from deposits or storage facilities	○ Impacts on third-party transport infrastructure following tornadoes	○ Accident or injury for outdoor workers
Water	Chronic changes	● Hydrological variability with impacts on production	✘	✘	✘	○ Hydrological variability with risk of gas pipeline rupture	○ Lowering of the heat pump water table	● Lower water availability especially in mountainous areas	✘	✘	✘	✘
	Extreme phenomena	● Lower production due to lower water availability	● Water shortage for thermoelectric cycle cooling	◌ Damage to assets from hail and lightning	✘	○ Flooding of underground substations	○ Lower water availability for plant use	● Lower water availability especially in mountainous areas Clogging and backflow in sewers	◌ Changes in moisture content of treated waste Floods/flooding and pollution	◌ Service and asset impacts in municipalities at hydrogeological risk	○ Impacts on third-party transport infrastructure as a result of floods/infloods	○ Impacts on worker safety in municipalities at hydrogeological risk
Solid masses	Chronic changes	✘	✘	✘	✘	✘	✘	○ Possible dragging and rupture of pipelines by soliflux	✘	✘	✘	✘
	Extreme phenomena	◌ Impacts on the hydroelectric system following landslides	✘	○ Landslide damage	○ Landslide damage	○ Landslides crossed by grids	✘	○ Disruptions from pipeline bursts due to landslides	✘	◌ Service and asset impacts in municipalities at hydrogeological risk	◌ Impacts on third-party transport infrastructure as a result of landslides	○ Impacts on worker safety in municipalities at hydrogeological risk

● Relevant ◌ Little/less relevant ○ To be monitored ✘ Not exposed

This assessment has made it possible to build an initial database that includes the physical climate change adaptation measures implemented by the various Group companies and to have a knowledge base to identify the most relevant areas for conducting future in-depth studies on forecast climate parameters, which may be useful for improving the assessment and optimizing the adaptation and risk reduction measures.

Water Scarcity

The A2A Group's activities and its various businesses significantly depend on the availability of water resources. The following is a description of the main interdependencies and risks of acute or chronic water shortages resulting from possible changes in the precipitation event regime in the short and medium/long term due to climate change.

Hydroelectric Production

The production of electricity with hydroelectric plants, whether reservoir or flowing water, is closely dependent on annual and seasonal rainfall patterns. Less accumulated precipitation events throughout the year result in less water availability for the power plants. In particular, low snowfall events result in lower water reserves that accumulate during the winter and that become available during the normally less rainy summer season. The way in which rainfall is distributed throughout the year is also important for hydropower production, as rainfall events with a more uniform pattern throughout the year mean a better chance of exploitation than having more intense rainfall concentrated in short periods. The resulting risk for the A2A Group is both a reduced availability of resources for hydroelectric production and the need to release greater quantities of water from reservoirs to make it available for other uses, e.g., agriculture, due to the increased demands and the needs of other stakeholders. Assessments and ways for managing these risks are contained in the table in Figure 12.

Integrated Water Service

The Group companies operating in the integrated water service are exposed to the risk of interruptions in the drinking water distribution service caused by the potential scarcity of water resources mainly as a result of any prolonged periods of drought, which could lead to the depletion of sources of supply that are more sensitive to seasonal fluctuations and rainfall patterns, normally located in mountainous municipalities. The consequences of this risk for the Group are represented by possible reputational impacts in relation to a possible lowering of the level of public satisfaction, as well as economic impacts for possible penalties in case of non-compliance with the service quality indicators established by the Authority. Assessments and ways for managing these risks are contained in the table in Figure 12.

Thermoelectric Production

Thermoelectric power plants based on a thermodynamic cycle require a cold source to cool the steam used in the generators, in order to condense it and return it to the boiler to restart the power generation cycle. The cold source can be a surface watercourse (river or canal), the sea or ambient air, depending on the plant. Periods of drought, especially in conjunction with heat waves and/or chronic increases in summer temperatures of the air, watercourses or the sea can lead to the need to reduce the load of the plants due to the non-availability of sufficient quantities of water (excessively low watercourse levels) and because there are limits on the maximum temperatures allowed for discharge and in the receiving body downstream of the discharge itself. Assessments and ways for managing these risks are contained in the table in Figure 12.

Other Businesses

Acute or chronic water shortages resulting from any changes in the rainfall event regime in the short and medium/long term also entail minor risks for other A2A Group's businesses/assets:

- district heating: in the event of chronic shortages, possible lowering of the water table level of water drawn for the operation of heat pumps and possible need to deepen wells;
- biomass plants: possible reduced availability of biomass from crops;
- waste treatment plants: changes in the moisture content of waste entering the plants and possible critical issues in normal operation.

The following table describes the climate risks and opportunities for the A2A Group, identified in accordance with both the Task Force on Climate-related financial Disclosure (TCFD) recommendations and the Group's Risk Assessment method and process. For each climate topic, the line of business affected, the classification according to the "TCFD" categories and the time horizon over which the risk or opportunity may occur are indicated. In addition, the impacts to the Group and the management strategy are described. The economic-financial or reputational assessment of physical climate risks concerns the relevant critical issues arising from the analysis of climate-related hazards in Figure 12.

Climate risks and opportunities are identified on the basis of three time horizons: short-term, corresponding to the current and next year; medium-term, corresponding to 5 years; and long-term, corresponding to 8 or more years, until 2030 and beyond. The choice of these horizons was based on an analysis of the relevant climatic, economic, energy and regulatory context (hereafter referred to as scenario analysis) and it overlaps with the planning period of the Industrial Plan and Sustainability Plan.

Figure 12 *Task Force on Climate-Related Financial Disclosure*

Table note: time horizon

S short term
M medium term
L long term

Code	TCFD classification	Risk/opportunity topic	Impact[30] and probability[31]	Management and capital expenditure strategy
CC1 Generation and Trading Business Unit	*Physical* *Chronic* S M L	**Change in the precipitation event regime** *Risks/opportunities* related to changes in the availability of water resources at the Group's main hydroelectric plants.	***Impact*** Lower/greater volumes and margins of hydroelectric production. Economic and financial risk ▲ High ***Probability*** Possible ***Impact*** Economic and financial opportunity ▲ Low ***Probability*** Unlikely	Development of tools to improve precipitation event and outflow forecasts. Development of analysis and engineering models to support the planning of hydroelectric plants, both short and medium term. Presence of hydroelectric plants with different features in terms of exploitation of water resources that are well distributed throughout the Italian territory. The **Business Plan** includes capital expenditures to optimize the use of the derived water resource for hydroelectric purposes (e.g., pumping). They are **eligible according to the EU Taxonomy** for Green capital expenditures (Regulation 2020/852). **CapEx: about 20 M€**
CC2 Generation and Trading Business Unit	*Physical* *Chronic* *Transition* *Policy and Legal* S M L	**Competition for water use.** *Risks of increasing the share of water that hydroelectric plants will be required to release to make it available for irrigation and drinking water uses.* *Risks of proliferation of third-party initiatives for the exploitation of the water resource over which A2A has rights.*	***Impact*** Lower volumes and margins of hydroelectric production. Economic and financial risk ▲ Medium ***Probability*** Possible	Constant dialogue with the various stakeholders in order to reach agreements and enter into conventions to protect A2A's interests while respecting the needs of the other stakeholders. In 2021, an agreement was signed with the Region of Calabria, which commits A2A to increase free releases only in return for water loss reduction activities by the region. The ***Business Plan*** includes capital expenditures to turbine the water before it is released for other uses. They are **eligible according to the EU Taxonomy** for Green capital expenditures (Regulation 2020/852). **CapEx: about 20 M€**
CC3 Generation and Trading Business Unit	*Transition* *Policy and Legal* S M L	**EUAs emission allowances** *Risks/opportunities related to changes in the price of emission allowances other than those assumed in the Business Plan*	***Impact*** Lower/ higher margins of electric production Economic and financial risk ▲ Medium Economic and financial opportunity ▲ Medium ***Probability*** Possible	Management as part of the monitoring of changes in the price of energy commodities in accordance with the Energy Risk Policy.
CC4 *Smart Infrastructures Business Unit*	*Physical* *Chronic* S M L	**Thermal energy demand for heating** *Risk* of unfavourable trends in customer demand for thermal energy, resulting from: - the occurrence of winter temperatures higher than expected. - the occurrence of climatic conditions at the end of the year that are very different (exceptional/ minimum temperature) from those used at the planning stage.	***Impact*** Lower revenues and less margins from the sale of gas and heating energy supplied by means of district heating. Economic and financial risk ▲ Medium ***Probability*** Possible	Studies on policies to support capital expenditures in the development and extension of TLR grids in the context of efficient district heating. Presence of corporate units dedicated to elaborating engineering analyses and models to support the management and optimization of heat production/supply also in relation to demand trends. Adoption of IT tools which allow gas demand forecasting; use of weather forecast service providers. The **Business Plan** includes - the development of district heating grids and strategies to increase the number of customers; - projects for the recovery of "heat waste" and revamping of existing plants, in order to optimize energy costs and maintain competitiveness. These capital expenditures, in addition to mitigating risk, are aimed at developing the district heating business. **CapEx** amounting to approximately **34 M€ eligible according to the EU Taxonomy** for Green capital expenditures (Regulation 2020/852). A share of 3.8 M€ is financed through **NRRP**.
CC5 *Smart Infrastructures Business Unit* Market	*Transition* *Policy and Legal* Market M L	**Energy efficiency systems** *Opportunity to increase demand for energy efficiency solutions by Public Administration and business and/or retail customers, also favoured by the spread of incentive systems.*	***Impact*** Possibility of margins from the development of energy efficiency service proposal, such as equipment replacement and/or building upgrades. "High" impact and margins already included in Business Plan forecasts. Economic and financial opportunity ▲ High ***Probability*** Possible	Presence of corporate S.O. and working groups dedicated to carrying out studies on the applicability of local financing calls and on the methods of access to incentive systems, including the Superbonus for building requalification. Strong presence on the territory with district heating services that can "work" in synergy with new interventions on public or private buildings. Management of a consolidated territorial database for the location of interventions and the study of synergies. The **Business Plan** envisages the development of energy efficiency and district heating efficiency services in the civil, industrial, tertiary and Public Administration sectors. **CapEx: about 410 M€ eligible according to the EU Taxonomy** for Green capital expenditures (Regulation 2020/852).

[30] For economic-financial risks and opportunities, the impact scales refer to impacts on EBITDA (downside for risks and upside for opportunities):
- Low: less than 5 M€/y
- Medium: between 5 M€/y and 20 M€/y
- High: more than 20 M€/y

[31] Probability: <10% Unlikely; =>10% and =<50% Possible; > 50% Probable

[32] For economic-financial risks and opportunities, the impact scales refer to impacts on EBITDA (downside for risks and upside for opportunities):
- Low: less than 5 M€/y
- Medium: between 5 M€/y and 20 M€/y
- High: more than 20 M€/y

[33] Probability: <10% Unlikely; =>10% and =<50% Possible; > 50% Probable

Code	TCFD classification	Risk/opportunity topic	Impact[34] and probability[35]	Management and capital expenditure strategy
CC6 *Smart Infrastructures Business Unit*	*Physical* *Chronic* S M L	**Change in the precipitation event regime** *Risk* of interruptions of electricity distribution service caused by: - peaks in demand for summer air conditioning as a result of heat waves - flooding caused by heavy rains - greater energy demand as a result of the electrification of services (electric cars, development of public transport, heating). *Opportunities* to make remunerated capital expenditures and participate in programmes defined by ARERA aimed at increasing the resilience and flexibility of electricity distribution grids.	***Impact*** Reputational impacts in case of prolonged service interruptions. Penalties for failure to meet minimum service continuity levels. Economic and financial risk Medium ***Risk probability*** Possible ***Impact*** Remuneration of risk management capital expenditures with predetermined rate within ARERA regulated business. Margins already included in Business Plan forecasts. Adhesion to a new bonus mechanism granted by ARERA to encourage the implementation of specific interventions to increase the resilience of the electricity grid. Economic and financial opportunity High ***Opportunity probability*** Likely	Creation of a working group for "Milan heat wave preparedness" to coordinate initiatives for the prevention and reduction of power failures and communication. Studies with the Group Data Officer organizational structure to define algorithms for prioritising control room interventions to optimize emergency management. The **Business Plan** includes a ten-year capital expenditure programme for the maintenance and development of the electricity grid, enabling both adaptation to physical climatic risks and the progressive electrification of energy services (heat pump heating, electric mobility, induction cookers, etc.), improving efficiency and reducing CO_2 emissions. In particular, the plan includes interventions to upgrade and rationalize grids, secondary substations, primary substations and expansion of remote asset management systems. CapEX around **1440 M€ eligible according to the EU Taxonomy** for Green capital expenditures (Regulation 2020/852). A part of the capital expenditures in the Industrial Plan comprises **climate risk adaptation** measures, mostly consisting of the replacement of grid sections. These capital expenditures amount to about **240 M€** in the period 2023-30, of which a share of about **14 M€** constitutes the 2022-24 **resilience plan** defined in accordance with the **ARERA** resolutions.
	Transition *Technology* M L			
CC7 *Smart Infrastructures Business Unit*	*Physical* *Chronic* M L	**Scarcity of water for drinking water use** *Risk* of failure to continuously supply drinking water in the event of prolonged periods of drought and/or changes in the hydrogeological regime. *Opportunities* to make remunerated adaptation capital expenditures.	***Impact*** Reputational impact in case of interruptions of water supply service for prolonged periods and/or on significant portions of territory. Economic and financial risk Medium ***Risk probability*** Possible ***Impact*** Remuneration of risk management capital expenditures with predetermined rate within ARERA regulated business. Margins already included in Business Plan forecasts. Economic and financial opportunity Low ***Opportunity probability*** Likely	Mapping of leaks from aqueducts in order to identify the most critical parts Studies to use – in conditions of scarcity/ emergency – freshwater reserves (lakes) to supplement upstream sources. Participation in the "Water Stressed Areas" project: mapping the municipalities most at risk and refining the monitoring of the quantities of treated, dispensed and lost water. Continuous monitoring of source and reservoir levels. Emergency management with road tankers and mobile tanks, also with the support of the Civil Defence. The **Business Plan** includes capital expenditures to: - reduce leakage from the water grid - implement capture from new sources of supply - interconnect aqueducts in order to create a "collaboration" between sources of supply and distribution grids. CapEX **around 90 M€ eligible according to the EU Taxonomy for Green capital expenditures (Regulation 2020/852)**. Since they reduce the risks arising from possible drought phenomena, they are configured as **climate change adaptation** activities within the EU Taxonomy.

[34] For economic-financial risks and opportunities, the impact scales refer to impacts on EBITDA (downside for risks and upside for opportunities):
- Low: less than 5 M€/y
- Medium: between 5 M€/y and 20 M€/y
- High: more than 20 M€/y

[35] Probability: <10% Unlikely; =>10% and =<50% Possible; > 50% Probable

Code	TCFD classification	Risk/opportunity topic	Impact[36] and probability[37]	Management and capital expenditure strategy
CC8 A2A Group	*Physical* *Acute* S M L	**Extreme weather phenomena** *Risks* to Group's assets and business continuity as a result of risks arising from acute physical weather hazards (e.g., floods, landslides, water bombs, tornadoes, etc.) which affect Group and/or third-party plants and infrastructure	***Impact*** Direct damage to Group's assets. Indirect damage due to the need to interrupt production activities. Economic and reputational impacts should such extreme events not be managed in an optimal way for the purposes of territorial safety in the areas where the Group operates. conomic and financial risk Low ***Probability*** Possible	Insurance contracts with extended coverage also for damage from natural phenomena. Improvement plans in terms of loss prevention, shared with the insurance broker. Procedures and emergency plans to promptly and optimally manage the onset of any acute weather phenomena. Implementation of plant modifications to prevent pollution in the event of "water bombs". Design and construction of installations (e.g., wind and photovoltaic) carried out while considering the features of the territory and local climatology (e.g., slope stability, windiness, etc.).
CC9 A2A Group	***Market*** **(financial markets)** M L	***Sustainable Finance Framework*** *Opportunity for the Group to support its strategy of funding "green" capital expenditures outlined in the Business and Sustainability Plan with sustainable finance tools.*	***Impact*** Advantages on economic conditions in the subscription of financing tools, in connection with the achievement of sustainability goals. Reputational benefit, particularly in relation to institutional investors, capital expenditure funds, shareholders, etc. Economic and financial opportunity High ***Probability*** Possible	Establishment of the Sustainable Finance Committee with the aim of monitoring potential "green"/ sustainable capital expenditures initiatives and guaranteeing the implementation of capital expenditure projects subject to financing Development of the Sustainable Finance Framework, in accordance with the Green Bond Principles published by the International Capital Market Association (ICMA) and the Green Loan Principles published by the Loan Market Association (LMA) Definition of a capital expenditure classification system in accordance with international standards and the relevant taxonomy. Issue of "Green Bonds"[38] Subscription of "KPI-linked Bonds", whose coupon is linked to certain sustainable performance indicators defined by specific KPIs[39].

[36] For economic-financial risks and opportunities, the impact scales refer to impacts on EBITDA (downside for risks and upside for opportunities):
- Low: less than 5 M€/y
- Medium: between 5 M€/y and 20 M€/y
- High: more than 20 M€/y

[37] Probability: <10% Unlikely; =>10% and =<50% Possible; > 50% Probable

[38] Green Bonds have the same financial features as a classic bond. The distinctive aspect is the use of the proceeds from the bond issue in the context of so-called "Environmental Projects", which must be described in detail in the legal documentation of the bond (Green Bond Framework).

[39] Key Performance Indicators

Code	TCFD classification	Risk/opportunity topic	Impact[40] and probability[41]	Management and capital expenditure strategy
CC10 Generation and Trading Business Unit	*Physical* *Chronic* S M L	Plant cooling Risk of plant operation limitations due to difficulty in adequately cooling the thermoelectric cycle in the event of rising summer temperatures of waterways/canals/sea, heat waves, and periods of drought.	***Impact*** Lower volumes and margins of thermoelectric production. conomic and financial risk ▲ Low ***Probability*** Unlikely	Adoption of weather forecasts when bidding on plant availability in the market. Continuous monitoring systems of the temperature of the cooling water withdrawn and discharged, as well as of the temperature of the watercourse downstream of the discharge at some plants. All-risk insurance coverage that also covers direct and indirect damages caused by natural phenomena.
CC11 Waste Business Unit	*Transition* *Policy and Legal* L	ETS Directive Revision Risk that the Group's waste-to-energy plants are included in the field of application of the Emissions Trading Scheme following the revision of the EU Directive.	***Impact*** Lower margins and loss of competitiveness of waste-to-energy plants. Economic and financial risk ▲ Medium ***Risk probability*** Possible	Experimental projects for the capture and sequestration of CO_2 emitted by waste-to-energy plants. Monitoring regulatory developments and assessing possible impacts.

Note on Method: Risk reduction capital expenditures and EU Taxonomy

The planned risk management capital expenditures shown in the table in Figure 10 have the effect of reducing the economic-financial and/or reputational risk for the A2A Group. The table shows the capital expenditures that are eligible according to the EU Taxonomy of Green capital expenditures. The Business Plan also includes other risk-reducing capital expenditures for the Group, which are however not eligible according to the Taxonomy, and that have therefore not been shown in figure 10.

The climate risk assessment, which is fully integrated into the Enterprise Risk Management process, is carried out **by difference relative to the goals of the Business Plan**. The risk assessments reported in this disclosure are therefore the result of punctual estimation models for each risk developed by the Enterprise Risk Management structure and they are shared with each **Risk Owner** and with the **Risk Specialists**. Once the model is shared, the quantification is carried out with the support of **management control,** which provides the necessary budget and business plan values.

[40] For economic-financial risks and opportunities, the impact scales refer to impacts on EBITDA (downside for risks and upside for opportunities):
- Low: less than 5 M€/y
- Medium: between 5 M€/y and 20 M€/y
- High: more than 20 M€/y

[41] Probability: <10% Unlikely; =>10% and =<50% Possible; > 50% Probable

The following table summarizes the main assumptions made in assessing climate risks and opportunities reported in this Integrated Report.

Code	Risk	Risk/opportunity assessment assumptions
CC1	Change in the precipitation event regime	Reduction/increase in production for each of the Group's hydroelectric poles compared to Business Plan forecasts - due to an unfavourable/favourable change in average rainfall - enhanced using the price values of the Business Plan energy scenario. Identification and development of statistical predictive assessment models about the possible variability of volumes.
CC2	Competition for water use.	Reduction/increase in production for each of the Group's hydroelectric poles compared to Plan forecasts - as a result of any change in agreements/ conventions - enhanced using the price values of the Business Plan energy scenario.
CC3	EUAs emission allowances	Sensitivity analyses are carried out which estimate the change in the A2A Group's EBITDA as a result of a price variance of the EUA equal to +/-10 €/t compared to the Business Plan forecast. Sensitivities are made with different assumptions about the correlation between the EUA price and the single national electricity price (PUN). The impact on EBITDA is calculated in the scenario that the A2A Group considers most likely in the energy transition context, which sees, over the plan years, a progressively decreasing correlation (from 100% to 25%) between the value of the PUN and the value of the EUAs (see box for details).
CC4	Thermal energy demand for heating	For at-risk revenues, the lower thermal energy sales that could occur as a result of milder winter and fall temperature trends than those projected in the Business Plan scenario are considered. Degrees Day (DD) forecast values are estimated based on statistical assessments performed on historical data, leading to intercept possible trends. The impact on margins, which is added to the impact of lower revenues, is based on the assumption that an unplanned deviation of the portfolio's uses occurs due to climatic conditions at the end of the year that are very different (exceptional/minimum temperature) from those used at the planning stage (normal temperature). The at-risk amount is estimated by applying the volatility of winter market prices to the daily consumption - calculated as a function of temperature (gradient).
CC5	Energy efficiency systems	The opportunity is estimated as a forecast of Plan EBITDA related to planned capital expenditures in the development of the energy efficiency business, shown in the table of figure 12.
CC6	Resilience of electricity distribution grids	For the risk, the reputational impact is considered prevalent The opportunity is estimated as a forecast of Plan EBITDA related to planned capital expenditures to maintain and develop the electricity grid, shown in the table of figure 12.
CC7	Resilience of electricity distribution grids	For the risk, the reputational impact is considered prevalent The opportunity is estimated as a forecast of Plan EBITDA related to planned water scarcity hazard adaptation capital expenditures, shown in the table of figure 12.
CC8	Extreme weather phenomena	The risk has been estimated starting from the damage scenarios described in the assessment reports drawn up by the insurance broker, the vulnerabilities of the plants and the deductibles for direct and indirect damages provided for by the insurance contract.
CC9	*Sustainable Finance Framework*	The reputational impact is considered prevalent.
CC10	Plant cooling	The risk was estimated based on historical events and on the need for more in-depth forecasting, as well as adaptive options.
CC11	ETS Directive Revision	There is still much uncertainty about the rules that will be adopted to determine the emissions of waste-to-energy plants included in the ETS. The estimate made took into account the forecasts of emissions from the Group's waste-to-energy plants envisaged over the Business Plan horizon, the EUA price forecasts of the A2A Scenario, and it assumed certain rules for the application of the system and of the possible effects on the waste disposal tariff for waste entering the plants.

Sensitivity analysis - price changes of CO_2 emission permits (EUAs)

The A2A Group estimates the range of impact on EBITDA resulting from a trend in the value of EUAs (European Union Allowances) that differs from the values taken as a reference in the preparation of the Business Plan.

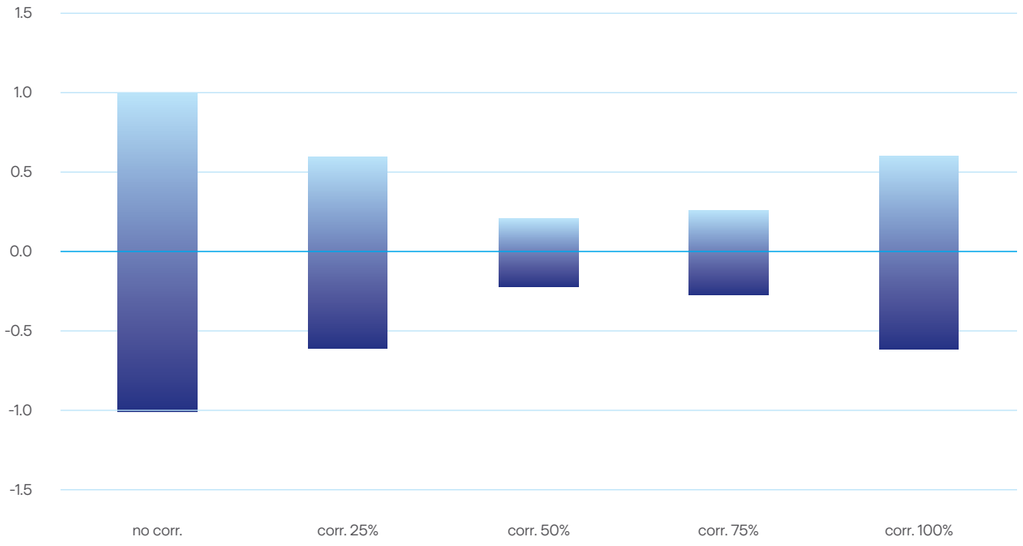
Method: changes in the A2A Group's EBITDA are estimated as a result of a deviation in EUA prices of +/-10 €/t compared to Business Plan forecasts. Sensitivities are made with different assumptions about the correlation between the EUA price and the single national electricity price (PUN). Full correlation (100%) means that the entire CO_2 cost is passed on in the energy price; vice versa, no correlation (0%) means that the CO_2 cost is not passed on in the price and it is entirely translated into increased costs of fossil fuel production. Intermediate degrees of correlation correspond to a partial transfer of cost to the PUN.

Results: the histogram shows the range of variability **of the average annual impact on EBITDA** calculated over the 8 years of the 2023-2030 Business Plan for each individual degree of correlation (0%; 25%; 50%; 75%; 100%).

The values are normalised to the highest impact with 0% correlation
- Green shows the possible favourable impacts
- Red shows the possible unfavourable impacts

Figure 13 Sensitivities of impacts on EBITDA for EUA price changes of +/- €10

Range of average annual impacts over the period 2023-2030 with different correlation assumptions between EUA price and PUN (normalised values)



The graph shows that extreme degrees of correlation (0% and 100%) produce potential amplified impacts on the A2A Group's EBITDA. In fact, if there is no correlation with the PUN, the impacts are "driven" by changes in the marginality of thermoelectric production, whereas if there is full correlation with the PUN (which means that the cost of CO_2 is passed on to the energy price), the impacts are "driven" by changes in the marginality of hydroelectric production. On the other hand, intermediate correlation values tend to mitigate the impacts of EUA price volatility. The EBITDA impact assessments shown in the graph were carried out on the A2A Group's power generation forecasts by source as defined in the Business Plan for the period 2023-30.

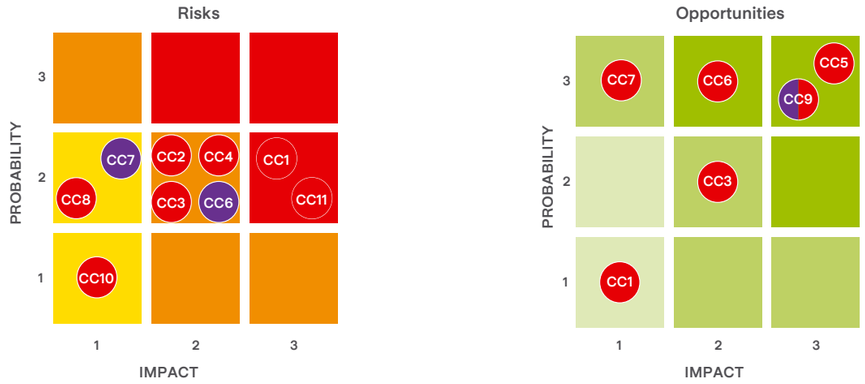
The quantification of the CC3 risk shown in the table in figure 12 was made considering the correlation trend between the EUA and PUN in the Plan years that the A2A Group considers most likely in the context of energy transition and which sees, in particular, a progressively decreasing correlation from 100% to 25%. In fact, it is expected that the increasing spread of electricity production from renewable sources will result in the cost of CO_2 emission permits becoming less and less of a factor in the price of electricity.

Summary of climate risks and opportunities and quantification of impacts on economic-financial results

The reference scenarios illustrated above are taken into account in the analyses carried out by the ERM Department to identify the risks and opportunities connected with climate change, helping to provide management with insights to ensure the resilience of the A2A's business model.

In the following figure, the risks and opportunities described in the previous table are briefly represented on the *impact - probability heatmap*.

Figure 14 Heatmap impact - probability risks and opportunities



CC1 Change in the precipitation regime
CC2 Competition on water use R
CC3 Emission authorisations R/O
CC4 Thermal energy demand for heating R
CC5 Energy efficiency systems O*
CC6 Efficiency of electricity distribution networks R/O
CC7 Scarcity of water for drinking water use R/O
CC8 Extreme weather events R
CC9 Green Financing Framework O
CC10 Plant cooling R
CC11 ETS Directive revision R

LEGEND

PROBABILITY	IMPACT	TYPE OF IMPACT
1 = Remote (less than 10%)	1 = Low	Imp. Eco-Fin
2 = Possible (between 10% and 50%)	2 = Medium	Imp. Image
3 = Likely (greater than 50%)	3 = High	

For economic and financial risks and opportunities, the impact scales refer to impacts on EBITDA downside for risks and upside for opportunities (low impact: less than 5 M€/y; medium impact: between 5 M€/y and 20 M€/y; high impact: greater than 20 M€/y).

Note: the margins of opportunities CC5, CC6 and CC7 are already included in the Business Plan forecasts.

In order to **include these considerations in an increasingly structured way in the assessment of the financial impacts of climate change**, the ERM Department carried out an additional in-depth study to quantify the impacts of climate risks and opportunities on the Group's economic and financial results. These effects are **measured in terms of the change in the Group's overall EBITDA forecast in the Business Plan.**

With reference to the above table, it is estimated that **physical** weather uncertainties will affect the Group's overall EBITDA as forecast in the Business Plan by between -2.3% and +0.2%.

For ***transition*** risks and opportunities, the impact on the Group's total EBITDA projected in the Business Plan is estimated between -2.1% and +0.6%.

4

Stakeholder Engagement and Materiality Analysis

4.

Stakeholder Engagement and Materiality Analysis

4.1 Stakeholder Engagement Initiatives

Consistent with the Davos World Economic Forum's 2020 Manifesto, "The Universal Purpose of a Company in the Fourth Industrial Revolution"[1], to be truly sustainable a company must engage all the relevant stakeholders in the pursuit of its mission in order to create **shared and lasting value** through processes that harmonize the divergent interests of its stakeholders, committing to **policies** and actions geared towards building long-term **prosperity**.

For A2A, the creation of shared value, the preservation of resources and the care for the well-being of communities are not only primary goals but elements of identity. With this approach, the Group consistently engages its stakeholders, listening to them, inviting them to dialogue and committing itself to identifying solutions geared towards achieving the common good.

At the beginning of 2022, a ***Policy on Stakeholder Engagement*** was published, defining the Group's guidelines for stakeholder engagement. This document formalises the way relations with the various stakeholders are managed, the mapping of **stakeholder categories** and **engagement initiatives**.

Through the cooperative use of a **digital platform**, more than 20 corporate structures, guided by ***Engagement Ambassadors*** - contact persons for each A2A company and Business Unit (for more details see the dedicated box) - mapped more than 850 stakeholders and more than 1,600 engagement activities carried out with them. These initiatives follow a unified approach formalized in the "**Stakeholder Engagement Toolkit**" developed in collaboration with The European House Ambrosetti.
The model aims to promote the creation of a **professional community** oriented to the exchange of know-how for the shared capitalisation of relational capital.

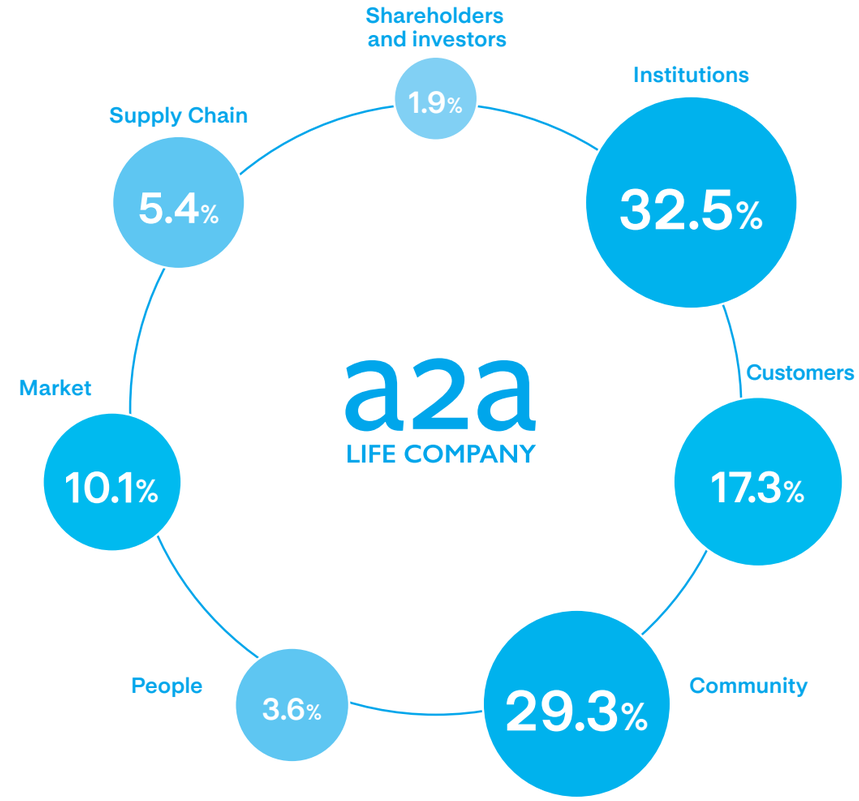
Mapping was carried out at a **granular** level in 2022, identifying not only areas of focus by categories and groups, but also the most influential individual actors and territories requiring a higher level of attention. The results of the activity are shared and accessible internally through an **interactive report**. For each stakeholder category and sub-category, a matrix is used to identify the sensitivity and any critical issue of the stakeholders and measure their expected level of engagement. By extracting comparable indicators across categories, territorial levels and business units, the model monitors relationships with the relevant stakeholders.

The following figure shows the stakeholder categories identified and the distribution of engagement activities by category. In the 2022 mapping, A2A's relevant stakeholders were grouped into the following categories: **Customers, Community, People, Market, Institutions**, **Supply Chain and Shareholders and Investors**, with over **900** registered **stakeholders**.

In continuation of the analysis conducted in 2021, the **stakeholders** were assessed for **familiarity, influence** and **relationship status** by internal contact persons engaged in the engagement activities. The overall results show that the engagement level proposed by the Group's initiatives is in line with the external expectations. The data collected for each stakeholder includes the material topics, the interests and the strategic goals related to that stakeholder, making it possible to assess the consistency of engagement activities and to track any critical issues associated with the stakeholders.

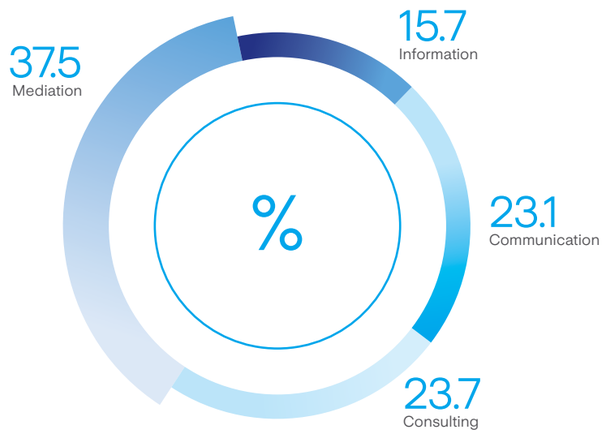
[1] For more details, please refer to the full text of the Davos 2020 Manifesto (*link*).

Figure 15 Stakeholder map and distribution of engagement activities by category*



* The size of the bubbles indicates how the engagement initiatives in 2021 were distributed across the different stakeholder categories.

Figure 16 The distribution of engagement activities in 2022 by type



Engagement initiatives are mainly focused on certain **material topics**: "Community listening and engagement", "Circular economy", "Infrastructure for the ecological transition" and "Accountability and quality in service provision". Although each stakeholder type is an expression of particular interests, at a general level, **4 relevant cross-cutting interests** emerged for all the mapped categories:

- **Community well-being and protection of the environment and of the territory**
- **Business development**
- **Control, regulation and compliance**
- **Knowledge of plants and services information**

Focal Points and Engagement Ambassadors

In 2021, the **Sustainability Focal Points** group was formed, a network of A2A's people formally charged with transmitting sustainability values and goals within the organization and integrating them into all corporate processes. This year, the Focal Points played a **key role** in spreading the **sustainable culture** in the different Group's areas, gathering the needs and expectations of the stakeholders concerned. Various activities were organized for their individual and collective development, including a **training cycle** for the acquisition of theoretical and technical-operational knowledge on sustainability and **team-building** and **sharing meetings**, necessary to consolidate a network of "actors of change".

The strengthening of stakeholder management activities led to the introduction of new figures, the **Engagement Ambassadors**, a network of about 50 people who oversee the monitoring of stakeholder relations in coordination with A2A's Sustainability Stakeholder Engagement structure. These contact persons periodically report on the progress of relations and engagement initiatives implemented by updating the **stakeholder management database**.

4.2 Multi-stakeholder Forums

Since 2015, A2A has continued a **structured programme of listening and dialogue** with local stakeholders (forumAscolto), by means of working groups and public meetings, with the aim of grasping the specific features of the territorial communities, creating discussions on the topics that are most important for A2A and its stakeholders, contributing to the development of ideas and projects in line with the Group's goals.

In 2021, in collaboration with The European House Ambrosetti, the "**The territories of sustainability**" roadshow was inaugurated. With the same format as the "**Right Turns**", the roadshows stimulated the stakeholders of 6 territories to give their opinion on the crossroads of the ecological transition, elaborated in the light of the A2A Group's positioning and ambitions. Participants were asked to prioritize one of two possible paths (e.g., Technological Innovation vs Individual Conduct, Incremental Change vs Radical Change, Institutions vs Stakeholders), to understand the orientations of each territory on transition topics in order to identify the best solutions for an inclusive and effective change.

This year, the cycle of multi-stakeholder meetings "**Alliances for a successful transition**" engaged 9 territories, with the aim of strengthening the roots in A2A's 6 "historical locations" (Bergamo, Valtellina-Valchiavenna, Brescia, Friuli Venezia-Giulia, Milan and Piedmont) and of promoting a responsible and transparent positioning in 3 "new" territories in the South (Calabria, Sicily and Apulia).

For A2A's 6 "historical locations", in the light of the results that emerged in the 2021 edition, a quantitative analysis was carried out based on the Fair and Sustainable Welfare indicators measured by ISTAT, in order to draw a picture of each of the territories concerned, identifying the main barriers and opportunities for achieving the ecological transition. Internal contact persons from different Group's structures worked in these areas in order to develop **concrete solutions** to accelerate the ecological transition. The solutions developed were presented during the multi-stakeholder table, in the presence of A2A's executives, to about 20 territorial players who expressed their interest in joining the initiatives, promoting new potential partnerships and synergies. From these alliances, working tables were set up in each territory with the aim of grounding the selected initiatives, in consultation with the participating stakeholders.

The programme also included the direct engagement of top management. In fact, a governance model has been defined within which A2A's management has acknowledged the critical issues,the risks and progress of each initiative, directing the implementation and reporting of projects.

In the territories of the South engaged in the meeting programme for the first time, the stakeholders were listened to following the "Right Turns" format.

Each stage of the roadshow also included a **public event for the presentation of the territorial Sustainability Report**, with the participation of A2A's executives and top management, institutions and key local opinion leaders, to recount the results achieved by the Group in 2021 in the geographic area of reference. The events were also an opportunity to discuss the path towards ecological transition and to comment on the results of the work carried out behind closed doors with stakeholders, considering together which alliances to build in order to achieve concrete results.

The programme engaged a total of 147 stakeholders in the closed-door working tables, recording about 1,350 minutes of listening time in total. The most engaged stakeholders were representatives of institutions, suppliers, trade associations, environmental and consumer associations, universities and, as of this year, members of the Generation Z.

In fact, A2A has recognized its precise responsibility to include at least one representative of the new generations not only in the Multi-stakeholder Forums, but in all its programmes of dialogue, listening and restitution of the value generated.

In the interest of future generations: the reform of Article 9 of the Italian constitution

Article 9 of the Italian Constitution promotes development and scientific and technical research, as well as the protection of the landscape and of the historical and artistic heritage of the nation. As of February 2022, the legislature has introduced a new sub-paragraph of fundamental importance, especially for the **prosperity of future generations**, enshrining the protection of the **environment**, **biodiversity** and **ecosystems**. The constitutional amendment makes it necessary to look at these topics today with the broader meaning of the need to ensure a sustainable development process for today's and tomorrow's generations.

The new constitution reflects the A2A Group's ethics and identity, which turned to Francesco Clementi, Professor of Comparative Public Law at the Sapienza University of Rome, to write the **dedicated paper "In the interest of future generations. The reform of Article 9 of the Italian Constitution and the challenge of thinking about the future again"**. The paper explored environmental protection as a topic of intergenerational solidarity, highlighting how development in the economic and social spheres can only be defined as sustainable if it can also guarantee future generations an intact environment, biodiversity and ecosystem.
The paper was the subject of analysis and debate during the **National Forum "In the interest of future generations"** organized by A2A in collaboration with the Foundation for Sustainable Development. The event was an opportunity for dialogue and discussion for institutions and young people from Generation Z: 30 students selected by Giffoni Innovation Hub and Scuola Zoo participated, as well as a delegation from Giovani Legambiente and Fridays for Futures.

Territorial Sustainability Reports

In 2022, A2A again drafted **territorial sustainability reports**, created with the aim of enabling all citizens to know and assess the Group's **commitment** and **results** in specific geographic areas: The reports of **9 territories** were published during the year: Brescia (eighth edition), Valtellina-Valchiavenna (seventh edition), Bergamo (seventh edition), Milan (sixth edition), Friuli Venezia-Giulia (sixth edition) and Piedmont (fourth edition) were all already engaged in previous years, to which the regional areas of Sicily, Apulia and Calabria were added this year.

Also for the 2022 edition, the reporting narrative unfolds according to three key words: **Planet** (environmental sustainability), **People** (social sustainability), **Prosperity** (economic sustainability) - the areas identified by the **World Economic Forum** with the document, "Measuring Stakeholder Capitalism: towards common metrics and consistent reporting of Sustainable value creation". The reports are available in the Sustainability section of the website with the possibility of downloading the Key Performance Indicators (KPIs) for the last 3 years in open format.

The Sustainability Report told by the younger generations

In 2022, A2A committed to a project aimed at engaging young people in the sustainability debate: the drafting of the **Group's first Sustainability Report dedicated to Generation Z**. The report, covering data from the year 2021, was written and produced together with a selection of young talents who were immersed in A2A's sustainable reality for a week. With the support of Giffoni Innovation Hub and Deloitte, they were accompanied on a path to understanding A2A's Integrated Report 2021 with the unprecedented task of reinterpreting it in their own language and making it as usable as possible for their peers.

The results of this experience were recounted during the **Giffoni Film Festival 2022** in a listening and debate space dedicated to the new generations. "**In viaggio con Azzurra**" was also presented at the Festival, a short film dedicated to children and safeguarding the Planet. The protagonists are some teenagers and Azzurra, the comic-strip character born from an idea of A2A and icon of a generation sensitive to environmental topics. She tells the story of the "sustainable journey" of four young people who decide to reach a concert on foot, emphasizing the importance of individual conduct for the benefit of the whole community.

4.3 Material Analysis and Topics

Thanks to the process of updating the materiality matrix, every year A2A analyses the topics relevant to the Group and its stakeholders. This year, taking into account the main changes in the context, the Group set out to update the matrix in accordance with the new GRI standard and the logic of "**double materiality**". This concept is introduced by the EU **Corporate Sustainability Reporting Directive (CSRD)** approved in November 2022 by the European Union. The new directive proposes an approach that consists of a two-way method with which to assess corporate governance and how sustainability topics are managed: how these affect a company's **financial performance** and long-term value (**impacts incurred**) and what **effects the company has on the society and on the surrounding environment** (**impacts generated**).

This year's materiality analysis therefore consisted of the following main phases:

- **Analysis of internal and external sources** and key ESG ratings in order to build a list of 116 impacts that the organization has on the external context, which were then grouped into 18 macro-topics;
- **Consultation of a panel of 43 stakeholders**: **23 external and 20 colleagues**, in order to capture information useful for assessing the "significance and likelihood" of the possible impacts generated (impact materiality) and suffered (financial materiality). The materiality update process engaged the administration of a qualitative-quantitative survey to different categories of stakeholders. For the assessment ofimpact materiality, a survey of 14 key opinion leaders on the generated impacts was collected, assigned according to their varying expertise, followed by an assessment of the internal departments and employees represented by the different business units on the generated impacts related to staff topics.
  Starting this year, A2A has also analysed **financial materiality**, i.e., sustainability aspects related to sustainability risks and opportunities that affect or that may affect the Group's financial position substantially. Therefore, in order to develop the financial materiality, an assessment of the impacts suffered was collected from **9 experts** representing the **financial community**. The assessment was based on the parameters proposed by the EFRAG framework .
- **Processing of results** and **preparation of a summary report** detailing the impacts generated and suffered (double materiality);
- Engagement of **top management and members of the BoD** through the assessment of material topics**from an impact-oriented perspective**and **approval of topics by the BoD**.

A2A's Board of Directors considered all 18 topics analysed to be material and representative of the impacts generated and suffered by the Group, highlighting the 5 priorities. Compared to the 17 material topics of 2021, a new topic has been added: "Energy Autonomy".

Figure 17 Material topics and impacts

The table below shows, for the first 5 material topics, the main impacts generated and suffered associated with them and their relative degree of impact[2].

Topic	*Materiality*	Type of impact	Impacts	Degree of impact
Climate Change	Impact	-	Generation of greenhouse gas emissions that contribute to climate change intensification	Medium
		+	Accelerating the transition to renewable energy at national level.	Medium
	Financial	-	Potential operational losses due to climatic events causing damage to infrastructure and/or resources (e.g., tropical storms, water bombs, etc.)	High
		+	Increased market competitiveness through the development of CO_2 capture technologies from flue gas.	Medium
Circular Economy	Impact	-	Contribution to the depletion of virgin raw materials due to insufficient reuse of resources.	Medium
		+	Supporting the sustainable development of the territories in which the Group operates through the acquisition of companies with circular business models.	Medium
	Financial	- +	Improved productivity (operational losses) resulting from the development (lack of development) of a regulatory framework that incentivizes action and capital expenditures in the circular economy.	High
Infrastructure for the ecological transition	Impact	+	Contribution to accelerating the energy transition through increased capital expenditures in digitalization and infrastructure innovation.	Medium
	Financial	- +	Increased productivity and production efficiency (possible operational losses) through capital expenditures in infrastructure for the ecological transition (due to insufficient development of infrastructure for the ecological transition) with related consequences in terms of business continuity and quality of services provided.	High
Energy autonomy	Impact	+	Contribution to the Country's energy autonomy through efficient management of waste-to-energy practices.	Medium
	Financial	- +	On the Group's brand image and attractiveness through capital expenditures in decarbonizing the energy mix and developing RES.	High
Responsible management of the supply chain	Impact	-	Deterioration of the relationship with some suppliers due to increased and burdensome demands/expectations on them.	Medium
		+	Contribution to the reduction of illegal activities through the selection of suppliers that respect principles of fairness, legality and anti-corruption.	Medium
	Financial	-	Worsening of business relations with suppliers whose conduct is not in line with the Group's ethical principles (e.g., corruption, anti-competitive conduct, non-compliance with environmental standards) and/or disputes undertaken by suppliers against the Group.	Low
		+	Improvement of the Group's brand image and attractiveness to investors through the adoption of practices/policies aimed at addressing ESG topics and monitoring sustainability performance along the entire value chain.	Medium

degree of impact High | degree of impact Medium | degree of impact Low

[2] The thresholds for the assessment of impacts (low, medium, high) were calculated based on the standard deviation of the mean of the scores obtained. For "low" generated/immediate impact value < 2.76; for "medium" generated/immediate impact value between 2.76 and 4.37 and for "high" generated/immediate impact value > than 4.37.

4.4 Human RightsAssessment

Human Rights are the inalienable rights of all individuals, without distinction, by virtue of their very membership of the human race, first officially sanctioned by the United Nations in the 1948 Universal Declaration of Human Rights as "the foundation of freedom, justice and peace in the world". In 2011, the United Nations endorsed the Guiding Principles on Business and Human Rights, which constitute the international reference framework for the prevention and management of risks associated with business-related human rights violations. The OECD Guidelines and the Tripartite Declaration of Principles on Multinational Enterprises and Social Policy of the International Labour Organisation (ILO) were also updated in the light of and in accordance with these principles. These Principles recognize the ability of companies to generate human rights impacts through their business, impacts that can be both positive, if they lead to an improvement in the quality of life of individuals, and negative, if they are related to exploitative labour practices or forced displacement of individuals or communities.

Operating within the above framework, the A2A Group recognizes and promotes safeguarding of the dignity, freedom and equality of human beings, the protection of labour and trade union, health, safety, the environment and biodiversity freedoms as well as the system of values and principles regarding the circular and efficient use of resources and sustainable development.

The Group has adhered to the Global Compact and has defined the principles of conduct regarding human rights within the **Code of Ethics** and within the **231/01 Organisational Model** since 2012, binding the members of the Corporate bodies, top management, employees, including executives as well as all those who, although external to the company, work, directly or indirectly, for it. In addition, A2A has adopted a **Human Rights Policy**, approved by the Board of Directors on July 8, 2021, to formally reaffirm the commitment of all the companies belonging to the Group in promoting and supporting all the values and principles affirmed by the International Human Rights Institutions and Conventions to which the A2A Group adheres. This Policy has been spread among all Group companies and it will be the subject of specific training during 2023.

As further evidence of the Group's commitment to promoting and guaranteeing the protection of human rights, as part of the 2022 materiality analysis update, A2A carried out an **assessment on respect for human rights**, taking into consideration the indications of the new GRI Standards, divided into the following three main phases:

- **Analysis of internal sources**, such as policies, procedures and other regulatory documents adopted by the Group, **and external** sources, such as international standards and frameworks (e.g., OECD Guidelines, Corporate Sustainability Due Diligence, etc.), in order to identify the areas connected with A2A's business within which human rights violations could occur;
- **Engagement of corporate departments**, in order to assess the Group's level of human rights protection, both in terms of governance maturity and the internal practices put in place to monitor and mitigate the risk of human rights violations (e.g., policies, procedures, monitoring actions, etc.).
- **Analysis of results, identification of gaps and definition of areas for improvement**.

A table summarizing the results of the assessment process is set out below, which indicates for each human rights principle under investigation: the material topics associated therewith, the main stakeholders impacted in the event of a breach of the principles, the level of supervision that emerged from the assessment and the reference to the pages of the Integrated Report where the policies, practices and actions that A2A adopts in order to oversee the activities/corporate areas where potential breaches of these principles could occur can be found.

Table 18 Outcomes of the Human Rights Assessment Process

PRINCIPLE OF HUMAN RIGHTS INVESTIGATED	MATERIAL TOPIC	MAIN STAKEHOLDER IMPACTED	COVERAGE LEVEL	ACTIONS/ SAFEGUARDS REFERENCE
Work-life balance	Enhancement of human capital	People	High	pag. 138; 147-148
Fair and favourable working conditions	Enhancement of human capital/Occupational health and safety	People	High	pag. 16-28; 148-150
Digital inclusion and access to innovation	Innovation and digital transformation	People	High	pag. 142-144; 166
Protection from sexual harassment and physical or psychological harassment	Occupational health and safety	People	High	pag. 26; 150
Protection of the environment	Biodiversity/Climate change/Circular economy/ Responsible water management	Community	High	pag. 114-131
Elimination of forced labour and abolition of child labour	Responsible management of the supply chain	Community	Medium-High	pag. 27-28
Occupational health and safety	Occupational health and safety	People Supply Chain	Medium-High	pag. 29-30; 152-155
Fight against corruption	Group's ethics and integrity	Customers Community People	Medium-High	pag. 26-27
Adequate remuneration	Enhancement of human capital/Responsible supply chain management	People Supply Chain	Medium	pag. 148-149
Respect for diversity, inclusion and equal opportunities	Diversity and inclusion/Responsibility and quality in the provision of services	People Customers	Medium	pag. 150-151
Protection and respect for local communities	Listening and engagement of communities	Community	Medium	pag. 66-70; 194-203
Protecting privacy	Responsibility and quality in the provision of services	Community People	Medium	pag. 28-29
Transparency and non-discrimination in communication	Responsibility and quality in the provision of services	Community	Medium	pag. 188
Freedom of opinion and expression	Responsibility and quality in the provision of services	Customers	Medium	pag. 27-28
Protection of the environment/ Protection and respect for local communities	Energy self-sufficiency/Climate change/ Responsible water management/Pollution prevention	Community	Medium	pag. 114-131
Freedom of association	Group's ethics and integrity/Responsible supply chain management	People Community	Medium	pag. 26-28; 148

In light of the controls adopted by the A2A Group and of the context in which it operates, i.e., mainly in Italy, there are no potential significant risks. Although the Group has a **medium-high level of human rights protection**, A2A has nevertheless identified some **areas for improvement** in terms of monitoring actions and safeguards to be implemented, linked to certain areas of investigation.

In particular, the Group undertakes to:

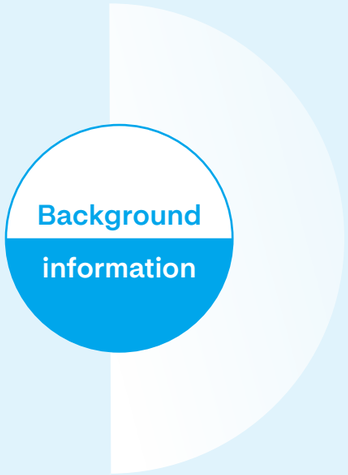
- strengthen the already existing and structured stakeholder engagement process, focusing on the **social needs of the territory**, in order to constantly increase cohesion with local communities;
- implement further solutions to **reduce possible negative environmental impacts on the communities**;
- strengthen the process of listening to **customers belonging to vulnerable groups**, in order to better take into account their needs and expectations within corporate strategies.

Lastly, with the aim of closing the gaps identified and increasingly spreading the culture of respect for human rights on the one hand and best practices useful for improving human rights monitoring in the corporate activities on the other, the Group will launch a human rights **training course** for all employees in **2023**. The course will be structured in 7 interactive modules with intermediate tests to check the effectiveness of the content.

5

Financial Capital

5.
Financial Capital



Interest in ESG issues and sustainable finance on the part of investors, stakeholders and institutions is steadily growing.

All the major players are committed to including sustainability indicators in their valuation mechanisms, making ESG criteria a key driver for financial asset management.

In 2022 the European Commission revised the regulations related to the European Green Deal, which had been launched the previous year with the goal of achieving zero climate impact by 2050. In this context, special attention was given to "Fit for 55", whereby Member States commit to reducing net gas emissions by 55% already by 2030, while ensuring a fair and socially just transition and strengthening the innovation and competitiveness of European industry. Two key instruments for achieving this objective are the "Emission Trading System" (ETS), the regulatory package for regulating emissions trading between EU countries in certain sectors of interest, and the "Social Climate Fund" to support households and businesses in the transition process, with an estimated budget of 16.4 billion to 2027 and the possibility of increasing to 72 billion to 2032.

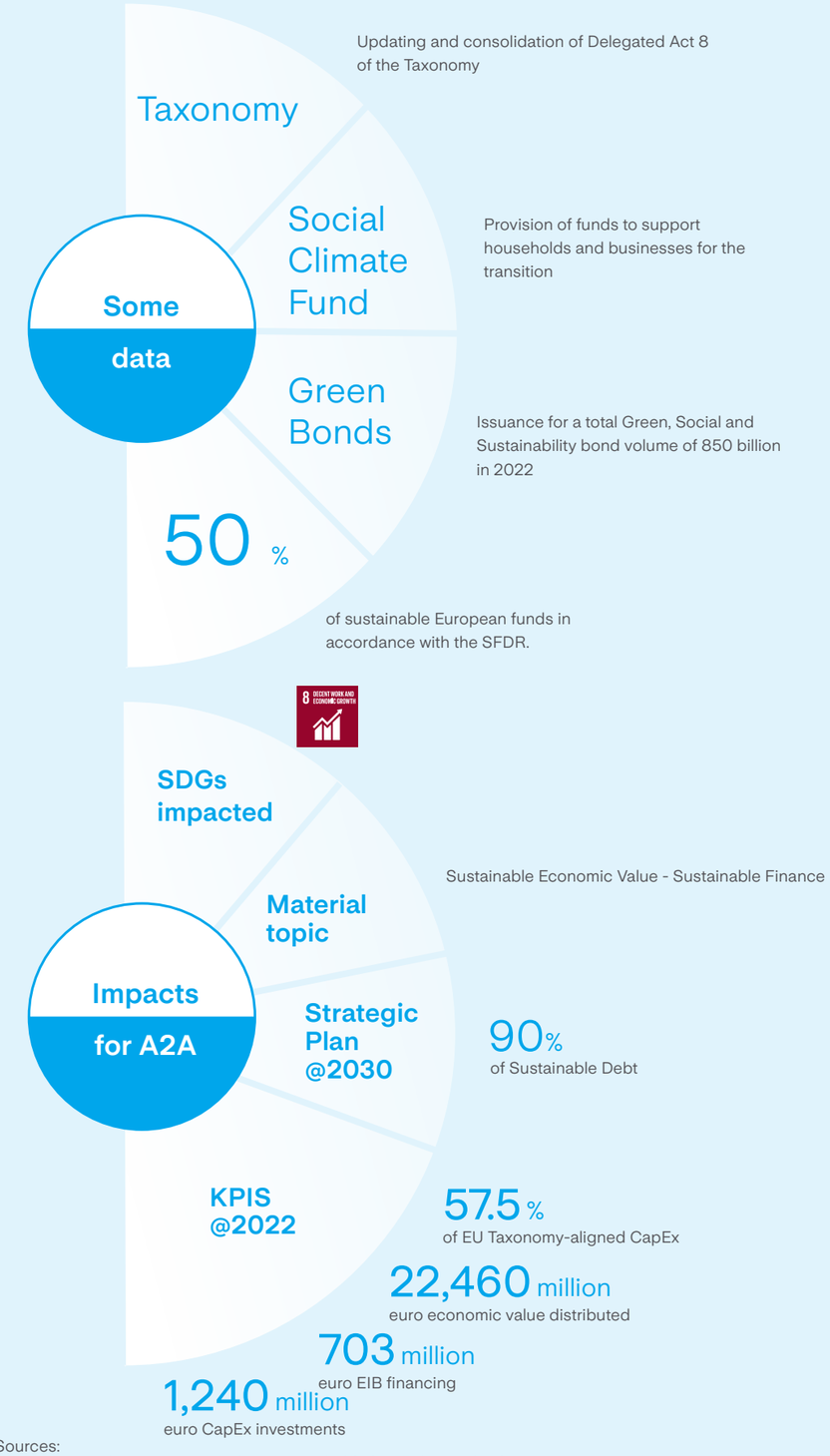
It therefore becomes crucial for the EU to define objective reporting criteria in order to provide an adequate assessment of the contribution made by companies and financial institutions to the six sustainable development goals. In this sense, the European Commission continued its work on the European Taxonomy, updating Delegated Act 8 of EU Regulation 852.

The Regulation will require financial market participants to indicate, through the calculation of an appropriate percentage of Revenues, OpEx and CapEx, the degree to which their activities are aligned with the objectives climate change mitigation and adaptation.

The centrality of sustainability issues is evidenced by the volume of **Green, Social and Sustainability (GSS)** bonds issued on the market in 2022. According to reports, they totalled **850 billion euro**. Of the total issued, the largest slice is made up of **Green Bonds**, i.e., bonds whose issuance is linked to projects that have a **positive impact on the environment**, such as energy efficiency, clean energy production, sustainable land use, etc.

Although there has been a decline since 2021, with analysts pointing to the impact of inflation and geopolitical tensions, the volume of securities on offer has quadrupled since 2018.

Consequently, the market share of sustainable funds is also growing. Morningstar calculated that European bond and equity funds labelled as sustainable under the **Sustainable Finance Disclosure Regulation** (SFDR) increased by almost 3% in the third quarter of 2022 compared to the same period in 2021, reaching **4.3 trillion euro in assets under management**, now accounting for more than 50% of total European funds.



Sources:
https://www.consilium.europa.eu/it/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/
https://www.europarl.europa.eu/news/it/headlines/economy/20220519STO30401/fondo-sociale-per-il-clima-le-idee-del-pe-per-una-transizione-energetica-giusta)
Sustainable Investments and Green Bonds: *Green and sustainable bonds, 850 billion issued in 2022, auto sector grows - ESG News*
https://www.eticanews.it/finanziamenti-bei-in-italia-oltre-il-50-sono-green/

Sustainable Economic Value

The Group creates and distributes economic and social value among its stakeholders, generated through the conduct of its business, thus also contributing to the growth of the territories. A2A also contributes to the energy transition by promoting the use of renewable energy sources and energy efficiency mechanisms.

#Added value #externality #Distributed value #Economic sustainability

Risk factors

Reduction of the value distributed to stakeholders

Possible non-achievement of the Sustainability Plan targets

Potential critical availability and price issues on the supply chain with impact on margins.

Short-, medium- and long-term liquidity crises, which undermine the relationship with financial stakeholders.

Negative evaluations or downgrading of rating agencies by automated investors:
- on ESG aspects;
- Group performance.

Ineffective communication of sustainability performance.

Opportunity factors

See "Sustainable Finance" opportunities.

Management Approach (MA)

Mitigate

ERM (Enterprise Risk Management) process integrated into the Guidelines for the Internal Control and Risk Management System.

Structured financial management by return on investment.

Attention to ESG aspects:
- for impacts of commodity market prices;
- for the choice of investments and business conduct.

Verification of A2A's ESG data on data providers.

Presence of Investor Relations Policy.

Traditional and ESG investor involvement

Transparent sustainability performance communication

Seize

What we have done

2022 actions

- EIB investments
- Improvement in CDP Water and S&P CSA assessments.
- Timely and transparent communication with stakeholders
- Improved alignment with TCFD recommendations
- Obtained an EE+ rating from Standard Ethics, becoming the highest rated Italian company in the reference sector

What we are doing

Sustainability Plan Actions

Risk Management

Sustainability in planning and investment processes

ESG Rating

Sustainable Finance

The Group constantly monitors financial market developments in the ESG area and adopts sustainable finance instruments in line with the European strategy. Also in order to reinforce the confidence of the financial community and meet the expectations of investors and institutions, A2A develops actions and projects aimed at ensuring compliance with ESG reporting regulations and is committed to progressively aligning with European sustainability objectives, such as those related to the EU Taxonomy.

#Sustainable debt #Green Deal #Impact investing #Taxonomy #ESG rating

Risk factors

Missed business opportunities related to sustainability.

Reputational and economic-financial impact of any failure to achieve the sustainability targets envisaged by the Green Bonds and the Group's Sustainability-Linked Bond issues

Opportunity factors

Adoption of sustainable finance tools to support the funding strategy (Green Bonds, KPI Linked Bond)

Management Approach (MA)

Mitigate

Establishment of the Sustainable Finance Committee with the aim of monitoring potential green/ sustainable investment initiatives and guaranteeing the implementation of investment projects subject to financing

ESG investor involvement.

Issue of financial products related to sustainability performance or sustainable taxonomy

Transparent sustainability performance communication

Seize

What we have done

2022 actions

- Sustainability-Linked Bond and Green Bond issues
- New KPI-linked Revolving Credit Facility
- Update of the Sustainable Finance Framework
- Publication of an ESG Database, a document that compiles A2A's historical KPIs that are most meaningful to investors and analysts
- Underwrote a General Liability policy linked to the achievement of five sustainability goals

What we are doing

Sustainability Plan Actions

Sustainability in planning and investment processes

ESG Rating

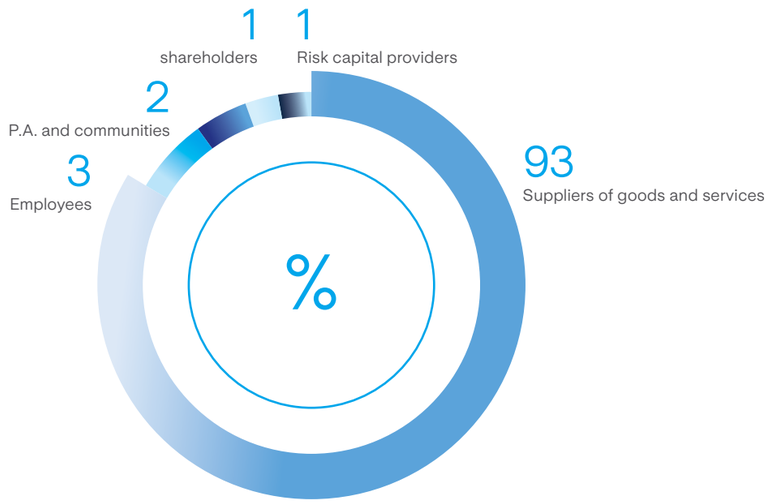
5.1
Economic Value Distributed

Alignment with the GRI framework continued in 2022.

The economic value directly generated represents the wealth produced by the Group. The economic value distributed instead measures the economic impact of the Group's activity of creating value for its stakeholders.

In 2022, the Economic Value Generated by the Group was 23,396 million euro. Of this, **22,460 million was distributed to various stakeholders**: suppliers of goods and providers of services (93%), employees (3%), venture capital providers (1%), PA and communities (2%) and shareholders (1%). Approximately 4% of the economic value generated was retained by the Group as profits, provisions and amortization.

Figure 19 Economic Value Distributed



5.2
Relations with Shareholders

The parent company A2A S.p.A. is listed on the Milan stock exchange. The A2A share is traded on the electronic stock market and belongs to the FTSE-MIB segment and falls within the “Public Services” sector. Under article 9 of the company’s By-laws, no single shareholder other than the Municipalities of Brescia and Milan may hold more than 5% of the share capital. Shares held in excess of the 5% limit have no voting rights.

A2A has about 76,000 shareholders, divided between institutional investors and retail investors.

The **institutional investors** (investment funds and other financial institutions) hold about 30% of the share capital. 44% of the free float in the hands of institutional investors is held by US investors, 21% by British investors, 16% by Italian investors, 6% by French investors and 4% by German investors. Approximately 30% of the shares held by institutional investors are in funds that integrate ESG analyses into their investment processes.

There are approximately 75,000 **retail investors** (natural persons and legal entities in this category), holding 15% of the share capital. Almost all of the retail shareholding is resident in Italy, and in particular 58% in Lombardy. The investors residing in the provinces of Milan and Brescia hold 26% and 14%, respectively, of the total retail[1].

Figure 20 A2A shareholding structure (at December 31, 2022)

	2022
Municipality of Milan	25.0%
Municipality of Brescia	25.0%
Other municipalities	4.6%
Market	45.4%

[1] The data were prepared on the basis of the Shareholders' Register updated as of the dividend distribution date (May 25, 2022), communications received pursuant to Article 120 of the Consolidated Finance Act and other available information.

A2A in the Stock Market Indices

The global equity markets were heavily impacted by the geopolitical environment and the significant rise in inflation in 2022, mainly driven by increases in energy prices, which prompted central banks to adopt repeated restrictive monetary policy interventions.

The company-specific factors instead relate to:
- the two updates of the 2021-2030 Strategic Plan with the confirmation of developments related to the circular economy and energy transition;
- growth of the dividend distributed;
- good quarterly results;
- A2A forms part of the following indices: *FTSE MIB, STOXX Europe 600, STOXX Europe 600 Utilities, EURO STOXX, EURO STOXX Utilities, MSCI Europe Small Cap, WisdomTree International Equity, S&P Global Mid Small Cap.*

Relations with Shareholders and Investors

A2A is constantly committed to providing answers as precise and exhaustive as possible to the needs and specific requests of financial stakeholders. In particular, the Investor Relations team assists top management in its dialogue with investors and in the continuous monitoring of the expectations of the financial markets on the company's performance.

In 2021, the Group approved the "**Policy for Managing Dialogue with General Shareholders and Other Stakeholders Relevant to the Company**", which is available on the Company's website. In accordance with the Policy, multiple communication tools and channels are used in order to maintain proactive, constant engagement with investors and analysts:
- institutional documentation (Annual Financial Statements, Integrated Report, Half-Year Financial Report, press releases, corporate presentations and Shareholders' Meeting documentation);
- ad hoc documentation (Investor Guidebook, Investor Databook);
- meetings on the main international financial scenes (road shows, one-to-one meetings, group meetings, conference calls, etc.). In 2022, the activities were held both in-person and virtually on meeting platforms;
- participation in various industry conferences organized by various brokers and Borsa Italiana;
- discussions/meetings with equity analysts covering A2A stock (at the end of 2022, the company was followed by seven Italian and international brokers).

In 2022, A2A expanded its provision of information related to ESG, providing investors with an **ESG Database, a document that compiles A2A's historical KPIs that are most meaningful to investors and analysts**. The project involves the constant updating and expansion of KPIs over the following years.

Furthermore, during Italian Sustainability Week of Borsa Italiana, a presentation dedicated to the Sustainability Plan and other relevant ESG issues was published on the company website.

Lastly, to facilitate the usability of information, the Group's main ESG policies have been grouped together in a dedicated section of the A2A website.

2022 was also marked by the high number of information requests and questionnaires from ESG investors and analysts. In addition, the increasing relevance of passively and quantitatively managed funds (e.g., ETF) and the growing number of bond investors has led to the need to monitor the accuracy of public financial databases, which are the preferred information channel for this category of funds. To meet the needs of these stakeholders, the Investor Relations team has been pursuing a multi-year project (Zero Gap) to reduce data provider errors and inconsistencies since 2020. Lastly, the engagement has continued in a structured manner with the main proxy agencies that provide institutional investors with voting recommendations on the items of the agenda of the Shareholders' Meeting. 3 Proxy Agency published the pre-meeting report.

5.3
A2A in the Sustainability Ratings

Over the past few years, the volume of investments subject to assessments related to environmental, social and governance issues has increased more and more, and new indices and portfolios have proliferated for which inclusion is based on sustainability performance.

A2A is present in the following ethical indices:
- MIB ESG.
- FTSE4Good Index.
- ECPI Euro ESG Equity.
- Ethibel Sustainability Index Excellence Europe.
- EURO STOXX Sustainability Index.
- *Euronext Vigeo index: Europe 120.*
- *Standard Ethics Italian Index.*
- *Solactive Climate Change Index.*
- *Bloomberg Gender Equality Index.*

A2A is also included in the Ethibel Excellence Investment Register and in the Ethibel Pioneer Investment Register.

In 2022, A2A **improved the score of the CDP Water Questionnaire for the second year running, obtaining A-, while it confirmed the score A- in the climate change assessment, confirming itself as a leader in the fight against climate change.**

In addition to its commitment to environmental issues, the Group also pays attention to issues related to the development of its people and the protection of diversity, responding for two years to the Refinitiv Diversity and Inclusion Assessment, and to Bloomberg's Gender Equality Index questionnaire. The latter included A2A in its index for the third year in a row.

In addition, A2A participates in the assessments of: Vigeo-Eiris, S&P Global, Sustainalytics, MSCI, FTSE4Good, "Top 100 Green Utilities" (dell'Energy Intelligence Group), Gaïa Research and Corporate Knights.

In 2022, the Group was **included in the S&P Global Sustainability Yearbook**, the initiative that recognizes globally listed companies with the best sustainability performance based on their score in the Corporate Sustainability Assessment, the ESG assessment model developed by the international rating agency. This year, over 7,500 companies were evaluated for potential inclusion in the Yearbook and only 716 were included. A2A ranked 7th out of 67 companies evaluated in the 'global water and multi utilities' sector.

The evaluation by Standard Ethics, an independent rating agency that measures the sustainability of companies, also continues annually. In 2022, Standard Ethics raised the Group's Corporate Rating to EE+ from the previous EE, maintaining the 'Positive' outlook. **With this rating, A2A becomes the Italian company with the highest rating in its sector.** According to Standard Ethics, A2A has long adopted ESG (Environmental, Social and Governance) reporting aligned with international best practices. Sustainability issues are continuously addressed through corporate policies that are updated to UN, OECD and EU guidelines and recently reinforced by the reorganization of some corporate functions.

[2] Source: ESG News

5.4
Sustainable Finance

Over the past few years, a very strong relationship has developed between finance and sustainability. Not only have new financial instruments been created (e.g. Green, Social, Sustainable Bond, Sustainability-Linked Bond, Green Loan, Sustainability-Linked Loan, EIB subsidized investments), which also include sustainability impacts in their logics, but the assets managed according to sustainable and responsible investment strategies have increased exponentially.

The difficult macroeconomic environment influenced by the outbreak of war in Ukraine and the high volatility in the market in 2022 led to a reduction in bond issuance volumes compared to the previous year. As a result, issues with ESG characteristics also decreased in absolute terms compared to 2021 (850 billion euro vs 1050 billion euro in 2021), although their weight in total issues increased slightly. Despite this decline in the volume of new ESG bond issues in 2022, new ESG bonds offered to the market have nevertheless quadrupled over the past four years[2].

For A2A, Sustainable Finance is an important lever for achieving the two pillars of the Group's strategy: energy transition and circular economy. The Strategic Plan updated in November 2022 includes the specific target of achieving more than 90% sustainable debt by 2030.

In order to achieve this goal, in May 2021 A2A established a new **Sustainable Finance Framework** which, for the first time in Italy, combines two approaches: Green - Use of Proceeds, which allows for maximum transparency about the use of proceeds in the short term for specific projects, and the Sustainability-Linked component, which allows for an overall reading of the Group's longer-term strategy by linking debt instruments to one or more of the Group's sustainability goals. The selected KPIs (Scope 1 CO_2 emission factor; installed capacity from renewable sources; treated waste aimed at material recovery) identify sustainability targets that contribute to the achievement of United Nations SDGs 7, 11, 12 and 13. The Framework was updated in February 2022, incorporating the more ambitious sustainability targets of the 2021-2030 Strategic Plan updated in January 2022.

