



2021 Supplement to the Integrated Report

Consolidated Non-Financial Disclosure pursuant to Legislative Decree no. 254/2016



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ACTION	KPIs	
	Municipal waste differentiated collection rate (%)	
WASTE RECOVERY AND TREATMENT	% differentiated collection Milan	
Improve the recovery process of waste collected (including through their transformation into	% municipal waste collected in landfill	
energy) and promote separate waste collection	Per capita undifferentiated waste reduction (t/inhabitant)¹	
	Waste sent for material recovery (Mt)	
	Thermal storage capacity for TLR (cubic metres)	
DISTRICT HEATING	Energy from thermal waste / renewables for the TLR (TWht)	
Help reduce the environmental impact of the cities, paying close attention to air quality,	Share of heat from renewables and waste recovery (% of total)	
implementing district heating and district cooling	CO ₂ emissions avoided thanks to TLR (t/a)	
	NOx emissions avoided thanks to TLR (t) - cumulative	
	Reduction in water consumption from aqueducts in electrical distribution - Unareti perimeter - % reduction compared to 2020 consumption	
	Linear water losses (m³/km/days) - average	
WATER	Total population served by treatment (millions)	
implement actions to reduce water consumption in capture and distribution processes, reduce water dispersion and improve the quality of	Cumulative reduction in consumption of electricity from aqueduct wells (base year 2021) by A2A Ciclo Idrico (kWh/m³)	
water returned to the environment	Number of intelligent sensors installed for water service - cumulative figure	
	Percentage of new generation water service meters installed	
	Percentage of districtualization of the A2A Ciclo Idrico aqueduct network	
POLICIES TO REDUCE WASTE PRODUCTION	Territories where waste prevention and reduction actions are active (% of total population served) always >85%	
Reduce the production of waste through a prevention, reduction and reuse policy	Number of partnerships launched for circular economy initiatives	
	LEED certification new building A2A	
REAL ESTATE Ensure maximum energy efficiency through BAT also for the <i>assets</i> of the Group	Develop energy efficiency projects in buildings of the Group	
	Emissions (Scope1+2) from building of Group (t)	

 $^{^{\}rm 1}$ Updated to include ACSM-AGAM and AEB.

OVER	VIEW		PLAN 21 - 30	
2020	2021	2023	2026	2030
71%	71%	72%	75%	77%
62%	62%	66%	70%	76%
0.3%	0%	0%	0%	0%
154.4	132.4	131.6	118.1	99.0
1.0	0.9	1.3	1.7	2.2
7,620	18,220	26,220	33,220	33,220
1.4	1.5	1.7	2.4	2.9
50%	50%	53%	68%	73%
-225,218	-323,029	-332,263	-476,725	-595,359
-241	-275	-800	-1,721	-3,234
-	-22%	-29%	-37%	-59%
24.4	23.1	21.8	19.9	18.7
0.6	0.6	0.7	1.0	1.8
-	NEW	-4.4%	-8.2%	-12.1%
87	841	953	1,123	1,423
22%	29%	60%	83%	96%
NEW	22%	29%	42%	65%
89%	85%	89%	91%	92%
7	10	18	26	31
-	-	-	Achievement (2025)	
-	-	Headquarters Porta Vittoria (2022)	Torre Faro	
NEW	4,887	5,212	4,722	3,741

Stakeholder engagement and materiality analysis

Financial capital

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The Acsm Agam Group



ACTION	KPIs	
	Total installed RES capacity (GW) Generation and Trading BU	
RENEWABLES Increase the proportion of energy produced	Percentage of renewable energy on total - Generation and Trading BU	
from renewable sources	Total installed RES capacity (GW) Market BU	
	Total net production (GWh) solar Market BU	
EMISSIONS	Scope 1 emission factor (gCO $_{\rm 2eq}/kWh)$ - perimeter in line with target approved by $SBTi^2$	
Develop actions aiming to reduce the environmental footprint, like direct and indirect	Emissions Scope 2 (ktCO _{2eq})	
emissions of greenhouse gases	Total methane emissions avoided from distribution networks - cumulative values with respect to 2015 (tCO_{2eq}) - Unareti perimeter	
	Charging service contracts E-moving (number)	
	Cumulative avoided emissions - E-moving (t)	
SUSTAINABLE MOBILITY Develop sustainable internal and external	Number of electric charging points - cumulative	
mobility solutions	Percentage of Group electric vehicles (out of total cars and light commercial vehicles)	
	Number of low environmental impact collection and street sweeping vehicles (Euro 6 vehicles, methane gas, electric)	
	Green energy sold to the market (TWh)	
	CO ₂ gas free sold (Mm³)	
GREEN ENERGY – END-USE ENERGY EFFICIENCY Contribute to the reduction of emissions of end	Loyal customers with energy efficiency services (Customers with a service/product in addition to the commodity)	
customers through the sale of green energy and the development of energy efficiency	Cumulative avoided emissions - VAS products (HVAC, PV systems) (t)	
measures for public and private real estate assets	Cumulative avoided emissions - Energy efficiency b2b - ESCo (t)	
	Cumulative avoided emissions - SEA products for condominiums and commercial buildings (t)	
	Percentage of users with 2G electricity smart meter (Unareti)	
SMART GRIDS Develop solutions to offer a better information	User interruptions in LV - SAIFI (#/year/POD)	
access infrastructure (Smart Grid) and improve the network resilience and to contribute to the growing electrification of consumption	Installed capacity of the electricity grid (MVA)	
8. 5 8 seed median of consumption	Investments in Smart Grids (mln €) - cumulative value	

 $^{^{\}rm 2}$ KPI included in the A2A Sustainable Finance Framework.

OVER	VIEW		PLAN 21 - 30	
2020	2021	2023	2026	2030
2.1	2.2	2.8	3.7	5.9
33%	30%	37%	38%	63%
0.01	0.01	0.03	0.09	0.17
10	15	50	136	269
310	332	292	283	216
29	21	8	0	0
-49,231	-58,611	-83,899	-138,156	-240,964
-	-	13,404	57,732	169,632
-	-	-18,945	-128,614	-581,976
-	472	2,035	10,079	23,995
NEW	8%	33%	42%	58%
49%	53%	64%	78%	91%
3.9	5.0	7.2	11.2	17.4
-	21	98	226	311
1.1%	1.9%	4.5%	11.0%	20.3%
-	-575	-11,329	-92,833	-440,130
-	-78,617	-147,087	-311,461	-555,274
-	-1,117	-8,064	-23,373	-52,168
10%	24%	73%	99%	100%
-	1.61	1.36	1.04	0.97
4,208	4,686	5,171	5,876	6,493
-	38	145	290	486

Stakeholder engagement and materiality analysis

Financial capital

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ACTION	KPIs	
	Digitalization of Customer Care: digital contacts of total	
	Interventions on Group websites aimed at increasing and improving contact touchpoints - number/year	
QUALITY Maintain high quality standards of the services supplied by keeping high Customer Satisfaction	CSI Call Center A2A Energia	
levels	Customer Satisfaction Aprica	
	Customer Satisfaction AMSA	
	Number of active supplies bollett@mail (energy sales) - thousands	
	Achievement certification Cybersecurity ISO27001 (ICT)	
CYBER & O.T. SECURITY Adoption of defence mechanisms and protection	Percentage of impacts to people, services and assets as a result of critical cyber incidents and events	
against logical, viral attacks	Events of cyber security knowledge sharing	
	Obtaining Business Continuity ISO22301certification	
	Inclusion of ESG logics in reputational analysis / Due diligence	
SMART CITY Support the development of the Smart City in the territory in which the Group operates,	Gas cabins, isolation boxes, 2^{nd} ele cabinets and IP poles enabling 5G, FWA and smartsensors	
including through new business models that exploit the technological component (Smart Grids and big data)	Data analytics projects for municipalities and utilities in the field of safety, mobility and air quality	
INNOVATION AND R&D	Number of innovation projects (or investments) related to the SDGs	
Develop investments in research and development, increasing the number of partnerships with international research centres	Investments in start-ups (new investments and follow on) through a Corporate Venture Capital	
and universities. Develop new technologies, patents for technological innovation.	Initiatives of crowd sourcing of ideas and solutions (e.g scouting, innovation brokers,) to address sustainability goals	
ANALYTICS Transforming data into actionable information	Advanced Analytics in scale up linked to SDGs	
that improves the company's systems, processes and strategies to achieve sustainable business success	Al projects with sustainability impacts	
ICT Infrastructure development and improvement	CO ₂ avoided by digital initiatives (t/a)	
projects of IT/OT/IoT/IIoT platforms and applications	Number of digital initiatives with measurable sustainability impact	

OVER	VIEW		PLAN 21 - 30	
2020	2021	2023	2026	2030
15%	14%	21%	29%	41%
15	21	27	30	35
> sector national average				
NEW	74.60	74.80	75.1	75.5
7.77	7.67	7.71	7.77	7.85
1,046	1,314	2,332	3,566	4,915
NEW	-	Achievement		
NEW	0%	0%	0%	0%
NEW	3	7	10	10
	-	Achievement		
	-	30%	90%	100%
0	5	45	470	10,000
0	1	6	20	150
NEW	80%	90%	100%	100%
4	4	6	6	6
NEW	8	12	15	15
NEW	2	4	5	5
NEW	10%	10%	50%	100%
NEW	-123	-166	-217	-288
NEW	11	18	27	35

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ACTION	KPIs	
HEALTH AND SAFETY Consolidate the training and prevention plan to	Number of accesses to health promotion initiatives	
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	
MbO and PERFORMANCE MANAGEMENT Add sustainability objectives to the MbO sheets	Employees with formally assigned objectives (% of total employees)	
(correlation between Management remuneration and Sustainability KPIs)	Extension tool for continuous feedback	
TRAINING Implement training routes aimed at optimising and requalifying competences and professional	Employees involved in training on sustainability and SDGs (% of employees to whom content is made available)	
development (including on matters such as sustainability, anti-corruption and human rights)	Investment density of training to the role	
ORGANIZATION WELLNESS	Average hierarchical depth	
Implementation of the best business organization systems for effective development of all work	Digitalization of regulatory documents	
processes	Interim positions longer than 12 months	
INTERNAL ENGAGEMENT	Employees involved in engagement campaigns (% of the total)	
Develop a systematic listening system to employees, promoting dialogue and collaboration	Actions implemented out of the total number of those proposed	
ompro/occ, promoung amogae and composition	Employees involved in Survey/pulse (number)	
	Women in positions of responsibility (% of total managers) ³	
	Gender Balance BoD	
WELFARE, DIVERSITY AND EQUAL	Gender Pay Gap	
OPPORTUNITIES Develop innovative welfare policies, also in	Women in succession plans (% of total) ³	
connection with the promotion of gender equality, and optimise competences through a generational bridge that allows for the transfer	% women among new hires in the Group (excluding blue collar workers)	
of knowledge and experience between the junior and senior populations	Training on D&I issues (% of employees to whom content is made available)	
	Employees with disabilities involved in specific support/inclusion projects (% of total employees Protected categories)	
	Hours worked in Remote Working % of total (considering the pandemic situation)	

³ Updated to include ACSM-AGAM and AEB.

OVER	VIEW		PLAN 21 - 30	
2020	2021	2023	2026	2030
NEW	5,100	7,300	10,600	15,000
Updated	20.0	17.67	14.99	12.60
10%	12%	15%	50%	100%
7%	29%	50%	50%	100%
60%	60%	80%	100%	100%
NEW	57% for 16.4 hours per capita	60% for 10 hours per capita	60% for 10 hours per capita	60% for 10 hours per capita
3.87	3.84	3.78	3.70	3.50
NEW	0%	50%	100%	100%
NEW	44%	31%	13%	0%
60%	100%	100%	100%	100%
100%	100%	100%	100%	100%
40%	100%	100%	100%	100%
21%	24%	25%	28%	35%
NEW	43%	53%	63%	90%
NEW	Imp: 98% Middle Managers: 96% Managers: 100%	Imp: 99% Middle Managers: 98% Managers: 100%	Imp: 100% Middle Managers: 100% Managers: 100%	Imp: 100% Middle Managers: 100% Managers: 100%
18%	19%	20%	26%	30%
NEW	45%	47%	50%	50%
50%	60%	80%	100%	100%
0%	10%	35%	80%	100%
NEW	21.7%	11.7%	13%	21%

Stakeholder engagement and materiality analysis

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ACTION	KPIs	
	Incidence of sustainability criteria in the vendor rating process	
	Value of orders assigned to certified suppliers	
RESPONSIBLE PROCUREMENT Develop initiatives aiming to spread the culture	Value of orders assigned to financially sound suppliers (D&B Rating 1-2)	
of health and safety at work amongst contractors and other suppliers. Develop Green Procurement policies	% of the order to Suppliers evaluated with ESG indicator (Infoprovider Ecovadis)	
	Corrective actions taken following unsuccessful audits	
	Inspections of road sites (number/year)	
EDUCATION	Number of accesses to environmental culture initiatives	
Consolidate and, where possible, improve the environmental education and promote the	Teachers registered in the education portal of A2A	
awareness of risks associated with climate change in the public opinion	Stakeholders involved in Environmental Education initiatives	
DISADVANTAGED GROUPS Promote beneficial tariffs or other solutions for users in difficulty (e.g. Banco dell'Energia)	Design of a multi-year plan for the Energy Bank that develops synergies with the involvement of associations, companies, research bodies and third sector organizations and encourages its expansion throughout Italy, as well as consolidating its presence in the areas where the Group has its roots	
	Territories involved in multi stakeholder engagement initiatives / year	
	Develop impact assessment analyses on the territories of competence	
	Group events CO ₂ free (offset through credits)	
TRANSPARENCY AND STAKEHOLDER ENGAGEMENT Develop integrated reporting and an adequate	Publishing content for the Group's growth in ESG brand reputation (value of reputational return on digital channels)	
information system for planning and control Develop external stakeholder engagement activities, strengthening the relationship with the	Sponsorships with initiatives to raise awareness of SDGs issues	
territory	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	
	Elaboration, also in sharing with BUs, of at least one innovative regulatory proposal on an issue of development of the business plan.	

