



ENVIRONMENTAL ACCOUNTS

# ENVIRONMENTAL ACCOUNTS

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## REFERENCE BOUNDARY

The perimeter of the *Environmental Account* is consistent with the reporting perimeter of the *Sustainability Report* (pursuant to Italian Legislative Decree 254/2016), as defined in the *Methodological Note*.

The water companies in which Acea has an investment: Acque, Acquedotto del Fiora, Publiacqua and Umbra Acque – consolidated in the Financial Statements with the equity method – are marginally included in the Environmental Accounts and only relative to the aspects which are specifically signalled in the text. Please see the chapter *Water Company data sheets and overseas activities* (outside the perimeter of the *Consolidated Non-Financial Statement*). The company Gori, which joined the scope of consolidation on a line-by-line basis in November 2018, has not been included within the scope of the consolidated non-financial statement for this reporting cycle, but is considered to be the same as the other water companies in which it has an interest.

The *Environmental Accounts*, integral part of the *Sustainability Report*, combines and presents systematically the information and environmental performance data of the principal companies of the Group.

The data is divided into “product systems” pertaining to the energy, “environment” and water fields, according to the Life Cycle Assessment approach (standard ISO Series 14040), which assesses the entire life cycle of the systems.

The report comprises **about 400 items and parameters monitored** which quantify the physical flows generated by the activities and some performance indicators.

The substances used by the Group – whether natural, like water, or not natural, like chemicals – the “products” and the emissions, the effluents and waste related to the activities managed, are reported for the three-year period, since they are significant in terms of **producing and distributing energy, collecting and distributing drinking water, the purification processes** and for all the process-

es connected to **waste management**, including **waste-to-energy**. Every use is reduced to a minimum in terms of quantity and every substance is selected carefully in terms of quality, safety and environmental sustainability.

The resources, both the **renewable and non-renewable** ones, used are explained in the three areas. In particular, among the renewable resources listed we highlight the consumption of water and the biomasses used for the production of compost. The energy produced from renewable sources (photovoltaic and biogas) is used where possible in the closest factories or installations (see *Relations with the environment*).

In the *Explanatory Notes* we provide additional information regarding the **quality of the data presented**, in particular whether it was **measured, estimated or calculated**, and the principal items of the *Environmental Accounts*, indicated in the tables and in the text by a number in brackets, including a brief description.

## PRODUCT SYSTEMS



### ENERGY SEGMENT

- ENERGY GENERATION (THERMOELECTRIC + HYDROELECTRIC + PHOTOVOLTAIC + ELECTRICITY FROM WASTE AND BIOGAS)
- DISTRIBUTION OF ELECTRICITY
- PRODUCTION AND DISTRIBUTION OF HEAT
- PUBLIC LIGHTING
- CONTROLS AND MEASUREMENTS



### ENVIRONMENT SEGMENT

- SOLID URBAN WASTE DISPOSED
- PRODUCTION OF COMPOST
- ANALYSIS AND MEASUREMENTS



### WATER SEGMENT

- DRINKING WATER SUPPLY
- NON-DRINKING WATER SUPPLY
- WATER DISTRIBUTION
- ADDUCTION/PURIFICATION WASTEWATER
- ANALYSIS AND MEASUREMENTS

The data are provided for the 2016-2018 three-year period and aggregated in three homogeneous categories:

- **the product supplied,**
- **the resources used,**
- **the waste produced.**

The service indicators and the principal environmental performance indicators are explained below for every area.

# THE PRODUCTS - ENERGY SEGMENT

The financial statement data relative to the generation of electricity refer to Acea Produzione and Acea Ambiente - Waste-to-Energy.