The Sustainable Finance Framework, which covers any type of financial instrument, was prepared in compliance with the Green Bond Principles and Sustainability-Linked Bond Principles published by the International Capital Market Association (ICMA), and the Green Loan Principles and Sustainability-Linked Loan Principles published by the Loan Market Association (LMA).

Vigeo Eiris, one of the leading international ESG rating agencies, issued a Second Party Opinion confirming the robustness of the Sustainable Finance Framework and attesting to its alignment with ICMA and LMA principles. The agency also **highlighted A2A's commitment to the development of sustainable finance and its "Advanced" position as an issuer.**

In the two-year period 2021-2022, the Group structured the following main operations in the area of sustainable finance:
- June 2021:
  - First share buyback programme involving a donation to Banco dell'Energia.

- July 2021:
  - New KPI-Linked Revolving Credit Facility of 500 million euro with a maturity of five years: the line is linked to two sustainability objectives included in the Sustainable Finance Framework (installed capacity from renewable sources and treated waste aimed at material recovery) and provides for an annual donation to Banco dell'Energia.
  - Sustainability-Linked Inaugural Bond of 500 million euro with a ten-year maturity: the coupon of the bond instrument is linked to the achievement of the 2025 target (approved by the Science Based Target Initiative in March 2020) of Scope 1 CO_2 emission factor.

- October 2021:
  - New Green Bond of 500 million euro with 12-year maturity: the proceeds of the bond instrument will be used to finance green projects aligned with the environmental objective of climate change mitigation of the European Taxonomy (EU Taxonomy Regulation 2020/852).

- March 2022:
  - New 500 million euro Sustainability-Linked Bond with six-year maturity: the bond's coupon is linked to the achievement of the 2024 target for installed capacity from renewable sources.

- June 2022:
  - New Green Bond of 600 million euro with four-year maturity: the proceeds of the bond instrument will be used to finance green projects aligned with the environmental objective of climate change mitigation of the European Taxonomy (EU Taxonomy Regulation 2020/852).
  - New 410 million euro KPI-linked Revolving Credit Facility with a maturity of three years, linked to the achievement of three social and governance objectives (accident frequency index; percentage of orders to suppliers assessed with ESG indicator; gender pay gap) and includes an annual donation to Banco dell'Energia.

- September 2022:
  - New Green Bond of 650 million euro with eight-year maturity: the proceeds of the bond instrument will be used to finance green projects aligned with the environmental objective of climate change mitigation of the European Taxonomy (EU Taxonomy Regulation 2020/852).

Thanks to the actions taken during the year, A2A's share of sustainable debt has reached 58% of total December 31, 2022 debt.

In December 2022, A2A published its second Green Bond Report on the allocation of proceeds from its second 500 million euro Green Bond issued on October 25, 2021. The entire proceeds of the Green Bond were used to finance Eligible Green Projects, 100% aligned with the EU Taxonomy of Sustainable Activities, confirming A2A's role as the first Italian issuer to issue a bond fully aligned with the Taxonomy.

In January 2023, A2A issued a new 500 million euro Green Bond with a maturity of 11 years. The proceeds of the bond will be used to finance green projects eligible for the European Taxonomy.

To further expand its range of sustainable tools by extending them into the insurance arena, in 2022 A2A **took out a Public and General Liability policy linked to the achievement of five sustainability goals** - which cover occupational health and safety - and are built around the "Social factor" of ESG (Environmental, Social, Governance) criteria. Among these: inspection visits to the A2A Group's construction sites; access to initiatives on health proposed by A2A and to the safety training for its employees; percentage of orders placed to suppliers evaluated with ESG indicators; verification of the maintenance of the number of ISO45001 certified Group companies. The enhancement of the Group's ESG initiatives and investments, as well as the measurement of A2A's positioning, were driving components in the dialogue with insurance companies, including during the renegotiation of the entire insurance plan for 2023. In particular, the insurance solution in Civil and General Liability was confirmed using four targets selected from the above. Sustainability goals have also been integrated into the occupational component of the Group's accident policy.

In order to strengthen its commitment, identify and develop sustainable finance tools, ensure the correct management of the project selection and fund allocation process, as well as monitor the positive impact on environmental metrics, A2A created an inter-functional Green Financing Committee in 2019, chaired by Finance and consisting of Planning and Control, Sustainability Development, Strategy and Innovation. Following the publication of the new Sustainable Finance Framework, the committee has been renamed the **Sustainable Financing Committee**. This Committee was set up with the aim of monitoring potential sustainable investment initiatives, underwriting any type of financial instrument dedicated to specific green projects and then guaranteeing their implementation.

A2A also has a **solid and long-standing relationship with the European Investment Bank (EIB)** to support the Group's investment programme. The European Institute finances specific investment projects that meet particular sustainability requirements, applying generally more advantageous economic conditions than the most common forms of financing. The EIB's periodic appraisal and monitoring process includes requests for information, including technical and financial information, and the possibility of inspecting the sites/plants concerned by the projects financed. At December 31, 2022, the value of these loans in the Group amounted to about 703 million euro.

Figure 21 ESG debt as at 12.31.2022

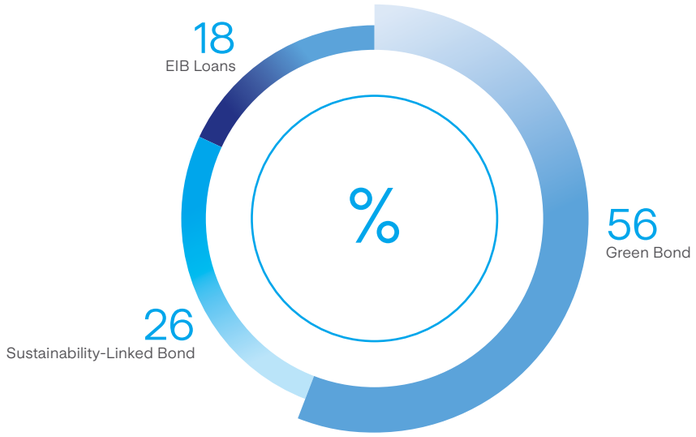
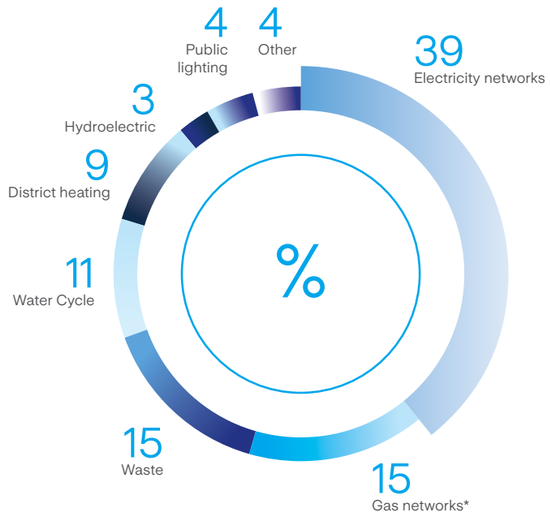
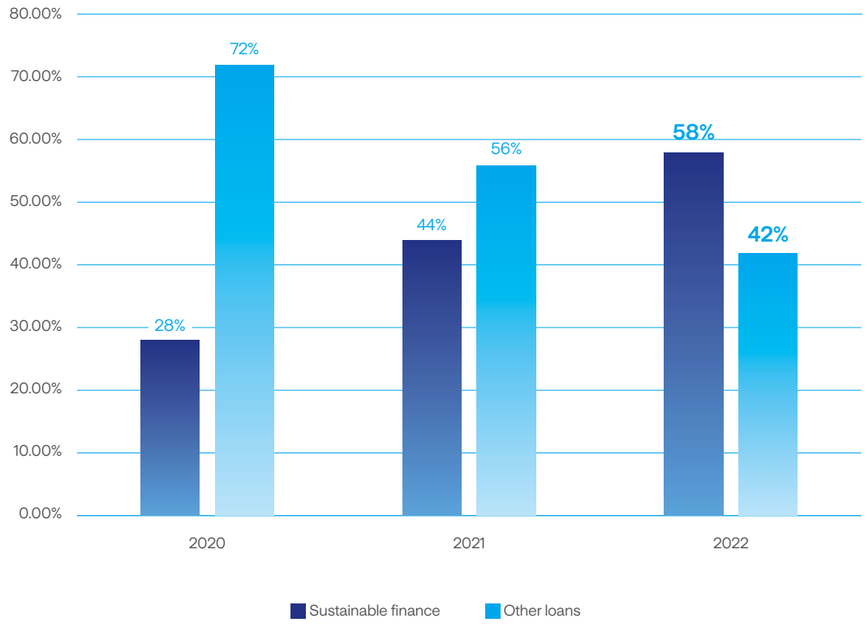


Figure 22 EIB loans by destination (%) at 12.31.2022



* In November 2019, the EIB announced that it will stop financing fossil fuel projects, including gas, from the end of 2021.

Figure 23 A2A's traditional vs sustainable funding sources



Furthermore, the Group continues to be a member of the Corporate Forum on Sustainable Finance, of which it has been a member since 2019. It aims to support and develop sustainable finance as a means of combating climate change and promoting a more sustainable economy through innovative financing instruments. Over the past three years, the Corporate Forum on Sustainable Finance, whose 25 members come from nine countries and four business macro-sectors, has responded to the most important consultations held by the European Union covering the topics: EU taxonomy, EU standard for green bonds, EU climate benchmarks and ESG disclosure on benchmark indices, renewed EU strategy for sustainable finance and EU review of the Non-Financial Reporting Directive.

Lastly, **A2A has been part of the Nasdaq Sustainable Bond Network since January 2023**, a Sustainable Finance platform that brings together investors, issuers, investment banks and specialist organizations. Its entrance was celebrated with a customization of the Nasdaq Tower in Times Square in New York City with the Life Company's logo and colours, is an important recognition of A2A's commitment and leadership in Sustainable Finance and will allow the Group to get in touch with a wide network of potential international investors attentive to sustainability issues.

5.5
Capital Expenditure

In 2022, the Group made investments in line with the Business Plan, based on the two main pillars of circular economy and energy transition, totalling 1,240 million euro.

Figure 24 Investments by Plan drivers

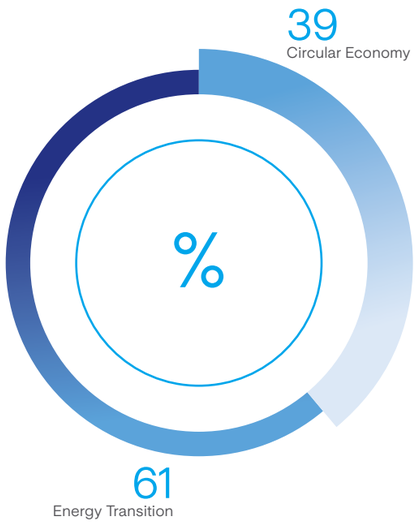
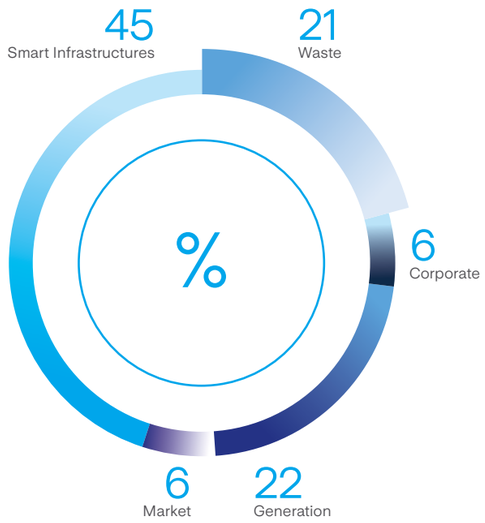


Figure 25 Investments by BU



Of these, about 45% concerned investments in the Smart Infrastructures BU: in particular, significant investments were made in the electricity and gas networks in order to promote the electrification of consumption and increase the resilience of the networks, and in the integrated water cycle.

The Generation and Trading BU's share of investments (22%) concerned upgrades of the Cassano d'Adda, Chivasso, Sermide and Piacenza power stations and the acquisition of new wind and photovoltaic plants.

21% of investments concerned the Waste BU, which saw the start of work on the new line 3 of the Parona WtE and the new flue gas purification line of the Brescia WtE. In addition, 2022 was characterized by major interventions on the Lacchiarella, Cavaglià, Castelleone and Bedizzole OFMSW treatment plants.

Other investments concerned the Market BU and Corporate, respectively for business development and energy efficiency activities and for the management of buildings, premises and the renewal of ICT infrastructures.

5.6
European Taxonomy

The Regulatory Environment and Reporting Obligations for 2022

EU Regulation 2020/852 (known as the Taxonomy) is part of the regulation aimed at ensuring the ecological transition of the European Union towards the goal of zero net greenhouse gas (GHG) emissions by 2050, with an intermediate target of a 55% reduction in emissions by 2030 compared to 1990 levels. In particular, the Taxonomy aims to establish the criteria to determine whether an economic activity can be considered environmentally sustainable and consequently determine the degree of sustainability of an investment. According to the regulations, activities that contribute to at least one of the following environmental objectives are considered environmentally sustainable, as long as they do not cause significant damage to the other objectives (so-called DNSH criteria) and they are carried out in compliance with minimum social safeguards:

- climate change mitigation;
- climate change adaptation;
- sustainable use and protection of water and marine resources;
- transition to a circular economy;
- pollution prevention and control;
- protection of ecosystems and biodiversity.

In June 2021, the European Commission formally adopted the first Technical Delegated Act (hereinafter: (Climate Delegated Act) that defines the list of economic sectors and activities currently included in the Taxonomy and the related technical screening criteria that allow to assess whether they contribute substantially to the achievement of environmental objectives for climate change mitigation and adaptation. Additional Technical Delegated Acts on the remaining environmental objectives are expected to be published during 2023.

As of January 1, 2022, in line with the reporting obligations set forth in Article 8 of EU Regulation 2020/852 and in accordance with the methods and timing indicated in EU Delegated Regulation 2021/2178, the A2A Group published the portion of revenues, capital expenditure (CapEx) and operating expenditure (OpEx) associated with its economic activities considered potentially eco-sustainable (known as "eligible economic activities") for the environmental objectives of climate change mitigation and adaptation.

Starting this year, as required by the regulations, the analyses have been further refined in order to identify those economic activities that are considered truly eco-sustainable (so-called 'taxonomy-aligned' economic activities), i.e., those activities which:

a) contribute substantially to the achievement of one or more of the environmental objectives by meeting the technical screening criteria defined in the Climate Delegated Act;
b) do no significant harm to any of the other environmental objectives (abbreviated as DNSH); and
c) are carried out in compliance with minimum safeguards[3].

Eligible Economic Activities of the A2A Group

In order to ensure compliance with the requirements of EU Regulation 2020/852, last year the A2A Group had already implemented a specific project aimed at identifying its "eligible" and "aligned" economic activities in accordance with the Regulation itself. During 2022, the appointed Working Group reviewed the A2A Group's classification within the scope of the economic sectors and activities included in the Climate Delegated Act and coordinated the conduct of the checks necessary to qualify the economic activities as Taxonomy "eligible" and "aligned", providing for the active involvement also of the referents of the various Business Units in the process. For each identified economic activity, verification of compliance with the technical screening and DNSH criteria was conducted in order to qualify it as "aligned". In particular, the verification of the former was carried out by involving the technical functions of each Business Unit involved, in order to ascertain whether the individual plants complied with the requirements of the Regulation. For the DNSH criteria, on the other hand, the verification involved additional functions, including the Group's Enterprise Risk Management Department as the owner of A2A's Climate Risk Assessment, with which it verified whether the requirements of the relevant Delegated Acts were met in terms of risks identified and mitigation measures identified and implemented. The DNSH for the other objectives were instead checked with the technical functions of the individual business units.

This process led to the identification of the following categories of "eligible" economic activities:

- 4.1. Electricity generation using solar photovoltaic technology: the generation of electricity from photovoltaic panels by the Generation BU is an eligible, and for most of the Group's plants, aligned activity. The only plants

[3] According to Article 18 of EU Regulation 2020/852, minimum safeguards are *"procedures implemented by an enterprise engaged in an economic activity in order to ensure that it is in line with the OECD Guidelines for Multinational Enterprises and the United Nations Guiding Principles on Business and Human Rights, including the principles and rights set out in the eight core conventions identified in the International Labour Organization's Declaration on Fundamental Principles and Rights at Work and the International Bill of Human Rights."*

that do not pass the Do Not Significant Harm criteria on the circular economy are those installed at the Chivasso, Sermide, Brindisi and San Filippo del Mela power plants. Furthermore, the photovoltaic plant in Sermide does not pass the Do Not Significant Harm criterion on biodiversity. These plants were therefore not considered aligned.

- 4.3. Electricity generation from wind power: the generation of wind power by the Generation BU plants is an eligible and aligned activity.
- 4.5. Electricity generation from hydropower: the generation of electricity from hydropower by the plants of the Generation BU is an eligible and aligned activity.
- 4.8. Electricity generation from bioenergy: the biogas and biomass plants of the Waste BU are eligible in this category.
- 4.9. Transmission and distribution of electricity: the distribution grids owned by the Group (in particular those belonging to the Smart Infrastructures BU) were considered eligible and aligned, net of a portion of the grid in Salò which is located in a protected area and for this reason does not pass the Do Not Significant Harm criteria for the biodiversity objective.
- 4.11. Storage of thermal energy: the Group's thermal power plants (Smart Infrastructures BU) were associated with this activity and considered to be aligned with the technical criteria of the Regulation.
- 4.14. Transmission and distribution networks for renewable and low-carbon gases: the gas network owned by the Group (in particular, part of the Smart infrastructures BU) is an eligible activity, while with reference to alignment, only the activities aimed at identifying and repairing gas leaks on the network itself are considered such.
- 4.15. District heating/cooling distribution: the activities relate to the district heating and cooling network owned by the Group (Smart Infrastructures BU). Some networks are not aligned because they are not efficient according to the current regulations required by the Delegated Act.
- 4.16. Installation and operation of electric heat pumps: the activity is considered aligned with particular reference to the Canavese, Famagosta and Lodi plants of the Smart Infrastructures BU.
- 4.20. Cogeneration of heat/cold and power from bioenergy: this activity includes the biomass power plants of Linea Group Holding (Smart Infrastructures BU), which are also aligned with the Regulation.
- 4.25. Production of heat/cold using waste heat: power plants owned or managed by the Group and falling within the Smart Infrastructures BU, which generate heat using waste gas are included in this activity, which is also entirely aligned.
- 4.29. Electricity generation from fossil gaseous fuels: electricity generation from natural gas-fired thermoelectric plants of the Generation BU was included in this activity under the Gas and Nuclear Act; however, no Group plant passes the technical screening criteria, so the activity is not aligned.
- 4.30. High-efficiency co-generation of heat/cold and power from fossil gaseous fuels: cogeneration from plants of the Smart Infrastructures BU was included as an eligible activity, but not aligned, as the technical screening criteria of the Regulation are not passed.
- 4.31. Production of heat/cold from fossil gaseous fuels in an efficient district heating and cooling system: the production of heat from natural gas in the Smart Infrastructures BU plants was included as an eligible activity, but not aligned, as the technical screening criteria of the Regulation are not passed.
- 5.1. Construction, extension and operation of water collection, treatment and supply systems: this includes water distribution plants owned and operated by the Group (Smart Infrastructures BU) and the networks connected to them. The activity is partially aligned, as the technical screening criteria are not passed by all Group assets.
- 5.3. Construction, extension and operation of wastewater collection and treatment: this includes the effluent treatment plants owned and operated by the Group (Smart Infrastructures BU) and the sewerage networks connected to them. The activity is partially aligned, as the technical screening criteria are not passed by all Group assets.
- 5.5. Collection and transport of non-hazardous waste in source segregated fractions: includes all waste collection activities of the Waste BU and its transport to disposal plants. The activity is fully aligned.
- 5.6. Anaerobic digestion of sewage sludge: this includes the Corteolona sludge plant and the Agripower biogas plant (Waste BU). Both plants pass the technical screening criteria and are therefore eligible and aligned.
- 5.7. Anaerobic digestion of bio-waste: for this activity, the OFMSW plants of Lacchiarella and Cavaglià (BU Ambiente) were considered, both of which are aligned with the criteria set out in the Regulation.
- 5.8. Composting of bio-waste: the composting plants of Corteolona and Bedizzole of the Waste BU are aligned with the criteria of the Regulation.
- 5.9. Material recovery from non-hazardous waste: this activity includes the non-hazardous waste treatment plants of the Waste BU. Some of these do not pass the technical screening criterion (Castenedolo, Fombio, Coccaglio, Muggiano and Cavaglià plants), which requires the conversion of 50%, by weight, of incoming waste into secondary raw material.
- 5.10. Landfill gas capture and utilization: plants installed at the Group's landfill sites (Waste BU) fall under this activity. Some installations are not considered aligned, as they do not pass the technical screening criteria of the Regulation.
- 6.15. Infrastructure enabling low-carbon road transport and public transport: the activity covers the installation of charging points for electric vehicles on public land. This activity is considered to be fully aligned with the Regulation.
- 7.1. Construction of new buildings: the construction of the new A2A Tower in Milan meets the criteria of the Regulation.
- 7.3. Installation, maintenance and repair of energy efficiency equipment: this activity includes interventions concerning public lighting and energy efficiency services at third parties, conducted by the Smart Infrastructures BU and considered aligned with the Regulation.
- 7.4. Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings): the activity covers the service of installing charging points for electric vehicles at third-party assets. This activity is considered to be fully aligned with the Regulation.
- 7.6. Installation, maintenance and repair of renewable energy technologies: this includes the maintenance and installation of technologies for generating electricity from renewable sources (e.g., photovoltaic panels) on third-party assets. The activity is aligned with the criteria envisaged by the Regulation.
- 8.1. Data processing, hosting and related activities: these include the activities carried out by A2A Smart City which are not considered aligned for the reporting year because they do not meet the technical activity screening criteria.

Subsequently, in coordination with the Planning and Management Control Department, the process of collecting data on revenues, capital expenditure (CapEx) and operating expenditure (OpEx) relating to the aforementioned economic activities was managed centrally in order to quantify and report the indicators required by the Taxonomy. This involvement was also necessary in order to ensure consistency between the amounts reported as part of the disclosure envisaged by the Taxonomy and those determined in the context of financial reporting, as required by the regulations. The entire analysis was implemented on a dedicated computer application that allowed the mapping of individual income statement items associated with the eligible and aligned activities.

Below are the three KPIs determined downstream of the results of the above activities, which are designed to represent the extent to which the activities carried out by A2A Group are "eligible" and "aligned" under the Taxonomy Regulation. The standard reporting templates required by EU Delegated Regulation 2021/2178, as well as some methodological specifications, are included in the Supplement to this document, on page 22.

Figure 26 Turnover

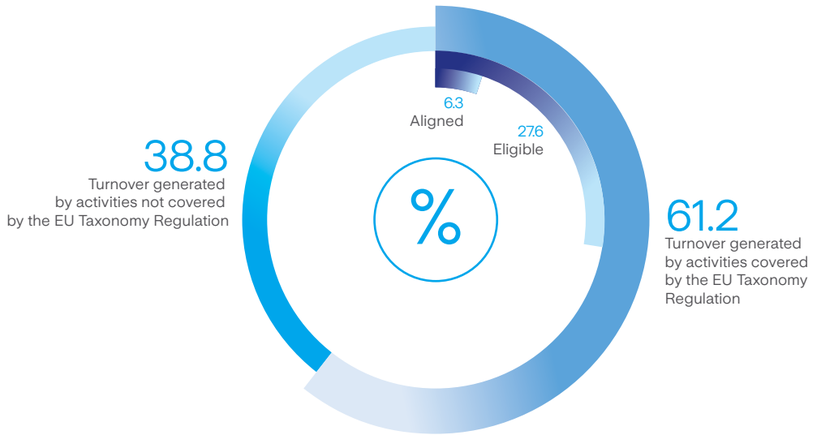


Figure 27 CapEX

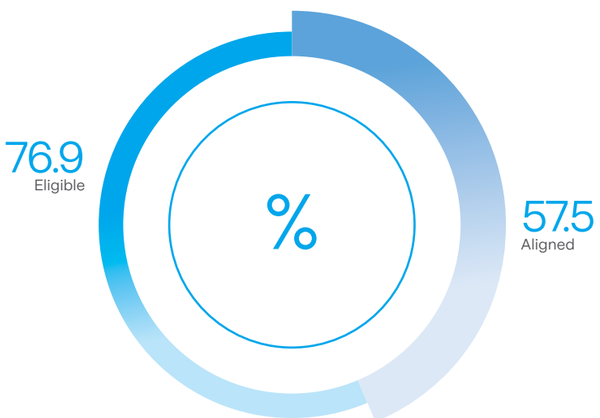
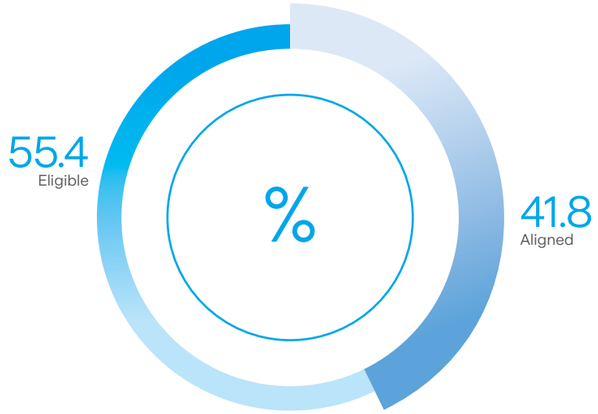


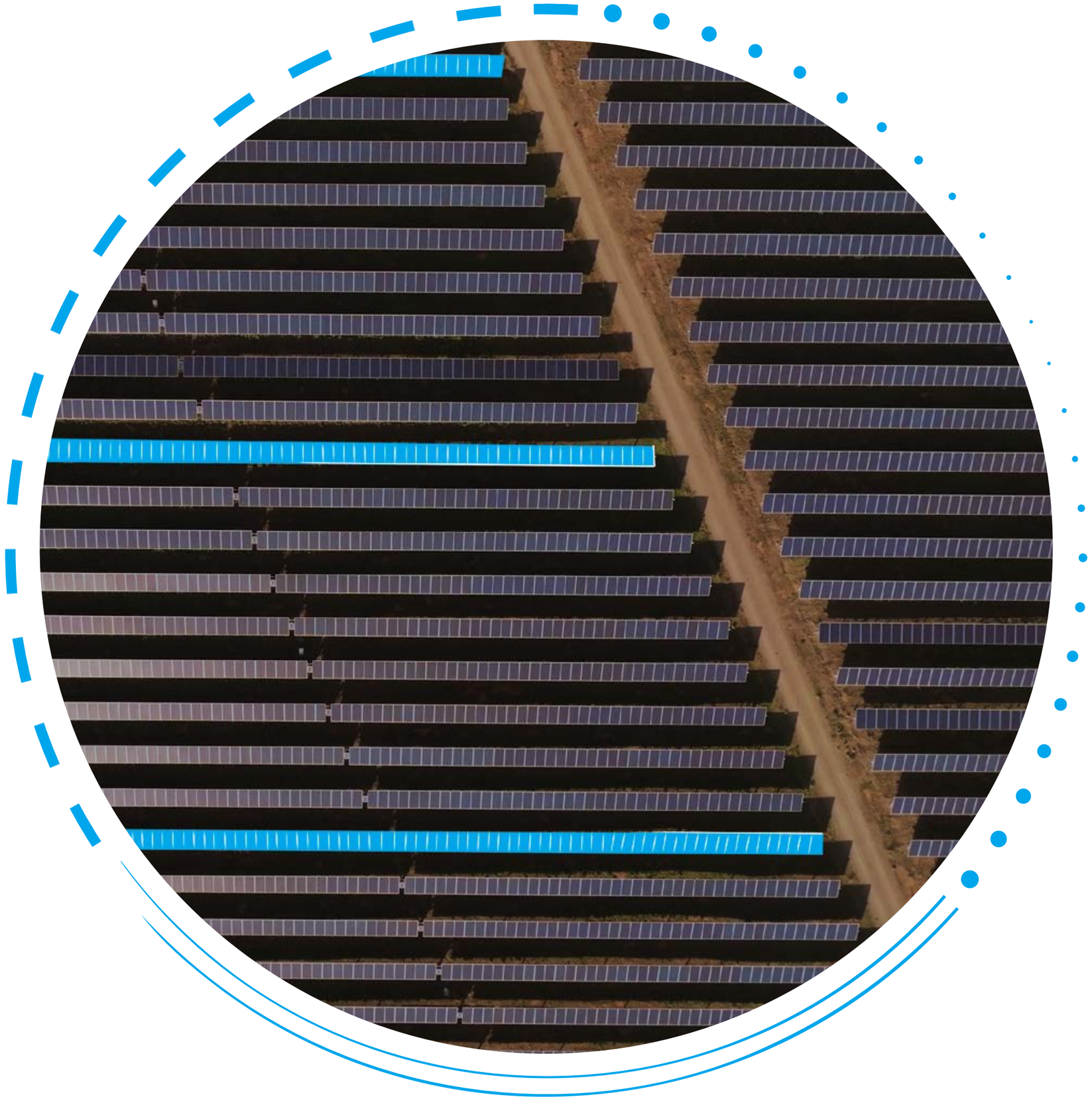
Figure 28 OpEX



It should be noted that the indicators were calculated on a consolidated basis, taking care to avoid the risk of double counting. In particular, the elimination of intercompany items was taken into account and the necessary adjustments were made in the case of revenues, capital expenditure and operating expenditure common to several economic activities. In the final calculation, the company Acinque was excluded, as it is subject to separate reporting obligations according to Italian Legislative Decree 254/16 (see the Note on Method on page 6).

Finally, it should be noted that the A2A Group operates in compliance with the 'minimum safeguards' required by the legislation and has robust procedures in the areas of human rights, anti-corruption, taxation management and management of competitive practices. For more details on the policies adopted, the management model, risk analysis and specific actions on these areas, please refer to the following sections within this document: Governance on page 20 and Dispute Management in the Supplement on page 82.

The difference with respect to the percentage values found in FY 2021 concerning the eligibility and alignment of business activities is primarily due to the greater degree of analysis, as well as an increased involvement of different business areas, which allowed for the implementation of a more robust and accurate process supported, among other things, by the implementation of dedicated software.



6

Manufacturing Capital

6.
Manufacturing Capital

Background information

In 2022, the fight against climate change was forced to face the geopolitical, economic and social challenges brought about by the war in Ukraine.

The conflict exacerbated the supply chain management difficulties that had already emerged during the pandemic, with sharp increases in energy and commodity prices as well as growing delays and price increases in logistics, hampering normal business operations.

The energy markets suffered a real global crisis: the price of natural gas reached record levels, and consequently, so did the price of electricity. Highly vulnerable when it comes to gas supplies due to its historical dependence on Russia, Europe had to review its decarbonization and energy transition policies in order to mitigate the current emergency.

In this context, the study 'Towards Italian energy autonomy: water, wind, sun, waste our raw materials', carried out by The European House - Ambrosetti in collaboration with A2A, was presented. The research aims to qualify how the valorisation of energy sources available in Italy can contribute to the country's energy autonomy. The possibility of further optimising production according to the peculiarities of individual Italian regions, their available resources and existing plants would enable Italy's full potential to be activated and make it less subject to exogenous dynamics. A goal of this magnitude can only be achieved through a paradigm shift and the fundamental collaboration between national and local institutions, citizens and businesses.

According to the indicator elaborated by Ambrosetti, Italy is currently fifth to last in Europe in terms of energy autonomy, producing only 22.5% of the energy consumed on its territory, but is second in terms of availability of renewable resources in its territory. The full exploitation of indigenous sources would triple Italy's independence from foreign energy supplies: an almost four-time increase over the last 20 years, to the benefit of citizens and businesses.

With regard to photovoltaics, with existing technologies and regulatory constraints, the development opportunity in Italy is an additional 105 GW, almost five times today's installed capacity. As far as wind power is concerned, the exploitation of development opportunities in the country's territories - with technologies and regulatory constraints in place - enables an increase in power of 21 GW compared to today, i.e., almost twice the currently installed capacity. Furthermore, through the repowering of existing plants and the development of mini-hydro plants, hydroelectric plants would be increased by more than 20% compared to the hydroelectric capacity currently installed (concentrated in Lombardy, Trentino Alto Adige and Piedmont). Lastly, proper management of the waste cycle, including through the use of energy recovery, makes it possible to both reduce the use of landfills and to contribute to increasing national electricity production and the development of the biomethane chain[1].

1 'Towards Italian energy autonomy: water, wind, sun, waste our raw materials', The European House - Ambrosetti in cooperation with A2A, 2022 *https://www.gruppoa2a.it/it/media/comunicati-stampa/autonomia-energetica-italiana-nostre-materie-prime*

Some data

Italy's achievable energy autonomy with the enhancement of indigenous resources
58.4%

105 GW
additional development opportunity of photovoltaics in Italy

21 GW
additional wind power development opportunity in Italy

6.3 billion
m^3 of biomethane which can be valorized from waste recovery

SDGs impacted

Material topic
Infrastructure for the ecological transition/ Energy autonomy

Impacts for A2A

Strategic Plan @2030
5 GW
of installed renewable capacity

KPIS @2022
52 Mm^3
of water delivered to users
2.7 TWh
thermal energy produced
19.5 TWh
electricity produced
3.6 million
tonnes of waste treated

Infrastructure for the Ecological Transition

The Group strives for excellence in its operating performance in terms of reliability, quality and safety of services offered, promoting continuous maintenance activities of company plants, the use of the BAT (Best Available Technology) and the application of innovative tools and technologies. In addition, A2A contributes to the ecological transition (climate change adaptation and mitigation) by engaging in investments aimed at innovation and the digitalization of existing infrastructures, with a view to energy efficiency, and encourages research and development activities related to sustainable mobility and the development of renewables.

#Energy transition #Mobility #Sustainable innovation #Resilience #Adaptation #Efficiency

Failure to achieve Business Plan and Sustainability Plan targets related to:
- energy efficiency
- greenhouse gas emissions
- waste recovery and treatment
- renewable energy generation
- waste water treatment
- sustainable mobility

Risk factors

Opportunity factors

Strategic plan focused on ecological transition over a ten-year horizon.

Management Approach (MA)

Mitigate

Development of energy efficiency initiatives; construction of plants for the recovery and treatment of waste and purifiers; increase in assets of generation from renewable sources, etc.

Seize

What we have done

2022 Actions

- Technological upgrades of gas turbines at the Cassano d'Adda, Chivasso, Sermide and Piacenza power stations
- Awarded 160 million euro in funding under the NRRP 'Strengthening the smart grid' call
- Inaugurated the new primary cabin at San Cristoforo in Milan
- Construction work started on the new Vobarno purification plant and the Calvisano purification plant
- Tenders awarded for the implementation of the remote network for reading drinking water meters with LoRaWAN technology in the cities of Turin and Naples

What we are doing

Sustainability Plan Actions

- District heating
- Water
- Sustainable Mobility
- Smart grid
- Cybersecurity

Energy autonomy

NEW: Through its energy efficiency activities and investments to develop the Renewable Energy Sources (RES) available in the country, the Group contributes to the country's transition towards energy autonomy.

In order to increase national energy self-production, A2A also promotes the energy valorization of waste and agricultural and food production waste in order to support the development of the biomethane chain, providing incentives for investments in production plants.

#FER #Renewable sources #energy mix #waste valorization #energy security

Possible failure to meet Plan targets in developing generation from renewable sources and developing batteries and storage systems.

Risk factors

Opportunity factors

Regulatory framework favourable to the implementation of the energy transition.

Management Approach (MA)

Mitigate

Implementation of investments defined in the Strategic Plan aimed at achieving 13 TWh energy production by 2030, through the energy transition and circular economy pillars.

Seize

What we have done

2022 Actions

- Italian wind companies Daunia Calvello and Daunia Serracapriola, Mimiani and Montegrighine acquired
- Photovoltaic companies De Stern and Cerveteri with plants in Puglia and Lazio acquired
- Acquired SEA Energia, the company that supplies electricity and heat to the two airports Milan Linate and Milan Malpensa
- Inaugurated two plants for processing OFMSW, which will allow the production of 13 million cubic metres of biomethane

What we are doing

Sustainability Plan Actions

- Renewables
- Energy efficiency in end uses
- Waste recovery and treatment

6.1
Manufacturing Capital in the Waste Business Unit

The plants managed by the Waste Business Unit cover all phases of the integrated waste cycle: from recycling management, ecological platforms and landfills through to energy and material recovery and processing plants.

Figure 29 Plant types and Geographic Location of the Waste BU

Plant type	Number of plants	Location	Capacity	u.m.
Material treatment and recovery	26	Lombardy Piedmont	1,884,383	tonnes/year
MBT (Mechanical Biological Treatment)	7	Lombardy Piedmont	627,000	tonnes/year
Waste-to-energy plants	8	Lombardy Calabria	264 622	MW_e MW_t
Landfills (available capacity)	11	Emilia Romagna Lombardy Piedmont Apulia	7.7	Mm^3
Biogas production	34	Abruzzo Emilia Romagna Friuli Venezia Giulia Lazio Lombardy Piedmont Sardinia Sicily Tuscany Umbria	38	MW_e
Biomass	4	Lombardy Apulia	28 11	MW_e MW_t

The waste entering the Group's plants amounts to 3.6 million tonnes, of which approximately 3 million tonnes is treated at the plants and disposed of in various ways. The waste treated in plants managed on behalf of third parties (e.g., Acerra waste-to-energy plant and Caivano CSS plant) and in the Acinque Group plants (Como waste-to-energy plant) is not included.

The amounts of waste entering the Group's plants have been stable over the last three years.
There is a slight increase of about 3% in electrical energy (amounting to 1,454 GWh) in 2022 and a decrease of 9% in thermal energy (amounting to 1,452 GWh) from waste utilisation.

In line with the Strategic Plan, the Group further strengthened its presence along the supply chain in 2022, increasing its capacity for material treatment and recovery and biomass energy production. **Two plants for the treatment of the organic fraction of municipal solid waste (OFMSW) were inaugurated** in 2022. The first plant was inaugurated in Giussago - Lacchiarella (PV) and allows the treatment of about 100,000 tonnes of waste between wet and urban green waste. Thanks to the natural fertilizer produced (about 20,000 tonnes per year of certified compost) and made available to farmers, it will allow to reduce the use of chemical fertilizers in local agriculture. Furthermore, it will be possible to obtain 8 million cubic metres of biomethane annually (equal to the annual needs of about 20,000 people). The second plant was inaugurated at the Cavaglià (BI) site: the new plant has 60,000 tonnes per year of authorized treatment capacity, allows the production of 5 million cubic metres of biomethane and 12,000 tonnes of certified compost for agriculture per year.

@2030 Objective

170 Mm^3 of biomethane production

The **Fanghi project** developed within the Lombardy Energy Cleantech Cluster working groups and financed by the Lombardy Region from POR FESR 2014-2020 resources ended on 30 November 2022. The goal set by the partnership - consisting of the lead partner A2A Ambiente S.p.A., BrianzAcque S.r.l., Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Lariana Depur S.p.A., MM S.p.A. and TCR Tecora S.r.l. - was to test and validate **new sewage sludge treatment technologies to optimize its management with a view to sustainable development**.

The project envisaged an ambitious work plan developed by the partners with an integrated approach, combining technological innovation, experimental and frontier modelling activities aimed at identifying the most advantageous single or combined strategy in terms of health, environmental, energy and economic sustainability.

The research broadly investigated the possible critical issues related to extensive use of sludge in agriculture, and thus the potential and implications inherent in the alternative process consisting of pre-conditioning (pre-treatment), waste-to-energy and recovery of nutrients from ash, in particular phosphorous recovery.

The results achieved allowed, through pre-treatment and combustion tests (also mono - in a dedicated plant) and pollutant removal tests (PFAS), the development of:
1. an innovative methodology within the framework of the Health Impact Assessment (HIA) guidelines for both the agricultural and waste-to-energy scenarios;
2. new instrumentation for sampling and analysis of gaseous effluents in air;
3. phosphorus extraction processes from sludge combustion ash, resulting in a phosphorus solution that can be used as a fertilizer.

The dissemination campaign organized during the course of the project involved all stakeholders, with the aim of raising awareness among organizations and citizens about the potential for exploiting and recovering sludge in the soil and in energy recovery.

Progress of the flue gas filtration system revamping project with heat recovery at the Brescia waste-to-energy plant

Work continued in 2022 on the flue gas treatment system (with the installation of an innovative system to further reduce emissions) and the heat recovery system from combustion gases. Work was completed on combustion line number three: the related flue gas treatment and heat recovery system began regular operation in December. The work will also be completed on the remaining two lines by 2023.

As a result of the above-mentioned measures, around 3 GWh of thermal energy was recovered from flue gas in December 2022, and nitrogen oxide emissions from line 3 were reduced by around 22% compared to the average of the previous months, while the acid-component emissions were reduced by more than 50%.

6.2
Manufacturing Capital in the *Energy - Generation and Trading Business Unit*

The Energy - Generation and Trading Business Unit is responsible for managing the Group's portfolio of generation plants and for trading in all energy commodities (natural gas, electricity and environmental certificates) on domestic and foreign markets. The production of electricity (and the balancing of the grid), takes place in an increasingly diversified and sustainable way through different types of plants, whose capacities are shown in the table below.

Figure 30 Plant types and geographic location of the Energy - Generation and Trading Business Unit

Type	No. Plants	Location	Capacity	Unit of measurement
Wind	6	Basilicata, Campania, Apulia, Sardinia, Sicily, Spain	243	MW_e
Synchronous compensators	2	Apulia	286	MVA_r
Thermoelectric*	9	Abruzzo, Emilia-Romagna, Friuli-Venezia Giulia, Lombardy, Piedmont, Apulia, Sicily	6,457	MW_e
Photovoltaic	106	Abruzzo, Calabria, Campania, Emilia-Romagna, Lazio, Lombardy, Marche, Piedmont, Apulia, Sardinia, Sicily, Tuscany, Trentino-Alto Adige, Spain	307	MW_e
Hydroelectric units	5	Lombardia, Friuli-Venezia Giulia, Calabria	2,071	MW_e

*Excluding the Scandale power plant, which is not consolidated in the data of this document

In 2022, energy production was characterized and influenced by the strong macroeconomic imbalances resulting from the post-pandemic economic crisis and the beginning of the war in Ukraine. In this context, the decarbonization process undertaken by A2A for its own plants (such as the closure of the Monfalcone coal-fired power plant in 2020) clashed with the need to ensure a stable and constant supply of energy to the country; for this reason, the San Filippo del Mela and Monfalcone plants, fuelled by fuel oil and coal respectively, resumed operations in 2022[1]. The BU's energy production in 2022 stands at 17,627 GWh, of which about 14 TWh from thermoelectric production. There was a 35% reduction in production from hydroelectric plants due to the major water crisis that characterized last year, and an increase of more than twice as much in photovoltaic and wind power production due to the acquisition of new companies.

The Cassano d'Adda, Chivasso, Sermide and Piacenza power plants were involved in technological upgrades of the gas turbines with the aim of increasing the overall power of the combined cycle (about 60/80 MW per plant). At the same time, the interventions also led to an improvement in plant efficiency[2], between +1.4% and +2.5%. The interventions include the installation of hardware components that improve efficiency and thus environmental performance. The activities were completed in 2022, except for the Piacenza power plant for which the work will be completed in 2023. The additional power deriving from the upgrade of the Chivasso and Cassano d'Adda power plants falls within the capacity allocated in Terna's Capacity Market[3] auction with delivery in 2022, while that of the upgrade of the Sermide and Piacenza power plants falls within the capacity allocated in the auction with delivery in 2023.

A project was started in 2022 to build a **photovoltaic carport** to cover the inner and outer car parks of the **Gissi thermoelectric power plant** with a capacity of 204.75 kW and 546 modules. The annual electricity production from renewable sources is estimated at around 260 MWh. The sustainability of the project also includes the forthcoming installation of electric charging stations for electric cars and the creation of a biological corridor for local fauna.

In 2022, **the photovoltaic plants located at the Sermide and Chivasso power plants were revamped and repowered**. Reusing existing fixed structures, state-of-the-art PV modules with increased power and efficiency were installed. The Chivasso PV system increased from 900 kW to 1289 kW, while the Sermide PV system increased from 997 kW to 1604 kW.

A major investment of almost 4 million euro was made in the **San Pietro Sovera hydroelectric plant** in 2022, a flowing water plant in the Province of Como capable of producing 15 million kWh/year of renewable energy. The investment covers the upgrading and complete revamping of all the electromechanical components of the power plant, which have now reached the end of their technical life, and the efficiency upgrading of the hydraulic capture and derivative system in general. Between July and December 2022, the existing turbine-alternator unit was replaced in the power plant with new high-efficiency machinery including modern auxiliary systems, new automation, supervision and remote control equipment. In the hydro-civil sector, on the other hand, the main investment made during the winter period concerned the renovation of the main intake work to change its type and make it more efficient, replacing and motorizing the hydraulic organs responsible for intercepting and discharging the flowing loads; a new remote control system of the hydraulic works was also implemented, which will optimize the operation of the plant as well as the works' and operators' safety, especially during flooding events. Overall, the intervention has increased the plant's value, extended its useful life and brought it in line with current regulations, increased its efficiency, performance, reliability and operating flexibility, and increased the expected output by around 15%.

Growth in the Photovoltaic and Wind Sector

In 2022, A2A consolidated its position among the leading operators in the generation of electricity from renewable sources in Italy through the **acquisition of new wind and photovoltaic portfolios**. A2A acquired the Italian wind companies Daunia Calvello and Daunia Serracapriola, Mimiani and Montegrighine located in Puglia, Sicily and Sardinia, respectively, for a total capacity of 205 MW. The photovoltaic plants acquired in Puglia and Lazio are De Stern and Cerveteri, for about 19 MW in total. In addition, A2A acquired a further portfolio in Spain of 30 MW wind (in Catalonia) and 10 MW solar (in Andalusia).

@2030 Objective

2.9 GW of installed solar + wind capacity

6.3
Manufacturing Capital in the *Smart Infrastructures Business Unit*

The Smart Infrastructures Business Unit is responsible for developing and maintaining the infrastructures that enable the provision of electricity and natural gas distribution services, heat production and distribution, management of the integrated water cycle (aqueducts, sewers and purifiers), recharging of electric vehicles through the appropriate columns, access to broadband connectivity and Smart City services (installation and monitoring of sensors, data collection and analytics development). The maintenance and evolution of these infrastructures are amongst the key factors necessary to achieve the national and European energy policy goals.

Figure 31 Plants of the Smart Infrastructures BU for the distribution of electricity and gas

Plant type	Extension (km)
Electricity grids	**15,974** – of which 13,974 underground
Gas networks	**11,238**

[1] With a communication dated September 15, 2022, Terna published the list of thermoelectric plants not fuelled by natural gas, subject to the utilization maximization programme pursuant to Article 5-bis of Italian Legislative Decree of February 25, 2022, with effect from September 19, 2022 until the date, now scheduled, of March 27, 2023 (total days: 189). The A2A Group's plants in Monfalcone and San Filippo del Mela are included in this list. The maximization criterion envisages the continued operation of these units on coal and fuel oil, respectively; the production of the two power plants is part of the exceptional measures used by the Ministry of Ecological Transition to curb natural gas consumption, given the significant role played by Russian gas in covering national natural gas needs (around 40% during 2021). In relation to the constraints to achieve maximum productivity and the actions required to remove the aforementioned constraints, a number of authorization changes were necessary, as well as other considerations on maintenance and plant-engineering work to ensure the operation of the Monfalcone and San Filippo del Mela plants, respectively.

[2] Net electrical efficiency: ratio between the net electricity produced (..) and the energy supplied by the fuel or raw material (..) within the boundaries of the combustion unit in a given period of time. Source: Commission implementing Decision (EU) 2017/1442 of July 31, 2017 establishing Best Available Technology (BAT) conclusions, pursuant to Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants. To learn more: *https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=CELEX%3A32017D1442*

[3] The Capacity Market is a mechanism by which Terna procures capacity through long-term procurement contracts awarded in competitive auctions. To learn more: *https://www.terna.it/it/sistema-elettrico/mercato-capacita*

Electricity and natural gas distribution service

The electricity distribution grid has an extension of 15,974 km in high, medium and low voltage, of which **87% of the total is underground**. The grid is also supported by 34 primary stations and substations and 9,779 secondary stations. In contrast, the length of gas distribution infrastructure is 11,238 km in medium and high pressure. In March 2022, the extraordinary transaction for the **sale of gas ATEMs** considered non-strategic for the A2A Group was completed. The size of the transferred grid amounts to about 3,000 km, mainly from Lombardy, Veneto and Abruzzo, and involves about 170,000 users for a RAB (Regulatory Asset Based) value of 90 million euro. The grid has 175 primary stations (REMI) and 2,146 secondary stations (GRF). The electricity distribution activity is managed by Unareti, LD Reti and Retipiù in Lombardy in the provinces of Milan, Brescia, Monza and Cremona. The gas distribution activity is managed by the same companies in addition to ASVT, with the most important share of the networks located in Lombardy, in the provinces of Milan, Brescia, Bergamo, Cremona, Lodi, Monza and Pavia.

In 2022, the electricity distributed amounted to 11,087 Gwh, while gas distribution amounted to 2,251 Mm^3. Through the subsidiary Retragas S.r.l., the Group also manages the regional transmission of natural gas in Lombardy, Trentino Alto Adige and Piedmont, with more than 412 km of network moving 368 Mm^3 of natural gas in 2022.

The integration of Renewable Energy Sources (RES) into the energy mix has been identified as the main path to be pursued in the energy transition process. In this scenario, the development, upgrading and renewal of the electricity distribution network are therefore some of the main interventions to be implemented in order to enable the increase of electricity consumption and thus make it available to the system in an efficient and flexible manner.

At the end of 2022, **the Group was awarded a grant of no less than 160 million euro as part of the NRRP 'Strengthening the Smart Grid' call**. The outcome of the call for tenders consolidates the process of adapting Unareti's electricity grids to the new requirements for energy transition, the electrification of consumption and the development of distributed generation from renewable sources. This important financing will allow the construction of **seven new Primary Stations**, the modernization of 100 km of the medium-voltage network in the municipality of Milan (and its surroundings) and three new reactive energy compensation plants to be built by the first half of 2026. These are fundamental interventions for improving the quality of service, the availability of electrical power and the capacity of the network to accommodate new generation distributed in the areas of Milan, Brescia, Vobarno and Tremosine. The activity will have a total duration of about six years and will impact the local distribution system by enabling an increase in hosting capacity[4] of 2,935 MW and electrification of 1,091 MW, involving more than 1.2 million citizens.

In addition, thanks to the 'STATCOM device installation' project - which consists of the installation of three STATCOM compensators in three primary substations connected to the National Transmission Grid in Milan in strategic positions (North Primary Substation, Lambrate Primary Substation and West Primary Substation) - the degrees of reliability, security and flexibility of the national energy system were increased. The project will have a total duration of about three years and will impact the local distribution system by enabling a total electrification increase of 43.06 MW, benefiting 616,000 end users.

In 2022, the **new primary substation in San Cristoforo in Milan** was inaugurated. Primary substations serve to ensure the resilience of the city's electricity grid, to distribute energy in an integrated and capillary manner and to increase the reliability of the networks. **After that of Rozzano, San Cristoforo is the second of 14 primary substations to be built in Milan by 2030 (Unareti's Ten-Year Plan)**. It was designed precisely to meet the growing energy demand (about 15MW are expected to be needed to power the new neighbouring urbanizations), allowing energy loads to be streamlined and balanced while guaranteeing high standards of quality and service continuity. San Cristoforo also provides power (about 17 MW) for the new M4 metro line and the charging **hub** (6 MW) for ATM's 'Giambellino' electric buses.

Training activities for the project that Unareti started in 2021 with the aim of using Unmanned Aircraft System (UAS) devices, commonly called **"drones", to search for faults on overhead power lines**, check for the deterioration of plants and equipment serving electrical assets, and check for potential interference from trees, all important analyses to improve the technical quality of the electricity service, were concluded in 2022.

@2030 Objective

3.3GW Peak power of electricity grids

Integrated Water Service

Through its subsidiaries A2A Ciclo Idrico and ASVT, the A2A Group manages services related to the integrated water cycle in almost the entire province of Brescia. In all, the Group distributed 52 million cubic metres of water in 2022. In the municipalities overseen for the sewage and treatment service as well, approximately 44 million cubic metres of wastewater were treated.

Figure 32 Plants of the Smart Infrastructures BU for integrated water service

Plant type	Extension
Aqueduct network	4,061 km
Sewer network	2,650 km
Purifiers	51
Population equivalent	659,000

[4] Hosting Capability is defined as the ability to host and integrate 'Distributed Generation'. To learn more *https://www.openinnovation.regione.lombardia.it/it/news/news/view?id=6677*

Water leakage detection and reduction activities continued in 2022: more than 1,010 km of network were inspected. The **Aquarius project** is also advancing, which involves the installation of sensors (noise loggers) capable of detecting the 'noise' of a leak from a pipeline in real time, thereby changing the paradigm of water network management. The project was expanded with the installation of 175 sensors in December 2022. Always with a view to technological innovation, the experiment to test the effectiveness of utility meters with an integrated noise detection module continued in 2022 as well.

Activities continued in 2022 for the **renewal and energy efficiency of the plants, both those related to the water service and those related to the sewers and purifiers.** For the aqueducts, work was carried out on wells and repumping with the installation of more efficient pumps and the renovation of around 20 electrical power and control panels. With regard to the sewage treatment plants, on the other hand, the project involving the replacement of the motors in about 20 plants was completed. Overall, more than 50 plants were involved. The concomitant activity underway to reduce water dispersion has also brought, and will continue to bring, positive impacts in terms of reducing electricity consumption (more than 330,000 kWh) of the water service's collection and repumping plants.

Planned work on the resolution of European infringements on the Italian purification network also continued during 2022. Where not already resolved, all the work related to the agglomerations with infringements is in the process of being resolved, some being completed, others in the planning stage, with a forecast of complete resolution by 2025. In this regard, **work was completed on the construction of the new purification plant in Alfianello** (6,000 population equivalent served) and the elimination of the non-purified terminals in the municipality of Offlaga was completed. Construction work also began on the **new Vobarno purification plant (7,195 population equivalent served) and the Calvisano purification plant (7,041 population equivalent served)**.

As part of the plan to reduce water losses, the **districtization of the distribution water network** is an important action which is useful for refining aqueduct monitoring, installing flow measurement points at the inlet of each district: in doing so, anomalous trends in the flow regime fed to the district, which is indicative of possible leaks, can be detected. In addition, where possible, districtization allows the implementation of pressure management logic: the reduction of operating pressures allows both a reduction in the volumes of water lost from leaks already present and a lesser burden on the pipes, thereby preventing future ruptures. Since the start of the plan (2018), 33% of the distribution network managed throughout the Province of Brescia, or 1,080 km, has been districtized. The plan includes a special focus on the city of Brescia, where four districts will be implemented in 2022, bringing the total number to eight. The hydraulic model of the city's network was also completed, which will allow to speed up the implementation of the missing districts in the coming years, being able to simulate their optimal layout.

The new Val Trompia district purification plant was inaugurated in December. This work was fundamental for the municipalities in the area and has been awaited for many years by its families and companies. It will produce important environmental benefits for the area passing along the Mella River from the Trompia Valley to Bassa Bresciana, passing through the city of Brescia. The plant, for which 38 million euro has been invested, is located in Concesio, Dosso Boscone - a highly urbanized area - on the left bank of the Mella River and will serve the municipalities of Bovegno, Pezzaze, Tavernole sul Mella, Lodrino, Marcheno, Gardone Valtrompia, Sarezzo, Lumezzane, Polaveno, Villa Carcina and Concesio. The purification plant that has been commissioned can treat the waste water generated by 85,000 population equivalents and is already planning a second expansion phase that will allow it to serve up to 138,000 population equivalents.

District Heating Plants and Networks

Through its subsidiaries A2A Calore e Servizi and Linea Green, the Group develops and manages the district heating plants and network[5] in Milan, Sesto San Giovanni (Mi), Novate (Mi), Cassano d'Adda (Mi), Cologno Monzese (Mi), Brescia, Bovezzo (Bs), Concesio (Bs), Bergamo, Crema (Cr), Cremona, Lodi, Rho (Mi), Seregno (MB) and Giussano (MB) for a length of over 1,260 km, with a service capacity of 500,000 equivalent apartments and a volume of 120 million cubic metres served. In 2022, the distributed heating and cooling energy will amount to 3,056 GWht.

[5] Network consisting of a double pipe for the distribution of heat, in the form of hot or superheated water, located capillarily in the urban area.

Figure 33 Plants of the Smart Infrastructures BU for the district heating service

Plant type	Number of plants	Capacity	u.m.
Cogeneration plants	20	442	MW_e
		1,167	MW_t
Thermal plants	24	712	MW_t
Heat exchange	9	296	MW_t
Heat pumps	2	33	MW_t
Heat accumulators	9	26,100	m^3

In 2022, through A2A Calore & Servizi, A2A acquired **SEA Energia**, the company wholly owned by SEA that supplies electricity and heat to the two airports of Milan Linate and Milan Malpensa. The transaction resulted in the acquisition and management by A2A of the Linate cogeneration plant and the Malpensa trigeneration plant, and is a long-term partnership aimed at fostering the decarbonization process of the two Milan airports. The aforementioned agreement will allow SEA to achieve plant operating efficiencies, exploiting the technological expertise in the management of the A2A Group's power plants, as well as the full utilisation of the available thermal and electrical capacity; finally, A2A's know-how will facilitate the achievement of the goal of carbon neutrality for the two Milan airports. Thanks to this transaction, A2A can also consolidate a source of supply for the district heating network in East Milan, which is considered strategic, by dedicating the two new plants - which today have an installed thermal power of 100 MW - to the supply of new users.

A2A Calore e Servizi and Sogemi have signed a project financing agreement for the **installation of the energy infrastructure of the new fruit and vegetable logistics platforms of the City of Milan's Agrifood Market** and the implementation of the related condensation cooling, photovoltaic and consumption metering services, with measures to reduce and minimize carbon emissions. In particular, the contract provides for the design, installation and management of a cooling plant which will exploit groundwater and use eight dedicated extraction wells to integrate the cooling systems of the new halls, as well as the construction of three photovoltaic systems covering the buildings of the New Fruit and Vegetable Market. It is estimated that the above will contribute to the production of 2400 MWh of renewable energy per year, equivalent to a reduction of more than one thousand tonnes of CO_2 emissions into the atmosphere annually.

@2030 Objective

60% of the heat for the district heating network from renewable sources or waste recovery

In 2022, **Gelsia**, a company of the AEB Group, **completed the revamping of obsolete cogeneration motors at the Seregno power plant** and carried out work on the new energy plant for a large nursing home in Lissone. The works involved the upgrading and adaptation of the facility's fire-fighting network, the replacement of the uninterruptible power supply unit, an upgrade of the thermal power plant, and the start-up of a cogeneration section for the combined production of heat and electricity. The new plant will make it possible to optimize heat production processes and satisfy a large part of electricity consumption, reducing withdrawal from the grid by means of energy cogeneration. This will ensure 65% coverage of electricity consumption requirements and 40% coverage of heat consumption requirements. On the sustainability front, the new plant will save 125 tonnes of CO_2 emissions per year.

Sustainable Mobility

Created in July 2021, A2A E-Mobility carries out in particular the role of Charging Point Operator (CPO): in the field of electric mobility, it develops, maintains and manages charging infrastructures ("charging columns") with public access. **In 2022, more than 320,000 charges were carried out in the more than 400 charging columns managed by A2A (of which more than 200 installed in 2022), which corresponds to approximately 4.5 million kWh of electricity delivered. This has resulted in almost 30 million km travelled with zero emissions and the avoidance of over 3,000 tonnes of CO_2 emissions.**

In 2022, A2A E-Mobility and Enel signed a **charging network interoperability agreement**: the collaboration between the two companies will allow customers to charge their vehicles at around 15,000 charging points across the country.

In addition, A2A has signed an agreement with Hubject, the first global operator of roaming services in the electric mobility sector (active on three continents, in 28 countries and with more than 200,000 charging points), made up of a consortium of car manufacturers and companies active in the sustainable mobility sector - with the aim of **simplifying the interoperability of electric vehicle charging stations and guaranteeing immediate access to the A2A network for Italian and European citizens**. In fact, the different charging apps of any eMSP participating in the Hubject system allow to view the map of A2A's charging stations, charging rates and power output and book the charging point. The operation significantly expands the number of supported apps and makes the charging experience even simpler, making the A2A network accessible to a much larger number of users in Italy and Europe. The agreement with Hubject is part of A2A's 2030 Business Plan to promote decarbonization by investing in the electric mobility segment.

A2A E-Mobility has also played a leading role in the **A2A Group's ambitious fleet renewal project, reaching a quota of 700 electric vehicles by 2022**, the highest in Italy among large companies. Vehicle charging will be ensured by a network of 1,200 charging points installed in 90 A2A Group locations or plants, 310 of which in the Brescia Lamarmora HUB alone.

Public Lighting

A2A operates public, artistic and traffic light installations in several Italian municipalities. Through A2A Illuminazione Pubblica, the Group deals directly with the design, construction and maintenance of public lighting systems, guaranteeing a reduction in energy consumption, limited light pollution and respect for the environment through the use of the latest technology. Through its subsidiaries, the company is present in eight regions - Piedmont, Lombardy, Veneto, Emilia-Romagna, Puglia, Campania, Calabria and Sicily. **In 2022, A2A Illuminazione Pubblica took over the management of public lighting in the municipalities of Trezzano sul Naviglio, Sedriano, Abbiategrasso, San Gregorio Magno, Villanterio and Isola d'Asti, for a total of around 12,500 light points**. The efficiency works will be completed during 2023, which include the replacement of the lighting fixtures that do not comply with the Regional Law for limiting light pollution and energy saving with high-efficiency street, furnishing and decorative products equipped with LED sources. **The project will save more than 5 million kWh and avoid the emission of more than 1,300 tonnes of CO_2 into the atmosphere**.

Smart City

A2A Smart City is the Group company that provides innovative solutions to make the supply of primary goods such as water, gas and electricity smarter.

A2A Smart City's **water management** strategy is based on the key points of remote meter reading, leak detection and districtization. The most important projects in this regard include:

- remote water meter reading in Turin and province: A2A Smart City was awarded the tender called by Società Metropolitana Acque Torino (SMAT S.p.A) for the implementation of a remote reading network for water meters using LoRaWAN technology for all the water meters in the Turin area. The supply of an acquisition system for the water consumption of the 350,000 utilities managed by the SMAT group covers about 300 municipalities, with a total estimated value of about 4 million euro;
- remote water meter reading in the city of Naples: A2A Smart City won the tender organized by ABC Napoli for the design of the LoRaWAN network for the city of Naples as well. The project includes the configuration of a remote reading system to manage the 30,000 smart water meters installed in the city. A2A will take care of all the activities for commissioning the network, from its executive design and the supply of servers, to the support and training of ABC Napoli staff.

A2A Smart City also aims to promote the digitalization of cities, for example through the installation of digital islands. These stations integrate various services ranging from the possibility of charging smart devices and e-bikes (in some cases using renewable energy) to the availability of **defibrillators to support emergency management in the area**. The defibrillators, in particular, are remotely controlled to ensure that they are always operational and available when needed.

Other projects developed by A2A Smart City in 2022 of particular relevance are those aimed at the implementation of **advanced video analysis** tools, the particularity of which lies in the multiplicity of possible uses. For example, in the biomass valorization plant in Sant'Agata di Puglia, the need emerged to develop algorithms capable of detecting aggregates and then allowing the data to be used for the systems in the plant. The implemented solution has as its objectives the reduction of plant downtime due to the presence of undetected aggregates during acceptance, which cause accelerated deterioration of plant components, and the increase of biomass yield productivity in energy terms.

6.4
Cybersecurity

The A2A Group has an organizational unit that provides continuous oversight of cybersecurity management.

In particular, within the Group Security & Cyber Defence Department, the **Cyber Defence structure is the function dedicated to Cybersecurity** and which guarantees the control and governance of security on A2A's infrastructures, applications and services in compliance with **current regulations and the main industry standards and best practices** , adopting an **integrated approach within the digital sphere and industrial plants**.

In line with the **Internal Control and Risk Management System (ICRMS) of A2A S.p.A., of which it is a constituent element**, and the guidelines defined within the Group Compliance structure, the activities carried out by Cyber Defence are therefore aimed at **defining and implementing compliance and governance models, in particular of cyber risk** in order to ensure the efficiency and effectiveness of operations, adequate risk control, prudent business conduct, reliability of information, and compliance with laws, regulations and internal procedures.

To this end, Cyber Defence has set up a **monitoring and management model integrated with the ICRMS** which defines the **Information Security Management System** (hereinafter also "ISMS"), **according to the international standard ISO 27001**[7] and through which it has set up controls, organizational processes and cyber security technological safeguards for the detection, mitigation and treatment of cyber risks, both in the digital IT and industrial OT spheres.

Further completing the above, it is important to point out that this model envisages, among other things, **executive reporting carried out both on a periodic basis and on an as-needed basis** (e.g., on the occasion of particularly serious incidents) to the **executive bodies and to the structures constituting the company's internal control system**.

As regards cyber risk, on an annual basis and in an **integrated manner with the Enterprise Risk Management Department**, **cyber risk analysis and monitoring** is carried out, which in 2022 involved the Digital Department and 11 industrial sites, for a total of about 100 meetings in which more than 4,000 cyber IT/OT checks were carried out.

As regards **business continuity**, 2022 was characterized by the implementation of a Business Continuity Management System and the promotion of training activities aimed at disseminating the main concepts of business continuity to all employees, strengthening and expanding training activities through the provision of ad hoc training sessions for Business Continuity Representatives (RBCs) and their operational teams.

A2A is also working on **awareness pathways on cyber issues. An innovative programme was launched in 2022 that integrates and enriches Sicura2a**, the corporate platform that encompasses awareness campaigns, training courses and exercises, procedures and standards, and thematic in-depth studies on A2A Security.

In particular, the **Cybersecurity Awareness & Training Programme 2022-23** was launched, focusing on the increasingly topical issues of e-mail security and phishing.

Training also included **a cyber incident management OT exercise** at the company Unareti and the Valtellina core and **specialized cyber OT training courses** in the industrial area involving a total of more than 100 employees, as well as the **training course on the principles of cybersecurity** which is compulsory for all new hires and company employees.

In addition, the **Master's degree in 'Security Management'** offered by the Tor Vergata University of Rome in cooperation with A2A's Group Security & Cyber Defence Departments represented a fundamental training path for about 60 employees, eight of whom graduated with specific technical requirements to then obtain **UNI 10459:2017 certification as "Security Professionals"**.

It is also worth noting that 2022 saw the completion of important **international certification processes** by our Group, aimed at certifying that our **cybersecurity and business continuity management systems are aligned with international best practices** in terms of secure information management capabilities, business continuity processes and security of industrial architectures in the face of possible destabilising events. In particular, A2A is:

- one of the first Italian multi-utilities to obtain **ISO/IEC 27001 Certification of the Group's Information Security Incident Monitoring and Management Services Portfolio**, with the prospect of expanding the certified scope year after year;
- **the first multi-utility in Italy to obtain ISO 22301 Certification**, which this year focused on the specific scope of critical business processes such as Customer Services, Supplier Services, Energy Management and Finance. The Group plans to continue on this path and certify further high-impact business processes/companies in the next three years (2023-2025);
- **the first multi-utility in Italy, and one of the first in Europe, to obtain the certificate of conformity for industrial cybersecurity practices according to ISO/IEC 62443**, which in 2022 focused on module 3.2 related to the security of architectures and remote control systems. The prospect is to extend the certification scope to the remaining modules of the standard, so as to achieve full certification of the industrial production systems of Unareti and then Generazione Idroelettrica;
- the A2A Cyber Defence Center, which is responsible for monitoring and managing cybersecurity incidents, is aligned with best standards by obtaining **CERT qualification**[8] and is affiliated with national and international cyber intelligence bodies (CERT and CSIRT), obtaining Trusted Introducer[9] and FIRST[10] certifications.

Some statistics concerning the cyber incidents handled in 2022 by the Cyber Defence Center deserve mention:
- about 3,800 reports of anomalous cyber events analyzed and concerning ICT digital services and industrial OT;
- approximately 1,000 incidents managed, contained and mitigated in 2022.

Of these, 21 are of high and critical severity (-45 compared to 2021) and none such as to jeopardize the company's business or generate data breaches[11].

[7] A2A Spa is certified according to ISO/IEC 27001:2013 (cert. # 847/22) in November 2022

[8] Computer Emergency Response Team
[9] https://www.trusted-introducer.org/
[10] https://www.first.org/
[11] A data breach is a security breach that results - accidentally or unlawfully - in the destruction, loss, modification, unauthorized disclosure of or access to personal data transmitted, stored or otherwise processed. A personal data breach can compromise the confidentiality, integrity or availability of personal data.
To learn more: *https://www.garanteprivacy.it/regolamentoue/databreach*

7

Natural Capital

7.
Natural Capital

Background information

The 2022 World Energy Outlook compiled by the International Energy Agency (IEA) shows that the effects of the difficult economic and geopolitical scenario caused by the war in Ukraine is causing serious repercussions in global energy markets,

these include rising raw material costs and a reorientation of energy policies and priorities that push fuel choice and hinder progress towards universal energy access.

This unstable energy situation has also led to a significant increase in CO_2 emissions due almost entirely to the ETS sectors. The European target to reduce emissions by 55% by 2030 now requires an average annual reduction of more than 6% over the next eight years, a reduction that has never been approached in years of positive economic growth. An increase in emissions of around 15% in Italy has been estimated on a trend basis for the first nine months of 2022. This increase is due to the increased consumption of coal in thermoelectric generation and the significant decrease in hydroelectric production (-38% in the nine months), which brought the carbon intensity of the electricity produced to about **280 grCO_2/kWh (+20% compared to the 2020 minimum)**[1].

The drop in hydropower production was mainly caused by the water crisis in Italy in the summer of 2022, where reduced rainfall created the weather conditions for **severe and prolonged drought**, aggravating the energy situation already strained by Russia's drastic reduction in gas supplies.

The scarcity of water resources has also put the issue of water management at the centre of both national and international debate, as while there is an increasing demand for water, there is also a decrease in its availability due to climate change and emerging pollutants.

In this context, however, it must be emphasised that innovative responses to the climate crisis are emerging such as **'Nature Based Solutions' (NBS)**, which multiple environmental, social and economic benefits, linking disaster risk reduction, mitigation and adaptation to climate change, with the restoration and protection of biodiversity and ecosystems[2]. In Q1 2022, the first draft framework of the Taskforce on Nature-related Financial Disclosures (TNFD) was published to incorporate the analysis of nature-related risks and opportunities at the heart of corporate and financial decision-making.

[1] Quarterly Analysis of the Italian Energy System (Q2 and Q3 2022) *https://www.pubblicazioni.enea.it/le-pubblicazioni-enea/analisi-trimestrale-del-sistema-energetico-italiano/fascicoli-2022/analisi-trimestrale-del-sistema-energetico-italiano-ii-trimestre-2022.html*
[2] *https://ipccitalia.cmcc.it/nature-based-solutions/*

2022 in facts

11 GW unblocked thanks to the acceleration of authorization procedures for renewable plants, of which 9.5 GW will be commissioned in 2023[3]

2045 year when TCO (Total Column Ozone) will return to 1980 values in the Arctic[4]

-14 TWh hydroelectric production (-25% compared to the minimum of the last 15 years)[5]

60% the ISPRED energy transition index (Decarbonisation Price Security Index) in Q3 compared to 2021[6]

SDGs impacted

Material topic

Circular Economy / Responsible Water Management / Climate Change / Biodiversity / Pollution Prevention

Impacts for A2A

Strategic Plan @2030

226 CO_2/kWh
Scope 1 + Scope 2 emission factor

KPIs @2022

73% of non-hazardous waste produced sent for recovery

418 GWh electricity consumed (99% renewable)

8.4 Mm^3 water consumed

146,000 TJ of fuels consumed

[3] *https://www.mase.gov.it/comunicati/rinnovabili-mite-chiarimenti-su-autorizzazioni-aree-idonee-e-comunita-energetiche*
[4] Scientific Assessment of Ozone depletion (2022) *https://ozone.unep.org/system/files/documents/Scientific-Assessment-of-Ozone-Depletion-2022-Executive-Summary.pdf*
[5] *https://www.pubblicazioni.enea.it/le-pubblicazioni-enea/analisi-trimestrale-del-sistema-energetico-italiano/fascicoli-2022/analisi-trimestrale-del-sistema-energetico-italiano-ii-trimestre-2022.html*
[6] *https://www.pubblicazioni.enea.it/le-pubblicazioni-enea/analisi-trimestrale-del-sistema-energetico-italiano/fascicoli-2022/analisi-trimestrale-del-sistema-energetico-italiano-ii-trimestre-2022.html*

Circular Economy

The Group promotes a production and consumption model aimed at extending the life cycle of products and services, with the objective of minimizing the use of non-renewable resources (virgin raw materials), minimizing waste and other environmental impacts related to the non-recycling and re-use of materials. To this end, A2A promotes separate waste collection activities and encourages the energy utilization of waste. Furthermore, the Group also takes environmental, social and governance aspects into account in its strategic business development choices related to the circular economy pillar of the Business Plan.

#zero landfill #recovery #circularity of resources #waste valorization #separate waste collection

Possible failure to reach target of:
- waste recovery and treatment;
- separate waste collection.

Possible delay in the evolution of the national regulatory framework supporting the development of the circular economy sector (e.g., End of Waste legislation).

Possible difficulties in obtaining permits needed for the construction of plants for the recovery of energy and materials from waste.

Possible unfavourable price trends for recovered materials.

Risk factors

Opportunity factors

Regulatory framework favourable to circular economy development.

Changing consumer behaviour when buying goods and services.

Management method (DMA)

Mitigate

Business Plan (Circular Economy pillar).

Adoption of best waste management and treatment technologies.

Planning of growth strategy in circular economy, also through M&A operations.

Listening and dialogue with local and institutional stakeholders.

Monitoring regulatory changes.