OVERVIEW		PLAN 21 - 30		
2020	2021	2023	2026	2030
17%	17%	>20%	>25%	>30%
83%	86%	85%	87%	90%
>70%	77%	>70%	>75%	>85%
50%	47%	65%	80%	90%
83%	94%	89%	91%	92%
3,961	5,522	4,920	5,910	6,900
0	5,399	7,500	10,700	15,000
1,700	2,346	2,000	2,200	2,500
24,000	44,000	26,000	30,000	35,000
NEW	Start	Development		
1	7	5	8	10
NEW	1	1	3	5
NEW	0%	30%	100%	100%
>60%	>90%	>77%	>80%	>85%
34%	50%	50%	70%	90%
NEW	>2	>2	>2	>2
NEW	1	1	1	1

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ACTION	KPIs	
COMPLIANCE/BUSINESS ETHICS	Certification ISO37001 - Anti-bribery management systems	
Implement all the principals and the best national and international initiatives for the dissemination of compliance within the Group	Training projects per year on compliance issues	
	Employees trained on the Code of Ethics and on Group documents relating to ethical/behavioural principles	
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.)	
RISK MANAGEMENT	Identify ERM risks on all material issues	
To verify that the system used to identify, manage and prevent business risks adequately covers sustainability risks (and, in particular,	Identification and assessment of risks related to the Green Deal	
social-environmental risks), also in organisational terms	Share of processes and activities covered by Environmental Risk Assessment	
	Percentage of 'sustainable debt' over total	
SUSTAINABILITY IN PLANNING AND INVESTMENT PROCESSES Included of ESG logic in investment planning and	Identify projects classified as "sustainable" when defining the budget/ plan, according to SDGs/ESGs/classification logics Taxonomy with indication of ESG performance KPIs	
evaluations	Develop a timely analysis of investors' and analysts' ESG expectations	
ESG RATING Participation in assessments to assess ESG performance of the Group, and implementation of activities for continuous improvement of the rating	Improve the score in at least 2 sustainability ratings/year	
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 as the company's perimeter is expanded)	

OVERVIEW			PLAN 21 - 30		
2020	2021	2023	2026	2030	
-	-	-	Achievement (2024)		
-	2	2	2	2	
81%	82%	>80%	>80%	>80%	
	1	1	1	1	
-	100%	100%	100%	100%	
-	NEW	>80% of the year's programme	>80% of the year's programme	>80% of the year's programme	
NEW	39%4	100%4	100%5	100%5	
28%	44%	50%	>70%	>80%	
-	100%	100%	100%	100%	
-	definition of a checklist of ESG best practices	update/revision of ESG best practices at KPI/KI level (2022)			
2	5	>2	>2	>2	
100%	100%	100%	100%	100%	

⁴ Intended as the completion of the roll out of the Environmental Risk Assessments on companies with a defined plan as of

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⁵ Understood as meeting the Environmental Risk Assessment timeline in the integration plan for new acquisitions

Stakeholder engagement and materiality analysis

Figure 1 Stakeholder engagement initiatives activated in 2021

CATEGORY	MODE OF COMMUNICATION AND INVOLVEMENT	INTEREST	MATERIAL ISSUES *
Shareholders and investors	Direct interaction Events, press conferences and conventions Road shows Shareholders' Meetings	Business development Knowledge, guidance and request for investment Knowledge of facilities and services information Territorial economic development	Circular economy and responsible use of resources Sustainability elements in corporate governance Creation of value for all parties in relation to the Group Risk management and sustainability opportunities
Customers	Direct interaction Plant tours Communication campaigns Training	 Costs, efficiency and quality of service Service continuity and security Application of and compliance with contracts/payments Sharing of criticalities and complaints 	Quality and innovation in the provision of services and products Creation of value for all parties in relation to the Group Circular economy and responsible use of resources Responsibility and Safety in the provision of services and products
Community	Direct interaction Plant tours Events, press conferences and conventions Communication campaigns	Community, environmental and land protection Community Well-Being Knowledge of facilities and services information Economic contributions and sponsorships	Circular economy and responsible use of resources Active local and environmental education Creation of value for all parties in relation to the Group Combating climate change
Institutions	Direct interaction Discussion tables Plant tours Press releases	Control, regulation and compliance Community, environmental and land protection Compliance with environmental requirements Community Well-Being	Ethical conduct of business Circular economy and responsible use of resources Active local and environmental education Sustainability elements in corporate governance

^{*} Monitoring on engagement activities related to the year 2021 was based on the material issues in effect in 2020. Beginning with the 2022 monitoring, material issues updated in 2021 will be used.

CATEGORY	MODE OF COMMUNICATION AND INVOLVEMENT	INTEREST	MATERIAL ISSUES *
Market	Direct interaction Discussion tables Events, press conferences and conventions Work groups/committees and observatories	 Business development Knowledge of facilities and services information Application of and compliance with contracts/payments Sharing best practice and creating networks 	Circular economy and responsible use of resources Quality and innovation in the provision of services and products Responsibility and Safety in the provision of services and products Creation of value for all parties in relation to the Group
People	Direct interaction Communication campaigns Training Work groups/committees and observatories	Working conditions Dialogue, engagement and raising awareness Employment Training	Protection of occupational health and safety Development of human capital Corporate welfare Ethical conduct of business
Supply chain	Direct interaction Plant tours Discussion tables	Application of and compliance with contracts/payments Service continuity and security Working conditions Order acquisition	Quality and innovation in the provision of services and products Responsible management of the supply chain Protection of occupational health and safety Responsibility and Safety in the provision of services and products Creation of value for all parties in relation to the Group

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^{*} Monitoring on engagement activities related to the year 2021 was based on the material issues in effect in 2020. Beginning with the 2022 monitoring, material issues updated in 2021 will be used.

Financial capital

Figure 2 - Statement for calculating the economic value - generated and distributed* (millions of euro) [GRI 201 - 1_4]

	2020	2021
Economic value generated	6,874	11,582
A. Production value	6,862	11,563
C.15 Income from equity investments	0	0
C.16 Other financial income	12	19
E.20 Extraordinary income	0	0
Economic value distributed	6,139	10,732
Operating expenses	4,911	9,365
B.6 Costs for raw materials	3,362	7,618
B.7 Costs for services	1,282	1,530
B.8 Costs for use of third-party assets	100	118
B.11 Changes in inventories of raw materials	45	-55
B.14 Other operating expenses (net of taxes)	122	154
Value distributed to employees	705	724
B.9 Personnel costs	705	724
Value distributed to capital providers	95	89
C.17 Interest and other financial expenses	95	89
Value distributed to Public Administrations	175	251
22. Income taxes (current and deferred)	141	218
B.14 Other operating expenses (only the value of indirect taxes)	34	33
Value distributed to shareholders	245	294
Dividends distributed	241	248
Third-party profits	4	46
Value distributed to the community	8	9
Sponsorships	1	2
Donations and Membership Contributions	7	7
Economic value retained	735	850
Profit (loss) for the period (net of dividends)	123	256
(B.10 + B.12 + B.13 + D.19 + D.18) Amortization, Depreciation / Provisions / Write-downs / Revaluations	654	776
22. Deferred tax liabilities	-42	-182
E.21 Extraordinary expenses	0	0

^{*} It should be noted that the item "Net profit (loss) from discontinued operations/assets held for sale" - entered in the Group's consolidated financial statements - was reallocated to the appropriate items in the income statement, in compliance with the provisions of the GRI Framework calculation schedule.

Figure 3 Gross operating margin by business unit (millions of euro)

	2019	2020 ***	2021
Generation and Trading	301	269	368
Market	229	202	214
Environment*	268	282	341
Smart Infrastructures **	461	471	538
Corporate	-36	-24	-33
Total	1,234	1,200	1,428

^{*} From 2020, the International BU has been included in the Environment BU.

Figure 4 Balance Sheet (millions of euro)

	2019	2020	2021
Net fixed assets	6,470	7,067	8,026
Working capital	335	507	243
Assets/liabilities held for sale	-	14	147
Net invested capital	6,805	7,588	8,416
Shareholders' equity	3,651	4,166	4,303
- Attributable to the Group	3,289	3,537	3,760
- Attributable to minorities	362	579	543
Net debt	3,154	3,472	4,113
Total sources	6,805	7,588	8,416
Gross debt	3,620	4,516	5,110

Figure 5 Main balance sheet indicators (millions of euro)

	2019	2020	2021
Turnover by permanent worker (millions of euro)	0.6	0.53	0.87
EBITDA per permanent worker (millions of euro)	0.10	0.09	0.11
Average number of permanent workers	12,198	12,907	13,206

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^{**} From 2019, the A2A Smarty City BU has been included in the Smart Infrastructures BU; from 2021, the A2A Illuminazione Pubblica company has been included in the Smart Infrastructures 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 6 CapEx (capital expenditure) (millions of euro)

	2019	2020	2021
Generation and Trading	88	76	144
Market	32	64	73
Environment**	96	174	273
Smart Infrastructures***	347	373	516
Smart City*	16	-	-
Corporate	48	51	77
Total	627	738	1,074

Figure 7 Share performance

	2019	2020	2021
Average capitalization (millions of euro)	5,011	4,143	5,259
Capitalization at Dec. 31 (millions of euro)	5,238	4,087	5,389
Average volumes	9,593,175	12,072,133	10,371,909
Average share price* (euro per share)	1.60	1.32	1.68
Maximum share price* (euro per share)	1.81	1.90	1.95
Minimum share price* (euro per share)	1.43	1.00	1.31

 $[\]ensuremath{^{*}}$ Euros per share (source: Bloomberg).

From 2019, the A2A Smart City BU is included in the Smart Infrastructures BU.
 From 2020, the International BU is included in the Environment BU.
 From 2021, A2A Illuminazione Pubblica is included in the Smart Infrastructures BU.

Manufacturing capital

Energy production

Figure 8 Average availability factor for all plants [G4 - EU30]

A2A average availability factor (%)	2019	2020	2021
Traditional coal-powered	91.4%	96.8%	96.6%
Traditional heavy fuel oil	79.8%	81.7%	71.0%
Combined cycle natural gas	86.8%	84.4%	77.4%
Run-of-the river hydroelectric	86.3%	86.2%	79.2%
Basin hydroelectric	89.8%	91.0%	84.4%
Storage hydroelectric	71.4%	83.8%	84.3%
LGH average availability factor (%)	2019	2020	2021
Run-of-the river hydroelectric	85.0%	90%	89%

Figure 9 Electricity produced fed into the grid divided up according to plant type and source GWh [G4 - EU2]

		2019	2020	2021
	Thermoelectric plants*	10,910	9,760	11,958
Generation Business Unit	Hydroelectric plants	4,534	4,388	4,226
	Photovoltaic and wind plants (including energy consumed)	122	126	312
Smart Infrastructures Business Unit	Cogeneration plants	268	264	255
Environment Business Unit	Waste-to-energy plants (including biogas) and natural gas boilers	1,192	1,288	1,409
Total		17,044	15,827	18,160

^{*} Does not include the production of the Scandale Plant, in line with the data of the Natural Capital and Sustainability Plan.

Figure 10 Heating energy produced fed into the grid divided up according to plant type and source (GWh)

		2019	2020	2021
Environment Business Unit	Waste-to-energy plants (including biogas) and natural gas boilers	1,478	1,530	1,604
Smart Infrastructures Business Unit	Cogeneration plants, natural gas thermal, heat pumps, biogas, solar panels	1,140	1,125	1,317
Generation Business Unit	Heat recovery	36	36	36
Total		2,654	2,691	2,957

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Electricity distribution

Figure 11 Extension of electricity distribution service [G4 - EU4]

	2019	2020	2021
Km of electricity network	15,359	15,472	15,829
of which underground cable	13,362	13,451	13,812

Figure 12 Extension of the gas distribution service

	2019	2020	2021
Km of natural gas network	11,240	9,852	13,022

Figure 13 Electricity, heating energy and gas released to the network

	2019	2020	2021
Electricity distributed (GWh)	11,573	10,497	11,268
Distributed heating and cooling energy (GWh)	3,079	3,146	3,418
Natural gas distributed (Mm³)	2,356	2,300	2,819
Transported natural gas (Mm³)	350	355	426

Figure 14 Losses in the grid*

	2019	2020	2021
Electricity (GWh) from distribution	301	250	298
Methane (Mm³) (distribution)*	n.a.	1.44	2.53
Methane (Mm³) (transport)	0.1	0.1	0.09
Heat (GWh) from district heating	n.a.	542	524

^{*} The figure is estimated.

Figure 15 Public lighting*

	2019	2020	2021
Light points (no.)	244,951	264,360	275,629

^{*} The 2019 and 2020 figures have been recalculated because the calculation criterion has changed; currently the criterion is pro-rata races of actual light points operated.

Integrated water cycle

Figure 16 Procurement and distribution

Technical data	2019	2020	2021
Wells (no.)	190	190	190
Sources (no.)	255	269	269
Drinking water conversion plants (no.)	123	122	121
Total network length (km)	4,019	4,044	4,042
Water delivered to the user and accounted for (Mm³)	54	54	56
Water extracted (Mm³)	93	92	93
Network losses and water not booked (Mm³)	37	36	33

Figure 17 Collection and treatment

Technical data	2019	2020	2021
Sewers - network length (km)	2,569	2,593*	2,621
Waste water treated (Mm³)	51	52	51
Purifiers (no.)	57	59	57

^{*} The 2020 figure from the previous document has been changed due to detection of material error.

Waste management

Figure 18 Waste collected

	2019	2020	2021
Tonnes	1,618,000	1,527,000	1,773,000

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Figure 19 Waste treated by type of plant* (kt)

	2019	2020	2021
Waste-to-energy plants	1,806	1,790	1,764
Landfills	182	120	129
Bio-drying plants and production of RDF	539	509	552
Recovery of materials and processing	1,024	1,190	1,235
Total	3,551	3,609	3,680

^{*} All incoming waste to the Group's plants is considered. The 2021 portion of waste disposal, net of intermediation (388 kt) and elisions (-737 kt) is 3,332 kt.

Figure 20 Waste brokered and cross-border waste (t)

	2019	2020	2021
Waste brokered*	220,368	183,460	196,518
Cross-border waste**	54,431	46,658	43,497

 $^{^{\}ast}$ $\;\;$ Brokered waste is third-party waste for which the Group operates a brokerage service.

District heating and heat

Figure 21 Thermal energy sold (GWh)

	2019	2020	2021
Heating / cooling energy	2,564	2,604	2,939

Waste treated in plants managed on behalf of third parties (Acerra waste-to-energy plant and Caivano CSS plant) and ACSM-AGAM (collection waste-to-energy plant of Como) is not included.

^{**} Cross-border waste is waste generated by Group companies and sent abroad.

Figure 22 Extension of the district heating

		20	19			20	20			20	21	
	USERS* (no.)	VOLUMES SERVED (Mm³)	Network development** (double pipe) km	Apartment equivalents	USERS* (no.)	VOLUMES SERVED (Mm³)	Network development** (double pipe) km	Apartment equivalents	USERS* (no.)	VOLUMES SERVED (Mm³)	Network development** (double pipe) km	Apartment equivalents
Province of Bergamo	672	7.2	75	30,000	692	7.3	77	30,500	719	7.7	81	32,500
Province of Brescia	21,313	42.5	672	177,100	20,513	42.6	678	177,700	21,586	42.8	679	178,500
Province of Milan***	3,585	52.8	343	220,083	3,990	54.8	363	228,183	3,334	56.3	372	235,126
Province of Cremona	749	6.6	77	27,600	754	6.8	77	28,317	772	6.7	78	28,067
Province of Lodi	227	3.1	27	12,700	232	3.1	27	12,735	237	3.1	28	12,848
Province of Monza and Brianza	-	-	-	-	-	-	-	-	223	1.0	16	4,083
Total	26,546	112.2	1,195	467,483	26,181	115	1,222	477,435	26,871	118	1,254	491,125

^{*} May not coincide with a single housing unit.

Smart City

Figure 23 Smart City Services- Smart Land (number)

Technical data	2019	2020	2021
Municipalities served	24	184	184
Services offered	40	126	126
Video cameras	2,174	5,919	4,760
Camera Control Stations	51	51	51
Break-in sensors	5,025	7,974	4,788
Fire sensors	3,373	3,885	600
Access and presence readers	841	1,074	841
SoS stations	250	250	260
Variable message panels	15	15	15
Digital islands	29	37	37
Wi-Fi antennae	1,198	1,887	1,887
IoT Sensors	216	7,197	6,792
Environmental sensors	148	159	159
Smart bins	12,880	12,870	12,870
Smart land sensors	125	239	239
Smart parking sensors	2,580	1,861	1,982

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^{**} The network is intended as the sum of heat transmission, distribution and supply pipes.

^{***} In 2017, the Province of Milan also included the district heating service of Linea Reti e Impianti, at Rho Nord and Rho Sud.