ELECTRICITY - GENERATION <sup>(*)</sup>	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Summary data</b>					
<b>Total gross electricity produced (1) = (3+11+14+19)</b>	<b>GWh</b>	<b>755.17</b>	<b>837.90</b>	<b>968.38</b>	<b>15.6</b>
<b>Total net electricity produced (2) = (10+13+18+21)</b>	<b>GWh</b>	<b>696.89</b>	<b>773.32</b>	<b>900.19</b>	<b>16.4</b>
From fossil fuels (thermoelectric) (5 + 0.49x 15 <sub>San Vittore</sub> + 0.58x 16 <sub>Terni</sub> )	GWh	166.29 22.0% of (1)	229.45 27.4% of (1)	272.88 28.2% of (1)	18.9
From renewable sources (Hydroelectric, solar, biodegradable waste fraction) (4+0.51x15 <sub>San Vittore</sub> +0.42 x 16 <sub>Terni</sub> +11+19)	GWh	571.19 78.0% of (1)	608.45 72.6% di (1)	695.51 71.8% di (1)	14.3
<b>Acea Produzione - hydroelectric and thermoelectric</b>					
<b>Total gross electricity produced (3) = (4+5)</b>	<b>GWh</b>	<b>399.73</b>	<b>420.18</b>	<b>549.84</b>	<b>30.9</b>
<b>Total gross hydroelectric energy (4)</b>	<b>GWh</b>	<b>389.68</b>	<b>380.48</b>	<b>476.52</b>	<b>25.2</b>
A. Volta Castel Madama	GWh	0.00	6.92	31.64	357.4
G. Ferraris Mandela	GWh	10.71	3.27	0.00	-100.0
G. Marconi Orte	GWh	62.69	56.32	73.01	29.6
Sant'Angelo	GWh	132.62	128.42	188.68	46.9
Salisano	GWh	181.26	182.82	180.49	-1.3
Other minor	GWh	2.40	2.73	2.70	-0.8
<b>Total gross thermoelectric energy (5)</b>	<b>GWh</b>	<b>10.05</b>	<b>39.70</b>	<b>73.32</b>	<b>84.7</b>
From diesel Montemartini power plant (**)	GWh	1.18	2.15	0.56	-74.1
From natural gas	GWh	8.88	37.55	72.76	93.8%
Tor di Valle cogeneration	GWh	8.88	8.22	0.00	-100.0%
Tor di Valle CAR module	GWh	-	29.33	72.76	148.1%
<b>Total losses of electricity (6) = (7+8+9)</b>	<b>GWh</b>	<b>10.90</b>	<b>10.12</b>	<b>12.32</b>	<b>21.7</b>
Self consumption hydro plants (7)	GWh	2.09	1.98	2.00	1.0
Self consumption thermo plants (Tor di Valle, Montemartini) (8)	GWh	4.17	3.63	5.39	48.2
First processing losses (9)	GWh	4.63	4.51	4.93	9.3
<b>Total net electricity produced by Acea Produzione (10) = (3-6)</b>	<b>GWh</b>	<b>388.84</b>	<b>410.06</b>	<b>537.52</b>	<b>31.1</b>
<b>Production Area - Photovoltaic</b>					
<b>Gross photovoltaic electrical energy (11)</b>	<b>GWh</b>	<b>10.99</b>	<b>11.60</b>	<b>10.20</b>	<b>-12.0</b>
Total electricity losses including own consumption (12)	GWh	1.95	1.98	2.18	10.3
<b>Net photovoltaic energy (13) = (11-12)</b>	<b>GWh</b>	<b>9.04</b>	<b>9.62</b>	<b>8.02</b>	<b>-16.6</b>
<b>Acea Ambiente - Waste-to-energy</b>					
<b>Total gross electricity produced (14) = (15)+(16)</b>	<b>GWh</b>	<b>326.75</b>	<b>384.25</b>	<b>389.71</b>	<b>1.4</b>
San Vittore del Lazio plant (15)	GWh	243.68	301.15	307.30	2.0
Terni plant (16)	GWh	83.07	83.10	82.41	-0.8
<b>Self consumption + losses from first processing (17)</b>	<b>GWh</b>	<b>44.34</b>	<b>51.30</b>	<b>52.73</b>	<b>2.8</b>
San Vittore del Lazio plant	GWh	35.68	42.78	44.35	3.7
Terni plant	GWh	8.66	8.52	8.38	-1.7
<b>Total net electricity produced (18) = (14-17)</b>	<b>GWh</b>	<b>282.41</b>	<b>332.95</b>	<b>336.98</b>	<b>1.2</b>
<b>Acea Ambiente - Biogas</b>					
<b>Total gross electricity produced from biogas (19)</b>	<b>GWh</b>	<b>17.69</b>	<b>21.87</b>	<b>18.63</b>	<b>-14.8</b>
Orvieto plant	GWh	17.69	21.87	18.63	-14.8
Self consumption (20)	GWh	1.10	1.17	0.97	-17.2
<b>Total electricity transferred in network (21) = (19-20)</b>	<b>GWh</b>	<b>16.60</b>	<b>20.69</b>	<b>17.66</b>	<b>-14.7</b>

(\*) Some data of the two-year period preceding the year of publication have been adjusted since they were estimated.