Organizational structure dedicated to business development in the environmental sector.

Seize

What we have done

2022 Actions

- Membership in the Alliance for the Circular Economy
- Secondary raw material produced in Group plants increased
- Inaugurated 2 new OFMSW treatment plants

What we are doing

Sustainability Plan Actions

Waste recovery and treatment

Reduction policies

Pollution Prevention

The Group adopts a system of preventive measures and controls aimed at limiting or eliminating all forms of pollution (environmental, noise and light), minimizing any negative impact on human health and the environment. In addition, thanks to constant monitoring of the environmental performance of infrastructures, plants and vehicles of all Group companies, A2A guarantees full compliance with current environmental legislation and EU regulations, thereby reducing the risk of accidents that could worsen the quality of air, water and soil.

Potential or suspected non-compliance with environmental legislation and/or any environmental damage arising from the Group's processes or activities.

Any abnormal discharges into the public sewers that reach the Group's treatment plants with potential criticality on treatment efficiency.

Possible non-compliance with community regulations on sewage treatment.

Any critical issues with the landfill leachate collection and treatment system.

Possible enactment of more restrictive and difficult to enforce environmental regulations.

Risk factors

Opportunity factors

Installation and operation of charging systems for electric vehicles.

Management method (DMA)

Mitigate

ISO 14001 certifications.

Operational control procedures.

Procedures and emergency plans.

Maintenance plan.

Annual HSE internal audit plan.

Investment plan agreed with the entities for the treatment of civil sewage discharges envisaged for the integrated water service sector.

Participation in working tables with trade associations.

Preventive maintenance of vehicles and limiting air and noise emissions from company vehicles.

Replacement of vehicles with less environmental impact.

Seize

What we have done

2022 Actions

- Promotion of electric mobility
- Agreement signed for the installation of the energy infrastructure of the new fruit and vegetable logistics platforms of the Milan Food Market

What we are doing

Sustainability Plan Actions

District heating

Emissions

Responsible Management of Water Resources

The Group adopts practices aimed at improving the management of water resources in its plants and business units, as well as optimizing user consumption, in order to minimize waste due to water losses along the network and thus increase the availability of water resources. A2A also promotes water recycling by encouraging water treatment and purification practices, especially in water-stressed areas. Finally, A2A is actively committed to improving the efficiency and safety of existing structures in the territories where it operates, constantly monitoring activities in order to ensure compliance with current regulations.

#Water quality #Minimizing leaks #Conscious use #Water stressed areas

Possible failure to reach the goals of the Sustainability Plan

Possible interruptions of the integrated water service, e.g., in case of prolonged periods of drought (TCFD page 56-60).

Possible insufficient attention to water consumption optimization.

Possible use restrictions in hydroelectric, due to competition for other uses by other stakeholders (TCFD page 56-60).

Possible restrictions on plant operations due to drought or temperature increases in water bodies (TCFD page 56-60).

Possible and accidental non-respect of the quality levels of water distributed and discharged, established by law.

Possible enactment of stricter regulations on the quality of water for human consumption.

Risk factors

Opportunity factors

Energy valorization of water released for irrigation purposes from hydroelectric basins.

Enhancement of investments in saving and optimizing the use of the water resource for drinking purposes.

Use of innovative technologies to survey geologic and hydrogeological data for aquifer research purposes.

Collaborations with universities for the experimentation of innovative processes to remove pollutants from water discharged for drinking purposes.

Management method (DMA)

Mitigate

Technological innovation for network leak detection.

Development of initiatives aimed at optimizing procurement and efficient management of the water resource.

Awareness raising initiatives on responsible water consumption.

Insight into risks from climate-related hazards, including in accordance with the EU taxonomy.

Investments to optimize the hydroelectric use of water released, in order to make it available for other uses.

Continuous monitoring of the quality of water withdrawn, distributed, treated and discharged.

Use of state-of-the-art water treatment technologies.

Oversight of regulatory update

Listening to stakeholder needs.

Seize

What we have done

2022 Actions

- Analyzed and constantly monitored water-stressed areas
- Developed systems to promote the recovery and reuse of water in production cycles (20% of the water withdrawn by the Generation BU is reused)
- Elaboration of the Safety Plan for the Brescia-Botticino-Bovezzo-Cellatica-Collebeato water systems and in parallel for the Ospitaletto water system continued
- Drinking water quality monitoring is being implemented In the districts of the city of Brescia.

What we are doing

Sustainability Plan Actions

Water

Climate Change

The Group encourages the development of sustainable technologies and the use of renewable energy, contributing to the energy transition of territories and simultaneously to the fight against climate change. In addition, A2A promotes energy efficiency activities aimed at reducing greenhouse gas emissions in both the Group's plants and with its customers, thus contributing to the achievement of international targets for reducing climate-changing emissions (e.g., the Paris Agreement).

#Emission reduction #Renewable sources #Energy efficiency #Energy transition

Changes in physical climate parameters with potential adverse impacts on production and/or sales volumes of energy products and services and/or quality of grid services (TCFD page 56-60)

Possible intensification of extreme natural phenomena that may cause impacts on production activities or services (TCFD page 56-60)

Possible loss of competitiveness in case of insufficient awareness of contextual changes (regulatory, legal, market, opinion, etc.) related to the energy transition.

Possible failure to meet the Group's climate change mitigation targets and reduce greenhouse gas emissions

Risk factors

Opportunity factors

Strategic Plan focused on energy transition and integrated with the Sustainability Plan.

Experimentation with technologies to capture CO_2 from combustion gases.

Management method (DMA)

Mitigate

New Emission Reduction Policy 2030

Business Plan (Energy Transition pillar).

Offering innovative energy services and those with a reduced impact on the climate.

Renewable energy investment plans.

Emissions strategy in line with COP21.

Climate risks brought to the attention of the Risk Control Committee on a semi-annual basis.

(TCFD page 56-60).

Seize

What we have done

2022 Actions

- Launched the 'Retipiù Meno CO_2' project, a major digitalization activity to identify and eliminate methane leaks in the network
- Unareti awarded 'Gold Standard'
- Renewal of the company car fleet with the acquisition of about 700 electric cars and the installation of more than 1,200 charging points in 90 Group locations
- Launched an internal working group focused on identifying strategic and technological solutions to achieve Net Zero by 2040 for A2A

What we are doing

Sustainability Plan Actions

Emissions

Sustainable mobility

Energy efficiency in end use

Renewables

District heating

Biodiversity

The Group promotes the protection of the landscape heritage and the flora and fauna of the territories in which its plants or operating sites are located. A2A is actively committed to protecting biodiversity and not interfering with the protected area system through its operations. In addition, in order to minimize the impact on biodiversity and ecosystems in new intervention areas, the Group carries out constant analyses, monitoring and dialogue with local communities and other stakeholders, aimed at incorporating any critical issues and considerations on the Group's operations in the territories of reference.

#Ecosystem protection #habitat #Negative externality management

Possible shortcomings in the controls on the environmental impacts of the plants, activities or services offered by the Group.

Possible tightening of "Ecological Outflows" regulations.

Risk factors

Opportunity factors

Not yet identified.

Management method (DMA)

Mitigate

Monitoring procedures and systems to minimize possible impacts on biodiversity.

Containment plans and programmes dedicated to emergencies.

Collaboration with entities, institutions and associations to protect the territory.

Experiments on ecological outflows in agreement with the authorities.

Definition and implementation of release plans of ecological outflows in accordance with obligations.

Seize

What we have done

2022 Actions

- Publication of the Biodiversity Protection Policy
- Implementation of a programme to protect birdlife in the Alto Garda Bresciano area
- Support for the "Migrandata - Cervati" project, aimed at studying the effects of climate change on migratory birds

What we are doing

Sustainability Plan Actions

Biodiversity

7.1
Circular Economy

The circular economy is one of the two pillars on which A2A's Business Plan is based. The Group has traditionally been a leader in the collection, treatment and recovery of municipal waste and continues its commitment to the construction of new plants that enhance the value of separate waste collection as a no longer secondary, but now ordinary, source of raw materials. In this regard, we should highlight the recent commissioning (October 2022) of a new composting plant using anaerobic digestion of the organic fraction of municipal waste in the Cavaglià (BI) Hub and a similar plant in Giussago Lacchiarella.

Alliance for the Circular Economy

The Alliance for the Circular Economy is the joint initiative of 12 Italian companies to promote circularity in business strategies. The Alliance was founded in 2017 with the intention of driving an overall evolution of the production context in a circular perspective that enhances the peculiarities of Made in Italy, focusing on innovation, encouraging the sharing of experiences and best practices and promoting constant discussion with the entire ecosystem of stakeholders. The companies participating in the Alliance are interpreters of a transformative economy, of innovative rethinking of the entire production cycle, the use of resources, business models. The following are members of the Alliance, in addition to A2A: Aquafil, Cassa Depositi e Prestiti, CIRFOOD, Costa Crociere, Enel, Gruppo Hera, Intesa Sanpaolo, Gruppo Ferrovie dello Stato, Gruppo Maire Tecnimont, Salvatore Ferragamo, Touring Club.
During 2022, the Alliance produced two guidance documents on circular declarations and communications and on circular procurement. The first document developed Guidelines for the implementation of communication policies that adhere to the principles shared by the companies of the Alliance. The document includes a common definition of circular economy and a set of core principles that companies should consider when making circular statements and communications. The second document includes a set of criteria and tools for including circularity criteria in procurement processes, a theoretical and organizational framework for the implementation of circular procurement processes and a common questionnaire for supplier involvement.

The international situation, which did not favour industrial activity due to the well-known increases in the costs of energy sources and raw materials, had a limited effect on the production of secondary End of Waste raw materials from urban collection, which suffered only a slight decrease.

Plastics sorted by the Cavaglià and Muggiano plants in 2022 amounted to 37,100 tonnes (of which 16,030 tonnes of PET), slightly down from the previous year (-3%). In addition to these fractions, which are ready for extrusion plants, 47,350 tonnes of plasmix (mixed small-sized plastics) were sent to specialized plants for further material recovery.

On the other hand, the **Asti plant** recorded an appreciable increase in the production of furnace-ready glass scrap in 2022 (+5.3% compared to 2021), thanks to the revamping of the plant and the increase in its production capacity, which allowed it to produce 105,867 tonnes.

Agripower produced more digestate from the anaerobic digestion of vegetable matter, used as a soil conditioner in agriculture in 2022, amounting to 387,058 tonnes (+4% compared to 2021), while there was a decrease in the overall compost produced from the green fraction due to reduced production of garden clippings and pruning caused by the particularly dry season (-31% compared to 2021), which amounted to 46,932 tonnes in 2022.

There were decreases in the percentage of **separate collection** in several capitals served in 2022 due to changes in legislation or specific situations, described below. In general, the possibility for commercial or manufacturing companies to manage the fractions of separate waste collection (especially paper, wood, plastic and glass) through private recovery channels has removed quantities of recoverable materials from the public service provider's circuit. In the case of Brescia (separate collection equal to 66.6%, -4.5 percentage points compared to 2021), the drop was influenced by almost three percentage points due to the classification of the green fraction 'produced' by gardeners as special waste, and therefore out of the urban waste circuit, as well as the elimination of a significant number of Green Boxes, containers for vegetable waste (such as mowed grass, branches and leaves) and the transition to door-to-door collection with a reduction in the phenomenon of waste conferred by users outside the municipality. In Como (separate collection 67.9%, -2.2 percentage points compared to 2021) and in Liguria (separate collection 64.0%, -4.6 percentage points compared to 2021), the recovery of tourist flows to pre-COVID levels led to an increase in undifferentiated waste from territorial waste bins and a decrease in the sorting capacity of tourist users. Milan remained substantially stable (separate collection 62.0%, -0.4 percentage points compared to 2021), although with a slight decrease, and the other capitals did well, among which Cremona stands out, increasing its collection efficiency to 77.9% (+3.1 percentage points compared to 2021).

In 2022, the total amount of **urban waste collected** also decreased (-1.4%) to 1,677,476 tonnes, and was mainly destined for material recovery (69.7%) or energy recovery (29.8%). A minority share of the urban waste collected was destined for disposal in landfills (0.5%), in relation to contingent territorial situations (temporary unavailability of Mechanical Biological Treatment plants and lack of direct waste-to-energy capacity in Liguria).

Figure 34 Separate waste collection by the Group*

	2020		2021		2022	
	Quantity collected (t)	Index %	Quantity collected (t)	Index %	Quantity collected (t)	Index %
Milan	379,035	62.6	391,179	62.4	392,018	62.0
Bergamo	42,583	73.1	45,429	76.7	44,630	77.0
Brescia	80,117	72.4	79,222	71.1	68,101	66.6
Como	25,996	70.4	27,103	70.1	26,046	67.9
Cremona	25,949	73.4	26,632	74.8	25,064	77.9
Lodi	14,308	76.0	14,594	75.6	16,020	77.0
Waste collection Lombardy provinces (Bg, Bs, Co, Cr, Lo, Mb, Mi, Mn, Va*)	95,207	67.6	589,104	77.8	559,420	76.2
Waste collection Liguria	19,403	65.2	28,950	68.6	32,866	64.0
Total/average	981,921	**69.4**	1,202,214	**70.7**	1,164,163	**69.7**
Total/average excluding Milan	303,563	**70.5**	352,348	**71.1**	772,146	**74.5**

* For 2022, the contribution of the province of Varese was added to the Lombardy provinces.

A2A's activities mainly generate special waste. The increased production at the Monfalcone Power Plant led to a higher production of non-hazardous waste, which was offset by a lower production of waste from maintenance and demolition in 2022 compared to the previous year; therefore, overall the **Generation BU** had a decrease in both non-hazardous waste, amounting to 25,856 tonnes (-3.8% compared to 2021), almost entirely sent for material recovery (96%), and hazardous waste, amounting to 5,068 tonnes (-2.8% compared to 2021).

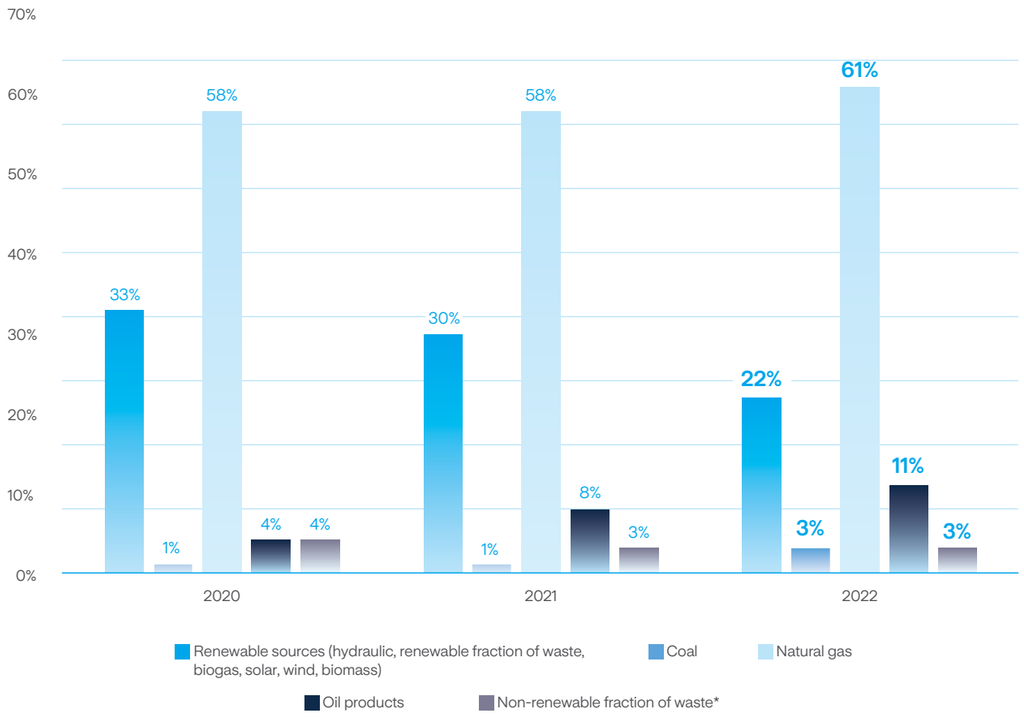
There was a slight increase in the production of non-hazardous waste within the **Smart Infrastructures BU**, with a total of 28,360 tonnes in 2022 (+2.4% compared to 2021), which was affected by the increased production of sewage sludge and the massive meter replacement campaign. The BU also produced a higher quantity of hazardous waste, amounting to 657 tonnes (+49.7% compared to 2021), mainly due to the disposal of residual lime no longer used at the Lamarmora Power Plant, following the definitive discontinuation of the use of coal.

The decrease in leachate produced in landfills, largely due to the drought, led to a sharp drop in non-hazardous waste produced by the **Waste BU** in 2022, amounting to 433,145 tonnes (-16.2% compared to 2021), while hazardous waste decreased slightly to 111,270 tonnes (-3.5%). On the other hand, the amount of non-hazardous waste produced in the **Corporate and Market area** returned to physiological levels, i.e., 308 tonnes compared to more than 11,500 tonnes generated by the extraordinary demolition and reclamation activities carried out in 2021.

7.2
Energy Transition

In 2022, the Ministry of Ecological Transition initiated the 'Plan for maximizing electricity production from fuels other than natural gas', with the intention of reducing the risks associated with a potential total disruption of gas flows from Russia and to meet European demands in terms of reducing consumption for the period 2022-2023. Therefore, the Italian electricity market, like the European one, was characterized by the 'reignition' of coal- and oil-fired power plants. The S. Filippo del Mela and Monfalcone Power Plants were included in the maximization programme - and therefore in continuous operation since September 2022 - for which an authorization process for reconversion had already been started, with the aim of decommissioning the coal used for power generation. Overall, the thermoelectric production of the A2A Group's power plants increased in 2022, and as a result, the composition of the energy mix changed compared to 2021. In particular, the contribution of coal increased from 1% in 2021 to 3% in 2022, that of heavy fuel oil from 8% to 11%, while the share of natural gas, which stood at 58% in previous years, increased by 3 points. **The percentage of production from renewable sources (hydro, solar, wind, biogas, biomass and the renewable fraction of waste) decreased to 21%**, despite the acquisition of wind and solar power plants (+292 GWh produced from these sources compared to 2021), due to the lower hydroelectric production, which was almost halved (-1,500 GWh compared to 2021) due to the low water availability conditions. The production attributable to the non-renewable fraction of waste instead remained constant.

Figure 35 Percentage of electricity produced by type of source (percentage of the total)



* The share of electricity from biodegradable waste is calculated for each waste-to-energy plant and derives from both an analytical procedure and a lump-sum estimate with reference to Italian Ministerial Decree of July 6, 2012.

Overall, the production of thermal energy through waste and biomass utilization decreased due to the lower demand for heat from district heating users. Electricity production (which also includes the contribution of biogas engines) instead remained virtually unchanged.

Figure 36 Energy produced by waste, biomass and biogas valorization on total energy produced

	2020	2021	2022
Thermal energy from waste-to-energy and biogas process	59%	58%	50%
Electricity from waste-to-energy and biogas process	8%	8%	8%

The overall reporting of CO_2 emissions, both direct and indirect, is presented in the table below and shows substantial growth in all items. See the following paragraphs for the details of the analysis.

Figure 37 Declaration of greenhouse gas emissions (t CO_2 eq)

	2020	2021	2022
Direct greenhouse gas emissions - Scope 1	5,855,402	7,127,422	8,631,749
Indirect greenhouse gas emissions - Scope 2			
Location based	107,439	108,098	109,502
Market based	6,948	1,694	1,919
Transmission and distribution losses			74,004
Other indirect greenhouse gas emissions - Scope 3	1,464,134	1,876,497	2,553,461

Direct Emissions Scope 1

Direct greenhouse gas emissions (Scope 1) are mainly related to combustion processes associated with the Group's businesses. These emissions have increased in line with the increase in energy production; in particular, the Generation BU has increased absolute emissions by 24%, although the specific emission factor, i.e., related to energy production, has increased by only 17% thanks to the contribution of the renewable fraction. The Smart Infrastructures BU increased its emissions, due to the entry of A2A Airport, while the Waste BU's combustion emissions remained virtually unchanged. The Group's CO_2 emission factor related solely to direct Scope 1 emissions stood at 378kg/MWh, an increase of 15% over the previous year.

In the Emission Trading System (ETS), the free allowances allocated to the Group's plants for 2022 amount to 53,491.

Figure 38 CO_2 emissions from combustion processes (t)

	2020	2021	2022
Generation and Trading BU	4,260,787	5,518,988	6,864,577
Smart Infrastructures BU	329,704	307,845	356,036
Waste BU	1,141,439	1,158,388	1,160,312
Total	5,731,930	6,985,221	8,380,925

Figure 39 Emission factor (kg/MWh)

	2020	2021	2022
Generation and Trading BU	299	335	391
Smart Infrastructures BU	272	268	240
Waste BU	384	352	371

The Scope 1 emissions, in addition to emissions linked to the combustion processes of fuels and the non-renewable part of waste, also include:

- biogas escaping capture in landfills, which in 2022 decreased by about 34% also due to decreasing degradation processes in landfills in post-operational management;
- natural gas dispersed by networks, the value of which has tripled since 2021 due to the expansion of the calculation scope (dispersion from plants and not only from networks is also included). Several projects are underway to reduce this type of emission, described in the following sections;
- emissions from the vehicle fleet remained substantially unchanged (-1%);
- emissions from accidental leaks of fluorinated greenhouse gases from air conditioning equipment and electrical switches, the value of which is insignificant and has a variable trend.

Retipiù Meno CO_2

The AEB Group company **Retipiù** carried out the '**Retipiù Meno CO_2**' project, an important digitalization activity for the identification and elimination of dispersions in the distribution network. In addition to improving the safety of the network, the project aims to achieve a reduction in CO_2 emissions into the atmosphere by eliminating so-called fugitive methane emissions. During 2022, 1,700 km of the network were inspected, and more than 600 gas leakage points were identified. In 2022, Retipiù carried out **the revamping of the pre-heating systems of six Re.Mi stations**: the heating systems were redesigned, adopting more efficient solutions and at the same time the insulation of the tube bundles was carried out. The efficiency measures generated a considerable improvement in performance, reducing consumption and emissions into the atmosphere. Lastly, a **fuel cell-powered micro-cogeneration plant** was activated. Electricity is fed into the distribution grid, while thermal energy is used by a lithium bromide absorber system to supplement the existing air-conditioning system serving RetiPiù's company changing rooms.

In 2021, Unareti joined the initiative Oil & Gas Methane Partnership (OGMP2.0), the new framework for reporting methane emissions introduced by the United Nations Environment Programme (UNEP) in 2020, and part of the broader International Methane Emission Observatory (IMEO) initiative. As part of this initiative, **Unareti was awarded the "Gold Standard" recognition** as highlighted in the IMEO report "An Eye on Methane", confirmed again for 2022. In addition to ambitious methane emission reduction targets (-40% by 2025 vs 2019), the award also recognizes the robustness of existing reporting processes and the plan to further improve them by 2024.

In 2022, **the A2A Group's car fleet was renewed** as a result of tenders for the renewal of owned and hired vehicles, with a strong push for electric cars. Instrumental vehicles (cars and vans), which represent the main share of the vehicles used by the Group, were renewed, excluding special vehicles for environmental hygiene. The renewal of the fleet involved the acquisition of about 700 electric cars and the installation of more than 1,200 charging points at 90 Group locations. With this project, A2A has set itself the goal of encouraging the adoption of sustainable mobility thanks to a higher percentage of electric cars than all Italian companies with comparable-sized operating fleets and a charging infrastructure powered by certified 100% renewable energy. The initiative will also allow to reduce CO_2 emissions by more than 25% compared to the previous company car fleet, equal to around 1,000 tonnes per year.

Indirect Emissions Scope 2

With regard to indirect Scope 2 emissions from electricity purchases, intra-Group green energy supply was confirmed for almost all sites. Also in the Scope 2 category, the calculation of emissions related to electrical distribution losses was implemented.

Indirect Emissions Scope 3

With a view to improving the analysis of its impacts on the climate, the A2A Group has begun an in-depth analysis of the various types of indirect emissions associated with its activities, with reference to the GHG Protocol's Scope 3 categories.

Therefore, indirect CO_2 emissions from the following activities were calculated for 2022:

- upstream value chain, for example extraction and refining of fuels and electricity used in the Group's operations;
- treatment of waste produced by the Group at third-party plants;
- business trips;
- management of third-party assets.

Figure 40 Total indirect greenhouse gas emissions (Scope 3)

	2022
Total indirect greenhouse gas emissions (Scope 3)	**2,553,461**
of which:	
Fuel and energy activities not included in Scope 1 or 2	1,643,777
Waste generated	77,243
Business trips	797
Leased assets (upstream)	831,644

The Decarbonization Path of A2A

On March 2, 2020, the SBTi declared that A2A's direct and indirect CO_2 emission reduction targets (Scope 1-2) are aligned with the reductions required to keep global warming below 2°C. The Group estimates to reach a value close to 226 gCO_2/kWh within the decade - equivalent to a 47% reduction in the CO_2 emission factor compared to the 2017 value (425 gCO_2/kWh).

Figure 41 Science Based Target emission factor

	2020	2021	2022	2025 Objective	2030 Objective	2030 SBTi Objective
gCO_2/kWh	310	332	386	296	226	230

In this path, the dynamics triggered by international tensions and national and EU measures to mitigate their effects have led to an increase in the Group's emission factor compared to 2021.

In this sense, A2A also reaffirmed its commitment to the ecological transition in the latest Strategic Plan update, declaring its intention to **reach net zero Scope 1 and Scope 2 emissions by 2040**. To make this commitment a reality, an internal working group was launched in 2022 that is focused on identifying strategic and technological solutions for achieving this goal. Coordinated by the Sustainability Development Department, the working group comprises the Strategy, R&D, Environmental Governance, Finance and Supply Chain Departments. Numerous meetings were held with internal contacts and Business Units during 2022. The group shares its progress with the CEO and some first reports on a quarterly basis. Three phases of action have been identified: an initial transition phase with investments in renewable sources and the launch of Carbon Capture Utilization & Storage (CCUS) pilot projects to be applied to the Group's waste-to-energy plants; a second phase focused on the phase-down of certain carbon intensive plants, the introduction of new technologies in thermoelectric production (blending hydrogen + gas), the application of the first full-scale CCUS plants on A2A's main waste-to-energy plants and continued growth in RES, and a third phase of the extension of CCUS plants, growth in RES and possible offsetting of residual emissions.

Consistent with a net-zero strategy that encompasses all of the Group's emission sources, A2A has also published a commitment document to reduce emissions throughout its value chain (Scope 3), focusing on four areas:
1. Accelerating the energy transition with its own technologies;
2. Investing responsibly;
3. Promoting positive impact engagement with the entire value chain;
4. Implementing sustainable corporate practices:

It is also important for a company like A2A to consider the contribution it makes with its activities and technologies to the decarbonization of the country's system. The growth of renewable sources and the efficiency of energy production have contributed to avoiding both the emission of significant quantities of carbon dioxide into the atmosphere and the consumption of equally significant portions of primary energy (expressed in tonnes of oil equivalent). Overall, in 2022, the use of waste-to-energy, production from renewable sources and efficient cogeneration **made it possible to avoid the production of 2.3 million tonnes of CO_2 and save almost 1 million TOE of primary energy.**

Other Polluting Emissions

The atmospheric emissions of macro-pollutants, always contained at the lowest possible levels thanks to combustion technologies and abatement systems, show different trends. The nitrogen oxides present in the flue gases of all types of combustion plants and emitted in concentrations that are always below the legal limits, rose by 14% due to the inclusion of the companies TecnoA and A2A Airport in the reporting perimeter and increased thermoelectric production.

Sulphur oxides increased by 94% due to the increased use of heavy fuel oil and coal. The amount of total dust emitted also increased by 71%, for the same reason. It should be noted that the specific emissions, i.e., referring to net production, are comparable to historical values, confirming the maintenance of the performance already achieved in previous years in terms of efficiency in the abatement of emitted pollutants.

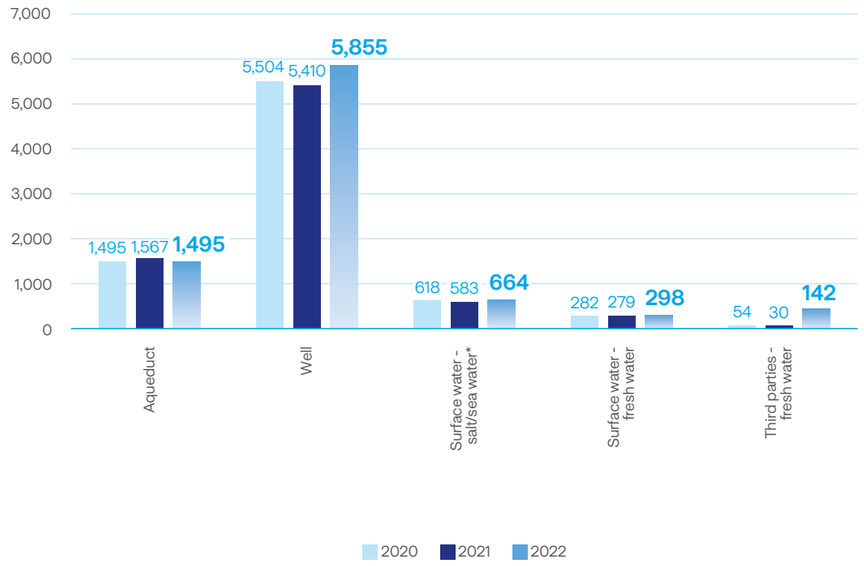
Figure 42 Total Group emissions (t)

	2020	2021	2022
NOx (t)	2,329	2,928	3,308
SO_2 (t)	539	495	959
Dust (t)	40	31	53

7.3 Responsible Management of Water Resources

The Group is aware of the importance of the sustainable management of water resources, which are increasingly subject to anthropogenic pressures that result in alterations to the quantitative and qualitative characteristics of water. In order to reduce consumption, the Group adopts practices for the recovery of process water and rainwater, the latter for the irrigation of green areas, the filling of fire fighting tanks and the recycling of washing water. Cooling water is returned in its entirety to the same water bodies from which it was withdrawn and with the same quality characteristics, except for a rise in temperature, in any case lower than the applicable limits. At the hydroelectric plants, water used to operate the plants and produce energy is withdrawn in a manner that ensures compliance with the Minimum Vital Flow in order to protect river habitats, and is returned with the same quality characteristics. **In 2022, the Group's water consumption increased by 7% year-on-year, totalling 8.4 million m^3 due to both the increase in energy production in 2022 and new acquisitions during the year**.

Figure 43 Consumption of water resources by type (thousands of m^3)



* Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride) >1000 mg/l.

Sustainability in the management of water resources also means **maintaining a greater level of control over water withdrawals in water-stressed areas,** impacted by the following factors: scarcity of fresh water available and a possible complexity in pumping water and distribution to users. Taking as reference the indications of the "Aqueduct" tool of the World Research Institute, the plants in Sicily, Calabria, Abruzzo and, for the integrated water service, the network in the Lombardy Mountain Municipalities, located in Valsabbia (BS), were identified as "critical". It should be noted that the classification of water stress area conferred to the Region of Sicily depends on the scarce availability of fresh water; therefore, the salt water withdrawals made by the San Filippo del Mela plant do not negatively impact the availability of the resource. Finally, the classification of Valsabbia municipalities as water stress areas is justified by the fact that water resource withdrawals come from springs, for which a constant availability of water is not guaranteed.

Due to an increase in production compared to the previous year, there was a 7.8% increase in consumption from wells and a 10.5% increase in consumption of salt/sea water from surface water bodies in these areas. On the other hand, the reduced operation of the Gissi Power Plant, which receives water from the consortium purification plant, led to a 43.3% reduction in fresh water withdrawals from third parties. The amounts of salt/sea water derived from surface water bodies, which are subsequently returned to the withdrawal body, increased by 5% compared to 2021, proportional to the production trends of the San Filippo del Mela Power Plant. On the other hand, there was a decrease of 18% in water derived for hydroelectric purposes from surface water bodies, due to

the water shortage that marked the reporting year. This water is subsequently returned with the same quality characteristics.

Withdrawals

Due to the scarcity of water resources in 2022, there was a 43% reduction in the amount of water derived from surface water bodies for hydropower production, totalling 1.7 million m^3 of water. The total volume of water released for Minimum Vital Flow is in line with that of last year, for a total of almost 445 million m^3.

Water consumption by the Generation and Trading BU amounted to 3.3 million m^3 and was used for process purposes. This quantity increased by 11.2% compared to the previous year, as a result of increased production at the San Filippo del Mela and Monfalcone Power Plants. Over the years, systems have been developed to favour the recovery and reuse of water in production process in order to reduce the withdrawal of this resource as much as possible; thanks to these efforts, in 2022 about 678,000 m^3 of water was recovered in the Generation BU production cycles.
In addition to this aspect and to protect the most 'valuable' water, especially in the current context of particular water stress, where possible, water from less noble sources - such as rainwater or from purification processes - is used for some production processes at the Group's plants: this is the case at the Gissi Power Plant, where purified water from the consortium on site is taken for the production of demineralised water.
Salt and sea water derived from surface water bodies (CIS) and returned for cooling uses increased by 16.8% over 2021, commensurate with the increased production recorded at the Monfalcone and San Filippo del Mela Power Plants. Fresh water withdrawn from CIS for cooling and returned also increased by 11.7% in 2022, due to the increased production of the other plants of the BU.

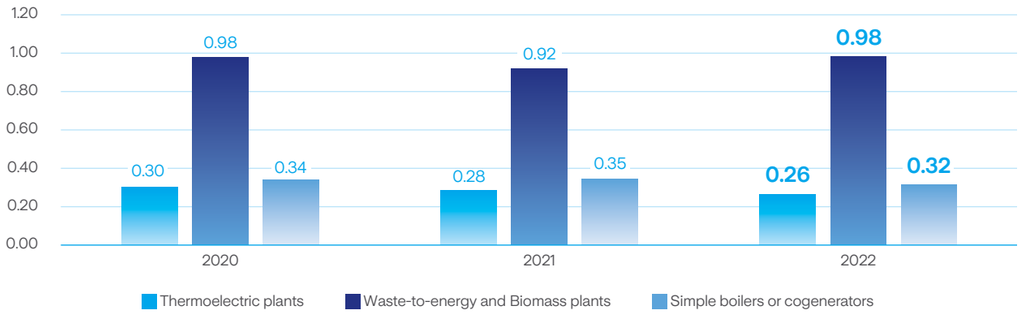
The consumption of water resources is also a relevant aspect for the cooling of combustion ashes at the waste-to-energy plants, in the other plants of the Waste BU and in the activities for street cleaning, washing of sweeping grounds and vehicles used for services to citizens. In 2022, there was a 7.7% increase in the amount of water procured by the Waste BU, standing at a total of 3.6 million cubic metres. Of this consumption, 84.8% is made up of water withdrawn from wells and only 15.1% is made up of water from aqueducts, in order to minimize the consumption of "precious" water.

To this end, in the Brescia Waste-to-Energy Treatment Plant, rainwater is used for process purposes and for extinguishing bottom ash at the boiler bottom, instead of more noble water.

In the Smart Infrastructures BU, water is used for cooling the stations serving the electricity distribution grid: in 2022 the withdrawals were in line with 2021. At the heat production plants, process water consumption stood at 1.4 million m^3, a slight increase compared to 2021 due to the inclusion of new plants in the reporting scope. Finally, the quantities of water derived and returned to groundwater by the BU in 2022 for the operation of heat pumps remained in line with those of previous years.
For the reporting year, attention was also paid to the water consumption used per unit of energy produced at the Group's energy production plants. The figure for thermoelectric and waste-to-energy plants did not significantly change, while the figure for cogeneration decreased by 7% compared to 2021.

The total process water consumption of the power generation plants was 0.36 m^3/MWh.

Figure 44 Water used per unit of energy produced (m^3/MWh)



Effluents

With regard to the discharge of wastewater that cannot be reused in the production cycles and cannot be recovered, the Group guarantees careful monitoring of the volumes discharged and of the relative polluting loads, in compliance with regulatory and authorization requirements. The Waste BU industrial wastewater discharges decreased by 4% compared to 2021. The decrease in discharges from the Crema chemical-physical treatment plant contributed to this variation, correlated to the lack of atmospheric precipitation. The Smart Infrastructures BU's industrial discharges, including those related to the provision of the integrated water service, amount to 589,000 m^3, a decrease of 30% compared to 2021. This reduction is to a large extent attributable to the decrease in discharges from the North Power Plant, which include the contributions generated by the production of osmosis water for the replenishment of the district heating network. The amount of water discharged is affected by variations in the amount of reintegration into the network as a function of network losses.

The organic load contributed to the environment remained very modest and amounted to about 0.3 t of BOD, while the total COD value was 1.5 t. Industrial discharges from the Generation BU increased by 4%, due to higher production at the Piacenza, Monfalcone and San Filippo del Mela Power Plants.

Integrated Water Service

The Group manages the integrated water service in Brescia and its province. In order to ensure high performance levels in service management, the priority objective is to maximize water distribution, limiting losses and guaranteeing the quality levels of water for human consumption. Water withdrawal for water distribution, which is done exclusively from wells and springs, was 89 million m^3 in 2022, a slight decrease compared to 2021. The amount of water delivered was 48 million m^3. Network leaks, including unmetered water, still represent a significant volume, amounting to almost 3.4 million m^3.

The Group's commitment to achieving European objectives for protecting the water resource is also reflected in the operation of wastewater treatment processes. Pollutant loads entering the treatment plants increased slightly in 2022 compared to previous years. Specifically, the BOD entering the plants increased by 9.3% over 2021 (7 tonnes), and the COD by 12.7% (15.5 tonnes).

The purification performance remained in line with that of previous years, as can be seen from the table below, showing a slight improvement due to the less diluted effluent to be treated at the Verziano purification plant and an increase in efficiency in purification process management.

Figure 45 Purification Yields

	2020	2021	2022
COD	90.2%	91.4%	93.3%
BOD	95.9%	94.3%	95.2%
Nitrogen	68.9%	71.0%	74.8%
Phosphorus	74.1%	76.1%	77.0%

Development of water safety plans

With the introduction of the European Drinking Water Directive 2020/2184, the implementation of Water Safety Plans (WSPs) for water systems has become mandatory. WSPs introduce a preventive approach consisting of an analysis of the water system in order to reduce the risks, both in terms of quality and quantity, associated with the distribution of drinking water. This analysis is carried out for each stage of the drinking water supply chain, from the hydro-geological basin to capture, treatment, storage and distribution, including the water delivery point. WSPs introduce continuous, online monitoring in order to anticipate the onset of any criticality, assessing the aqueduct's ability to withstand a crisis and preparing a strategy to deal with any eventuality with maximum efficiency. They also address the issue of emerging contaminants and take into account the specificities of territories, studying their context and the anthropogenic pressures present. During 2022, the elaboration of the Safety Plan continued for the Brescia-Botticino-Bovezzo-Cellatica-Collebeato water systems and in parallel for that of Ospitaletto. Both WSPs are expected to be completed during 2023.

In addition to monitoring related to the reduction of water losses, the **implementation of drinking water quality monitoring** is underway in the districts of the city of Brescia. In 2021, research was initiated to identify the optimal sensors for the implementation of a widespread monitoring network for the quality of distributed water as well as to further the operation of the network (evaluation of mixing effects of different supply sources). A monitoring point was installed in 2022 at the entrance to the San Rocchino district, equipped with sensors for pH, turbidity, chlorine, conductivity, nitrate, absorbance at 254 nm, temperature, TOC and the UV-Vis spectrum. Following the challenge launched on the online platform Innocentive (an open innovation marketplace where organizations can launch open competitions to find solutions), a collaboration arose for the development of sensors whose prototypes are currently being tested at the A2A Water Cycle laboratory.

7.4
Protection of Biodiversity

Analyses of potential interference of the A2A Group's activities with the protected areas system continued in 2022, to include plants consolidated into the Group more recently. The system of protected areas considered concerns the sites belonging to the Natura 2000 Network, IBA (Important Bird and Biodiversity Area) areas, and areas considered important habitats for the conservation of populations of wild birds, nature reserves, natural monuments (individual elements or areas characterized by a particular natural or scientific value that makes them the subject of protection).

From the mapping phase - which is increasingly extended - it emerged that out of a total of 347 Group sites and networks analysed, 133 have potential interference with the system of protected areas, which not only takes into account criteria of adjacency or overlap, but also wider areas of possible influence. Of these 133 sites, 12 are located within protected areas (one is in the planning stage) and ten are networks that have stretches in protected areas (underground sections are also included). The following is a summary of information about these sites and networks.

Figure 46 Group sites and activities with interference on protected areas

Number of directly interfering sites/networks	Activities performed	Interfering area surface/interfering network stretch length	Type of protected areas
1	waste management	0.01 km^2	Natura 2000 Network IBA National network (EUAP)
5	renewable energy production	0.07 km^2	Natura 2000 Network IBA National network (EUAP)
6	hydroelectric production	1,144 km^2*	Natura 2000 Network IBA National network (EUAP)
10	distribution of gas and electricity	643** km of which 492 underground	Natura 2000 Network IBA National network (EUAP)

* The interfering area of the hydroelectric plants refers to the area of the catchment area underlying the Group's plants and dams, which falls within a protected area.
** The interfered surface, intended as the projection on the ground of the overhead lines including the buffer zone and added to the surface of the electrical substations, is equal to 1.5 km2.

The protected areas directly affected have more than 40 species on the Italian Red Lists of the International Union for Conservation of Nature (IUCN); a detailed survey of each species has been undertaken in order to systematize information on the species themselves and their degree of threat relative to the risk of extinction.

Following the mapping of the plants and networks, **a "relevance index" was developed to measure the degree of potential interference that the activities could have on the ecosystems**, due to the proximity and peculiarities of the habitats present in the protected areas. The most sensitive areas were thereby highlighted. Starting with these results, but moving in the direction of a broader issue of protection, studies have been launched to identify possible actions to protect biodiversity, which are in addition to those already implemented at the production sites.

The projects launched in 2022 include:
- implementation of a project to protect birdlife in the Alto Garda Bresciano area, an activity that integrates with the interventions planned by Unareti on power lines (see box below);
- support for the "Migrandata - Cervati" project, aimed at studying the effects of climate change on migratory birds.

As a further step towards a concrete commitment to the protection of biodiversity, the Group drew up and adopted a **Biodiversity Policy** in the first half of 2022, which includes the promotion of specific studies to learn about and protect fauna and flora, and a commitment to protect the ecosystems in which these species live, such as forested areas. In the area of forest protection, initiatives were launched in the second half of the year for the sustainable procurement of paper and wood-based materials, in particular by analysing the status of suppliers' alignment with the requirements of **FSC®**, **PEFC** and **Ecolabel** certifications, and identifying areas for improvement and tools to implement them.

Protection of birdlife in the Alto Garda Bresciano area

In 2022, studies began to identify the potential interference of overhead power lines on birdlife in the Alto Garda Bresciano area.

The project was planned in the first few weeks after the start of the activities, defining its purpose and the target species to be monitored, as they are useful for identifying the most critical bird species related to the power lines. The five designated target species are: Eagle Owl (Bubo bubo), Golden Eagle (Aquila chrysaetos), Peregrine Falcon (Falco peregrinus), Black Kite (Milvus migrans) and Short-toed Snake Eagle (Circaetus gallicus), all of which are particularly prone to mortality through electrocution and/or collision. Field monitoring and research of past occurrence data of the target species and known mortality cases were then carried out. A study area was defined to investigate the territory within the borders of the Alto Garda Bresciano Regional Park for a period of three breeding seasons (from May 2022 to the end of 2024). In view of the wide motility of migratory and dispersive individuals covering particularly extensive territories that are not necessarily included in the regional protected area alone, the area of the valley that extends between the municipalities of Bagolino to the north, Casto to the west and Rezzato to the south will also be surveyed.

The studies will make it possible to quantify the benefits in terms of protecting biodiversity deriving from the interventions already carried out and planned by Unareti, concerning the replacement and decommissioning of overhead lines, as well as to identify any further interventions to make certain sections of line at high risk safe.

Migrandata - Cervati

The project for monitoring birdlife on Mount Cervati launched by the ARDEA Association in 2021, which A2A has decided to support, continues. Approved by Ispra and authorized by the Campania Region for the three-year period 2021-2023, the project is aimed at studying 'outward migration', i.e., that which occurs from the end of August to the end of autumn and which sees the migratory birds fly to Africa. Unlike the 'return migration', i.e., the journey from Africa to Europe to nest, information on the outward migration is incomplete and fragmentary, especially when dealing with territories in inland areas. The project therefore aims to fill this information gap by locating the ringing station on Mount Cervati, 1880 m above sea level in the heart of the Cilento National Park, the first station in the southern Apennines.

The aim is to collect useful information on the resident and migratory bird community on Mount Cervati for at least three consecutive years, in the time window between late August and early September. This investigation is also of great importance in the context of climate change studies, as high-altitude open environments are among those most affected by the climate emergency.

Lastly, potential impacts on biodiversity may occur as a result of spills of hazardous substances and pollutants into the environment. For all the sites within the Group's perimeter, no significant spills occurred in 2022.

8

Human Capital

8.
Human Capital

Background information

Developing resilient skills while respecting uniqueness

The World Social Report 2023 produced by the United Nations highlights population ageing as a global trend in recent decades. According to the Report, a child born in 2021 could enjoy a life expectancy almost 25 years longer than a baby born in 1950. However, not everyone benefits equally from improvements in health and education; developing countries in particular suffer more from inequalities in gender, salary, ethnicity and consequently difficulties in accessing basic services. In order to address current demographic trends, governments must take proactive measures to support birth rates and equal opportunities, as well as redefine the resources allocated to the elderly[1].

Despite the gradual easing of the restrictions brought about by the pandemic, work at company sites in 2022 did not return to previous levels. Hybrid work has passed from being a necessary condition to increasingly take on an environmental and social value. Indeed, remote work reduces emissions from home-work commuting, and in this year full of inflation and high energy prices, in addition to the obvious benefits for balancing personal and work life, hybrid working has taken on a new dimension of utility, cutting energy consumption for public administrations and companies.

The year 2022 has also highlighted the accentuation of a new phenomenon known as the Great Resignation, which sees thousands of employees voluntarily resigning en masse from their jobs due to lack of motivation and a mismatch of values with their reference organisations. From the companies' point of view, this translates into an increase in the incidence of turnover, which is particularly damaging in a period of radical digital transformation and economic instability. According to the School of Management of the Milan Polytechnic Institute, 96% of companies have difficulty attracting the new resources needed to update their know-how to meet sector needs. More precisely, in OECD countries at least one in three workers is over- or under-qualified and the mismatch between supply and demand (skill mismatch) annually affects the global GDP[2].

Organisations will therefore have to make greater efforts to meet employee needs by stimulating their engagement, with results that can directly influence economic and financial performance[3].

Lastly, there is an increased focus on human rights and inclusion issues, as evidenced by the growth in the Diversity Brand Index in 2022, which reports a higher maturity and awareness in the market on these issues. In fact, consumers are increasingly inclined to choose inclusive companies with significant effects of revenue growth (+23%)[4].

[1] *https://unric.org/it/the-world-social-report-2023/*
[2] *https://www.peoplechange360.it/people-strategy/competenze-digitali/skill-gap-quanto-pesa-il-divario-di-competenze-quali-strategie-possono-sanarlo/*
[3] *https://www.eticasgr.com/storie/approfondimenti/grandi-dimissioni-perche-i-dipendenti-stanno-lasciando-in-massa-il-posto-di-lavoro*
[4] *https://www.adcgroup.it/adv-express/big-data/scenari/diversity-brand-index-2022.html*

2022 in facts

25 years average additional life expectancy of an infant born this year compared to an infant born in 1950

100 billion **of funds** under the Just Transition Mechanism to help the poorest regions of the EU move towards a zero-emission economy that leaves no one behind

96 % of companies has difficulty attracting new resources with know-how adapted to sector needs.

23 % revenue growth of companies considered more inclusive by consumers

SDGs impacted

5 GENDER EQUALITY 8 DECENT WORK AND ECONOMIC GROWTH

Material topic

Occupational health and safety / enhancement of human capital / diversity and inclusion

Impacts for A2A

Strategic Plan @2030

-36 % Reduction in injury frequency index (compared to the 2021 figure)

KPIS @2022

3.8 % voluntary turnover

25 % women in managerial positions

93 % employees trained during the year

12,858 total employees

Occupational Health and Safety

The Group is actively committed to ensuring a healthy working environment for all workers, whether employees, contractors or collaborators. In order to ensure full compliance with current regulations and prevent accidents throughout the supply chain, A2A adopts working practices and management systems that establish procedures, monitoring actions and training activities in the field of occupational health and safety that allow for the controlled management of the Group's activities both in its offices and plants/operating sites. At the same time, the Group promotes a culture of respect for the individual and their human rights and adopts specific measures (such as the Human Rights Policy or the Whistleblowing reporting system) aimed at countering the occurrence of sexual harassment or physical and psychological harassment in the workplace.

#Injury reduction #H&S training #Prevention #Health protection

Possible non-achievement of the goals set in the Sustainability Plan.

Health and safety risks for employees, suppliers, collaborators and third-party workers.

Complaints for occupational illnesses of Group employees.

Potential actual or alleged failures to comply with health and safety regulations.

Risk factors

Opportunity factors

Experimenting with innovative technologies to perform operational activities more safely and efficiently.

LiHS (Leadership in Health and Safety) training and awareness programmes that adopt forms of communication that leverage emotional aspects.

Management Approach (MA)

Mitigate

Continuous monitoring by corporate and company/site HSE Structures.

ISO 45001 health and safety certifications.

ISO 39001 road safety certification for higher risk companies.

Specific Health & Safety training

Ad hoc programmes and procedures, in line with current regulations.

Controls on contractors' sites.

Integration of the MbO system with health and safety indicators.

Specific procedures for risk management related to Covid-19

Seize

What we have done

2022 actions

- LiHS Programme - Leaders in Health and Safety
- Webinar "WebiLaw HSE"
- Installation of two "Capsule" Health Pods
- "HSE from Procurement" project to oversee the entire outsourcing process to external contractors from an HSE perspective
- Launched a specific safety course for managers
- Promoted new safety courses for contractors

What we are doing

Sustainability Plan Actions

Health and Safety

Development of Human Capital

The Group is actively committed to creating a positive corporate climate and to maintaining high levels of employee satisfaction, recognising that employees play a fundamental and highly valuable role in running its business. To this end, A2A adopts a structured employee listening system that includes systematic dialogue and collaboration initiatives aimed at intercepting workers' needs and expectations. The Group also promotes the development and enhancement of its human capital, offering defined and structured career paths, training plans aimed at enhancing technical, managerial and organisational skills, and upskilling and reskilling programmes through internal job rotation. Lastly, the Group adopts a welfare system that promotes the personal, family and work well-being of employees and offers solutions to achieve work-life balance (e.g., flexible working, remote work).

#Training #Development #Talent acquisition #Retention #Welfare #Trade union agreements #Work-life balance

Management Approach (MA)

Risk factors

Possible lack of attention to employee expectations.

Potential increase in key figure resignations due to:

- competitiveness of the job offer for key skills;
- generational handover.

Possible actual or alleged non-compliance with employment laws.

Lack of integration between human resources management systems and sustainability (e.g., performance assessment).

Ageing of workers performing operational activities, particularly in the waste collection sector.

Opportunity factors

Promotion and application of individual remote work agreements for business activities of companies compatible with this new way of working.

Mitigate

Employee surveys and listening campaigns, including survey on alignment with company values and follow-up on remote work implementation

Mapping of roles and profiles, identifying the resources of greatest value and definition of retention plans.

Employer branding projects.

Job rotation, training and initiation plans of resources with skills lacking in the company.

Compensation systems in line with the market.

Digital training programmes.

Continuous monitoring of changes in employment law.

Assessment and remuneration of employees related to sustainability performance.

SA8000 certification for the companies Aprica and A2A Calore e Servizi.

Job rotation programmes and study of ergonomic solutions for waste collection.

Seize

What we have done

2022 actions

- Communication campaign for talent attraction, "our Boss is calling"
- "Manager as a Coach" Training Programme
- Launched the Technical Academy, which complements theoretical training with practical training in schools
- New Life&Me skills model defined
- First Engagement Survey
- Launched a salary benchmark for the entire non-management population

What we are doing

Sustainability Plan Actions

MBO
Performance management
Training
Internal Engagement

Diversity and Inclusion

The Group promotes an inclusive working environment and operates according to criteria of impartiality, not allowing any form of discrimination in relation to gender identity and sexual orientation, age, disability, state of health, ethnic origin, nationality, political opinions, social category and religious faith.

A2A disseminates a culture of diversity and equal opportunities at all corporate levels, including through awareness-raising initiatives, and is committed to ensuring that all employees are treated with respect and fairness, including in terms of equal pay for men and women, in all corporate processes.

#Equal opportunities #Disability enhancement #Gender gap

Management Approach (MA)

Risk factors

Possible insufficient maturity of Diversity Management and consequent loss of attractiveness and competitiveness.

Opportunity factors

Programmes to enhance the value of workers with disabilities/occupational illness.

Certification project according to UNI/PdR 125:2022 on the management system for gender equality.

Mitigate

Inclusion Team and definition of an Action Plan on Diversity and Inclusion (D&I).

Survey on D&I issues.

Constant monitoring of the Gender Equality Index.

Role Model Project: meetings with high school and middle school students to inspire and orient young people, overcoming gender stereotypes.

D&I KPIs in top management MBOs.

Programmes to favour conciliation of private and work life and well-being.

Seize

What we have done

2022 actions

- New DE&I visual and claim published
- Milan Pride Partnership
- Inclusive Language Manifesto launched
- First DE&I survey administered to employees
- Nuove Energie Project
- Participation in 4 Week 4 Inclusion
- Cross-functional working group on the gender pay gap launched

What we are doing

Sustainability Plan Actions

Welfare
Diversity and Equal Opportunity

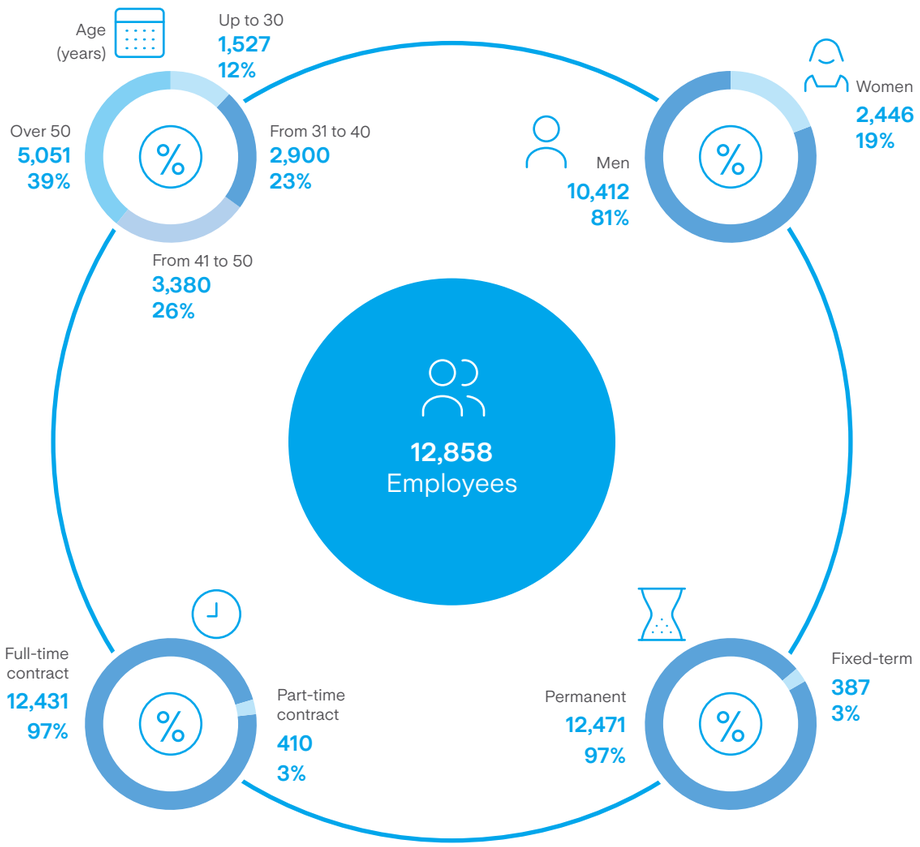
8.1

People and their Value

A2A people are those who live the Life Company on a daily basis, directing their daily choices towards the achievement of sustainability goals. Taking care of people's quality of life is a great responsibility. That is why the Group puts dialogue, care and attention first in managing its people: towards them, towards citizens, and above all, towards the environment. Because people are the value that creates a Life Company.

As at December 31, 2022, **there were 12,858 people employed by the A2A Group (+4% compared to 2021),** of whom 19% were women. Job stability remains a prerogative of the Group: 97% of employees have a permanent contract. Remote work was massively introduced on an emergency basis, involving 5,817 people during the year.

Figure 47 Staff by category and type of contract



8.2

Responsible Management of Human Capital

Recruitment

The component that most contributes to giving a company a competitive advantage is the ability to acquire and retain talent. An important factor in retaining talent is ensuring that the Group's identity is translated into a positive life experience for employees.

A2A's Talent Attraction Strategy is set up based on the profiles sought for the different roles and Business Units. Using annual planning based on business growth and estimated turnover, search activities are set up for the best available profiles on a national basis, with continuous recruiting activities on frequently filled positions and targeted activities for specific searches.

The following channels are used for **blue collar profiles** (around 60% of annual hirings): company database, advertisements on the A2A careers site, recruiting campaigns on the most suitable social networks, employment agencies and selection search companies, collaboration with high schools, technical and scientific secondary schools, training bodies (for specific certifications and licences).

For **white collar profiles** (the remaining 40%, divided between clerks, middle managers and executives) different channels are chosen depending on the specificity and difficulty of filling the roles: A2A database and careers site for all profiles, targeted campaigns on the Group's social network pages, participation in university events throughout the country to search for candidates with no experience or junior candidates (20% of the total of white collars), head hunters and search companies for more specialised profiles.

With reference to the graduates employed, 58% are profiles with an engineering background; therefore, A2A participates in the main Employer Branding and Recruiting STEM events at national level, many of which have an explicit focus on Diversity & Inclusion issues ("Stem Girls", Inclusion Days, etc.).

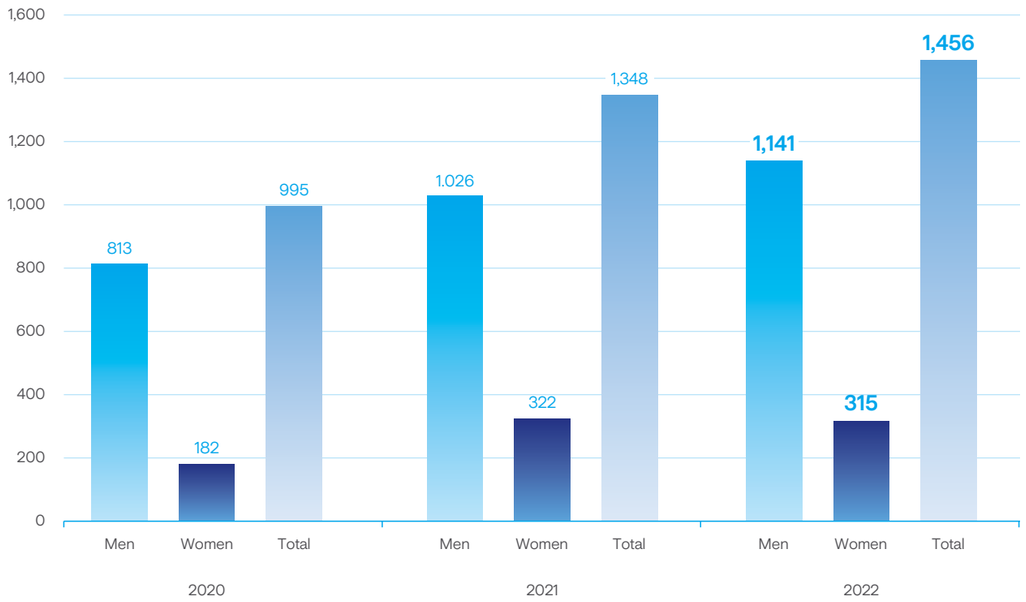
The levers of attraction for candidates focus on the aspects which are most distinctive and appreciated by A2A employees, identified through important work that includes interviews and focus groups, carried out on the occasion of the revision of our EVP (Employee Value Proposition). These include: **a leading group in the energy transition and circular economy that creates a measurable impact in improving people's lives, a high level of professional industry expertise, solid but innovation-driven businesses, and a friendly, educational and collaborative environment**.

On the basis of this evidence, the **communication campaign "our Boss is calling"** was launched with the aim of engaging people who can support the path towards the ecological transition and the ambitious goal of reaching Net-Zero by 2040. Every single employee is called upon to become a real recruiter to recount our initiatives and convey our values outside the Group.

Those who join A2A are offered a package which includes comprehensive **welfare**, meritocratic and fair **remuneration policies** and an environment that upholds the values of diversity and **inclusion**.

A2A has created specific guidelines for its selection interviews, with the aim of making the process increasingly transparent and inclusive and also being an important Employer Branding vehicle.
There were 1,456 new hires in the year compared to 1,069 terminations, an increase of +13% in total hires compared to the previous year. Of the hires made in 2022, 315 concern women, thanks to concrete initiatives put in place to support diversity and inclusion, promoting equal treatment and opportunities between genders. Among these, was also the update of the **selection procedure, which specifies that where possible, the presence of women in the pool of candidates is guaranteed.**

Figure 48 Recruitment trends, by gender



Thanks to partnerships with universities, schools and research institutes, **81 extracurricular internships and 84 curricular internships were set up during the year, and 38 of these resources have since joined the company on a permanent basis**.

In addition, through the **iL@b programme** active since 2020, the Group has launched a real talent incubator: through an internship course focused on Project Management, youth have the opportunity to test themselves with work experiences on different fronts, vertically and transversally across the various Group structures. The aim is to facilitate collaboration between company structures and the university world in order to bring new people into A2A. The universities that participated in the project in 2022 included:

- Alma Mater Studiorum - University of Bologna
- Università Cattolica del Sacro Cuore
- Università Bocconi
- Polytechnic Institute of Milan
- Polytechnic Institute of Turin
- University of Milan *(La Statale)*
- University of Milan - Bicocca

Great importance and attention is given to internal job rotation processes. In this regard, in order to support and guide employees in this opportunity, a digitalisation of the job posting process has been undertaken, which allows them to view all open positions directly from the internal management application, and when applying, directly access their CV with the possibility of updating their data and experience. **During the year, 38% of the 68 open job postings were filled by internal company candidates.**

Training

Almost 300,000 hours of training were provided in 2022, with an average per capita value of 24 hours. Approximately 93% of both full-time and part-time employees received training during the year, an increase of 11% compared to the previous year. Through the various upskilling and reskilling activities, the Group encourages the updating of the skills of its people, inviting its workers to develop their skills and manage their professional growth.

Several initiatives saw people at the centre of the training courses:

- **Digital Academy Evolution and Digital Angel** are the natural evolutions of the Digital Academy launched in 2019. These projects are dedicated to raising awareness on topics that are extremely strategic for the Group, namely digital transformation and the propensity for innovation, with experimentation and training activities. To date, the path has allowed more than 1,600 people to be trained for a total of more than 13,500 hours delivered of thematic content and 7,250 participations in individual events;
- **Digital Role Play**, an experiment dedicated to the sales area to foster the development of key soft skills for sales conversations through a platform with simulated conversations with pre-recorded real actors, which immerse the user in a realistic situation, where the experience is enriched by artificial intelligence;
- Specialised course on the topics of **Cyber Security OT/IoT/IIoT** in collaboration with the "Start 4.0" Training Centre of Excellence of the University of Genoa. The course involved 50 people in the Group, with the aim of reinforcing awareness of the risks connected with possible cyber threats, as well as addressing the identification of vulnerabilities in a more effective and timely manner. In addition, the entire company population was offered the opportunity to learn more about the main topics connected with cyber security and discover good practices, with the inclusion of the **new course on cyber security** in the A2Academy;
- "**P-Learning**" technical training for 120 engineers in the Group, allowing them to obtain up to 20 training credits (CFPs) necessary to maintain their registration. The e-learning platform has more than 60 courses in its catalogue divided by subject areas, such as energy, building structures and environment, graphics, ICT and management, occupational safety, and POLIMI Graduate School of Management modules;
- **Project Management Academy Program** continues its activity through the courses developed and delivered by the PMO Specialists of A2A's PMO Pooling. Two courses were constructed that were tailored to the specific needs of the Group: one was a general introduction to Project Management and another on specific in-depth modules on the topics of Agile Project Management, Project Planning and Project Risk;
- Course on **competition law** and **antitrust** compliance tools, presenting the salient aspects of the law and letting students consolidate learning with a final test

The "**Manager as a Coach**" course involved around 125 managers of colleagues involved in specific development programmes, with the aim of developing a mindset that inspires and guides managerial action and enables people to fully express their potential.

Following the success of the previous year, **the e-learning course "The 2030 Agenda and Sustainable Development Goals"** carried out by Asvis Alleanza Italiana per lo Sviluppo Sostenibile, was also **offered to all employees** in 2022, in order to broaden employees' knowledge of the global framework for sustainable development defined by the United Nations in 2015, which is also the basis for the 2021-2030 Strategic Plan.

Induction of new hires

Induction A2A is the Group's on-boarding programme dedicated to newly-hired employees. The course includes a kick-off aimed at learning more about the Group and the People Strategy, with a focus on sustainability and inclusion issues. A total of four interactive webinars are planned with the directors of the Business Units with the aim of learning about A2A's main businesses, followed by a workshop dedicated to the Group's key soft skills and an Online Gamification section to further these skills. Training days are also planned for younger colleagues to enable them to better prepare themselves for their new work experience (some examples of contents include Problem Solving, Resourcefulness, Effective Communication).

As part of the Operational Excellence programme, the coaching course inspired by Lean and Agile philosophies, **"PerformA2A"**, was completed. The EccellenzA2A Community was also created as a space for the dissemination of the culture of continuous improvement, the development of Operational Excellence issues and the creation and sharing of standards and tools.

Intellectual capital

Finally, the sixth edition of **Lean Six Sigma Green Belt**, the training and certification programme on Lean philosophy and methods, was completed to support the evolution of Operational Excellence programmes into a "widespread system", creating "benchmarks for continuous improvement".

Technical Academy Project

Launched in June 2022, Unareti's Technical Academy is a 360° knowledge management and training project. In fact, the training method for operators involves a **blended** system that integrates **on-the-job** and **theoretical training** with practical training in **school camps** - real "training spaces" that allow an effective transition from theory to practice with simulated exercises on replicas of the infrastructure. The project was created with the desire to shorten training times and train both new hires - who need widespread knowledge of systems - and to up-skill and re-skill effectively. In particular, the pathway for new entries makes it possible to involve a significant number of new people, fostering their autonomy and speeding up their ability to operate effectively: in the on-boarding phase, the resources are supported, assessed and monitored, while in the subsequent off-boarding phase, training updates are provided during the in-company pathway. The Academy also envisages the direct involvement of **A2A people as trainers**: a choice which aims to facilitate the exchange of skills between the different generations of workers, foster a dynamic and integrated working environment and enhance the Group's know-how. The entire Academy is also characterised by a strong push towards **digitalisation**, with the creation of specific Learning Objects in multimedia mode and virtual reality tools, which make the entire training path even more intuitive and replicable over time. To date, the Academy has involved more than 230 participants for more than 1,550 training hours, while training offers involving 709 employees for a total of 6,700 hours are planned for the beginning of 2023. This training model with Unareti acting as "pathfinder" could be scaled up to the other companies of the A2A Group networks.

A2A also **established a partnership with the Milan Polytechnic Institute, which enabled the organisation of nine workshops involving over 220 people from the Group's various Business Units and Companies** for a total of 36 hours. The main topics covered were: renewable generation; energy efficiency, collective self-consumption and energy communities and electrification of transport; market innovation, SEA and Customer Centricity; infrastructure and systems planning; infrastructure operation; integrated water cycle; Life Cycle Assessment and Waste to Chemical; Waste to Energy and Hydrogen.

These events were mainly brainstorming sessions led by academics and aimed at identifying the **key skills of tomorrow,** linked to new **emerging trends,** and the related strategic training needs.

Lastly, in October 2022 **a framework research agreement was signed with the University of Brescia, which includes the possibility of activating training courses for employees**.

Development

Great attention is paid to people development at A2A. **A People Strategy has been defined** in support of the Group's Strategic Plan. **One of its main elements is precisely the theme of development, with the importance of the manager's role, who are increasingly called upon to pay attention to listening to and growing the people in their teams, but also spreading the culture of self-development**, where people are increasingly called upon to take care of their own growth, in a context where the company defines the models, processes and tools that make this possible, in line with business needs.

The main elements of the **Talent Management model** include:

- a very structured induction path for new hires, aimed at stimulating the development of key skills and getting to know the Group and its businesses; this path is also a retention factor for people who have recently joined the Group;
- importance of the role of management, both in identifying talent and in supporting the development of people's potential;
- introduction of development centre moments, also with ad hoc tools to complement management's indications and help people define actions aimed at their own development;
- Performance Management as an enabling factor;
- specific development actions for people identified as having the greatest potential, in order to accelerate their readiness for positions of increasing complexity;
- integration with Succession Planning model, to progressively feed an internal pipeline to cover the most relevant positions.

To support spreading the culture of development, training courses are periodically held on the key skills of the A2A model, especially for Group managers, whose role in managing the Group's talent is fundamental both in terms of business growth and sustainability, and in terms of retention.

In 2022, **the new "Life&Me" skills model was introduced**, which was created in line with our company's commitment to a more sustainable future. The skills model is a set of behaviours to be inspired by and put into practice in our daily work. Life&Me arose from listening to employees through their participation in surveys and involvement in specific focus groups, and responds to the new needs of a changing work environment. The model is based on Three Pillars - Business, People and Relationships - and focuses on the concept of sustainability as a synthesis of all the behaviours.

The **Leadership for life** ended in the first quarter of 2022, including dedicated training for all about 1,100 Group managers. It counted nine online meetings dedicated to leadership and its evolution in a rapidly changing context. The course explored key issues for A2A's People Strategy and more generally for the Strategic Plan, such as sustainability, circular economy, energy transition. In a broad sense, it enabled managers to reinterpret their leadership style from a multimodal perspective, consistent with the increasingly hybrid management of teams. There were 7,700 participations in total. There were numerous opportunities for interaction and the collection of contributions from all of Management during the course, with over 800 suggestions that contributed to the creation of the next phase of the programme, **Insight Labs: workshops dedicated to a small group of managers to define best practices to be pooled in order to redefine the new managerial models emerging from increasingly hybrid work contexts**.

As a continuation of the course, a group of 100 managers had the **opportunity to experiment and further their leadership skills through a training programme aimed at enhancing soft skills** using conversations focused on team management situations in a highly realistic simulated environment. This initiative allowed to reflect on the impact of one's behaviour **through augmented reality and artificial intelligence**. The situational self-empowerment course included 30-minute a week simulation programmes designed with a neuroscientific approach and involving real actors.

Ten team-building sessions were organised in 2022 for a total of about 600 colleagues. They arose mainly from the need to meet to build relationships and strengthen leadership and a sense of belonging to the team. The team-building sessions addressed employees' needs and requirements through different training modes and off-site experiential activities. This enabled the people involved to put their skills to use in non-work contexts and to network.

After its launch in 2021, the **mentoring project** continued in 2022 with a significant extension to a group of managers (ensuring gender balance) involved in development programmes following a specific dedicated assessment process. 55 people were involved in 2022, who had the opportunity during the year to work on their own development thanks to the support of one of the Executives trained in the role of company mentor. The course lasted approximately eight months and included a final evaluation, as an opportunity to further relaunch the development actions of each person involved.

Performance Management

A2A has a Performance Management process that involves the entire population of Middle Managers and White Collars in the Group, altogether more than 5,000 people.

The process involves an assessment of individual goals and behaviours evaluated against the key skills of the A2A skills model. In the evaluation phase, all participants work on a self-assessment step aimed at stimulating awareness and discussions with the manager, as well as the possibility of involving one or more additional assessors beyond the manager in order to gather additional points of view and enrich the feedback in the manager-collaborator relationship. The final evaluation is carried out by the direct manager and at the end of the process, after a calibration phase at Business Unit/ Directorate level, there is a moment for feedback. The result of the performance appraisal is an important and enabling element for the talent management model and the remuneration policy process.

In addition, the communication and training campaign to encourage and nurture a feedback culture within the Group continues through the use of the "**Anytime Feedback**" platform, which allows for the exchange of continuous feedback between managers and employees, and between colleagues.

Youth Development Centre

The new "Development Centre" initiative launched in 2021 continued throughout 2022, aiming to accompany the participants - young professional graduates - in building their own personalised development plan based on their characteristics and aptitudes.

The path is individual, with group stages, and with the guidance of one's direct manager in an ongoing coaching logic. More specifically, six "Group Coaching" sessions on individual development issues were organised with the support of expert coaches, and at the end a follow-up was carried out with the aim of addressing some reflections and expectations regarding the skills acquired and the future development path of the participants.

A new wave was launched in the second half of 2022 involving around 80 Young Professionals in an initial online light assessment phase, which was followed by a one-to-one interview with an experienced coach. As in the previous year, the group coaching course was also launched with an initial start-up workshop, and will continue during 2023. Training measures were also planned in 2022 to begin in 2023 dedicated to certain key management skills to enable the professional development of the colleagues involved.

Internal Engagement

During 2022, several pathways were initiated for engaging Group colleagues, starting with updates on the directions of evolution of our businesses.

In particular, a digital event was held in January to share the progress of the 2021-2030 Strategic Plan, and an in-person convention was held in November, mainly involving Group managers, with over 1,400 attendees. Guided by the **"Light Up Life"** concept, the day was an important opportunity to share and discuss the main developments of our Strategic Plan with top management. Following the event, a cascading phase of the main messages was initiated, making video recordings of the day available, including thematic workshops held by colleagues.

Another important engagement event in 2022 was the **Call for Sustainability** initiative to promote the generation of ideas on sustainability issues. There was strong support for the course, with over 3,000 active colleagues on the dedicated portal, and a total of 342 ideas suggested. The promoters of the most popular idea were able to attend the Climate Innovations Festival in October in Tel Aviv, an event that brings together the world's leaders in the field and promotes the generation of solutions in the Climate-Tech field to stimulate and motivate the brightest minds around the world to stem the climate crisis (see also page 162).