Natural capital

Figure 24 Percentages of electricity generated by type of source [G4-EU2]

	2019	2020	2021
Renewable sources (hydraulic, renewable fraction of waste*, biogas, solar)	31%	33%	30%
Coal	6%	1%	1%
Natural gas	55%	58%	58%
Oil products	4%	4%	8%
Non-renewable fraction of waste	4%	4%	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 25 Energy performance and gross production of plants [GRI 302-3; G4 - EU11]

	2019	2020	2021
Average yield of thermoelectric plants	47%	49%	48%
Yield of high-performance natural gas combined cycles	51%	52%	52%
Yield of multi-fuel plants	31%	29%	31%
Average yield of fossil fuel cogeneration plants	80%	81%	80%
Energy intensity - Electricity consumption per unit produced (MWh)	n.a.	n.a.	5.7%
Average electricity produced from 1 t waste (kWh/te)	759	746	750
Average thermal energy produced from 1 t waste (kWh/t)	823	855	918
Specific water demand for total thermoelectric production (I/ $kWh_{\rm eq})^*$	0.31	0.30	0.28
Specific water requirement for overall waste-to-energy plant production (l/kWh $_{\mbox{\tiny eq}})^{\!*}$	1.13	1.07	0.92
Specific water demand for total cogeneration production (I/ $\mathrm{kWh}_{\mathrm{eq}})^*$	0.35	0.35	0.35
Gross electricity production by type of plant (GWh)			
Coal	1,161	202	174
Natural gas (CCGT and cogeneration)	9,762	9,494	10,843
Wind	0	0	22
Oil	849	763	1,667
Hydroelectric	4,552	4,424	4,253
Solar	122	127	301
Biomass	22	217	191
Waste-to-energy	1,377	1,341	1,324
Landfill gas	29	22	24
Biogas from biomass digestion plants	0	0	175

^{*} 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 26 Global impact indicators

	2019	2020	2021
Ozone-depleting substances - ODs- (kgR11 _{eq})	0.4	0.0	0.0
Total acidifying emissions (tSO2 _{eq})	2,927	2,168	2,545

Figure 27 Indicators of impact due to the purchase and use of fossil fuels (scope 3) [GRI 305-3]

	2019	2020	2021
Carbon footprint (tCO _{2eq} /year)	853,467	695,408	1,109,739
Water footprint (thousands of m³ water)	20,383	17,721	25,689

Figure 28 Environmental sanctions [GRI 307-1]

	2019	2020	2021
Number	25	32	39
of which related to the water cycle	n.a.	n.a.	22
of which relevant*			-
Value (euro)	83,962	106,272	101,569

^{*} 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.

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Figure 29 Water consumed by the Group Business Units according to type of collection (thousands of m³)

	2019	2020	2021
Aqueduct	1,508	1,495	1,567
Well	6,104	5,258	5,410
Surface water body - salt/sea water*	707	618	583
Surface water body - fresh water	218	282	279
From third parties - fresh water	47	54	30
Total	8,584	7,707	7,869

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

Water stressed areas

Withdrawals

Figure 30 Group water withdrawals in water-stressed areas (thousands of m³) [GRI 303-3_5]

		2019	2020	2021
	From aqueduct	37	29	34
	From well	246	259	217
Water withdrawn for process	From third parties - fresh water	47	54	30
consumption	From surface water body - salt/ sea water	707	618	583
	Total	1,037	960	864
	From surface water body - fresh water for hydroelectric production	493,067	312,028	338,749
Water derived and returned	From surface water body - salt/ sea water	272,471	247,974	459,462
	Total	765,538	560,002	798,211
Water withdrawn for distribution to water service users		19,692	20,240	20,392

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

Water discharges

Figure 31 Discharges, returned water and distributed drinking water A2A Group, in water stressed areas (thousands of m³) [GRI 303-4]

		2019	2020	2021
	Discharged into sewers	0	0	0
	Discharged into surface water body (fresh water)	0	0	0
Industrial wastewater discharged	Discharged into coastal waters/ channels	736	639	535
	Total	736	639	535
	Recovered in the production cycle	827	292	318
D	% of total water withdrawn	80%	30%	37%
Recovered waters	Derived water - fresh water	493,067	312,028	338,749
B	Derived water - salt/sea water	272,471	247,974	459,462
Returned waters	Total	765,538	560,294	798,211
Public water supplied to water service users		9,179	7,176	7,060

^{*} 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.

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Natural capital in the Environment BU

Resources and materials used

Figure 32 Resources used [GRI 301-1; GRI 302-1_2; GRI 303-5]

	2019	2020	2021
Fuel (TJ)			
Natural gas	724	750	792
Oil (heavy fuel oil and diesel)	66	73	75
Waste, biomass and CSS	21,035	22,224	25,563
Biogas (from landfills and treatment facilities)	428	463	1,885
Automotive fuels (TJ)*			
Petrol	6	6	10
Diesel	492	463	543
Methane	145	147	170
Energy (GWh)			
Plant self-consumption, electricity		254	253
Electricity consumed (GWh), withdrawn from the grid	58	67	73
of which renewable		64	73
Heat consumed		31	92
of which renewable		21	68
Chemical products and materials (t)			
Mineral acids	1,642	1,997	2,921
Water additives/conditioners	360	1,897	3,981
Ammonia (solution)	5,002	5,593	5,780
Lime and solid neutralisers	32,176	34,937	38,308
Active carbon	1,566	1,495	1,600
Cement, sand an inert materials	219,165	360,771	19,564
Sodium chloride	280	449	5,284
Technical gases (nitrogen, CO ₂ , hydrogen, oxygen)	939	1,181	808
Sodium hydroxide (solution)	2,316	3,256	3,959
Methanol, solvents and other products	516	992	987
Oils and lubricants	126	112	292
Urea (solution)	2,138	1,977	2,046
Total chemical products **	266,172	414,657	85,530

Increase due to the inclusion of Agripower in the scope.
 The change in 2021 is primarily related to the minor use of aggregates for post management landfills.

Withdrawals

Figure 33 Water withdrawal (thousands of m³) [GRI 303-3]

		2019	2020	2021
Water withdrawn for process consumption	Aqueduct	511	467	524
	Well	3,134	2,942	2,808
	Total	3,645	3,409	3,332

Water discharges

Figure 34 Discharges and returned water (water in thousands of m³) [GRI 303-4]

		2019	2020	2021
	In the sewer	535	475*	481
Industrial wastewater discharged	In surface water body (fresh water)	1,333	1,735	2,096
	Total	1,868	2,210*	2,577
Recovered waters	Recovered in the production cycle	384	457	555
	% of total water withdrawn	11%	13%	17%
Returned (cooling) water	In surface water body (fresh water)	764	742	865
	BOD	20	38	26
Pollutant discharges into surface water (t)	COD	49	141	90

 $^{^{*}}$ The 2020 figure from the previous document has been changed due to detection of material error.

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Waste*

Figure 35 Waste produced (t) [GRI 306]**

	2019	2020	2021
Non-hazardous waste			
Non-hazardous waste for material recovery			304,927
Non-hazardous waste for energy recovery			9,366
Total recovery			314,293
Non-hazardous waste to incineration			1,298
Non-hazardous waste other disposals			197,165
Non-hazardous waste to landfill			4,286
Total at disposal			202,749
Total non-hazardous waste produced	490,684	585,541	517,042
% non-hazardous waste recovered			60.8%
Hazardous waste			
Hazardous waste for material recovery			31,706
Total recovery			31,706
Hazardous waste to incineration			177
Hazardous waste other disposals			71,915
Hazardous waste at landfill			11,505
Total at disposal			83,597
Total hazardous waste produced	115,267	113,944	115,303
% hazardous waste recovered			27%

^{*} The methodological change, adopted in 2021, to align with the requirements of the GRI 306 2020 indicator limits the comparability of the waste data to total hazardous, total non-hazardous, due to unavailability of higher detail in previous years.

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 36 Total emissions (t) [GRI 305-1_2_6_7]

	2019	2020	2021
CO ₂ from combustion processes	1,163,222	1,141,439	1,158,388
Biogenic emissions	1,183,778	1,488,149	1,500,460
CO ₂ from motor vehicles	44,646	42,612	50,233
CO ₂ indirect from energy acquisition			
Location based ¹	17,341	19,133	19,290
Market based ²	28,085	4,215	302
Fluorinated gases (t CO _{2eq})	303	329	350
of which SF ₆ (Kg)	0	0.99	0
NO _x	851.16	811	1133
SO_2	52.83	73	58
Powders	7.0	9.0	7.2
Methane (CH4) - biogas losses released in landfills (t CO_{2eq})	78,701	43,042	22,660
Dioxins (grams - toxic equivalency)	0.032	0.029	0.036
Dioxin-like PCBs (polychlorinated biphenyls) (grams - toxic equivalency)	0.0070	0.0090	0.0033

Figure 37 Percentage of energy produced by the valorisation of waste in relation to total production (thousands of m³) [G4-EU2]

	2019	2020	2021
Thermal energy from waste-to-energy and biogas process	58%	59%	58%
Electricity from waste-to-energy and biogas process	7%	8%	8%

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¹ The reporting standard used (GRI Sustainability Reporting Standards 2018) provides two different approaches for calculating Scope 2 emissions: Location-based and market-based. The "Location-based" approach involves the use of a national average emission factor related to the specific national energy mix for power generation (source of emission factors: ISPRA Report 317/2020).

The market-based approach refers to contractual agreements entered into with the electricity supplier. In the absence of specific contractual agreements between the Group companies and the electricity supplier (e.g. purchase of Guarantee of Origin certificates), the emission factor relating to the national "residual mix" (source of the AIB European Residual Mixes 2017 (Version 1.13, 2018-07-11) was used for this approach.

Natural capital in the Generation and Trading BU

Resources and materials used

Figure 38 Resources used [GRI 301-1; GRI 302-1_2; GRI 303-5]

	2019	2020	2021
Fuel (TJ)			
Natural gas	64,339	62,604	71,389
Coal	9,604	1,177	1,690
Oil (OCD, diesel)	9,787	8,835	18,258
Automotive fuels (TJ)			
Petrol	2.03	2.79	0.09
Diesel	4.31	5.46	1.05
Methane	0.01	0.00	0.01
Energy (GWh)			
Electricity for plant self-consumption		378	485
Electricity withdrawn from the grid	177	202	213
of which renewable		202	211
of which renewable		-	-
Chemical products and materials (t)			
Mineral acids	204	236	235
Water additives/conditioners	133	232	183
Ammonia (solution)	557	270	457
Lime and solid neutralisers	14,676	10,250	12,758
Active carbon	0	0	20
Sodium chloride	0	4	7
Technical gases (nitrogen, CO ₂ , hydrogen, oxygen)	67	68	83
Sodium hydroxide (solution)	180	186	174
Methanol, solvents and other products	23	21	32
Oils and lubricants	95	113	120
Total chemical products	15,935	11,380	14,069

Withdrawals

Figure 39 Water withdrawal (thousands of m³) [GRI 303-3]

		2019	2020	2021
	From Aqueduct	99	85	94
	From Well	2,347	1,922	1,988
Water withdrawn for process	From surface water body - fresh water	218	282	279
consumption	From third parties - fresh water	47	54	30
	From surface water body - salt/ sea water	707	618	583
	Total	3,418	2,961	2,974
Derived water for hydroelectric use	From surface water body - fresh water for hydroelectric production	3,082,634	3,108,050	3,060,194
	From surface water body - fresh water for cooling	910,481	842,788	971,518
Water derived and returned for cooling	Surface water body - salt/sea water for cooling	424,753	278,798	521,510
	Total	1,335,234	1,121,586	1,493,028

Effluents

Figure 40 Discharges, returned water (water in thousands of m³) [GRI 303-4]

		2019	2020	2021
	In the sewer	207	188	168
Industrial wastewater	In surface water body (fresh water)	3,990	4,090	4,175
discharged	In coastal waters/salt water channels	1,412	1,161	898
	Total discharged water	5,609	5,438	5,241
December	Recovered in the production cycle	1,374	770	763
Recovered waters	% of total water withdrawn	40%	26%	26%
Returned water (of hydroelectric derivation)		3,082,634	3,108,050	3,060,194
	In surface water body (fresh water)	910,481	842,788	971,518
Returned (cooling) water	In coastal waters/salt water channels	424,753	278,798	521,510
	Total	1,335,234	1,121,586	1,493,028
Pollutant discharges into	BOD	6.1	4.8	5.8
surface water	COD	18	15	31

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

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Waste*

Figure 41 Waste produced (t) [GRI 306]**

	2019	2020	2021
Non-hazardous waste			
Non-hazardous waste for material recovery			24,772
Total recovery			24,772
Non-hazardous waste other disposals			1,032
Non-hazardous waste at landfill			1,060
Total at disposal			2,092
Total non-hazardous waste produced	27,802	23,953	26,864
% non-hazardous waste recovered			92.2%
Hazardous waste			
Hazardous waste for material recovery			1,257
Total recovery			1,257
Hazardous waste for incineration			6
Hazardous waste other disposals			3,946
Hazardous waste at landfill			8
Total at disposal			3,959
Total hazardous waste produced	3,405	16,202	5,216
% hazardous waste recovered			24.1%

The methodological change, adopted in 2021, to align with the requirements of the GRI 306 2020 indicator limits the comparability of the waste data to total hazardous, total non-hazardous, due to unavailability of higher detail in previous years.
 Indicators calculated in accordance with the GRI 306 - 2020 standard update. The energy recovery operation (R1) is

^{**} 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 42 Total emissions (t) [GRI 305-1_2_6_7]

	2019	2020	2021
CO ₂ from combustion processes	5,228,056	4,260,787	5,518,988
CO ₂ from motor vehicles*	467	607	84
CO ₂ indirect from energy acquisition			
Location based**	52,736	57,573	56,142
Market based**	85,527	1,244	880
Fluorinated gases (t CO ₂ eq.)	1,440	1,250	5,355
of which SF ₆ (Kg)****	45	37	188
NO _x	1,886	1,416	1,680
SO ₂	747	393	437
Powders	49	31	24
Other metals (Sb + As + Pb + Cr + Cu + Mn + Ni + V + Sn+Cd+Tl)***** (kg)	48	237	928
Dioxins (grams - toxic equivalency)	0.002	0.0003	0.0002

 $^{^{}st}$ The reduction is due to both improved data reporting and efficiency gains in consumption.

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^{**} See notes on page 35.

^{***} The indicator includes the new parameters (Pd+Pt+Rh+Sn) prescribed at the San Filippo del Mela Plant.

^{****} The variation compared to previous years is due to accidental losses occurred on High Voltage circuit breakers.

Natural capital in the Smart Infrastructures BU

Resources and materials used

Figure 43 Resources used [GRI 301-1; GRI 302-1_2; GRI 303-5]

	2019	2020	2021
Fuel (TJ)			
Natural gas	3,297	4,039	5,742
Coal	1,805	1,075	-
Oil (OCD, diesel)	0.1	0.1	0.1
Biogas (from group purification plants)	12	10	7
Automotive fuels (TJ)			
Petrol	10	10	11
Diesel	18	18	19
Methane	9	9	12
Energy (GWh)			
Electricity for plant self-consumption		40	38
Electricity consumed	114	108	118
of which renewable		99	117
Heat consumed for heating premises*		2	2
Heat energy (GWh - purchased from external sources)	464	464	505
Chemical products and materials (t)			
Mineral acids	628	601	512
Water additives/conditioners	8,235	9,098	8,690
Lime and solid neutralisers	1,225	841	0
Active carbon	72	67	42
Sodium chloride	21	19	38
Technical gases (nitrogen, CO ₂ , hydrogen, oxygen)	141	190	213
Sodium hydroxide (solution)	196	170	169
Methanol, solvents and other products	998	1,011	957
Odorants	58	57	74
Oils and lubricants	57	35	31
Urea (solution)	668	529	361
Total chemical products	12,299	12,618	11,088

 $^{\ ^{*}}$ It also includes heat used for industrial purposes.