(\*\*) The Montemartini power plant is maintained operational but in reserve mode.

<b>THERMAL ENERGY - GENERATION</b>	<b>u. m.</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Δ% 2018/2017</b>
<b>Acea Produzione</b>					
<b>Gross thermal energy produced Tor di Valle power plant (22)</b>	<b>GWh<sub>t</sub></b>	<b>90.03</b>	<b>96.19</b>	<b>98.38</b>	<b>2.3</b>
Total losses of thermal energy (23)	GWh <sub>t</sub>	23.95	20.14	25.29	25.5
<i>Distribution losses</i>	GWh <sub>t</sub>	17.83	14.06	14.81	5.3
<i>Production losses</i>	GWh <sub>t</sub>	6.11	6.08	10.48	72.4
<b>Net thermal energy sold (24) = (22-23)</b>	<b>GWh<sub>t</sub></b>	<b>66.08</b>	<b>76.04</b>	<b>73.09</b>	<b>-3.9</b>
<b>ELECTRICITY - TRANSPORT AND SALE</b>					
<b>In Rome and Formello - summary data</b>					
Supply from Acea Group (25)	GWh	3.00	3.21	2.62	-18.4
Electricity from the market (26)	GWh	10,798.59	10,832.86	10,610.06	-2.1
<i>from Single Buyer</i>	GWh	2,675.92	2,620.42	2,321.83	-11.4
<i>From importation</i>	GWh	390.20	389.13	389.14	0.0
<i>From wholesalers + other producers</i>	GWh	7,732.47	7,823.31	7,899.09	1.0
<b>electricity requested on the grid (27) = (25+26) = (28+29+30+31+32)</b>	<b>GWh</b>	<b>10,801.59</b>	<b>10,836.07</b>	<b>10,612.68</b>	<b>-2.1</b>
<i>Distribution, transport and commercial losses (28)</i>	GWh	699.58 6.48% of (27)	747.40 6.90% of (27)	763.74 7.20% of (27)	2.2
<i>Uses for own transmission and distribution (29)</i>	GWh	32.45	40.39	39.63	-1.9
<i>Net electricity transferred to third parties (30)</i>	GWh	2.52	2.59	2.59	-
<b>Net electricity conveyed from Acea to clients of the open market (31)</b>	<b>GWh</b>	<b>7,309.73</b>	<b>7,393.80</b>	<b>7,463.10</b>	<b>0.9</b>
<i>Net electricity sold by Acea Energia to clients of the open market on distribution company grid (Areti)</i>	GWh	5,673.51	5,847.37	6,041.16	3.3
<i>Net electricity sold by other sellers to clients of the open market on distribution company grid (Areti)</i>	GWh	1,636.22	1,546.43	1,421.94	-8.1
<b>Net electricity sold to managed clients (32)</b>	<b>GWh</b>	<b>2,757.30</b>	<b>2,651.90</b>	<b>2,343.60</b>	<b>-11.6</b>
<b>Sale in Italy - summary data</b>					
<b>Net electricity sold by Acea on the open market - including sale on Rome (33)</b>	<b>GWh</b>	<b>5,558.84</b>	<b>4,190.94</b>	<b>3,684.54</b>	<b>-12.1</b>
<i>Acea Energia</i>	GWh	5,163.44	3,852.12	3,322.62	-13.7
<i>other Associated companies</i>	GWh	395.40	338.82	361.92	6.8
<b>Net electricity sold by Acea in Italy (open market + managed) (32+33)</b>	<b>GWh</b>	<b>8,316.14</b>	<b>6,842.84</b>	<b>6,028.14</b>	<b>-11.9</b>
<b>PUBLIC LIGHTING</b>					
<b>u. m.</b>					
<b>Luminous flux to Rome (34)</b>	<b>Mlumen</b>	<b>2,750</b>	<b>1,991</b>	<b>2,010</b>	<b>1.0</b>
<b>CONTROLS AND MEASUREMENTS</b>					
<b>u. m.</b>					
<b>measurement and control activity (35)</b>	<b>no.</b>	<b>410</b>	<b>371</b>	<b>526</b>	<b>41.8</b>
<i>Electro-magnetic field measurements</i>	no.	23	25	27	8.0
<i>Noise measurements</i>	no.	18	27	17	-37.0
<i>PCB chemical analyses</i>	no.	76	43	59	37.2
<i>Waste classification</i>	no.	43	28	130	-
<i>Transformer diagnostics</i>	no.	217	216	261	20.8
<i>other</i>	no.	33	32	32	0.0