First employee engagement survey for the A2A Group

Thanks to the collaboration with the Polytechnic Institute of Milan, the first **Group Engagement Survey** was carried out between December 2021 and January 2022, aimed at measuring the level of well-being and engagement of A2A employees. Around 4,000 people gave their input, answering questions on four key dimensions of engagement: individual, relational, organisational and values. All four of the dimensions taken into consideration - which make up A2A's ecosystem - showed positive perception by employees, who declared a great sense of belonging and a strong bond with the company: specifically, there was over 80% correspondence between personal values and those of the Group. The aim is to administer this survey every 18 months to assess the development of employee satisfaction and engagement within the Group.

Finally, the **A2A Life App** and the **A2A Life Portal** were launched in March 2022 and in July 2022, respectively, as part of the digitalisation of the company-employee touchpoints. These tools allow people in the A2A Group to take advantage of more than 60 services and functions previously digitised only partially or not at all, from a multi-channel perspective.

Welfare

The Group is committed to promoting the well-being of its people and organization, both at work and in the family, developing a culture of well-being and improve the reconciliation between private and professional life. The main welfare activities in each area in 2022 were as follows:

- *Services redesign*
  As part of the initiatives aimed at harmonising and developing recreational and cultural activities in the Energy area, elections were held in July for the creation of the new **CRAL UNICO AZIENDALE "CRA2A".** The new club was created through the merger of CRASM BRESCIA and CRAL ASM BERGAMO into CRAEM MILANO. The **votes** in favour of the merger exceeded **91%**: an important result towards a goal pursued in **strong synergy between A2A and the trade unions**.

- Family sphere
  Among the various measures aimed at supporting families, two important initiatives dedicated to new parents were launched in 2022: a **pathway dedicated to mothers-to-be**, as a space for listening and discussion to support colleagues in this delicate moment of personal and professional life, and a **team coaching pathway for new parents and their managers** in order to support the qualities that characterise the parental role, strengthen positive managerial cultural models and increasingly value the needs of "new parents".

  Moreover, A2A again organized a cycle of webinars in 2022 for people seeking more information and to discuss aspects linked to parenting and education. The nursery and day care at the Brescia headquarters continues to be available for the children of Group employees and other affiliated companies, accommodating 31 children of Group employees.

- Well-being
  The collaboration with LILT Milano Monza e Brianza was further consolidated in 2022, with which the Group organised two initiatives: a webinar path to combat misinformation, with the aim of raising people's awareness of the importance of primary prevention as a useful tool to fight the onset of oncological diseases and promote healthy lifestyles, and an **awareness campaign on alcohol consumption**, helping participants learn the immediate and future **benefits of adopting more conscious behaviour** towards the consumption of alcoholic beverages.

- Health
  The **Healthcare Support system** is again available and operational in 2022. It was first created through a shared path between the company and trade unions, and then guided by the Bilateral Government Agency for A2A Supplementary Healthcare. The coverage has been designed to provide an immediate and concrete response to Group employees and their families, offering supplementary benefits beyond the National Healthcare Service. In its third year now, the initiative has involved some 5,600 member employees and their families.

  In 2022, a **campaign dedicated to dermatological prevention** was launched, to which more than 1,700 people signed up.

- Savings
  Working with trade union representatives, A2A has again confirmed the possibility of **converting the result bonus into a welfare credit** for 2022. In continuation with previous years, the Group offered an additional share on top of the amount converted and spent. In addition, during the course of the year, A2A proposed a series of webinars dedicated to the social security system: in fact, knowledge of it is fundamental for making informed choices today and **protecting future economic well-being**.

Relational capital - customers

In response to the **difficult energy scenario** and in view of the instability and price growth recorded on the energy market, A2A has decided to apply a **10% discount** on the price of the energy and gas raw material component to all supplies with the active **MIA2A offer**, valid for six months.

- Mobility
  In the area of Mobility Management, a number of initiatives have been put in place for 2022 including: an experimental **e-bike sharing** project for the Group's people in the Cremona offices, and special agreements in cooperation with ATM and Brescia Trasporti. The areas at company premises dedicated to parking bicycles have also been upgraded.

Trade union agreements

Relations of all A2A Group employees are regulated by National Collective Bargaining Agreements ("CCNL").

Multiple trade union agreements were again stipulated in 2022, divided into those of a transversal nature to Group companies and other specific ones of some realities. The main ones are as follows:

- **agreement on initiatives to counter the energy shock**: agreements have been signed for both the energy and the waste area to help counter the energy shock, activating agile work on Fridays for the duration of the heating season, allowing the shutdown of heating systems for three days a week in offices characterised by activities that are not strictly operational; a measure has been activated in parallel to help the company population that envisages the application of a discount. Please see the dedicated chapter for more information;
- **agreement for the application within the Group of the new special part introduced by the CCNL for electrical workers:** trade union agreements have been signed to apply the innovative special discipline of the electrical contract to specifically identified perimeters of the Energy Area, envisaged at national level to encourage energy efficiency activities and commercial services to converge towards this collective labour agreement; these agreements also led to the sharing of the implementation time-scales and operating procedures for the entry of this new discipline within the A2A Group.
- **agreements for the reorganisation and harmonisation** of the main institutes regulated by company bargaining were signed in the **Waste Area**. More specifically, a single agreement on the Results Bonus valid for the three-year period 2022-2024; in the area of canteen contributions and meal replacements, the employee deduction for meals was standardised and the minimum ticket value was defined for the entire BU with a gradual alignment of the lowest amounts; in the area of recreational clubs, a path was defined to create a system with a single service provider for the entire Waste Area;
- **agreement on the "Project to integrate the business companies of the LGH perimeter":** agreements have been signed (one for the Energy Area and one for the Waste Area) relating to the corporate transactions for the transfer of the compendiums pertaining to the business companies of the former LGH perimeter to A2A; simultaneous definition of the harmonisation rules that are preliminary to favouring the transfer of the branches to the receiving companies of the Energy and Waste areas;
- **agreement for the introduction of "Smart PPE" in the company Unareti**: union negotiations concluded for the introduction of an innovative system in the company perimeter to increase the safety of operators by facilitating the detection of the presence of PPE through the use of active Bluetooth tags.

Remuneration

A2A sets its remuneration policy with full respect for internal fairness and external competitiveness. In the definition of interventions, it scrupulously complies with Italian law and the relevant national collective agreements, excluding any kind of discrimination. The remuneration policies and processes focus on acknowledging and optimizing the commitment, constant achievement of results, skills and behaviours of employees in line with the Group's Managerial Model and with external benchmarks.

To this end, starting in 2021, A2A has continuously monitored:
- the evolution of women's and men's wages and the relative gender pay gap;
- the remuneration structure of employees with respect to the external market, in relation to the activity carried out.

In particular:
- in relation to the **gender pay gap**, **a cross-functional working group has been set up** to monitor the gender pay gap against the external benchmark, taking into account factors such as age, seniority, education, performance evaluation, with the aim of closing the gap in 2026.
- in the area of employee compensation, compared with the external market, **a remuneration benchmark was launched on the entire non-executive population** aimed at comparing the A2A Group's remuneration with the external market and with specific references to the markets for different professional families or roles that have become increasingly "critical" in the labour market. The objective of this benchmark has been to identify, for any specific families and/or roles, targeted remuneration practices to be adopted in the processes of compensation, recruiting and talent management as well as building ad hoc retention packages for the most exposed roles in the market.

The table below illustrates the differences in average gross annual female/male pay within the different job categories. The analysis of punctual deviations did not reveal any discriminatory phenomena but dynamics linked to turnover, acquisitions of new companies in the Group or differences linked to the representativeness of the female sample in the reference cluster.

Figure 49 Average gross annual pay men/women by role

	2020	2021	2022
Category	**Woman / Man**	**Woman / Man**	**Woman / Man**
Managers	97.70%	104.10%	101.20%
Middle Managers	94.40%	93.00%	93.25%
White-collar workers	90.50%	90.30%	91.20%
Blue-collar workers	95.20%	95.10%	93.59%

For all employees, remuneration is structured into fixed and variable monetary components and provides for a package of benefits in support of income or similar such additions (medical and social security insurance, projects and initiatives for employees and their families, promotions and benefits of various types). The variable monetary component is based on systems of a direct connection between company performance and individual performance ("MbO") or on discretionary mechanisms for the recognition of working performance and conduct in terms of "one-off" bonuses.

The variable remuneration system is also supplemented by a **collective incentive tool (a "results bonus")**, which is based on Group productivity and profitability goals, aimed at guaranteeing the involvement of all staff in company performance, including those not assigned MbOs. In line with current legislation and following an agreement with the workers' representatives, also in 2022, all employees were given the opportunity to convert part of the performance bonus into services through a special welfare platform. The results achieved were positive, in line with those of the sector. The ratio of the annual total compensation of the highest paid individual in the organization to the median of the annual total compensation of all employees is 25 (annual total compensation ratio)[1].

The MbO process has confirmed the importance of formalized incentive processes in increasing the closeness of employees to the Group's objectives and incentivizing each worker towards the achievement of corporate results. In line with A2A's People Strategy and in continuity with what has been done in previous years, the extension of the perimeter will concern a significant percentage of middle managers in 2023.

In 2023, **a new "bonus pool" incentive system will be implemented** which will integrate and relate the Group's financial performance to individual performance. The aim is to simplify and make the evaluation systems complementary, to finalize the MbO as an incentive tool for managerial figures with potential enlargement of the target population, to correlate the incentive system with valuable results for the business, to make managers responsible for the management and accounting of the incentive system.

Consistent with the challenging objectives of the A2A Strategic Plan, alongside the standard incentive plans, extraordinary incentive plans have continued which are increasingly focused on the sale of energy efficiency and e-mobility services and which will be further focused in 2023 on the sale of "green" energy.

Lastly, to strengthen the commitment to sustainability, the significant weight of sustainability goals across the entire front line of the General Manager is again confirmed in 2023, also assigning common, cross-cutting KPIs geared toward the reduction of accidents and improvement of **DE&I** indicators (in terms of: increasing the % of female managers, increased presence of women on the Boards of Directors of subsidiaries and affiliates; increase in the % of women hired). **Three relevant and measurable** sustainability objectives consistent with the Strategic Plan have been identified:
- **Reduction of injuries**. As in 2022, the frequency index will be measured - for performance purposes - and there will be an access gate to the target based on the severity index (first prognosis only).
- **Reducing emissions**: focus on investments aimed at sustainable development (of renewable generation plants and bioenergy)
- **DE&I KPI improvement**, articulated as follows: 1) Increase in % of female managers vs 2022; 2) Increase in BoDs compliant with the Golfo/Mosca Law (excluding BoDs with sole director); 3) Increase in the percentage of women hired (versus 2022 - non-workers).

[1] For the purposes of calculating the KPI:
- employee with highest total remuneration: fixed remuneration + nominal value of variable remuneration year 2022;
- median value of the total remuneration of all other employees including the disbursed value of variable remuneration for the year 2021.

8.3
Diversity and Inclusion

The Group's approach to diversity and inclusion is based on the principles of integrity and protection of the individual within the work environment, ensured through the Code of Ethics, the Human Rights Policy and from 2021, the **DE&I Declaration of Commitment.** Through these documents, A2A undertakes to guarantee its employees a climate of mutual respect for the dignity, honour and reputation of each individual, preventing insulting, discriminatory or defamatory attitudes and openly condemning any mobbing, harassment of any kind or unjustified attempts to hinder the professional prospects of others. Within the Group, anyone who believes to have been subjected to harassment and/or discrimination can make a report, which is promptly taken into consideration and assessed.

As evidence of the Group's commitment to promoting an increasingly inclusive working environment free from stereotypes, A2A has continued for the second consecutive year in **Inclusion Team activities,** carried out by a working group dedicated to DE&I issues with the aim of defining the strategy, objectives and actions in the areas of Culture, Gender, Generations, Disability, Sexual Orientation and Gender Identity. The Inclusion Team consists of more than 70 Group colleagues representing different Business Units, backgrounds, seniority, generations, gender, skills and corporate roles, guided for each topic by an HR Guide and a Sponsor identified in the Steering Committee. After participating in a training course of dedicated seminars and workshops, the **Inclusion Team** carried out a series of initiatives.

During the course of the year, **six awareness-raising videos/ webinars were produced and celebrated on the occasion of International Days on Diversity and Inclusion**, where possible providing an update on the development of the action plan through the narrative of each Inclusion Team working group (March 8 - International Women's Day; April 2 - World Autism Awareness Day; May 17 - International Day against Homophobia, Biphobia and Transphobia; May 21 - World Day for Cultural Diversity, Dialogue and Development).

In May 2022, **the Group participated in European Diversity Month**, a month promoted by the EU Platform of Diversity Charters to celebrate diversity within companies that are signatories to the Charter of Equal Opportunities and Equality at Work, and on this occasion published:

- the **new DE&I visual and claim:** "We are united by the same values: respect and inclusion" to remind us how each identity is an expression of uniqueness that generates variety, a wealth of viewpoints and opportunities for comparison. In short, it generates life;
- the "**Inclusive Language Manifesto**", a priority action of the Inclusion Team action plan. The manifesto recounts five principles to improve communication and is intended to be a commitment to shared responsibility for fostering respectful language and behaviour;
- launched the **survey on DE&I issues** to make A2A more and more inclusive and to listen to the contribution of all people. The objective of the completely anonymous questionnaire was to: detect the level of knowledge on Diversity and Inclusion issues; to understand the needs of the corporate population with respect to specific issues; and to have a snapshot of the current situation for each area, which is essential to be able to direct the next actions.

Initial evidence from the Diversity and Inclusion Survey revealed perception of the use of language that is not very inclusive. For this reason, in the following months the Inclusion Team worked on the theme of inclusive language by creating:

- good practices on inclusive language, a practical and user-friendly tool with concrete suggestions on how to use inclusive and diversity-friendly language
- six D&I Podcasts, a new mode of communication consisting of quick audio snippets with news and interviews on the topics of Diversity and Inclusion and a focus on inclusive language
- "I was only joking" webinar dedicated to inclusive language on the occasion of the "4 Weeks 4 Inclusion" inter-company marathon dedicated to the topics of diversity and inclusion.

Sexual Orientation and Gender Identity

On July 2, 2022, A2A marched alongside the association Parks Liberi e Uguali as a **partner in Milan Pride**. This is an important gesture for the Group, which thus confirms its active commitment to designing, developing and promoting initiatives aimed at removing any barriers that might make a person feel uncomfortable in their workplace because of their sexual orientation or gender identity.

Gender Diversity

With the objective of promoting equal treatment and opportunities between genders within the entire corporate organization, A2A has for years implemented structured initiatives to encourage inclusion on this issue such as signing the "**Women Empowerment Principles**", a declaration of a programmatic commitment in seven principles defined by the UN Global Compact and UN Women to promote female employment and gender equity as a factor of innovation and growth for companies. The CEO's adhesion to the **Valore D - G20 EMPOWER Advocates** network, a global network of CEOs committed at the front line to promoting diversity and female talent in companies, and membership also for the two-year period 2023-2024 to the **"Elis Business School System**", a project that aims to orient girls and boys to the professions of the future and break gender stereotypes. In September 2022, the call to action was launched for the renewal of the new A2A Role Models, who will be engaged with the support of ELIS in the creation of events in Italian institutes to inspire girls and boys to the professions of the future, particularly in the STEM field.

In 2022, confirming the positive trend of previous years, A2A saw an important increase in its score in the **Bloomberg GEI** index, which considers companies that have a transparent approach to inclusion and gender practices and policies (see also page 84).

To raise awareness and prevent violence against women, A2A has dedicated the month of November to several initiatives, including: a webinar "Forse anche io...: Le piccole grandi violenze quotidiane contro le donne... e non solo"; a show promoted by Fondazione AEM "Senza Paura" which offered reflections for talking about violence against women, leaving room for hope and positivity. A further initiative was the Cascina Ri-Nascita project by SVS Donna Aiuta Donna Onlus with Banco dell'energia, which involved the renovation of a large farmhouse in the Milan municipality to ensure a safe place for female victims of violence.

Figure 50 Women in the company

	2021	2022
Women promoted during the year (out of total promotions)	29.30%	34.90%
Women in ICT functions	27.70%	26.80%
Women in Engineering	20.20%	20.70%
Women in entry-level positions (out of total entry-level positions)	46.00%	45.30%
Women in managerial positions (out of total managerial positions)	23.10%	25.00%
Women in junior management positions (out of total junior management positions)	24.40%	25.80%
Women in top management	25.30%	22.80%
Women in managerial positions with cash-generating functions	36.00%	39.40%
Women in STEM	40.70%	

Disability

During 2022, the A2A Group continued to develop the "Nuove Energie" Project launched in 2021 by involving a new company perimeter in the initiative. The objective of the project is to define, starting from the mapping of the "needs" of the most "fragile" workers, an organizational model of disability management aimed at facilitating the involvement of people with disabilities in business processes. During 2022, special survey questionnaires were administered to both managers and workers with disabilities, followed by individual interviews by external consultants, from the analysis and synthesis of which a number of intervention areas emerged with the consequent definition of an action plan, targeted on the person, which will be implemented during 2023. At the same time, with a view to constructing the above-mentioned "disability management" model, A2A began an in-depth analysis of the HR company processes impacted by disability-related issues in order to verify any areas for improvement in terms of the inclusiveness of the most fragile people.

Culture

During 2022, A2A collaborated with the Human Age Institute Foundation for the inclusion of five people benefiting from international protection with the aim of bearing witness to its adherence to a model of an inclusive society, making a concrete commitment to help build it.

Generations

In 2022, the A2A Group conducted market research and investigated the corporate context in order to identify project initiatives aimed at encouraging a culture that values the full expression of people's individual characteristics in the intergenerational corporate context, to be launched in 2023.

No incidents of discrimination occurred in 2022.

8.4

Occupational Health and Safety

Health and Safety Management Systems covers 99% of the company population, all activities and all workplaces of the Group. These systems are subjected to audits by certification bodies and recognized and certified as compliant with the relevant standards.

All Group companies use the application ARIAL (Application for Environmental and Labour Risks) to consult and manage aspects relating to occupational health and safety. This application makes it possible to:

- perform the risk assessment and create RADs (Risk Assessment Documents) with the possibility of highlighting the initial and residual risk level following the application of specific prevention and protection measures, with a clear and traceable approval process;
- define the prescription and delivery of PPE (Personal Protective Equipment);
- view the archive and management of chemicals;
- schedule safety training;
- manage health surveillance pursuant to Italian Legislative Decree 81/08.

The tool is also used to record and classify accidental events (reports, accidents, near misses and injuries to employees and third-party workers), made according to a level of severity based on the potential and/or actual effects of the event.

Safety at Work

The downward trend in accident indices continues in 2022 with a 6% reduction in the frequency index compared to 2021, in line with the corporate objectives.

Figure 51 Frequency Index (FI)

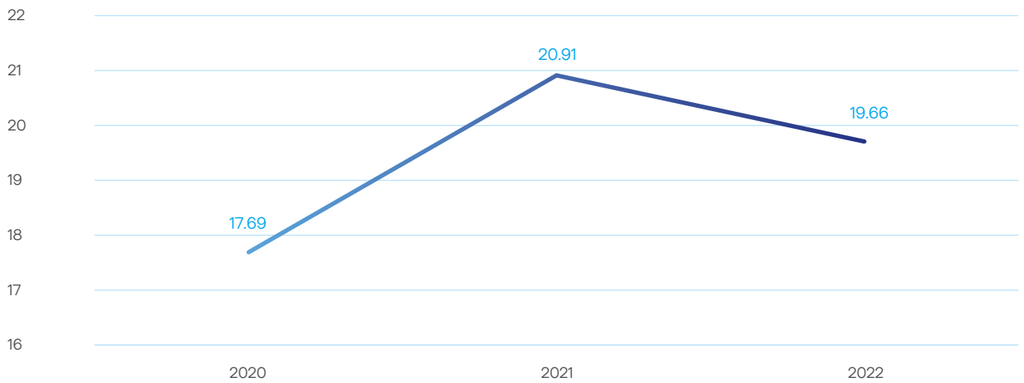


Figure 52 Severity Index (SI)

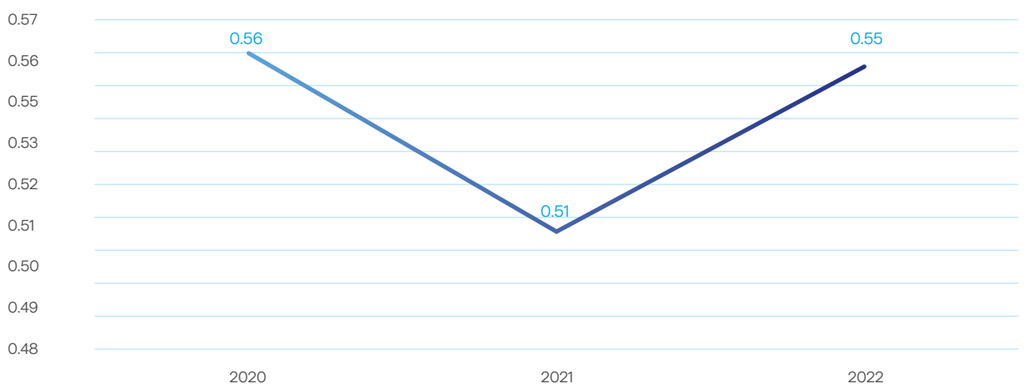
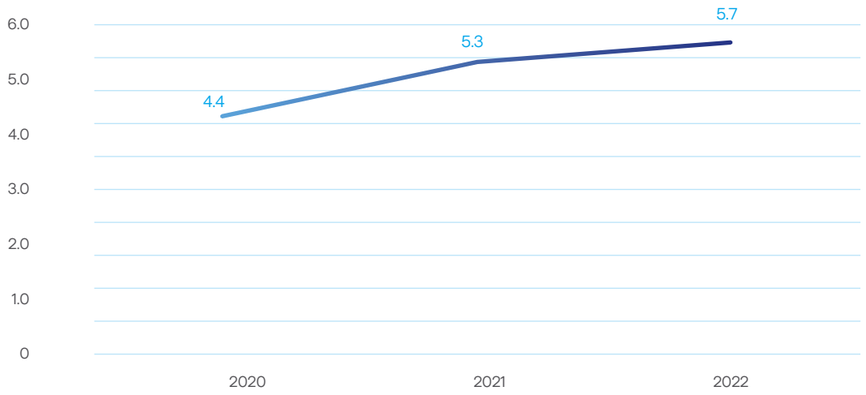


Figure 53 Incidence Index (IG)



One of the initiatives put in place in 2022 to raise employee safety awareness is the **LiHS** - Leader in Health and Safety - programme, which promotes cultural change on health and safety issues. It is based on a cascading approach and is structured in three phases: workshop manager and top manager, cascading with all employees and training "safety leaders".

To assist employees in reading and interpreting regulations, a series of "**WebiLaw HSE**" webinars have been made available, covering significant and/or topical regulatory provisions and highlighting risks and opportunities for the Group's businesses.

Safety Mondays continued in 2022, an initiative that aims to promote a true culture of safety by tackling specific issues that may affect work activities in an agile manner, using unconventional communication systems and languages that also affect the emotional sphere, a fundamental element for modifying unsafe behaviour.

The **"HSE from Procurement"** project activities also continue in 2022, based on the need to establish a series of specific and necessary elements throughout the procurement management process in order to properly oversee, from the HSE point of view, the entire process of entrusting to contractors. As part of the procurement process, the project resulted in the definition of 30 HSE checkpoints, including the inclusion of the HSE technical visa in relation to purchase requests for specific product classes, the revision of the special terms and conditions of contracts with the inclusion of additional contractual clauses, the revision of the safety documentation to be requested for the verification of contractors' technical and professional suitability, and the definition of an information flow to the Purchasing Department on supplier incidents.

Another important element in the Group's supervision of safety in its activities is the **manager safety course**, designed with the aim of raising awareness among managers to take charge of and support the cultural change on health and safety, renewing their commitment and that of their line, sharing the actions and good practices established in recent years, reflecting on the factors emerging from the latest analyses and adhering to the development scenarios of the future. Managers are called upon to consider technical and behavioural safety as an important ally well integrated into the organisational culture, in order to create managerial action that is synergistic with the HSE model, compliant with legislative safety and consistent with human capital development.

The **"one year injury-free" initiative** continues in 2022 as part of the "Leadership in Health and Safety" programme and involving more than 2,000 colleagues of the Smart Infrastructures Business Unit who are committed every day to adopting virtuous behaviour and carrying out their activities in compliance with the provisions of the company rules and regulations. The goal of the initiative is to achieve 365 injury-free days. The Unareti "Pronto intervento Area Milano" team achieved 475 accident-free days, exceeding the initiative's target.

Through the collaboration between several departments, an integrated system with WFM (Work Force Management) was created for Unareti to verify the use of PPE in an aggregated manner. The purpose of this tool is to preserve operator safety by facilitating the detection of the presence of the PPE itself, prescribed for the professional activities performed, through the use of active Bluetooth tags.

During the year, the Group's main contractors and suppliers were involved in new campaigns to raise awareness of sustainability issues. In this context, a safety awareness meeting was organised in the

Brindisi power plant involving 12 colleagues and 39 contractors belonging to 12 external companies working in the plant. After the projection of a video retracing an accident that took place in one of the Group's plants, the participants had the opportunity to discuss and share useful hints for a correct approach to safety involving all the people who work in our company premises.

With the amendments introduced to Italian Legislative Decree 81/08 by Law 215/2021, the role of the person in charge has taken on even greater importance, who now finds himself or herself playing an important role in the enforcement of specific company regulations on HSE by intervening to change any non-compliant behaviour of workers and providing the necessary safety instructions. The skills required are therefore multidisciplinary. For this reason, A2A joined the experimental training project carried out by AiFOS with the coordination, support and patronage of Elettricità Futura and UNEM, aimed primarily at the supervisors of the contracting companies of Elettricità Futura and UNEM member companies who intend to increase both their technical and psychosocial skills in the role, **hosting the first pilot session of the 32-hour course with the participation of 18 supervisors of various contracting companies in November 2022 at Casa dell'Energia**.

In total, 7,755 hours of health and safety training were provided to employees of third-party companies in 2022.

The safety pact between A2A Ciclo Idrico and contractors

A pact was signed by A2A Ciclo Idrico and contractors with the aim of bringing the customer and the contracting and executing companies together to strengthen awareness of safety issues in all staff, both technical and operational. The pact called for an induction project at A2A work sites that was structured in two phases: the first phase in the classroom was aimed at raising the awareness of the contractors' operational staff, reinforcing good operational practices and improving those that were lacking; the second phase consisted of "on-the-job" awareness-raising.

There were 31 accidents in contractor workers in 2022; this translates into a frequency index of 5.33, which is therefore almost half of the 2021 figure, and a severity index of 1.45, a value that does not decrease significantly compared to last year due to a fatal accident that occurred during maintenance activities at one of our plants; an analysis is currently underway to clarify the dynamics of the event.

In addition, there were two unfortunate deaths of citizens in accidents involving the Group's municipal hygiene collection vehicles.

It should be noted that 381 FTEs not directly employed by the Group were working in A2A Ambiente in 2022 for activities related to waste collection, sweeping and waste treatment.

Health at Work

The Group constantly monitors the health of workers in relation to the specific risk for the various tasks present at the workplace, through health monitoring.

A2A provides the company doctors with a computerised health record as well as a system for scheduling activities according to health protocols, i.e., the set of instrumental and laboratory tests and examinations whose frequency and content is established by the Group's company doctors themselves in coordination with the Healthcare structure and according to quality standards shared with university structures. The health surveillance service is offered mainly in the 66 medical units distributed throughout national territory. In 2022, around 9,000 medical examinations for job fitness and more than 16,000 checks were carried out in accordance with health protocols. The appointed physicians also carried out more than 150 site inspections at the workplaces.

At December 31, 2022, 13 cases of occupational illnesses had been recorded by the Group, the main types of which included diseases of the osteomuscular system and asbestos-related illnesses.

The **flu vaccination campaign** was repeated, ensuring that all workers who requested it were able to get vaccinated. A total of 1,575 vaccinations were administered in 2022. Following the popularity of the 2021 pilot, **two additional Health Pod "Capsules" were installed** in 2022 to give an increasing number of colleagues the opportunity to increase their awareness of their own level of well-being through a number of measurements that the device allows them to take: overall physical fitness, degree of resilience to stress, level of cellular ageing and dietary style. In 2022, the capsules were accessed more than 4,000 times.

9

Intellectual Capital

9.
Intellectual Capital

Background information

At a time of great technological transformation, activities such as digitalization, the search for solutions to reduce environmental impacts, cybersecurity and the management of increasingly resilient networks have become extremely important for companies.

Research and innovation play a central role, also thanks to government interventions such as the "Transition 4.0" package aimed at increasing the competitiveness of Italian industry in Europe and worldwide. In this context, EU directives also aim to consolidate the position in science, ensuring that technological breakthroughs are converted into viable products with real commercial potential through the creation of partnerships between industry and governments.

Smart metering, digital interfaces and increasingly digital urban services are already available to companies and customers. The current challenge is to manage complex processes such as predictive maintenance, the provision of networked services with IoT (Internet of Things) solutions and with digital systems for special vehicle fleets, such as waste collection vehicles. Increasingly advanced solutions are therefore required for management through big data, machine learning, blockchain, cloud technologies and data management.

Cybersecurity is rapidly assuming a major role in dealing with the growing number of cyber attacks in the industry. Around 90% of the utilities have stated that investments in this area will increase in the future.

On the energy innovation front, starting with the local production of hydrogen from renewable sources, the aim is to spread the use of the green molecule in industry, SMEs and public transport[1]. With respect to the integrated water service, smart infrastructure is the main strategic driver for reducing losses and inefficiencies.

In the context of current market dynamics, the digitalization of the production system as a whole is also driven by innovation in customer services and brand reputation. Indeed, the indicators of the Edelman Trust Barometer 2023[2] show that companies hold a clear advantage over institutions in public perceptions of competence and ethics. Companies were also considered the most reliable interlocutors globally in 2022.

[1] *https://www.althesys.com/thinktank/top-utility-x-edizione/*
[2] *https://www.edelman.com/trust/2023/trust-barometer*

2022 in facts

1.8 billion of the EU for projects in clean technologies[3]

90 % of utilities will increase investments in cybersecurity in the future

62 % companies considered the most reliable global players

76 % society's concern about climate change

Impacts for A2A

SDGs impacted

Material topic

Innovation and Digital Transformation

Strategic Plan @2030

288 tonnes of CO_2 PER YEAR avoided by digital initiatives

KPIS @2022

52.5 % A2A brand awareness in December 2022

161 Tonnes of CO_2 saved through digitalization initiatives

172 Projects submitted in the call for sustainability

8 Projects invested with the A+360 fund

[3] *https://italy.representation.ec.europa.eu/notizie-ed-eventi/notizie/fondo-linnovazione-18-miliardi-di-eu-dellue-progetti-tecnologie-pulite-2022-07-12_it*

Innovation and Digital Transformation

The Group promotes and invests in research and development activities aimed at enhancing and consolidating the digital knowledge of its internal resources, thereby ensuring that the Group's services and infrastructures are periodically updated and computerized. A2A also implements innovative services and encourages the development of smart solutions for neighbourhoods and cities, with the aim of making them smarter, connected, and at the same time sustainable, contributing to the creation of the smart cities of the future.

#stakeholder engagement #environmental education #R&D #hydrogen #data management #Digital education #smart services

Management Approach (MA)

Risk factors

Possible failure to meet Strategic Plan goals in the areas of smart product and service development.

Possible insufficient "digital" skills of resources.

Mitigate

Presence of an organizational structure in charge of the development, control, monitoring and innovation of organizational, process and staffing structures, etc., in order to ensure an optimal organization of work and development/retention of skills to support the achievement of the objectives of the Strategic Plan and the Sustainability Plan.

Digital training and coaching programmes for specific professional families.

Opportunity factors

Opportunities to capture the innovation potential present in employees with dedicated programmes.

Development of collaborations with start-ups.

Seize

What we have done

2022 Actions

- Preparation of the Group's Corporate Venture Capital Programme
- Corporate Intrapreneurship initiative "Call For Sustainability" launched
- Focus on sustainable mobility and hydrogen research activities
- Implementation of the Digital Transformation Plan
- Use of Advance Analytics Systems for Data Governance
- Use of internal training programmes for employees
- Initiatives to strengthen Group identity and A2A brand recognition

What we are doing

Sustainability Plan Actions

Innovation R&D

Analytics

Digital

Organization wellness

9.1

Open Innovation

In today's ever-changing business environment, organisations can no longer think of innovation as a purely internal process. It is therefore necessary to operate in an **open, widespread** and **interconnected innovation ecosystem** in order to create **shared value** for more sustainable development.

The Open Innovation paradigm therefore involves **opening up innovation processes beyond one's own borders** in order to intercept flows of knowledge, ideas and new perspectives that can increase internal innovation potential.

For A2A, the first concrete step in this direction was the creation of a **shared platform** to connect Group colleagues, start-ups, companies and the world of research in order to contribute to the creation of value in the territories where it operates. The platform allows end-to-end management of project development, but also innovation initiatives such as "Call for Ideas", idea generation activities, hackathons and challenges.

The Group has created a true virtuous process of innovation generation and management that has allowed building strong relationships with important entities such as incubators/accelerators, innovation hubs, universities, research centres and venture capitalists.

Corporate Venture Capital

The **Corporate Venture Capital (CVC)** programme of the A2A Group was created in 2019 to promote the Group's innovation through **investments in early stage start-ups** operating in strategic businesses such as **energy transition** and **circular economy**, in line with the Group's Business Plan.

The CVC programme's budget to date amounts to approximately 40 million euro divided into funds from different managers including **360 Capital, Eureka! Venture SGR, CDP Venture Capital – Fondo Nazionale Innovazione**. With 360 Capital, a dedicated fund named "A+360" was set up (with A2A as sole investor - limited partner) with which **eight investments in start-ups** at European level have been made to date.

Energy Dome, an Italian start-up, has **patented a new battery** based on the thermodynamic cycle and the use of carbon dioxide (CO_2): a **highly efficient and durable solution** that can optimize the storage and use of energy from renewable sources.

In fact, the technology allows to store large amounts of energy, in the order of hundreds of MWh, and aims to complement wind and photovoltaic plants or systems for the production of green hydrogen.

Unlike a thermochemical system such as lithium batteries, it uses machines capable of compressing CO_2 to 65 atmospheres in order to transform it into a liquid state and ensure that the energy expended is efficiently stored.

Lastly, the CO_2 is regasified, re-expanded in a turbine to return the current absorbed by the network to the network itself and re-injected into a tank, the "dome". The process of supplying electricity can thereby take place throughout the day, overcoming the limitations of photovoltaic and wind power whose production of electricity depends on the presence of the natural source. All this was technically demonstrated in the demo plant built by the company in Sardinia, thanks to the investment obtained in the Series A round in which A2A participated with its dedicated fund as lead investor.

Moreover, **the start-up has signed a Memorandum of Understanding with A2A for the initial implementation of the first CO_2 batteries in Italy.**

The British start-up **Greyparrot** has developed a computer vision-based solution that integrates artificial intelligence and data analytics. The software automatically identifies different types of waste, providing precise information on its composition and nature. The software is currently being tested at the A2A plastics sorting and treatment plant in Muggiano (MI). Greyparrot was chosen because it will be able to contribute to the **digitalization** and **automation of waste cycle processes,** further improving the efficiency of the collection and separation process.

Enspired is an Austrian start-up that has developed a digital **energy trading as a service (TaaS)** platform equipped with advanced **artificial intelligence algorithms**, which aims to **promote energy transition and make electricity grids more flexible**. The company operates in the short-term energy trading market, helping to balance energy supply and demand on the grid, optimizing the management of production and storage plants.
The company is currently working with A2A to bring its solution already present in Germany, Austria, the UK, France and the Netherlands to the Italian market.

Pallon, on the other hand, is a start-up linked to ETH University in Zurich. The company took the lead in the development of a **computer vision-based solution for the inspection of wastewater networks**. Using an artificial intelligence model, it is able to identify and locate leaks, breaks and cracks along the network, enabling predictive maintenance and savings of up to 40% on repairs and upgrades. Contracts with major European municipalities and utilities are already in place for the start-up. A2A is currently working on a partnership to facilitate the start-up's entry into the Italian market. In addition to a significant reduction in costs, the project will make the sewerage system even safer, further limiting the emission of pollutants into the surrounding area.

The French start-up **Beem Energy offers a plug-and-play photovoltaic panel kit** for the self-generation of electricity in residential settings. The panels can be installed quickly and easily directly by the customer, without the need for specialised technicians. The start-up aims to encourage the self-generation of energy from renewable sources and contribute to decarbonization. After a successful first pilot project during the summer of 2022, A2A is working to include the product in its catalogue and encourage the self-generation of energy among its customers in Italy.

Still based in France, **Siteflow** has developed software for the **digitalization of maintenance processes** in large production facilities. The solution allows to **improve shared operating standards** for **managing scheduled maintenance**, producing audit documentation and promoting collaboration between various tasks. In June 2021, Unareti chose Siteflow to enhance its maintenance operations in the Milan power grid**.** To date, the start-up's customers include some of the leading players in the nuclear, oil & gas and construction sectors.

A2A also wants to encourage the emergence of innovative technological solutions in Italy. In this respect, collaborations with two Italian start-ups deserve mention: **Circular Materials and Sinergy Flow.** The first is based in Milan and has patented a **technology for the removal of heavy and precious metals from industrial wastewater** with a view to the circular economy. The plant developed by the start-up effectively recovers metals such as arsenic, cadmium, nickel, zinc, copper, mercury, gold and silver so that they are not dispersed into the environment and can once again generate value. The technology adopted also allows a drastic reduction in treatment costs compared to current technologies.

Sinergy Flow has instead developed a low-cost ($30-150/kWh) and highly efficient (>70%) **sustainable flow cell battery** for large-scale stationary energy storage applications through the utilization of petrochemical industry by-products (e.g., sulphur) from different industrial processes. The extremely low cost allows the system to be compatible with long-term storage, enabling the penetration of up to 90% renewable energy sources.

A2A - SIBF Memorandum of Understanding

On October 27, 2022, A2A and the Israeli technology investment fund **SIBF VC** signed a memorandum of understanding to establish **a joint innovation hub** based in Tel Aviv.

SIBF - Southern Israel Bridging Fund - is a **leading Israeli venture capital fund** dedicated to frontier technologies, **investing in innovative hi-tech start-ups and technology companies** in Israel and abroad. SIBF works closely with its portfolio companies to support their growth thanks to a network of partners and geographical proximity, which allows it to better monitor processes with a practical approach that benefits both companies and investors. The fund now has **50 start-ups in its portfolio and 450 million dollars in investments**.

Thanks to this agreement, **A2A is SIBF's only Italian partner**, broadening its innovation horizon by expanding the scope of its activities in Israel, one of the world's most advanced industry ecosystems.

Federated Innovation @MIND

With a view to strengthening and further developing the Group's ability to intercept valuable solutions in the field of sustainability, and increasing its own ecosystem of innovation, **A2A also participated in "Federated Innovation @MIND" in 2022**, a public-private collaborative model created within MIND - the new innovation district that is growing in the former Milan EXPO area.

Federated Innovation is a unique model that currently brings together **a network of leading companies in their respective sectors at national and international level,** aimed at generating research and innovation initiatives, encouraging technology transfer and the contamination of ideas on a platform open to the collaboration of all: companies, universities, start-ups, investors and talents.

Within the Federated Innovation, A2A is part of the **Greentech and Circular economy** thematic area where it is working to develop projects to support the objectives of energy transition and circular economy.

MIND represents a **laboratory on an urban scale where innovations in the City of the Future can be tested**.

Among the projects implemented in 2022, a virtuous example is the experimentation of "**Trombia Free", the electric, self-driving sweeper that promises to revolutionize urban hygiene, as it reduces consumption and emissions**. Tested with the **collaboration of AMSA**, the project is an example of sustainable innovation aimed at improving the lives of citizens, a key aspect of a Life Company. The prototype designed by Trombia Technologies, a Finnish company, has demonstrated prerogatives that could prove invaluable in meeting the challenges of the coming decades. In fact, **the vehicle** is capable of **cleaning more than three times the surface area normally covered in an hour** by sweepers on the market today, and is particularly effective in removing both fine dust and significantly larger debris. All this while using only **15% of the energy required by a traditional vehicle**, and respecting the urban environment as much as possible: it is very quiet and safe, detects obstacles and pedestrians thanks to advanced vision systems and image analysis algorithms based on artificial intelligence. In addition, the sweeper can also be operated in semi-autonomous mode, thus giving an operator the possibility, at any time, to access control of the vehicle remotely, even controlling several sweepers at the same time.

Intrapreneurship and Corporate Venture Capital

The Corporate Intrapreneurship initiative **Call For Ideas**, which started in 2021 with over 3,000 participants, 540 ideas and eight finalist teams, continued in 2022.

In particular, **the six finalist projects were developed**, some of which already **materialised** during the year:

- **"Beyond Borders":** an initiative consisting of the implementation of an **employee engagement platform** for creating **social responsibility projects** in **developing countries**. In the first project in collaboration with the NGO WeWorld, participating colleagues will provide their expertise in the energy and circular economy sector to the people of Burundi;
- **"EV Smart Parking",** a project for the creation of "**Quick Charge" electric charging stations**, followed a development path through an initial crowd-design phase and a subsequent creation phase. The first columns will be installed in the Brescia area in 2023;
- **"Teleriscaldamento Zero",** aimed at carrying out a technical-economic feasibility study of a **fifth-generation district heating network** at natural temperature and based on the recovery of waste energy, saw the construction of a prototype plant inside the Brescia North power station.

Lastly, some of the ideas collected from the Call for Ideas 2021 are currently being evaluated for the launch of dedicated development paths, with the aim of assessing their potential to become new businesses for the Group.

Its success led to the Group launching its **second Corporate Intrapreneurship initiative** in 2022, aimed at all Group employees: **the "Call For Sustainability".**

It was entirely dedicated to the **challenges of the "Climate Tech" world,** with the aim of stimulating the generation of valuable ideas by colleagues on topics related to the energy transition and the circular economy while supporting the corporate entrepreneurship process. In parallel, the same challenge was addressed to the Group's external start-up ecosystem with the aim of finding possible providers in line with the internally generated use cases. Once again, participation was very broad with over 3,000 participants, 342 competing ideas and ten finalist teams.

Among the finalist ideas, the following reached the podium:

- **"Urban Micro Wind",** which consists of evaluating the performance of innovative **small vertical wind turbines** equipped with an adaptive control system through experimentation in order to assess their distributed and integrated application to industrial or urban structures;
- **"CO_2 Chain",** an initiative to create a **marketplace** to **certify carbon credits** via blockchain technology;
- **"CO_2 capture with fly ash**", which was the winning idea of the initiative. Its objective is to carry out a technical-economic feasibility study of **a plant for the sequestration of CO_2 from ash coming from waste-to-energy plants** through the process of accelerated mineral carbonation, a chemical process whose resulting product could be used as aggregate material and reused for a second purpose.

The **first place team** in the Call for Sustainability won the prize consisting of the **chance to participate in a real "Tech Mission" in Israel,** in order to discover the Israeli innovation ecosystem and interact with local start-ups and incubators in one of the most dynamic nations in terms of entrepreneurship and technology development.

9.2
Research and Development

The complexity and constant evolution of the energy context make it necessary for the Group to **ambitiously promote research activities and projects**.

The in-house Research and Development team actively participates in the pursuit of the Group's plan objectives, paying particular attention to **the energy transition and circular economy** through project initiatives in the fields of **decarbonization, material recovery** and **bioenergy**.

With this in mind, the focus on developing the skills of the future takes the form of a commitment to promote **highly qualified training** in **cooperation with universities and research centres**. Agreements have been finalized for **14 PhDs**, who will work on specific topics of interest to the Group. In line with this vision, A2A is also a **founding member** of the *National Centre for Sustainable Mobility (MOST)*, and of the *Ecosystem of Innovation and Research Multilayered Urban Sustainability Action (MUSA)*.

Multilayered Urban Sustainability Action

The "Multilayered Urban Sustainability Action" **(MUSA**) led by the University of Milan Bicocca and of which A2A is a founder was set up in 2022 within the framework of NRRP with the aim of **contributing to the improvement of the urban environment** in terms of sustainability thanks to the collaboration of university and research institutes with the business sector and private individuals.

MUSA aims to increase the understanding and awareness of the main critical issues to be addressed in the process of digital and sustainable urban and territorial transition, proposing innovative actions and solutions.

In particular, A2A will work alongside universities and other industrial partners in research and development activities relating to Deep Tech, Entrepreneurship and Technology Transfer, with the aim of strengthening the process of developing technological innovation by encouraging entrepreneurship.

The **modulation** capacity of **energy networks** is an essential precondition for the **energy transition and the development of RES**. For this reason, A2A is engaged in **research activities on energy storage systems** in order to better support the development of networks with alternative solutions to the already established battery technologies. In particular, the Group expressed its interest in participating in the creation of **a Research Infrastructure**, promoted by the Milan Polytechnic Institute and financed by the NRRP, **aimed at studying energy storage technologies** (chemical, electrochemical, thermal, thermodynamic). The infrastructure will be built at the historical building of the now decommissioned "Emilia" thermoelectric power plant in Piacenza by 2025.

The cornerstone of sustainable development from a circular economy perspective is material recovery. The Group is engaged in the study of all possible technologies aimed mainly at the **recovery of plastic materials and poor biomass**, in order to develop solutions that effectively integrate with energy recovery. The **"Plastic to Plastic"** and **"Biomass to Biofuel"** projects should be mentioned in this respect.

The first aims to investigate **technologies** that can be used in the **conversion of polyolefin mixtures into chemical precursors** for use in the production of new plastics or other chemical compounds other than fuels.

The second instead aims to evaluate the use of **residual biomasses** to produce pyrolysis oil for use in **biofuel refining processes,** for hard-to-abate sectors, and **biochar**, which can be used in agriculture for soil enrichment and CO_2 sequestration.

In 2022, in response to the challenging goal declared by A2A in its Business Plan of zeroing its emissions by 2040, the Group launched a series of research projects focused on the **identification and development of technologies for the capture, storage and utilization of the carbon dioxide** emitted by its plants, in order to achieve the challenging goals of reducing climate-changing emissions. The various projects currently underway include:

- **definition of the technology "road map**"' in order to **identify, select and develop** all **major emerging technologies** in the field of Carbon Capture, Utilization and Sequestration (CCUS);
- **"Herccules - Calcium Looping" project:** financed by the European Union under the Horizon fund to build an **experimental carbon dioxide capture plant** based on Calcium Looping technology at the Milan waste-to-energy plant;
- **"Potassium Carbonate" project:** in collaboration with industrial and university partners, the activity involves a test campaign **for the use of potassium carbonate adsorption technology** in the **CO_2 capture** process from waste-to-energy fumes;
- **development of a test plant for CO_2 absorbent solutions:** in collaboration with Acinque and the Milan Polytechnic Institute, the project aims to set up an experimental plant to test different absorbent solutions and identify **substances to capture carbon dioxide from combustion fumes**, ensuring high capture efficiency and low energy consumption. The activities will be conducted at the waste-to-energy plant in Como.

Hydrogen

Hydrogen has always been considered a top priority by industry as well as the regulator, as its unique characteristics make its availability an **essential precondition for the development of many technologies**: emission reduction in the hard-to-abate, mobility, carbon utilization and storage sectors. However, the high production costs and investment required to upgrade the technologies for its use have not yet allowed its development on an industrial scale. Technological research and institutional support therefore play an essential role for the future of this energy vector.

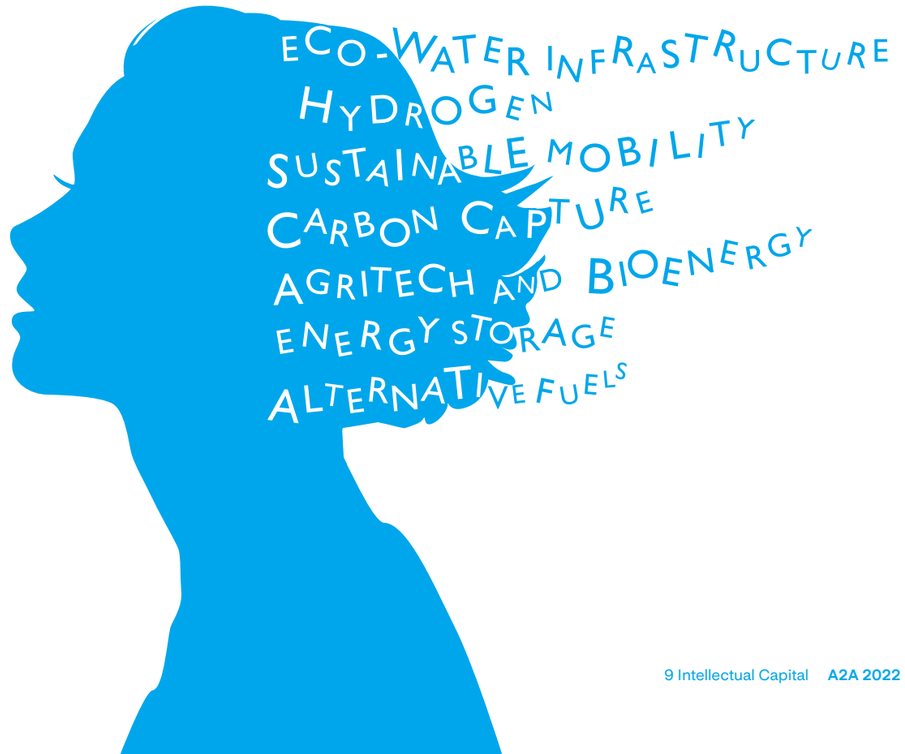
The Group's role as Italy's second largest electricity producer in terms of installed capacity and its established experience in the circular economy allow it to offer **various solutions for the production of *renewable* hydrogen.** For this reason, in 2022 A2A continued to be committed to developing the potential of this resource by launching several wide-ranging projects aimed at contributing effectively to the decarbonization of the heavy mobility sector and more generally of the hard-to-abate sectors.

During 2022, the feasibility of **converting thermoelectric power plants from natural gas to hydrogen**, or natural gas/hydrogen blends was confirmed, and the study of **gas distribution infrastructures in order to make them "hydrogen-ready"** was launched.

A2A is also a partner in the **"Hydrogen Joint Research Platform"** promoted by the Milan Polytechnic Institute in order to investigate, with the economic and operational support of numerous industrial partners, **technologies** aimed at the **production, storage, transport** and **use of hydrogen**, as well as to promote projects proposed by the academic world to identify all possible applications.

Lastly, the collaboration with **FNM, A2A** and **Snam** - as per the memorandum of understanding of 2020 - also continued throughout 2022 to give further impetus to the development of green mobility in Lombardy, pursuing the design of the first renewable hydrogen production plant. The **goal of developing Italy's first "Hydrogen Valley"** in Val Camonica has been confirmed, which will also allow the replacement of the current diesel trains on the Brescia-Iseo-Edolo line with new hydrogen-powered trains. The energy used will be renewable electricity from the Brescia waste-to-energy plant, thanks to the installation of a 6 MW electrolyzer, potentially scalable up to 20 MW.

Moreover, the project is configured as one of the first initiatives in the hydrogen field in Italy and has recently been awarded with a European grant of 4.5 million euro from the Innovation Fund Small Scale.



9.3
Digitalization

The 2020-2030 **Business Plan** includes the **Digital Transformation Plan** and the **Digital Sustainability Plan.** The Digital Transformation Plan is the key enabler for achieving the Strategic Plan and represents a transformative element not only in technology but also in processes, culture and skills.

Digital sustainability for the A2A Group takes the form of behaviours and actions aimed at **minimizing the negative environmental impact associated with the use of digital tools**, renewing existing corporate assets and stimulating conscious and virtuous behaviour in the corporate population.

With a view to digital innovation, by exploiting the potential of Open Innovation, A2A will engage in the creation of an **open**, widespread and interconnected **ecosystem of innovation** on the themes of digital sustainability, which can be achieved by selecting and initiating collaborations with partners and specialized research institutes.

The main milestones of the Group's digitalization process are translated into **12 measurable initiatives that have produced the following results**:
- 161 tonnes of CO2 saved in 2022 (compared to 123 tonnes in 2021)
- 216 tonnes of paper saved
- 567,000 km saved
- 236 MWh of consumption saved

The relevance of the development and use of digital tools in environmental matters led to the decision to launch "**One2Green",** a programme created with the aim of **improving the impact of digital technology on the environment** and supporting sustainable development, even with small everyday gestures.

The One2Green programme focuses on three main areas of intervention:
- **"Green IT":** techniques for the design, implementation, use and disposal of computers, servers and related systems with reduced environmental impacts;
- **"Digital Carbon Footprint":** conscious use of electronic devices with the aim of reducing CO_2 emissions;
- **"Work Automation Tool":** digital tools for simplifying employees' work activities.

Measurable sustainability KPIs have been identified for each of the programme's initiatives, which will be used as **indicators for verifying the achievement** of environmental impact reduction targets.

Synergies with other corporate initiatives

From the synergy between One2Green and the **"Good4All"** project, the latter aimed at investigating new workflows and processes with a view to work-life balance, the guidelines for sustainable collaboration in a Life Company were developed. They consist of a set of best practices to promote the development of a corporate culture aimed at improving the use of digital tools in a sustainable manner.

A new **"Digital Inclusion"** initiative was also undertaken, with the aim of equipping all Group employees with a company smartphone to access company services.

Lastly, one of the most important projects is the **Cloud Strategy**, a study to define the plan for the implementation, adoption and migration to cloud computing solutions to achieve resilience, flexibility and energy efficiency goals.

Group Data Office

A2A wants to be a data-driven Group, and works every day to achieve its goal by **using data as a strategic resource for digital transformation.**

With the launch of an ambitious Data Strategy programme within the group, the massive use of data for **decision-making through Advanced Analytics algorithms and Data Governance programmes** is becoming more widespread. During the year, numerous Advanced Analytics use cases were developed for different corporate businesses.

In particular, the activities were aimed, from a strategic perspective, at **accompanying the user** in the on-boarding phase through a series of dedicated **Customer Journeys** aimed at reducing the phenomenon of "early churn", which is the tendency of consumers to abandon the site in a short time.

One of the projects started during this period is **Customer Lifetime Value (CLV),** which has a **dual purpose**: on the one hand, it allows us to define a **five-year prospective value metric for each customer** who has had at least one contract with A2A, and on the other to understand **the potential profitability** of new customers or those currently in the customer base.

The use of Advanced Analytics systems has found application both within the Group's Corporate Department and in the various Business Units. In the Corporate Department, these tools were aimed at creating a **tool for detecting anomalies** in payments. This procedure proved to be fundamental in allowing a **large amount of data** to be collected and processed, so as to **automatically calculate control indicators** on Group audits.

In cooperation with the Waste Business Unit, a project was developed concerning the reduction of **electrical imbalances at the Silla2 waste-to-energy plant.** Electrical imbalances are the difference between planned electricity production and the actual amount fed into the grid. Their reduction is important for the company, given the financial burdens associated with their amount. This was achieved in the project through the **development of a model** capable of **improving the prediction** of electricity fed into the grid, using historical data as a calculation base.

In the area of Smart Infrastructures, several projects were launched in 2022, including:
- **"Diamond 3.0":** through the application of Advanced Analytics Relysense tools, **a predictive maintenance tool** was developed **for the medium voltage electricity grid** in Milan. It is able to estimate a risk rate value associated with the branches of the electricity grid in order to predict the probability of component failures;
- **"Design to value Water Cycle":** starting from a list of maintenance work to be carried out on the water network, the tool allows **prioritizing interventions**, taking into account the cost reduction associated with any avoidable water losses, the possible improvement in the quality of the service provided and the infrastructural state of the network, and the ability to exploit operational synergies; "**Smart Meters Analytics":** in order to **manage gas meter readings**, the project aims to develop **machine learning models**. The application solution was contextually developed for meters with RF (radio frequency) and GPRS (General Packet Radio Service) technology and consists of two parts: a **model for forecasting missed readings** and a **model for identifying the cause thereof**.

9.4
Knowledge Spillover

The search for innovative and technologically advanced solutions affects all areas of the Group and is aimed at improving both the products and services offered to end customers and the processes and working methods of all Group resources.

The Group's objective is to foster the personal growth of its employees through **training courses**, upskilling programmes and ad hoc **coaching**, aimed at fostering the development of new skills that are increasingly useful in the labour market.

Among those conducted, the **"Lean Six Sigma"** and **"PerformA2A"** initiatives are particularly relevant.

Lean Six Sigma is a **training programme** for selected employees and is active in the areas of continuous improvement, aimed at **obtaining "Green Belt" certification** after passing a specific examination. The programme offers participants: classroom training sessions; expert coaching 121 to carry out the assignments; the possibility of taking the final exam to verify the skills acquired, with a certificate issued by the University of Milan Bicocca.

Since the pilot year of the project in 2019, 89 employees have already achieved Green Belt certification, and further editions are in progress and planned for the future.

The programme supports the Group in achieving the objectives of its ten-year plan by encouraging an increase in the number of employees responsible for managing continuous improvement projects. Such an approach also ensures the creation of a network between the various organizational structures and the sharing of methodologies and tools needed in the performance of activities.

The projects conducted in such a training context resulted in the following economic benefits:
- an improvement in EBITDA of 500 thousand euro and avoided costs of 600 thousand euro in 2022;
- an improvement in EBITDA of approximately 2.2 million euro and avoided costs of 4 million euro annually as of 2019.

PerformA2A is an upskilling and coaching programme aimed at **optimizing the work performance of employees** through the introduction of "lean" and "agile" principles. In particular, the initiative aims to **foster a culture of operational excellence** through involvement in the following training modules: Vision & KPI; Visual Management; Performance meeting; Planning and Levelling; Problem Solving; Standard & Process Confirmation; Coaching and Routines; Celebrate Success.

As with the Lean Six Sigma programme, PerformA2A also supports the achievement of business plan targets, enabling employees to improve their business performance by monitoring them daily through specific KPIs and triggering **problem solving actions** in the event of failure to meet targets.

From a strictly quantitative point of view, the problem solving initiatives carried out during the initiatives allowed to reduce the costs incurred by around 300 thousand euro per year with the involvement of 260 employees.

Projects within the Lean Six Sigma Programme

Two projects within Six Sigma developed in 2022 deserve mention because of their positive effects on sustainability:

- Optimization of A2A Ambiente's WTE purchasing process: the project stems from the need to standardize purchasing procedures related to the Maintenance, Technical Office and Hydrogen areas, with the aim of creating a standardized process for processing purchase requests, which will make it possible to increase the number of Group contracts, reduce the lead time for planning contracts and optimize the process for the inclusion of new WTE.
- Optimization of the new warehouse at the Bergamo waste-to-energy plant: the project stems from Aprica's decision to move the Bergamo warehouse, where the waste-to-energy plant's spare parts are currently managed. Through optimized goods code management, the project aims to decrease the value of the warehouse with a view to more efficient stock management.

ISO 22301 Certification

A2A is the first utility in Italy to see its **ability to invest in continuous improvement of business resilience and business processes** certified.

In fact, the Group has obtained **ISO 22301 Business Continuity Management certification**. This management system defines the requirements necessary to **implement, maintain and improve business continuity processes over time**, ensuring that services can be provided even in the case of adverse events, minimizing their impact on the company organization and all stakeholders involved.

In particular, it bears witness to the Group's ability to ensure that its **operations comply with** national and international **regulations**, including in relation to **security**, and at the same time, to promote a **corporate culture that is aware of** potential **risks**.

This recognition is further evidence of A2A's commitment to offering services that are essential to people's quality of life, **preventing and/or managing any crisis situations** to the benefit of customers, citizens and employees.

9.5
Brand Reputation

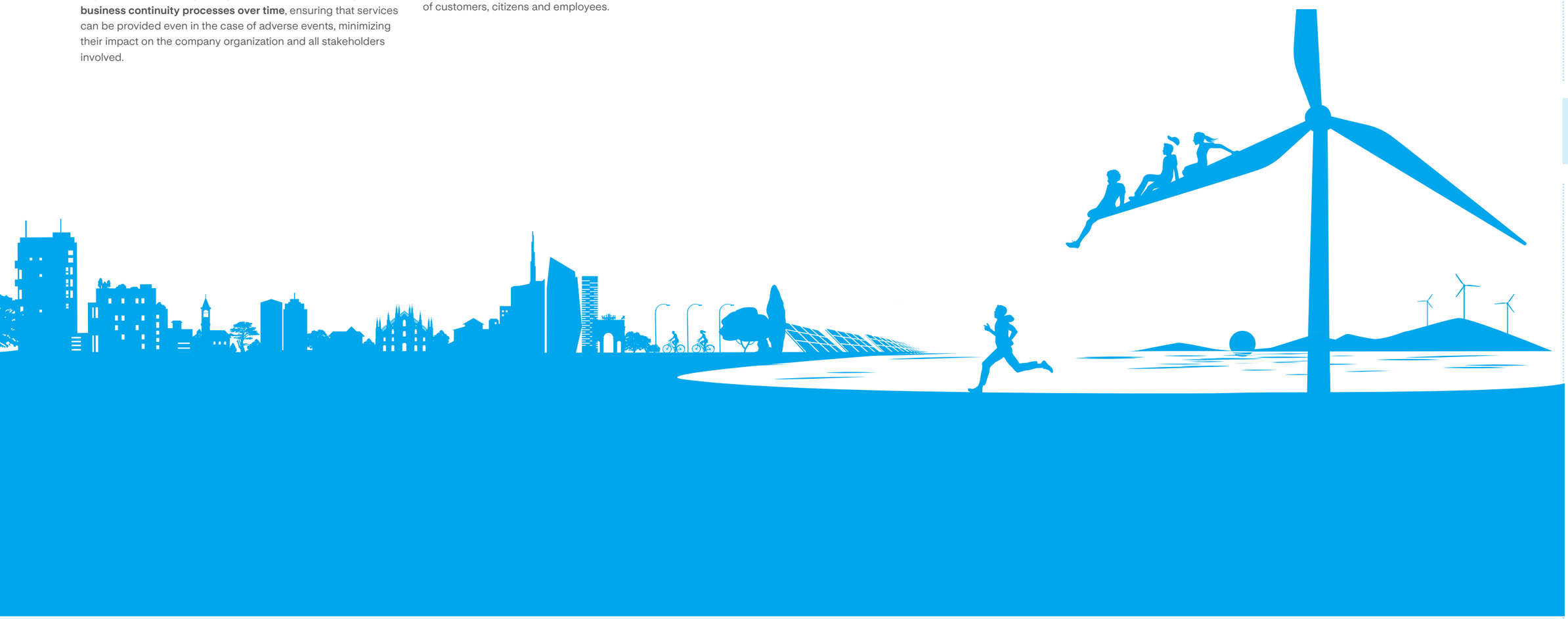
In 2022 the Group continued to **develop A2A brand awareness and recognizability** through the **"one brand" strategy,** launched with the repositioning to Life Company, in which the **A2A Life Company** motherbrand guides the communication of all the A2A Group companies in the matrix and becomes an important endorsement in all the other companies.

The strategy is aimed at transferring the **Group's strength and enhancing its activities in its business areas (energy, water, environment)**, working synergistically on equity, awareness, trust, familiarity and reputation.
The work is divided into three main points:

- **consistent and coordinated communication activities** across all properties, online and offline;
- **content strategy** and **tone of voice shared** by the whole Group;
- **unique and identity-based visual language** through the definition of shared cross-channel and cross-target formats and guidelines.

The various communication projects carried out during the year, aimed at enhancing A2A's commitment to **sustainability** and **raising awareness** of environmental issues, contributed to the development of Brand Awareness. The projects were developed in a **synergistic** manner, integrating various activities on several channels, including: advertising campaigns, organization and participation in trade fairs and events, media relations, regional affairs and stakeholder engagement activities.

Thanks to this strategy, **brand awareness** at national level was **52.5%** in December 2022, up 6.4% compared to 2021 and an impressive 14.5 points compared to 2020.



10

Relational Capital

10.1
Relations with Customers

Background information

According to the International Energy Agency (IEA), the persistent energy instability throughout 2022 has led to rising fuel prices, contributing to inflationary pressures that significantly impact households and businesses.

To cope with this emergency situation, governments have decided to focus on security of supply and consumer protection.[1]

In August 2022, the price of gas in Europe peaked at one of the highest values in the last 50 years and Italy, according to Cassa Depositi e Prestiti, is unfortunately one of the European countries most exposed to these price rises, as the incidence of imported gas as a source of electricity production and as an item of direct consumption by companies and households is higher than the European average. In particular, more than half of the households and businesses in our country are contractually exposed to volatile energy prices[2].

This is also in line with the findings of the **Quarterly analysis of the Italian energy system of the second and third quarter of 2022** published by ENEA, which shows that most wholesale gas price increases have been progressively incorporated into consumer contracts, despite the measures launched by the EU to mitigate high energy prices. As a consequence, in October 2022 inflation rose to 10% in the Eurozone and to almost 13% in Italy. Spending on energy in OECD countries in 2022 is estimated to double from 2021, to over 17% of GDP, marking an all-time high.

In order to cope with this complex economic situation, the European institutions have launched several measures to protect their consumers. As a last measure, the EU Council announced in December 2022 that a market correction mechanism would be established starting in February 2023 to protect both citizens and the economy from excessive prices. The regulation aims to limit episodes of excessive gas prices as much as possible in the European Union, as they do not reflect world market prices, thereby ensuring the security of energy supply and stability of financial markets[3].

Bearing this complex context in mind, in 2022 the A2A Group also sought to support its customers by offering not only different solutions according to the type of customer and the service rendered, but also by making an active effort to raise awareness of the founding themes of its Strategic Plan, the circular economy and energy transition. This was achieved through both awareness-raising campaigns aimed at reducing the economic and environmental impact of its consumption and through the provision of new products and services, also made available through strategic partnerships with major market players.

[1] *https://esgnews.it/environmental/iea-scenari-settore-energetico/#:~:text=Secondo%20le%20stime%20dell'agenzia,tonnellate%20di%20CO2%20nel%202050.*
[2] *https://www.cdp.it/sitointernet/page/it/il_sistema_energetico_italiano_alla_prova_dellinverno_?contentId=CSA40707*
[3] *https://www.consilium.europa.eu/it/press/press-releases/2022/12/19/council-agrees-on-temporary-mechanism-to-limit-excessive-gas-prices/*

2022 in facts

300% the increase compared to 2021 in average wholesale gas and electricity prices in the first nine months of the year, more than five times the ten-year averages[4]

50%[5] of respondents to the **Edelman Trust Barometer** believe that companies should do more to address energy resource scarcity

17% of GDP is energy expenditure in OECD countries[6]

+50.9% yearly average growth in energy prices, compared to +14.1% in 2021 (ISTAT)[7]

SDGs impacted

Material topic

Responsibility and Quality in the Provision of Services

Impacts for A2A

Strategic Plan @2030

23.5% Loyal customers with energy efficiency services

KPIS @2022

32 new energy requalification contracts

92% satisfaction with the call centre service

30 million km travelled with zero emissions thanks to the e-mobility service

7 TWH green energy sold to customers

[4] *https://www.pubblicazioni.enea.it/le-pubblicazioni-enea/analisi-trimestrale-del-sistema-energetico-italiano/fascicoli-2022/analisi-trimestrale-del-sistema-energetico-italiano-ii-trimestre-2022.html*
[5] *https://www.edelman.com/trust/2023/trust-barometer*
[6] *https://www.pubblicazioni.enea.it/le-pubblicazioni-enea/analisi-trimestrale-del-sistema-energetico-italiano/fascicoli-2022/analisi-trimestrale-del-sistema-energetico-italiano-ii-trimestre-2022.html*
[7] *https://www.istat.it/it/archivio/279831#:~:text=Nel%20mese%20di%20dicembre%202022%2C%20l'inflazione%20di%20fondo%20(,a%20%2B6%2C2%25.*

Responsibility and Quality in the Provision of Services

The Group constantly strives to provide quality, safe and reliable services, acting flexibly and promptly in responding to customers' expectations and adopting fair, transparent and inclusive communication practices. Acknowledging the crucial role and value that customers have for its business, A2A pays close attention to meeting their needs and provides them with the opportunity to report through a special channel. Lastly, again with the aim of guaranteeing continuity of service to its customers, the Group implements actions and systems to manage risks (including those arising from cyber attacks that could jeopardise data protection) and possible emergencies.

#reliability #security #customer focus #privacy

Management Approach (MA)

Mitigate

Possible interruptions to public services.

Cyber risk or inadequacy of IT and OT (Operational Technology) systems and possible ineffectiveness of customer data protection systems.

Any injuries or accidents (e.g., road accidents) during the performance of services in the area (collection and urban hygiene, network maintenance, etc.).

Third-party security issues for plants and infrastructures (e.g., dams, plants subject to the Seveso Directive, unauthorized access, fire, etc.).

Possible reduction in customer satisfaction levels (individuals and Public Administration).

Possible inadvertent adoption of unfair business practices.

Any critical issues in online reviews concerning the Group, particularly for companies selling energy products and services.

Issues of adequacy, compliance and updating computer applications.

Business Continuity Topics.

Risk factors

Opportunity factors

Brand promotion.

High level of appreciation of the territory for services with high quality standards.

Development of products and services with high added value (e.g., post-meter and e-mobility services).

Seize

Efficient management of infrastructure and services to ensure service reliability.

Group Crisis Management Procedure.

ICT infrastructure improvement; initiatives on cybersecurity; improvement of IT and process control platforms and applications

Implementation of state-of-the-art ICT infrastructures and systems for sensitive data storage.

ISO 39001 certification on road safety for some of the services provided.

Emergency procedures and contingency plans.

Monitoring service delivery processes.

Continuous updating of CRM plans and support SW.

Respecting sector standards and continuous innovation in services.

Partnership with consumer associations to prevent consumer scams.

Contractual instruments to ensure fair business practices

Adoption of IT platforms for online reviews.

Organizational structures responsible for carrying out the Business Impact Assessment and the definition of the Business Continuity Plan.

Implementation of ICT infrastructures and systems to protect against cyber threats.

ISO 27001 Information Security certification

ISO certification on business continuity.

What we have done

2022 Actions

- Bonus in bills for customers of Ukrainian nationality
- Green energy offers
- Partnership with Hitachi Rail
- "100% Green Heating and Cooling" Regulations
- Virtual Assistant "Uno"
- Un Sacco Etnico project

What we are doing

Sustainability Plan Actions

Sustainable mobility

Green energy – end-use energy efficiency

Quality

Policies to reduce waste production

Relations with Customers of the Market BU

Consistent with its positioning as a Life Company, A2A is committed to ensuring the highest standards of quality in the sale of its products and services and in customer service, with which it aims to establish a relationship constantly based on transparency and reliability.

Within the Group, the Market Business Unit manages and develops sales and after-sales activities relating to the supply of electricity and gas, products and solutions for energy efficiency and e-mobility, with the aim of providing effective, innovative and sustainable solutions. The Market Business Unit operates throughout Italy and consists of the companies A2A Energia, A2A Energy Solutions and Yada Energia and their subsidiaries and investees. The following chapter also includes the performance of the Group's retail companies Gelsia, Lumenergia and ASM Energia.

Electricity and Gas Sales Service

In 2022, the Group's sales companies sold a total of 2,328 million cubic meters of gas and 20,292 GWh of electricity. The number of total deliveries increased 8% for electricity and 3% for gas. As of December 31, 2022, 1,214,884 electricity deliveries and 945,596 gas contracts were active in the deregulated market. There was a slight increase in the share of electricity sold outside Lombardy, to 41%, while the share of gas grew by 7 percentage points from 26% in 2021 to 33%.

Figure 54 Number of customers, analyzed by type

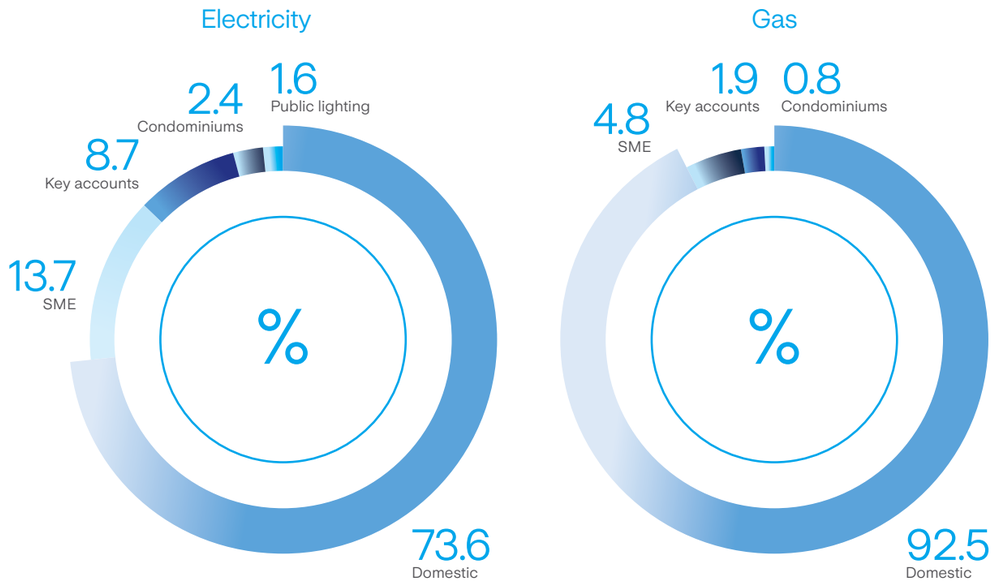
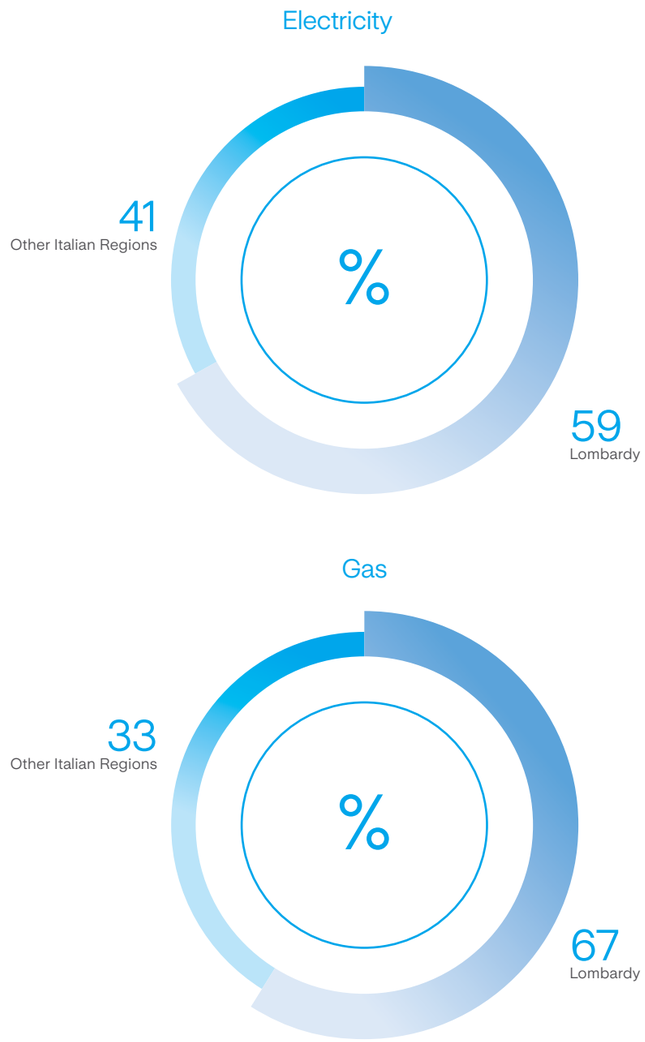


Figure 55 Geographic breakdown of sales volumes



In line with the Group's strategy aimed at a continuous path of development and growth at national level in the sale of electricity and gas, A2A Energia has achieved several important milestones, including **the award, for the four-year period from April 1, 2023 to March 31, 2027, of four lots through the auction procedures for the Gradual Protection Service for the delivery of electricity to micro-businesses**. The contract covers some 500,000 delivery points, with a total volume of almost 1 TWh/year. This result is in addition to the allocation, again by the Single Buyer, of four lots (corresponding to 11 regions) for the Safeguard Service for the years 2023 and 2024, for a total volume of more than 2 TWh/year. In addition, several lots related to CONSIP tenders have been definitively awarded to A2A Energia: for electricity, four lots were awarded for a total volume of more than 2 TWh/year, while for natural gas, one lot was awarded for a total volume of about 40 million cubic metres.