Withdrawals

Figure 44 Water withdrawal (thousands of m³) [GRI 303-3]

		2019	2020	2021
	From Aqueduct	721	800	814
Water withdrawn for process consumption	From Well	623	640	614
	Total	1,344	1,440	1,428
	From surface water body - fresh water	3	0.1	-
Water derived and returned	From acquifer	1,716	2,179	1,861
	Total	1,719	2,179	1,861
Water withdrawn for distribution to water service users (millions of m³)		93	92	93

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Effluents

Figure 45 Discharges, returned water and drinking water distributed (thousands of m³) [GRI 303-4]

		2019	2020	2021
	In the sewer	370	308	379
Industrial wastewater discharged	In surface water body (fresh water)	216	229	255
a.ou.ia. 800	Total discharged water	586	537	634
	Recovered in the production cycle	11.0	12.0	11.2
Recovered waters	% of total water withdrawn	0.8%	0.8%	0.8%
	In surface water body (fresh water)	3	-	-
Detumed (seeling)ton	In the aquifer	1,716	2,179	1,861
Returned (cooling) water	Total	1,719	2,179	1,861
Public water supplied to water service users (millions of m³)		54	54	56
Pollutant discharges into surface water (t)	BOD	1.1	0.9	0.6
	COD	5.3	6.6	1.7

^{*} 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 46 Waste produced (t) [GRI 306]**

	2019	2020	2021
Non-hazardous waste			
Non-hazardous waste for material recovery			3,725
Non-hazardous waste for energy recovery			19,190
Total recovery			22,916
Non-hazardous waste other disposals			4,777
Total at disposal			4,777
Total non-hazardous waste produced	37,395	35,862	27,693
% non-hazardous waste recovered	,,,,,,	,	82.7%
Hazardous waste			
Hazardous waste for material recovery			402
Total recovery			402
Hazardous waste other disposals			36
Total at disposal			36
Total hazardous waste produced	333	468	439
% hazardous waste recovered			91.7%

^{*} The methodological change, adopted in 2021, to align with the requirements of the GRI 306 2020 indicator limits the comparability of the waste data to total hazardous, total non-hazardous, due to unavailability of higher detail in previous years.

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]

	2019	2020	2021
CO ₂ from combustion processes	377,631	329,704	307,845
CO ₂ from motor vehicles	2,575	2,539	2,858
CO ₂ indirect from energy acquisition			
Location based*	33,970	30,713	31,201
Market based*	55,092	1,399	489
Fluorinated gases (t CO ₂ eq.)	776	1,173	4,760
of which SF ₆ (Kg)	18	11	6
Methane (CH4) - losses from natural gas distribution networks (t CO_{2eq})	45,204	28,875	52,333
NO _x	133	101	115
SO_2	117	73	0
Powders	0.2	0.2	0.1

^{*} See notes on page 35.

Figure 48 Distributed Water Quality Analysis

Technical data	2019	2020	2021
Potability analysis – samples (no.)	13,300	11,222	11,537
Potability analysis – total parameters (no.)	279,808	219,240	233,143

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Resources used

Figure 49 Resources used [GRI 301-1; GRI 302-1_2; GRI 303-5]

	2019	2020	2021
Water (thousand m³)	177	143	135
Electricity distributed (GWh)	14	12	5
of which renewable	NA	12	5
Heat consumed for heating and cooling premises	6	7	5
of which renewable	NA	2	1
Fuel (TJ)			
Methane	26	18	9
Fuels (TJ)			
Petrol	3.6	2.6	6.1
Diesel	48	24	31
Methane	1.0	0.7	0.8
Electricity for vehicles GWh			0.013

Waste*

Figure 50 Waste produced (t) [GRI 306]**

	2019	2020	2021
Non-hazardous waste			
Non-hazardous waste for material recovery			11,487.85
Non-hazardous waste for energy recovery			42.02
Total recovery			11,530
Total non-hazardous waste produced	134.6	199.2	11,530
% non-hazardous waste recovered			100%
Hazardous waste			
Hazardous waste for material recovery			78.929
Total recovery			79
Hazardous waste to other disposals			0.69
Total at disposal			1
Total hazardous waste produced	18.2	6.5	79.6
% hazardous waste recovered			99%

 $^{^{}st}$ The methodological change, adopted in 2021, to align with the requirements of the GRI 306 2020 indicator limits the comparability of the waste data to total hazardous, total non-hazardous, due to unavailability of higher 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 51 Total emissions (t) [GRI 305-1_2_6_7]

	2019	2020	2021
CO ₂ from combustion processes	1,450	1,013	493
CO ₂ from motor vehicles	3,827	1,997	2,797
CO ₂ indirect from energy acquisition			
Location based*	4,027	3,392	1,425
Market based*	6,530	89	22
Fluorinated gases (t CO _{2 eq} .)	165	35	277
of which SF ₆ (Kg)	0	0	0

^{*} See notes on page 35 for methodology; In addition, the *Location based* 2020 figure is different than that published in the previous Integrated Report due to a change in calculation methodology.

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Composition of personnel

Figure 52 Personnel by category and type of contract [GRI 102-8; 405-1]

		2019			2020			2021				
	Men	Women	Total	Men	Women	Total	Men	Women	Total			
Executives	147	27	174	145	26	171	154	31	185			
Middle Managers	507	156	663	510	164	674	541	191	731			
White-collar workers	3,266	1,464	4,730	3,337	1,524	4,861	3,525	1,743	5,269			
Blue-collar workers	5,104	199	5,303	5,267	201	5,468	5,602	204	5,806			
Permanent workers	9,024	1,846	10,870	9,259	1,915	11,174	9,822	2,169	11,991			
Fixed-term workers	402	22	424	246	57	303	289	90	379			
Executives	1	1	2	3	1	4	1	-	1			
Middle Managers	1	-	1	1	-	1	-	-	-			
White-collar workers	16	15	31	28	42	70	25	76	101			
Blue-collar workers	384	6	390	214	14	228	263	14	277			
Total	9,426	1,868	11,294	9,505	1,972	11,477	10,111	2,259	12,370			
of which workers with part-time contracts	112	275	387	115	262	377	111	289	400			
of which workers with full-time contracts	9,314	1,593	10,907	9,390	1,710	11,100	10,000	1,970	11,970			
Workers with non- standard contracts* (temporary/interns/ collaborators)	156	66	222	111	52	163	143	62	205			

 $[\]ast$ Workers under non-standard contracts do not include consultants.

Figure 53 Personnel by type of contract applied [GRI 102-41]

	2019	2020	2021
Executive contracts	176	175	186
Electrical contracts	3,511	3,488	3,573
Single natural gas and water contracts	1,579	1,545	1,812
Commercial contracts	490	545	593
Municipal sanitation contracts	4,673	4,797	5,194
FISE contracts	804	872	909
Haulage contract	58	4	-
Other contracts	3	51	103
Total	11,294	11,477	12,370

Figure 54 Average number of employees in service

Total	11,311	11,431	12,282
	2019	2020	2021

Figure 55 Personnel by workplace (Italian Regions) [GRI 102-8]

		2019			2020		2021					
	Men	Women	Total	Men	Women	Total	Men	Women	Total			
Abruzzo	49	5	54	51	6	57	53	6	59			
Calabria	78	1	79	75	1	76	71	1	72			
Campania	197	18	215	197	19	216	201	21	222			
Emilia Romagna	47	7	54	45	6	51	73	5	78			
Friuli Venezia Giulia	143	4	147	125	4	129	119	3	122			
Lazio	3	2	5	7	5	12	6	6	12			
Liguria	57	4	61	83	5	88	93	7	100			
Lombardy	8,531	1,795	10,326	8,563	1,895	10,458	9,159	2,180	11,339			
Marche	7	4	11	7	4	11	-	-	-			
Piedmont	107	22	129	107	20	127	112	24	136			
Puglia	43	1	44	85	3	88	72	3	75			
Sicily	156	5	161	157	4	161	149	3	152			
Veneto	4	-	4	-	-	-	-	-	-			
International	4	-	4	3	-	3	3	-	3			
Total	9,426	1,868	11,294	9,505	1,972	11,477	10,111	2,259	12,370			

Figure 56 Main foreign nationalities of employees*

	Number of employees	Percentage of minority employees out of total employees
Romanian	35	0.30%
Peruvian	27	0.20%
Albanian	25	0.20%
Moroccan	22	0.20%
Bulgarian	10	0.10%
Egyptian	10	0.10%
Other nationalities (non-Italian)	108	0.90%

 $[\]ensuremath{^{*}}\xspace$ Calculated based on the employee's citizenship.

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Figure 57 Number of hires and turnover rate, by age, gender and contract type* [GRI 401-1]

		2019			2020			2021				
	Men	Women	Total	Men	Women	Total	Men	Women	Total			
Permanent workers	438	86	524	528	120	648	608	197	805			
Up to age 30	169	40	209	220	62	282	255	98	353			
From 31 to 40	124	30	154	162	43	205	188	67	255			
From 41 to 50	83	10	93	94	11	105	116	28	144			
Over 50	62	6	68	52	4	56	49	4	53			
Fixed-term workers	338	15	353	285	62	347	369	112	481			
Up to age 30	131	14	145	125	40	165	155	74	229			
From 31 to 40	102	1	103	69	14	83	99	27	126			
From 41 to 50	82	0	82	77	8	85	83	8	91			
Over 50	23	0	23	14	0	14	32	3	35			
Total	776	101	877	813	182	995	977	309	1,286			
Percentage of new employees out of total workforce	8.23%	5.41%	7.77%	8.55%	9.23%	8.67%	9.66%	13.68%	10.40%			

^{*} The turnover rate was calculated according to the following formula: (outgoing) / (employees) at Dec. 31.

Figure 58 Selection costs (Hiring Cost)* (thousands of euro)

	2019	2020	2021
Total	2,805	2,209	2,738

 $[\]ensuremath{^{*}}$ Limited to the A2A Group.

Figure 59 Workers leaving, by age bracket [GRI 401-1]

			2019				2020							
	Up to 30	31-40	41-50	Over 50	Total	Up to 30	31-40	41-50	Over 50	Total				
Retirement	0	0	0	288	288	0	0	0	388	388				
Voluntary resignation	52	68	39	69	228	47	56	47	35	185				
Decease	0	1	3	10	14	0	0	4	14	18				
Dismissal	10	16	29	30	85	4	9	15	61	89				
Other (e.g., end of fixed-term contract)	68	57	32	18	175	76	53	55	50	234				
Total	130	142	103	415	790	127	118	121	548	914				
Turnover rate	12.99%	6.34%	3.13%	8.71%	6.99%	11.18%	4.85%	3.77%	11.67%	7.96%				
Voluntary turnover rate**	4.90%	2.95%	1.15%	5.69%	3.76%	4.14%	2.30%	1.46%	9.01%	4.99%				

^{*} The turnover rate was calculated according to the following formula: (departures) / (employees) at December 31. ** Intended as the ratio of voluntary outgoing employees and retirement to total employees.

Figure 60 Workers leaving, by gender [GRI 401-1]

		2019			2020			2021				
	Men	Women	Total	Men	Women	Total	Men	Women	Total			
Retirement	267	21	288	358	30	388	372	28	400			
Voluntary resignation	198	30	228	148	37	185	239	56	295			
Decease	14	0	14	18	0	18	24	2	26			
Dismissal	68	17	85	70	19	89	62	20	82			
Other (e.g., end of fixed-term contract)	161	14	175	221	13	234	193	38	231			
Total	708	82	790	815	99	914	890	144	1,034			
Turnover rate*	7.51%	4.39%	6.99%	8.57%	5.02%	7.96%	8.80%	6.37%	8.36%			
Voluntary turnover rate**	4.11%	2.03%	3.76%	5.32%	3.40%	4.99%	6.04%	3.72%	5.62%			

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Up to 30 31-40 41-50 Over 50 Total 0 0 0 400 400 98 121 57 19 295 0 0 5 21 26 11 8 13 50 82 97 60 55 19 231 206 189 130 509 1,034 15.41% 7.10% 3.88% 10.14% 8.36% 7.33% 4.55% 1.70% 8.35% 5.62%					
0 0 0 400 400 98 121 57 19 295 0 0 5 21 26 11 8 13 50 82 97 60 55 19 231 206 189 130 509 1,034 15.41% 7.10% 3.88% 10.14% 8.36%			2021		
98 121 57 19 295 0 0 5 21 26 11 8 13 50 82 97 60 55 19 231 206 189 130 509 1,034 15.41% 7.10% 3.88% 10.14% 8.36%	Total	Over 50	41-50	31-40	Up to 30
0 0 5 21 26 11 8 13 50 82 97 60 55 19 231 206 189 130 509 1,034 15.41% 7.10% 3.88% 10.14% 8.36%	400	400	0	0	0
11 8 13 50 82 97 60 55 19 231 206 189 130 509 1,034 15.41% 7.10% 3.88% 10.14% 8.36%	295	19	57	121	98
97 60 55 19 231 206 189 130 509 1,034 15.41% 7.10% 3.88% 10.14% 8.36%	26	21	5	0	0
206 189 130 509 1,034 15.41% 7.10% 3.88% 10.14% 8.36%	82	50	13	8	11
15.41% 7.10% 3.88% 10.14% 8.36%	231	19	55	60	97
	1,034	509	130	189	206
7.33% 4.55% 1.70% 8.35% 5.62 %	8.36%	10.14%	3.88%	7.10%	15.41%
	5.62%	8.35%	1.70%	4.55%	7.33%

Welfare and Diversity

Figure 61 Personnel by age bracket and gender [GRI 405-1]

		2019									2020								
	Mana	gers	Mi Mana	ddle gers	c	hite- ollar kers	Blue-c	ollar kers	Total	Mana	gers	Mi Mana	iddle igers	С	hite- ollar kers	Blue-c	ollar kers	Total	
	М	W	М	W	M	W	М	W		M	W	М	W	М	W	М	W		
Up to age 30		-	1	2	271	154	569	4	1,001	-	-	2	1	332	196	597	8	1,136	
From 31 to 40	7	-	89	26	600	407	1,068	41	2,238	10	1	94	28	720	464	1,079	38	2,434	
From 41 to 50	49	16	162	65	775	434	1,697	93	3,291	42	13	158	71	721	432	1,673	100	3,210	
Over 50	92	12	256	63	1,636	484	2,154	67	4,764	96	13	257	64	1,592	474	2,132	69	4,697	
Average age of employees	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Total	148	28	508	156	3,282	1,479	5,488	205	11,294	148	27	511	164	3,365	1,566	5,481	215	11,477	

Figure 62 Personnel by protected categories [GRI 405-1]

		2019			2020			2021		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	
Cat. Pro. (Art.18 para.2 Law 68/99)	36	15	51	34	14	48	33	13	46	
People with disabilities	302	87	389	277	74	351	263	74	337	
Total	338	102	440	311	88	399	296	87	383	

Figure 63 Personnel by position and company seniority [G4-EU15]

		2019					2020					
	Managers	Middle Managers	White- collar workers	Blue-collar workers	Total	%	Managers	Middle Managers	White- collar workers	Blue-collar workers	Total	%
Up to age 10	61	213	1,481	2,323	4,078	36.1%	62	217	1,716	2,398	4,393	38.3%
From 11 to 20	65	193	934	1,705	2,897	25.7%	67	213	1,022	1,786	3,088	26.9%
From 21 to 30	38	120	1,200	1,085	2,443	21.6%	34	108	1,071	994	2,207	19.2%
Over 30	12	138	1,146	580	1,876	16.6%	12	137	1,122	518	1,789	15.6%
Total	176	664	4761	5,693	11,294	100.0%	175	675	4,931	5,696	11,477	100.0%

	2021									
	Managers	Middle Managers		W	White-collar workers		r workers	Total		
М	W	М	W	М	W	М	W			
-	-	1	1	391	273	660	11	1,337		
10	2	102	37	828	533	1,115	34	2,661		
34	12	171	83	749	479	1,733	91	3,352		
111	17	267	70	1,582	534	2,357	82	5,020		
54	52	50	48	47	43	46	48	46		
155	31	541	191	3,550	1,819	5,865	218	12,370		

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	2021										
Managers	Middle Managers	White-collar workers	Blue-collar workers	Total	%						
64	241	2,097	2,752	5,154	41.7%						
67	248	1,158	1,893	3,366	27.2%						
38	99	937	886	1,960	15.8%						
17	144	1,177	552	1,890	15.3%						
186	732	5,369	6,083	12,370	100.0%						

Figure 64 Personnel by educational qualification*

		2019		2020				
	Men	Women	Total	%	Men	Women	Total	%
Undergraduate degree	1,143	619	1,762	15.6%	1,280	703	1,983	17.3%
Secondary school diploma	3,711	924	4,635	41.0%	3,828	960	4,788	41.7%
Vocational degree	635	66	701	6.2%	635	60	695	6.1%
Compulsory schooling	3,937	259	4,196	37.2%	3,765	246	4,011	34.9%
Total	9,426	1,868	11,294	100%	9,508	1,969	11,477	100%

^{*} Does not include AEB Group data.