# THE PRODUCTS - ENVIRONMENT SEGMENT

The data refers to the three composting plants (the one located in Aprilia and the two located, respectively, in Monterotondo Marittimo and Sabaudia) and the waste management plant of Orvieto, all from December 2016 in Acea Ambiente and 100% Acea SpA. The Sabaudia plant, in order to permit the implementation of ordinary and extraordinary maintenance operations, suspended conferments in September 2016, was inactive throughout 2017 and resumed deliveries on 16 August 2018 for composting only, while the liquid waste treatment section is still inactive<sup>1</sup>. In order to start work on the new anaerobic digestion section, the Monterotondo Marittimo plant

suspended deliveries as early as the end of 2017 and was only operational to process the material that had arrived on site until April 2018. The Aprilia plant – placed by the Latina Public Prosecutor's Office under preventive seizure in 2017 for aspects related to odorous emissions – despite the validity of the provisions of the Public Prosecutor's Office was able to restart practically full operations in April, Acea having responded to the notices of compliance prescribed by the relevant authorities (Arpa, Lazio Region, NOE). The percentage changes are not calculated for this plant since they are not very significant considering the various operating times of the plant.

NON-HAZARDOUS WASTE DISPOSED AND RECOVERED - ORVIETO PLANT	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Total incoming waste (36) = (37)+(38)</b>	t	<b>96,541</b>	<b>88,273</b>	<b>91,142</b>	<b>3.3</b>
<b>Waste sent for treatment (37)</b>	t	<b>55,328</b>	<b>58,297</b>	<b>58,343.00</b>	<b>0.1</b>
<i>Of which: waste sent to the anaerobic digester and aerobic treatment</i>	t	29,846	42,506	43,420	2.2
<i>Of which: sent for aerobic treatment or just shredding</i>		n.a.	15,791	14,923	-5.5
<b>Waste sent directly to landfill (38)</b>	t	<b>40,894</b>	<b>29,976</b>	<b>32,799</b>	<b>9.4</b>
<b>Waste sent to landfill after treatment (39)</b>	t	<b>29,886</b>	<b>13,625</b>	<b>18,469</b>	<b>35.6</b>
<b>Waste recovered (40)</b>	t	<b>3,887</b>	<b>336</b>	<b>45</b>	<b>-86.6</b>
<b>High quality compost (41)</b>	t	<b>1,339</b>	<b>4,578</b>	<b>5,009</b>	<b>9.4</b>
<b>Reduction for stabilisation (42) = (36) – (38+39+40+41)</b>	t	<b>20,535</b>	<b>39,758</b>	<b>34,820</b>	<b>-12.4</b>

PRODUCTION OF COMPOST	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Total incoming organic waste (43) = (44+45+46)</b>	t	<b>45,051.07</b>	<b>56,474.33</b>	<b>28,714.78</b>	<b>-49.2</b>
<b>Incoming sludge (44)</b>	t	<b>16,999.50</b>	<b>10,593.60</b>	<b>3,385.4</b>	<b>-68.8</b>
<i>Aprilia plant</i>	t	6,393.94	5,464.54	1,286.60	-
<i>Monterotondo Marittimo plant</i>	t	4,867.80	5,129.06	0.00	-
<i>Sabaudia plant</i>	t	5,737.76	0.00	2,098.8	-
<b>Incoming green (45)</b>	t	<b>12,596.45</b>	<b>11,220.33</b>	<b>3,679.95</b>	<b>-67.2</b>
<i>Aprilia plant</i>	t	5,705.00	8,585.21	2,626.81	-
<i>Monterotondo Marittimo plant</i>	t	2,202.43	2,635.12	0.00	-
<i>Sabaudia plant</i>	t	4,689.02	0.00	1,053.14	-
<b>Organic fraction from separate incoming collection and other agrifood waste (46)</b>	t	<b>15,467.18</b>	<b>34,660.40</b>	<b>21,649.43</b>	<b>-37.5</b>
<i>Aprilia plant</i>	t	15,439.40	33,141.62	21,649.43	-34.7
<i>Monterotondo Marittimo plant</i>	t	27.78	1,518.78	0.00	-
<b>High quality compost (47)</b>	t	<b>12,654.00</b>	<b>12,538.00</b>	<b>9,259.64</b>	<b>-26.1</b>
<i>Aprilia plant</i>	t	5,000.0	10,238.0 (*)	7,200	-
<i>Monterotondo Marittimo plant</i>	t	2,100.0	2,300.0	777.0	-66.2
<i>Sabaudia plant</i>	t	5,554.0	0.0	1,282.6	-
<b>Non-compostable material for disposal (48)</b>	t	<b>3,364.08</b>	<b>9,361.97</b>	<b>3,565.50</b>	<b>-61.9</b>
<i>Aprilia plant</i>	t	3,364.08	9,163.36	2,799.28	-
<i>Monterotondo Marittimo and Sabaudia plants</i>	t	0.00	198.61	<b>766.22</b>	-
<b>Reduction through stabilisation (49) = (44+45-47-48)</b>	t	<b>29,045.1</b>	<b>34,574.4</b>	<b>15,889.6</b>	<b>-54.0</b>

