

Manufacturing capital

Energy production

Figure 9 Average availability factor for all plants [G4 - EU30]

	2018	2019	2020
A2A average availability factor (%)			
Traditional coal-powered	80%	91.4%	96.8%
Traditional heavy fuel oil	80%	79.8%	81.7%
Combined cycle natural gas	87%	86.8%	84.4%
Run-of-the river hydroelectric	86%	86.3%	86.2%
Basin hydroelectric	85%	89.8%	91.0%
Storage hydroelectric	87%	71.4%	83.8%
LGH average availability factor (%)			
Run-of-the river hydroelectric	90%	85%	90%

Figure 10 Electricity produced fed into the grid divided up according to plant type and source – GWh [G4 - EU2]

	2018	2019	2020	
Generation and Trading Business Unit	Thermoelectric plants	10,671	10,910	9,760
	Hydroelectric plants	4,464	4,534	4,388
	Photovoltaic plants (including energy consumed)	63	122	126
Networks and District Heating Business Unit	Cogeneration plants	285	268	264
Environment Business Unit	Waste-to-energy plants (including biogas) and natural gas boilers	1,183	1,192	1,288
Total	16,666	17,044	15,827	

Figure 11 Heating energy produced fed into the grid divided up according to plant type and source – GWh

	2018	2019	2020	
Environment Business Unit	Waste-to-energy plants (including biogas) and natural gas boilers	1,403	1,478	1,530
Networks and District Heating Business Unit	Cogeneration plants, natural gas thermal, heat pumps, biogas, solar panels	1,213	1,140	1,125
Generation and Trading Business Unit	Heat recovery	33	36	36
Total	2,649	2,654	2,691	

Electricity distribution

Figure 12 Extension of electricity distribution service [G4 - EU4]

	2018	2019	2020
Km of electricity network	15,014	15,359	15,472
of which underground cable	12,976	13,362	13,451

Figure 13 Extension of the gas distribution service

	2018	2019	2020
Km of natural gas network	11,193	11,240	9,852

Figure 14 Losses in the grid*

	2018	2019	2020
Electricity (GWh) from distribution*	299	301	250
Methane (Mm ³) from distribution*	na	na	1,444
Heat (GWh) dispersed	na	na	542

* The figure is estimated.F

Figure 15 Electricity, heating energy and gas released to the network

	2018	2019	2020
Electricity distributed (GWh)	11,747	11,573	10,497
Distributed heating and cooling energy (GWh)	3,130	3,079	3,146
Distributed natural gas (Mm ³)	2,425	2,356	2,300
Transported natural gas (Mm ³)	372	350	355

Figure 16 Public lighting

	2018	2019	2020
Light points (no.)	232,368	275,950	327,923

Integrated water cycle

Figure 17 Procurement and distribution

TECHNICAL DATA	2018	2019	2020
Wells (no.)	190	190	190
Sources (no.)	275	255	269
Drinking water conversion plants (no.)	122	123	122
Total network length (km)	4,010	4,019	4,044
Water delivered to the user and accounted for (Mm ³)	54	54	54
Water extracted (Mm ³)	94	93	92
Network losses and water not booked (Mm ³)	41	37	36

Figure 18 Collection and treatment

TECHNICAL DATA	2018	2019	2020
Sewers - network length (km)	2,567	2,569	3,911
Waste water treated (Mm ³)	52	51	52
Purifiers (no.)	61	57	59

Waste management

Figure 19 Waste collected

	2018	2019	2020
Tonnes	1,584,955	1,618,000	1,527,000

Figure 20 Waste treated by type of plant* - kt

	2018	2019	2020
Waste-to-energy plants	1,790	1,806	1,790
Landfills	455	182	120
Bio-drying plants and production of RDF	545	539	509
Recovery of materials and processing	997	1,024	1,190
Total	3,787	3,551	3,609

* All incoming waste to the Group's plants is considered. The 2020 portion of waste disposal, net of intermediation (369 kt) and elisions (-816 kt) is 3,162 kt. Waste treated in plants managed on behalf of third parties (Acerra waste-to-energy plant and Caivano SSF plant) is not included.

Figure 21 Intermediated waste

	2018	2019	2020
Tonnes	216,374	220,368	183,460

District heating and heat

Figure 22 Heating energy sold

	2018	2019	2020
Heating/cooling energy (GWh)	2,620	2,564	2,604

Operational sustainability targets 21-30

Stakeholder engagement and materiality analysis

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	2018				2019				2020			
	USERS* (no.)	VOLUMES SERVED (Mm ³)	Network development** (double pipe) km	Apartment equivalents	USERS* (no.)	VOLUMES SERVED (Mm ³)	Network development** (double pipe) km	Apartment equivalents	USERS* (no.)	VOLUMES SERVED (Mm ³)	Network development** (double pipe) km	Apartment equivalents
Province of Bergamo	647	7.0	74.8	29,100	672	7.2	75	30,000	692	7.3	77	30,500
Province of Brescia	20,584	42.3	670.7	176,200	21,313	42.5	672	177,100	20,513	42.6	678	177,700
Province of Milan***	3,495	52.6	339.4	219,021	3,585	52.8	343	220,083	3,990	54.8	363	228,183
Province of Cremona	741	6.6	76.9	27,500	749	6.6	77	27,600	754	6.8	77	28,317
Province of Lodi	214	2.9	26.6	12,200	227	3.1	27	12,700	232	3.1	27	12,735
Total	25,681	111.4	1,188.4	464,021	26,546	112.2	1,195	467,483	26,181	115	1,222	477,435

* May not coincide with a single housing unit.

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

*** Province of Milan has also included the district heating service of Linea Green, at Rho Nord and Rho Sud.

Smart City

Figure 24 Smart City - Smart Land Services - number

	2018	2019	2020
Municipalities served	2	24	184
Services offered	7	40	126
Video cameras	2,013	2,174	5,919
Camera Control Stations	51	51	51
Break-in sensors	5,025	5,025	7,974
Fire sensors	3,373	3,373	3,885
Access and presence readers	841	841	1,074
SoS stations	250	250	250
Variable message panels	15	15	15
Digital islands	29	29	37
Wi-Fi antennae	1,198	1,198	1,887
IOT Sensors	216	216	7,197
Environmental sensors	118	148	159
Smart bins	6,663	12,880	12,870
Smart land sensors	62	125	239
Smart parking sensors	711	2,580	1,861

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