Personnel training and development

Figure 65 Training delivered by role [GRI 404-1]

		20	19		2020			
	Number of hours		Average annual hours of training per employee		Number of hours		Average annual hours of training per employee	
	Men	Women	Men	Women	Men	Women	Men	Women
Managers	4,535	1,049	30.64	37.45	1,899	389	12.83	14.42
Middle Managers	22,952	6,355	45.18	40.74	10,920	3,478	21.37	21.21
Vhite-collar vorkers	78,960	22,108	24.06	14.95	64,758	24,552	19.24	15.68
lue-collar orkers	64,494	837	11.75	4.08	41,585	914	7.59	4.25
otal	170,940	30,349	18.13	16.25	119,162	29,333	12.54	14.87

	2021									
Men	Women	Total	%							
1,424	833	2,257	19.2%							
3,945	1,013	4,958	42.2%							
620	55	675	5.7%							
3,638	234	3,872	32.9%							
9,627	2,135	11,762	100%							

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2021								
Number of hours		Average annual hours of training per employee						
Men	Women	Men	Women					
4,362	1,041	28.14	33.58					
21,149	7,279	39.09	38.11					
93,695	37,105	26.39	20.40					
60,152	1,063	10.26	4.87					
179,358	46,487	17.74	20.58					

Figure 66 Training delivered by age bracket [GRI 404-1]

		2019					20	
	Number of hours		Average annual hours of training per employee		Number of hours		Average annual hours of training per employee	
	Men	Women	Men	Women	Men	Women	Men	Women
Up to age 30	22,937	4,020	27.27	25.12	20,268	4,880	21.77	23.81
From 31 to 40	32,647	8,484	18.51	17.90	25,977	8,441	13.65	15.90
From 41 to 50	44,545	9,493	16.60	15.61	27,194	8,422	10.48	13.67
Over 50	70,811	8,352	17.11	13.34	45,723	7,590	11.21	12.24
Total	170,940	30,349	18.13	16.25	119,162	29,333	12.54	14.87

Figure 67 - Health and safety training

	2019	2020	2021
Training hours	96,067	66,722	111,682

Figure 68 Cost of training

	2019	2020	2021
Euro	1,800,839	1,433,437	1,470,932
% of training costs covered by inter-professional funds	37%	37%	42%

Figure 69 Employees trained in the year (percentage of total)

	2019	2020	2021
Percentage	81%	73%	76%

Number of hours	Average annual	hours of training per emplo	yee
Men	Women	Men	Women
27,491	7,114	26.13	24.96
42,956	12,949	20.90	21.37
46,139	13,949	17.17	20.98
62,771	12,475	14.54	17.75
179,358	46,487	17.74	20.58

Figure 70 Attendance of training courses (number)

	2019	2020	2021
Total	54,465	99,208	73,248

Figure 71 Percentage of employees who regularly receive performance assessments [GRI 404-3]

	2019	2020	2021
Percentage	49%	50%	48.51%

Figure 72 Third-party employees that have undergone relevant health and safety training (number)

	Number of employees involved	Training hours provided
2019	3,702	6,176
2020	808	1,373
2021	1,054	1,631

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Occupational health and safety

Figure 73 Data on injuries* [GRI 403-2]

Decease 0 Number of accidents (excluding commuting) 461 Men 436 Women 25 of which with severe consequences** - Number of days of absence 11,238 Average duration 24.38 Frequency Index (FI) 24.95	2020	2021
Number of accidents (excluding commuting) Men 436 Women 25 of which with severe consequences** Number of days of absence 11,238 Average duration 24.38 Frequency Index (FI) 24.95	-	0
Men436Women25of which with severe consequences**-Number of days of absence11,238Average duration24.38Frequency Index (FI)24.95	205	
Women25of which with severe consequences**-Number of days of absence11,238Average duration24.38Frequency Index (FI)24.95	325	423
of which with severe consequences** Number of days of absence 11,238 Average duration 24.38 Frequency Index (FI) 24.95	308	401
Number of days of absence11,238Average duration24.38Frequency Index (FI)24.95	17	22
Average duration 24.38 Frequency Index (FI) 24.95	7	3
Frequency Index (FI) 24.95	10,312	10,364
11.1.9	31.73	24.50
	17.69	20.91
Severity Index (SI) 0.61	0.56	0.51
Occurrence Index (OI) 7.4	4.3	5.3
Commuting accidents 86	50	66
Lost Time Injury Rate (LTIR with 200,000) 4.99	3.54	4.18

^{*} 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.

Commuting accidents: accidents suffered by workers while commuting from home to work and vice-versa (but not while in service).

Figure 74 Percentage of workers represented in formal health and safety committees [GRI 403-1]

	2019	2020	2021
Percentage of the total	100%	100%	100%

Figure 75 Health data by BU

	Generation and Trading BU			Ma	Market BU			Environment BU		
	2019	2020	2021	2019	2020	2021	2019	2020	2021	
Visits as per 81/08	672	548	751	337	195	535	5,790	5,143	4,039	
Tox visits	114	180	171	27	24	27	2,292	2,120	2,759	
Assessments	1,797	1,325	1,530	406	194	506	13,686	9,539	8,593	
Flu vaccination	13	84	76	71	170	186	274	550	466	
Vaccinations	11	8	9	18	6	0	1,497	1,283	629	
Site inspections	17	16	28	7	11	16	67	44	57	
Reporting occupational illness	8	3	8	0	0	0	11	9	7	
Health provisions	17	17	17	5	5	5	27	27	27	
Specialist visits	0	0	0	0	0	1	125	26	23	

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.

Absenteeism

Figure 76 Number of working days lost by gender [GRI 403-2]

	2019		2020		2021		
	Men	Women	Men	Women	Men	Women	
Illness	106,409	18,946	125,453	17,649	121,744	16,105	
Unpaid leave/absence	6,414	1,028	4,585	494	6,641	1,689	
Company strikes	-	-	-	- 1		-	
National strikes	30	3	5	1	4,013	300	
Accidents	11,355	1,062	10,876	682	13,959	700	
Total	124,208	21,039	140,919	18,826	146,357	18,794	
Total days worked by the workforce in the reporting period	2,488,184	465,105	2,532,261	489,561	2,707,427	553,211	
Absentee Rate	5%	5%	6%	4%	5%	3%	

^{*} It should be noted that the figures presented in this table refer solely to working days lost due to accidents and not to calendar days lost, which are used to calculate the severity index.

Figure 77 Incident indices of contractors and subcontractors for construction and maintenance works [GRI 403-2_G4-EU17]

	No. of hours worked by contractors	No. Deceased	No. of accidents	No. of accidents with severe consequences	Days lost	Frequency index	Severity index
2019	4,492,370	0	25	n.a.	278	5.56	0.06
2020	2,945,274	0	22	2	736	7.47	0.25
2021**	4,507,139	1	42	3	9,129	9.33	2.03

 $[\]ensuremath{^{*}}$ The indicator does not include AEB, Fragea and Agripower.

^{**} Number of days lost 2021 includes days lost equal to the remaining working life of the deceased contractor.

Smart infrastructures BU			Co	Corporate			Total		
2019	2020	2021	2019	2020	2021	2019	2020	2021	
1,361	1,192	1,666	536	266	712	8,696	7,344	7,703	
368	369	471	12	1	1	2,813	2,694	3,429	
2,885	1,740	2,190	632	266	678	19,406	13,064	13,497	
304	567	568	227	341	312	889	1,712	1,608	
174	97	124	18	3	0	1,718	1,397	762	
35	24	23	8	13	10	134	108	134	
1	0	1	0	0	0	20	12	16	
9	9	9	7	7	7	65	65	65	
5	0	23	0	0	0	130	26	47	

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Figure 78 Rate of days lost* (total number of days lost for injury or illness out of total working hours by the workforce in the reporting period) [GRI 403-2]

		2019			2020			2021	
	Men	Women	General total	Men	Women	General total	Men	Women	General total
Days lost due to occupational illness	-	-	-	-	-	-	-	-	-
Days lost to accidents	11,355	1,062	12,417	10,876	682	11,558	13,959	700	14,659
Total workable hours of the workforce in the reporting period	18,063,290	3,386,063	21,449,353	18,265,462	3,568,847	21,834,309	19,271,291	4,009,527	23,280,817
Total hours worked by the workforce in the reporting period	15,693,976	2,801,174	18,495,150	15,459,541	2,908,822	18,368,362	16,817,777	3,413,159	20,230,935
Lost day rate	0.06%	0.03%	0.06%	0.06%	0.02%	0.05%	0.07%	0.02%	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 79 Return to work and retention rates after parental leave*

	2019		2020	2020		2021	
	Men	Women	Men	Women	Men	Women	
Employees who took parental leave	338	219	312	168	371	170	
of whom, employees who returned to work in 2019	328	183	0	0	0	0	
of whom, employees who returned to work in 2020	-	-	308	150	0	0	
of whom, employees who returned to work in 2021	-	-	-	-	358	141	
Employed by the company 12 months after return	-	-	-	-	304	142	

 $^{^{}st}$ Employees who did not return to work relative to 2020 have not necessarily resigned, but are continuing their leave.

Figure 80 Union membership

	2019	2020	2021
Members of Trade Unions	4,831	4,749	5,035

Figure 81 Hours of strikes

	2019	2020	2021
Total strike hours	237	42	29,572
Strike hours per capita*	0	0	2

 $[\]ensuremath{^{*}}\xspace$ Per capita hours are calculated on the average headcount.

Benefits and remuneration

Figure 82 Contributions to Recreational and Welfare Circles

	2019	2020	2021
Total (€)	5,325,796	5,522,525	5,918,051

Figure 83 Gender remuneration broken down by quartiles

	2020	2021
Share of women among the Top 10% of highest paid employees	14.12%	15.63%
Percentage of women in the first pay quartile globally	15.69%	16.94%
Percentage of women in the upper-middle global pay quartile	18.93%	19.72%
Percentage of women in the lower-middle global pay quartile	17.13%	18.63%
Percentage of women in the lowest global pay quartile	17.02%	17.84%

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Relations with customers

Electricity and natural gas sales service

Figure 84 Electricity sold to end customers (GWh)

	2019	2020	2021
Total	13,278	14,555	18,020

Figure 51 Gas sold to end customers (Mm³)

	2019	2020	2021
Total	1,987	1,878	2,275

Figure 85 Electricity supply contracts by type of market

	2019	2020	2021
Protected market	476,269	429,707	369,899
Free market	749,554	890,070	1,013,943
Gradual protection market			62,534
Safeguard market			18,486
Total	1,225,823	1,319,777	1,464,862

Figure 86 Electricity supply contracts by type of customer

	2019	2020	2021
Domestic	946,223	961,835	1,063,108
SME	139,574	152,167	200,809
Large customers	82,158	135,805	127,633
Condominiums	34,498	37,458	39,884
Public lighting	23,370	32,512	33,428
Total	1,225,823	1,319,777	1,464,862

Figure 87 Gas supply contracts by type of market

	2019	2020	2021
Protected market	597,714	548,400	539,738
Free market	645,009	699,146	826,423
Total	1,242,723	1,247,546	1,366,161

Figure 88 Natural gas supply contracts by type of customer [G4 - EU3]

	2019	2020	2021
Domestic	1,159,003	1,162,058	1,274,612
SME	67,482	58,819	63,063
Large customers	7,663	17,754	18,722
Condominiums	8,575	8,915	9,764
Total	1,242,723	1,247,546	1,366,161

Figure 89 Geographic breakdown of electricity sales volumes

	2019	2020	2021
Lombardy	65%	53%	60%
Rest of Italy	35%	47%	40%

Figure 90 Geographic breakdown of gas sales volumes

	2019	2020	2021
Lombardy	72%	78%	74%
Rest of Italy	28%	22%	26%

Figure 91 Cerved Energy Monitor survey on the level of satisfaction of A2A Energia customers

			2018			2019			2020	
Service supplied	Business segment	CSI	Market standard	Position*	CSI	Market standard	Position*	CSI	Market standard	Position*
	Domestic	93.3	92.0	1 of 7	91.9	92.9	2 of 7	93.1	93.4	3 of 7
Gas	VAT reg. & SME	93.8	93.4	1 of 6	94.7	94	1 of 6	96.3	95.5	1 of 5
Flantoinia.	Domestic	91.7	91.1	5 of 9	92.2	91.6	3 of 9	93.2	92.2	3 of 8
Electricity	VAT reg. & SME	91.1	91.7	3 of 10	93.1	93	4 of 11	95	95	3 of 11

^{*} 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.

Figure 92 Customer satisfaction on call centre operations

	2018 (annual)	2019 (annual)	2020 (annual)
A2A Energia	98.1%	95.4%	94.6%
National average	92.3%	92.0%	90.1%

^{*} In 2021, the 2020 figure was published.

Figure 93 Customer satisfaction after a call to the call centre (percentage on assessments recorded) - A2A Energia

	2019	2020	2021
score 1 (very dissatisfied)	5.4%	5.3%	6.7%
score 2 (dissatisfied)	2.2%	2.3%	2.4%
score 3 (satisfied)	8.0%	6.7%	5.9%
score 4 (very satisfied)	84.4%	85.7%	85.0%

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Figure 94 Electricity and natural gas complaint trends

	2019	2020	2021
A2A Energia - number of complaints	4,281	5,792	6,121
Lineapiù - Number of complaints	1,766	-	-
Yada Energia (NeN) - Number of complaints	-	39	285
Lumenergia - Number of complaints	6	9	22
Gelsia - Number of complaints			573
ASM Energia	n.a.	n.a.	762
A2A Energia complaints percentage out of average no. of customers	0.20%	0.23%	0.25%
Lineapiù complaints percentage out of average no. of customers	0.55%	-	-
Lumenenergia complaints percentage out of average no. of customers	0.05%	0.08%	0.20%
Yada Energia (NeN) complaints percentage out of average no. of customers	-	0.51%	0.73%
AEB - complaints percentage out of average no. of customers			0.29%
ASM Energia - complaints percentage out of average no. of customers	n.a.	n.a.	n.a.

^{*} From May 1, 2019, Linea Più was incorporated into A2A Energia. As a result of this transaction, the 2019 figures have been included in A2A Energia's figures.

Figure 95 Electricity bill cost trends (in euro) for a typical household*

	A2A Energia		YADA Energ	gia (NeN)	ASM En	ASM Energia	
	2019	2020	2021	2020	2021	2020	2021
Sales services	253.92	198.72	370.64	264.68	529.74	237.80	370.64
Network services	231.75	218.46	181.15	218.44	174.10	259.50	181.15
Tax	21.79	21.94	21.82	21.79	21.79	22.88	21.82
VAT	50.75	43.91	57.36	50.49	72.56	51.82	57.36
Total	558.21	483.03	630.97	555.40	798.19	572.00	630.97

^{*} For electricity, the Authority took as an example a resident domestic use contract, with 3 kW of available power and an average annual use of 2,700 kWh.