The process of renewing and promoting digital channels continued in 2022; in fact, the A2A Energia website was renewed and **the MyA2A App was launched**, dedicated to all A2A Energia customers. It has been designed to improve and simplify the customer experience, increase customer satisfaction and increase brand appeal. The MyA2A App allows deregulated-market customers to quickly and easily pay their bills, check the progress of their expenses, view their payment history and status, review their consumption overview, keep track of all requests and their status, communicate self-readings, activate direct debits to their current account, or change their meter power.

Responsibility in Customer Service

Green Energy Offers and VAS for Customers

In line with the objectives of the Strategic Plan related to the energy transition, A2A values customers who are committed to reducing their impact on the planet by choosing an increasingly sustainable style of energy consumption. Therefore, the Group's sales companies have activated numerous offers and services to promote the use of green energy and support the energy efficiency of end customers.

The entire portfolio of offers for the residential segment has consisted of 100% certified green energy since 2018. In 2022, the companies of the Market Business Unit sold 6,989 GWh of green energy to their customers, an increase over 2021 of +40%. Of the total number of green energy delivery points in the mass market segment as of 2022, 83% are domestic customers and the remaining 17% business customers.

Customers who have signed a contract for the supply of electricity produced from renewable sources of certified origin with one of the Group's commercial companies may request authorization to use the "100% GREEN A2A" brand.

Figure 56 Green energy sold and breakdown by market segment (in % and in GWh)

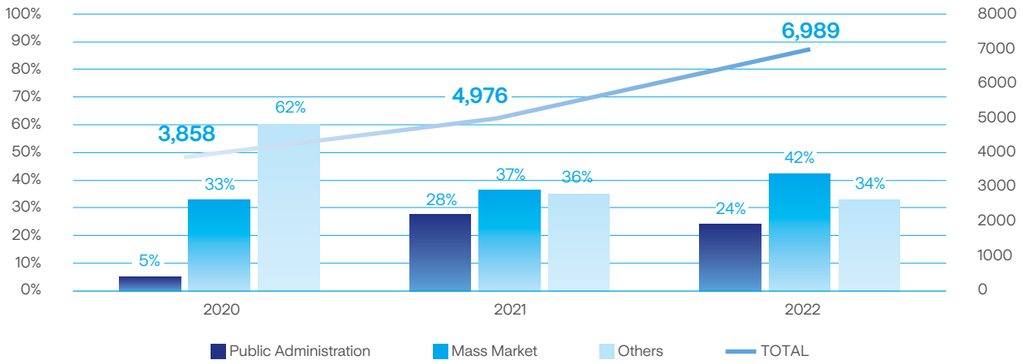
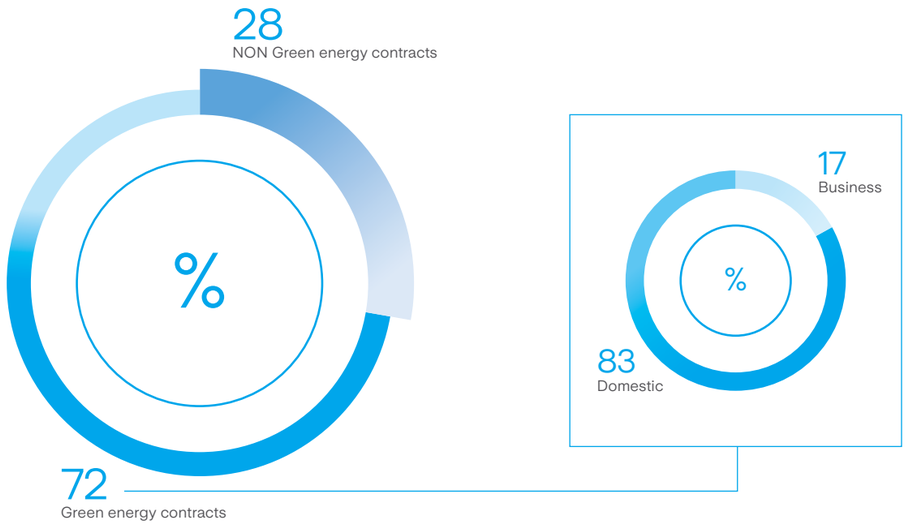


Figure 57 Distribution of mass market green energy



@2030 Objective:

17.4 TWh green energy sold to the market

Compensation offers for purchased gas

From 2021, both A2A Energia and Yada have made it possible for their customers to offset the emissions generated by the gas used in their supply. This has been made possible by "carbon offsetting" initiatives. In concrete terms, it means that carbon credits generated by energy efficiency projects that have a positive impact on the environment are purchased and compensated. Every time a "carbon offset" occurs, one tonne of CO_2 released into the atmosphere is compensated, i.e., an equivalent amount of emissions is saved somewhere in the world relative to the gas sold. To date, the Group has financed two carbon offsetting projects. The first in the district of Nyagatare, Rwanda, for the rehabilitation of a number of drinking water wells, which not only reduces CO_2 emissions but also concretely improves the lives of the inhabitants of the area. The second is a sustainable agriculture project in Ukraine, which completely eliminates ploughing emissions and increases crop productivity without the use of chemical fertilizers.

Thanks to these projects in 2022, the quantities offset by Yada amounted to 24 million cubic meters.

With a view to increasing its customers' awareness of reducing the economic and environmental impact of their consumption, A2A Energia has launched the "**Consuming less energy is worthwhile**" initiative aimed at encouraging customers to reduce their consumption on fixed-price electricity supplies, starting from their own habits; for customers who reduced their consumption in the period from September to December 2022 compared to the same period of the previous year, the company has made a supply bonus available that can be used from the first useful bill issued after June 2023.

Furthermore, in order to encourage its customers to participate in the energy transition process, the **Solare a2a** offer has been available to residential customers since June, which includes the installation of a photovoltaic system on the roofs of their homes, allowing them to produce clean energy independently, reducing costs and emissions. Customers - as with Clima2a, Caldaia2a and Wallbox A2A - can benefit from an "all-inclusive" service that supports them from the quotation, through installation to final connection, including the handling of all administrative paperwork. An innovation project in partnership with Beem Energy, a company specializing in "do-it-yourself" photovoltaics that can be installed independently on surfaces such as walls or floors, also began in July 2022.

Lastly, as a result of the energy crisis and the consequent rise in electricity and gas prices, in recent months A2A Energia has provided a discount on the MIA2A variable-price green offer reserved for Group employees, who can also benefit from a 10% discount on the list price of home energy efficiency solutions.

A2A Energia is committed to achieving the objectives of its Sustainability Plan, and has contributed to the reduction of paper materials to be printed, "saving" about 237 trees in 2022 thanks to the bollett@mail service. This result was also achieved through the implementation of automated customer journeys inviting customers to join the bollett@mail and SEPA service.

Contact Channels and Customer Satisfaction

Sales and service channels are two key elements for guaranteeing quality service to customers. This must be done by effectively integrating physical-territorial channels with digital ones, aiming at the synergistic management of touch points and interaction channels between A2A Energia and its customers, with the objective of optimizing their contact experience.

A2A Energia offers a complete listening service through physical branches, SpazioA2A stores, call centers, social channels, Whatsapp and a call-back service available on the website. In 2022, the A2A Energia call center received more than 2 million calls, while the commercial desks welcomed and served nearly 178,350 visitors with an average wait time of about 12:30 minutes. In addition, the retail companies Gelsia and Lumenergia served 49,308 and 5,955 customers, respectively, through their territorial branches.

Figure 58 Call center call monitoring (2021)

	ARERA target	A2A Energia	Gelsia	Asm Energia Vigevano
Percentage of successful calls	>=85%	83.8%	95.1%	82.7%

With the aim of informing consumers of the changes taking place in the energy markets and promoting the subscription of free market offers, the expansion of A2A Energia's physical points throughout the country continued in 2022 with the activation of new touch points in the provinces of Bari, Taranto, Parma, Perugia and Terni. In addition, agreements have been signed with third-party partners to propose A2A Energia offers in their multi-brand sales outlets and through their staff, allowing a significant expansion of the shop-in-shop network throughout Italy (Lazio, Liguria, Friuli and Piedmont, as well as in Lombardy).

The agreement with BTL was also renewed in 2022, thanks to which it is possible to subscribe to A2A's electricity and gas offers (domestic and business) at their 71 desks.

Customer Satisfaction

The A2A Group sales companies constantly monitor customer satisfaction in order to acquire awareness of the perception of the service provided and to identify intervention areas with a view to continuous improvement through the many channels of contact.

In particular, in 2022 A2A took part in the 14th edition of the Cerved survey "Monitor energia e gas", and carried out a satisfaction analysis of free market customers and users who used the call center.

In Cerved's Customer Satisfaction Index survey, A2A Energia was on the podium for three out of four targets: domestic gas, business gas and business electricity. In particular, it maintained its first position on the target gas business.

In the satisfaction survey of free market customers, A2A Energia obtained an overall score of 76.6, growing further compared to the score of 2021 (+1.2).

In addition, satisfaction with the call center stands at 92%, higher than the national average. Finally, the "after call" survey confirms the excellent reputation of the call center represented below. Details of the satisfaction survey results can be found in the Supplement on page 62.

Figure 59 Customer satisfaction after a call to the call center (percentage on assessments recorded)

	2020	2021	2022
grade 1 (very dissatisfied)	5.30%	6.70%	4.20%
grade 2 (dissatisfied)	2.30%	2.40%	1.50%
grade 3 (satisfied)	6.70%	5.90%	5.30%
grade 4 (very satisfied)	85.70%	85.00%	89.10%

Consumer Protection

The Market Business Unit is always attentive to the less well-off and to social and humanitarian emergencies.

Following the outbreak of the conflict in Ukraine and the ensuing humanitarian emergency, the Group chose to make its contribution by supporting customers of Ukrainian nationality through an in-bill bonus. The bonus was aimed at supporting Ukrainian customers of A2A Energia residing in Italy who are hosting or were about to host compatriots fleeing war territories.

Thanks to this initiative, A2A received the special "Friend of the Consumer 2022" award from Codacons, an acknowledgement that the association bestows every year on companies, entities and personalities who have distinguished themselves for their commitment to protecting rights and the community.

The retail companies of the Market Business Unit regularly apply the measures defined by ARERA (Regulatory Authority for Energy Networks and the Environment), the social bonus for economic hardship and the electricity bonus for physical discomfort. The first is a measure aimed at supporting consumers' electricity and gas supply expenditure based on specific parameters such as ISEE or family size. In 2022, the sales companies of the A2A Group awarded the gas bonus to 113,079 customers and the electricity bonus to 112,040 customers.

The electricity bonus for physical discomfort is instead focused on supporting expenditure on the supply of electricity for households with a member in a condition of physical discomfort. For 2022, the bonus was awarded to 1,951 customers of A2A Energia and 34 customers of Lumenergia.

Lastly, A2A is committed to ensuring customers a service based on maximum transparency and fairness and over time, also thanks to the collaboration with the Consumer Associations, which have allowed it to define already in the last few years specific tools by which to simplify the information provided to customers and regulate conduct clearly: from service activation through to joint settlement, to the stipulation of the institute agreement of the Observatory on unfair commercial practices, to the activation of the anti-fraud toll-free phone number and the Self-regulation protocol. Sales and service staff in direct contact with customers are trained on an ongoing basis with respect to these measures

Under the scope of consumer protection, the toll-free “anti-fraud” number received 4,345 calls. Of these, 1,652 are related to unfair business practices by other operators and 2,693 by "unidentified" companies.

Confirming its attention to consumer protection, A2A Energia keeps its customers' consent constantly updated: in 2022 around 56% gave consent for marketing activities for its own products and services, while 28% gave consent for profiling for marketing purposes.

Energy Efficiency

A2A Energy Solutions (AES) is the Group company that offers energy efficiency solutions for industrial customers, condominiums and service sector companies with the aim of developing a better environment, using innovative high-efficiency technologies and renewable sources, to meet customers' needs and ensure their competitiveness and satisfaction at all times.

An important part of the activities is still represented by the incentive systems: the presence of a large number of Energy Management Experts (EGE), certified according to the UNI CEI 11339 standard, allows us to actively manage more than 300 applications for obtaining Energy Efficiency Certificates, which are flanked by requests and negotiations for owned plants for Guarantees of Origin and interventions incentivized through Conto Termico. Last but not least is the management of tax credits deriving from the 110% Superbonus, where A2A Energy Solutions also plays the role of General Contractor.

Moreover, the same EGEs present in A2A Energy Solutions are responsible for coordinating and managing Energy Diagnoses pursuant to Italian Ministerial Decree 102/14, the obligation of which is due every four years, using the experience gained from years of work on both in-house companies and external customers.

With regard to apartment buildings, AES has signed 32 new contracts for integrated energy requalification during 2022, allowing a reduction of CO_2 emissions into the atmosphere estimated at 2,200 tonnes. These interventions have mainly involved the installation of photovoltaic systems on apartment blocks and companies in the tertiary sector, as well as integrated building upgrades on apartment blocks of different sizes.

Great attention is being paid in the residential and tertiary sector to issues of electrification of consumption, adopting heat pump or hybrid technologies to replace traditional fossil fuel technologies.

As far as the industrial sector is concerned, all the interventions have been in the photovoltaic sector. Taking into account both projects in the authorization and construction phase as well as completed projects, more than 40 projects with an average size of around 1 MW were managed in 2022, thanks to which an estimated 12,671 tonnes of CO_2 were avoided. In addition, five more projects are in the start-up phase, thanks to which a further 10,000 tonnes of CO_2 not emitted into the atmosphere will be saved. The interventions see the entire Italian territory as the perimeter of installation and demonstrate how the A2A Group is increasingly becoming a national player in the field of energy efficiency solutions also through renewable sources.

A2A Energy Solutions' goal has always been to return an important part of the value it generates to the territories. Even in the case of incentivized photovoltaic plants, the aim has been to combine the economic advantages of green production with the environmental benefits on the territory. For this reason, A2A Energy Solutions, directly and through dedicated vehicles, has represented 15% of average market share in the A-2 category registers of Italian Ministerial Decree RES1 dedicated to the installation of photovoltaic systems to replace asbestos roofs, with a cumulative authorized capacity of more than 10MW.

2022 was also the year in which the business model on Renewable Energy Communities (RECs) was launched. While waiting for the implementing decrees sent to the European Community to come into force, A2A Energy Solutions has developed its business model together with A2A Energia.

In an REC, groups of citizens, apartment blocks, small and medium-sized enterprises, but also local authorities, cooperatives, associations and religious bodies who decide to join together to self-produce energy from renewables, form a legal entity whose aim is to focus on environmental, economic and social benefits for its members. A2A Energy Solutions proposes itself as the entity that can feed the REC and, together with A2A Energia, represent the aggregator capable of comprehensively supporting the CER, guaranteeing the maximum economic and environmental benefit for both industrial members and those of the community.

In 2022, the Group issued a total of 31,281 energy efficiency certificates (known as White Certificates).

Hitachi Rail and A2A in partnership for energy transition and consumption optimization

Hitachi Rail and A2A, through its subsidiary A2A Energy Solutions, have signed a 20-year agreement with the Virtual PPA (Power Purchase Agreement) formula, which envisages the construction of new photovoltaic plants for the production of renewable energy at the Hitachi sites in Reggio Calabria, Naples and Pistoia, both in self-consumption mode and as entities capable of conveying excess energy to other Group plants.

More specifically, A2A will install more than 40,000 solar panels over the next two years on both land and on the roofs of Hitachi Rail's production facilities, covering a total of more than 100,000 square meters, and will support the initial investment and ordinary and extraordinary maintenance for the entire duration of the contract, during which Hitachi Rail agrees to purchase the green energy produced at agreed prices that are much lower than market prices.

The initiative foresees the construction by A2A of state-of-the-art plants capable of producing around 19 GWh/year of energy, equal to 60% of the average annual needs of Hitachi Rail's six Italian sites, which require over 31 GWh/year.

The project will not only result in significant savings in terms of industrial costs for Hitachi Rail, but will also lead to a significant reduction in CO_2 emissions for the community and the country, quantifiable at around 7,000 tonnes of CO_2 per year, equivalent to the creation of a 5-hectare forest with 42,000 new trees.

Thanks to this partnership and through its subsidiary A2A Energy Solutions, the A2A Group consolidates its leadership in the photovoltaic and distributed generation sector, adding a further piece to its growth programme in the management of renewable energy production plants. This is a completely green field project that the Group has developed from the early design stages, to be followed by construction, asset management and technical-administrative management.

Electric Mobility

In 2022, A2A Energia confirmed its focus on the electrification of mobility through a series of solutions proposed to its customers, including the new "all inclusive" **WALLBOX A2A** service, which includes the supply and installation of a charging device for the electric car at home, as well as the **A2A Easy Moving** offer which, with a single fixed monthly contribution, allows customers to have 100% green energy at the cost price for home supply and to recharge their electric car up to 180 kWh per month, depending on the package chosen. Lastly, electric bikes and electric scooters, both ideal solutions for those who want to get around in a practical and sustainable way, are available on all channels.

In addition, a number of strategic partnerships have been signed to spread the service, such as that signed in September 2022 with Autotorino. The partnership envisages providing vehicle charging solutions, both at home and on the road, that use only energy from renewable sources certified by a guarantee of origin.

An example of an action to support the circular economy was the inauguration in Via Amoretti in Milan of the first H24 self-service methane plant for motor vehicles covered by a guarantee to feed the same amount of biomethane into the grid. This was possible thanks to the agreement between X3Energy and A2A Energia.

National Center for Sustainable Mobility (MOST)

A2A is a founding member of MOST, the **Centro Nazionale Mobilità Sostenibile [National Center for Sustainable Mobility]** established in 2022 with the aim of enabling Italy's best university and manufacturing resources to work together to boost sustainable mobility and create a positive impact on the community.

A2A will collaborate with universities and other industrial partners within the perimeter of sustainable mobility for research and development activities related to four specific areas (Mobility as a Service and Innovative Services, Urban Mobility, Electric Traction Systems and Batteries and Hydrogen and new fuels), offering its financial and technological resources alongside those of the other members involved.

Relations with District Heating Service Customers

District heating is a safe, clean, effective and economical system that minimizes emissions in the vicinity of the environments in which people live and work (the heat is usually produced in plants located outside the inhabited centers) and significantly reduces the management costs borne by customers compared to traditional heating systems (e.g., periodic maintenance of boilers). Through its subsidiaries A2A Calore e Servizi, Linea Green and AEB, the A2A Group manages the production, distribution and supply of heat using the most innovative, efficient and environmentally-friendly technologies. The Group is present in the cities of Milan, Sesto San Giovanni (MI), Novate (MI), Cassano d'Adda (MI), Brescia, Bovezzo (BS), Concesio (BS), Bergamo, Cologno Monzese, Lodi, Cremona, Crema (Cr), Rho (MI), Seregno (Mb) and Giussano (Mb).

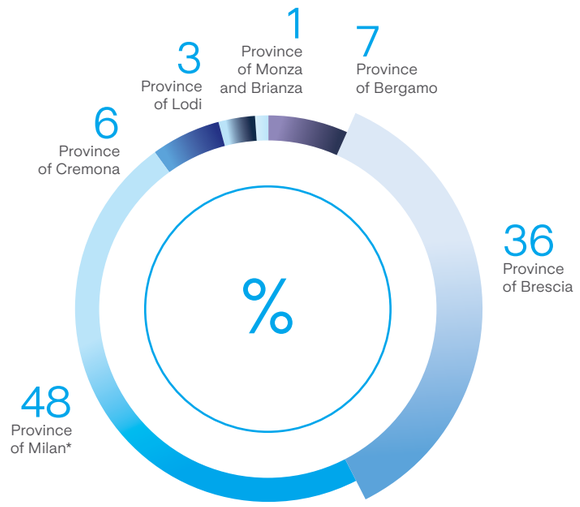
This service has been delivered to over 27,080 users (individual residential units in the case of independent heating or whole buildings in the case of centralised heating), for a total served volume of approximately 120 million cubic meters.

In 2022, A2A was the first in Italy to achieve the challenging goal of certifying thermal and cooling energy produced from renewable sources and distributed in its district heating and cooling networks. The model that A2A has given itself to identify and regulate this sector is encapsulated in its **"Heating and Cooling 100% GREEN"** specification, which has been validated and confirmed by a third-party certification body as an example for regulating the production and distribution of renewable heating and cooling energy throughout Italy. This therefore represents a unique aspect in the framework of regulation in Italy, as well as an important innovation for the Italian energy system.

@2030 Objective:

60% of the heat fed into the network from renewable sources or recovery of waste heat

Figure 60 Geographical distribution of the volume served by district heating



* Since 2017, the Province of Milan has also included the district heating service of Linea Reti e Impianti, at Rho Nord and Rho Sud.

50 years of district heating in Brescia. “Hackathon – calore in rete”

"Hackathon - calore in rete" [networked heat] is the district heating initiative aimed at fourth and fifth-year secondary school students in the city of Brescia and promoted by A2A. The initiative is part of the programme of events linked to the 50th anniversary of district heating in Brescia and is designed to give rise to and create sustainable projects that exploit the opportunities arising from district heating and to provide an opportunity for training. In fact, the students were able to take an active part in a company project, bringing out their creativity and inventiveness, interfacing with A2A sector experts and learning how to evaluate, develop and present a project, thereby shortening the distance between the school world and the world of work.

Quality of Services Provided and Attention to Customers

The Group companies that manage the district heating service operate in accordance with the standards indicated by the Regulatory Authority for Energy, Networks and Environment (ARERA) in Resolution 661/2018 on the regulation of commercial quality.

The A2A Group - through the companies A2A Calore e Servizi and Linea Green - decided to freeze district heating prices, keeping them "frozen" until September 30, 2022 in the face of the conflict in Ukraine, which triggered vertiginous rises in energy prices. This allowed customers connected to district heating networks to keep their prices indexed on January 1, 2022, thus avoiding further price increases.

The initiatives that envisaged instalment plans with maximum flexibility for bills were also confirmed, according to the specific needs of customers, without interest and with the suspension of all supply disconnection actions.

Also in 2022, work was carried out to **strengthen digital channels & self-care operations** through the introduction of the on-time password (OTP) signature for A2A Calore e Servizi customers, who can now activate their contract in a few clicks from mobile and without any paper consumption. This paperless process of activating the new supply contract leads to a reduction in CO_2 consumption of 122kg/year.

In addition, the **bollett@mail** and **direct debit** services were promoted through dedicated campaigns with the support of Customer Care and thanks to the cooperation of all customer contact touch points. This promotional activity has allowed sending nearly 88,000 bills in digital format, about 30% of all bills issued in the year, resulting in improved service for customers and a positive environmental impact from reduced paper consumption for printing bills.

Relations with Customers of the Integrated Water Service

The companies A2A Ciclo Idrico and Azienda Servizi Valtrompia (ASVT) manage the integrated water service within the Group and are mainly responsible for the activities of supply, treatment, distribution, sale of water, and collection and purification of sewage in a vast area of the province of Brescia.

In 2022, 225,570 users were connected to the aqueduct service, 652,468 users were served by the sewerage network and 640,504 were served by the purification plants.

In line with previous years, the companies guaranteed the continuity of the service in 2022 as well, managing all the programmed and accidental interruptions within the timing envisaged by sector regulations and promptly arranging replacement services in all cases in which the interruption lasted more than 48 hours.

Quality of Services Provided and Attention to Customers

The A2A Group provides various communication channels and disseminates a variety of informative materials to citizens who use the integrated water service.

The emergency telephone service for reporting inefficiencies, irregularities or interruptions in supply is free of charge from fixed and mobile networks and active 24 hours a day, every day of the year. The service provides, if necessary, instructions on the conduct to be adopted immediately to protect their own and others' safety, pending the arrival of the emergency team. In 2022, the A2A Ciclo Idrico call center processed 116,630 calls, maintaining excellent service quality levels with an average wait time of 163 seconds (168 in 2021).

Also for 2022, A2A Ciclo Idrico and ASVT users were able to benefit from the free **Bollett@mail** service. The percentage of bills sent digitally has reached around 24% of the total, also allowing a significant reduction in paper consumption. In terms of contracts, just under 60,000 users use the service out of a total of about 224,000.

In the course of 2022, feasibility and subsequent technical analysis activities were completed in order to continue the digitalization of the contract activation process (introduction of One Time Password (OTP) signatures) and activating the "virtual" desk service.

With the latter service, it will be possible to talk to users via videoconferencing while being able to exchange documents and sign them using OTP.

Both of these functionalities will be activated by February 2023, also allowing desk colleagues to work remotely.

Since November 2022, the new IVR (Interactive Voice Response) has also been active, aimed at greater use of the website and customer area. The main new features introduced include reduction of the average wait time through revised messaging; promotion of the Customer Area and other services available on digital channels; user recognition by entering the user code.

Lastly, a pilot project was launched on 3,500 A2A Ciclo Idrico domestic users in December 2022 called "**A2A Ricorda**", through which an SMS or e-mail is sent to users to remind them of a bill that is due (two days before expiry) or has expired (four days later).

Figure 61 General indicators of the emergency service

	2022	ACI		2022	ASVT	
	Standard	Cases that comply with the standard %	Actual average time	Standard	Cases that comply with the standard %	Actual average time
Response time to emergency call	≤120 sec.	91.30	70.35 sec.		93.60	61 sec.
Arrival time at the place of emergency call	3 hours	97.30	1:59 (h:mm)		100.00	44:99 (mm:sec.)

Relations with Customers of the Gas and Electricity Distribution Service

Unareti is the Group company that manages the distribution of electricity and natural gas in an integrated manner. Unareti's activities are carried out in about 200 Italian municipalities in seven regions, for a total of more than 20,000 km of network.

Quality of Services Provided and Attention to Customers

In order to improve the support provided to its customers and increase the quality of service through new digital tools, in 2022 Unareti developed the virtual assistant "Uno", accessible from the website and via SMS, Telegram or Whatsapp.

Uno is available to customers 24 hours a day, seven days a week to help them find a wide range of information on electricity and natural gas distribution services:

- access to supplies
- costs and estimates for new connections and other work
- management of readings and self-readings
- status of the electricity grid and information on planned outages and faults.

Relations with Customers of the Municipal Sanitation Service

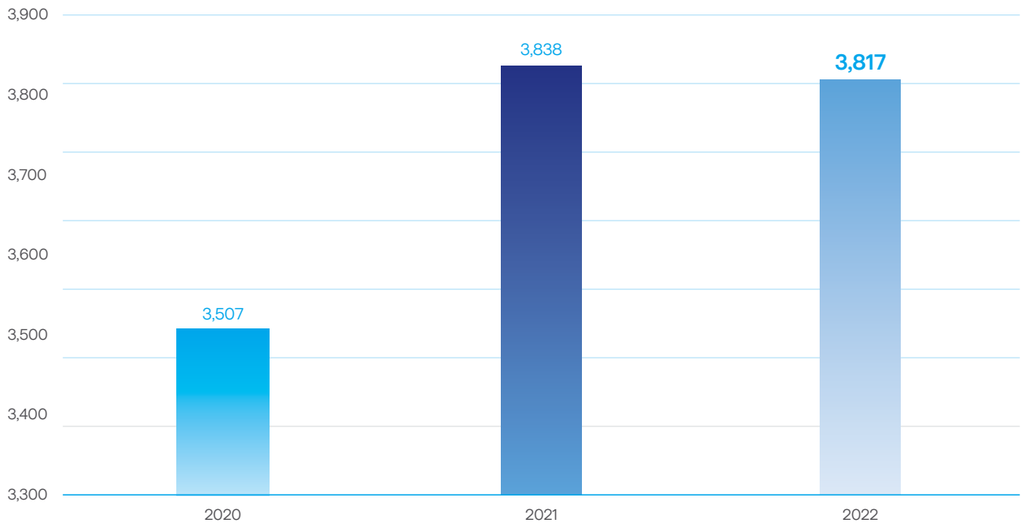
Through the companies AMSA, APRICA, Linea Gestioni and Gelsia Ambiente, the Group deals with the municipal sanitation services of 266 municipalities, for a total of more than 3,817,000 citizens served, in the provinces of Milan, Brescia, Bergamo, Como, Lodi, Lecco, Monza and Brianza, Mantua, Cremona, Genoa and Varese.

Natural Capital

Separate waste collection
69.7% separate collection index

In 2022, the waste disposal service carried out by the companies A2A Ambiente and A2A Recycling, served 1,420 municipalities and 8,790 thousand companies, for a total of over 389 thousand tonnes of waste disposed of.

Figure 62 Total number of users of the municipal sanitation services (thousands)



The figure for 2021 has been updated to include the Maleo basin (+19 compared to last year's publication (3,819)

Initiatives for Promoting Separate Waste Collection

During 2022, AMSA renewed the agreements with partners in the large-scale retail sector for the collection of used vegetable oil from households and small WEEE (Waste Electrical and Electronic Equipment).

APRICA introduced the new service in 2022 for the collection of used vegetable oils, promoted together with the Municipality of Brescia and in collaboration with some private companies of the large-scale retail trade, with the aim of improving the quality of separate waste collection while approaching user needs.

Both companies have promoted proper waste collection at **multi-ethnic restaurants with the *Un Sacco Etnico* project**, engaging around **200** businesses in **Milan**, **nine in Bergamo and 12 in Brescia.** During the meetings, information was provided on proper waste separation and on the innovations introduced by the European Single Use Plastics Directive.

Finally, AMSA renewed its support for the "NoPlà" and "NoPlà AGain, reuse is win-win" projects, initiatives whose main aim is to reduce plastic, with a particular focus on combating the use of single-use plastic and on reuse as a virtuous practice.

Quality of Services Provided and Attention to Customers

In order to implement the new ARERA regulation, in synergy with the served municipalities, AMSA and Aprica drew up the **Quality Charter**. The Charter complies with the provisions of the Consolidated Act for the Regulation of the Quality of Waste Management Services (TQRIF), describes the tasks and responsibilities of the manager of collection and transport services and street sweeping and washing, and those of the TARI manager. AMSA has drawn up 18 Quality Charters, while APRICA has produced 100 Quality Charters, 40 of which have been published on the website. In July 2022, a meeting was organised with consumer associations to explain the changes introduced by ARERA, which involved all companies in the collection chain.

On the other hand, the work of updating the PULIamo website and app remained constant, while new municipalities and services have been added and a great deal of attention has been paid to an analysis of the current digital communication strategy, structuring various editorial plans for social media through the publication of informative posts. The main objective is to reach and raise awareness of new targets active on social media.

In order to better focus the engagement activity towards young people, AMSA organized a **focus group with representatives of Generation Z**, which then continued with an activity to involve the main universities in Milan.

As part of continuous digitalization, AMSA and APRICA have carried out a number of initiatives, including the partnership with Junker, thanks to which the innovative method of scanning the barcode of packaging has been implemented in the App, aimed at identifying the most appropriate separate waste collection method. In addition, APRICA provides the citizens of Bergamo and Brescia with an online appointment booking service to access the desks and a Bollett@mail service. This feature allows receiving the TARI payment notice and bill online directly via email, at the customer's convenience, thus reducing paper waste and ensuring delivery, also avoiding unpleasant surprises and unexpected payments.

In line with previous years, a **customer satisfaction** survey was carried out by the companies to analyse the satisfaction level of the users served.

AMSA carried out specific surveys with 500 business users in Milan, with reference to the customized services provided, and with 2,230 citizens of the neighbouring municipalities served, except Milan. The survey was conducted using CATI methodology. The results of the Reasoned Global Satisfaction that emerged are: Commercial operators - AMSA customers: 8.1 and Municipalities served by AMSA: 7.9.

APRICA carried out **customer satisfaction for the city of Bergamo**. The survey was sent to both households and commercial users. The surveys were carried out using CATI methodology and involved a sample of 1,000 households and 300 commercial users.

As far as households are concerned, the results of the analysis show that the citizens of the municipality of Bergamo are satisfied with the service provided by Aprica, the overall CSI Index being 78.3 (on a scale from 1 to 100). For commercial users, the overall CSI index is 73.1.

With regard to the customer center service, despite the high number of contacts (over 580,000 considering the AMSA and APRICA perimeter), performance levels remained very high.

In addition, with the aim of increasingly improving customer relations, AMSA and APRICA have promoted the use of digital channels, such as the Puliamo App and the websites, which include a structured form for sending information requests and reports.

A steady increase in the use of these channels and a gradual decrease in unstructured calls and e-mails were thus noted in the course of 2022.

Figure 63 Quality indicators of the call center

	Amsa		Aprica
Service accessibility (free lines with respect to operator presence time)	100%	Service accessibility (free lines with respect to operator presence time)	100%
Average response speed (seconds)	22	Average response speed (seconds)	113
Percentage of successful calls	99%	Percentage of successful calls	92%

Fairness and Transparency in Customer Relations

In 2022, the Group companies did not receive any sanctions for situations of non-conformity with laws or regulations relating to the supply and related services, for marketing, sponsorship and communication activities.

In 2017, A2A Energia appealed to the Regional Administrative Court of Lazio against the fine imposed in October 2017 by the Antitrust Authority, for A2A Energia's failure to promptly adjust the channel for paying bills online by credit card in accordance with the Consumer Code of June 2014.

During 2017, a company within the AEB perimeter appealed to the Regional Administrative Court of Lazio against a penalty imposed on it by the Antitrust Authority for alleged unfair commercial practice. The Court dismissed the appeal at the end of 2022. The company had already paid the penalty in 2017.

10.2

Relations with the Community

Background information

Relations with Communities in the Current Macroeconomic Context

2022 has accentuated the sense of distrust citizens and communities have towards classical social institutions. In a year when the world was hoping to emerge from the pandemic crisis, the energy and economic crises have reopened the chasm of distrust and anxiety about the near future of the planet.

As revealed in the latest **Edelman Trust Barometer** report, business is the only institution considered competent and ethical; therefore today, even more so, businesses are called upon to play an active role within the communities in which they operate. More specifically, companies are asked to provide solutions to climate change, invest in fair pay, training and local communities to address the class divide and polarisation cycle that will characterise 2023. In general, there are three issues that Italians expect CEOs to work on in order to revive optimism in the market: fairer salaries (77%), investment in employee training (73%), and ensuring well-being and security for the community (70%). For six out of ten Italians (61%), companies must also use the iconic power of brands to create a shared identity, emphasising aspects that unite and strengthen the social fabric.

In order to achieve these objectives, relations with agencies and institutions, universities, research centres and think tanks have proven to be increasingly relevant both at national and European level, in order to initiate strategic collaborations for sharing expertise. Moreover, it should not be forgotten that the community also bears the fundamental responsibility for the training and education of its citizens, especially through the world of education, which contributes significantly to the conscious growth of future generations.

Furthermore, companies will increasingly have an essential role to play in the information ecosystem in order to be a source of reliable information.

Due to the importance of relations with the community, the Group's ESGT Committee has executive responsibility for managing these relations (for more information, please refer to the Governance section on page 24)

2022 in facts

24 out of **28**[1]
Countries are recording record lows in the number of people who think their families will be better off in five years.

79%[2]
of respondents ask CEOs to ensure that the community where they live is safe and prosperous

July 28
EARTH OVERSHOOTDAY[3] One day earlier than last year, and a full five months earlier than December 30, 1970

Cop 27
agreement reached on a fund to compensate for loss and damage caused by climate change in vulnerable countries[4]

SDGs impacted

Material topic
Listening and Involvement of communities

Impacts for A2A

Strategic Plan @2030
90%
Sponsorships with initiatives to raise awareness of SDGs issues

KPIS @2022
1.5 million euro
In sponsorships disbursed

4.3 million euro
Contributions to theatres and foundations

~ 1 million euro
In donations made

7 million euro
In contributions to associations

~ 7.8K
Plant tours

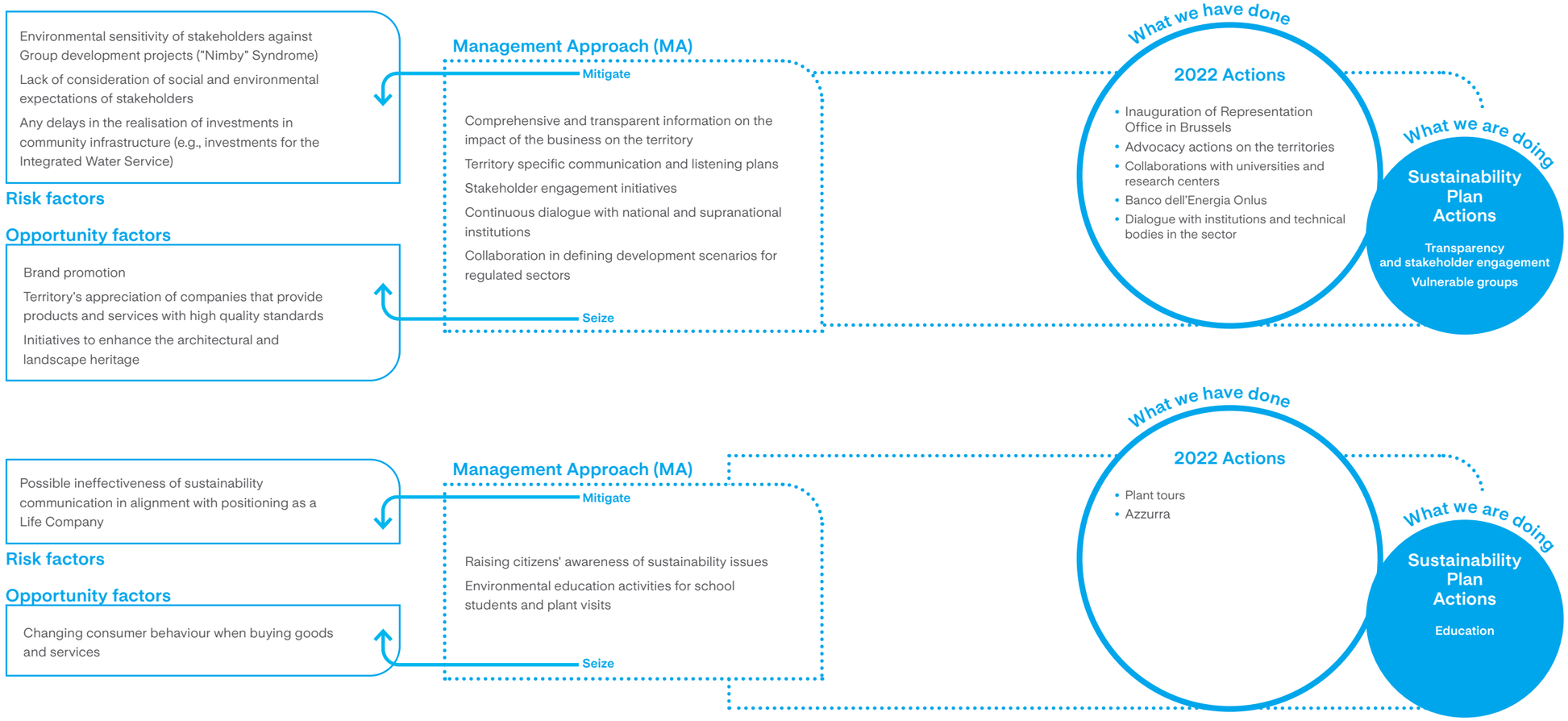
~ 78.7K
People involved in environmental education

[1] 2023 Edelman Trust Barometer – Global Report *(https://www.edelman.com/trust/2023/trust-barometer)*
[2] 2023 Edelman Trust Barometer – Global Report *(https://www.edelman.com/trust/2023/trust-barometer)*
[3] *https://www.weforum.org/agenda/2022/08/earth-overshoot-day-climate-crisis/#:~:text=28%20July%20marks%20Earth%20Overshoot,earlier%20and%20earlier%20each%20year.*
[4] *https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries*

Listening and Involvement of communities

The Group creates value in the territory, sharing the environmental and social benefits of its projects, thus redistributing the economic value created through its activities and investments to its stakeholders. In addition, A2A is constantly committed to listening to the needs and expectations of its stakeholders through an active and transparent dialogue with them, with the aim of ensuring cohesion with the reference communities and investigating any critical issues that could generate dissatisfaction, conflicts or opposition. To this end, A2A implements a series of actions/initiatives aimed at resolving any issues and mitigating the impacts that the Group generates (or could generate) on its stakeholders. Lastly, the Group is committed to raising the awareness of its communities on energy/environmental issues, promoting information and education initiatives for the younger generations.

#stakeholder engagement #environmental education #dialogue #Communities #Institutions



Relations with Entities and Institutions

The role and nature of the A2A business require constant dialogue and comparison of notes with national and European institutions, especially in the current context of the geopolitical and energy crises. The aim is to put the experience that A2A has gained in the field at the service of institutions, also thanks to continuous consultations with the territorial communities in which it operates. In 2022, the Group decided to establish **a representative office in the European Union** in order to meet the needs of a changing environment. Inaugurated on June 22, the Brussels office serves as a bridge between the various Corporate departments and Business Units and the European Commission, Parliament and EU Council.

In addition to relations with national and European institutions, the dialogue that the Group constantly maintains with national and territorial trade associations is also fundamental. Relations with Entities, Institutions and Associations are managed in accordance with A2A's Code of Ethics, in full compliance with current regulations and with strict adherence to the highest international standards of transparency.

In 2022, the main topics covered were:

- **positioning** of top management and representation of the new Business Plan towards institutional and association decision-makers;
- monitoring **European legislation** for the areas of competence, in particular with regard to the emergency Council Regulations and the *Green Deal and Fit for 55* packages;
- monitoring the numerous measures launched by governments to tackle the energy crisis through provisions such as the extraordinary contribution against **high energy bills**;
- representation of the **main dossiers** of interest to the Group to the new national and local institutional representatives;
- monitoring and proposals on regulations for the renewal of **hydroelectric concessions** in Italy;
- regulations on exceeding **greater protection** on the electricity and gas market;
- the proposed legislation on the **water cycle**;
- **End of Waste** regulations;
- legislation concerning the **district heating** sector;
- development of the **hydrogen** and **biohydrogen** supply chain;
- awareness of the **plant gap** in the country for an effective transition towards a **circular economy**;
- necessary introduction of authorization simplifications to allow the development of **renewable energy sources** and accelerate the **phase out** of coal;
- development of **renewable energy communities and self-consumption**, as part of the transposition of EU Directive 2018/2001 on the promotion of the use of energy from renewable sources (Red II).

A2A was also present at the 39th ANCI - National Association of Italian Municipalities - Assembly in Bergamo with the aim of extending its relational network at national level to local administrations, supporting the business lines in identifying new opportunities for collaboration.

Trade Associations

The A2A Group is a member of more than 100 national trade associations, including:

- **AIRU**(Italian municipal heating association), association which aims to promote and disseminate the application and innovation of territorial energy plants, in the sector of district heating and district cooling. Lorenzo Spadoni, CEO of the AEB Group, is president of AIRU.
- **Assoambiente**, an association representing companies, mainly private, at national and EU level that manage environmental services and the circular economy.
- **Confindustria**, main national organization representing Italian manufacturing and services companies, where A2A's Chair and Chief Executive Officer are members of the General Council, and the **territorial Confindustria** of reference with respect to the places where the Group's offices and plants are located, including **Confindustria Brescia**, where A2A's Chief Executive Officer is a member of the General Council, and **Assolombarda Milan, Lodi, Monza and Brianza, Pavia,** where A2A's Chair is a member of the Board of Directors.
- **Elettricità Futura**, the association of companies operating in the Italian electricity sector, in which the CEO of A2A holds the position of Deputy Chair.
- **Utilitalia**, federation of companies operating in the public services of water, the environment, electricity and gas. The Chair of A2A holds the position of Deputy Chair of the Association.

It also participates in a number of European trade associations, including:

- ***CEDEC*** (European Federation of Local and Regional Energy Companies), a European federation representing the interests of local and regional energy and broadband companies.
- ***CEWEP*** (Confederation of European Waste-to-Energy Plants), the association that brings together the operators of Waste-to-Energy plants.
- ***EUROELECTRIC***, the European sector association representing the common interests of the European energy industry.
- ***EUREAU***, European federation of national water service associations.
- **FEAD** (European Waste Management Association), an association promoting the circular economy, representing the European waste management industry and private resources. Claudia Mensi, head of A2A Group Laboratories, is Chair.

Collaborations with Universities, Research Centers and Think-Tanks

For years, A2A has been committed to maintaining and developing collaborations with the academic world of universities and research centers, consolidating existing relationships and seeking out new entities with which to establish cooperative relations, as well as with think tanks, authoritative study centers and independent foundations. The main stakeholders in this category are: Aspen Institute Italia, Associazione Civita, Astrid, Centro Studi Americani, Fondazione Nuovo Millenio, Ispi (Institute for International Policy Studies), The European House - Ambrosetti and Bruegel. Collaborations with these players allow the development of initiatives to support the Group's positioning vis-à-vis key opinion leaders and institutional interlocutors, providing expertise and qualified testimonials or supporting the organization of conferences and events dedicated to topics of interest. The purpose of the activity is to contribute to a better representation of the company's objectives, results and positions, affirming A2A's thought leadership, especially on the issues of energy transition and the circular economy.
Among other initiatives, in 2022 A2A contributed with ISPI to the discussion on ecological transition issues, participating in the Dossier "***The Role of Energy Production Through the Waste-to-Energy Cycle***" on the subject of energy transition and the circular economy in Europe, with a focus on the role of the WTE, as well as a geo-economics briefing session dedicated to companies "***The Economic Drivers Behind Smart Mobility***", with a testimony by the Group CEO, on topics such as mobility, innovation and sustainability.

In addition, in-house sessions were organized in 2022 with experts, researchers and analysts from think-tanks on specific topics for the benefit of management, helping to improve knowledge of operating mechanisms, emerging trends and dynamics not only in the market, but also in the geopolitical sphere.

As part of its partnerships with **universities and research institutions, A2A and the Milan Polytechnic Institute** have signed a five-year agreement worth a total of 8 million euro for the development of innovation, research and training initiatives in the Energy & Utility sector. This partnership will allow the two entities to consolidate their collaboration and jointly develop innovative solutions to support the country's ecological transition. In particular, through the establishment of a Joint Research Center, multidisciplinary experimentation projects will be implemented on specific topics such as **sustainable mobility**, the development of renewable energy and **hydrogen**, **battery** recycling, and the study of new technologies for **waste treatment and material and energy recovery**. In parallel, the partnership will create a Joint Research and Innovation Center within the **Innovation District** project, which will be entirely dedicated to innovation in the thematic macro-areas: "Technologies for the Environment and Energy" and "Technologies for Sustainable Mobility", also touching on the topics of **energy transition** and the **circular economy**.

Lastly, in 2022 A2A participated in 46 events focusing on the university population nationwide, meeting more than 2,300 male and female students. In addition, more than 20 testimonials and seminars were held at first- and second-level Master's degree programmes of leading universities and training institutions, giving the opportunity to get to know each other through project work and company internships.

Collaboration with The European House - Ambrosetti

Within the current global economic and geopolitical context that has forced reflection on the issues of energy dependence and the need to accelerate the path of decarbonization and transition, A2A has collaborated with The European House - Ambrosetti, in the drafting of two position papers. The first, entitled: "Towards Italian energy autonomy: water, wind, sun, waste our raw materials. The fundamental contribution of the regions to the achievement of our goals" showed that by harnessing their own raw materials (water, wind, sun and waste) and acting on electrification of consumption and efficiency, Italy can achieve 58.4% energy autonomy, almost tripling current levels.

The second, with a focus on the Center-South of the country: "Towards Italian energy autonomy: the role of the Center-South", which shows that considerable growth in installed power can be achieved by activating renewable energy sources, with the Center-South accounting for 60% of additional solar power (105.1 GW total at Italian level); 95% of wind power development opportunities (21.1 GW total at national level); 23% of additional hydroelectric power (3.3 GW total at national level); 63% of the total opportunities in Italy for energy recovery from waste and 37% for biomethane production.

Regulation Stakeholders

The A2A Group operates in sectors in which regulation and control by independent administrative Authorities plays a fundamental role in promoting competition and protecting consumers and users, while respecting the economic-financial balance of companies.

The Group adopts a **regulatory risk monitoring and management policy in order to adapt its industrial strategies to the opportunities and constraints of the national and Community framework** on public services and competition. The monitoring consists of dialogue with institutions such as the **Regulatory Authority for Energy, Networks and the Environment (ARERA), the Italian Communications Authority (AGCOM), the Transport Regulatory Authority (ART), the Antitrust Authority (AGCM)** and technical bodies in the sector, as well as active participation in trade associations. The issues of euro-unitary derivation are also monitored through participation in the meetings of the relevant Community Associations (including Eurelectric and Cedec).

The emphasis on these policy actions and the holistic approach of the **Green Deal**, also taking into account the new package of legislative proposals known as ***Fit for 55***, have been fully shared by the Group, also through the organization of specific moments across the various Departments (***Regulatory Breakfasts***).

In particular, in the many occasions for dialogue with stakeholders, the most interesting issues have been addressed, including:

- management of the **Italian and European emergency market measures for the energy crisis** (e.g., tax on extra profits, solidarity contributions, market mechanisms for filling gas storages and measures to contain natural gas consumption, including maximizing the use of fuels other than natural gas for thermoelectric use) and the revision of the **electricity market design** for a more efficient integration of renewable production and to enable greater affordability for consumers;
- the regulatory impacts resulting from the adoption of Italian Legislative Decrees 199/2021 and 210/2021 transposing, respectively, the REDII and Electricity Market Directives on, among other things, the **promotion of renewable sources** and **individual and extended self-consumption configurations**;
- the evolution of regulation regarding the **development of a mechanism to support the development of electrical storage capacity**;
- evolution of the **permitting** of renewable sources in light of the innovations introduced by numerous decrees issued to cope with soaring energy costs, as well as the possible development of the regulations concerning the definition of eligible areas, contained in Italian Legislative Decree 199/2021;
- the resolution of the difficulties affecting the **White Certificates mechanism** and the implementation of the new mechanism for allocating incentives through auctions;
- the definition of the new **incentive mechanism for biomethane production** (coordinated with NRRP resources) and the extension of the previous incentive mechanism to the end of 2023;
- need for interventions that ensure greater awareness of end customers to accompany them in an informed transition to the **free market**;
- regulatory and tariff mechanisms to support investments in **upgrading and the digitalization of distribution networks**;
- impetus for the development of **electric mobility**, contributing to the consultation on the allocation of NRRP funds for fast and ultra-fast charging, the modification of the regulatory framework and the preparation of calls for tenders for the installation of charging stations in motorway rest areas;
- participation in NRRP calls dedicated to the development of **efficient district heating**;
- monitoring how important **NRRP** resources are delivered and their relationship with incentives and regulation;
- participation in **innovative projects** (e.g., Terna's pilot project on plant modifications for the provision of voltage regulation for plants connected to the National Transmission Grid and not already obliged to provide this service);
- the **changes** introduced to the regulations to protect competition, aimed at profoundly impacting the sectors in which the Group operates.

On the "frontier" issues, A2A has been involved in the association's technical working groups and in dialogues with the institutions on emerging issues such as the **development of the national hydrogen supply chain, in particular with reference to the NRRP calls for tenders, tariff concessions for grid withdrawals with the obligation to connect third parties for electrolyzers and the development of an incentive system for green hydrogen in application of the regulatory provisions of Italian Legislative Decree 199/2021**.

In 2022, the Group began discussions with the Lombardy Region concerning the transparency obligations related to the transfer prices of the waste cycle closure plants, classified as "additional" pursuant to Council Resolution 5777 of December 21, 2021. As far as the municipal sanitation operating companies are concerned, the process of updating the *Service Quality Charters* was started, which involved - on the one hand - the municipalities as territorially competent bodies and - on the other - consumer associations. The Group's commitment in this sector also took the form of the contributions offered, individually or within the association, to define the standard service contract outline between the entrusting body and the Manager placed for consultation by ARERA.

The same approach of attention to environmental aspects and opportunities for infrastructural adaptation has also permeated the engagement activities in the water service. In particular, the Group has opened to the possibility of interacting with Invitalia, the entity delegated to provide support to the Area Government Bodies and the Regions for the transitional management of the water service in those territories where the governance process is still being defined, in order to make its industrial capabilities available, as well as its long-term experience.

The Group undertook to help disseminate the regulatory culture internally and externally, as a driver for innovation and service transparency. Monitoring and control tools (such as the Regulatory Review prepared every six months or the Regulatory Agenda drawn up when the Budget and Business Plan are presented) have been implemented internally and are constantly updated in order to consider the potential impact of regulation on Group companies and to ensure constant dialogue with the Business Units.

A2A has also supported the same ARERA in its initiative seeking to introduce metrics in its **2022-2025 Strategic Framework** for assessing the environmental sustainability of regulatory measures and their contribution to achieving the objectives of the **SDGs 2030 Agenda set by the UN.**

A2A and Relations with Environmental Associations, Territorial Committees and Consumer Associations

Each year, the Group develops and consolidates relations with environmental associations, consumer associations and citizens' movements and committees seeking to protect the environment, climate, biodiversity and natural heritage, at national and territorial level.

Considering the open dialogue **with the environmental world**, in 2022 A2A also extended the scope of the debate to include youth movements such as **Fridays For Future** and **Youth4Planet**, as well as strengthening its collaboration with historical Italian and international environmental associations such as **Friends of the Earth, Legambiente** and the **Foundation for Sustainable Development**.

Constant dialogue with citizens and civil society, organized in its Associations, Committees and Think Tanks, is a strategic element for the Group, as it enables it to identify and understand the main needs and expectations of its stakeholders, to direct investments in the best way possible, and to build consensus and alliances in the territories and with the communities of reference, in order to make an effective contribution to the country's ecological transition.

Advocacy in the Territories

The Group's advocacy activities in 2022 covered all the territories under development through structured discussions, engagement initiatives, events and meetings with associations and committees in order to contribute to building a solid reputation characterised by a relationship of trust with the main national associations and their local branches.

In particular, A2A has increasingly invested in relations with the territories of **Lazio, Umbria, Piedmont** and **Calabria** in order to initiate dialogue with local communities and promote the values of the Life Company even outside the company's historical perimeter. In fact, the activities in these areas aim to reduce information asymmetries and promote a greater degree of citizen awareness in relation to the Group's activities.

A2A's commitment to Sicily's ecological transition also continued in 2022 through its collaboration with the regional Legambiente. In this context, the Group participates in actions to raise awareness among Sicilian citizens on the issues of innovation in waste treatment and the need for investments in energy production from renewable sources. This year A2A was a partner in the *Regional Eco-Forum* dedicated to the circular economy, and the *Quale Energia Forum* dedicated to the themes of energy efficiency and renewable energy communities.

In the historical territories of Lombardy, on the other hand, the Group has consolidated its relations with the main associations, setting up various initiatives for dialogue with local stakeholders aimed at sharing specific projects and launching three Advisory Boards on the subject of sustainable consumption in the cities of Milan, Brescia and Bergamo.

With reference to relations with consumer associations, during 2022 the Environmental Service Charters defined pursuant to TQRIF - ARERA DECISION 15/22/R/rif - were shared before final approval by the Consumer Protection Entities.

For the benefit of these Associations, information and training meetings were also organized on specific topics relating to A2A Ciclo Idrico's Investment Plan, electric mobility, and the initiatives of the Group's sales companies towards electricity, gas and district heating consumers.

ADR - Out-of-Court Dispute Resolution

In 2022, the activity commenced with the establishment of the negotiation protocol signed between A2A and the national consumer associations for the promotion of multi-service joint conciliation continued.

Regular meetings were carried out with the signatory organizations of the Single Protocol, confirming the constant commitment to a tool that provides consumers with an effective means of protecting their rights without recourse to legal proceedings and provides for joint initiatives aimed at improving awareness and use of joint negotiation as an independent, rapid and free process.

During the year, the conciliation secretariat of the A2A – Consumers Association ADR Body received 43 requests on behalf of gas, electricity and water customers, of which 30 concerned A2A Energia, 10 A2A Ciclo Idrico, 1 Unareti, 1 A2A Calore e Servizi and 1 Azienda Servizi Valtrompia linked mainly to the metering of consumption and billing.

As in previous years, in compliance with the provisions contained in the Integrated Conciliation Act (TICO), training courses for conciliators in the energy, district heating and water sectors were organized through a platform managed by Consumers' Forum.

As far as the ARERA Conciliation Service managed by the Single Buyer is concerned, 311 requests were received compared to 155 in 2021: 275 concerning A2A Energia, 25 A2A Ciclo Idrico and 11 concerning Unareti.

In addition, the legislation also provides for the distributor to be called into conciliation when the discussion concerns technical data and if it is necessary and indispensable for the proper and effective handling of the dispute.

In these cases, the Authority has established that the convened distributor has an obligation to participate in the procedure. As the distribution service operator, Unareti received 116 mandatory convocations as a technical aid.

Responsible Investments in the Community

The Group is constantly striving to efficiently support the territories in which it operates through a variety of sponsorship activities and other forms of investments, such as contributions to foundations, which carried out various projects during the year. **The Foundations of the A2A Group** act with a focus on the social dimension, promoting cultural initiatives for the overall growth of communities, supporting scientific research and sustainable development. Thus the preservation of historical memory and striving towards the future come together in a coherent and far-reaching project towards the Group's territories. As of 2022, all the Foundations are registered in RUNTS - the Single National Registry of the Third Sector.

Foundations	Description
AEM Foundation	**AEM Foundation** has been preserving and enhancing AEM's historical memory and corporate culture since 2007. The areas of activity in which the Foundation operates are environmental education, the protection and enhancement of AEM's historical heritage, research, specialized training and charitable giving, particularly in the areas of Milan and Valtellina. **Initiative: AEMuseum** 2022 saw the opening of **AEMuseum**, the corporate museum dedicated to the immense heritage of the AEM Foundation and conceived as an immersive space in which the past comes to life thanks to the use of photographic and film material, industrial artefacts and works from the painting collection with an intermingling of digital and analogue, in a journey of discovery of **AEM's history** from the origins of public lighting to its transformation into a Life Company.
ASM Foundation	**ASM Foundation** is a philanthropic organization that has been supporting cultural and social projects in the Brescia and Bergamo areas since 1999. The Foundation is an active partner in numerous initiatives promoted by voluntary associations, social enterprises and other foundations. It works to reduce inequalities and build sustainability, contributing to the formation of an open and environmentally sensitive society. **Initiative: Social cooperation and A2A** In 2022 the ASM Foundation promoted research aimed at measuring and quantifying the **value created** by Brescia's **type B** social **cooperatives** through their work and in their specific relationship with A2A SpA and Group companies. The results of the research allowed for **a fruitful discussion** between the cooperative world and A2A.
LGH Foundation	**LGH Foundation** was established in 2021 to support development opportunities related to bioenergy, the circular economy, renewable energy and smart land technologies. The Foundation operates in southern Lombardy, with a focus on the research and development of innovative solutions applied to the agri-food chain. **Initiative: research projects** The Foundation works in line with the UN Sustainable Development Goals and has joined the Banco dell'Energia (Energy Bank). The first four scientific projects supported in 2022 were: *biostimulants from microalgae, food agro-zootechnology hub, dairy chain* and the *digestimulus project*.

Developments in relations with theatre foundations: culture and social solidarity

In 2022, A2A innovated its historical support to local theatre foundations (La Scala Theatre in Milan, Teatro Grande in Brescia, Donizetti Theatre in Bergamo and Centro Teatrale Bresciano) by stipulating new agreements on a multi-year basis to develop the relationship in a more strategic key, also open to the joint planning of initiatives based on common objectives and values and which envisage the devolution of part or all of the proceeds from ticket sales to the Banco dell'Energia Foundation. A2A also started a new partnership with the Ponchielli Theatre.

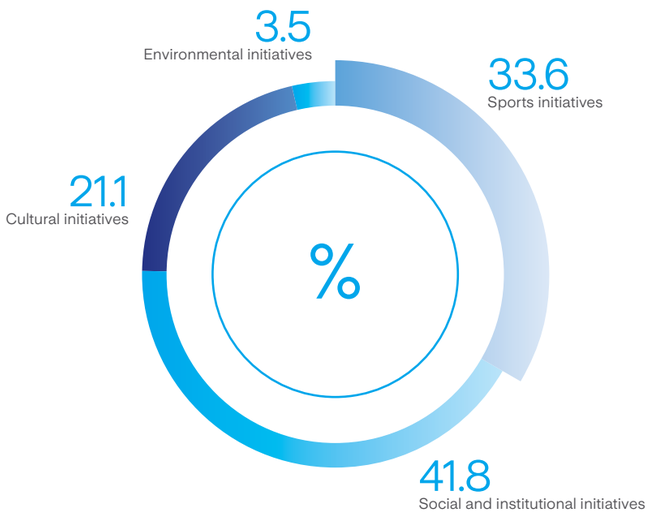
More specifically, **four events** in December 2022 put the **new lines of action** in partnership with the Theatre Foundations into practice: the charity evening concert on December 19 at the Donizetti Theatre, the two season-opening concerts in February and the Christmas concert at Teatro Grande in Brescia, charity evenings in favour of the Banco dell'Energia, and the Christmas lighting of the façade of the Ponchielli Theatre in Cremona.

The strategic relationship with theatres also brings employees and citizens closer to **culture** through promotions (discounts, free events, etc.) and the digital sharing of special content.

In continuity with the past, the contributions made for the communities are aimed at enhancing the territory through support for socio-institutional, sports, cultural and environmental activities, in line with A2A Life Company's purpose. The Group's total investments for the community amounted to approximately **7 million euro**. More specifically, sponsorships in social and institutional, environmental, cultural and sports activities in 2022 amounted to **more than 1.5 million euro**. In addition, the Group disbursed more than **4 million euro** to theatres and foundations and almost **1 million euro** in the form of donations

Below is a breakdown of the total amount of sponsorships granted in 2022 by type.

Figure 64 Sponsorships by area of activity



One of the main socio-institutional activities of national interest that the A2A Group has decided to join is the partnership with Jova Beach Party and participation in the ANCI Annual Assembly. Both initiatives were aimed at engaging and raising awareness on the topics of sustainability, energy saving and ecological transition. In support of the younger generations, the two conferences of the National Association of Young Innovators were supported and the Feltrinelli Foundation's "School of European Citizenship" project was concluded. At territorial level, in line

with the Group's focus on Diversity & Inclusion issues, "Milano Pride", "Basket for Kids" and "Camp Now Festival From me to we" were all sponsored. Several other initiatives were also supported in the territories of Bergamo, Brescia, Cremona, Pavia, Calabria and Valtellina.

In the sports sphere, cooperation continued with PalaleonessaA2A in Brescia, where the LBA Supercoppa was also played, with New Basket Brindisi, Atlantide Pallavolo Brescia, Stramilano, and mountaineer Marco Confortola, while the collaboration with Pallacanestro Olimpia Milano and Junior Rugby Brescia came to an end. The Group also supported other sports initiatives and various sports seasons organized in Biella-Vercelli, Pavia, Bergamo, Brescia, Cremona, Friuli-Monfalcone, Valtellina and the Milanese Hinterland.

In the cultural sphere, the following were supported: the theatre seasons at Teatro Grande, the "Milano Arte Musica" concert season, and the exhibition "Capolavoro per Milano - La predella della Pala Oddi di Raffaello". Support for the Alleanza per la Cultura project and the Brescia and Bergamo Piano Festival continued, and the collaboration with the Veneranda Fabbrica del Duomo's "Adopt a Statue" project came to an end. Other cultural initiatives concerned the territories of Brescia, Cremona, Varese, Lodi-Ferrara-Mantua and Valtellina.

In the environmental field, various national initiatives were supported: "#primalefficienza campaign", "Zero Waste Campaign", "Water Festival". Legambiente initiatives were sponsored in Lombardy and Sicily, with the focus on waste management.

Azzurra, the comic that gives a voice to Gen Z

The new generations are the promoters of a new environmental sensitivity, and A2A wanted to give them a voice through Azzurra, a lively girl eager to safeguard the planet with many ideas on how to adopt a sustainable lifestyle, and who wants to represent a generation that is attentive to environmental issues.
The brainchild of A2A was created by the Fonti Attendibili editorial team: Azzurra is the protagonist of a series of vignettes promoting virtuous and concrete behaviours that can be implemented by anyone in their daily lives to optimize consumption, providing advice on how to make better use of energy and water, benefiting the environment.

A2A wanted to give Azzurra a stage to speak from, and had such an opportunity thanks to its participation in all the stages of the Jova Beach Party 2022, Jovanotti's musical party to spread the message that **respecting energy, water and the environment #GIOVAATUTTI**.
But that's not all, a real travelling social hub was also set up to produce not only content and cartoons but also live videos of the events, direct interviews with young people and guests who wanted to share their views on environmental issues.
Azzurra and her advice are published on A2A's social platforms and at ***www.giovaatutti.it***

Education and Training

Sustainability, respect for the planet's resources, proper waste management and environmental protection are essential prerequisites to ensure a sustainable present and future for new generations. For this reason A2A collaborates with the world of schools, developing constant dialogue with communities and territories through the **A2A Per le Scuole portal**, an open channel full of resources which is constantly being updated and which offers numerous initiatives free of charge in order to raise environmental awareness. The portal is for teachers and students of all levels and grades, from pre-school to university. On the topics of **energy production from alternative sources and energy saving, circular economy, water cycle, conscious consumption**, educational paths have been proposed to involve Italian teachers and students to travel together on the journey towards sustainability. The materials created for teachers and students are designed to address sometimes complex issues in the classroom: the tools are full of information and can be easily used and downloaded free of charge from the website scuole.a2a.it.

The available brochures include: "**The journey of water**", which allows discovering how from wells and springs, drinking water reaches the tap at home, and how after being used it is "cleaned" so that it can return to nature without damaging the environment; "**The new value of things**" where the theme of correct waste management is explored by investigating the different types of waste and making children aware of the importance of separate waste collection as a necessary gesture to activate materials recycling with a view to the circular economy, and lastly, "**A world of energy**" which provides knowledge of the world of energy in its different aspects: the different forms and sources of renewable and non-renewable energy, energy efficiency and energy saving, energy production from waste, district heating, all while focusing on the environment and sustainability.

Gaming activities and educational trials for school children continued in 2022 as well. Among them, **Ecogame** A2A is a challenge between classes from all over Italy that allows children to compare and challenge themselves by acquiring cross-cutting as well as technical skills, moving around a map structured in different environments: home, school, the park, a supermarket, a recycling area. **Sustainability Olympiads** is the A2A project dedicated to fourth-year secondary school students throughout Italy. It focuses on sustainability issues in order to stimulate reflection on the main points of the 2030 Agenda, in collaboration with ELIS. The enrolled classes had the opportunity to explore topics such as the circular economy, energy transition, diversity & inclusion, innovation and digital through digital tools close to the Gen Z target audience, such as podcasts and video clips. The classes that made the three best short videos on their idea of sustainability were awarded three days of Creathon, a digital creative marathon on sustainable development.

In order to raise awareness among more and more Gen Z youth, the project was enhanced in cooperation with Scuolazoo with a campaign dedicated to the same issues through the formats most used by youth: Podcasts, Vidcasts and TikTok videos, via various channels (Spotify, Instagram, TikTok, Youtube).

The High School of Ecological and Digital Transition (TRED) ELIS

This is an experimental school involving 24 institutes from all over Italy, and is promoted by the ELIS Consortium for higher vocational training, with the support of A2A and other Italian companies. TRED offers **a study course** with innovative didactics and content, combining the study of **STEM disciplines** (Science, Technology, Engineering and Mathematics) with a **quality education in the humanities**. A2A helped to **define the study course**, offering its willingness to **develop the new programmes** and the **"field" verification of theoretical learning**. Specifically, in the first four-month term of the first school year, it offered its educational contribution on the topic of **WATER**, exploring climate change, the integrated water cycle, water as a resource to be preserved and sustainable development as themes. There are 23 schools participating in the project, with a total of 513 students.

Thanks to the collaboration with the **Feltrinelli Foundation**, A2A has developed an online educational offer aimed at first and second-level secondary schools: a workshop dedicated to calculating digital ecological footprint, and two master-classes with the participation of its own experts on the topics of the circular economy and energy transition. For teachers throughout Italy, a training course of ten webinars with experts, researchers and lecturers from authoritative institutions and universities was created in cooperation with **Deascuola**.

The Group's collaboration with **Intercultura** also continued, allowing 26 scholarships to be awarded to deserving youth from secondary schools, giving them the opportunity to experience an educational summer trip to Ireland dedicated to STE(A)M subjects. A total of 125 students in the territories served by the Group's companies registered for this school year's call for applications.

Guided visits to the Group's plants have always been a flagship of A2A's educational proposal thanks to the added value that this type of experience brings to teaching environmental issues. After a pause due to the Covid-19 emergency, some 40 Group plants were reopened to schools with the start of the 2022-23 school year.

Thanks to the School Project, as many as 7,791 students visited the Group's facilities and 78,685 students and teachers were involved in environmental education activities in 2022.

External Communication

The year 2022 saw a major redesign of the Group's digital ecosystem with the aim of adopting a customer-centric approach in order to simplify and clarify citizens' and customers' interactions with the Group's digital properties. With this in mind, the Group's new website (***www.gruppoa2a.it***) was designed according to international accessibility criteria. 2022 also saw the publication of two more sites with an 'edutainment' slant: ***virtualtour***, which was created with the aim of narrating the Group's infrastructures in a more popular logic and designed especially for the world of schools, and ***www.giovaatutti.it***, which gave voice to "Azzurra", the character who, through her advice on energy, water and the environment, was the protagonist of the Group's communication activities representing the change required by the new generations. In particular, the site accompanied the story of the entire "Jova Beach Party" event sponsored by the A2A Group in the summer of 2022, thanks to a real editorial team and cartoonists who involved the public by dispensing advice aimed at respecting and safeguarding our natural resources.

The Group is present on the following social channels: Facebook, LinkedIn, Twitter, Instagram and YouTube. Communication through the ten active social profiles, with a fan base of over **334,770 users**, grew **13%** compared to 2021. It allows more direct contact with citizens and customers, informing them about central issues for the Group such as the energy transition, the circular economy, sustainability. In addition, it is possible to initiate social media caring flows to promptly intercept the needs and reports to be transmitted to customer care channels: a total of approximately **20,000** requests received from users have been resolved in this manner. Lastly, the activity allows the Group to understand and gather the main topics discussed on the web, taking cues to design new services and products.

During 2022, Press Office activities produced over 430 communications to the media, up about 8% on the previous year. The year also included more than 250 opportunities to meet with journalists, amongst interviews and one-to-one dialogues, press conferences and press visits.

In terms of reputational impact, ESG content produced by Press Office, Web and Social activities accounted for 72% of the total ESG reputational impact for the year 2022: in particular, content related to Environmental Sustainability is responsible for 96% of the total ESG reputational impact.

Banco dell'Energia

In 2022, following the reform of the third sector and the entry into force of RUNTS (Single National Registry of the Third Sector), **Banco dell'Energia was transformed from a non-profit committee to a Foundation Philanthropic Body.**

After the presentation of December 14, 2021, in 2022 the Bank consolidated its commitment to continue promoting the "**Together to Fight Energy Poverty**" Manifesto. In the last months of 2022, the engagement activities started at the end of 2021 were followed up, which led to new stakeholders joining, reaching 60 signatories. **The year 2022 was full of new projects for the Bank**: the "Energy in the Suburbs" initiative was followed up in other Italian territories.

The first pilot started in Milan Quarto Oggiaro in September 2021 and ended in autumn 2022 supported, through the listening centres of Caritas Ambrosiana and Società San Vincenzo de' Paoli, **over 100 families who benefited from economic aid** for the payment of their electricity and/or gas bills issued by any energy operator and from training meetings aimed at raising awareness on energy saving, optimizing consumption and reducing expenses related to electricity and gas utilities.

From the positive experience in Milan, **Banco dell'Energia launched "Energy in the suburbs - Rome Torpignattara"**, a project financed by Acea that replicated what had already been carried out in Milan Quarto Oggiaro in the Roman neighbourhood. The project is helping around 40 families, intercepted by the Casa Famiglia Lodovico Pavoni and accompanied on an educational path with the support of Federconsumatori Lazio.