<sup>1</sup> The reactivation of the liquid waste treatment section is linked to the conclusion of the ongoing AIA review process.



LIQUIDS TO PURIFICATION	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Liquids to purification (50)</b>					
<i>Liquids to purification - Sabaudia plant</i>	t	10,489	0	0	-

ANALYTICAL DETERMINATIONS ON WASTE AND ON QUALITY COMPOST	u. m.	2016	2017	2018	Δ% 2018/2017
<b>total analytical determinations (51)</b>	no.	95	104	60	-42.3
<i>Analytical determinations on compost - Orvieto plant</i>	no.	0	12	12	-
<i>Analytical determinations on compost - Aprilia, Monterotondo Marittimo and Sabaudia plants</i>	no.	35	30	17	-43.3
<i>Analytical determinations on waste - Orvieto plant</i>	no.	60	62	31	-50.0

(\*) Adjusted compared to the figure published in the 2017 Sustainability Report as it was in part estimated.

## THE PRODUCTS - WATER SEGMENT

The water data **summarised at the national level** include all the principal water companies of the Acea Group: Acea Ato 2, Acea Ato 5 (Lazio), Gesesa (Campania), Gori (Campania), Umbra Acque (Umbria), Acque, Publiacqua and Acquedotto del Fiora (Tuscany).

The details of the water balances are only presented for the companies operating in the reporting perimeter of the *Sustainability Report*: Acea Ato 2, Acea Ato 5 and Gesesa. Please see the chapter *Water Company data sheets and overseas activities* for the water balance sheets of the other companies of the Group<sup>2</sup>.

SUMMARISED WATER DATA OF THE GROUP IN ITALY <sup>(*)</sup>	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Total drinking water collected from the environment or from other systems (52)</b>	Mm <sup>3</sup>	1,458.6	1,425.0	1,384.8	-2.8
<b>Total drinking water released into network (53)</b>	Mm <sup>3</sup>	1,312.5	1,286.4	1,258.6	-2.2
<b>Total drinking water supplied (54)</b>	Mm <sup>3</sup>	680.6	671.3	654.6	-2.5

(\*) The 2016 data has been adjusted after consolidation of certain items by the water companies of the Group. Some 2018 items were estimated and will be consolidated in the months following publication.

SUMMARY WATER DATA OF THE OPERATING COMPANIES IN THE DNF PERIMETER: ACEA ATO 2, ACEA ATO 5 AND GESESA <sup>(*)</sup>	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Total drinking water collected from the environment or from other systems (55)</b>	Mm <sup>3</sup>	890.6	858.4	826.9	-3.7
<b>Total drinking water released into network (56)</b>	Mm <sup>3</sup>	763.2	734.6	720.8	-1.9
<b>Total drinking water supplied (57)</b>	Mm <sup>3</sup>	404.3	397.4	382.3	-3.8

(\*) Some items for the two-year period 2016-2017 have been adjusted after their consolidation.