Figure 96 Cost trends in the natural gas bill in euro for a typical household*

	A2A Energia		YADA Energia (NeN)		ASM Energia		
	2019	2020	2021	2020	2021	2020	2021
Sales services	419.18	309.33	522.17	337.93	913.86	323.20	522.17
Network services	248.71	239.12	237.37	234.22	264.94	242.70	237.37
Tax	224.68	224.68	224.68	224.68	224.68	232.00	224.68
VAT	180.63	159.27	155.39	147.45	256.08	148.10	155.39
Total	1,073	932.40	1,140	944.28	1,659.56	946.00	1,139.61

^{*} 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 97 Office visits

	2019	2020	2021
Total number of customers served	240,354	134,399	185,995
A2A Energia	168,054	89,065	146,336
Lumenergia	-	3,853	4,816
AEB	-	-	34,843
Average office waiting time in minutes			
A2A Energia	12'54"	5'30"	5'12"
Lumenergia	n.a.	n.a.	n.a.
AEB	-	-	25'

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Figure 98 Customer satisfaction on the services provided at the counter

	2019	2020	2021
Positive	98.7%	99.6%	99.4%
Negative	1.3%	0.4%	0.6%

Figure 99 Number of electricity and gas contracts with the Bollett@mail service

	2019	2020	2021
A2A Energia	458,659	916,534	1,093,616
Lumenergia	1,362	1,457	2,333
ASM Energia	-	4,971	6,399
Yada Energia	-	16,629	51,032
Gelsia	-	-	37,096
Total	536,143	939,591	1,190,476
Increase (percentage)	23.7%	75.3%	26.7%

Figure 100 Number of visits to the commercial websites

	2019	2020	2021
Total number of visits	5,135,493	10,269,646	12,806,487
Registered with the online counter	425,985	517,168	636,493

Figure 101 Green energy sold (GWh)

Market segment	2019	2020	2021
Government	2%	5%	28%
Mass market	51%	33%	37%
Others	47%	62%	36%
Total GWh	2,276	3,858	4,976

Electricity and natural gas distribution service

Figure 102 Extension of the electricity distribution service [G4 – EU3_EU4]

	2019	2020	2021
Customers connected	1,190,375	1,204,394	1,219,703

^{*} Weighted average number of POD active during the year calculated on the basis of ARERA and CSEA provisions and valid for tariff purposes.

Figure 103 Extension of the gas distribution service* [G4 – EU3_EU4]

	2019	2020	2021
Customers connected	1,502,645	1,420,545	1,710,707

^{*} Weighted average number of PDR active during the year calculated on the basis of ARERA and CSEA provisions and valid for tariff purposes.

Figure 104 Technical quality of electricity [G4 – EU29_EU28]

						M	lilan					
		High density area		١	Medium density area			Low density area				
Service continuity indicator	2019	2020	2021	ARERA 2021 objective	2019	2020	2021	ARERA 2021 objective	2019	2020	2021	ARERA 2021 objective
Average annual minutes of outage per LV user due to long outages without notice	32.81	33.80	38.75	25	34.55	47.11	45.37	40	N/A	N/A	N/A	N/A
Average annual number of outages per LV user due to long outages without notice	1.51	1.57	1.55	1.42	1.76	1.98	2.61	2.03	N/A	N/A	N/A	N/A

	Brescia											
		High de	ensity ar	ea	١	1edium	density	area		Low de	ensity ar	ea
Service continuity indicator	2019	2020	2021	ARERA 2021 objective	2019	2020	2021	ARERA 2021 objective	2019	2020	2021	ARERA 2021 objective
Average annual minutes of outage per LV user due to long outages without notice	8.81	8.91	7.15	25	22.48	23.71	24.38	40	29.45	30.19	31.47	60
Average annual number of outages per LV user due to long outages without notice	0.83	0.84	0.84	1.0	2.29	2.64	1.9	2.0	3.07	2.64	2.84	4.0

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Figure 105 Technical quality of electricity [G4 – EU29_EU28]

						Cre	emona					
		High de	ensity ar	·ea	1	1edium	density	area		Low d	ensity a	rea
Service continuity indicator	2019	2020	2021	ARERA 2021 objective	2019	2020	2021	ARERA 2021 objective	2019	2020	2021	ARERA 2021 objective
Average annual minutes of outage per LV user due to long outages without notice	9.10	7.00	13.00	25	N/A	N/A	N/A	N/A	12.90	24.00	7.00	60
Average annual number of outages per LV user due to long outages without notice	0.29	0.40	0.30	1	N/A	N/A	N/A	N/A	0.78	1.50	1.00	4

Figure 106 Electricity emergency service [G4 – EU28]

		Milan		Brescia			
	2019	2020	2021	2019	2020	2021	
No. MV customers with more than 6 interruptions per year for high density areas	12	29	30	0	2	0	
No. of MV customers with more than 8 interruptions a year for medium- concentration areas	0	0	0	4	4	0	
No. MV customers with more than 9 interruptions per year for low density areas	N/A	N/A	N/A	3	18	2	

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 107 SAIDI index

	2019	2020	2021
SAIDI Index	0.648	0.487	0.646

^{*} 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 108 Electricity emergency service [G4 – EU28]

	Cremona					
	2019	2020	2021			
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 109 Commercial quality of electricity: specific indicators for the Milan-Brescia area [G4 – EU21]

Specific indicators	ARERA Level Res.		provided o d timetable		Average time to execute the service (days)			
Specific indicators	646/15	2019	2020	2021	2019	2020	2021	
Time to prepare estimate for work on the network	15 working days for LV 30 working days for MV	96.34%	98.02%	95.77%	7.83	6.63	7.69	
Execution time for simple work	10 working days for LV 20 working days for MV	98.22%	96.92%	95.64%	5.46	5.78	6.3	
Execution time for complex work	50 working days	99.03%	98.03%	97.31%	13.21	15.13	17.07	
Activation time for LV/MV supply	5 working days	99.44%	99.37%	99.14%	0.63	0.6	0.61	
Supply de-activation time	5 working days for LV 7 working days for MV	99.57%	99.24%	99.15%	0.64	0.57	0.66	
Reactivation time following suspension due to non-payment	1 working day	99.75%	99.72%	99.67%	0.08	0.07	0.07	
Observance of time bracket for appointments	2 hours	99.27%	99.57%	99.45%	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	76.58%	85.27%	89.24%	0.11	02:42	2h and 1min	
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	90.43%	94.54%	96.18%	0.10	02:07	1h and 52min	
Time to report results of testing of LV/MV meter equipment	15 working days	75.35%	97.76%	98.50%	11.86	6.92	6.36	
Time for notifying the result of the verification of voltage	20 working days	65.38%	76.92%	100.00%	21.31	22.23	13.8	

^{*} 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.

Figure 110 Commercial quality of electricity: specific indicators for the Cremona area [G4 – EU21]

			•			-	-
Specific indicators	ARERA Level Res.		provided o			ime to exec	ute the
	646/15	2019	2020	2021	2019	2020	202
Time to prepare estimate for work on the network	15 working days for LV 30 working days for MV	100% 100%	100% 100%	100% 100%	4.96 18.60	3.44 10	4.92 9.25
Execution time for simple work	10 working days for LV 20 working days for MV	100% 100%	100% 100%	99.25% 100%	2.28 0	2.54 9	3.16 0
Execution time for complex work	50 working days for LV 50 working days for MV	100% 100%	100% 100%	100% 100%	20.64 22.57	20.47 1	19.83 20.33
Activation time for LV/MV supply	5 working days	99.6% 100%	100% 100%	99.96% 100%	0.35 2.33	0.28 5	0.28 2
Supply de-activation time	5 working days for LV 7 working days for MV	99.80% 100%	99.02%	99.82% 100%	0.56 1	0.54	0.51 0.5
Reactivation time following suspension due to non-payment	1 working day on zeroed 1 working day reduced 15%	99.64%	98.18% 100%	99.74%	0.1	0.14 0	0.09
Observance of time bracket for appointments	2 hours	100%	100%	98.96%	-	-	-
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%	100%	1h and 13 min	1 h and 6 min	1 h and 16 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%	1h and 27 min	1 h and 23 min	1 h and 24 min
Time to report results of testing of LV/MV meter equipment	15 working days	100%	100%	100%	8.38	4.25	6
Time for notifying the result of the verification of voltage	20 working days	NA	NA	100%	NA	NA	11

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Figure 111 Commercial quality of electricity: specific indicators for the Monza area [G4 – EU21]

Specific indicator	ARERA Level Res. 646/15	Services provided on the indicated timetable (%)	Average time to execute the service (days)		
	010/10	2021			
Time to prepare estimate for work on the network	15 working days for LV 30 working days for MV	100.00	7.23		
Execution time for simple work	10 working days for LV 20 working days for MV	98.98	5.64		
Execution time for complex work	50 working days	100.00	15.5		
Activation time for LV/MV supply	5 working days	99.74	0.94		
Supply de-activation time	5 working days for LV 7 working days for MV	99.22	1.32		
Reactivation time following suspension due to non-payment	1 working day	98.28	0.24		
Observance of time bracket for appointments	2 hours	100.00	-		
Time for reinstating supply following a fault in the measurement group on working days between 8:00 a.m. and 6:00 p.m. on the LV network	3 hours	100.00	1.27		
Time for reinstating supply following a fault in the measurement group on working days between $8:\!00$ and $18:\!00$ on the LV network	4 hours	100.00	1.57		
Time to report results of testing of LV/MV meter equipment	15 working days	-	-		
Time for notifying the result of the verification of voltage	20 working days	-	-		

Figure 112 Commercial quality of electricity: general indicators for the Milan Brescia area [G4 – EU21]

-	405041 1 1/4	Services provided on the indicated timetable (
Type of service	ARERA level - LV	2019	2020	2021		
Minimum percentage of detailed responses to written complaints or	0.50%	05.40%	07.70%	04.5494		
requests for information provided within the maximum period of 30 calendar days	95%	95.40%	96.78%	96.56%		

Type of service	ADED A Love L. MV	Services provided on the indicated timetable (%)				
	ARERA level - MV	2019	2020	2021		
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95%	98.86%	99.17%	94.87%		

Figure 113 Commercial quality of electricity: general indicators for the Cremona area [G4 – EU21]

	ADEDA 1 1 1V	Services provided on the indicated timetable (%)				
Type of service	ARERA level - LV	2019	2020	2021		
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95%	100%	100%	100%		

The of country	ADEDA Louis MV	Services provided or	netable (%)	
Type of service	ARERA level - MV	2019	2020	2021
Minimum percentage of detailed responses to written complaints or requests for information provided within the maximum period of 30 calendar days	95%	100%	100%	83%

Figure 114 Commercial quality of electricity: general indicators for the Monza area [G4 – EU21]

Specific indicator	ARERA level - LV	Services provided on the indicated timetable (%) 2021
Minimum percentage of detailed responses to written complaints or requests for	95%	80.39
information provided within the maximum period of 30 calendar days	73/0	00.37

Stakeholder engagement and materiality analysis

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Figure 115 Technical quality of natural gas [G4 – EU21]

	Lev.	Lev.			Lev. Effect	tive 2019			
	Base	level	Milan	Brescia	Bergamo	Cremona	Lodi	Pavia	
Annual percentage of the high and medium pressure network inspected	30%	90%	72%	0%	100%	100%	100%	100%	
Annual percentage of the low pressure network inspected	20%	70%	56%	100%	100%	100%	100%	100%	
Annual number of leaks located per km of network inspected	8.0	0.1	0.22	0.12	0.04	0.04	0.02	0.03	
Annual number of leaks located in response to reports from third parties per km of network	0.8	0.1	0.17	0.08	0.02	0.03	0.01	0.02	
Conventional number of measurements of degree of natural gas odorant per thousand end customers	0.19	0.5	0.95	1.73	1.88	1.70	1.80	1.10	

Figure 116 Natural gas emergency service [G4 – EU21]

Annual number of calls to the switchboard with a time to arrival of the team at destination <= 60 min Lev. Base 90% Lev. Ref. 95%	2019	2020	2021
Milan	98.37%	99.68%	99.23%
Brescia	100.00%	96.14%	96.26%
Bergamo	100.00%	100.00%	100.00%
Cremona	99.90%	99.90%	99.90%
Lodi	100.00%	100.00%	99.90%
Pavia	100.00%	99.80%	100.00%
Monza and Brianza	n.a.	n.a.	97.72%

Figure 117 Natural gas commercial quality: general indicators [G4 – EU21]

Services provided within	Level		Unareti				
the times indicated (%)	ARERA	2019	2020	2021			
ercentage of requests to perform omplicated jobs which were completed ithin a maximum of 60 working days	90	% 98.71%	98.61%	99.60%			
reentage of justified replies to written ims or information requests communicated thin a maximum of 30 working days	95	% 97.54%	98.64%	99.07%			

Lev. Effective 2020						Lev. Effective 2021						
Milan	Brescia	Bergamo	Cremona	Lodi	Pavia	Milan	Brescia	Bergamo	Cremona	Lodi	Pavia	Monza
100%	0%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	99%
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%
0.08	0.10	0.01	0.00	-	0.01	0.08	0.10	0.01	0.00	0.01	0.01	0
0.15	0.07	0.01	0.02	0.01	0.02	0.14	0.07	0.03	0.01	0.02	0.01	0.1
0.96	1.85	1.41	1.70	1.8	1.1	0.93	1.82	1.62	1.70	1.80	1.10	2.3

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	LD Reti			ASVT	Retipiù	
2019	2020	2021	2019	2020	2021	2021
98.00%	98.00%	100.00%	100.00%	100.00%	100.00%	93.75%
98.00%	92.00%	100.00%	100.00%	100.00%	100.00%	80.84%

Figure 118 Gas commercial quality: specific indicators: Milan, Brescia, Bergamo and Chieti Area [G4 – EU21]

Type of service	ARERA Service provided within the Levels indicated timetable (%)					Average time to execute the service (days)			
Type of service	Res. 574/13	2019	2020	2021	2019	2020	2021		
Estimating time (simple work)	15 working days	94.07%	98.92%	99.21%	8.46	4.68	4.23		
Execution time (simple work)	10 working days	96.37%	96.58%	96.39%	6.84	6.85	7.16		
Estimating time (complex work)	30 working days	95.70%	95.28%	90.49%	13.77	12.03	14.79		
Supply activation time	10 working days	99.84%	99.85%	99.85%	3.18	3.19	3.23		
Supply de-activation time	5 working days	99.66%	98.10%	98.99%	2.75	3.07	3.07		
Reactivation time following suspension due to non-payment	2 working days	98.87%	98.56%	99.12%	1.12	1.11	1.03		
Observance of time bracket for appointments	2 hours	99.85%	99.80%	99.82%	N/A	N/A	N/A		
Time to notify results of testing of meter equipment	20 working days	93.18%	88.06%	87.61%	10.87	10.96	17.12		

Figure 119 Natural gas commercial quality: specific indicators for LD Reti [G4 – EU21]

Type of service	ARERA levels Res. 574/13 of 01/01/2014	Services provided on the indicated timetable (%)			Average time to execute the service (days)		
		2019	2020	2021	2019	2020	2021
Estimating time (simple work)	15 working days	99.00%	100.00%	98.65%	4.13	3.42	4.55
Execution time (simple work)	10 working days	97.00%	96.00%	97.54%	3.67	3.67	4.24
Estimating time (complex works)	30 working days	100.00%	100.00%	98.68%	7.58	2.62	5.22
Supply activation time	10 working days	90.00%	100.00%	99.88%	3.03	2.97	2.73
Supply de-activation time	5 working days	95.00%	97.00%	96.36%	2.66	2.86	2.69
Reactivation time following suspension due to non-payment	2 working days	95.00%	90.00%	95.92%	1.27	1.26	1.18
Observance of time bracket for appointments	2 hours	99.00%	99.00%	99.55%	N.A.	N.A.	N.A.
Time to notify results of testing of meter equipment	20 working days	83.00%	73.00%	86.67%	16.63	19.51	13.87