The third project, "**Energy in the suburbs - Reggio Calabria**", was presented in November 2022. It was financed by Edison and implemented locally thanks to a partnership between Banco Alimentare, local associations and Adiconsum Calabria. The initiative is helping around 100 households with both direct financial support for utility payments and supporting them on a path to energy awareness.

In December 2022, the project "Conscious and sustainable access to energy" was presented in collaboration with the Italian Red Cross, which will affect more than 400 beneficiaries living in six different Italian cities, and the project **"Condomini Solidali" to support the Social Housing structures** dedicated to the elderly and refugees in the Community of Sant'Egidio in Rome.

To date, the Banco dell'Energia Foundation has collected and donated more than 6.5 million euro and helped more than 11,000 families. Its development plan envisages increasing the economic resources deployed over the next three years, **an ambitious and concrete goal to reduce energy poverty, in which everyone's contribution will be crucial**.

10.3
Relations with Suppliers

Background information

The new European legislation as an impetus towards a more sustainable supply chain.

Responsible procurement involves directing expenditure towards sustainable supplies in sustainable ways and from sustainable suppliers. This means a company must ask itself three questions to understand whether it is really integrating sustainability into its procurement process: **what is being purchased?** And thus consider the technical specifications and attributes of supplies throughout the life cycle (e.g., recyclability with minimal emissions impacts, proven health and safety qualities during production, use and disposal without negative impacts on communities); **how is it being purchased?** Incorporating ESG issues into procurement processes and activities; **who is it being purchased from?** By carrying out an analysis of suppliers' performance and maturity on ESG criteria.

On February 23, 2022, the European Commission adopted a **proposal for a directive on companies' due diligence for sustainability**, which aims to promote sustainable and responsible behaviour by companies throughout their value chain. Businesses play a key role in building sustainable economies and societies and will have to identify and, if necessary, avoid, stop or mitigate the negative effects of their activities on human rights (e.g., child labour and exploitation of workers) and the environment (e.g., pollution and loss of biodiversity). In detail, the Directive aims to:

- avoid fragmentation of due diligence obligations in the single market and **create a legal basis on expected business conduct and responsibilities**;
- integrate **risk management and mitigation of impacts on human rights and the environment** more closely into corporate strategies;
- increase **corporate responsibility for the negative impacts** created.

Today, **33%** of the companies analysed by a **study of the World Benchmarking Alliance** manages the issue of human rights in the supply chain through tools such as codes of conduct and contractual agreements, but **only 11%** say they work together with their suppliers on these aspects and only **2%** say they conduct assessments and disclosures on the number of people affected by the risk of human rights violations within the supply chain and report on progress[1].

[1] *https://www.eticanews.it/human-rights-poca-attenzione-sul-campo/.*

2022 in facts

Up to **90%** of a company's carbon footprint can come from the supply chain[2]

+11,000 companies reporting according to the CDP Supply Chain Program in 2021[3]

10% of the EcoVadis network is labelled as "advanced" (+5% compared to 2017)[4]

SDGs impacted

Material topic

Responsibility in the services supply chain

Impacts for A2A

Strategic Plan @2030

90% of orders assigned to suppliers evaluated with ESG scoring

KPIS @2022

2,316 million euro Total orders

97.8% Orders to Italian suppliers

85.2% Orders to suppliers with at least one certification

[2] Carbon Maturity Report 2022 - The State of Climate Action in Global Supply Chains *(https://resources.ecovadis.com/whitepapers/carbon-maturity-report-the-state-of-climate-action-in-global-supply-chains)*
[3] Carbon Maturity Report 2022 - The State of Climate Action in Global Supply Chains *(https://resources.ecovadis.com/whitepapers/carbon-maturity-report-the-state-of-climate-action-in-global-supply-chains)*
[4] *https://www.eticanews.it/supply-chain-5-anni-di-crescita-esg/*

Responsible Supply Chain Management

The Group promotes responsible management throughout the supply chain, encouraging sustainable practices among suppliers and ensuring that they respect the principles of fairness, legality and transparency.
To this end, A2A adopts policies for qualifying and selecting suppliers, collaborators and business partners that envisage the integration of social and environmental sustainability criteria, stimulating the improvement of reliability and safety in the provision of services supplied and contributing to improving the Group's environmental and social performance throughout the supply chain.

#Sustainable procurement #Human rights #Supply chain awareness

Management Approach (MA)

Risk factors

Possible image impacts of unethical conduct in the supply chain.

Contractors' possible non-compliance with environmental legislation.

Possible insufficient availability of contractors/materials for certain services/products.

Risks to the health and safety of workers of third-party companies.

Opportunity factors

Supplier qualification and selection process that integrates social and environmental responsibility aspects.

Mitigate

Supplier qualification process using reputation analysis tools.

Progressive adoption of an ESG rating for suppliers.

Presence of an organizational structure Procurement excellence and governance, which has the task, among other activities, of overseeing compliance with regulations on Privacy, Italian Law 262 and HSE.

Monitoring of tender process management through specific KPIs

Optimization of supply batches and inventory management activities in order to avoid risks of unavailability.

Procedures for environmental and safety management in contracted activities.

Programmes to improve the multi-annual procurement planning process.

Seize

What we have done

2022 Actions

- Analysis of suppliers' ESG performance
- Green Procurement training course
- New clause in RDOs
- Inspection visits to sites

What we are doing

Sustainability Plan Actions

Responsible procurement

Introduction

11,830 orders were issued in 2022 for supplies, services and works by Group companies, with a total value of 2,315,882,435 euro. Approximately 97.8% of order value came from transactions with Italian suppliers and 61%[5] of orders was awarded by tenders.

Figure 65 Order value by Business Unit

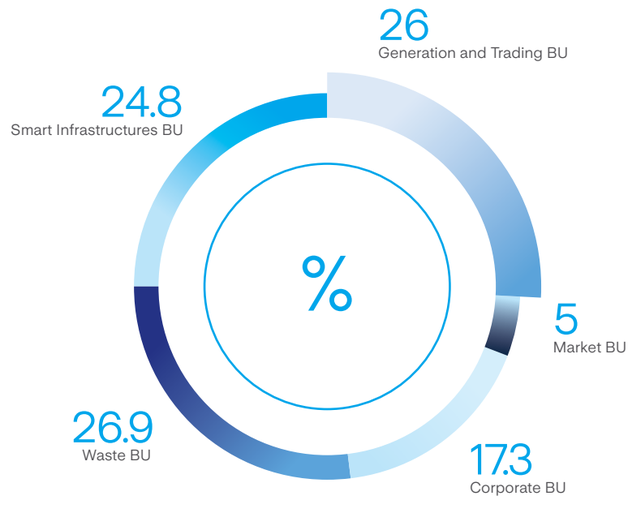
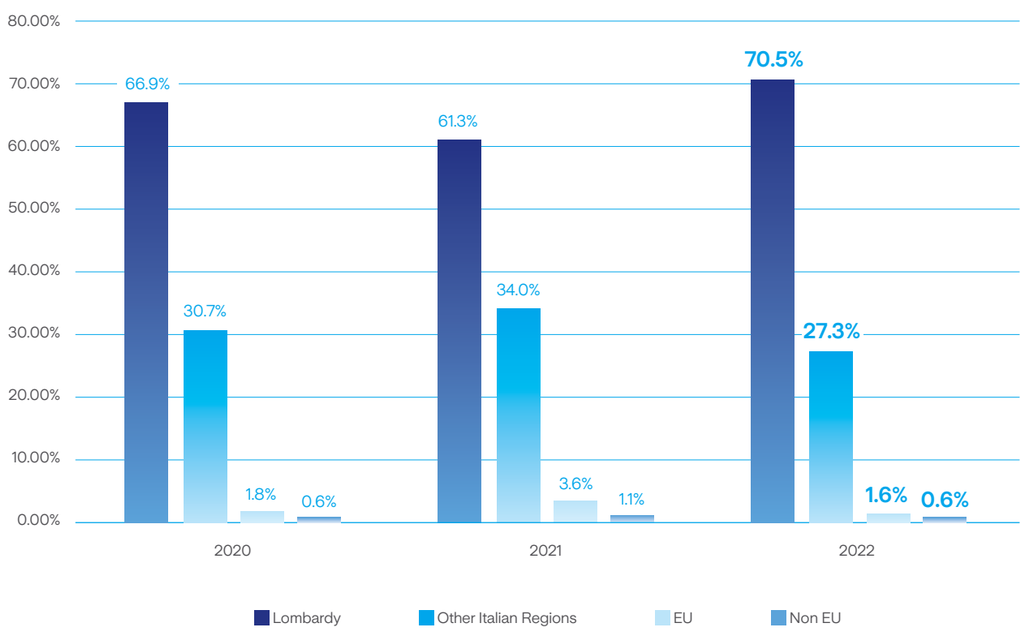


Figure 66 Geographic breakdown of orders (percentage of the total)



[5] The % refers exclusively to orders of the A2A Group net of extra-perimeter companies

Responsible Supply Chain Management

In line with the Group's Strategic Plan, A2A has decided to aim for increasingly sustainable management of the supply chain, which translates into the adoption of policies for the selection of suppliers, collaborators and business partners, the use of fair and transparent processes that include the integration of sustainability criteria, and the promotion of social and environmental responsibility practices among suppliers, which stimulate the improvement of ESG performance throughout the supply chain.

In fact, the Strategic Plan updated in November 2022 confirms the commitment to achieve an incidence of sustainability criteria in the vendor rating process of more than 30% by 2030, with 90% awarded to suppliers with ESG scoring.

In 2021 A2A started a project with "EcoVadis" - a leading company in corporate sustainability assessments - to assess the ESG performance of its suppliers and promote their improvement.

The first step of the project verified the level of sustainability in A2A's procurement processes through a self-assessment, called the "**sustainable procurement maturity matrix**". Thanks to the development of such a matrix, qualitative data were collected and analyzed on the elements most useful for building a sustainable procurement programme.

Next, the companies collaborating with the Group were analyzed. The assessment methodology is based on four pillars: environment, labour practices and human rights, ethics and responsible purchasing. For each parameter, EcoVadis gives a score that contributes to the final evaluation.

In 2021, about 100 suppliers were evaluated, with a 50% coverage of all orders. By the end of 2022, the annual target of **60%** coverage was reached and exceeded, involving some 500 suppliers. The medium-term objectives aim at continuous improvement of the scores obtained in the evaluation, the implementation of sustainability assessments in procurement processes, the development of clear post-assessment rules and **capacity building** through ad hoc training courses on sustainable procurement.

To further concretize the Group's commitment to the target, a **new clause** was formulated in all **RDOs** in 2022 requiring the supplier to adhere to the sustainability programme, i.e., to share its ESG rating with the Group or to commit to obtaining it within a defined timeframe.

Lastly, a **training** course on **Green Procurement** practices was organized, which was attended by numerous colleagues from different corporate functions, with the dual purpose of raising awareness on sustainable procurement and training buyers on the use of the Ecovadis platform. The training course aims at a precise capacity building objective, which is crucial for the success of the Group's sustainability programme.

Figure 67 Qualified A2A Group suppliers by certification held (number)

	2020	2021	2022
Suppliers qualified for ISO9001 certification	2,239	2,110	2,354
Suppliers qualified for ISO14001 certification	731	816	907
Suppliers qualified for ISO 45001 certification	640	670	784
Suppliers qualified for SA8000 certification	192	177	207
Total suppliers with at least one certification	3,018	3,451	3,863
of which activated with order	1,113	1,239	1,523

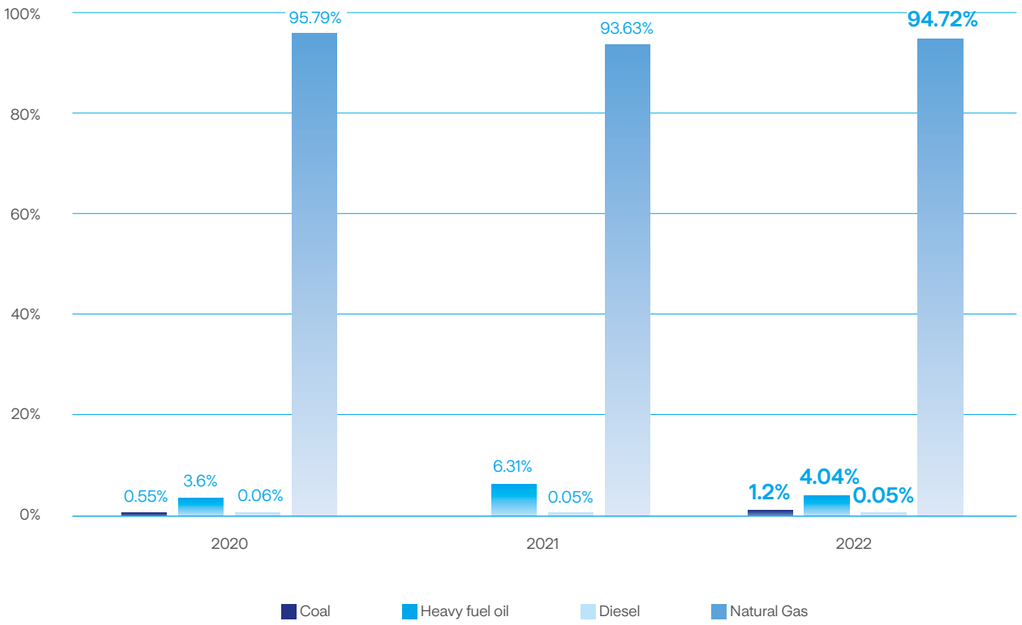
In 2022, **3,863 suppliers had at least one quality, environment and safety certification**, 1,523 of which were activated with at least one order. **The value of orders** issued by the A2A Group to suppliers with at least one certification amounts to approximately 85.2% of the total value[6].

Fuel Suppliers

In 2022, the value of orders for the purchase of fuels used both for the Group's power stations and conveyed to end customers amounted to 9,478.8 million euro. Of this amount, 94.70% was allocated to the purchase of natural gas, 1.20% to the purchase of coal, and diesel and heavy fuel oil accounted for the remaining 4.1%.

In spite of the great efforts undertaken by the Group to implement the decarbonization plan, which made it possible to reduce coal purchases to zero in 2021, the energy crisis of 2022 caused mainly by the outbreak of war in Ukraine made it necessary, due to a question of national energy security, to return to purchasing minimal quantities of coal.

Figure 68 Value of orders issued by fuel type (% of total)



Emissions Scope 3

1,378,946 tCO_2eq emitted for the purchase of fuels

10.3.3 Site Management

The Group is committed to ensuring workplace safety throughout its supply chain, including through specific inspection visits to construction sites aimed at certifying both compliance with the main health and safety regulations, such as verifying the presence and use of PPE, and to identify any environmental impacts, such as, but not limited to, verifying the proper management of waste during the works.

In 2022, in continuity with previous years, A2A and in particular the Smart Infrastructures BU carried out rigorous checks to certify compliance with the provisions on workplace health and safety (Italian Legislative Decree 81/2008) and environment (Italian Legislative Decree 152/2006).

Specifically, during the year the Group inspected 140 contractors and an equal number of 62 subcontractors (+41% compared to last year) for a total of 6,784 inspections. The number of inspections is higher than the total number of contractors and subcontractors, as a construction site may be subject to multiple inspection visits in order to ensure sound, constant supervision.

The *audited* sites are selected according to a logic/procedure that ensures an exhaustive number of checks and includes sites of both large and small value.

[6] The grand total is to be understood as the value of the orders issued by the A2A Group net of the extra-perimeter companies

The controls carried out during the inspection are reported and tracked by means of special checklists in which any anomalies are formalized and classified as "Blocking", "Serious" or "Significant" according to their severity. The results of the inspection are commented on and discussed with site staff. If blocking or serious anomalies are found, the project manager and customer are informed in good time so that the necessary corrective actions can be taken together with the contractors involved.

In 2022, 15.20% of inspections detected at least one anomaly. There were 298 blocking anomalies and none of them related to the category "environmental site aspects". The other types of anomalies identified in relation to this category mainly concerned the cleanliness of the site areas; the proper handling of waste and scrap materials; and the presence of environmental emergency kits.

All anomalies detected were duly reported to the relevant staff.

Figure 69 Site inspections - summary

	2020	2021	2022
Number of inspections carried out	**3,961**	**5,522**	**6,784**
No. of checks performed	118,450	179,017	205,257
% inspections with at least one anomaly detected	11.4%	7.2%	15.2%
Companies concerned	Unareti, A2A Ciclo Idrico, A2A Calore & Servizi	Unareti, A2A Ciclo Idrico, A2A Calore & Servizi	Unareti, A2A Ciclo Idrico, A2A Calore & Servizi
Areas concerned	Province: Milan, Bergamo and Brescia	Province: Milan, Bergamo and Brescia	Province: Milan, Bergamo and Brescia
Corrective actions planned	Constant information on the results of inspections to all parties concerned.	Constant information on the results of inspections to all parties concerned.	Constant information on the results of inspections to all parties concerned.
no. of corrective actions taken (serious non-conformity = RED anomaly)	138	114	298
Results expected	Minimise anomalies with a consequent improvement to safety, reduction in environmental impacts, improvement in quality of works and guarantee of complete compliance with current standards.	Minimise anomalies with a consequent improvement to safety, reduction in environmental impacts, improvement in quality of works and guarantee of complete compliance with current standards.	Minimise anomalies with a consequent improvement to safety, reduction in environmental impacts, improvement in quality of works and guarantee of complete compliance with current standards.

* The systematic and tracked reporting activity was introduced in May 2017.

EY S.p.A.
Via Meravigli, 12
20123 Milano

Tel: +39 02 722121
Fax: +39 02 722122037
ey.com

Independent auditors' report on the consolidated disclosure of non-financial information in accordance with Article 3, par. 10, of Legislative Decree 254/2016 and with Article 5 of CONSOB Regulation adopted with Resolution n. 20267 of January 18, 2018 (Translation from the original Italian text)

To the Board of Directors of
A2A S.p.A.

We have been appointed to perform a limited assurance engagement pursuant to Article 3, paragraph 10, of Legislative Decree 30 December 2016, n. 254 (hereinafter "Decree") and article 5 of CONSOB Regulation adopted with Resolution 20267/2018, on the consolidated disclosure of non-financial information of A2A S.p.A. and its subsidiaries (hereinafter "A2A Group" or "Group") for the year ended on 31st December 2022 in accordance with article 4 of the Decree and approved by the Board of Directors on 16th March 2023 (hereinafter "DNF").
Our limited assurance engagement does not cover the information included in the paragraphs "*European taxonomy*" and "*EU Taxonomy*" of the DNF, that are required by art.8 of the European Regulation 2020/852.

Responsibilities of Directors and Board of Statutory Auditors for the DNF

The Directors are responsible for the preparation of the DNF in accordance with the requirements of articles 3 and 4 of the Decree and the "Global Reporting Initiative Sustainability Reporting Standards" defined by GRI – Global Reporting Initiative (hereinafter "GRI Standards"), identified by them as a reporting standard.

The Directors are also responsible, within the terms provided by law, for that part of internal control that they consider necessary in order to allow the preparation of the DNF that is free from material misstatements caused by fraud or not intentional behaviors or events.

The Directors are also responsible for identifying the contents of the DNF within the matters mentioned in article 3, par. 1, of the Decree, considering the business and the characteristics of the Group and to the extent deemed necessary to ensure the understanding of the Group's business, its performance, its results and its impact.

The Directors are also responsible for defining the Group's management and organization business model, as well as with reference to the matters identified and reported in the DNF, for the policies applied by the Group and for identifying and managing the risks generated or incurred by the Group.

The Board of Statutory Auditors is responsible, within the terms provided by the law, for overseeing the compliance with the requirements of the Decree.

EY S.p.A.
Sede Legale: Via Meravigli, 12 – 20123 Milano
Sede Secondaria: Via Lombardia, 31 – 00187 Roma
Capitale Sociale Euro 2.525.000,00 i.v.
Iscritta alla S.O. del Registro delle Imprese presso la CCIAA di Milano Monza Brianza Lodi
Codice fiscale e numero di iscrizione 00434000584 - numero R.E.A. di Milano 606158 - P.IVA 00891231003
Iscritta al Registro Revisori Legali al n. 70945 Pubblicato sulla G.U. Suppl. 13 - IV Serie Speciale del 17/2/1998
Iscritta all'Albo Speciale delle società di revisione
Consob al progressivo n. 2 delibera n.10831 del 16/7/1997

A member firm of Ernst & Young Global Limited

Auditors' independence and quality control

We are independent in accordance with the ethics and independence principles of the *International Code of Ethics for Professional Accountants (including International Independence Standards) (IESBA Code)* issued by *International Ethics Standards Board for Accountants*, based on fundamental principles of integrity, objectivity, professional competence and diligence, confidentiality and professional behavior. Our audit firm applies the International Standard on Quality Control 1 (ISQC Italia 1) and, as a result, maintains a quality control system that includes documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable laws and regulations.

Auditors' responsibility

It is our responsibility to express, on the basis of the procedures performed, a conclusion about the compliance of the DNF with the requirements of the Decree and of the GRI Standards. Our work has been performed in accordance with the principle of "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. This principle requires the planning and execution of work in order to obtain a limited assurance that the DNF is free from material misstatements. Therefore, the extent of work performed in our examination was lower than that required for a full examination according to the ISAE 3000 Revised ("reasonable assurance engagement") and, hence, it does not provide assurance that we have become aware of all significant matters and events that would be identified during a reasonable assurance engagement.

The procedures performed on the DNF were based on our professional judgment and included inquiries, primarily with company's personnel responsible for the preparation of the information included in the DNF, documents analysis, recalculations and other procedures in order to obtain evidences considered appropriate.

In particular, we have performed the following procedures:

1. analysis of the relevant matters in relation to the activities and characteristics of the Group reported in the DNF, in order to assess the reasonableness of the selection process applied in accordance with the provisions of article 3 of the Decree and considering the reporting standard applied;
2. analysis and evaluation of the criteria for identifying the consolidation area, in order to evaluate its compliance with the provisions of the Decree;
3. comparison of the economic and financial data and information included in the DNF with those included in the A2A Group's consolidated financial statements;
4. understanding of the following aspects:
   - Group's management and organization business model, with reference to the management of the matters indicated in the article 3 of the Decree;
   - policies adopted by the Group related to the matters indicated in the article 3 of the Decree, results achieved and related key performance indicators;
   - main risks, generated or suffered related to the matters indicated in the article 3 of the Decree.

   With regard to these aspects, we obtained the documentation supporting the information contained in the DNF and performed the procedures described in item 5. a) below;

5. understanding of the processes that lead to the generation, detection and management of significant qualitative and quantitative information included in the DNF.
   In particular, we have conducted interviews and discussions with the management of A2A S.p.A. and with the personnel of A2A Calore e Servizi S.p.A., A2A Gencogas S.p.A., Lomellina Energia S.r.l. and Acinque S.p.A. and we have performed limited documentary evidence procedures, in order to collect information about the processes and procedures that support the collection, aggregation, processing and transmission of non-financial data and information to the management responsible for the preparation of the DNF.

   Furthermore, for significant information, considering the Group activities and characteristics:

   - at Group level
     a) with reference to the qualitative information included in the DNF, and in particular to the business model, policies implemented and main risks, we carried out inquiries and acquired supporting documentation to verify its consistency with the available evidence;
     b) with reference to quantitative information, we have performed both analytical procedures and limited assurance procedures to ascertain on a sample basis the correct aggregation of data.

   - for A2A Calore e Servizi S.p.A. (Canavese cogeneration plant - Milan), A2A Gencogas S.p.A. (Chivasso thermoelectric power plant) and Lomellina Energia S.r.l. (Parona waste-to-energy plant), that we have selected based on their activities, relevance to the consolidated performance indicators and location, we have carried out site visits during which we have had discussions with management and have obtained evidence about the appropriate application of the procedures and the calculation methods used to determine the indicators.

Conclusions

Based on the procedures performed, nothing has come to our attention that causes us to believe that the DNF of the A2A Group for the year ended on 31st December 2022 has not been prepared, in all material aspects, in accordance with the requirements of articles 3 and 4 of the Decree and the GRI Standards.
Our conclusions on the DNF of the Group do not refer to the information included in the paragraphs "*European taxonomy*" and "*EU Taxonomy*" of the DNF itself, that are required by art.8 of the European Regulation 2020/852.

Milan, 3 April 2023

EY S.p.A.
Signed by: Paolo Zocchi (Auditor)

This report has been translated into the English language solely for the convenience of international readers.

GRI Content Index

GRI STANDARD	Disclosure	Integrated Report	Supplement	Omission			GRI sector standard ref. No.
				Request omitted	Reason	Explanation	
General disclosures							
GRI 2: General Disclosures 2021	2-1 Organizational details	10					
	2-2 Entities included in the organization's sustainability reporting	6-7					
	2-3 Reporting period, frequency and contact point	6-7					
	2-4 Restatements of information	6-7					
	2-5 External assurance	212					
	2-6 Activities, value chain and other business relationships	12-13,16-19					
	2-7 employees	14-15					
	2-8 Workers who are not employees	154	pag. 51				
	2-9 Governance structure and composition	22-23					
	2-10 Nomination and selection of the highest governance body	22-23 https://www.gruppoa2a.it/it/investitori/governance/documenti-societari					
	2-11 Chairman of the highest governance body	22-23					
	2-12 Role of the highest governance body in overseeing the management of impacts	24-25					
	2-13 Delegation of responsibility for managing impacts	24-25					
	2-14 Role of the highest governance body in sustainability reporting	24-25					
	2-15 Conflicts of interest	26-27					
	2-16 Communication of critical concerns	66-67					
	2-17 Collective knowledge of the highest governance body	22-23					
	2-18 Evaluation of the performance of the highest governance body	22-23					
	2-19 Remuneration policies	23					
	2-20 Process to determine remuneration	23					
	2-21 Annual total compensation ratio	149					
	2-22 Statement on sustainable development strategy	42-53					
	2-23 Policy commitments	27-29, 66					
	2-24 Embedding policy commitments	27-29, 66					
	2-25 Processes to remediate negative impacts	32-35; 56-60; 66-67, 80-81; 98-99; 114-119; 136-139; 160-161; 174-175; 192-193; 197; 206-207					
	2-26 Mechanisms for seeking advice and raising concerns	26; 66-67, 197					
	2-27 Compliance with laws and regulations	188					
	2- 28 Membership associations	38, 194-195					
	2-29 Approach to stakeholder engagement	66-75					
	2-30 Collective bargaining agreements	148					
Topic Specific Disclosure							
GRI 3: Material Topics 2021	3-1 Process to determine material topics	70-73					
	3-2 List of material topics	71-73	pag. 16-17				
Economic performance							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 80-81	pag. 14-15				
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	82	pag. 20				
	201-2 Financial implications and other risks and opportunities due to climate change	54, 63					
Indirect economic impacts							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 80-81	pag. 4-5				
GRI 203: Indirect economic impacts 2016	203-2 Significant indirect economic impacts	82, 161-162, 203	pag. 90; 96				
Procurement practices							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 206-207	pag. 12-13				
GRI 204: Procurement practices 2016	204-1 Proportion of spending on local suppliers	208	pag. 80-81; 91; 96				
Anti-corruption							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 32-35	pag. 14-15				
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	26-27					
	205-3 Confirmed incidents of corruption and actions taken	24-25	pag. 84; 92				
Anti-competitive behaviour							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 32-35	pag. 14-15				
GRI 206: Anti-competitive behaviour 2016	206-1 Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	188	pag. 84; 91; 92				
Taxation							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 32-33	pag. 14-15				
GRI 207: Taxation 2019	207-1 Approach to tax	28-29					
	207-2 Tax governance, control and risk management	28-29					
	207-4 Country-by-country reporting	28-29					
Materials							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 114-115					
GRI 301: Materials 2016	301-1 Materials used by weight or volume	120-121	pag. 35; 39; 43; 46; 49				
Energy							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 118-119	pag. 6-7				
GRI 302: Energy 2016	302-1 Energy consumption within the organization	122-123	pag. 35; 39; 43; 46; 49				
Water and waste water							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 116-117	pag. 4-5				
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	127-129					
	303-2 Management of water discharge-related impacts	127-129					
	303-3 Water withdrawal	128	pag. 37; 40; 44; 47				
	303-4 Water discharge	128-129	pag. 37; 40; 44; 47				
	303-5 Water consumption	127-128	pag. 36				

GRI STANDARD	Disclosure	Integrated Report	Supplement	Omission			GRI sector standard ref. No.
				Request omitted	Reason	Explanation	
Biodiversity							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 118-119	pag. 4-5				
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in or adjacent to protected areas and areas of high biodiversity value outside protected areas	130-131					
Emissions							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 118-119	pag. 6-7				
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	124-125	pag. 37; 42; 45; 48; 50				
	305-2 Energy indirect (Scope 2) GHG emissions	125	pag. 37; 42; 45; 48; 50				
	305-3 Other indirect (Scope 3) GHG emissions	125	pag. 37; 42; 45; 48; 50				
	305-7 Nitrogen oxides (NOx), sulphur oxides (SOx) and other significant air emissions	125-126	pag. 37; 42; 45; 48; 50				
Waste							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 114-115	pag. 4-5				
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	120-121	pag. 36; 41; 45; 49				
	306-2 Management of significant waste-related impacts	114-115	pag. 36; 41; 45; 49				
	306-3 Waste generated	120-121	pag. 36; 41; 45; 49				
	306-4 Waste diverted from disposal	120-121	pag. 36; 41; 45; 49				
	306-5 Waste directed to disposal	120-121	pag. 36; 41; 45; 49				
Supplier environmental assessment							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 206-207	pag. 12-13				
GRI 308: Supplier Environmental Assessment 2016	308- 1 New suppliers that were screened using environmental criteria	209-210	pag. 80-81; 91; 96				
Employment							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 138-139	pag. 10-11				
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	140-142	pag. 53; 88; 94				
Occupational health and safety							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 136-137	pag. 10-11				
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	136-137					
	403-2 Hazard identification, risk assessment and incident investigation	152-154					
	403-3 Occupational health services	155					
	403-4 Worker participation, consultation and communication on occupational health and safety	152-154					
	403-5 Worker training on occupational health and safety	152-154					
	403-6 Promotion of worker health	152-154					
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	136-137					
	403-8 Workers covered by an occupational health and safety management system	29-30, 152					
	403-9 Work-related injuries	152-154	pag. 60-61; 89; 94				
	403-10 Work-related ill health	155	pag. 60				
Training and Education							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 138-139	pag. 10-11				
GRI 404: Training and Education 2016	404-1 Average annual hours of training per year per employee	142-144	pag. 58; 89-90; 95				

GRI STANDARD	Disclosure	Integrated Report	Supplement	Omission			GRI sector standard ref. No.
				Request omitted	Reason	Explanation	
Diversity and Equal Opportunity							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 138-139	pag. 10-11				
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	150-151	pag. 51; 56-57; 89; 95				
Non-discrimination							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 32-33	pag. 10-11				
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	26-28					
Freedom of Association and Collective Bargaining							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 192-193					
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	148-149	pag. 62				
Local Communities							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 192-193					
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	68-70, 194-201					
Supplier Social Assessment							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 206-207	pag. 12-13				
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	209-210	pag. 80-81; 91; 96				
Public policy							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 192-193					
GRI 415: Public Policy 2016	415-1 Political contributions	198-200					
Consumer Health and Safety							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 174-175					
GRI 416: Consumer Health and Safety 2017	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	-	pag. 82; 91; 96				
Marketing and Labelling							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73; 181					
GRI 417: Marketing and Labelling 2016	417-3 Incidents of non-compliance concerning marketing communications	181; 188					
Customer Privacy							
GRI 3: Material Topics 2021	3-3 Management of material topics	72-73, 174-175					
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	28-29, 108-109	pag. 82; 91				

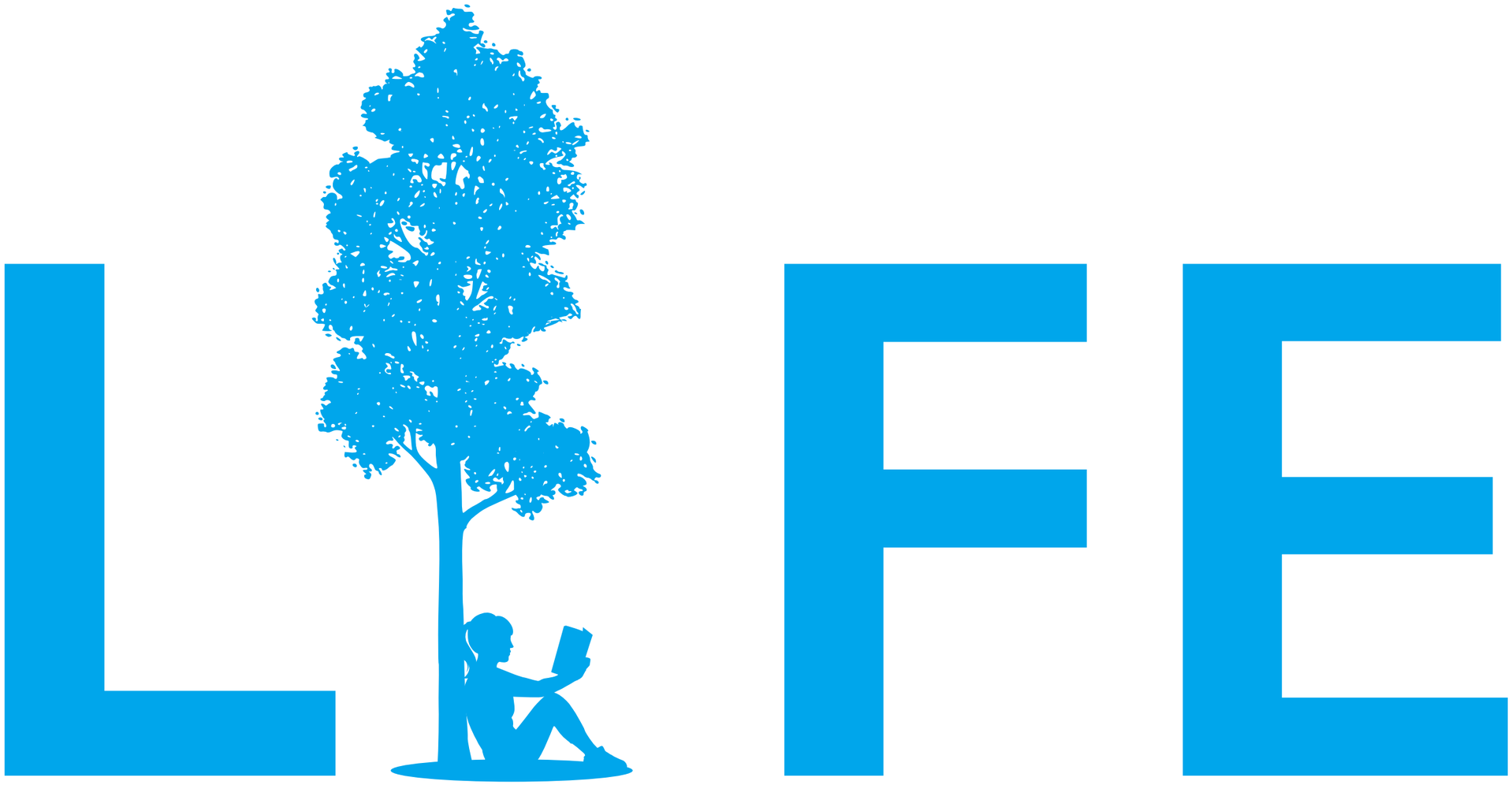
Material aspects and scope of application

MATERIAL TOPIC	REFERENCE GRI	BOUNDARY	STAKEHOLDER
Group Ethics and Integrity	Anti-corruption (GRI 205) Anti-competitive behaviour (GRI 206) Compliance with laws and regulations (GRI 2-27) Non discrimination (GRI 406) Freedom of association and collective bargaining (GRI 407)	Group	Community/Customers/ Suppliers*
Sustainability in Governance	Non discrimination (GRI 406) Compliance with laws and regulations (GRI 2-27) Anti-corruption (GRI 205) Research and development (EU Supplement)	Group	Community/Customers/ Suppliers*
Sustainable economic value	Economic performance (GRI 201)	Group	Shareholders/Institutions
Sustainable Finance	Indirect economic impacts (GRI 203)	Group	Shareholders/Institutions
Infrastructure for the Ecological Transition	Energy (GRI 302) Efficient management (EU Supplement)	Group	Community
Energy autonomy	Energy (GRI 302) Emissions (GRI 305) Efficient management (EU Supplement)	Group	Community
Circular economy	Materials (GRI 301) Effluents and waste (GRI 306)	Waste BU Smart Infrastructures BU Generation and Trading BU	Community
Responsible management of water resources	Water and effluents (GRI 303) Effluents and waste (GRI 306) Compliance with laws and regulations (GRI 2-27)	Group	Suppliers* Community/Customers
Climate change	Energy (GRI 302) Emissions (GRI 305)	Group	Suppliers*/Customers
Biodiversity	Compliance with laws and regulations (GRI 2-27) Biodiversity (GRI 304)	Group	Community
Pollution prevention	Energy (GRI 302) Emissions (GRI 305) Effluents and waste (GRI 306)	Group	Community/Customers
Occupational health and safety	Occupational health and safety (GRI 403)	Group	Contractors
Development of human capital	Employment (GRI 401) Development and training (GRI 404)	Group	
Diversity and inclusion	Diversity and equal opportunities (GRI 405)	Group	-
Innovation and digital transformation	Research and development (EU Supplement) Demand side management (EU Supplement)	Group	Institutions
Responsibility and quality in the provision of services	Consumer health and safety (GRI 416) Marketing and labelling (GRI 417) Consumer privacy (GRI 418) Service accessibility (EU Supplement) Demand side management (EU Supplement)	Market BU Smart Infrastructures BU	Institutions/Communities/ Customers
Listening and involvement of communities	Local community (GRI 413) Public policy (GRI 415)	Group	Community
Responsible Supply Chain Management	Procurement practices (GRI 204) Supplier environmental assessment (GRI 308) Supplier social assessment (GRI 414)	Group	Suppliers*

* Limited scope: reporting relates solely to direct suppliers and not to level-two suppliers.

TCFD Content Index

Scope	TCFD Recommendations	Reference
Governance Governance model of the organization in relation to climate change risks and opportunities	a. Describe the Board's oversight of climate change risks and opportunities	- Roles and responsibilities for climate change mitigation page 24
	b. Describe the role of management in assessing and managing the risks and opportunities associated with climate change	- Roles and responsibilities for climate change mitigation page 24
Strategy Current or potential impacts of climate change risks and opportunities on the organization's business, strategy and financial planning	a. Describe the risks and opportunities related to climate change that the organization has identified in the short, medium and long term	- Risk management and climate-related opportunities pages 54-63
	b. Describe the impact of climate change risks and opportunities on the organization's business, strategy and financial planning	- The Strategic Plan 2021 - 2030 pages 42-45 - Risk management and climate-related opportunities pages 54-63
	c. Describe the resilience of the organization's strategy, considering different climate-related scenarios, including a scenario of 2°C or less	- Background information and scenarios pages 39-42 - The Strategic Plan 2021 - 2030 pages 42-45 - A2A's decarbonization path page 126
Risk Management Process for the identification, assessment and management of risks connected with climate change,	a. Describe the organization's processes for identifying and assessing climate change risks	- Risk management and climate-related opportunities pages 54-63
	b. Describe the organization's processes for managing climate change risks	- Risk management and climate-related opportunities pages 54-63 - Natural Capital pages 114-115 - Energy Transition pages 122-126 - Sustainable management of water resources pages 127-129
	c. Describe how the processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	- Risk management and climate-related opportunities pages 54-63
Metrics and targets Metrics and targets used by the organization to assess and manage relevant risks and opportunities related to climate change	a. Disclose the metrics used by the organization to assess climate change risks and opportunities in line with its strategy and risk management process	- Risk management and climate-related opportunities pages 54-63
	b. Disclose Scope 1, Scope 2 and Scope 3 greenhouse gas (GHG) emissions, and related risks	- Energy Transition pages 122-126
	c. Describe the objectives used by the organization to manage climate change risks and opportunities and performance against the objectives	- The Strategic Plan 2021 - 2030 pages 42-45 - The Sustainability Plan pages 45-53 - Energy Transition pages 122-126 - Sustainable management of water resources pages 127-129


LIFE

A2A S.p.A.

Registered office:
Via Lamarmora, 230 - 25124 Brescia
T [+39] 030 35531 F [+39] 030 3553204

Managerial and administrative headquarters:
Corso Porta Vittoria, 4 - 20122 Milan
T [+39] 02 77201 F [+39] 02 77203920

Created by:
Communication, Sustainability and Regional Affairs
T [+39] 02 77201 - sostenibilita@a2a.eu - gruppoa2a.it

We would like to thank all our colleagues of A2A who worked on the preparation of this Report.

Cover and separators:
SERVICEPLAN

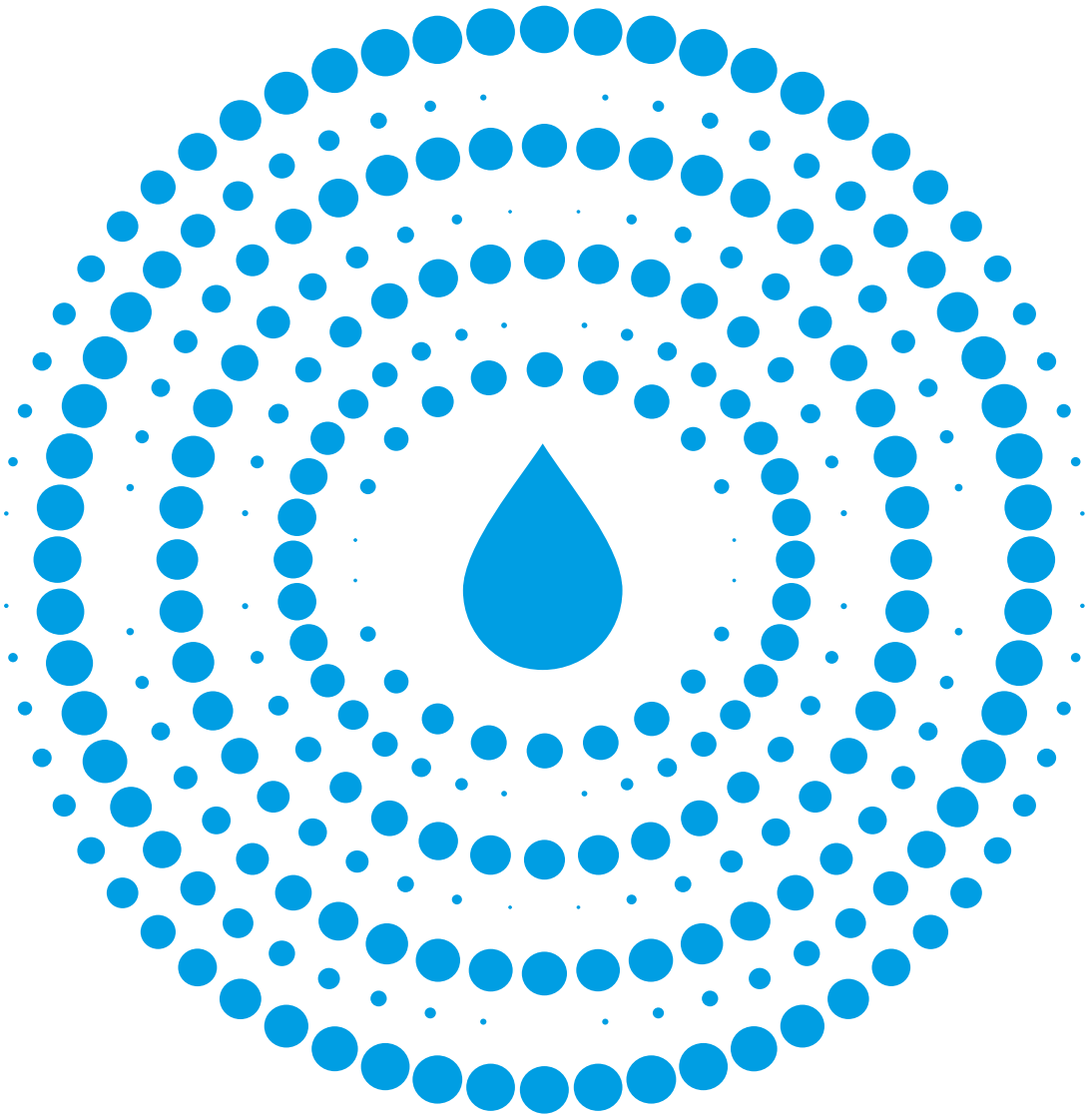
Graphic design and layout:
MERCURIO GP

Printing:
AGEMA S.p.A.

Milan, March 2023


a2a
LIFE COMPANY

a2a
LIFE COMPANY



2022

Supplement to the Integrated Report

Consolidated Non-Financial Disclosure
pursuant to Legislative Decree
no. 254/2016

Supplement Integrated Report 2022

Consolidated
Non-financial Disclosure
in accordance with Italian Legislative
Decree no. 254/2016

This Report may be viewed on the website
gruppoa2a.it

Contents

Operational sustainability targets 21-30

Circular Economy

Action	KPIs	2021	2022	2026	2030
Waste recovery and treatment Improve the recovery process of waste collected (including through its transformation into energy) and promote separate waste collection	Separate collection rate of municipal waste in all municipalities served (%)	**71%**	70%	74%	**77%**
	Separate waste collection rate in the city of Milan (%)	**62%**	64%	70%	**76%**
	Collected municipal waste sent to landfill (% of total)	**0.5%**	0.6%	0%	**0%**
	Per capita undifferentiated waste reduction (kg/inhabitant)	**132.4**	135.2	121.0	**102.0**
	Waste sent for material recovery (Mt)	**1.0**	1.0	1.1	**2.2**
District heating Help reduce the environmental impact of the cities, paying close attention to air quality, implementing district heating and district cooling	Thermal storage capacity for TLR (cubic metres)	**18,220**	28,520	38,720	**38,720**
	Energy from thermal waste / renewables for the TLR (TWht)	**1.6**	1.6	1.9	**2.0**
	Share of heat from renewables and waste recovery (% of total)	**50%**	53%	60%	**60%**
	CO_2 emissions avoided thanks to TLR (t/a)	**-323,029**	- 300,425	- 368,273	**- 391,092**
	NOx emissions avoided thanks to TLR (cumulative t)	**- 275**	- 525	- 1,677	**- 2,973**
Water Implement actions to reduce water consumption in capture and distribution processes, reduce water dispersion and improve the quality of water returned to the environment	Reduction in water consumption from aqueducts in electrical distribution - Unareti perimeter - compared to 2020 (%)	**-22%**	-27%	-37%	**-60%**
	Linear water losses (m3/km/days) - average	**n.a.**	19.2	16.7	**15.1**
	Number of intelligent sensors installed for water service - cumulative figure	**881**	2,250	2,712	**2,932**
	New generation water service meters installed (% of total)	**29%**	35%	86%	**95%**
	Districtualization of the aqueduct network - A2A Ciclo Idrico perimeter (% of total)	**NEW**	33%	52%	**69%**
Policies to reduce waste production Reduce the production of waste through a prevention, reduction and reuse policy	Territories where waste prevention and reduction actions are active (% of total population served)	**85%**	86%	>85%	**>85%**
	Number of partnerships launched for circular economy initiatives	**10**	24	35	**44**
Real estate Ensure maximum energy efficiency Through bat also for group assets	Emissions (Scope1+2) from Group buildings	**4,887**	3,721	4,722	**3,741**
	LEED certification new building A2A by 2025		-	Achievement by 2025	
	Develop energy efficiency projects in buildings of the Group		-	Torre Faro A2A	**44**

Energy Transition

Action	KPIs	2021	2022	2026	2030
Renewables Increase the proportion of energy produced from renewable sources	Total installed RES capacity (GW) Generation BU - Italy perimeter	**2.2**	2.5*	2.8	**4.8**
	Percentage of renewable energy on total - Generation BU	**30%**	19%	32%	**52%**
	Total installed RES capacity (GW) Market BU	**0.01**	0.04	0.1	**0.2**
	Total net production (GWh) solar Market BU	**13.6**	27.0	136.0	**269.0**
Emissions Develop actions aiming to reduce the environmental footprint, like direct and indirect emissions of greenhouse gases	Scope 1 + Scope 2 emission factor (gCO_2eq/kWh) - perimeter in line with target approved by SBTi **	**332**	386	289	**226**
	Scope 2 emissions ($ktCO_2eq$) - electricity purchase	**21**	21	0	**0**
	Total methane emissions avoided from distribution networks - cumulative values with respect to 2015 (tCO_2eq) - Unareti perimeter	**58,611**	73,449	148,327	**268,539**
Sustainable mobility Develop sustainable internal and external mobility solutions	Charging service contracts Emoving (number)	**NEW**	11,500	62,918	**176,418**
	Emissions avoided by the Emoving service - cumulative 21-30 (t)	**2,541**	6,114	33,967	**132,390**
	Number of electric charging points - cumulative 21-30	**444**	886	15,198	**46,960**
	Group electric vehicles (percentage of total cars and light commercial vehicles)	**8%**	29%	42%	**58%**
	Number of low environmental impact collection and street sweeping vehicles (Euro 6 vehicles, methane gas, electric)	**54%**	58%	77%	**89%**
Green energy – end-use energy efficiency Contribute to the reduction of emissions of end customers through the sale of green energy and the development of energy efficiency measures for public and private real estate assets	Green energy sold to the market (TWh)	**4.7**	7.0	10.8	**17.4**
	CO_2-free gas sold to segment (Mm^3)	**21**	98	310	**409**
	Loyal customers with energy efficiency services (Customers with a service/product in addition to the commodity)	**1.9%**	3.9%	11.5%	**23.5%**
	Cumulative avoided emissions 21-30 - VAS products (HVAC, PV systems) (t)	**575**	2,620	79,193	**411,968**
	Cumulative avoided emissions 21-30 - Energy efficiency b2b - ESCo (t)	**78,617**	112,706	243,985	**381,580**
	Cumulative avoided emissions 21-30 - VAS products for condominiums and commercial buildings (t)	**1,117**	3,430	25,386	**56,990**
Smart Grid Develop solutions to offer a better information access infrastructure (Smart Grid) and improve the network resilience and to contribute to the growing electrification of consumption	Users with 2G electricity smart meters - Unareti perimeter (% of total)	**24%**	42%	96%	**98%**
	User interruptions in LV - SAIFI (#/year/POD)	**1.61**	1.84	1.26	**1.06**
	Installed capacity of the electricity grid (MVA)	**4,664**	5,042	6,678	**7,136**
	Number of primary stations installed	**32**	34	46	**50**
	Investments in Smart Grids (mln €) - cumulative value 21-30	**43**	97	298	**426**

* KPI at Group level (Italy + Spain) is 2,504 MW.
** Note that the direct emissions component (Scope 1) accounts for 99.98% of the numerator of the emission factor approved by SBTi, which in 2022 results in 8.6 mln tons CO_2. The contribution of indirect energy emissions (Scope 2) is negligible, amounting to 1,919 tons.

Digital

Action	KPIs	2021	2022	2026	2030
Quality Maintain high quality standards of the services supplied by keeping high customer satisfaction levels	Digitalization of Customer Care: digital contacts of total	**14%**	18%	28%	**28%**
	CSI Call Center A2A Energia	**> sector national average**	> sector national average	> sector national average	**> sector national average**
	Customer Satisfaction Amsa (Milan/Municipalities)	**7.67**	7.69	7.77	**7.85**
	Customer Satisfaction Aprica	**74.60**	78.30	75.10	**75.50**
	Number of active supplies bollett@mail (Market BU) - thousands	**1,314**	1,619	3,053	**5,513**
Cyber & O.T. Security Projects of infrastructural improvement and improvement of IT/OT/IoT/IIoT platforms and applications Adoption of defence mechanisms and protection against logical, viral attacks	Achievement certification Cybersecurity ISO27001 (ICT)	**-**	Achievement	Maintenance	**Maintenance**
	Number of cyber security activities, managed with a risk-based approach and based on the principle of security by design	**NEW**	225	300	**300**
	IT security verification measures (Ethical Hacking, Vulnerability Assessment, etc.)	**NEW**	80	60	**60**
	Events of cyber security knowledge sharing	**3**	5	10	**10**
	Obtaining Business Continuity* ISO22301 certification	**-**	Achievement	Achievement Unareti + A2A Ciclo Idrico + Ld Retl	**Achievement A2A Ambiente**
	Inclusion of ESG logic in the analyses	**-**	30%	90%	**100%**
Smart City Support the development of the Smart City in the territory in which the Group operates, including through new business models that exploit the technological component (Smart Grids and big data)	Gas cabins, isolation boxes, 2nd ele cabinets and IP poles enabling 5G, FWA and smart sensors	**5**	5	470	**10,000**
	Data analytics projects for municipalities and utilities in the field of safety, mobility and air quality	**1**	3	20	**150**
Innovation and R&D Develop investments in research and development, increasing the number of partnerships with international research centres and universities. Develop new technologies, patents for technological innovation.	Number of innovation projects (or investments) related to the SDGs	**80%**	90%	100%	**100%**
	Investments in start-ups (new investments and follow on) through a Corporate Venture Capital	**4**	5	6	**6**
	Initiatives of crowd sourcing of ideas and solutions (e.g scouting, innovation brokers,...) to address sustainability goals	**8**	13	15	**15**
Analytics	Advanced Analytics in scale up linked to SDGs	**2**	11	5	**5**
	AI projects with sustainability impacts (% of total)	**0**	70%	50%	**100%**
ICT	CO_2 avoided by digital initiatives (t/a)	**- 123**	- 161	- 191	**- 320**
	Number of digital initiatives with measurable sustainability impact	**11**	12	27	**35**

People innovation

Action	KPIs	2021	2022	2026	2030
Health and safety Consolidate the training and prevention plan to reduce injuries and develop new initiatives for worker health and safety	Number of accesses to health promotion initiatives	**5,100**	9,087	11,600	**15,000**
	Accident Frequency Index (If) with gate on Severity Index (Ig) calculated taking into account only the first prognoses	**20.91 (0.21)**	19.66 (0.17)	15.13 (gate Ig<=0.25)	**12.72 (gate Ig<=0.25)**
MbO and performance management Add sustainability objectives to the MbO sheets (correlation between Management remuneration and Sustainability KPIs)	Employees with formally assigned objectives (% of total employees)	**12%**	13%	50%	**100%**
	Extension tool for continuous feedback	**29%**	31%	50%	**100%**
Training Implement training routes aimed at optimising and requalifying competences and professional development (including on matters such as sustainability, anti-corruption and human rights)	Employees involved in training on sustainability and SDGs, Diversity and Inclusion (% of employees to whom content is made available)	**60%**	100%	100%	**100%**
	Investment density of training to the role	**67% of employees involved for 16.40 hours per capita**	67% of employees involved for 17.86 hours per capita	60% employees involved for 10 hours per capita	**60% of employees involved for 10 hours per capita**
Organization wellness Implementation of the best business organization systems for effective development of all work processes	Digitalization of regulatory documents	**0%**	10.25%	50%	**100%**
	Adoption APP A2A Life	**NEW**	50%	80%	**100%**
INTERNAL ENGAGEMENT Develop a systematic listening system to employees, promoting dialogue and collaboration	Employees involved in engagement campaigns (% of the total)	**100%**	100%	100%	**100%**
	Actions implemented out of the total number of those proposed	**100%**	100%	100%	**100%**
	Employees involved in survey/pulse (number)	**11,605**	11,605	13,155	**13,451**
Welfare, diversity and equal opportunities Develop innovative welfare policies, also in connection with the promotion of gender equality, and optimise competences through a generational bridge that allows for the transfer of knowledge and experience between the junior and senior populations	Women in positions of responsibility (% of total managers)	**24%**	26%	29%	**35%**
	Gender Balance BoD	**43%**	51.6%	63%	**90%**
	Gender Pay Gap	**Imp: 98% Middle Managers: 96% Executives: 100%**	Imp: 99% Middle Managers: 96% Executives: 100%	Imp: 100% Middle Managers: 100% Executives: 100%	**Imp: 100% Middle Managers: 100% Executives: 100%**
	Women in succession plans (% of total)	**19%**	19%	26%	**30%**
	% women among the Group's new hires (excluding blue collar workers)	**45%**	41%	50%	**50%**
	Employees with disabilities involved in specific support/inclusion projects (% of total employees Protected categories)	**10%**	27%	80%	**100%**
	Hours worked in Remote Working (% of total) *considering the pandemic situation	**21.7%***	15.4%*	13.00%	**21.00%**

People innovation

Action	KPIs	2021	2022	2026	2030
Responsible procurement Develop initiatives aiming to spread the culture of health and safety at work amongst contractors and other suppliers. Develop Green Procurement policies.	Incidence of sustainability criteria in the vendor rating process	**17%**	17%	>25%	**>30%**
	Value of orders assigned to certified suppliers	**86%**	85%	87%	**90%**
	Value of orders assigned to financially sound suppliers (D&B Rating 1-2)	**77%**	85%	>80%	**>85%**
	% of the order to Suppliers evaluated with ESG indicator (Infoprovider Ecovadis)	**47%**	65%	75%	**90%**
	Corrective actions taken following unsuccessful audits (% of total)	**94%**	97%	>90%	**>90%**
	Inspections of road sites (number/year)	**5,522**	6,784	5,900	**6,900**
EDUCATION* Consolidate and, where possible, improve the environmental education and promote the awareness of risks associated with climate change in the public opinion	Number of accesses to environmental culture initiatives	**5,339**	9,103	11,600	**15,000**
	Teachers registered on the A2A education portal	**2,346**	2,770	2,200	**2,500**
	Stakeholders involved in environmental education initiatives	**44,000**	63,410	35,000	**40,000**
Vulnerable Groups Identification of new needs and development of actions allowing a inclusive access to energy	Number of projects activated by Banco dell'Energia and its Manifesto partners to tackle energy poverty	**-**	-	9 at 2023	
	Funds raised by Banco dell'Energia to fight energy poverty (k€)	**-**	-	1,500 at 2024	
Transparency and Stakeholder Engagement Develop integrated reporting and an adequate information system for planning and control. Develop external stakeholder engagement activities, strengthening the relationship with the territory	Territories involved in multi stakeholder engagement initiatives / year	**7**	10	11	**12**
	Impact assessment on the territories of competence (cumulative)	**1**	1	3	**5**
	Group events CO_2-free (offset through credits)	**0%**	31%	100%	**100%**
	Publishing content for the Group's growth in ESG brand reputation (value of reputational return on digital channels)	**90%**	72%	>72%	**>74%**
	Sponsorships with initiatives to raise awareness of SDGs issues	**50%**	65%	70%	**90%**
	Organization of meetings on innovative regulatory and sustainability issues related to the Business Plan between A2A top management and one or more relevant regulatory stakeholders	**-**	2	>1	**>1**
	Elaboration, also in sharing with BUs, of at least one innovative regulatory proposal on an issue of development of the business plan	**-**	1	>1	**>1**

*Including ACinque and AEB from 2021.

Governance

Action	KPIs	2021	2022	2026	2030
Compliance/business ethics Implement all the controls and the best national and international initiatives for the dissemination of compliance within the Group	Certification ISO37001 - *Anti-bribery management systems*	-	-	Achievement by 2025	
	Number of training projects per year on compliance issues	2	4	At least 2	At least 2
	Employees trained on privacy, Leg. Decree 231/2001, code of ethics, anti-corruption policy, whistleblowing system and other group documents on ethical behavioural principles.	82%	84%	>80%	>80%
Sustainability governance Ensure the integration of ESG issues into management models, corporate strategy and purpose.	Number of meetings per year of Induction to BoD/CST on emerging Sustainability issues (tbd e.g. EU Taxonomy, Human Rights, TCFD etc.)	1	3	At least 1	At least 1
Risk Management To verify that the system used to identify, manage and prevent business risks adequately covers sustainability risks (and, in particular, social-environmental risks), also in organisational terms	Identify ERM risks on all material issues	100%	100%	100%	100%
	Identification and assessment of risks related to the *Green Deal*	NEW	100%	Achieved	
	Share of processes and activities covered by Environmental Risk Assessment ** Intended as the completion of the roll out of the Environmental Risk Assessments on companies with a defined plan as of 12/31/2021 *** Understood as meeting the Environmental Risk Assessment timeline in the integration plan for new acquisitions	39%**	48%	100%***	100%***
Sustainability in planning and investment processes Inclusion of ESG logic in investment planning and evaluations. Adoption of sustainable finance tools to support the funding strategy.	Percentage of 'sustainable debt' over total	44%	58%	79%	>90%
	Identify projects classified as "sustainable" when defining the budget/plan, according to SDGs/ESGs/classification logics Taxonomy with indication of ESG performance KPIs	100%	100%	Achieved	
	Develop a timely analysis of investors' and analysts' ESG expectations	definition of a checklist of ESG best practices	Creation of a Hub on the company website dedicated to ESG Policy. Launch of internal work group on ESG investor expectations.	ESG Roadshow (in 2023)	-
ESG rating Participation in assessments to evaluate the Group's ESG performance, and implementation of activities to continuously improve the rating	Improve the score in at least 2 sustainability ratings/year	5	3	>2	>2
Biodiversity Adhere to projects aiming to protect the soil and protected species, monitoring and protecting biodiversity in the territories of competence	Plants monitored with respect to potential interference with biodiversity (protected areas, Natura 2000 and others) - (Maintaining full coverage of sites and activities, against the planned extension of the company perimeter)	100%	100%	100%	100%

Stakeholder engagement and materiality

Figure 1 Table of impacts

Pillar	Material issues	Material issue description		Associated impacts
Governance	Group Ethics and Integrity	The Group promotes an ethical conduct of its business, adopting specific prevention measures and standards (such as the Code of Ethics, Model 231/01, Anti-Corruption Policy and other procedures to govern the company's activities and protect human rights throughout the value chain, and ISO 37001), in order to thwart cases of corruption and money laundering that could create damage for the territory, the market and the Group's stakeholders. At the same time, A2A encourages the dissemination of an ethical corporate culture, based on the principles of integrity, honesty and respect for human rights, by implementing specific information and training activities, as well as providing suitable systems to report irregularities and unlawful conduct. **#Anti-corruption #Compliance #Human rights #Whistleblowing**	Socio-economic damage to the territory, including the supply chain, due to corruption and money laundering activities, as well as repercussions on financial markets, as a result of illegal and anti-competitive behaviour	Restricted freedom of employees through denial of the possibility to participate in trade unions, trade associations, etc.
	Sustainability of Governance	The Group adopts a holistic approach that, starting with the assessment of risks and opportunities on sustainability issues and constant monitoring of regulatory developments in the ESG field, allows for sustainable and responsible management of business activities and, at the same time, a prompt response to the legislative requirements. The Group is also committed to achieving the sustainability goals of the UN 2030 Agenda, through the adoption of specific measurable ESG KPIs and the integration of these into the MbOs of company Management.	Increased dissemination of a culture of sustainability, fairness and ethics through the adoption of defined and measurable ESG KPIs.	
Financial capital	Sustainable economic value	The Group creates and distributes economic and social value among its stakeholders, generated through the conduct of its business, thus also participating in the growth of its territories. A2A also contributes to the energy transition by promoting the use of renewable energy sources and energy efficiency mechanisms. **#Added value #externality #Distributed value #Economic sustainability**	Contribution to energy transition through access to incentive mechanisms that promote the use of renewable energy sources and energy efficiency.	Distribution of economic value to stakeholders.
	Sustainable finance	The Group constantly monitors financial market developments on ESG issues and adopts sustainable finance instruments in line with the European strategy. To reinforce the confidence of the financial community and meet the expectations of investors and institutions, A2A develops actions and projects aimed at ensuring compliance with ESG reporting regulations and is committed to progressively aligning to the European sustainability goals, such as those related to the EU Taxonomy. **#Sustainable debt #Green Deal #Impact investing #Taxonomy # ESG rating**	Encouragement of investments in projects aligned to the European Taxonomy.	
Natural capital	Responsible management of water resources	The Group adopts practices aimed at improving the management of water resources in its plants and business units, as well as optimising user consumption, in order to minimise waste due to leaks along the network and thus increase the availability of water resources. A2A also promotes water recycling by encouraging water treatment and purification practices, especially in water-stressed areas. Last but not least, A2A is actively committed to improving the efficiency and safety of existing facilities in the areas in which it operates, constantly monitoring its activities in order to ensure compliance with current regulations. **#Water quality #Leakage minimisation #Responsible use #Water stressed areas**	Increased water stress, due to the failure to optimise the water consumption of BUs and end users.	Decline in local water quality due to non-compliance with water quality levels of distributed and discharged water.
	Biodiversity	The Group promotes safeguarding of the landscape heritage and the flora and fauna of the territories in which its plants or operating sites are located. A2A is actively committed to protecting biodiversity and not interfering with the protected areas system through its operations. In addition, to minimise the impact on biodiversity and ecosystems in the areas of new intervention, the Group carries out constant analysis, monitoring and dialogue with local communities and other stakeholders, aimed at identifying any critical issues and considerations on the Group's operations in the territories of reference. **#Ecosystem protection #habitat #Managing negative externalities**	Decreased biodiversity, due to interference of the Group's activities with the protected areas system.	
	Pollution prevention	The Group adopts a system of preventive measures and controls to limit or eliminate all forms of pollution (environmental, noise and light), minimising any negative impact on human health and the environment. Furthermore, thanks to constant monitoring of the environmental performance of the infrastructures, plants and vehicles of all Group companies, A2A ensures full compliance with current environmental legislation and EU regulations, thereby reducing the risk of accidents that could worsen air, water and soil quality.	Worsening of air, water and soil pollution due to pollutant emissions, particularly in the case of accidental mismanagement.	Deterioration of land use due to soil pollution.	Deterioration of quality of life in cities due to excessive noise pollution.

Pillar	Material issues	Material issue description		Associated impacts	
Human capital	**Occupational health and safety**	The Group is actively committed to ensuring a healthy and wholesome working environment for all staff, whether employees, contractors or collaborators. To ensure full compliance with current regulations and prevent accidents throughout the supply chain, A2A adopts working practices and management systems that envisage procedures, monitoring and training activities in the area of workplace health and safety that allow controlled management of the Group's activities both in its offices and at its plants and operating sites. At the same time, the Group promotes a culture of respect for individuals and their human rights and adopts specific measures (such as the Human Rights Policy or Whistleblowing system) to combat instances of sexual or physical and psychological harassment in the workplace. **#Injury reduction #H&S training #Prevention #Health protection**	Accidents to employees, collaborators, contractors and sub-contractors within the Group's premises, plants and sites, due to non-compliance with regulations and shortcomings in prevention procedures and measures.	Psycho-physical well-being	
	Development of human capital	The Group is actively committed to creating a positive corporate climate and to maintaining high levels of employee satisfaction, recognising that employees play a fundamental and highly valuable role in the running of its business. To this end, A2A adopts a structured employee listening system that includes systematic dialogue and collaboration initiatives aimed at identifying workers' needs and expectations. The Group also promotes the development and enhancement of its human capital, offering defined and structured career paths and training plans aimed at enhancing technical, managerial and organisational skills, as well as upskilling and reskilling programmes through internal job rotation. Lastly, the Group adopts a welfare system that promotes personal, family and work well-being of employees and offers solutions to achieve a work-life balance (e.g. flexible working, remote working). **#Training #Development #Talent acquisition #Retention #Welfare #Union agreements #Work-life balance**	Increased turnover rate due to failure to listen to employees' needs and expectations, lack of upskilling, reskilling and job rotation, and salaries not in line with the market or tasks performed.	Enhancing employees' professional skills through structured career paths and maintaining a work-life balance.	Limited continuity of business activities, resulting in loss of key information due to unstructured knowledge transfer.
	Diversity and inclusion	The Group promotes an inclusive working environment and operates on an impartial basis, rejecting any form of discrimination in relation to gender identity and sexual orientation, age, disability, state of health, ethnic origin, nationality, political opinion, social status or religion. A2A disseminates a culture of diversity and equal opportunity at all corporate levels, including through awareness-raising initiatives, and is committed to ensuring that all employees are treated with respect and fairness, including in terms of equal pay for men and women, at all corporate levels. **#Equal opportunities #Disability enhancement #Gender gap**	Lack of integration of the differently-abled, due to failure of inclusion practices.	Lack of respect for diversity and equality due to differential treatment conditioned by factors such as gender, sexual orientation, religion, ethnicity, language.	Increased gender inequality due to wage disparities between women and men.

Pillar	Material issues	Material issue description	Associated impacts		
Intellectual capital	**Innovation and digital transformation**	The Group promotes and invests in R&D activities to enhance and consolidate the digital knowledge of its internal resources, thus ensuring that the Group's services and infrastructures are periodically updated and computerised. A2A also implements innovative services and encourages the development of smart solutions for neighbourhoods and cities, to make them more intelligent, connected and, at the same time, sustainable, contributing to the creation of the smart cities of the future. **#stakeholder engagement #environmental education #R&D #hydrogen #data management #Digital education #smart services**	Reducing the environmental and social impact of its activities through investment in R&D.	Contribution to create the smart cities of the future.	Development and consolidation of the digital knowledge of resources.
Relational capital	**Listening and Involvement of communities**	The Group creates value in the territory, sharing the environmental and social benefits of its projects, redistributing to its stakeholders the economic value created through its activities and investments. Moreover, A2A is constantly committed to listening to the needs and expectations of its stakeholders through active and transparent dialogue, with the aim of ensuring cohesion with the reference communities and investigating any critical issues that could generate dissatisfaction, conflicts or opposition. To this end, A2A deploys a series of measures and initiatives aimed at resolving any issues and mitigating the impact that the Group generates (or could generate) on its stakeholders. Lastly, the Group is committed to raising the awareness of its communities on energy/environmental issues, promoting information and education initiatives for the younger generations **#stakeholder engagement #environmental education #dialogue #Communities #Institutions**	Loss of cohesion and possible conflicts with the target community due to failure to understand its social needs and share the environmental and social benefits of new company projects.	Social and economic development in the areas where the company operates, through economic investments aimed at energy transition and the resolution of any local problems.	Increased awareness of the community served on energy/environmental issues through information and training actions/initiatives, as well as through increased transparency towards users (i.e. billing, Service Charter)
	Responsibility and quality in the provision of services	The Group constantly strives to provide quality, safe and reliable services, flexibly and promptly responding to customers' expectations and adopting fair, transparent and inclusive communication practices. Acknowledging the crucial role and value of customers for its business, A2A pays close attention to satisfying their needs and provides them with the opportunity to report through a special channel. Lastly, again with the aim of guaranteeing continuity of service to its customers, the Group implements measures and systems to manage risks (including those arising from cyber attacks that could jeopardise data protection) and possible emergencies. **#reliability #security #customer focus #privacy**	Increased dissatisfaction among recipients of corporate communications due to non-transparent, discriminatory and culturally disrespectful commercial/corporate communications and lack of reporting mechanisms.	Decrease in the quality of services for customers, including vulnerable customers, due to a failure to analyse their needs and expectations or to a disruption of operations	Lack of privacy and confidentiality in processing the personal data of customers, suppliers and employees.

Financial capital

Figure 2 Economic value calculation statement

(millions of euro)	2020	2021	2022
Economic value generated	**6,874**	**11,582**	**23,396**
A. Production value	6,862	11,563	23,166
C.15 Income from equity investments			
C.16 Other financial income	12	19	37
E.20 Extraordinary income			193
Economic value distributed	**6,139**	**10,732**	**22,460**
Operating costs	**4,911**	**9,365**	**20,815**
B.6 Costs for raw materials	3,362	7,618	18,935
B.7 Costs for services	1,282	1,530	1,868
B.8 Costs for use of third-party assets	100	118	133
B.11 Changes in inventories of raw materials	45	-55	-301
B.14 Other operating expenses (net of taxes)	122	154	180
Value distributed to employees	**705**	**724**	**765**
B.9 Personnel costs	705	724	765
Value distributed to capital providers	**95**	**89**	**125**
C.17 Interest and other financial expenses	95	89	125
Value distributed to Public Administration	**175**	**251**	**418**
22. Income taxes (current and deferred)	141	218	344
B.14 Other operating expenses (only the value of indirect taxes)	34	33	74
Value distributed to shareholders	**245**	**294**	**330**
Dividends distributed	241	248	283
Third-party profits	4	46	47
Value distributed to the community	**8**	**9**	**7**
Sponsorships	1	2	2
Donations and Membership Contributions	7	7	5
Economic value retained	**735**	**850**	**936**
Profit (loss) for the period (net of dividends)	**123**	**256**	**118**
(B.10 + B.12 + B.13 + D.19 + D.18) Amortization, Depreciation / Provisions / Write-downs / Revaluations	**654**	**776**	**818**
22. Deferred tax liabilities	-42	-182	0
E.21 Extraordinary expenses	0	0	0

Figure 3 Gross operating margin by Business Unit

(millions of euro)	2020**	2021	2022
Generation and Trading	270	368	554
Market	217	215	125
Waste*	286	341	359
Smart Infrastructures	450	538	519
Corporate	-25	-32	-52
Total	**1,199**	**1,428**	**1,505**

* From 2020, the International BU has been included in the Waste BU
** In 2020, reclassified revenues and operating costs relating to gas distribution assets held for sale reclassified under the item "Net profit (loss) from assets sold/held for sale".

Figure 4 Balance sheet

(millions of euro)	2020	2021	2022
Net fixed capital	7,067	8,026	8,849
Working capital	507	243	-124
Assets/liabilities held for sale	14	147	0
Net invested capital	**7,588**	**8,416**	**8,725**
Shareholders' equity	**4,116**	**4,303**	**4,467**
- Attributable to the Group	3,537	3,760	3,899
- Attributable to minorities	579	543	568
Net debt	3,473	4,113	4,258
Total sources	**7,588**	**8,416**	**8,725**
Gross debt	4,516	5,110	6,889

Figure 5 Balance sheet indicators by worker

	2020	2021	2022
Turnover by worker (millions of euro)	0.53	0.88	1.72
EBITDA per worker (millions of euro)	0.09	0.11	0.11
Average number of workers	12,907	13,176	13,455

Figure 6 CAPEX (capital expenditure)

(millions of euro)	2020	2021	2022
Generation and Trading	76	144	271
Market	47	72	71
Waste*	176	273	264
*Smart Infrastructures***	388	517	560
Corporate	48	77	73
Corporate eliminations		-9	0
Total	**736**	**1,074**	**1,240**

* From 2020, the International BU is included in the Waste BU.
** From 2021, A2A Illuminazione Pubblica is included in the Smart Infrastructures BU.