WATER BALANCES OF THE OPERATING COMPANIES IN THE DNF PERIMETER	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Acea Ato 2 for historic network of Rome<sup>(*)</sup></b>					
<b>Drinking water collected from the environment (58)</b>	Mm <sup>3</sup>	635.9	612.3	569.5	-7.0
<i>Purified from Lake Bracciano</i>	Mm <sup>3</sup>	32.0	22.8	0.0	-
<i>From wells</i>	Mm <sup>3</sup>	20.5	33.1	8.7	-73.7
<i>From springs</i>	Mm <sup>3</sup>	583.5	556.4	560.8	0.8
Drinking water transferred to Municipalities located along the route of the aqueducts (59)	Mm <sup>3</sup>	69.1	70.7	71.2	0.7
Drinking water released into non-potable network (60)	Mm <sup>3</sup>	11.2	8.8	11.9	35.7
Drinking water returned to the environment / technical operating amounts (61)	Mm <sup>3</sup>	45.6	55.2	48.4	-12.3
<b>Drinking water released into the historic network of Rome (62) = (58) - (59+60+61)</b>	Mm <sup>3</sup>	510.1	477.6	437	-8.3
<b>Drinking water supplied through the historic network of Rome (63)</b>	Mm <sup>3</sup>	271.1	270.2	262.2	-3.0
<b>Assessment of the losses according to Ministerial Decree no. 99/97 and in conformity with the ARERA requirements</b>					
Overall losses (quantity A17 Ministerial Decree 99/97) (64)	Mm <sup>3</sup>	237.7	206.1	174.4	-15.4

<sup>2</sup> Gori was added to the scope of consolidation on a full basis in November 2018. Therefore, for the present reporting cycle it has not been considered within the scope of the Consolidated Non-Financial Declaration.