Figure 120 Natural gas commercial quality: specific indicators for ASVT [G4 – EU21]

Type of service	ARERA levels Res. 574/13 of	Services provided on the indicated timetable (%) Average time to execu service (days)				ite the	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	01/01/2014	2019	2020	2021	2019	2020	2021
Estimating time (simple work)	15 working days	100.00%	100.00%	97.96%	4.66	4.26	6.01
Execution time (simple work)	10 working days	100.00%	100.00%	100.00%	0.94	1.48	0.93
Estimating time (complex works)	30 working days	N/A	1.00	100.00%	1.00	7.19	5.74
Supply activation time	10 working days	99.89%	99.87%	99.88%	3.00	2.95	3.25
Supply de-activation time	5 working days	100.00%	98.67%	99.57%	2.20	2.16	2
Reactivation time following suspension due to non-payment	2 working days	100.00%	100.00%	100.00%	0.50	0.32	0.26
Observance of time bracket for appointments	2 hours	99.74%	99.84%	100.00%	N/A	N/A	N/A
Time to notify results of testing of meter equipment	20 working days	100.00%	75.00%	77.78%	18.50	15.00	18.67

Figure 121 Commercial quality of electricity: specific indicators for Retipiù [G4 – EU21]

Services provided on the indicated timetable (%)	Level ARERA Res. 574/13 of 01/01/2014	Services provided on the indicated timetable (%)	Average time to execute the service (days)
		20	
Estimating time (simple work)	15 working days	99.74	8.28
Execution time (simple work)	10 working days	97.34	5.60
Estimating time (complex works)	30 working days	96.30	20.72
Time for switching on supply	10 working days	99.98	3.58
Supply de-activation time	5 working days for LV	99.96	3.40
Reactivation time following suspension due to non-payment	2 working day	99.51	0.98
Observance of time bracket for appointments	2 hours	99.89	-
Time for notifying the result of the verification of measurement group	20 working days	72.45	25.75

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Integrated water service

Figure 122 Extension of the integrated water service [G4 - EU3]

	2019	2020	2021
Municipalities served by Integrated Water Service	95	95	95
Municipalities served by aqueduct service	86	86	86
Customers served aqueduct	217,545	222,451	223,608
Inhabitants served by aqueduct	667,094	667,736	665,152
Inhabitants served by sewers	657,628	655,430	652,845
Inhabitants served by purification	643,385	643,673	641,106

Figure 123 Call center quality [GRI 102-43_44]

	2019	2020	2021
Service accessibility rate (free lines with respect to operator presence time)	100%	100%	100%
Number of calls to the call centre	119,803	161,221	166,792
Average telephone waiting time for calls from end customers (sec)	152	177	168
Percentage of successful calls	87.86%	86.68%	88.87%

Figure 124 Quality of the A2A Ciclo Idrico and ASVT service*

	A2A Ciclo Idrico ASVT			ASVT		
data in days	2019	2020	2021	2019	2020	2021
Response time to requests for estimate for connection to the aqueduct	9.06	8.49	9.82	3.92	3.91	3.48
Response time to requests for estimate for connection to the sewers	9.72	10.55	9.92	2.27	2.35	1.13

^{*} Time charged to the operator.

District heating and heat management

Figure 125 Transformations made by the heat management service*

	2019	2020	2021
Transformations (no.)	28	37	14
Capacity installed (kW)	17,400	11,015	6,924

^{*} 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 126 Population served by the urban sanitation activity

	2019	2020	2021
Municipalities served	218	223	257
Population served	3,449	3,507	3,819

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Figure 127 Customer Satisfaction of the urban hygiene service carried out by AMSA (average vote)

Service	2019	2020	2021
Urban waste collection	8.31	8.3	8.11
Road and pavement cleaning and washing	7.39	7.15	7.42
Emptying of large road bins	7.46	7.33	7.33
Cleaning of market areas	8.33	8.16	7.49
Cleaning of green areas	7.3	7.12	7.47
Cleaning and collection during and after events	7.98	7.68	7.50
Cumbersome waste collection	8.83	8.89	8.67
Clarity and completeness of the communication on separate collection	8.06	7.97	8.07
Toll Free Number	8.17	8.17	8.42
Amsa counter	-*	7.36	8.00
Website	7.22	7.17	8.50
App Puliamo	_*	7.83	8.75
Recycling	8.5	8.43	8.51
Snow service	7.64	7.32	7.22

^{*} The counter and app satisfaction ratings are not statistically significant due to the low number of respondents.

Figure 128 Customer Satisfaction of the urban hygiene service carried out by Aprica (average vote)

	2021
CSI service	75.99
CSI contact channels	78.19
CSI improvement*	73.00

^{*} The Improvement CSI refers to the quality of service provided over the past 2 years, specifically how the service is perceived to have improved/stayed the same/worsened.

NOTE: Starting in 2021, in order to summarize in an operational manner the outcomes of the *Customer Satisfactions*urveys, 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 129 Paid services: waste disposal and other specific services for individuals [G4 - EU3]

Customers served	2019	2020	2021
Amsa	5,661	4,370	5,961
Aprica	1,248	1,229	1,438
La.Bi.Co. Due*	331	-	-
Linea Gestioni	633	637	1,394
Gelsia ambiente	-	-	87

 $[\]ensuremath{^{*}}$ The company La.Bi.Co.Due has been integrated into Aprica as of 2020.

Figure 130 Waste disposal service [G4 - EU3]

Customers served	2019	2020	2021
Municipalities served (no.)	1,000	1,007	1,285
Companies served (no.)	6,406	6,407	8,482

Figure 131 Call centre services

	AMSA				APRICA		
	2019	2020	2021	2019	2020	2021	
Number of calls to the call centre	419,383	398,470	368,197	57,618	75,262	136,054	
Accessibility of lines and services (time when line is free vs operator presence time)	100%	100%	100%	100%	100%	100%	
Average waiting time on the telephone (seconds)	47	39	29	45	64	116	
Percentage of successful calls	97%	98%	98%	93%	93%	92%	

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Conciliation management

Figure 132 ADR A2A-Consumer associations conciliation procedures

2021 Dispute issues	Electricity	%	Gas	%	Dual fuel	%	Total demand Ele/gas/dual	%	Water	%
Invoicing	5	38%	20	74%	1	100%	26	63%	3	43%
Market	0	0%	0	0%	0	0%	0	0%	1	14%
Contracts	6	46%	5	19%	0	0%	11	27%	2	29%
Late payment and suspension	1	8%	1	4%	0	0%	2	5%	1	14%
Metering	0	0%	1	4%	0	0%	1	2%	0	0%
Damages	1	8%	0	0%	0	0%	1	2%	0	0%
General total	13	100%	27	100%	1	100%	41	100%	7	100%

2020 Dispute issues*	Electricity	%	Gas	%	Dual fuel	%	Total demand Ele/gas/dual	%	Water	%
Invoicing	5	56%	5	42%	1	50%	11	48%	4	50%
Market	1	11%	0	0%	0	0%	1	4%	0	0%
Contracts	0	0%	1	8%	1	50%	2	9%	0	0%
Late payment and suspension	1	11%	1	8%	0	0%	2	9%	0	0%
Metering	1	11%	4	33%	0	0%	5	22%	4	50%
Connections, works and technical quality	0	0%	1	8%	0	0%	1	4%	0	0%
Damages	1	11%	0	0%	0	0%	1	4%	0	0%
General total	9	100%	12	100%	2	100%	23	100%	8	100%

 $[\]ensuremath{^{*}}$ The 2020 data has been recalculated due to a clerical error.

2019 Dispute issues*	Electricity	%	Gas	%	Dual fuel	%	Total demand Ele/gas/dual	%	Water	%
Invoicing	14	64%	7	28%	0	0%	21	44%	1	25%
Market	0	0%	2	8%	0	0%	2	4%	0	0%
Contracts	0	0%	1	4%	1	100%	2	4%	0	0%
Late payment and suspension	0	0%	1	4%	0	0%	1	2%	0	0%
Metering	7	32%	14	56%	0	0%	21	44%	3	75%
Connections, works and technical quality	1	5%	0	0%	0	0%	1	2%	0	0%
General total	22	100%	25	100%	1	100%	48	100%	4	100%

Figure 133 Contributions to the Authorities*

	2019	2020	2021
Energy Authority operating contribution	2,121,570	2,386,123	2,393,712
Ega operating contribution	474,602	481,201	479,822
Agcom operating contribution	42,005.52	52,409.47	65,105.65

^{*} Contributions made referencing the previous year are shown.

Figure 134 Contributions to political parties and trade associations (thousands of euro)

	2019	2020	2021
Politicians and political parties*	0	0	0
Trade associations	1,614	1,676	1,735
Other associations/organizations (promotion and dissemination of sustainability, research and sector/thematic studies)	269	284	442
Total	1,883	1,961	2,177

^{*} 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 135 Details of higher expenses for trade associations (thousands of euro)

thousands of euro	2019	2020	2021
Utilitalia	615	590	620
Confindustrie	497	531	492
Elettricità futura	129	135	134

Relations with suppliers

Figure 136 Number and value of orders by supply type [GRI 204-1]

Time	20	19	20	20	2021		
Туре	No. orders	Amount (€)	No. orders	Amount (€)	No. orders	Amount (€)	
Supplies	2,381	299,853,423	3,355	550,916,448	3,724	500,434,434	
Works	1,922	341,424,019	1,641	535,916,303	1,987	732,303,731	
Services	4,318	477,256,457	5,486	542,210,382	5,615	810,340,864	
Other types	-	-	-	-	282	6,836,577	
A2A Group orders	8,621	111,839,354	10,482	1,629,043,132	11,608	2,049,915,606	
LGH orders	2,650	114,846,305	2,060	101,910,000	1,488	98,558,390	

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Figure 137 Geographic breakdown of orders by business unit (%)

	Lombardy	Other Italian Regions	EU	Non EU	Total
Generation and Trading	42.76%	56.69%	0.11%	0.44%	100%
Market	55.41%	44.48%	0.09%	0.02%	100%
Corporate	69.71%	28.93%	0.34%	1.02%	100%
Environment	57.99%	29.11%	10.71%	2.19%	100%
Smart Infrastructures	71.81%	26.91%	0.75%	0.54%	100%

 $[\]ensuremath{^{*}}\xspace$ A2A Smart City merged in Smart infrastructures BU from 2019.

Figure 138 Geographic breakdown of orders [GRI 204-1] (% orders)

	2019	2020	2021
Lombardy	59.6%	66.9%	61.3%
Other Italian Regions	36.5%	30.7%	34.0%
EU	3.4%	1.8%	3.6%
Non EU	0.4%	0.6%	1.1%

Figure 139 Suppliers with at least one A2A Group certification (% orders)

	2019	2020	2021
Total suppliers with at least one certification	2,767	3,018	3,451
of which activated with order	1,092	1,113	1,239
Value of orders issued on total orders	83%	83%	86%

Figure 140 Validated suppliers, by type

	2019	2020	2021
Large business (more than 250 employees)	295	335	316
Medium business (50-250 employees)	770	911	916
Small business (10-50 employees)	1,572	1,796	1,650
Micro business (1-10 employees)	1,382	1,542	1,501
NA	210	299	279
Total	4,229	4,883	4,662

DISPUTE MANAGEMENT

EMPLOYEES

A total of 65 labour disputes were in progress or concluded in 2021 involving employees of A2A Group companies (excluding AMSA and including both the former LGH group and the AEB group), of which 10 concerned the assessment of the illegitimacy of dismissals for just cause or dismissals for justified subjective reason, 14 concerned the assessment of the illegitimate exclusion of the claimant from the business unit disposed of to one of the companies of the A2A Group with the consequent right to the establishment of an employment relationship subordinate to the latter company from the date of disposal of the business unit. In addition, 16 claimants requested for payment of salary differences other than requests for a higher level of classification, 1 claimant applied for a finding that the sale of the business unit was unlawful, with the result that it was reinstated in the transferor company, while 7 claimants applied for a finding that they were entitled to a higher level of classification and order to pay the relevant differences in remuneration. Then there were 2 claimants who took legal action to request compensation for the damage caused by the demotion of which 1 also requested a finding that the measure of secondment ordered against the latter was unlawful. In addition, in 2021, 2 cases were pending concerning the determination of the entitlement to compensation for damages arising from occupational illness or accident. The remaining causes concerned various requests (such as appeals of conservative disciplinary proceedings and appeals against dismissal due to the fact that the compensation period has been exceeded).

With regard to AMSA, there were a total of 85 labour disputes in progress or concluded in 2021, of which 10 concerned the assessment of the illegitimacy of dismissals for just cause or justified subjective reason and 5 concerned the assessment of the illegitimacy of dismissals for exceeding the period of conduct. In addition, 16 claimants challenged the fixed-term contracts and 7 fixed-term workers required the verification of the violation of the preferential right by the employer company in the subsequent permanent recruitments, 10 requested a determination of the right to recognition of the higher classification and an order for payment of the relevant salary differences, 10 a determination of fictitious interposition of labour and determination of the right to the establishment of an employment relationship and 7 a determination of the unlawfulness of the transfer of a business unit. The remaining cases concerned various requests, such as requests for payment of salary differences other than requests for a higher level of classification and appeals of conservative disciplinary proceedings.

SUPPLIERS

There were 7 labour disputes in progress or concluded in 2021 initiated by workers of contracting firms that worked on contracts awarded by A2A Group companies (excluding AMSA and including the LGH an AEB groups). There were 4 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.

Moreover, 1 claimant requested ascertainment of the right of establishment of an employment relationship by the client company.

As far as Amsa is concerned, during 2021, 8 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.

Non-compliance with environmental regulations [GRI 307-1]

During 2021, 22 environmental proceedings were in progress or concluded; of these, 4 proceedings were closed, 5 are new proceedings and 13 were already in progress (8 now relating to the former LGH S.p.A. group companies); these proceedings are related to: (i) allegations of violations of provisions contained in the respective Integrated Environmental Authorizations (A.I.A.), (ii) certain alleged irregularities in waste management and (iii) alleged non-compliance with other legal or regulatory requirements.

With regard to the 4 proceedings, closed in 2021:

· Criminal proceedings for violation of Legislative Decree no. 152/06 by the Milan Public Prosecutor's Office concerned an (at the time of the facts) employee of A2A's "assets" service who had been served, in September 2014, a notice of investigation underway by the municipal police. The facts referred to work carried out in Milan for which the same had presented the SCIA with annexed certification of conformity of the land prepared on the basis of environmental investigations carried out by a geologist appointed by the contractor and certifying the conformity of the land to the standard for industrial use of the site. However, the annexed table showed an exceedance of a potential contamination threshold that was not mentioned in the conclusions of the geologist's report and, consequently, in the statement made.

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Since then, however, the time limit for the closure of the investigation has passed without any action being taken by the Public Prosecutor's Office: more than seven years have passed and the person concerned by the notice left the Group some time ago and never communicated that the initial notice was followed by proceedings against, which have now been archived.

- Criminal proceedings concerned an employee of A2A Ambiente (Brescia Public Prosecutor's Office - Brescia preliminary investigation judge (GIP) for the unauthorized management of special non-hazardous waste) for whom on October 7, 2011 the Brescia GIP ruled that there was no need to proceed due to the fact of not having committed the crime (A2A Ambiente is now only a plaintiff in the trial);
- Criminal proceedings by the Milan Public Prosecutor's Office for an alleged violation found by ARPA at AMSA's "Silla transfer station" and charged to the company's then chief operating officer have been filed (the filing actually dates back to 2016, but we only heard from the defendant last year);
- The proceeding for a hypothesis of "organized activity for the traffic of waste" of the Court of Rome No. 29830/14 against the technical director (at the time of the facts) of the Rovato plant where waste coming from the reclamation of the former Sisas area of Pioltello had been disposed of for a short time and in small part, was defined on November 15, 21 with a sentence of acquittal.