Figure 7 Share performance

	2020	2021	2022
Average capitalization (millions of euro)	4,143	5,259	4,292
Capitalization at Dec. 31 (millions of euro)	4,087	5,389	3,900
Average volumes	12,072,133	10,371,909	9,966,105
Average share price (euros per share)	1.32	1.68	1.37
Maximum share price (euros per share)	1.90	1.95	1.74
Minimum share price (euros per share)	1.00	1.31	0.95
Share price as at 31.12			1.25

Figure 8 Share of capital expenditure deriving from products or services associated with economic activities aligned with the taxonomy - Disclosure for the year 2022

				Substantial contribution criteria						DNSH criteria (Does Not Significantly Harm)									
	Code(s)	Absolute CapEx	Proportion of CapEx	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular Economy	Pollution	Biodiversity and ecosystems	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular Economy	Pollution	Biodiversity and ecosystems	Minimum safeguards	Taxonomy-aligned proportion of CapEx, year N	Taxonomy-aligned proportion of CapEx, year N-1	Category (enabling activity)	Category (transitional activity)
A. TAXONOMY-ELIGIBLE ACTIVITIES																				
A.1. Environmentally sustainable activities (Taxonomy-aligned)																				
Transmission and distribution networks for renewable and low-carbon gases	4.14	€105,416,421.51	6.46%	100.00%						Y	Y	Y		Y	Y	Y	6.46%			
District heating/cooling distribution	4.15	€43,864,518.65	2.69%	99.84%						Y	Y	Y		Y	Y	Y	2.68%			
Installation and operation of electric heat pumps	4.16	€32,961.02	0.00%	100.00%						Y	Y	Y	Y	Y		Y	0.00%			
Electricity generation using solar photovoltaic technology	4.1	€50,778,826.26	3.11%	100.00%						Y			Y		Y	Y	3.11%			
Cogeneration of heat/cool and power from bioenergy	4.20	€39,661.75	0.00%	100.00%						Y	Y	Y		Y	Y	Y	0.00%			
Production of heat/cool using waste heat	4.25	€2,800,222.53	0.17%	100.00%						Y	Y		Y	Y	Y	Y	0.17%			
Electricity generation from wind power	4.3	€383,723,729.37	23.50%	100.00%						Y	Y	Y		Y	Y	Y	23.50%			
Electricity generation from hydropower	4.5	€26,106,002.68	1.60%	100.00%						Y	Y	Y			Y	Y	1.60%			
Electricity generation from bioenergy	4.8	€13,249,034.52	0.81%	100.00%						Y	Y	Y		Y	Y	Y	0.81%			
Transmission and distribution of electricity	4.9	€178,085,352.81	10.91%	100.00%						Y	Y		Y		Y	Y	10.91%			
Landfill gas capture and utilisation	5.10	€13,411.21	0.00%	38.84%						Y	Y			Y	Y	Y	0.00%			
Construction, extension and operation of water collection, treatment and supply systems	5.1	€28,574,222.97	1.75%	98.12%						Y	Y	Y			Y	Y	1.72%			
Construction, extension and operation of waste water collection and treatment	5.3	€12,943,837.74	0.79%	23.63%						Y	Y	Y		Y	Y	Y	0.19%			
Collection and transport of non-hazardous waste in source segregated fractions	5.5	€14,114,155.88	0.86%	100.00%						Y	Y		Y			Y	0.86%			
Anaerobic digestion of bio-waste	5.7	€51,848,748.89	3.18%	100.00%						Y	Y	Y		Y	Y	Y	3.18%			
Composting of bio-waste	5.8	€88,497.33	0.01%	100.00%						Y				Y	Y	Y	0.01%			
Material recovery from non-hazardous waste	5.9	€3,490,571.36	0.21%	63.79%						Y	Y				Y	Y	0.14%			
Infrastructure enabling low-carbon road transport and public transport	6.15	€3,790,335.05	0.23%	100.00%						Y	Y	Y	Y	Y	Y	Y	0.23%			
Construction of new buildings	7.1	€6,528,675.87	0.40%	100.00%						Y	Y		Y	Y	Y	Y	0.40%			
Installation, maintenance and repair of energy efficiency equipment	7.3	€12,836,011.59	0.79%	100.00%						Y	Y			Y		Y	0.79%			
Installation, maintenance and repair of renewable energy technologies	7.6	€1,221,225.16	0.07%	100.00%						Y	Y					Y	0.07%			
		€939,546,424.15	57.54%	56.82%	0.00%	0.00%	0.00%	0.00%	0.00%								2.71%			
A.2. Taxonomy-Eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																				
District heating/cooling distribution	4.15	€70,050.38	0.00%																	
Electricity generation from fossil gaseous fuels	4.29	€190,098,287.19	11.64%																	
High-efficiency co-generation of heat/cool and power from fossil gaseous fuels	4.30	€73,700,719.97	4.51%																	
Production of heat/cool from fossil gaseous fuels in an efficient district heating and cooling system	4.31	€6,501,766.39	0.40%																	
Landfill gas capture and utilisation	5.10	€21,122.47	0.00%																	
Construction, extension and operation of water collection, treatment and supply systems	5.1	€547,134.26	0.03%																	
Construction, extension and operation of waste water collection and treatment	5.3	€41,824,977.43	2.56%																	
Material recovery from non-hazardous waste	5.9	€1,981,008.50	0.12%																	
Data processing, hosting and related activities	8.1	€752,476.27	0.05%																	
		€315,497,542.86	19.32%																	
Total (A.1 + A.2)		€1,255,043,967.01	76.86%																	
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																				
		€377,908,069.10	23.14%																	
Total (A + B)		1,632,952,036.11	100.00%																	

The capital expenditure indicator includes in the numerator the sum of the investments associated with the various "aligned" activities carried out by the Group, listed in section A1 of the table.

The "eligible" but not "aligned" investments shown in section A2 of the table are mainly attributable to electricity generation, cogeneration and heat/cold production from gaseous fossil fuels.

The denominator of the indicator is the sum of the gross additions recorded in 2022 with respect to owned tangible assets, rights of use and intangible assets, as indicated in Note 1 "Tangible assets" and Note 2 "Intangible assets" of the consolidated financial statements.

Figure 9 Share of operating expenses from products or services associated with economic activities aligned with the taxonomy - Disclosure for the year 2022

				Substantial contribution criteria						DNSH criteria (Does Not Significantly Harm)									
	Code(s)	Absolute OpEx	Proportion of OpEx	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular Economy	Pollution	Biodiversity and ecosystems	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular Economy	Pollution	Minimum safeguards	Minimum safeguards	Taxonomy-aligned proportion of OpEx, year N	Taxonomy-aligned proportion of OpEx, year N-1	Category (enabling activity)	Category (transitional activity)
A. TAXONOMY-ELIGIBLE ACTIVITIES																				
A.1. Environmentally sustainable activities (Taxonomy-aligned)																				
Storage of thermal energy	4.11	€9,131.00	0.00%	100.00%						Y	Y	Y		Y	Y	0.00%	0.65%			
Transmission and distribution networks for renewable and low-carbon gases	4.14	€15,411,622.47	6.49%	100.00%						Y	Y	Y		Y	Y	6.49%	0.77%			
District heating/cooling distribution	4.15	€998,193.53	0.42%	99.61%						Y	Y	Y		Y	Y	0.42%	0.29%			
Installation and operation of electric heat pumps	4.16	€89,977.64	0.04%	100.00%						Y	Y	Y	Y	Y	Y	0.04%	0.03%			
Electricity generation using solar photovoltaic technology	4.1	€2,815,772.06	1.18%	100.00%						Y			Y		Y	1.18%	0.15%			
Cogeneration of heat/cool and power from bioenergy	4.20	€9,021.65	0.00%	100.00%						Y	Y	Y		Y	Y	0.00%	1.29%			
Production of heat/cool using waste heat	4.25	€233,666.37	0.10%	100.00%						Y	Y		Y	Y	Y	0.10%	0.31%			
Electricity generation from wind power	4.3	€417,052.58	0.18%	100.00%						Y	Y	Y		Y	Y	0.18%	0.55%			
Electricity generation from hydropower	4.5	€9,904,888.22	4.17%	100.00%						Y	Y	Y			Y	4.17%	0.01%			
Electricity generation from bioenergy	4.8	€5,154,998.77	2.17%	100.00%						Y	Y	Y		Y	Y	2.17%	0.21%			
Transmission and distribution of electricity	4.9	€15,119,565.70	6.36%	100.00%						Y	Y		Y		Y	6.36%	0.01%			
Landfill gas capture and utilisation	5.10	€872,883.20	0.37%	95.09%						Y	Y			Y	Y	0.35%	1.21%			
Construction, extension and operation of water collection, treatment and supply systems	5.1	€2,891,208.50	1.22%	89.07%						Y	Y	Y			Y	1.08%	0.01%			
Construction, extension and operation of waste water collection and treatment	5.3	€844,537.28	0.36%	28.73%						Y	Y	Y		Y	Y	0.10%	0.00%			
Collection and transport of non-hazardous waste in source segregated fractions	5.5	€27,902,271.79	11.74%	100.00%						Y	Y		Y		Y	11.74%	0.00%			
Anaerobic digestion of sewage sludge	5.6	€493,137.12	0.21%	100.00%						Y	Y	Y		Y	Y	0.21%	0.19%			
Anaerobic digestion of bio-waste	5.7	€136,716.79	0.06%	100.00%						Y	Y	Y		Y	Y	0.06%	0.01%			
Composting of bio-waste	5.8	€214,424.28	0.09%	100.00%						Y				Y	Y	0.09%	0.43%			
Material recovery from non-hazardous waste	5.9	€2,186,363.09	0.92%	60.73%						Y	Y				Y	0.56%	0.00%			
Infrastructure enabling low-carbon road transport and public transport	6.15	€729,874.25	0.31%	100.00%						Y	Y	Y	Y	Y	Y	0.31%	0.01%			
Installation, maintenance and repair of energy efficiency equipment	7.3	€12,745,286.09	5.36%	100.00%						Y	Y			Y	Y	5.36%	0.00%			
Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	7.4	€10,934.96	0.00%	100.00%						Y	Y				Y	0.00%	0.29%			
Installation, maintenance and repair of renewable energy technologies	7.6	€124,957.83	0.05%	100.00%						Y	Y				Y	0.05%				
0		€99,316,485.17	41.79%	41.03%	0.00%	0.00%	0.00%	0.00%	0.00%							1.78%				
A.2. Taxonomy-Eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																				
District heating/cooling distribution	4.15	€3,931.70	0.00%																	
Electricity generation from fossil gaseous fuels	4.29	€21,518,548.54	9.06%																	
Production of heat/cool from fossil gaseous fuels in an efficient district heating and cooling system	4.31	€1,332,185.00	0.56%																	
Landfill gas capture and utilisation	5.10	€45,057.63	0.02%																	
Construction, extension and operation of water collection, treatment and supply systems	5.1	€354,646.11	0.15%																	
Construction, extension and operation of waste water collection and treatment	5.3	€2,095,380.80	0.88%																	
Material recovery from non-hazardous waste	5.9	€1,414,026.27	0.60%																	
Data processing, hosting and related activities	8.1	€96,953.18	0.04%																	
0		€32,326,904.20	13.60%																	
Total (A.1 + A.2)		€131,643,389.37	55.40%																	
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																				
		€105,987,446.93	44.60%																	

The turnover indicator includes in the numerator the sum of revenues associated with the various "aligned" activities carried out by the Group, listed in section A1 of the table.
The revenues of the Smart Infrastructures BU for gas distribution activities were determined using a proportional allocation method based on the remuneration of investments made.
With reference to the Waste BU and specifically activity 5.5 "Collection and transport of non-hazardous waste in source segregated fractions", only revenues from separate collection, estimated at 68% of the total, were considered eligible and aligned.
The "eligible" but not "aligned" revenues shown in section A2 of the table are mainly attributable to electricity generation, cogeneration and heat/cold production from gaseous fossil fuels.
The denominator of the indicator is the consolidated revenues (net of intercompany items) for the year 2022, as indicated in Note 26 "Revenues" within the consolidated financial statements.

Figure 10 Share of turnover from products or services associated with economic activities aligned with the taxonomy - Year 2022 disclosure

				Substantial contribution criteria						DNSH criteria (Does Not Significantly Harm)									
	Code(s)	Absolute turnover	Proportion of turnover	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular Economy	Pollution	Biodiversity and ecosystems	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular Economy	Pollution	Biodiversity and ecosystems	Minimum safeguards	Taxonomy-aligned proportion of turnover, year N	Taxonomy-aligned proportion of turnover, year N-1	Category (enabling activity)	Category (transitional activity)
A. TAXONOMY-ELIGIBLE ACTIVITIES																				
A.1. Environmentally sustainable activities (Taxonomy-aligned)																				
Transmission and distribution networks for renewable and low-carbon gases	4.14	€146,720,166.78	0.65%	100.00%						Y	Y	Y		Y	Y	Y	0.65%			
District heating/cooling distribution	4.15	€179,440,045.37	0.79%	97.52%						Y	Y	Y		Y	Y	Y	0.77%			
Electricity generation using solar photovoltaic technology	4.1	€66,670,281.81	0.29%	100.00%						Y			Y		Y	Y	0.29%			
Cogeneration of heat/cool and power from bioenergy	4.20	€6,517,119.97	0.03%	100.00%						Y	Y	Y		Y	Y	Y	0.03%			
Electricity generation from wind power	4.3	€34,939,614.41	0.15%	100.00%						Y	Y	Y		Y	Y	Y	0.15%			
Electricity generation from hydropower	4.5	€293,252,454.72	1.29%	100.00%						Y	Y	Y			Y	Y	1.29%			
Electricity generation from bioenergy	4.8	€69,805,483.33	0.31%	100.00%						Y	Y	Y		Y	Y	Y	0.31%			
Transmission and distribution of electricity	4.9	€123,737,010.86	0.55%	100.00%						Y	Y		Y		Y	Y	0.55%			
Landfill gas capture and utilisation	5.10	€3,387,392.91	0.01%	89.56%						Y	Y			Y	Y	Y	0.01%			
Construction, extension and operation of water collection, treatment and supply systems	5.1	€53,796,789.45	0.24%	90.38%						Y	Y	Y			Y	Y	0.21%			
Construction, extension and operation of waste water collection and treatment	5.3	€9,116,651.41	0.04%	19.55%						Y	Y	Y		Y	Y	Y	0.01%			
Collection and transport of non-hazardous waste in source segregated fractions	5.5	€273,476,469.45	1.21%	100.00%						Y	Y		Y			Y	1.21%			
Anaerobic digestion of sewage sludge	5.6	€2,273,434.54	0.01%	100.00%						Y	Y	Y		Y	Y	Y	0.01%			
Anaerobic digestion of bio-waste	5.7	€613.21	0.00%	100.00%						Y	Y	Y		Y	Y	Y	0.00%			
Composting of bio-waste	5.8	€630,377.32	0.00%	100.00%						Y				Y	Y	Y	0.00%			
Material recovery from non-hazardous waste	5.9	€65,326,421.34	0.29%	66.84%						Y	Y				Y	Y	0.19%			
Infrastructure enabling low-carbon road transport and public transport	6.15	€3,388,610.60	0.01%	100.00%						Y	Y	Y	Y	Y	Y	Y	0.01%			
Installation, maintenance and repair of energy efficiency equipment	7.3	€98,221,109.31	0.43%	100.00%						Y	Y			Y		Y	0.43%			
Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	7.4	€99,926.18	0.00%	100.00%						Y	Y					Y	0.00%			
Installation, maintenance and repair of renewable energy technologies	7.6	€2,681,921.37	0.01%	100.00%						Y	Y					Y	0.01%			
Professional services related to energy performance of buildings	9.3	€56,401.45	0.00%	100.00%						Y	Y					Y	0.00%			
		€1,433,538,295.79	6.32%	6.15%	0.00%	0%	0%	0%	0%								0.29%			
A.2. Taxonomy-Eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																				
District heating/cooling distribution	4.15	€4,555,804.49	0.02%																	
Electricity generation from fossil gaseous fuels	4.29	€4,594,728,459.57	20.26%																	
High-efficiency co-generation of heat/cool and power from fossil gaseous fuels	4.30	€81,897,054.82	0.36%																	
Landfill gas capture and utilisation	5.10	€394,677.28	0.00%																	
Construction, extension and operation of water collection, treatment and supply systems	5.1	€5,727,708.84	0.03%																	
Construction, extension and operation of waste water collection and treatment	5.3	€37,508,111.10	0.17%																	
Material recovery from non-hazardous waste	5.9	€32,415,052.84	0.14%																	
Data processing, hosting and related activities	8.1	€607,723.82	0.00%																	
		€4,834,694,196.16	21.32%																	
Total (A.1 + A.2)		€6,268,232,491.95	27.64%																	
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																				
		€16,408,390,653.13	72.36%																	
Total (A + B)		22,676,623,145.08	100.00%																	

The operating expenses indicator includes in the numerator the sum of costs as provided for in Article 8 of the Taxonomy Regulation associated with the various “aligned” activities carried out by the Group, listed in section A1 of the table.
With reference to the Smart Infrastructures BU, for activities 5.1. “Construction, extension and operation of water collection, treatment and supply systems” and 5.3 “Construction, extension and operation of wastewater collection and treatment”, some fixed maintenance costs were allocated among the networks using the extent of the individual territorial network over the total as a proxy for calculation.
The “eligible” but not “aligned” costs shown in section A2 of the table are mainly attributable to electricity generation, cogeneration and heat/cold production from gaseous fossil fuels.

Information on nuclear and fossil gas activities

Figure 11 Table 1:

Activities related to nuclear energy	
The company carries out, finances or has exposures to research, development, demonstration and implementation of innovative power generation plants that produce energy from nuclear processes with a minimum amount of waste from the fuel cycle.	NO
The company carries out, finances or has exposures to the construction and safe operation of new nuclear power plants for the generation of electricity or process heat, including for district heating purposes or for industrial processes such as hydrogen production, and improvements in their safety, with the help of the best available technology.	NO
The company carries out, finances or has exposures to the safe operation of existing nuclear power plants that generate electricity or process heat, including for district heating or industrial processes such as the production of hydrogen from nuclear energy, and improvements to their safety.	NO
Fossil gas activities	
The company carries out, finances or has exposures to the construction or operation of electricity production plants using gaseous fossil fuels.	YES
The company carries out, finances or has exposures to the construction, upgrading and operation of combined heat/cold and electricity production plants using gaseous fossil fuels.	YES
The company carries out, finances or has exposures to the construction, upgrading and operation of heat generation plants that produce heat/cold using gaseous fossil fuels.	YES

Figure 12 Table 4:

Fossil gas activities	Portion		
	CCM + CCA	Climate change mitigation (CCM)	Climate change adaptation (CCA)
	Amount/%	Amount/%	Amount/%
Amount and portion of economic activity eligible for the taxonomy but not aligned with the taxonomy in section 4.29 of Annexes I and II of Delegated Regulation (EU) 2021/2139 in the denominator of the applicable KPI	OPEX: 21,518,548 euro (9.1%) CAPEX; 190,098,287 euro (11.6%) TURNOVER: 4,594,728,459 euro (20.26%)	OPEX: 21,518,548 euro (9.1%) CAPEX; 190,098,287 euro (11.6%) TURNOVER: 4,594,728,459 euro (20.26%)	NA
Amount and portion of economic activity eligible for the taxonomy but not aligned with the taxonomy in section 4.30 of Annexes I and II of Delegated Regulation (EU) 2021/2139 in the denominator of the applicable KPI	OPEX: 5,446,175 euro (2.30%) CAPEX: 11,313,243 euro (0.63%) TURNOVER: 81,897,055 euro (0.36%)	OPEX: 5,446,175 euro (2.30%) CAPEX: 11,313,243 euro (0.63%) TURNOVER: 81,897,055 euro (0.36%)	NA
Amount and portion of economic activity eligible for the taxonomy but not aligned with the taxonomy in section 4.31 of Annexes I and II of Delegated Regulation (EU) 2021/2139 in the denominator of the applicable KPI	OPEX: 1,332,185 euro (0.56%) CAPEX: 6,501,766 euro (0.40%) TURNOVER: 76,859,603 euro (0.34%)	OPEX: 1,332,185 euro (0.56%) CAPEX: 6,501,766 euro (0.40%) TURNOVER: 76,859,603 euro (0.34%)	NA

With reference to the disclosure pursuant to Article 8, paragraphs 6 and 7 of Delegated Regulation (EU) 2021/2178, which envisages use of the templates provided in Annex XII for the disclosure of nuclear and fossil gas activities, it should be noted that templates 2, 3 and 5, provided for the Delegated Act, have been omitted, as they are not representative of the A2A Group's activities.

Manufacturing capital

Energy production

Figure 13 Average availability factor for all plants [G4 - EU30]

	2020	2021	2022
Average availability factor (%)			
Traditional coal-powered	96.8%	96.6%	87.8%
Traditional heavy fuel oil	81.7%	71.0%	66.0%
Combined cycle natural gas	84.4%	77.4%	75.5%
Run-of-the river hydroelectric	176.2%	168.2%	184.8%
Basin hydroelectric	91.0%	84.4%	86.7%
Storage hydroelectric	83.8%	84.3%	83.0%

Figure 14 LGH average availability factor (%)

	2020	2021	2022
LGH average availability factor (%)			
Run-of-the river hydroelectric	90.0%	89.0%	98.0%

Figure 15 Electricity produced fed into the grid, divided up according to plant type and source - GWh [G4-EU2]

		2020	2021	2022
Generation Business Unit	Thermoelectric plants	9,760	11,958	14,264
	Hydroelectric plants	4,388	4,226	2,726
	Photovoltaic and wind plants (including energy consumed)	126	312	637
Smart Infrastructures Business Unit	Cogeneration plants	264	255	385
Waste Business Unit	Waste-to-energy plants (including biogas), boilers and natural gas	1,288	1,409	1,454
Total		15,827	18,160	19,466

Figure 16 Heating energy produced fed into the grid divided up according to plant type and source - GWh

		2020	2021	2022
Generation Business Unit	Waste-to-energy plants (including biogas) and natural gas boilers	1,530	1,604	1,452
Smart Infrastructures Business Unit	Cogeneration plants, thermal, natural gas, heat pumps, biogas, solar panels	1,125	1,317	1,210
Waste Business Unit	Heat recovery	36	36	28
Total		2,691	2,957	2,690

Energy distribution

Figure 17 Extension of electricity distribution service [G4 - EU4]

	2020	2021	2022
Km of electricity network	15,472	15,829	15,974
of which underground cable	13,451	13,812	13,974

Figure 18 Extension of the gas distribution service

	2020	2021	2022
Km of natural gas network	9,852	13,022	11,238

Figure 19 Network losses

	2020	2021	2022
Electricity (GWh) from distribution	250	298	284
Methane (Mm^3) from distribution	1.44	2.53	8.86
Transport methane (Mm^3)	0.10	0.09	0.04
Dispersed heat (GWh)	542	524	485

Figure 20 Electricity, heating energy and gas released to the network

	2020	2021	2022
Electricity distributed (GWh)	10,497	11,268	11,087
Distributed heating and cooling energy (GWh)	3,146	3,418	3,056
Natural gas distributed (Mm^3)	2,300	2,819	2,251
Natural gas transported (Mm^3)	355	426	368

Figure 21 Public lighting

	2020	2021	2022
Light points (no.)	264,360	275,629	289,247

Integrated water cycle

Figure 22 Procurement and distribution

	2020	2021	2022
Wells (no.)	190	190	195
Sources (no.)	269	269	286
Drinking water conversion plants (no.)	122	121	75
Total network length (km)	4,044	4,042	4,061
Water delivered to the user and accounted for (Mm^3)	54	56	52
Water withdrawn (Mm^3)	92.08	92.59	88.74
Network leaks and unmetered water (Mm^3)	36.08	33.25	33.78

Figure 23 Collection and treatment

	2020	2021	2022
Sewers - network length (km)	2,593	2,621	2,650
Waste water treated (Mm^3)	52	52	44
Purifiers (no.)	59	57	57

Waste management

Figure 24 Waste collected

	2020	2021*	2022
Tonnes Waste Collected	1,527,000	1,741,108	1,690,645

*Figure recalculated due to material error

Figure 25 Waste treated by type of plant* (kt)

	2020	2021	2022
Waste-to-energy plants	1,790	1,764	1,739
Landfills	120	129	140
Bio-drying plants and production of RDF	430	468	443
Materials recovery and processing plants	1,269	1,319	1,303
Total waste treated	3,609	3,680	3,625

* All incoming waste to the Group's plants is considered. The 2022 portion of waste disposal, net of intermediation (364 kt) and eliminations (-800 kt), is 3,189 kt. Waste treated in plants managed on behalf of third parties (Acerra waste-to-energy plant and Caivano RDF plant) and ACinque (collection and waste-to-energy plant of Como) is not included.

Figure 26 Waste brokered and cross-border waste (t)

	2020	2021	2022
Tonnes of brokered waste*	183,460	196,518	232,499
Tonnes of cross-border Waste**	46,658	43,497	48,800

* Brokered waste is third-party waste for which the Group operates a brokerage service
** Cross-border waste is waste generated by Group companies and sent abroad

District heating and heat

Figure 27 Thermal energy sold (GWh)

	2020	2021	2022
Heating and cooling energy (GWh)	2,604	2,939	2,663

Figure 28 Extension of district heating

	2020				2021*				2022			
	Users* (no.)	Volume serviced (Mm^3)	Network development** (double pipe) km	Apartment equivalents	Users* (no.)	Volume serviced (Mm^3)	Network development** (double pipe) km	Apartment equivalents	Users* (no.)	Volume serviced (Mm^3)	Network development** (double pipe) km	Apartment equivalents
Province of Bergamo	692	7.3	77	30,500	719	7.7	81	32,083	752	8.0	85	33,333
Province of Brescia	20,513	42.7	678	177,700	21,586	42.8	679	178,333	21,688	43.0	681	179,167
Province of Milan***	3,990	54.8	363	228,183	3,334	56.3	372	234,708	3,408	58.0	375	241,667
Province of Cremona	754	6.8	77	28,317	772	6.7	78	28,042	772	7.0	79	29,167
Province of Lodi	232	3.1	27	12,735	237	3.1	28	12,833	245	3.0	28	12,500
Province of Monza and Brianza					223	1.0	16	4,083	215	1.0	16	3,971
Total	**26,181**	**114.7**	**1,222**	**477,435**	**26,871**	**117.6**	**1,254**	**490,083**	**27,080**	**120.0**	**1,264**	**499,804**

* May not coincide with a single housing unit.
** The network is intended as the sum of heat transmission, distribution and supply pipes.
*** Since 2017, the Province of Milan also includes the Linea Reti e Impianti service at Rho Nord and Rho Sud.

Smart City

Figure 29 Smart City Services - Smart Land (number)

	2020	2021	2022
Municipalities served	184	184	199
Services offered	126	126	142
Video cameras	5,919	4,760	4,908
Camera Control Stations	51	51	52
Break-in sensors	7,974	4,788	5,107
Fire sensors	3,885	600	0
Access and presence readers	1,074	841	1,169
SoS stations	250	260	256
Variable message panels	15	15	15
Digital islands	37	37	10
Wi-Fi antennae	1,887	1,887	1,787
IOT Sensors	7,197	6,792	1,110
Environmental sensors	159	159	831
Smart bins	12,870	12,870	12,873
Smart land sensors	239	239	41
Smart parking sensors	1,861	1,982	265

Natural capital

Group environmental performance

Figure 30 Percentages of electricity generated by type of source (G4-EU2)

	2020	2021	2022
Renewable sources (hydraulic, renewable fraction of waste*, biogas, solar, wind, biomass)	33%	30%	21%
Coal	1%	1%	3%
Natural gas	58%	58%	61%
Oil products	4%	8%	11%
Non-renewable fraction of waste*	4%	3%	3%

* The share of electricity from biodegradable waste is calculated for each waste-to-energy plant and derives from both an analytical procedure and a lump-sum estimate with reference to the Ministerial Decree of July 6, 2012.

Figure 31 Energy Performance (GRI 302-3; G4 - EU11)

	2020	2021	2022
Average yield of thermoelectric plants	49%	48%	47%
Yield of high-performance natural gas combined cycles	52%	52%	52%
Yield of multi-fuel plants	29%	31%	33%
Average yield of fossil fuel cogeneration plants	81%	80%	76%
Energy intensity - Electricity consumption per unit produced (MWh)		5.7%	6.3%
Average electricity produced from 1 t waste (kWh/t)	746	750	785
Average thermal energy produced from 1 t waste (kWh/t)	855	918	883
Specific water demand for total thermoelectric production (l/kWheq)*	0.30	0.28	0.26
Specific water requirement for overall waste-to-energy plant production (l/kWheq)*	0.98	0.92	0.98
Specific water demand for total cogeneration production (l/kWheq)*	0.34	0.35	0.32

* Demand means the total quantity of water withdrawn, including the reuse of wastewater, required for the operation of the plant. The specific requirement from total production is calculated considering the total water consumption from thermoelectric production in relation to the total thermoelectric production. Water withdrawals used for open-cycle cooling, which are then returned to the original water body, are not included in this value.

Figure 32 Gross electricity production by type of plant (GWh)

	2020	2021	2022
Coal	202	174	735
Natural gas (CCGT and cogeneration)	9,494	10,843	12,073
Wind	0	22	229
Oil	763	1,667	2,405
Hydroelectric	4,424	4,253	2,654
Solar	127	301	397
Biomass	217	191	169
Waste-to-energy	1,341	1,324	1,373
Landfill gas	22	24	26
Biogas from digestion plants	0	175	161

Figure 33 Global impact indicators

	2020	2021	2022
Ozone-depleting substance emissions - ODs (kgR11eq)	0.0	0.0	0.1
Total acidifying emissions (tSO_2eq)	2,168	2,545	3,302

Figure 34 Indicators of global impact due to the purchase and use of fossil fuels (Scope 3) (GRI 305-3)

	2020	2021	2022
Carbon footprint (tCO_2eq/year)	695,408	1,109,739	1,378,946
Water footprint (thousands of m^3 water)	17,721	25,689	33,182

Figure 35 Environmental sanctions (GRI 307-1)

	2020	2021	2022
Number	32	39	16
Related to Water Cycle		22	7
Relevant*			
Value (euro)	106,272	101,569	45,220

* Sanctions relate to infractions of authorization measures or administrative imprecisions that did not result in any damages or concrete temporary or permanent danger to the environment.
Penalties greater than or corresponding to the value of 10,000 euro are reported, as this is considered the minimum threshold of materiality in reporting incidents of non-compliance with environmental laws and regulations.

Figure 36 Resources used by the Group

	2020	2021	2022
Fuel (TJ)			
Natural gas	67,393	77,923	85,998
Oil (OCD, Diesel)	8,908	18,333	24,925
Waste, biomass and RDF	22,224	25,563	25,154
Biogas (from landfills and treatment facilities)	473	1,892	1,800
Coal	2,252	1,690	7,042
Methane	18	9	9
Automotive fuels (TJ)			
Petrol	21	27	28
Diesel	510	594	529
Methane	157	183	180
Electricity for vehicles (GWh)	-	0	0
Energy			
Electricity for plant self-consumption (GWh)	672	776	872
Electricity consumed (GWh), withdrawn from the grid	389	409	418
of which renewable	377	406	414
Heat consumed for heating premises*	40	99	77
of which renewable	23	69	2
Heat energy (GWh - purchased from external sources)	464	505	370
Chemical products and materials (t)			
Mineral acids	2,834	3,668	3,785
Water additives/conditioners	11,227	12,855	15,494
Ammonia (solution)	5,863	6,237	7,848
Lime and solid neutralisers	46,028	51,066	64,213
Active carbon	1,562	1,662	1,684
Cement, sand and inert materials	360,771	19,564	20,821
Sodium chloride	472	5,329	2,896
Technical gases (nitrogen, CO_2, hydrogen, oxygen)	1,439	1,104	959
Sodium hydroxide (solution)	3,612	4,302	4,485
Methanol, solvents and other products	2,024	1,976	2,576
Odorants	57	74	51
Oils and lubricants	260	443	424
Urea (solution)	2,506	2,407	2,311
Total chemical products	**438,654**	**110,687**	**127,548**

* For 2022, heat consumed for heating refers only to heat taken from district heating networks for the heating of buildings. The data refer to the Waste and Corporate BUs, which manage properties

Figure 37 Water resource consumed by the Group by collection type (thousands of m^3)

	2020	2021	2022
Aqueduct	1,495	1,567	1,495
Well	5,504	5,410	5,855
Surface water body - salt/sea water*	618	583	644
Surface water body - fresh water	282	279	298
Third parties - fresh water	54	30	142
Total	**7,953**	**7,869**	**8,434**

* Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride) >1000 mg/l.

Figure 38 Group Effluents

	2020	2021	2022
Industrial wastewater discharged			
Sewerage*	1,114	1,163	980
surface water body (fresh water)	6,054	6,526	6,378
coastal waters/salt water channels	1,161	898	1,096
Total industrial waste water	8,329	8,587	8,454
Recovered waters			
production cycle	1,239	1,329	1,171
% of total water withdrawn	16%	17%	14%

* (waste water in the sewerage system includes civil waste water from Corporate)

Figure 39 Group Waste*

	2020	2021	2022
Non-hazardous waste			
for material recovery	645,555	344,912	320,647
for energy recovery	-	28,598	33,580
Total recovery	**645,555**	**373,511**	**354,227**
for incineration	-	1,298	788
other disposals	-	202,974	130,110
in landfill	-	5,346	2,544
Total at disposal	**-**	**209,618**	**133,442**
Total non-hazardous waste produced	**645,555**	**583,129**	**487,669**
% non-hazardous waste recovered	100%	64%	73%
Hazardous waste	**-**	**-**	**-**
for material recovery	130,621	33,444	35,646
for energy recovery	-	-	1,812
Total recovery	**130,621**	**33,444**	**37,458**
for incineration	-	183	406
other disposals	-	75,898	74,367
in landfill	-	11,513	4,846
Total at disposal	**-**	**87,593**	**79,618**
Total hazardous waste produced	**130,621**	**121,038**	**117,075**
% hazardous waste recovered	100%	28%	32%

* Methodological change adopted in 2021 to align with GRI 306 (2020) requirements limits comparability of waste data to total hazardous, total non-hazardous, due to unavailability of greater detail than previous years indicators calculated in accordance with updated GRI standard 306 (2020). Energy recovery operation (R1) is classified as a recovery activity according to national regulations

Figure 40 Group emissions

	2020	2021	2022
Total emissions from combustion	5,732,943	6,985,714	8,631,749
Biogenic emissions	1,488,149	1,500,460	1,467,648
CO_2 from motor vehicles (t)	47,755	55,972	55,448
Indirect CO_2 from energy acquisition (t)			
Location based*	110,811	108,058	109,502
Market based**	6,947	1,693	1,919
Fluorinated gases (t CO_2eq)	2,787	10,742	3,707
SF_6 (Kg)	49	194	111
NOx (t)	2,328	2,928	3,308
SO_2 (t)	539	495	959
Powders (t)	40	31	53
Methane (CH_4) - losses from natural gas distribution networks* (t CO_2 eq)	71,917	74,993	191,271
Dioxins (grams - toxic equivalency)	0.0303	0.0402	0.0507
Dioxin-like PCBs (polychlorinated biphenyls) (grams - toxic equivalency)	0	0	0
Other metals (Sb + As + Pb + Cr + Cu + Mn + Ni + V + Sn+Cd+Tl) (kg)	564	1,323	919

* The reporting standard used (GRI Sustainability Reporting Standards 2018) provides two different approaches for the calculation of Scope 2 emissions: "Location-based" and "Market-based." The "Location-based" approach involves using a national average emission factor related to the specific national energy mix for electricity generation (source of the emission factors: ISPRA Report 317/2020).
** The market-based approach refers to contractual agreements made with the electricity supplier. In the absence of specific contractual agreements between Group companies and the electricity supplier (e.g., purchase of Certificates of Origin), the emission factor related to the national "residual mix" has been used (source of residual mixes AIB European Residual Mixes 2017 (Version 1.13, 2018-07-11).

Water stressed areas

Withdrawals

Figure 41 Group water withdrawals in water-stressed areas (thousands of m^3) (GRI 303-3_5)

	2020	2021	2022
Water withdrawn for process consumption			
Aqueduct	29	34	28
Well	259	217	234
Third parties - fresh water	54	30	17
Surface water body - salt/sea water*	618	583	644
Total water withdrawn	**960**	**864**	**923**
Derived water			
Surface water body - fresh water for hydroelectric production	312,028	338,749	276,383
Surface water body - salt/sea water*	247,974	459,462	482,557
Total derived water	**560,002**	**798,212**	**758,940**
Water withdrawn for distribution to water service users (millions of m^3)			
Water withdrawn for distribution to water service users	20	20	18

* Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride) >1000 mg/l. The areas with the greatest water stress are the Calabria Region, the Sicily Region, the Abruzzo Region, the areas of the Mountain Communities in the Province of Brescia.

Water Discharge

Figure 42 Discharges, returned water and distributed drinking water A2A Group, in water stressed areas (thousands of m³) (GRI 303-4)

	2020	2021	2022
Industrial wastewater discharged			
In the sewer	0	0	0
in surface water body (fresh water)	0	0	0
In coastal waters/salt water channels	639	535	682
Total industrial waste water	**639**	**535**	**682**
Recovered waters			
production cycle	292	318	291
% of total water withdrawn	30%	37%	32%
Returned waters			
Surface water body - fresh water	312,028	338,749	276,383
Surface water body - salt/sea water*	247,974	459,462	482,557
Total water returned	**560,002**	**798,212**	**758,940**
Public water supplied to water service users (millions of m³)			
Public water supplied to water service users	7	7	7

* Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride) >1000 mg/l. The areas with the greatest water stress are the Calabria Region, the Sicily Region, the Abruzzo Region, the areas of the Mountain Communities in the Province of Brescia.

Natural capital in the Waste BU

Resources and materials used

Figure 43 Resources used (GRI 301-1; GRI 302-1; GRI 303-5)

	2020	2021	2022
Fuel (TJ)			
Natural gas	750	792	805
Oil (OCD, Diesel)	73	75	77
Waste, biomass and RDF	22,224	25,563	25,154
Biogas (from landfills and treatment facilities)	463	1,885	1,794
Automotive fuels (TJ)			
Petrol	5.77	9.71	8.58
Diesel	462.72	543.06	494.55
Methane	147.30	170.03	156.23
Energy			
Electricity for plant self-consumption (GWh)	254	253	258
Electricity consumed (GWh), withdrawn from the grid	67	73	75
of which renewable	64	73	74
Heat consumed for heating premises*	31	92	69
of which renewable	21	68	1
Chemical products and materials (t)			
Mineral acids	1,997	2,921	2,951
Water additives/conditioners	1,897	3,982	6,085
Ammonia (solution)	5,593	5,780	6,708
Lime and solid neutralisers	34,937	38,308	41,964
Active carbon	1,495	1,600	1,628
Cement, sand and inert materials	360,771	19,564	20,821
Sodium chloride	449	5,284	2,856
Technical gases (nitrogen, CO_2, hydrogen, oxygen)	1,181	808	670
Sodium hydroxide (solution)	3,256	3,959	4,168
Methanol, solvents and other products	992	987	1,492
Oils and lubricants	112	292	243
Urea (solution)	1,977	2,046	1,763
Total chemical products	**414,658**	**85,530**	**91,348**

* For 2022, heat consumed for heating premises refers only to heat taken from district heating networks for the heating of buildings

Withdrawals

Figure 44 Water withdrawal (thousands of m³) (GRI 303-3)

	2020	2021	2022
Water withdrawn for process consumption			
Aqueduct	467	524	542
Well	2,942	2,808	3,042
Third parties - fresh water	0	0	4
Total water withdrawn	**3,409**	**3,333**	**3,588**
Derivative waters for cooling and returned			
Surface water body - fresh water	742	865	859
Total water derived and returned	**742**	**865**	**859**

Water Discharge

Figure 45 Discharges and returned water (water in thousands of m³) (GRI 303-4)

	2020	2021	2022
Industrial wastewater discharged			
sewerage	475*	481	409
surface water body (fresh water)	1,735	2,096	2,064
Total industrial waste water	**2,210***	**2,577**	**2,473**
Recovered waters			
production cycle	457	555	484
% of total water withdrawn	13%	17%	13%
Cooling water returned			
Surface water body - fresh water	742	865	859
Total cooling water returned	**742**	**865**	**859**
Pollutant discharges into surface water (t)			
BOD	37.9	26.0	61.3
COD	141.4	90.0	156.4

* The 2020 figure has been changed from the previous document due to detection of a material error

Waste*

Figure 46 Waste produced (t) (GRI 306)**

	2020	2021	2022
Non-hazardous waste			
for material recovery	585,541	304,927	289,637
for energy recovery	0	9,366	15,064
Total recovery	**585,541**	**314,293**	**304,701**
for incineration	0	1,298	788
other disposals	0	197,165	125,113
in landfill	0	4,286	2,544
Total at disposal	**0**	**202,749**	**128,445**
Total non-hazardous waste produced	**585,541**	**517,042**	**433,146**
% non-hazardous waste recovered	100.00%	60.79%	70.35%
Hazardous waste			
for material recovery	113,944	31,706	34,467
for energy recovery	0	0	1,812
Total recovery	**113,944**	**31,706**	**36,279**
for incineration	0	177	368
other disposals	0	71,915	70,518
in landfill	0	11,505	4,105
Total at disposal	**0**	**83,597**	**74,991**
Total hazardous waste produced	**113,944**	**115,303**	**111,270**
% hazardous waste recovered	100.00%	27.50%	32.60%

* The methodological change, adopted in 2021, to align with the requirements of the GRI 306 (2020) limits the comparability of the waste data to total hazardous and total non-hazardous, due to unavailability of greater detail in previous years
** Indicators calculated in accordance with the GRI 306 (2020) standard update. The energy recovery operation (R1) is classified as a recovery activity under national law.

Emissions

Figure 47 Total emissions (t) (GRI 305-1_2_6_7)

	2020	2021	2022
Total emissions from combustion	1,141,439	1,158,388	1,160,312
Biogenic emissions	1,488,149	1,500,460	1,467,648
CO_2 from motor vehicles (t)	42,612	50,233	49,905
indirect CO_2 from energy acquisition (t)			
Location based*	19,133	19,290	19,529
Market based*	4,215	302	342
Fluorinated gases (t CO_2eq)	329	350	199
SF_6 (Kg)	1	0	0
NOx (t)	811	1,133	1,104
SO_2 (t)	73	58	62
Powders (t)	9.1	7.2	5.5
Methane (CH_4) - biogas losses released in landfills (t CO_2eq)	43,041.97	22,660.02	14,846.96
Dioxins (grams - toxic equivalency)	0.03	0.04	0.05
Dioxin-like PCBs (polychlorinated biphenyls) (grams - toxic equivalency)	0.0100	0.0000	0.0100
Other metals (Sb + As + Pb + Cr + Cu + Mn + Ni + V + Sn+Cd+Tl) (kg)	327.4700	395.2800	250.5400

* See notes on p. 37.

Figure 48 Percentage of energy produced by the valorisation of waste in relation to total production (thousands of m^3) (G4 - EU2)

	2020	2021	2022
Thermal energy from waste-to-energy and biogas process	59%	58%	50%
Electricity from waste-to-energy and biogas process	8%	8%	8%

Natural capital in the Generation and Trading BU

Resources and materials used

Figure 49 Resources used (GRI 301-1; GRI 302-1; GRI 303-5)

	2020	2021	2022
Fuel (TJ)			
Natural gas	62,604	71,389	78,504
Coal	1,177	1,690	7,042
Oil (OCD, Diesel)	8,835	18,258	24,848
Automotive fuels (TJ)			
Petrol	2.79	0.09	0.51
Diesel	5.46	1.05	1.25
Methane	0.00	0.01	0.00
Energy			
Electricity for plant self-consumption (GWh)	378	485	565
Electricity consumed (GWh), withdrawn from the grid	202	213	222
of which renewable	202	211	220
Chemical products and materials (t)			
Mineral acids	236	235	291
Water additives/conditioners	232	183	270
Ammonia (solution)	270	457	1,140
Lime and solid neutralisers	10,250	12,758	22,250
Active carbon	0	20	3
Cement, sand and inert materials	0	0	0
Sodium chloride	4	7	4
Technical gases (nitrogen, CO_2, hydrogen, oxygen)	68	83	74
Sodium hydroxide (solution)	186	174	191
Methanol, solvents and other products	21	32	39
Oils and lubricants	113	120	139
Total chemical products	**11,378**	**14,069**	**24,400**

Withdrawals

Figure 50 Water withdrawal (thousands of m³) (GRI 303-3)

	2020	2021	2022
Water withdrawn for process consumption			
Aqueduct	85	94	90
Well	1,922	1,988	2,259
Surface water body - fresh water	282	279	298
Third parties - fresh water	54	30	17
Surface water body - salt/sea water*	618	583	644
Total water withdrawn	**2,961**	**2,974**	**3,308**
Derivative waters for cooling and returned			
Surface water body - fresh water	842,788	971,518	1,085,059
Surface water body - salt/sea water for cooling	278,798	521,510	609,326
Total water derived and returned	**1,121,587**	**1,493,028**	**1,694,385**
Derived water for hydroelectric use			
Surface water body - fresh water for hydroelectric production	3,108,050	3,060,194	1,744,218

* Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride >1000 mg/l)

Water Discharge

Figure 51 Discharges and returned water (water in thousands of m³) (GRI 303-4)

	2020	2021	2022
Industrial wastewater discharged			
sewerage	188	168	247
surface water body (fresh water)	4,090	4,175	4,091
coastal waters/salt water channels	1,161	898	1,096
Total industrial waste water	**5,438**	**5,241**	**5,434**
Recovered waters			
production cycle	770	763	678
% of total water withdrawn	26%	26%	21%
Cooling water returned			
Surface water body - fresh water	842,788	971,518	1,085,059
Surface water body - salt/sea water*	278,798	521,510	609,326
Total cooling water returned	**1,121,587**	**1,493,028**	**1,694,385**
Water extracted for hydroelectric generation			
Water extracted for hydroelectric generation	3,108,050	3,060,194	1,744,218
Pollutant discharges into surface water (t)			
BOD	4.8	5.8	12.0
COD	15.4	31.1	39.6

* Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride >1000 mg/l)

Waste*

Figure 52 Waste produced (t) (GRI 306)**

	2020	2021	2022
Non-hazardous waste			
for material recovery	23,953	24,772	24,876
Total recovery	**23,953**	**24,772**	**24,876**
other disposals	0	1,032	980
in landfill	0	1,060	0
Total at disposal	**0**	**2,092**	**980**
Total non-hazardous waste produced	**23,953**	**26,864**	**25,856**
% non-hazardous waste recovered	100.00%	92.21%	96.21%
Hazardous waste			
for material recovery	16,202	1,257	534
Total recovery	**16,202**	**1,257**	**534**
for incineration	0	6	38
other disposals	0	3,946	3,756
in landfill	0	8	741
Total at disposal	**0**	**3,959**	**4,535**
Total hazardous waste produced	**16,202**	**5,216**	**5,068**
% hazardous waste recovered	100.00%	24.10%	10.53%

* The methodological change, adopted in 2021, to align with the requirements of the GRI 306 (2020) limits the comparability of the waste data to total hazardous and total non-hazardous, due to unavailability of greater detail in previous years
** Indicators calculated in accordance with the GRI 306 (2020) standard update. The energy recovery operation (R1) is classified as a recovery activity under national law.

Emissions

Figure 53 Total emissions (t) (GRI 305-1_2_6_7)

	2020	2021	2022
Total emissions from combustion	4,260,787	5,518,988	6,864,577
CO_2 from motor vehicles (t)*	607	84	130
Indirect CO_2 from energy acquisition (t)			
Location based**	57,573	56,142	57,801
Market based**	1,244	880	1,013
Fluorinated gases (t CO_2eq)	1,250	5,355	2,619
SF_6 (Kg)***	37	188	93
NOx (t)	1,416	1,680	2,093
SO_2 (t)	393	437	897
Powders (t)	30.8	23.8	46.9
Dioxins (grams - toxic equivalency)	0.0003	0.0002	0.0007
Other metals (Sb + As + Pb + Cr + Cu + Mn + Ni + V + Sn+Cd+Tl) (kg)	237	928	668

* The reduction is due to both improved data reporting and efficiency gains in consumption
** See notes on page 37
*** The indicator includes the new parameters (Pd+Pt+Rh+Sn) prescribed at the San Filippo del Mela Plant

Natural capital in the Smart Infrastructures BU

Resources and materials used

Figure 54 Resources used (GRI 301-1; GRI 302-1; GRI 303-5)

	2020	2021	2022
Fuel (TJ)			
Natural gas	4,039	5,742	6,689
Coal	1,075	0	0
Oil (OCD, Diesel)	0	0	0
Biogas (from landfills and treatment facilities)	10	7	5
Automotive fuels (TJ)			
Petrol	9.68	10.81	11.79
Diesel	17.85	18.75	16.94
Methane	9.22	12.20	7.65
Energy			
Electricity for plant self-consumption (GWh)	40	38	49
Electricity consumed (GWh), withdrawn from the grid	108	118	116
of which renewable	99	117	115
Heat energy (GWh - purchased from external sources)	464	505	370
Heat consumed for heating premises*	2	2	3
Chemical products and materials (t)			
Mineral acids	601	512	543
Water additives/conditioners	9,098	8,690	9,139
Lime and solid neutralisers	841	0	0
Active carbon	67	42	53
Cement, sand and inert materials	0	0	0
Sodium chloride	19	38	37
Technical gases (nitrogen, CO_2, hydrogen, oxygen)	190	213	216
Sodium hydroxide (solution)	170	169	126
Methanol, solvents and other products	1,011	957	1,046
Oils and lubricants	35	31	42
Odorants	57	74	51
Urea (solution)	529	361	548
Total chemical products	**12,618**	**11,088**	**11,801**

* also includes heat used for industrial purposes For 2022, heat consumed for heating premises refers only to heat taken from district heating networks for the heating of buildings.

Withdrawals

Figure 55 Water withdrawal (thousands of m^3) (GRI 303-3)

	2020	2021	2022
Water withdrawn for process consumption			
Aqueduct	800	814	758
Well	640	614	554
Third parties - fresh water	0	0	121
Total water withdrawn	**1,440**	**1,428**	**1,433**
Derivative waters for cooling and returned			
Surface water body - fresh water	0	0	0
Acquifer	2,179	1,861	1,966
Total water derived and returned	**2,179**	**1,861**	**1,966**
Water withdrawn for distribution to water service users (millions of m3)			
Water withdrawn for distribution to water service users	92	93	89

Water Discharge

Figure 56 Discharges and returned water (water in thousands of m^3) (GRI 303-4)

	2020	2021	2022
Industrial wastewater discharged			
sewerage	308	379	220
surface water body (fresh water)	229	255	223
Total industrial waste water	**537**	**634**	**443**
Recovered waters			
production cycle	12	11	9
% of total water withdrawn	1%	1%	1%
Cooling water returned			
Surface water body - fresh water	0	0	0
In the aquifer	2,179	1,861	1,966
Total cooling water returned	**2,179**	**1,861**	**1,966**
Public water supplied to water service users (millions of m^3)	**54**	**56**	**52**
Pollutant discharges into surface water (t)			
BOD	0.9	0.6	0.3
COD	6.6	1.7	1.5

Waste*

Figure 57 Waste produced (t) (GRI 306)**

	2020	2021	2022
Non-hazardous waste			
for material recovery	35,862	3,725	5,834
for energy recovery	0	19,190	18,510
Total recovery	**35,862**	**22,916**	**24,343**
other disposals	0	4,777	4,017
Total at disposal	**0**	**4,777**	**4,017**
Total non-hazardous waste produced	**35,862**	**27,693**	**28,360**
% non-hazardous waste recovered	100.00%	82.75%	85.84%
Hazardous waste			
for material recovery	468	402	567
Total recovery	**468**	**402**	**567**
other disposals	0	36	90
Total at disposal	**0**	**36**	**90**
Total hazardous waste produced	**468**	**439**	**657**
% hazardous waste recovered	100.00%	91.69%	86.30%

* The methodological change, adopted in 2021, to align with the requirements of the GRI 306 (2020) limits the comparability of the waste data to total hazardous and total non-hazardous, due to unavailability of greater detail in previous years
** indicators calculated in accordance with the GRI 306 (2020) standard update. The energy recovery operation (R1) is classified as a recovery activity under national law.

Emissions

Figure 58 Total emissions (t) (GRI 305-1_2_6_7)

		2020	2021	2022
Total emissions from combustion		329,704	307,845	356,036
CO_2 from motor vehicles (t)		2,539	2,858	2,805
Indirect CO_2 from energy acquisition (t)				
	Location based*	30,713	31,201	30,690
	Market based*	1,399	489	538
Fluorinated gases (t CO_2eq)		1,173	4,760	502
SF_6 (Kg)		11	6	18
NOx (t)		101	115	111
SO_2 (t)		73	0	0
Powders (t)		0.2	0.2	0.2
Methane (CH_4) - losses from natural gas distribution networks* (t CO_2 eq)		28,875.00	52,333.00	176,424.04
Dioxins (grams - toxic equivalency)		0.0000	0.0000	0.0000
Other metals (Sb + As + Pb + Cr + Cu + Mn + Ni + V + Sn+Cd+Tl) (kg)		0	0	0

*see notes on page 37

Figure 59 Distributed water quality analysis

Technical Data	2020	2021	2022
Potability analysis – samples (no.)	11,222	11,537	11,970
Potability analysis – total parameters (no.)	219,240	233,143	238,443

Natural capital in the Corporate BU

Resources and materials used

Figure 60 Resources used (GRI 301-1; GRI 302-1; GRI 303-5)

	2020	2021	2022
Water (thousand of m³)	143	135	104
Electricity consumed (GWh), withdrawn from the grid	12	5	6
of which renewable	12	5	5
Heat consumed for heating premises*	**7**	**5**	**5**
of which renewable	2	1	1
Fuel (TJ)			
Methane	18	9	9
Fuels (TJ)			
Petrol	2.6	6.1	7.3
Diesel	24.4	31.3	15.9
Methane	0.7	0.8	16.0
Electricity for vehicles (GWh)		0.010	0.160

* for 2022, heat consumed for heating premises refers only to heat taken from district heating networks for the heating of buildings

Waste*

Figure 61 Waste produced (t) (GRI 306)**

	2020	2021	2022
Non-hazardous waste			
for material recovery	199	11,488	300
for energy recovery	0	42	7
Total recovery	**199**	**11,530**	**307**
for incineration	0	0	0
other disposals	0	0	0
Total at disposal	**0**	**0**	**0**
Total non-hazardous waste produced	**199**	**11,530**	**307**
% non-hazardous waste recovered	100.00%	100.00%	100%
Hazardous waste			
for material recovery	7	79	78
Total recovery	**7**	**79**	**78**
other disposals	0	1	2
Total at disposal	**0**	**1**	**2**
Total hazardous waste produced	**7**	**80**	**80**
% hazardous waste recovered	100.00%	99.13%	97.71%

* The methodological change, adopted in 2021, to align with the requirements of the GRI 306 (2020) limits the comparability of the waste data to total hazardous and total non-hazardous, due to unavailability of greater detail in previous years
** indicators calculated in accordance with the GRI 306 (2020) standard update. The energy recovery operation (R1) is classified as a recovery activity under national law.

Emissions

Figure 62 Total emissions (t) (GRI 305-1_2_6_7)

		2020	2021	2022
Total emissions from combustion		1,013	493	478
CO_2 from motor vehicles (t)		1,997	2,797	2,608
Indirect CO_2 from energy acquisition (t)				
	Location based*	3,392	1,425	1,475
	Market based*	89	22	26
Fluorinated gases (t CO_2eq)		35	277	386

* See notes on page 37.

Human capital

Composition of personnel

Figure 63 Personnel by category and type of contract (GRI 2-7; 2-8; 405-1)

	2020			2021			2022		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Executive	145	26	171	154	31	185	145	31	176
Middle Manager	510	164	674	541	191	732	565	221	786
White-collar worker	3,337	1,524	4,861	3,525	1,743	5,268	3,708	1,918	5,626
Blue-collar worker	5,267	201	5,468	5,602	204	5,806	5,672	211	5,883
Permanent workers	**9,259**	**1,915**	**11,174**	**9,822**	**2,169**	**11,991**	**10,090**	**2,381**	**12,471**
Executive	3	1	4	1		1	3		3
Middle Manager	1		1			0			0
White-collar worker	28	42	70	25	76	101	24	48	72
Blue-collar worker	214	14	228	263	14	277	295	17	312
Fixed-term workers	**246**	**57**	**303**	**289**	**90**	**379**	**322**	**65**	**387**
Total	**9,505**	**1,972**	**11,477**	**10,111**	**2,259**	**12,370**	**10,412**	**2,446**	**12,858**
Workers with part-time contracts	115	262	377	111	289	400	116	294	410
Workers with full-time contracts	9,390	1,710	11,100	10,000	1,970	11,970	10,296	2,152	12,448
Workers with non-standard contracts* (temporary/ interns/collaborators)	**111**	**52**	**163**	**143**	**62**	**205**	**133**	**73**	**206**

* Workers under non-standard contracts do not include consultants.

Figure 64 Personnel by type of contract applied (GRI 2-30)

	2020	2021	2022	% Contract applied
Executive contracts	350	186	179	1%
Electrical contracts	3,491	3,573	3,784	29%
Single natural gas and water contracts	1,547	1,812	1,870	15%
Commercial contracts	1,090	593	14	0%
Municipal sanitation contracts	4,802	5,194	5,317	41%
FISE contracts	1,744	909	983	8%
Haulage contract	8	0	0	0%
Other contracts	106	103	108	1%
Electrical contracts - special discipline	0	0	603	5%
Tot. Personnel	**11,477**	**12,370**	**12,858**	**100%**

Figure 65 Average number of employees in service

	2020	2021	2022
Average number of employees in service	11,431	12,282	12,654

Figure 66 Personnel by workplace (Italian Regions) - (GRI 2-7)

	2020			2021			2022		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Abruzzo	51	6	57	53	6	59	35	5	40
Calabria	75	1	76	71	1	72	135	5	140
Campania	197	19	216	201	21	222	197	19	216
Emilia Romagna	45	6	51	73	5	78	71	6	77
Friuli Venezia Giulia	125	4	129	119	3	122	109	4	113
Lazio	7	5	12	6	6	12	10	6	16
Lombardy	8,563	1,895	10,458	9,159	2,180	11,339	9,400	2,362	11,762
Liguria	83	5	88	93	7	100	95	7	102
Marche	7	4	11			0			0
Piedmont	107	20	127	112	24	136	121	26	147
Apulia	85	3	88	72	3	75	75	3	78
Sardinia			0			0	3		3
Sicily	157	4	161	149	3	152	158	3	161
Veneto			0			0			0
International	3		3	3		3	3		3
Total	**9,505**	**1,972**	**11,477**	**10,111**	**2,259**	**12,370**	**10,412**	**2,446**	**12,858**

Figure 67 Main foreign nationalities of employees*

	2022	
	Number of Employees	% Minority employees out of total
Romanian	54	0.42%
Peruvian	26	0.20%
Albanian	30	0.23%
Moroccan	24	0.19%
Bulgarian	11	0.09%
Ukraine	12	0.09%
Other nationalities (non-Italian)	127	0.99%

* calculated based on the employee's citizenship.

Figure 68 Number of hires and turnover rate, by age, gender and contract type - (GRI 401-1)*

	2020			2021			2022		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Permanent workers									
Up to age 30	220	62	282	255	98	353	270	103	373
From 31 to 40	162	43	205	188	67	255	275	94	369
From 41 to 50	94	11	105	127**	36**	163**	135	31	166
Over 50	52	4	56	83**	4	87**	45	6	51
Fixed-term workers									
Up to age 30	125	40	165	155	74	229	177	53	230
From 31 to 40	69	14	83	99	27	126	134	21	155
From 41 to 50	77	8	85	86**	13**	99**	86	7	93
Over 50	14		14	33**	3	36**	19		19
Total	**813**	**182**	**995**	**1,026**	**322**	**1,348**	**1,141**	**315**	**1,456**
Percentage of new employees out of total workforce	8.55%	9.23%	8.67%	10.15%	14.25%	10.90%	10.96%	12.88%	11.32%

* the *turnover* rate was calculated according to the following formula: (hires/employees at 12/31)
** the 2021 figure has been recalculated by including AEB in the perimeter

Figure 69 Number of hires and turnover rate, by category, gender and contract type - (GRI 401-1)*

	2020			2021			2022		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Permanent workers	**520**	**116**	**636**	**608**	**197**	**805**	**725**	**234**	**959**
Executive	7	2	9	8	4	12	4		4
Middle Manager	12	4	16	30	15	45	37	11	48
White-collar worker	204	105	309	281	167	448	322	208	530
Blue-collar worker	297	5	302	289	11	300	362	15	377
Fixed-term workers	**285**	**62**	**347**	**369**	**112**	**481**	**416**	**81**	**497**
Executive	1		1			0	2		2
Middle Manager			0			0			0
White-collar worker	32	48	80	32	92	124	28	61	89
Blue-collar worker	252	14	266	337	20	357	386	20	406
Total	**805**	**178**	**983**	**977**	**309**	**1286**	**1141**	**315**	**1456**
Percentage of new employees out of total workforce	**8.47%**	**9.03%**	**8.56%**	**9.66%**	**13.68%**	**10.40%**	**10.96%**	**12.88%**	**11.32%**

* The *Turnover* Rate was calculated according to the following formula: (outgoing) / (employees) at Dec. 31.

Figure 70 Hiring costs - thousands of euro

	2020	2021	2022
Total	2,209	2,738	3,159

Figure 71 Outgoing employees during the year, by age bracket and gender - (GRI 401-1)

	2020										2021										2022									
	Men					Women					Men					Women					Men					Women				
	Up to 30	31-40	41-50	Over 50	Total	Up to 30	31-40	41-50	Over 50	Total	Up to 30	31-40	41-50	Over 50	Total	Up to 30	31-40	41-50	Over 50	Total	Up to 30	31-40	41-50	Over 50	Total	Up to 30	31-40	41-50	Over 50	Total
Retirement (voluntary exit)	0	0	0	358	358	0	0	0	30	30	0	10	0	372	382	0	0	0	28	28	0	0	0	337	337	0	0	0	22	22
Voluntary resignation	36	44	38	30	148	11	12	9	5	37	70	93	48	18	229	28	18	9	1	56	91	116	71	41	319	37	27	3	4	71
Decease	0	0	4	14	18	0	0	0	0	0	0	0	4	20	24	0	0	1	1	2	0	0	3	12	15	0	0	1	0	1
Dismissal	4	9	13	44	70	0	0	1	18	19	10	7	13	32	62	1	1	0	18	20	12	9	19	17	57	2	1	1	3	7
Other (e.g., end of fixed-term contract)	73	51	53	45	222	2	5	2	5	14	76	56	47	14	193	20	5	8	5	38	63	43	53	43	202	15	9	5	9	38
Total	**113**	**104**	**108**	**491**	**816**	**13**	**17**	**12**	**58**	**100**	**156**	**166**	**112**	**456**	**890**	**49**	**24**	**18**	**53**	**144**	**166**	**168**	**146**	**450**	**930**	**54**	**37**	**10**	**38**	**139**
Turnover rate*	**12.14%**	**5.47%**	**4.16%**	**12.04%**	**8.58%**	**6.34%**	**3.20%**	**1.95%**	**9.35%**	**5.07%**	**14.83%**	**8.08%**	**4.17%**	**10.56%**	**8.80%**	**17.19%**	**3.96%**	**2.71%**	**7.54%**	**6.37%**	**14.40%**	**7.81%**	**5.69%**	**11.13%**	**9.38%**	**15.74%**	**5.80%**	**1.54%**	**5.54%**	**6.00%**
Voluntary turnover rate**	**3.87%**	**2.31%**	**1.46%**	**9.52%**	**5.32%**	**5.37%**	**2.26%**	**1.46%**	**5.65%**	**3.40%**	**6.65%**	**5.01%**	**1.79%**	**9.03%**	**6.04%**	**9.82%**	**2.97%**	**1.35%**	**4.13%**	**3.72%**	**7.89%**	**5.39%**	**2.77%**	**9.35%**	**6.62%**	**10.79%**	**4.23%**	**0.46%**	**3.79%**	**4.02%**

* The turnover rate was calculated according to the following formula: (departures) / (employees) at 12/31
** Intended as the ratio of voluntary resignations to total employees

Figure 72 Outgoing employees during the year, by category and gender - (GRI 401-1)

	2020					2021					2022				
	Executive	Middle Manager	White-collar worker	Blue-collar worker	Total	Executive	Middle Manager	White-collar worker	Blue-collar worker	Total	Executive	Middle Manager	White-collar worker	Blue-collar worker	Total
Men															
Retirement (voluntary exit)	5	16	135	202	358	3	16	132	199	350	8	24	118	187	337
Voluntary resignation	1	10	64	73	148	1	11	63	73	148	12	17	119	171	319
Decease	0	0	4	14	18	0	0	4	12	16	0	1	3	11	15
Dismissal	0	6	32	32	70	0	6	27	35	68	0	1	7	49	57
Other (e.g., end of fixed-term contract)	5	2	11	204	222	4	2	9	194	209	1	2	28	171	202
Total	**11**	**34**	**246**	**525**	**816**	**8**	**35**	**235**	**513**	**791**	**21**	**45**	**275**	**589**	**930**
Turnover rate*	**7.43%**	**6.65%**	**7.31%**	**9.58%**	**8.58%**	**5.16%**	**6.47%**	**6.62%**	**8.75%**	**7.82%**	**14.19%**	**7.96%**	**7.37%**	**9.87%**	**8.93%**
Voluntary turnover rate **	**4.05%**	**5.09%**	**5.91%**	**5.02%**	**5.32%**	**2.58%**	**4.99%**	**5.49%**	**4.64%**	**4.93%**	**13.51%**	**7.26%**	**6.35%**	**6.00%**	**6.30%**
Women															
Retirement (voluntary exit)	0	2	26	2	30	0	2	28	2	32	0	1	19	2	22
Voluntary resignation	3	0	33	1	37	3	0	29	1	33	1	3	64	3	71
Decease	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Dismissal	0	1	18	0	19	0	1	16	0	17	0	0	4	3	7
Other (e.g., end of fixed-term contract)	1	1	8	4	14	0	1	4	4	9	0	0	24	14	38
Total	**4**	**4**	**85**	**7**	**100**	**3**	**4**	**77**	**7**	**91**	**1**	**4**	**112**	**22**	**139**
Turnover rate*	**14.81%**	**2.44%**	**5.43%**	**3.26%**	**5.07%**	**9.68%**	**2.09%**	**4.23%**	**3.21%**	**4.03%**	**3.23%**	**1.81%**	**5.70%**	**9.65%**	**5.68%**
Voluntary turnover rate **	**11.11%**	**1.22%**	**3.77%**	**1.40%**	**3.40%**	**9.68%**	**1.05%**	**3.13%**	**1.38%**	**2.88%**	**3.23%**	**1.81%**	**4.22%**	**2.19%**	**3.80%**

* The turnover rate was calculated according to the following formula: (departures) / (employees) at 12/31
** Intended as the ratio of voluntary resignations to total employees

Welfare and diversity

Figure 73 Personnel by age bracket and gender (GRI 405-1)

	2020									2021									2022								
	Executive		Middle Manager		White-collar worker		Blue-collar worker		Total	Executive		Middle Manager		White-collar worker		Blue-collar worker		Total	Executive		Middle Manager		White-collar worker		Blue-collar worker		Total
	M	W	M	W	M	W	M	W		M	W	M	W	M	W	M	W		M	W	M	W	M	W	M	W	
Up to age 30			2	1	332	196	597	8	1,136			1	1	391	273	660	11	1,337	0	0	1	0	442	336	736	12	1,527
From 31 to 40	10	1	94	28	720	464	1,079	38	2,434	10	2	102	37	828	533	1,115	34	2,661	11	1	113	47	933	576	1,175	44	2,900
From 41 to 50	42	13	158	71	721	432	1,673	100	3,210	34	12	171	83	749	479	1,733	91	3,352	35	11	180	99	760	493	1,718	84	3,380
Over 50	96	13	257	64	1,592	474	2,132	69	4,697	111	17	267	70	1,582	534	2,357	82	5,020	102	19	271	75	1,597	561	2,338	88	5,051
Average age of employees									0	54	52	50	48	47	43	46	48	49	54	52	102	48	89	86	46	48	65
Total	**148**	**27**	**511**	**164**	**3,365**	**1,566**	**5,481**	**215**	**11,477**	**155**	**31**	**541**	**191**	**3,550**	**1,819**	**5,865**	**218**	**12,370**	**148**	**31**	**565**	**221**	**3,732**	**1,966**	**5,967**	**228**	**12,858**

Figure 74 Personnel by protected categories (GRI 405-1)

	2020			2021			2022		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
PRO.CAT. (ART.18 PARA.2 LAW 68/99)	34	14	48	33	13	46	42	12	54
PEOPLE WITH DISABILITIES	277	74	351	263	74	337	343	108	451
Total	**311**	**88**	**399**	**296**	**87**	**383**	**385**	**120**	**505**

Figure 75 Personnel by position and company seniority (G4-EU15)

	2020					2021					2022				
	Executive	Middle Manager	White-collar worker	Blue-collar worker	Total	% Of Total	Executive	Middle Manager	White-collar worker	Blue-collar worker	Total	% Of Total	Executive	Middle Manager	White-collar worker	Blue-collar worker	Total	% Of Total
Up to age 10	62	217	1,716	2,398	4,393	38%	64	241	2,097	2,752	5,154	42%	61	289	2,411	2,953	5,714	44%
From 11 to 20 years	67	213	1,022	1,786	3,088	27%	67	248	1,158	1,893	3,366	27%	63	256	1,227	1,867	3,413	27%
From 21 to 30 years	34	108	1,071	994	2,207	19%	38	99	937	886	1,960	16%	36	97	858	796	1,787	14%
Over 30 years	12	137	1,122	518	1,789	16%	17	144	1,177	552	1,890	15%	19	144	1,202	579	1,944	15%
Total Employees	**175**	**675**	**4,931**	**5,696**	**11,477**	**100%**	**186**	**732**	**5,369**	**6,083**	**12,370**	**100%**	**179**	**786**	**5,698**	**6,195**	**12,858**	**100%**

Figure 76 Personnel by educational qualification*

	2020				2021				2022			
	Men	Women	Total	% Of Total	Men	Women	Total	% Of Total	Men	Women	Total	% Of Total
Undergraduate degree	1,280	703	1,983	17%	1,424	833	2,257	19%	1,615	1,022	2,637	21%
Secondary school diploma	3,825	963	4,788	42%	3,945	1,013	4,958	42%	3,851	1,066	4,917	38%
Vocational degree	635	60	695	6%	620	55	675	6%	1,198	134	1,332	10%
Compulsory schooling	3,765	246	4,011	35%	3,638	234	3,872	33%	3,748	224	3,972	31%
Total Personnel	**9,505**	**1,972**	**11,477**	**100%**	**9,627**	**2,135**	**11,762**	**100%**	**10,412**	**2,446**	**12,858**	**100%**

* 2021 figures not including AEB Group

Personnel training and development

Figure 77 Training delivered by role (GRI 404-1)

	2020					2021					2022				
	Number of Training Hours Delivered		Average annual hours of training per employee		Hours per capita	Number of Training Hours Delivered		Average annual hours of training per employee		Hours per capita	Number of Training Hours Delivered		Average annual hours of training per employee		Hours per capita
	Men	Women	Men	Women	Total	Men	Women	Men	Women	Total	Men	Women	Men	Women	Total
Executive	1,899	389	12.8	14.4	13	4,362	1,041	28.1	33.6	29	4,954	1,060	34.6	35.3	35
Middle Manager	10,920	3,478	21.4	21.2	21	21,149	7,279	39.1	38.1	39	23,594	8,686	43.4	41.4	43
White-collar worker	64,758	24,552	19.2	15.7	18	93,695	37,105	26.4	20.4	24	113,394	49,166	31.2	26.6	30
Blue-collar worker	41,585	914	7.6	4.3	7	60,152	1,063	10.3	4.9	10	91,632	2,217	16.4	9.9	16
Total	**119,162**	**29,333**	**12.5**	**14.9**	**13**	**179,358**	**46,488**	**17.7**	**20.6**	**18**	**233,574**	**61,128**	**23.6**	**26.4**	**24**

Figure 78 Training delivered by age bracket (GRI 404-1)

	2020					2021					2022				
	Number of hours		Average annual hours of training per employee		Hours per capita	Number of hours		Average annual hours of training per employee		Hours per capita	Number of hours		Average annual hours of training per employee		Hours per capita
	Men	Women	Men	Women	Total	Men	Women	Men	Women	Total	Men	Women	Men	Women	Total
Up to age 30	20,268	4,880	21.8	23.8	22.1	27,491	7,114	26.1	25.0	25.9	41,733	12,126	36.2	35.4	36.0
From 31 to 40	25,977	8,441	13.7	15.9	14.1	42,956	12,949	20.9	21.4	21.0	65,193	18,823	30.3	29.5	30.1
From 41 to 50	27,194	8,422	10.5	13.7	11.1	46,139	13,949	17.2	21.0	17.9	53,003	15,201	20.7	23.4	21.2
Over 50	45,723	7,590	11.2	12.2	11.4	62,771	12,475	14.5	17.8	15.0	73,645	14,978	18.2	21.8	18.7
Total	119,162	29,333	12.5	14.9	12.9	179,357	46,487	17.7	20.6	18.3	233,574	61,128	23.6	26.4	24.1

Figure 79 Health and safety training

	2020	2021	2022
Training hours	215,218	111,682	133,162
Number of employees trained			9,424

Figure 80 Training cost

	2020	2021*	2022
Euro	1,433,437	2,218,866	2,951,859
% of training costs covered by inter-professional funds	37%	28%	26%

* 2021 figure adjusted for material error

Figure 81 Employees trained during the year

	2020	2021	2022
Total number of employees trained	8,423	10,097	12,016
Tot. Personnel	11,477	12,370	12,858
Employees trained in the year (percentage of total)	73%	82%	93%

Figure 82 Participation in training courses

	2020	2021	2022
Men	73,803	53,753	72,774
Women	25,405	19,495	22,567
Total	**99,208**	**73,248**	**95,341**

Figure 83 Percentage of employees who regularly receive performance assessments (GRI 404-3)*

	2020		2021		2022	
	Men	Women	Men	Women	Men	Women
Managers					30	132
Middle Managers					194	499
White-collar workers					1,423	2,933
Blue-collar workers					0	0
Tot. Personnel	**1,972**	**9,505**	**2,259**	**10,111**	**2,446**	**10,412**
% employees who received performance appraisals by gender	0%	0%	0%	0%	67%	34%

* Data by gender and category are available from 2022. For the previous two years, only the total value of employees subject to the performance appraisal process is shown.