CUSTOMERS [GRI 206-1]

2021 ended with 101 open legal proceedings relating to billing disputes on electricity and gas supplies, incorrect detection of consumption due to malfunctioning of the meters, incorrect configuration of the available power of the electricity

supply, incorrect termination of supply and, more generally, the failure and/or incorrect detection of consumption of electricity, gas and/or water service; of the aforementioned total no. 77 judicial proceedings specifically concern the issue of the repetition of excise duties on electricity of 2010/2011.

A dispute continued in 2021 with a customer of AMSA, A2A Ambiente and Aprica, which is claiming contractual termination for excessive costs incurred.

For the AEB Group, 2021 ended with 1 legal proceeding pending concerning the invoicing of gas supplies and 2 legal proceedings of (former) customers concerning disputes relating to the operation of micro-cogeneration plants installed at their premises.

COMMUNITY [G4 - EU25]

At end 2021, there were 89 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 41 cases seeking compensation for physical damages in respect of personal injuries; these include 1 relating to a fatal accident involving a Group company (an operative vehicle cleaning a cycle path) and a fatal accident involving a Group company (the placement of waste collection containers on the road-side is considered a cause of a road accident).

Finally, three lawsuits are pending regarding alleged violations of property rights.

For the AEB Group, 1 legal proceeding was pending at the end of 2021 between a local authority and a company, involving an AEB company, for a low-value claim involving property damage.

The Acsm Agam Group

Group Profile

The Acsm Agam Group includes 11 companies and is divided into 4 Business Units (BUs):

- Networks BU includes the companies that deal with:
- water service and gas distribution for the provinces of Monza, Como and Varese;
- only gas distribution in the provinces of Lecco and in Veneto;
- gas and electricity distribution in the province of Sondrio.
- Environment BU deals with waste collection activities (in the province of Varese and Como) and waste-to-energy (Como);
- Sales BU to which the Group companies operating in the sale of natural gas and electricity refer;
- Energy and Smart Technologies BU oversees the activities of energy efficiency, electricity generation, heat management, new innovative and smart city services, public lighting and district heating.

AEVV Farmacie s.r.l., which operates three pharmacies in the city of Sondrio, should also be added to these BUs.

Governance

The Company is listed on the Italian stock exchange in Milan and has adopted, since 2016, the Corporate Governance Code promoted by Borsa Italiana. The company's Corporate Governance structure is based on the traditional organizational model. Currently, all Group companies adopt their own Organization, Management and Control Models in accordance with Italian Legislative Decree 231/2001 (MOG), covering 100% of the Group's employees.

In addition to the control instruments provided for in the Legislative Decree, 231/2001, the Company has adopted a Code of Ethics, which also contains the main elements of its human rights policy. The Group companies are monitored with regards to risks connected with corruption. In accordance with the provisions of the Company's Code of Ethics, the Group does not allow active or passive corruption or collusion of any nature or form.

In 2021, 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.

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Economic value generated and distributed

Figure 141 Statement for distributing the gross global added value and Economic value generated and distributed (millions of euro)

	2020	2021
Remuneration of personnel	54.52	55.45
Remuneration of risk capital	16.41	16.87
Remuneration of borrowed capital	0.93	0.87
Transfers to the government	10.83	17.58
Transfers to the local community	2.47	5.62
COMPANY REMUNERATION	310.22	315.43
GROSS GLOBAL VALUE ADDED	395.38	411.83
Economic value generated	397	485
Economic value distributed	333	416

Figure 142 Investments - Percentage of Total (%)

	2020	2021
Group infrastructure investments (M€)	73.2	79.9
Networks BU	46%	48%
Energy BU	23%	27%
Environment BU	9%	11%
Sales BU	3%	1%
Corporate	19%	13%

Efficient infrastructure management

Figure 143 Installed capacity

INSTALLED CAPACITY	2020	2021
Electricity (MW _e)	48	31
Thermal (MW _t)	250	251

Figure 144 Energy production

ENERGY PRODUCTION	2020	2021
Electricity (GWh _e)	78	81
Thermal (GWh _t)	286	318

Figure 145 Natural gas distribution

Distribution of natural gas	2020	2021
Natural gas distributed (Mm³)	591	623
Gas network extension (km)	3,277	3,286

Figure 146 Electricity Distribution

Electricity distribution	2020	2021
Electricity distributed (GWh)	153	156
Electricity losses in the grid (GWh)	4	4
Extension of the electricity distribution service (km)	570	575
- of which underground cable (km)	413	419

Figure 147 Heating energy released to the network

Thermal energy released to the network	2020	2021
Heating energy distributed (GWh)	195	220
Thermal energy losses (GWht)	32	34

Figure 148 Integrated water service

Integrated water service	2020	2021
Wells (no.)	97	96
Springs (no.)	189	169
Drinking water plants (no.)	20	20
Total network length (km)	1,695	1,703
Water delivered to the user and booked (Mm³)	29	28
Water extracted (Mm³)	43	42
Network losses and water not booked (Mm³)	15	14

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Figure 149 Municipal waste collected

	2	.020	2	021
Urban waste collected	Quantity collected (t)	% differentiated collection	Quantity collected (t)	% differentiated collection
Varese	38,396	71%	41,015	70%
Province of Varese	37,381	81%	41,904	82%
Other municipalities in the province of Varese	8,548	-	7,435	-
Province of Como	5,647	74%	6,041	77%
Other municipalities in the province of Como	17,366	-	21,612	
Total	107,339	-	118,007	-

Environmental responsibility

Figure 150 Water withdrawal* (thousands of m³)

Source of withdrawal	2020	2021
Surface water	20,773	20,966
- of which in water stressed areas	0	0
Groundwater	20,311	19,911
- of which in water stressed areas	0	0
Third-party water	1,098	1,115
- of which in water stressed areas	0	0
Total volume of water withdrawn	42,182	41,993

^{*} Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride) >1,000 mg/l.

Figure 151 Water Discharge* (thousands of m³)

Destination of discharges	2020	2021
Surface water	20	18
- of which in water stressed areas	0	0
Third-party water	784	879
- of which in water stressed areas	0	0
Total volume of water discharged	804	897
Public water supplied to water service users (Mm3)	29	28

^{*} Salt/sea water is defined as marine or salt water with a concentration of dissolved solids (measured as sodium chloride) >1,000 mg/l.

Figure 152 Resources used

Resources used	2020	2021
Non-renewable fuels (GJ)	2,034,244	2,135,595
Electricity (GJ)	153	151
Chemical products and materials used (t)	7,597	2,509

Figure 153 Emission of greenhouse gases (t)

	2020	2021
Direct emissions (Scope 1)	163,137	171,424
Indirect emissions (Scope 2) - Location Based	11,794	11,666
Indirect emissions (Scope 2) - Market based	19,798	19,188

Figure 154 Pollutant emissions

	2020	2021
Nitrogen oxides (NO _x) (t)	76	82
Sulphur oxides (SO_X) (t)	0.4	1.0
Powders (t)	0.2	0.4
CO (t)	28	29
Fluorinated gases (kg)	27	42

Figure 155 Total waste generated

	2020	2021
Non-hazardous waste (t)	19,282	19,487
Hazardous waste (t)	2,828	2,581
Total (t)	22,110	22,068
Sent for recovery (% of total)	89%	90%

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Responsible management of people

Figure 156 Breakdown of employees and collaborators by gender

No seeds		2020			2021		
No. people	Men	Women	Total	Men	Women	Total	
Employees							
Permanent	645	228	873	657	232	889	
Temporary Contract	4	1	5	1	7	8	
Total	649	229	878	658	239	897	
of which with part-time contract	4	42	46	3	44	47	
Collaborators	n.a.	n.a.	42	n.a.	n.a.	42	

Figure 157 Number of hires, outgoing and turnover rate

New hires, outgoing, Turnover	2020	2021
Hires	52	82
Outgoing	76	63
Turnover*	9%	7%

^{*} The turnover rate was calculated according to the following formula: (departures) / (employees) at December 31.

Figure 158 Percentage of workers represented in formal health and safety committees

	2020	2021
%	100%	100%

Figure 159 Occupational accidents

	2020	2021
Decease	0	0
Accidents at work	27	18
of which with severe consequences	2	0
Rate of recordable occupational accidents	18.59	12.31
Rate of severe accidents at work	1.38	0

Figure 160 Breakdown of employees by professional category, gender and age group

			2020					2021		
ITALY	Managers	Middle Managers	White- collar workers	Blue- collar workers	Total	Managers	Middle Managers	White- collar workers	Blue- collar workers	Total
Men	17	39	218	375	649	17	40	226	375	658
Women	1	17	210	1	229	1	18	219	1	239
<30	0	0	17	21	38	0	0	34	29	63
30-50	8	33	263	180	484	9	31	269	170	479
>50	10	23	148	175	356	9	27	142	177	355
Total	18	56	428	376	878	18	58	445	376	897

Figure 161 Company population is covered by collective bargaining

	2020	2021
%	100%	100%

Figure 162 Training hours provided by gender

	203	2020		21
	Number of hours	Average annual hours of training per employee	Number of hours	Average annual hours of training per employee
Men	7,484	12	15,687	24
Women	3,302	14	7,308	31

Figure 163 Hours of training broken down by professional category

	20	2020		21
	Number of hours	Average annual hours of training per employee ⁴	Number of hours	Average annual hours of training per employee ⁴
Managers	518	29	1,023	57
Middle Managers	2,136	38	3,887	67
White-collar workers	6,234	15	13,235	30
Blue-collar workers	1,898	5	4,851	13

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The average number of hours per capita was calculated on the total number of employees in the Group's workforce.

Relations with shareholders

Figure 164 Customer relations

Number of PDRs (redelivery points) and municipalities served by the gas distribution service	2020	2021
PDR	313,458	312,447
Municipalities served	88	88
Number of users and municipalities served by the electricity distribution service	2020	2021
POD	25,779	25,934
Municipalities served	4	4
Number of users and municipalities served by the municipal sanitation service	2020	2021
Users	196,500	201,819
Municipalities served	42	52
Municipalities and customers served by the water service	2020	2021
Municipalities served by aqueduct service	37	37
Customers served aqueduct	85,214	85,515
Inhabitants served by aqueduct	314,775	310,283
Users connected to the district heating service	2020	2021
Users	633	637
Contracts by type of gas sales service provision	2020	2021
Protected market	121,481	110,125
Free market	125,179	128,015
Total	246,660	238,140
Volumes sold (Mm³)	431	436
Contracts by type of electricity sales service provision	2020	2021
Protected market	14,814	13,423
Free market	69,988	74,877
Total	84,802	83,300
Volumes sold (GWh)	369	381

Supply Chain

The Group adopts a register of suppliers (divided into product categories) whose qualification criteria do not constitute barriers to entry. Each selection procedure must be carried out in accordance with the widest possible conditions of competition. 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. Almost all orders are from Italian suppliers, of which over 76% are based in Lombardy. In addition, 789 suppliers were activated with at least one order as at December 31, 2021, all in the Group's register of suppliers.

Figure 165 Number of Group orders by type

Orders	20	20	20	2021		
Orders	No.	€	No.	€		
Supplies	1,068	29,088,825	760	43,220,601		
Works	152	40,072,364	102	25,635,944		
Services	1,354	63,433,462	835	102,709,413		
Sponsorships	75	444,537	103	572,070		
Other	-	-	-	-		
Total	2,649	133,039,188	1,800	172,138,028		

Disputes

No disputes have arisen with Group customers (with the exception of those relating to debt collection in which the company is a claimant), either for non-compliance linked to impacts on consumer health and safety or for supply services and related marketing activities.

There are no legal actions for recourse due to sanctions by the AGCM for causes related to anti-competitive conduct or unfair market practices.

During the year 2021, Acsm Agam Group Companies were not involved in disputes concerning non-compliance incidents involving privacy violations or loss of customer data.

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The AEB Group

The AEB Group's performance for the year 2021 has been fully integrated into the scope of A2A's Non-Financial Declaration.

For completeness and comparability, the following is an excerpt from 2020 published last year.

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, a 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 to Public Lighting, 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 inspired by 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

Figure 166 Investments by business unit

Group infrastructure investments (M€)	32.2
Corporate BU	4.3%
Market BU	24.5%
Environment BU	14.6%
Smart Infrastructures BU	56.6%
Total	100.0%

Figure 167 Installed capacity

	2020
Electricity (MW _e)	10
Thermal (MW _t)	150

Figure 168 Energy production

	2020
Electricity (GWh _e)	14
Thermal (GWh ₁)	64

Figure 169 Natural gas distribution

	2020
Natural gas distributed (Mm³)	346
Gas distribution network extension (km)	2,849

Figure 170 Electricity distribution

	2020
Electricity distributed (GWh)	130,794
Electricity losses in the grid (GWh)	4,709
Extension of the electricity distribution service (km)	252

Figure 171 Heating energy released to the network

	2020
Heating energy distributed (GWh)	68
District heating network extension* (km)	16

 $^{\ ^{*}}$ The network is intended as the sum of heat transmission, distribution and supply pipes.

Figure 172 Municipal waste collected

Gelsia Ambiente	2020	2020	
	Tonnes of waste	% differentiated collection	
Province of Monza and Brianza	184,111	80.6%	

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Environmental responsibility

Figure 173 Resources used

Resources used	2020
Fuel (TJ)	340
Automotive fuels (TJ)	52
Electricity (GWh)	5
Chemical products and materials used (t)	50

Figure 174 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

^{*} See notes on page 35. ** See notes on page 35.

Figure 175 Special waste produced (t)

	2020
Non-hazardous waste	164
Hazardous waste	41
Total	205

Responsible management of people

Figure 176 Breakdown of employees and collaborators by gender

	2020		
	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 177 Number of hires, outgoing and turnover rate

	2020
Hires	30
Outgoing	72
Turnover	11%

Figure 178 Injuries to employees by gender and days lost

	2020			
	AEB	GELSIA	GELSIA AMBIENTE	RETI più
Number of deaths	0	0	0	0
No. accidents at work	1	0	24	1
Men			24	1
Women	1	0	0	0
Accidents 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 179 Breakdown of employees by professional category and gender

		2020				
No. people	Managers	Middle Managers			Total	
Men	6	26	99	366	497	
Women	1	7	112	6	126	
Total	7	33	211	372	623	

Figure 180 Company population is covered by collective bargaining

	2020
%	100%

Figure 181 Training hours provided by gender

2020	No. employees trained	Participations	Number of hours	Average annual hours of training per employee	
Men	434	903	5,089	10.08	
Women	83	194	1,041	8.20	

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Figure 182 Hours of training broken down by professional category

2020	No. employees trained	Participations	Number of hours	Average annual hours of training per employee ⁶
Managers	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

Relations with shareholders

Figure 183 Customer relations

lumber of PDRs (redelivery points) and municipalities served by the gas distribution ervice	2020
DR	285,995
1unicipalities served	97
lumber of users and municipalities served by the electricity distribution service	
OD	26,048
1unicipalities served	1
lumber of users and municipalities served by the municipal sanitation service	
lsers .	414,229
1unicipalities served	26
Jsers connected to the district heating service	
lsers .	530
bublic lighting (net of A2A Public Lighting points)	
ight points	7,059
Gas sales service (number of contracts)	
rotected market	73,910
ree market	63,805
otal	137,715
otal gas sales (Mm³)	260
lectricity sales service (number of contracts)	
rotected market	8,409
ree market	55,509
otal	63,918
otal sales of electricity (GWh)	488

⁴ The average number of hours per capita was calculated on the total number of employees in the Group's workforce.

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 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 184 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		

Financial c

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).

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The Acsm Agam Group

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