Figure 84 Third-party employees that have undergone relevant health and safety training

	Number of employees involved	Training hours provided
2020	808	1,373
2021	1,054	1,631
2022	3,036	7,755

Occupational health and safety

Figure 85 Data on injuries* (GRI 403-9)

	2020	2021	2022
Number of deaths			
No. of incidents (excl. during travel)	325	423	405
Men	308	401	386
Women	17	22	19
of which with severe consequences**	7	3	1
No. of days absence	10,312	10,364	11,403
Average duration	31.73	24.50	28.16
Hours worked	18,371,962	20,227,491	20,601,773
Frequency Index (FI)	17.69	20.91	19.66
Severity Index (SI)	0.56	0.51	0.55
incidence Index (II)	4.4	5.3	5.7
Tot. Personnel	11,477	12,370	12,858
No. of incidents during commuting***	50	66	73
Lost Time Injury Rate (LTIR with 200,000)	3.54	4.18	3.93

* When calculating indices, only professional accidents, that result in at least one day of absence, not including the day of the event, are considered. Medications and precautionary absences and unrecognised accidents are therefore excluded. Professional accidents also include those that occur in transit, with or without a vehicle. The table counts all injuries involving employees.
FI = frequency index (no. accidents x 1,000,000: hours worked)
SI = severity index (no days of absence x 1,000: hours worked)
II = incidence index (no accidents x 1,000: headcount) – it is calculated on the number of commuting accidents.
LTIR: no. accidents x 200,000 hours worked
** Severe accident: Injury resulting in death, hospitalization with a reserved prognosis or first prognosis of more than 40 days.
*** Commuting accidents: accidents suffered by workers while commuting from home to work and vice-versa (but not while in service).

Figure 86 Percentage of workers represented in formal health and safety committees (GRI 403-1)

	2020	2021	2022
% of workers represented in formal health and safety committees	100.00%	100.00%	100.00%

Figure 87 Health data by BU

	Generation and Trading			Market			Waste			Smart Infrastructures			Corporate			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Visits as per 81/08	548	751	710	195	535	343	5,143	4,039	5,681	1,192	1,666	1,596	266	712	677	7,344	7,703	9,007
Tox visits	180	171	204	24	27	3	2,120	2,759	3,015	369	471	540	1	1	1	2,694	3,429	3,763
Assessments	1,325	1,530	1,770	194	506	339	9,539	8,593	10,957	1,740	2,190	2,430	266	678	655	13,064	13,497	16,151
Flu vaccination	84	76	80	170	186	128	550	466	455	567	568	480	341	312	432	1,712	1,608	1,575
Vaccinations	8	9	54	6			1,283	629	341	97	124	133	3		1	1,397	762	529
Site inspections	16	28	16	11	16	16	44	57	87	24	23	27	13	10	11	108	134	157
Reporting occupational illness	3	8	3				9	7	10		1	1				12	16	14
Health provisions	17	17	16	5	5	4	27	27	38	9	9	7	7	7	8	65	65	73
Specialist visits			8		1		26	23	22		23	3				26	47	33

Absenteeism

Figure 88 Number of working days lost by gender

	2020			2021			2022		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
No. of working days lost									
for Sickness	125,453	17,649	143,102	121,744	16,105	137,849	138,635	21,923	160,558
for unpaid leave/absence	4,585	494	5,079	6,641	1,689	8,330	9,808	2,011	11,819
for company strikes			0			0			0
for national strikes	5	1	6	4,013	300	4,313	152	20	172
for accidents	10,876	682	11,558	13,959	700	14,659	13,502	637	14,139
Total working days lost	**140,919**	**18,826**	**159,745**	**146,357**	**18,794**	**165,151**	**162,098**	**24,590**	**186,688**
Total days worked by the workforce in the reporting period	2,532,261	489,561	3,021,822	2,707,427	553,211	3,260,638	2,720,520	585,490	3,306,010
Absentee Rate	**5.56%**	**3.85%**	**5.29%**	**5.41%**	**3.40%**	**5.06%**	**5.96%**	**4.20%**	**5.65%**

Figure 89 Accident rates of contractors and subcontractors for construction and maintenance works* (GRI 403-9 and G4-EU17)

	2020	2021**	2022**
No. of hours worked by contractors	2,945,074	4,507,139	5,818,784
No. of contractor and subcontractor deaths		1	1
No. of contractor and subcontractor accidents	22	42	31
No. of contractor and subcontractor accidents with severe consequences	2	3	7
Contractor and subcontractor days lost	736	9,129	8,430
Frequency index - contractors and subcontractors	**7**	**9**	**5**
Severity index - contractors and subcontractors	**0**	**2**	**1**

* The indicator does not include AEB, Fragea and Agripower.
** Number of days lost in 2021 and 2022 includes days lost equal to the remaining working life of the deceased contractor.

Figure 90 Lost days rate* (number of total days lost to accident or illness over total hours worked by the workforce during the reporting period)

	2020			2021			2022		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
No. of working days lost due to accidents	10,876	682	11,558	13,959	700	14,659	13,502	637	14,139
Total workable hours of the workforce in the reporting period	18,265,462	3,568,847	21,834,309	19,271,291	4,009,527	23,280,818	19,365,442	4,260,420	23,625,861
Total hours worked by the workforce in the reporting period	15,459,541	2,908,822	18,368,363	16,817,777	3,413,159	20,230,936	16,893,438	3,577,274	20,470,712
Lost day rate	0.06%	0.02%	0.05%	0.07%	0.02%	0.06%	0.07%	0.01%	0.06%

* Days lost means days on which work cannot be performed due to an occupational accident or occupational illness. They are not counted if there is a partial return to working activity. Occupational illness is defined as an illness caused by the working environment or professional activity (e.g., stress or regular exposure to harmful chemical substances) or resulting from an accident.

Figure 91 Return to work and retention rates after parental leave*

	2020		2021		2022	
	Men	Women	Men	Women	Men	Women
Parental leave						
Employees eligible for parental leave	9,505	1,972	10,111	2,259	10,412	2,446
Employees who took parental leave	312	168	371	170	438	197
of which not yet returned					1	2
of which returned to work in the reference year	308	150	358	141	427	160
Employed by the company 12 months after return			304	142	351	131
% Return from leave	99%	89%	97%	83%	97%	81%
% retention rate			99%	95%	98%	93%

* Employees who did not return to work relative to 2020 have not necessarily resigned, but are continuing their leave.

Figure 92 Trade union membership

	2020	2021	2022
Members of Trade Unions	4,749	5,035	4,772

Figure 93 Strike hours

	2020	2021	2022
Total strike hours	42	29,572	3,907
Strike hours per capita	0.0000	2.4100	0.3100

Benefits and remuneration

Figure 94 Contributions to recreational and welfare clubs

	2020	2021	2022
Total (€)	5,522,525	5,918,051	6,706,073

Figure 95 Gender remuneration broken down by quartiles

	2020	2021	2022
Share of women among the Top 10% of highest paid employees	14.12%	15.63%	16.82%
Percentage of women in the first pay quartile globally	15.69%	16.94%	18.79%
Percentage of women in the upper-middle global pay quartile	18.93%	19.72%	21.68%
Percentage of women in the lower-middle global pay quartile	17.13%	18.63%	18.47%
Percentage of women in the lowest global pay quartile	17.02%	17.84%	17.20%

Relational capital

Relations with customers

Electricity and natural gas sales service

Figure 96 Electricity sold to end customers (GWh)

	2020	2021	2022
Electricity sales service			
Electricity sold to end customers (GWh)	14,555	18,020	20,292

Figure 97 Gas sold to end customers (Mm^3)

	2020	2021	2022
Gas sales service			
Gas sold to end customers (Mm^3)	1,878	2,275	2,328

Figure 98 Electricity supply contracts by type of market

	2020	2021	2022
Electricity supply contract			
Protected market	429,707	369,899	314,058
Free market	890,070	1,013,943	1,214,884
Gradual protection market		62,534	39,952
Safeguard market		18,486	17,327
Total	**1,319,777**	**1,464,862**	**1,586,221**

Figure 99 Electricity supply contracts by type of customer

	2020	2021	2022
Electricity supply contract			
Domestic	961,835	1,063,108	1,168,036
SME	152,167	200,809	217,262
Key accounts	135,805	127,633	138,041
Condominiums	37,458	39,884	37,594
Public lighting	32,512	33,428	25,288
Total	**1,319,777**	**1,464,862**	**1,586,221**

Figure 100 Gas supply contracts by type of market

	2020	2021	2022
Gas supply contracts			
Protected market	548,400	539,738	456,049
Free market	699,146	826,423	945,596
Total	**1,247,546**	**1,366,161**	**1,401,645**

Figure 101 Natural gas supply contracts by type of customer (G4 - EU3)

	2020	2021	2022
Gas supply contracts			
Domestic	1,162,058	1,274,612	1,296,114
SME	58,819	63,063	67,602
Key accounts	17,754	18,722	26,672
Condominiums	8,915	9,764	11,257
Public lighting			
Total	**1,247,546**	**1,366,161**	**1,401,645**

Figure 102 Geographic breakdown of electricity sales volumes

	2020	2021	2022
% Lombardy	53%	60%	59%
% Other Italian Regions	47%	40%	41%

Figure 103 Geographic breakdown of gas sales volumes

	2020	2021	2022
% Lombardy	78%	74%	67%
% Other Italian Regions	22%	26%	33%

Figure 104 Cerved Energy Monitor survey on the level of satisfaction of A2A Energia customers**

Service supplied	Business segment	2019			2020			2021		
		CSI	Market standard	Position*	CSI	Market standard	Position*	CSI	Market standard	Position*
Gas	Domestic	91.9	92.9	2 of 7	93.1	93.4	3 of 7	92.2	90.8	2 of 7
		94.7	94.0	1 of 6	96.3	95.5	1 of 5	94.8	93.4	1 of 5
Electricity	Domestic	92.2	91.6	3 of 9	93.2	92.2	3 of 8	90.7	89.9	4 of 9
	VAT reg. & SME	93.1	93.0	4 of 11	95.0	95.0	3 of 11	94.2	94.1	3 of 8

* The position in the rankings derives from the comparison of the performance of A2A Energia with that of the main market players, apart from the macro category of "Other suppliers", which combines several operators and whose results cannot be read individually due to the number of associated interviews.
** In 2022, the 2021 figure was published.

Figure 105 Customer satisfaction on call centre operations*

	2020	2021	2022
A2A Energia	95.40%	94.60%	92.00%
National average	92.00%	90.10%	90.10%

* In 2022, the 2021 figure was published.

Figure 106 Customer satisfaction after calling the call centre (percentage on assessments recorded) - A2A Energia

	2020	2021	2022
% Customer satisfaction			
score 1 (very dissatisfied)	5.30%	6.70%	4.20%
score 2 (dissatisfied)	2.30%	2.40%	1.50%
score 3 (satisfied)	6.70%	5.90%	5.30%
score 4 (very satisfied)	85.70%	85.00%	89.10%

Figure 107 Electricity and natural gas complaint trends

		2020	2021	2022
Asm Energia Vigevano	Number of complaints*		762	1,133
	Complaint frequency**	0.00%	0.00%	0.00%
A2A Energia	Number of complaints*	5,792	6,121	9,231
	Complaint frequency**	0.23%	0.25%	0.36%
Lumenergia	Number of complaints*	9	22	10
	Complaint frequency**	0.08%	0.20%	0.09%
Yada	Number of complaints*	39	285	445
	Complaint frequency**	0.51%	0.73%	0.65%
Gelsia	Number of complaints*		573	738
	Complaint frequency**	0.00%	0.29%	0.38%

* Since 2021, the number of complaints does not take into account STG (gradual protection service) and safeguards.
** This index is given by the ratio: total number of complaints/number of supply points as at 12/31.

Figure 108 Electricity bill cost trends (in euro) for a typical household*

	A2A Energia			Yada			Asm Energia Vigevano			Gelsia
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2022
Sales services	198.72	370.64	1,070.35	264.68	529.74	881.70	237.80	370.64	1,070.35	1,409.77
Network services	218.46	181.15	103.82	218.44	174.10	103.85	259.50	181.15	103.82	103.85
Tax	21.94	21.82	21.75	21.79	21.79	21.79	22.88	21.82	21.75	61.29
VAT	43.91	57.36	119.59	50.49	72.56	100.73	51.82	57.36	119.59	161.75
Total	**483.03**	**630.97**	**1,315.51**	**555.40**	**798.19**	**1,108.07**	**572.00**	**630.97**	**1,315.51**	**1,736.66**

* For electricity, the Authority hypothesised a resident domestic use contract, with 3 kW of available power and an average annual use of 2,700 kWh.

Figure 109 Cost trends in the natural gas bill (in euro) for a typical household*

	A2A Energia			Yada			Asm Energia Vigevano			Gelsia
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2022
Sales services	309.33	522.17	1,498.00	337.93	913.86	1,548.44	323.20	522.17	1,498.00	1,463.76
Network services	239.12	237.37	-39.20	234.22	264.94	74.44	242.70	237.37	-39.20	18.55
Tax	224.68	224.68	224.68	224.68	224.68	224.68	232.00	224.68	224.68	224.68
VAT	159.27	155.39	102.83	147.45	256.08	96.31	148.10	155.39	102.83	85.35
Total	**932.40**	**1,139.61**	**1,786.31**	**944.28**	**1,659.56**	**1,943.87**	**946.00**	**1,139.61**	**1,786.31**	**1,792.34**

* For gas, domestic use with independent heating in the north-east and an annual use of 1,400 m3 was taken as the example by the Authority.

Figure 110 Office visits

	2020	2021	2022
Total number of customers served	**134,399**	**185,995**	**233,613**
A2A Energia	130,546	146,336	178,350
Lumenergia	3,853	4,816	5,955
Gelsia		34,843	49,308
Average office waiting time in minutes			
A2A Energia	05'30''	05'12''	12'30''
Lumenergia			
Gelsia		25'00''	34'00''

Figure 111 Customer satisfaction on the services provided at the counter

	2020	2021	2022
Opinions: Positive	99.60%	99.40%	99.59%
Opinions: Negative	0.40%	0.40%	0.41%

Figure 112 Number of electricity and gas contracts with the Bollett@mail service

	2020	2021	2022
A2A Energia	916,534	1,093,616	1,338,083
Lumenergia	1,457	2,333	2,531
Asm Energia Vigevano	4,971	6,399	7,704
Yada	16,629	51,032	83,367
Gelsia		37,096	38,777
Total	**939,591**	**1,190,476**	**1,470,462**
Increase (percentage)	75.30%	26.70%	23.52%

Figure 113 Number of visits to the commercial websites

	2020	2021	2022
Total number of visits	10,269,646	12,806,487	11,214,847
Registered with the online counter	517,168	636,493	785,911

Figure 114 Green energy sold (GWh)

	2020	2021	2022
Market segment			
Government	5%	28%	24%
Mass Market	33%	37%	42%
Others	62%	36%	34%
Total	**3,858**	**4,976**	**6,989**

Electricity and natural gas distribution service

Figure 115 Extension of the electricity distribution service* [G4 – EU3_EU4]

	2020	2021	2022
No. Customers connected	1,204,394	1,219,703	1,220,070

* Weighted average number of POD active during the year calculated on the basis of ARERA and CSEA provisions and valid for tariff purposes

Figure 116 Extension of the gas distribution service* [G4 – EU3_EU4]

	2020	2021	2022
No. Customers connected	1,420,545	1,710,707	1,631,655

* Weighted average number of PDR active during the year calculated on the basis of ARERA and CSEA provisions and valid for tariff purposes

Figure 117 Technical quality of electricity [G4 – EU29_EU28]

Milan

	High density area				Medium density area				Low density area			
	2020	2021	2022	Arera 2022 objective	2020	2021	2022	Arera 2022 objective	2020	2021	2022	Arera 2022 objective
Average annual minutes of outage per LV user due to long outages without notice	33.80	38.75	47.42	25.00	47.11	45.37	123.65	40.00	N.A	N.A	N.A	N.A
Average annual number of outages per LV user due to long outages without notice	1.57	1.55	2.09	1.32	1.98	2.61	4.84	2.02	N.A	N.A	N.A	N.A

Brescia

	High density area				Medium density area				Low density area			
	2020	2021	2022	Arera 2022 objective	2020	2021	2022	Arera 2022 objective	2020	2021	2022	Arera 2022 objective
Average annual minutes of outage per LV user due to long outages without notice	8.91	7.15	11.10	25.00	23.71	24.38	12.74	40.00	30.19	31.47	27.97	60.00
Average annual number of outages per LV user due to long outages without notice	0.84	0.84	0.88	1.00	2.64	1.90	1.23	2.00	2.64	2.84	2.31	4.00

Figure 118 Technical quality of electricity [G4 – EU29_EU28]

Cremona

	High density area				Medium density area				Low density area			
	2020	2021	2022	Arera 2022 objective	2020	2021	2022	Arera 2022 objective	2020	2021	2022	Arera 2022 objective
Average annual minutes of outage per LV user due to long outages without notice	7.00	13.00	14.00	25.00					24.00	7.00	58.00	60.00
Average annual number of outages per LV user due to long outages without notice	0.40	0.30	0.40	1.00					1.50	1.00	1.50	4.00

Figure 119 Electricity emergency service [G4 – EU28]

	Province of Brescia	Province of Brescia	Province of Brescia	Province of Milan	Province of Milan	Province of Milan
	2020	2021	2022	2020	2021	2022
No. MV customers with more than 6 interruptions per year for high density areas	2	N.A.	N.A.	29	30	32
No. of MV customers with more than 8 interruptions a year for medium-concentration areas	4	N.A.	N.A.	N.A.	N.A.	N.A.
No. MV customers with more than 9 interruptions per year for low density areas	18	2	3	N.A.	N.A.	N.A.

In the event of an electricity shortfall, Terna - National Electrical Network requests that distributors implement a scheduled rotating outage plan in order to avoid a general blackout. There are five levels of severity of electricity shortfall used to determine the number of users involved and the frequency of outages. Terna informs customers of the outages, which have a maximum duration of 90 minutes, with advance notice of 30 minutes, and they may occur at any time during the hourly periods indicated, not necessarily at the beginning of each period. The scheduled outage plan prepared by A2A Reti Elettriche, by day and time slot, is available from the company's website.

Figure 120 SAIDI index

	2020	2021	2022
Province of Milan	0.490	0.650	0.790

* Index calculated on the Milan area (high concentration), the most representative for the Group.
The average duration of interruption (expressed in hours) with long unannounced interruptions (>3 minutes), with MV and LV origin due to other causes (i.e. responsibility of the distributor), as provided for by ARERA indicators, was considered.

Figure 121 Electricity emergency service [G4 – EU28]

	Province of Cremona	Province of Cremona	Province of Cremona
	2020	2021	2022
No. MV customers with more than 6 interruptions per year for high density areas	0	0	0
No. of MV customers with more than 8 interruptions a year for medium-concentration areas	N.A	N.A.	N.A.
No. MV customers with more than 9 interruptions per year for low density areas	0	0	0

Figure 122 Commercial quality of electricity: specific indicators for the Milan-Brescia area [G4 – EU21]

		Services provided on the indicated timetable (%) - Electricity			Average time to execute the service (days) - Electricity		
	ARERA Level Res. 646/15	2020	2021	2022	2020	2021	2022
Time to prepare estimate for work on the network	15 working days for LV 30 working days for MV	98.02%	95.77%	95.61%	6.63	7.69	7.72
Execution time for simple work	10 working days for LV 20 working days for MV	96.92%	95.64%	95.26%	5.78	6.3	6.59
Execution time for complex work	50 working days	98.03%	97.31%	95.94%	15.13	17.07	19.58
Activation time for LV/MV supply	5 working days	99.37%	99.14%	98.87%	0.6	0.61	0.67
Supply de-activation time	5 working days for LV 7 working days for MV	99.24%	99.15%	99.28%	0.57	0.66	0.7
Reactivation time following suspension due to non-payment	1 working day	99.72%	99.67%	99.84%	0.07	0.07	0.07
Observance of time bracket for appointments	2 hours	99.57%	99.45%	99.62%	n.a.	n.a.	n.a.
Time to restore service following failure of meter equipment during business days from 8 AM to 6 PM on the LV network	3 hours	85.27%	89.24%	85.62%	02:42	2h and 1 min	2h and 7 min
Time to restore service following failure of meter equipment during non-working days from 6 PM to 8 AM on the LV network	4 hours	94.54%	96.18%	96.02%	02:07	1h and 52 min	1h and 51 min
Time to report results of testing of LV/MV meter equipment	15 working days	97.76%	98.5%	96.97%	6.92	6.36	8.04
Time for notifying the result of the verification of voltage	20 working days	76.92%	100%	95%	22.23	13.8	14.47

Figure 123 Commercial quality of electricity: specific indicators for the Cremona area [G4 – EU21]

	ARERA Level Res. 646/15	Services provided on the indicated timetable (%) - Electricity			Average time to execute the service (days) - Electricity		
		2020	2021	2022	2020	2021	2022
Time to prepare estimate for work on the network	15 working days for LV 30 working days for MV	100% 100%	100% 100%	96.5% 100%	3.44 10	4.92 9.25	6.08 12.28
Execution time for simple work	10 working days for LV 20 working days for MV	100% 100%	99.25% 100%	99.30% 100%	2.54 9	3.16 0	3.72 1
Execution time for complex work	50 working days	100% 100%	100% 100%	100% 100%	20.47 1	19.83 20.33	20.26 24
Activation time for LV/MV supply	5 working days	100% 100%	99.96% 100%	99.92% 100%	0.28 5	0.28 2	0.26 0
Supply de-activation time	5 working days for LV 7 working days for MV	99.02% -	99.82% 100%	100% -	0.54 -	0.51 0.5	0.44 -
Reactivation time following suspension due to non-payment	1 working day	98.18% 100%	99.74%	99.89%	0.14 0	0.09	0.04
Observance of time bracket for appointments	2 hours	100%	98.96%	99.34%	-		-
Time to restore service following failure of meter equipment during business days from 8 AM to 6 PM on the LV network	3 hours	100%	100%	95.45%	1 h and 6 min	1 h and 16 min	1 h and 22 min
Time to restore service following failure of meter equipment during non-working days from 6 PM to 8 AM on the LV network	4 hours	100%	100%	100%	1 h and 23 min	1 h and 24 min	1 h and 47 min
Time to report results of testing of LV/MV meter equipment	15 working days	100% -	100%	100% 100%	4.25 -	6	8.28 -
Time for notifying the result of the verification of voltage	20 working days	NA	100%		NA	11	NA

Figure 124 Commercial quality of electricity: specific indicators for the Monza area [G4 – EU21]

	ARERA Level Res. 646/15	Services provided on the indicated timetable (%) - Electricity			Average time to execute the service (days) - Electricity		
		2020	2021	2022	2020	2021	2022
Time to prepare estimate for work on the network	15 working days for LV 30 working days for MV		100%	100%		7.23	7
Execution time for simple work	10 working days for LV 20 working days for MV		98.98%	100%		5.64	4
Execution time for complex work	50 working days		100%	100%		15.5	17
Activation time for LV/MV supply	5 working days		99.74%	98.73%		0.94	1
Supply de-activation time	5 working days for LV 7 working days for MV		99.22%	97.32%		1.32	3
Reactivation time following suspension due to non-payment	1 working day		98.28%	95.32%		0.24	
Observance of time bracket for appointments	2 hours		100%	99.9%			
Time to restore service following failure of meter equipment during business days from 8 AM to 6 PM on the LV network	3 hours		100%	100%		1.27	1
Time to restore service following failure of meter equipment during non-working days from 6 PM to 8 AM on the LV network	4 hours		100%	100%		1.57	2
Time to report results of testing of LV/MV meter equipment	15 working days		20%				40
Time for notifying the result of the verification of voltage	20 working days						

Figure 125 Commercial quality of electricity: general indicators for the Milan - Brescia area [G4 – EU21]

	ARERA level	2020	2021	2022
	LV	Total	Total	Total
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95.00%	96.78%	95.56%	98.32%

	ARERA level	2020	2021	2022
	LV	Total	Total	Total
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95.00%	99.17%	94.87%	99.35%

Figure 126 Commercial quality of electricity: general indicators for the Cremona area [G4 – EU21]

	ARERA level	2020	2021	2022
	LV	Total	Total	Total
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95.00%	100.00%	100.00%	100.00%

	ARERA level	2020	2021	2022
	LV	Total	Total	Total
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95.00%	100.00%	83.00%	100.00%

Figure 127 Commercial quality of electricity: general indicators for the Monza area [G4 – EU21]

	ARERA level	2020	2021	2022
	LV	Total	Total	Total
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95.00%		80.39%	95.38%

Figure 128 Technical quality of natural gas [G4 – EU21]

	Lev. Base	Lev. Ref.	Lev. Effective 2020						Lev. Effective 2021							Lev. Effective 2022							
			Province of Milan	Province of Brescia	Province of Bergamo	Province of Lodi	Province of Cremona	Province of Pavia	Province of Milan	Province of Brescia	Province of Bergamo	Province of Lodi	Province of Cremona	Province of Pavia	Province of Monza and Brianza	Province of Milan	Province of Brescia	Province of Bergamo	Province of Lodi	Province of Cremona	Province of Pavia	Province of Monza and Brianza
Annual percentage of the high and medium pressure network inspected	30.00%	90.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.00%	71.00%	200.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Annual percentage of the low pressure network inspected	20.00%	70.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.00%	53.00%	191.00%	100.00%	100.00%	100.00%	100.00%	96.70%
Annual number of leaks located per km of network inspected	0.80	0.10	0.08	0.10	0.01		0.00	0.01	0.08	0.10	0.01	0.01	0.00	0.01		0.26	0.26	0.00	0.06	0.02	0.02	0.08
Annual number of leaks located in response to reports from third parties per km of network	0.80	0.10	0.15	0.07	0.01	0.01	0.02	0.02	0.14	0.07	0.03	0.02	0.01	0.01	0.10	0.13	0.35	0.03	0.02	0.01	0.01	0.04
Conventional number of measurements of degree of natural gas odorant per thousand end customers	0.19	0.50	0.96	1.85	1.41	1.80	1.70	1.10	0.93	1.82	1.62	1.80	1.70	1.10	2.30	0.99	2.46	1.56	1.80	1.70	1.10	2.67

Figure 129 Natural gas emergency service [G4 – EU21]

		2020	2021	2022
Province of Milan		99.68%	99.23%	99.42%
Province of Brescia	Unareti	96.14%	96.26%	96.17%
Province of Brescia	ASVT	100.00%	100.00%	100.00%
Province of Bergamo		100.00%	100.00%	100.00%
Province of Lodi		100.00%	100.00%	100.00%
Province of Cremona		99.90%	99.90%	99.80%
Province of Pavia		99.80%	100.00%	100.00%
Province of Monza and Brianza			97.72%	97.75%

Figure 130 Natural gas commercial quality: general indicators [G4 – EU21]

	ARERA level	Unareti			Ld Reti			Azienda Servizi Valtrompia			Retipiù	
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2021	2022
Percentage of requests to perform complicated jobs which were completed within a maximum of 60 working days	90.00%	98.61%	99.60%	99.44%	98.00%	100.00%	100.00%	100.00%	100.00%	100.00%	93.75%	100.00%
Percentage of justified replies to written claims or information requests communicated within a maximum of 30 working days	95.00%	98.64%	99.07%	98.61%	92.00%	100.00%	100.00%	100.00%	100.00%	100.00%	80.84%	90.68%

Figure 131 Natural gas commercial quality: specific indicators: Unareti [G4 – EU21]

		Services provided on the indicated timetable (%)			Average time to execute the service (days)		
	ARERA Levels Res. 574/13	2020	2021	2022	2020	2021	2022
	2022	2020	2021	2022	2020	2021	2022
Estimating time (simple work)	15 working days	98.92%	99.21%	98.67%	4.68	4.23	3.81
Execution time for simple work	10 working days	96.58%	96.39%	94.40%	6.85	7.16	6.69
Estimating time (complex works)	30 working days	95.28%	90.49%	75.93%	12.03	14.79	23.55
Activation time for LV/MV supply	10 working days	99.85%	99.85%	99.74%	3.19	3.23	3.37
Supply de-activation time	5 working days for LV	98.10%	98.99%	99.82%	3.07	3.07	2.80
Reactivation time following suspension due to non-payment	2 working day	98.56%	99.12%	96.75%	1.11	1.03	1.17
Observance of time bracket for appointments	2 hours	99.80%	99.82%	99.84%	N.A.	N.A.	N.A.
Time to report results of testing of LV/MV meter equipment	20 working days	88.06%	87.61%	81.40%	10.96	17.12	13.15

Figure 132 Natural gas commercial quality: specific indicators for LD Reti [G4 – EU21]

		Services provided on the indicated timetable (%)			Average time to execute the service (days)		
	ARERA Levels Res. 574/13	2020	2021	2022	2020	2021	2022
	2022	2020	2021	2022	2020	2021	2022
Estimating time (simple work)	15 working days	100.00%	98.65%	97.29%	3.42	4.55	4.84
Execution time for simple work	10 working days	96.00%	97.54%	95.16%	3.67	4.24	5.09
Estimating time (complex works)	30 working days	100.00%	98.68%	96.00%	2.62	5.22	6.56
Activation time for LV/MV supply	10 working days	100.00%	99.88%	99.78%	2.97	2.73	2.96
Supply de-activation time	5 working days for LV	97.00%	96.36%	94.12%	2.86	2.69	2.80
Reactivation time following suspension due to non-payment	2 working day	90.00%	95.92%	98.31%	1.26	1.18	1.24
Observance of time bracket for appointments	2 hours	99.00%	99.55%	99.36%	N.A.	N.A.	N.A.
Time to report results of testing of LV/MV meter equipment	20 working days	73.00%	86.67%	90.48%	19.51	13.87	12.38

Figure 133 Natural gas commercial quality: specific indicators for ASVT [G4 – EU21]

		Services provided on the indicated timetable (%)			Average time to execute the service (days)		
	ARERA Levels Res. 574/13	2020	2021	2022	2020	2021	2022
	2022	2020	2021	2022	2020	2021	2022
Estimating time (simple work)	15 working days	100.00%	97.96%	100.00%	4.26	6.01	3.98
Execution time for simple work	10 working days	100.00%	100.00%	100.00%	1.48	0.93	3.20
Estimating time (complex works)	30 working days	100.00%	100.00%	100.00%	7.19	5.74	3.60
Activation time for LV/MV supply	10 working days	99.87%	99.88%	100.00%	2.95	3.25	3.05
Supply de-activation time	5 working days for LV	98.67%	99.57%	100.00%	2.16	2.00	2.24
Reactivation time following suspension due to non-payment	2 working day	100.00%	100.00%	100.00%	0.32	0.26	0.36
Observance of time bracket for appointments	2 hours	99.84%	100.00%	100.00%	N.A.	N.A.	N.A.
Time to report results of testing of LV/MV meter equipment	20 working days	75.00%	77.78%	50.00%	15.00	18.67	26.25

Figure 134 Natural gas commercial quality: specific indicators for Retipiù [G4 – EU21]

		Services provided on the indicated timetable (%)			Average time to execute the service (days)		
	ARERA Levels Res. 574/13	2020	2021	2022	2020	2021	2022
	2022	2020	2021	2022	2020	2021	2022
Estimating time (simple work)	15 working days	N.A.	99.74%	99.34%	N.A.	8.28	7.22
Execution time for simple work	10 working days	N.A.	97.34%	95.88%	N.A.	5.60	5.91
Estimating time (complex works)	30 working days	N.A.	96.30%	94.74%	N.A.	20.72	16.16
Activation time for LV/MV supply	10 working days	N.A.	99.98%	99.88%	N.A.	3.58	3.60
Supply de-activation time	5 working days for LV	N.A.	99.96%	99.74%	N.A.	3.40	2.87
Reactivation time following suspension due to non-payment	2 working day	N.A.	99.51%	99.08%	N.A.	0.98	1.42
Observance of time bracket for appointments	2 hours	N.A.	99.89%	99.95%	N.A.	N.A.	N.A.
Time to report results of testing of LV/MV meter equipment	20 working days	N.A.	72.45%	94.55%	N.A.	25.75	15.31

Integrated water service

Figure 135 Extension of the integrated water service [G4 - EU3]

	2020	2021	2022
Municipalities served SII - Integrated Water Service (no.)	95	95	95
Municipalities served by aqueduct service (no.)	86	86	86
Customers served aqueduct (no.)	222,451	223,608	225,570
Inhabitants served aqueduct (no.)	667,736	665,152	664,709
Inhabitants served by sewers (no.)	655,430	652,845	652,468
Inhabitants served by purification (no.)	643,673	641,106	640,504

Figure 136 Quality of the call centre

	2020	2021	2022
Service accessibility (free lines with respect to operator presence time)	100%	100%	100%
Number of calls to the call centre	161,221	166,792	116,630
Average response speed (minutes seconds)	177	168	163
Percentage of successful calls	86.68%	88.87%	94.45%

Figure 137 Quality of the A2A Ciclo Idrico and ASVT service*

Data in days	A2A Ciclo Idrico			Azienda Servizi Valtrompia		
	2020	2021	2022	2020	2021	2022
Response time to requests for estimate for connection to the aqueduct	8.49	9.82	8.78	3.91	3.48	2.24
Response time to requests for estimate for connection to the sewers	10.55	9.92	6.86	2.35	1.13	1.63

* Time charged to the operator.

District heating and heat management

Figure 138 Transformations made by the heat management service*

	2020	2021	2022
no. transformations	6	14	17
Capacity installed (KW)	627	6,924	8,982

* These refer to replacement of methane with methane with a condensing boiler, of methane with district heating, of diesel with methane with a condensing boiler and of diesel with district heating.

Integrated waste cycle

Figure 139 Population served by the urban sanitation activity

	2020	2021	2022
Urban hygiene			
Municipalities served	223	269	266
Population served	3,507	3,838	3,817

Figure 140 Customer Satisfaction of the urban hygiene service carried out by AMSA (average rating)

	2020	2021	2022
Urban waste collection	8.30	8.11	8.09
Road and pavement cleaning and washing	7.15	7.42	6.70
Emptying of large road bins	7.33	7.33	7.03
Cleaning of market areas	8.16	7.49	7.99
Cleaning of green areas	7.12	7.47	6.83
Cleaning and collection during and after events	7.68	7.50	7.46
Cumbersome waste collection	8.89	8.67	8.71
Clarity and completeness of the communication on separate collection	7.97	8.07	7.91
Toll Free Number	8.17	8.42	7.94
Office	7.36	8.00	
Website	7.17	8.50	7.59
App Puliamo	7.83	8.75	8.02
Recycling	8.43	8.51	8.31
Snow service	7.32	7.22	7.17

Figure 141 Customer Satisfaction of the urban hygiene service carried out by Aprica (Municipalities)

	2020	2021	2022
CSI			
Contact channels		78.19	83.10
Service		75.99	77.70
Improvement*		73.00	75.60

* The Improvement CSI refers to the perception of quality of service provided in the last year/two years.
NOTE: Starting in 2021, in order to summarize in an operational manner the outcomes of the *Customer Satisfaction* surveys, it has become necessary to build an overall *CSI INDEX*, consisting of: Service CSI, Contact Channel CSI, and Improvement CSI. These indicators are in turn constructed as a weighted average of specific items investigated with the questionnaire and which are selected in agreement with A2A so that any improvement actions which will be diagnosed by the analysis are to all intents and purposes applicable.

Figure 142 Customer Satisfaction of the urban hygiene service provided by Gelsia Ambiente

	2020	2021	2022
CSI			
Service			76.60
Contact channels			79.60
Improvement*			73.70

* The Improvement CSI refers to the quality of service provided over the past 2 years.

Figure 143 Paid services (waste disposal and other specific services for individuals) [G4 - EU3]

	2020	2021	2022
Amsa	4,370	5,961	6,184
Aprica	1,229	1,438	1,503
La Bi.Co Due *			
Linea Gestioni	637	1,394	1,235
Gelsia ambiente		87	84
Total	**6,236**	**8,880**	**9,006**

* The company La.Bi.Co.Due has been integrated into Aprica as of 2020.

Figure 144 Waste disposal service [G4 - EU3]

	Amsa			Aprica		
	2020	2021	2022	2020	2021	2022
Waste disposal						
Municipalities served	1,007	1,285	1,447	1,007	1,285	1,447
Companies served	6,407	8,482	8,874	6,407	8,482	8,874
Special waste collected	133,678	324,007	389,475	133,678	324,007	389,475

Figure 145 Call centre services - AMSA and Aprica

	Amsa			Aprica		
	2020	2021	2022	2020	2021	2022
Number of calls to the call centre	398,470	368,197	323,266	75,262	136,054	131,085
Service accessibility (free lines with respect to operator presence time)	100%	100%	100%	100%	100%	100%
Average response speed (seconds)	39	29	22	64	116	113
Percentage of successful calls	98%	98%	99%	93%	92%	92%

Figure 146 Call centre services - Gelsia

	2020	2021	2022
Number of calls to the call centre		75,977	64,499
Service accessibility (free lines with respect to operator presence time)		100%	100%
Average response speed (seconds)		60	60
Percentage of successful calls		96%	94%

Conciliation management

Figure 147 ADR A2A-Consumer associations conciliation procedures

	2022									
	Electricity	%	Natural Gas	%	Dual Fuel	%	Tot ele/ gas/dual	%	Water	%
Disputes received for:										
Invoicing	5	36%	6	43%	2	100%	13	43%	10	83%
Market		0%		0%		0%	0	0%	2	17%
Contracts	7	50%	7	50%		0%	14	47%		0%
Late payment and suspension	2	14%		0%		0%	2	7%		0%
Metering		0%		0%		0%	0	0%		0%
Connections, works and technical quality		0%		0%		0%	0	0%		0%
Commercial Quality		0%	1	7%		0%	1	3%		0%
Damages		0%		0%		0%	0	0%		0%
Other (not included in protocol)		0%		0%		0%	0	0%		0%
Total	**14**	**100%**	**14**	**100%**	**2**	**100%**	**30**	**100%**	**12**	**100%**

	2021									
	Electricity	%	Natural Gas	%	Dual Fuel	%	Tot ele/ gas/dual	%	Water	%
Disputes received for:										
Invoicing	5	38%	20	74%	1	100%	26	63%	3	43%
Market		0%		0%		0%	0	0%	1	14%
Contracts	6	46%	5	19%		0%	11	27%	2	29%
Late payment and suspension	1	8%	1	4%		0%	2	5%	1	14%
Metering		0%	1	4%		0%	1	2%		0%
Connections, works and technical quality		0%		0%		0%	0	0%		0%
Commercial Quality		0%		0%		0%	0	0%		0%
Damages	1	8%		0%		0%	1	2%		0%
Other (not included in protocol)		0%		0%		0%	0	0%		0%
Total	**13**	**100%**	**27**	**100%**	**1**	**100%**	**41**	**100%**	**7**	**100%**

	2020									
	Electricity	%	Natural Gas	%	Dual Fuel	%	Tot ele/ gas/dual	%	Water	%
Disputes received for:										
Invoicing	5	56%	5	42%	1	50%	11	48%	4	50%
Market	1	11%		0%		0%	1	4%		0%
Contracts		0%	1	8%	1	50%	2	9%		0%
Late payment and suspension	1	11%	1	8%		0%	2	9%		0%
Metering	1	11%	4	33%		0%	5	22%	4	50%
Connections, works and technical quality		0%	1	8%		0%	1	4%		0%
Commercial Quality		0%		0%		0%	0	0%		0%
Damages	1	11%		0%		0%	1	4%		0%
Other (not included in protocol)		0%		0%		0%	0	0%		0%
Total	**9**	**100%**	**12**	**100%**	**2**	**100%**	**23**	**100%**	**8**	**100%**

Figure 148 Contributions to the Authorities*

	2020	2021	2022
Operating contribution			
Energy Authority	2,386,123	2,393,712	3,460,384
Ega	481,201	479,822	479,822
Agcom	52,409	65,106	54,995

* Contributions made referencing the previous year are shown.

Figure 149 Contributions to political parties and trade associations (thousands of euro)

	2020	2021	2022
Politicians and political parties*			
Trade associations	1,676	1,735	6,666
Other associations/organizations (promotion and dissemination of sustainability, research and sector/thematic studies)	284	442	405
Total	**1,960**	**2,177**	**7,071**

* The Group does not make any contributions directly or indirectly to any political party, movement, political and trade union organisation and committee, nor to their representatives or candidates, in Italy and abroad, apart from contributions due in accordance with specific regulations.

Figure 150 Details of higher expenses for trade associations (thousands of euro)

	2020	2021	2022
Expenses for Trade Associations			
Utilitalia	590	620	728
Confindustrie	531	492	544
Elettricità futura	135	134	143

Relations with suppliers

Figure 151 Number and value of orders by supply type [GRI 204-1]

	2020		2021		2022	
	Number of Orders	Order Value	Number of Orders	Order Value	Number of Orders	Order Value
Supplies	3,355	550,916,448	3,724	500,434,434	4,718	991,095,660
Works	2,066	536,333,761	1,987	732,303,731	2,239	539,502,632
Services	5,277	541,808,169	5,615	810,340,864	4,873	785,284,143
Other types			282	6,836,577		
A2A Group orders	**10,698**	**1,629,058,377**	**11,608**	**2,049,915,606**	**11,830**	**2,315,882,435**
Orders of former LGH Group companies	**2,060**	**101,910,000**	**1,488**	**98,558,390**		

Figure 152 Geographic breakdown of orders by business unit (%)

	2020					2021					2022				
	Lombardy	Other Italian Regions	EU	Non EU	Total	Lombardy	Other Italian Regions	EU	Non EU	Total	Lombardy	Other Italian Regions	EU	Non EU	Total
% Generation and Trading BU	0.00%	0.00%	0.00%	0.00%	0.00%	42.76%	56.69%	0.11%	0.44%	100.00%	84.62%	15.20%	0.08%	0.10%	100.00%
% Market BU	76.11%	23.09%	0.80%	0.00%	100.00%	55.71%	44.02%	0.22%	0.04%	100.00%	84.58%	14.60%	0.80%	0.01%	100.00%
% Waste BU	86.17%	7.93%	5.90%	0.00%	100.00%	58.84%	28.22%	10.75%	2.20%	100.00%	59.02%	37.50%	3.43%	0.04%	100.00%
% Corporate BU	66.26%	31.47%	1.68%	0.60%	100.00%	69.61%	29.05%	0.34%	1.01%	100.00%	70.73%	26.34%	0.35%	2.58%	100.00%
% Smart Infrastructures BU	100.00%	0.00%	0.00%	0.00%	100.00%	71.74%	26.91%	0.79%	0.57%	100.00%	64.99%	32.25%	2.39%	0.37%	100.00%

Figure 153 Geographic breakdown of orders [GRI 204-1] (% orders)

	2020	2021	2022
Lombardy	66.9%	61.3%	70.5%
Other Italian Regions	30.7%	34.0%	27.3%
EU	1.8%	3.6%	1.6%
Non EU	0.6%	1.1%	0.6%

Figure 154 Suppliers with at least one A2A Group certification (% orders)

	2020	2021	2022
Total suppliers with at least one certification	3,018	3,451	3,863
of which activated with order	1,113	1,239	1,523
Value of orders issued to suppliers in possession of at least one certification	1,302,915,153	1,714,194,865	1,905,899,745
Value of orders issued	1,569,591,482	1,998,076,148	2,315,882,433
% of orders issued to suppliers in possession of at least one certification	83.01%	85.79%	82.30%

Figure 155 Validated suppliers, by type

	2020	2021	2022
A2A Group qualified suppliers			
Large Business (Over 250 employees)	335	316	346
Medium Business (50-250 employees)	911	916	929
Small Business (10-50 employees)	1,796	1,650	1,743
Micro Business (1-10 employees)	1,542	1,501	1,964
Other	299	279	49
Total	**4,883**	**4,662**	**5,031**

Dispute management

Non-compliance with environmental regulations [GRI 307-1]

In the year 2022, 19 environmental proceedings were in progress, of which 2 were concluded, 1 was newly established and 16 were already in progress (9 relating to LGH group companies). These proceedings refer to: (i) allegations of violations of provisions contained in the respective Integrated Environmental Authorizations (AIA - Autorizzazioni Integrate Ambientali), (ii) certain alleged irregularities in waste management and (iii) alleged non-compliance with other legal and regulatory requirements.

With regard to proceedings that were concluded in 2022:

- On 11/25/2021, the landfill manager of Linea Ambiente (as at the date of the events, no longer an employee of the company) received from the Taranto Public Prosecutor's Office a notice of request for extension of the preliminary investigation against him for a criminal offence pursuant to Article 256 of Legislative Decree 152/2006 (violation relating to the temporary storage of waste).

  The facts relate to an inspection carried out by ARPA in November 2020 at the Grottaglie landfill. On that occasion, ARPA identified a violation concerning the temporary storage of materials, which ARPA qualified as waste, in an area where a third company, identified as the "offender", operates. The infringement notice was also served, as "jointly and severally liable", on the landfill manager of Linea Ambiente, although the latter was completely uninvolved in the facts concerning a third party and an area under its exclusive jurisdiction.

  However, since this criminal offence did not cause concrete and actual damage or danger to protected environmental, urban or landscape resources, as declared by ARPA itself, it is subject to the system provided for by Law 68/2015 through fulfilment of the provisions set forth by the assessing body and subsequent payment of a fine with extinction effects. This is what occurred, since the legal representative of the third company, i.e. the "offender", complied with the requirements imposed by ARPA and was permitted to pay the fine, which was done in accordance with the terms of the preliminary investigation, through its lawyer. The landfill manager at that time filed a defence statement in this regard. The Public Prosecutor sent the GIP (preliminary investigation judge) a request for archiving, which was ordered on 20 December 2022.

- The proceedings stem from an inspection by ARPA, which informed the Prosecutor of the violation of certain authorisation requirements (AIA) relating to Linea Ambiente's Grottaglie landfill, involving the technical director at that time. The Prosecutor asked for an extension of the preliminary investigation period twice.
  On 10/28/2020, the defendant was notified of the summons for the hearing on 02/02/2021, which was then postponed to 05/25/2021 and, finally, to 12/21/2021. At that hearing, the Municipality of Grottaglie requested to be admitted as civil claimant. The defence, on the other hand, requested the exclusion of the civil claimant and raised a plea of nullity of the summons. The Judge reserved the relative decision and adjourned the hearing to 01/11/2022 for the dissolution of the reservation, then to 03/22/2022. At this last hearing, the defendant formally filed a petition for oblation on which the Court reserved its decision, further postponing it to the hearing of October 4, 2022. At that hearing, the Court issued an order of admission of oblation and set the hearing for 10/25/2022 where, having taken note of the payment made, issued an order of acquittal.

Customers [GRI 206-1]

The year 2022 ended with 139 open court proceedings related to: (i) billing disputes on electricity, gas and/or supplies, including the charging of items such as the CMOR (default charge); (ii) incorrect measurement of consumption due to malfunctioning of the meters; (iii) incorrect configuration of the available power of the electricity supply; (iv) undue contractual termination and, more generally (v) failure and/or incorrect measurement of consumption of electricity, gas and/or integrated water services; of the aforementioned total of 139, some 110 judicial proceedings specifically concern the issue of repetition of excise duties on electricity of 2010/2011.

For the AEB perimeter, the year 2022 ended with 2 legal proceedings pending, relating to disputes of (former) customers concerning the operation of micro-cogeneration plants installed at their premises and, with reference to the issue of repayment of excise duties on electricity in 2010/2011, 3 positions still pending and 2 closed.

Finally, a dispute continued in 2022 with a customer of AMSA, A2A Ambiente and Aprica, claiming contractual termination for excessive costs incurred.

Community [G4 - EU25]

At the end of 2022, there were 81 cases in which citizens requested compensation, for the most part of fairly small value, for financial damages or damages to property or things, while there were 42 cases seeking compensation for physical damages in respect of personal injuries; these include two fatal accidents involving a Group company (the first regarding an operative vehicle cleaning a cycling path and the second regarding the placement of waste collection containers on the roadside, considered to be an additional cause of a road accident).

Lastly, 6 cases of alleged infringements of property rights, 1 case of alleged damage to neighbouring crops from previous years and 1 case for damages due to depreciation of property are pending.

Employees

There were a total of 43 labour disputes pending or concluded in 2022 brought by employees of A2A Group companies (excluding AMSA and including both the former LGH Group and the AEB Group). In particular, 12 applicants requested assessment of the illegitimacy of dismissals for justified objective reasons, 3 applicants requested assessment of the illegitimacy of dismissals for just cause or for justified subjective reasons, and 1 applicant challenged the dismissal for exceeding the maximum days absent. In addition, 8 claimants requested payment of salary differences other than requests for a higher category level, 1 claimant requested an assessment of the illegitimacy of the sale of the business unit, with consequent reinstatement in the transferor company, while 8 claimants requested an assessment of their right to a higher category and payment of the relative remuneration differences. In addition, in 2022, 2 cases were pending concerning the determination of the entitlement to compensation for damages arising from occupational illness or accident.

There was also 1 claimant who made complaints with regard to the application of the Covid-19 emergency regulations.

The remaining cases concerned various requests (e.g., appeals against conservative disciplinary measures, ascertainment of the unlawfulness of the secondment measure, claims related to the non-extension/renewal of a fixed-term contract).

With regard to AMSA, there were a total of 66 labour disputes in progress or concluded in 2022, of which 5 concerned the assessment of the illegitimacy of dismissals for just cause or justified subjective reason and 4 concerned the assessment of the illegitimacy of dismissals for exceeding the maximum days absent. In addition, 7 of the plaintiffs challenged the fixed-term contracts, 4 fixed-term workers requested an investigation into the employer's breach of the right of precedence in the subsequent recruitment for permanent positions, 6 of the applicants - 2 of whom also requested transformation of the employment relationship from part-time to full-time - requested ascertainment of the right to recognition of a higher classification and the order to pay the relative salary differences, 10 petitioned the ascertainment of fictitious interposition of labour and the right to the establishment of a subordinate employment relationship, while 7 claimed illegitimacy of the transfer of a business branch. In 2022, 2 cases were pending concerning the determination of the entitlement to compensation for damages arising from occupational illness or accident.
There was also 1 claimant who made complaints with regard to the application of the Covid-19 emergency regulations.
The remaining cases concerned various requests (such as requests for payment of salary differences other than requests for a higher level of classification and requests for compensation for damages of other nature).

Suppliers

There were 8 labour disputes in progress or concluded in 2022, initiated by workers of contracting firms that worked on contracts awarded by A2A Group companies (excluding AMSA and including the former LGH Group and AEB Group). There were 3 proceedings for compensation for damages resulting from occupational diseases or injuries allegedly contracted during the contract work while 1 claimant took legal action to obtain compensation for various damages.
In addition, 1 claimant sought ascertainment of the entitlement to the establishment of an employment relationship with the client company, and 3 plaintiffs took legal action to have the contracting company and the client - the latter being jointly and severally liable pursuant to Article 29 of Legislative Decree 276/2003 and Art. 1676 of the Italian Civil Code - ordered to pay the wage differences claimed by them.
As far as AMSA is concerned, during 2022, 3 workers took legal action so that the contracting company and AMSA - the latter jointly and severally liable pursuant to Art. 29 Legislative Decree 276/2003 and Art. 1676 of the Italian Civil Code in as customer - were sentenced to the payment of the salary differences claimed by the same.

The ACinque Group

Group Profile

As of October 1, 2022, the Group changed its name from Acsm Agam to Acinque.

The activities of the Acinque Group are organised into four *Business Units*:

- **Sales**: manages the sale of gas and electricity and related value-added services mainly in the provinces of Lecco, Varese, Sondrio, Como, Monza and Veneto.
- **Energy and Smart Technologies**: deals with energy efficiency, electricity generation from hydroelectric, photovoltaic and cogeneration plants, heat management, new innovative services and smart cities (e.g. installation of electricity columns, radio frequency networks), microgeneration, public lighting and district heating, through the subsidiaries Acinque Innovazione S.r.l, Comocalor S.p.A. and Acinque Tecnologie S.p.A. and Acinque Energy Greenway S.r.l., set up to operate in the district heating sector in the municipality of Lecco.
- **Waste**: manages urban hygiene and waste-to-energy activities through its subsidiary Acinque Ambiente S.r.l. The environmental hygiene service is carried out mainly in the provinces of Varese and Como.
- **Networks**: manages gas, electricity and water distribution services, through its subsidiaries Lereti S.p.A., Reti Valtellina Valchiavenna S.r.l.
  - Lereti S.p.A. handles natural gas distribution activities in the provinces of Como, Lecco, Monza and Brianza, Varese and Treviso, as well as water service management activities in the provinces of Como and Varese.
  - Reti Valtellina Valchiavenna s.r.l's main activity is the distribution of natural gas and electricity.

Acinque Farmacie S.r.l., which operates three pharmacies in the city of Sondrio, should also be added to the above companies.

Governance

Acinque S.p.A. is listed on the stock market of Borsa Italiana Euronext Milan (EXM) and is organised based on the "traditional" administration and control model.
In accordance with the Bylaws and with the principles and recommendations of the Corporate Governance Code to which the Company has adhered, the Control and Risk and Related Parties Committee, the Remuneration Committee and the Strategic Committee have been established within the Board of Directors to make proposals and provide advice to the Administrative Body.

Acinque's governance system is based on the principles of proper administration and transparency of management decisions in business activities, also ensured through the identification of information flows between corporate bodies and corporate functions, as well as through an efficient definition of the internal control and risk management system.

The internal organisational structure includes figures and bodies responsible for monitoring compliance aspects, such as the Financial Reporting Manager pursuant to Law 262/05, the Internal Auditing department and the Supervisory and Control Body pursuant to Legislative Decree 231/01. The Legal Department in charge of Corporate Affairs constantly monitors compliance with the antitrust regulations, sector regulations, national and EU rules applicable to listed issuers and the supervisory authorities to which the Group is subject.
The Legal Affairs and Compliance department is responsible, among other things, for managing any administrative, criminal and civil litigation, ensuring the protection of the Group's interests.

All Group companies have adopted their own Organisation, Management and Control Models in accordance with Legislative Decree 231/2001 (OMM[1] and the Code of Ethics[2] as a document defining the set of company ethics and values that the Group recognises, accepts and shares. Consistent with its Code of Ethics, the Group has adopted an Anti-Corruption Policy[3]. There were no cases of corruption in 2022.
The Group also adopts the "Whistleblowing" Model.

[1] The Organisation, Management and Control Model is available at the following link: *https://gruppoacinque.it/governance/etica-d-impresa*
[2] The Group Code of Ethics is available at the following link: *https://gruppoacinque.it/governance/etica-d-impresa*
[3] The Group's Anti-Corruption Policy is available at the following link: *https://gruppoacinque.it/governance/etica-d-impresa*

Economic value generated and distributed

Figure 156 Statement for distributing the gross global added value and Economic value generated and distributed (millions of euro)

	2021	2022
Remuneration of personnel	55.45	49.80
Remuneration of risk capital	16.87	19.84
Remuneration of borrowed capital	0.87	1.09
Transfers to the Government	17.58	12.53
Transfers to the local community	5.62	4.86
Remuneration of the company	315.43	338.38
Gross global value added	411.83	426.50
Economic value generated	485	720.87
Economic value distributed	416	635.93

Figure 157 Investments - Percentage of total (%)

	2021	2022
Group infrastructure investments (M€)	79.9	69.4
BU Reti	48%	43%
BU Energia	27%	31%
Waste BU	11%	5%
Sales BU	1%	2%
Corporate	13%	19%

Efficient infrastructure management

Figure 158 Installed capacity

	2021	2022
Electricity (MW_e)	31	30
Thermal (MW_t)	251	267

Figure 159 Energy production

	2021	2022
Electrical (GWh_e)	81	83
Thermal (GWh_t)	318	293

Figure 160 Natural gas distribution

	2021	2022
Natural gas distributed (Mm^3)	623	453
Gas network extension (km)	3,286	2,467

Figure 161 Electricity Distribution

	2021	2022
Electricity distributed (GWh)	156	151
Electricity losses in the grid (GWh)	4	3.5
Extension of the electricity distribution service	575	579
of which underground cable	419	423

Figure 162 Heating energy released to the network

	2021	2022
Heating energy distributed (GWht)	220	199
Thermal energy losses (GWht)	34	30

Figure 163 Integrated water service

	2021	2022
Wells (no.)	96	99
Sources (no.)	169	169
Drinking water conversion plants (no.)	20	20
Total network length (km)	1,703	1,702
Water delivered to the user and accounted for (Mm^3)	28	28
Water withdrawn (Mm^3)	42	41
Network leaks and unmetered water (Mm^3)	14	14

Figure 164 Municipal waste collected

	2021		2022	
	Quantity collected (t)	% separate collection	Quantity collected (t)	% separate collection
Varese[4]	41,015	70%	10,667	61%
Province of Varese	41,904	82%	30,003	78%
Other municipalities in the province of Varese	7,435	-	-	-
Province of Como	6,041	77%	13,483	75%
Other municipalities in the province of Como	21,613	-	31,496	35%
Total[5]	**118,007**	**58%**	**85,648**	**60%**

[4] As far as the city of Varese is concerned, the 2022 waste collection service was limited to the first 3 months of the year and only for the operation of the via Ecologia centre. The quantities of waste collected separately door-to-door are not included, unless they pass through the centre. The figure is not comparable to that reported in previous years.
[4] Also in the case of the other Municipalities, the perimeter managed and the type of collection cannot be compared to previous years due to the different perimeter managed.

Environmental responsibility

Figure 165 withdrawal (thousands of m^3)

Source of withdrawal	2021	2022
Surface water (total)	**20,966**	**18,937**
Fresh water (≤ 1000 mg/L total dissolved solids)	20,966	18,937
- of which in water stressed areas	-	-
Groundwater (total)	**19,911**	**21,522**
Fresh water (≤ 1000 mg/L total dissolved solids)	19,911	21,522
- of which in water stressed areas	-	-
Third-party water (total)	**1,115**	**926**
Fresh water (≤ 1000 mg/L total dissolved solids)	1,115	926
- of which in water stressed areas	-	-
Total volume of water withdrawn	**41,993**	**41,385**

Figure 166 Water Discharge (thousands of m^3)

Destination of discharges	2021	2022
Surface water (total)	**624**	**541**
Fresh water (≤ 1000 mg/L total dissolved solids)	624	541
- of which in water stressed areas	-	-
Groundwater (total)	**-**	**-**
Fresh water (≤ 1000 mg/L total dissolved solids)	-	-
- of which in water stressed areas	-	-
Third-party water (total)	**273**	**177**
Fresh water (≤ 1000 mg/L total dissolved solids)	273	177
- of which in water stressed areas	-	-
Total volume of water discharged	**897**	**718**

Figure 167 Resources used

	2021	2022
Non-renewable fuels (GJ)	2,135,595	2,057,819
Electricity (GJ)	151,271	158,150
Chemical products and materials used (t)	2,509	2,630

Figure 168 Emission of greenhouse gases (t)

	2021	2022
Direct emissions (Scope 1)	171,423	168,306
Indirect Emissions (Scope 2) - Location based	11,666	11,387
Indirect emissions (Scope 2) - Market based	19,188	19,584

Figure 169 Pollutant emissions

	2021	2022
Nitrogen oxides (NOx) (t)	82.01	68.35
Sulphur oxides (SOx) (t)	1.00	1.20
Powders (t)	0.40	0.50
Fluorinated gases (kg)	41.65	31.79
Polycyclic aromatic hydrocarbons (kg)	0.14	0.00
Mercury (t)	9.90	9.40
Other metals (Sb+As+Pb+Cr+Cu+Mn+Ni+V+Sn+Cd+Tl) (kg)	62.00	7.80
Dioxins (grams - toxic equivalency)	0.0037	0.00
Dioxin-like PCBs (polychlorinated biphenyls) (grams - toxic equivalency)	0.0047	0.00020
CO (t)	29.02	25.20
NH3 (t)	0.78	0.69

Figure 170 Total waste generated

Total weight of waste (t)	2021	2022
Special non-hazardous	19,487	19,282
Special hazardous	2,581	2,575
Total special	22,068	21,857
- of which for recovery	19,861	20,141
Sent for recovery (% of total)	90%	92%

Responsible management of people

Figure 171 Breakdown of employees and collaborators by gender

No. people	2021ACT			2022ACT		
	Men	Women	Total	Men	Women	Total
Employees						
Permanent	657	232	889	561	234	795
Temporary Contract	1	7	8	2	0	2
Total	658	239	897	563	234	797
of which with part-time contract	3	44	47	3	39	42
Collaborators	n.a.	n.a.	42	n.a.	n.a.	35

Figure 172 Number of hires, outgoing and turnover rate

New hires, outgoing, Turnover	2021	2022
Hires	82	75
Outgoing	63	149
*Turnover**	7%	19%

* The *Turnover* Rate was calculated according to the following formula: (departures) / (employees) at December 31.

Figure 173 Percentage of workers represented in formal health and safety committees

	2021	2022
%	100%	

Figure 174 Occupational accidents

	2021	2022
Decease	0	0
Accidents at work	18	28
of which with severe consequences	0	8
of which, number of deaths as a result of workplace accidents	0	0
Rate of recordable occupational accidents	12.31	21.54
Rate of severe accidents at work	0	6.15

Figure 175 Breakdown of employees by professional category, gender and age group

	2021					2022				
	Managers	Middle Managers	White-collar workers	Blue-collar workers	Total	Managers	Middle Managers	White-collar workers	Blue-collar workers	Total
Men	17	40	226	375	658	16	39	217	291	563
Women	1	18	219	1	239	2	19	212	1	234
<30	0	0	34	29	63	0	0	29	21	50
30-50	9	31	269	170	479	9	29	267	133	438
>50	9	27	142	177	355	9	29	133	138	309
Total	**18**	**58**	**445**	**376**	**897**	**18**	**58**	**429**	**292**	**797**

Figure 176 Company population is covered by collective bargaining

	2021	2022
%	100%	100%

Figure 177 Training hours provided by gender

	2021		2022	
	Number of hours	Average annual hours of training per employee	Number of hours	Average annual hours of training per employee
Men	15,687	24	20,523	36
Women	7,308	31	8,583	37

The average number of hours per capita was calculated on the total number of employees in the Group's workforce.

Figure 178 Hours of training broken down by professional category

	2021		2022	
	Number of hours	Average annual hours of training per employee	Number of hours	Average annual hours of training per employee
Executives	1,023	57	1,135	63
Middle Managers	3,887	67	3,828	66
White-collar workers	13,235	30	17,440	41
Blue-collar workers	4,851	13	6,703	23

Relations with shareholders

Figure 179 Customer relations

Number of PDRs (redelivery points) and municipalities served by the gas distribution service	2021	2022
PDR	312,447	258,139
Municipalities served	88	73
Number of users and municipalities served by the electricity distribution service	**2021**	**2022**
PDR	25,934	26,082
Municipalities served	4	4
Number of users and municipalities served by the municipal sanitation service	**2021**	**2022**
Users	201,819	147,534
Municipalities served	52	56
Municipalities and customers served by the water service	**2021**	**2022**
Municipalities served by aqueduct service	37	37
Customers served aqueduct	85,515	85,905
Inhabitants served by aqueduct	310,283	308,322
Users connected to the district heating service	**2021**	**2022**
Users	637	640
Contracts by type of gas sales service provision	**2021**	**2022**
Protected market	110,125	79,867
Free market	128,015	137,674
Total	238,140	217,541
Volumes sold (Mm^3)	436	349
Contracts by type of electricity sales service provision	**2021**	**2022**
Protected market	13,423	9,331
Free market	74,877	91,209
Total	88,300	100,540
Volumes sold (GWh)	381	444

Supply Chain

The purpose of the Acinque Group's qualification system is to define a list of operators with the suitability and capacity to be entrusted with works, supplies and services. The Group uses a Register of Suppliers with a specific regulation aimed at ensuring uniform, systematic and timely application of the selection criteria for registered operators, in accordance with the Group's provisions on the procurement of works, supplies and services and in compliance with the principles of non-discrimination, equal treatment, proportionality, transparency, competition and rotation.
Supplier performance, in addition to ensuring the necessary quality standards, must go hand in hand with a commitment to adopt best practices in terms of human rights and working conditions, occupational health and safety, and environmental responsibility. Therefore, the Group has developed specific clauses so that the goods and services it offers are produced in accordance with minimum social standards regarding human rights and working conditions along the supply chain.

Introduced in 2021, the Group maintained its "*Green Procurement*" policy in 2022, i.e. the system of purchasing environmentally friendly products and services with a reduced impact on human health and the environment compared to other products and services used for the same purpose.

At the end of 2022, 1600 orders were issued by Group companies for supplies, services or works, making for a total value of about 225 million euro. Of these orders, almost all were from Italian suppliers, of which about 86% are based in Lombardy, thus confirming the Group's commitment to the development of the main regions in which it operates. In addition, 825 suppliers were activated with at least one order as at December 31, 2022, all in the Group's register of suppliers.

Figure 180 Number of Group orders by type

	2021		2022	
Orders	**No.**	**€**	**No.**	**€**
Supplies	760	43,220,601	593	55,874,100
Works	102	25,635,944	97	19,452,872
Services	835	102,709,413	910	149,277,646
Sponsorships	103	572,070	125	653,991
Other	-	-	-	-
Total	1,800	172,138,028	1,725	225,258,609

Disputes

Group companies were not involved in disputes concerning non-compliance with social and economic laws and regulations, nor were they involved in disputes concerning anti-competitive behaviour, antitrust and monopolistic practices.
In addition, there were no disputes concerning non-compliance related to the health and safety impacts of products and services, nor any disputes concerning incidents of privacy breaches or loss of customer data.

The AEB Group

The AEB Group's performance for the years 2021 and 2022 was fully integrated into the scope of A2A's Non-Financial Declaration. For completeness and comparability, the following is an excerpt from 2020.

Group Profile

The AEB Group represents an industrial company rooted in the social and economic fabric of Brianza and has been operating since 1910 in the public utility services sector. The Group consists of AEB SpA (the parent company) and the four companies involved in the main businesses:

- **Gelsia** deals with the sale of methane gas and electricity, the construction of cogeneration plants, district heating networks, building heat management and photovoltaic systems;
- **Retipiù**, company that distributes methane gas and electricity, and is active in the public lighting sector and smart cities services;
- **Gelsia Ambiente** is the Group company that manages environmental hygiene services.

On November 1, 2020, AEB A2A entered the share capital of AEB with a 34% share against a contribution in terms of gas distribution assets and the entire shareholding in the company **A2A Illuminazione Pubblica**, which serves more than 2.2 million inhabitants on the national territory.

Governance

The Group has a Code of Ethics that aims to ensure that the activities of each Group company are based on the principles of fairness, transparency, diligence, honesty, loyalty, sustainability, efficiency and legality and presupposes compliance with the applicable legal and administrative provisions in force and observance of company regulations and procedures. The purpose of the Code is therefore to provide general ethical-behavioural guidelines to be complied with in the performance of activities and to help prevent the commission of offences connected with the crimes referred to in Legislative Decree no. 231/01 (hereinafter also referred to as the "Decree"). In 2020, there were no cases of corruption and no cases of corruption are pending. Moreover, the company policy does not provide for the payment of contributions of any kind to parties or politicians.

Economic value generated and distributed - investments

Figure 181 Investments - Percentage of total (%)

	2020
Group infrastructure investments (M€)	32.2
Corporate	4.3%
Market BU	24.5%
Waste BU	14.6%
BU Reti	56.6%
Total	100%

Efficient infrastructure management

Figure 182 Installed capacity

	2020
Electricity (MW_e)	10
Thermal (MW_t)	150

Figure 183 Energy production

	2020
Electrical (GWh_e)	14
Thermal (GWh_t)	64

Figure 184 Natural gas distribution

	2020
Natural gas distributed (Mm^3)	346
Gas network extension (km)	2,849

Figure 185 Electricity Distribution

	2020
Electricity distributed (GWh)	131
Electricity losses in the grid (GWh)	5
Extension of the electricity distribution service	252

Figure 186 Heating energy released to the network

	2020
Heating energy distributed (GWh_t)	68
Thermal energy losses (GWh_t)	16

Figure 187 Municipal waste collected

Gelsia Ambiente	2020	
	Quantity collected (t)	% separate collection
Province of Monza and Brianza	184,111	80.6%

Environmental responsibility

Figure 188 Resources used

	2020
Non-renewable fuels (TJ)	340
Electricity (GWh)	5
Chemical products and materials used (t)	50
Automotive fuels (TJ)	52

Figure 189 Emission of greenhouse gases (t)

	2020
Direct emissions (Scope 1)	20,412
Indirect Emissions (Scope 2) - Location based	1,310
Indirect emissions (Scope 2) - Market based	2,145

Figure 190 Special waste produced (t)

Total weight of waste (t)	2020
Non-hazardous waste	164
Hazardous waste	41
Total	205

Responsible management of people

Figure 191 Breakdown of employees and collaborators by gender

	2020		
No. people	Men	Women	Total
Employees			
Permanent	497	126	614
Temporary Contract	8	1	9
Total	**505**	**127**	**623**
of which with part-time contract	3	30	33
Workers with non-standard contracts (temporary, interns, collaborators)	48	13	61

Figure 192 Number of hires, outgoing and turnover rate

New hires, Outgoing, Turnover	2020
Hires	30
Outgoing	72
*Turnover**	11%

* The turnover rate was calculated according to the following formula: (departures) / (employees) at December 31.

Figure 193 Occupational accidents

	2020			
No. people	AEB	Gelsia	Gelsia Ambiente	Reti Più
Decease	0	0	0	0
Accidents at work	1	0	24	1
Men	0	0	24	1
Women	1	0	0	0
of which with severe consequences	0	0	0	0
Frequency Index FI	8.1	0	5.38	5.38
Severity Index SI	0.28	0	0.04	0.04
Incidence Index II	0	0	2.52	7.58
Commuting accidents	0	0	1	1

Figure 194 Breakdown of employees by professional category and gender

	2020				
	Managers	Middle Managers	White-collar workers	Blue-collar workers	Total
Men	6	26	99	366	497
Women	1	7	112	6	126
Total	**7**	**33**	**211**	**372**	**623**

Figure 195 Company population is covered by collective bargaining

	2020
%	100%

Figure 196 Training hours provided by gender

	2020			
	Number of employees trained	Participations	Number of hours	Average annual hours of training per employee[6]
Men	434	903	5,089	10.08
Women	83	194	1,041	8.20

Figure 197 Hours of training broken down by professional category

	2020			
	Number of employees trained	Participations	Number of hours	Average annual hours of training per employee[6]
Executives	6	23	229.5	32.8
Middle Managers	33	84	323.5	9.8
White-collar workers	121	288	1,588	7.5
Blue-collar workers	357	702	3,989	10.5

[6] The average number of hours per capita was calculated on the total number of employees in the Group's workforce.

Relations with shareholders

Figure 198 Customer relations

Number of PDRs (redelivery points) and municipalities served by the gas distribution service	2020
PDR	285,995
Municipalities served	97
Number of users and municipalities served by the electricity distribution service	**2020**
POD	26,048
Municipalities served	1
Number of users and municipalities served by the municipal sanitation service	**2020**
Users	414,229
Municipalities served	26
Users connected to the district heating service	**2020**
Users	530
Public lighting (net of A2A Public Lighting points)	**2020**
Light points	7,059
Contracts by type of gas sales service provision	**2020**
Protected market	73,910
Free market	63,805
Total	**137,715**
Volumes sold (Mm^3)	260
Contracts by type of electricity sales service provision	**2020**
Protected market	8,409
Free market	55,509
Total	**63,918**
Volumes sold (GWh)	488

Supply Chain

The Group adopts a register of suppliers (divided into product categories) whose qualification criteria do not constitute barriers to entry. There are no evaluations of suppliers, who intend to qualify, on environmental or social issues. The geographical origin of the orders could not be identified. In addition, 786 suppliers were activated with at least one order as at December 31, 2020, all in the Group's register of suppliers.

Figure 199 Number of Group orders by type

	2020	
Orders	**No.**	**€**
Supplies	597	14,865,823
Works	137	5,267,474
Services	1,335	29,864,027
Total	**2,069**	**49,997,324**

Disputes

At the end of 2020, Gelsia Ambiente S.r.l., in relation to the management of an ecological platform owned by the municipality, received a warning from ATO MB for discharging first rain water into the public sewerage system in violation of the requirements contained in the single authorization. Gelsia Ambiente requested a hearing from the ATO. The Authority granted the hearing, which was held on 12/21/2020. Developments are awaited. The company had already scheduled the necessary work but was awaiting permission from the owner. In February 2017, Gelsia S.r.l. filed an appeal with the Lazio Regional Administrative Court against a penalty imposed on it by the AGCM for alleged unfair commercial practice. The lawsuit is still pending, pending the scheduling of a hearing for arguments. In the meantime, the company paid the penalty subject to repetition. At December 31, 2020, there were six disputes with employees, including five at Gelsia Ambiente (four judicial and one out-of-court) and one at RetiPiù S.r.l. (out-of-court).

A2A S.p.A.

Registered office:
Via Lamarmora, 230 - 25124 Brescia
T [+39] 030 35531 F [+39] 030 3553204

Managerial and administrative headquarters:
Corso Porta Vittoria, 4 - 20122 Milan
T [+39] 02 77201 F [+39] 02 77203920

Created by:
Communication, Sustainability and Regional Affairs
T [+39] 02 77201 - sostenibilita@a2a.eu - gruppoa2a.it

We would like to thank all our colleagues of A2A who worked on the preparation of this Report.

Cover and separators:
SERVICEPLAN

Graphic design and layout:
MERCURIO GP

Printing:
AGEMA S.p.A.

Milan, March 2023


a2a
LIFE COMPANY