	u. m.	2016	2017	2018	$\Delta\%$ 2018/2017
Actual losses (quantities A13+A15 as per Ministerial Decree 97/99) (65)	Mm <sup>3</sup>	229.5 45.0% of (62)	198.2 41.5% of (62)	166.6 38.0% of (62)	-13.6
<b>Water balance non-potable network of Rome</b>					
<b>Non-potable water collected from the environment (66)</b>	<b>Mm<sup>3</sup></b>	<b>24.6</b>	<b>23.2</b>	<b>23.0</b>	<b>-0.9</b>
From the Tiber River treated (Grottarossa Plant)	Mm <sup>3</sup>	9.2	10.7	5.4	-49.3
From springs	Mm <sup>3</sup>	4.2	3.8	5.7	51.2
Drinking water released into non-potable network	Mm <sup>3</sup>	11.2	8.8	11.9	35.2
<b>Non-potable water supplied to the Municipality of Rome (67)</b>	<b>Mm<sup>3</sup></b>	<b>12.0</b>	<b>12.1</b>	<b>12.5</b>	<b>3.3</b>
<b>Non-potable water supplied to other Municipalities (68)</b>	<b>Mm<sup>3</sup></b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>-</b>
<b>Acea Ato 2 for Ato 2 - Central Lazio (Rome + municipalities acquired as at 31.12.2018) (*)</b>					
<b>Drinking water collected from the environment and from other systems (69)</b>	<b>Mm<sup>3</sup></b>	<b>761.7</b>	<b>737.2</b>	<b>700.0</b>	<b>-5.0</b>
Purified from Lake Bracciano	Mm <sup>3</sup>	32.0	22.8	0.00	-100.0
From wells	Mm <sup>3</sup>	99.9	115.7	90.10	-22.1
From springs	Mm <sup>3</sup>	624.6	593.0	604.60	2.0
From other aqueduct systems	Mm <sup>3</sup>	5.2	5.7	5.3	-7.0
Drinking water transferred to other aqueduct systems (70)	Mm <sup>3</sup>	36.8	29.5	28.40	-3.7
Drinking water released into non-potable network (71)	Mm <sup>3</sup>	11.2	8.8	11.90	35.2
Drinking water returned to the environment / technical operating amounts (72)	Mm <sup>3</sup>	60.2	69.1	61.80	-10.6
<b>Drinking water released into the Ato 2 network (73) = (69) - (70+71+72)</b>	<b>Mm<sup>3</sup></b>	<b>653.5</b>	<b>629.8</b>	<b>597.8</b>	<b>-5.1</b>
<b>Total drinking water released into the Ato 2 network (74)</b>	<b>Mm<sup>3</sup></b>	<b>364.7</b>	<b>360.5</b>	<b>346.00</b>	<b>-4.0</b>
<b>Assessment of the losses according to Ministerial Decree no. 99/97 and in conformity with the ARERA requirements</b>					
Overall losses (quantity A17 Ministerial Decree 99/97) (75)	Mm <sup>3</sup>	324.1	297.4	273.7	-8.0
Actual losses (quantities A13+A15) (76)	Mm <sup>3</sup>	314.1 (48.1% of 73)	287.8 (45.7% of 73)	264.2 (44.2% of 73)	-8.2
<b>Acea Ato 5 for Ato5 - Southern Lazio - Frosinone (85 municipalities)</b>					
<b>Drinking water collected from the environment and from other systems (77)</b>	<b>Mm<sup>3</sup></b>	<b>107.4</b>	<b>97.4</b>	<b>110.7</b>	<b>13.7</b>
From wells	Mm <sup>3</sup>	73.0	65.9	59.4	-9.9
From springs	Mm <sup>3</sup>	34.4	31.5	51.3	62.9
From other aqueduct systems	Mm <sup>3</sup>	8.3	8.4	13.9	65.5
<b>Drinking water released into network (78)</b>	<b>Mm<sup>3</sup></b>	<b>96.5</b>	<b>89.6</b>	<b>106.7</b>	<b>19.1</b>
<b>Drinking water supplied (79)</b>	<b>Mm<sup>3</sup></b>	<b>27.0</b>	<b>23.1</b>	<b>20.7</b>	<b>-10.4</b>
<b>Assessment of the losses according to Ministerial Decree no. 99/97 and in conformity with the ARERA requirements</b>					
Overall losses (quantity A17 Ministerial Decree 99/97) (80)	Mm <sup>3</sup>	72.8	64.9	85.1	31.1
Actual losses (quantity A15 Ministerial Decree 99/97) (81)	Mm <sup>3</sup>	64.4 (66.8% of 78)	58.1 (64,8% of 78)	77.7 (72.8% of 78)	33.7
<b>Gesesa - Ato Calore Irpino - Benevento (21 municipalities)</b>					
<b>Drinking water collected from the environment and from other systems (82)</b>	<b>Mm<sup>3</sup></b>	<b>13.2</b>	<b>15.4</b>	<b>16.2</b>	<b>4.8</b>
From wells	Mm <sup>3</sup>	4.9	6.6	7.1	7.8
From springs	Mm <sup>3</sup>	1.0	1.5	1.6	8.0
Drinking water collected from other aqueduct systems	Mm <sup>3</sup>	7.3	7.4	7.5	1.6
<b>Drinking water released into network (83)</b>	<b>Mm<sup>3</sup></b>	<b>13.2</b>	<b>15.2</b>	<b>16.2</b>	<b>6.8</b>
<b>Drinking water supplied (84)</b>	<b>Mm<sup>3</sup></b>	<b>12.6</b>	<b>13.8</b>	<b>15.6</b>	<b>12.9</b>
<b>Assessment of the losses according to Ministerial Decree no. 99/97 and in conformity with the ARERA requirements</b>					
Overall losses (quantity A17 Ministerial Decree 99/97) (85)	Mm <sup>3</sup>	5.53	6.79	6.11	-10.0
Actual losses (quantity A13+A15 Ministerial Decree 99/97) (86)	Mm <sup>3</sup>	5.50 (41.7% of input)	6.75 (44.4% of input)	6.07 (37.5% of input)	-10.1

(\*) The 2017 data of the water balance for the historical Rome network and the Acea Ato 2 network have been adjusted to update certain items. In particular, the calculation of overall losses and real losses was carried out using the calculation criteria provided by ARERA (Resolution 5/2016 former AEEGSI) also taking into account the updates on the volumes measured according to ARERA Resolution 917/2017 for the years 2017 and 2018.



TOTAL WASTE WATER TREATED BY THE COMPANIES OF THE GROUP IN ITALY - SUMMARY DATA	u. m.	2016	2017	2018	Δ% 2018/2017
Waste water treated in the principal treatment plants of the companies of the Group in Italy (87)	Mm <sup>3</sup>	872.7	810.2 <sup>(*)</sup>	859.2	6.1

(\*) Some Group company data for 2017 have been adjusted/consolidated.

TOTAL WASTE WATER TREATED BY THE COMPANIES OPERATING IN THE DNF PERIMETER (ACEA ATO 2, ACEA ATO 5 AND GESESA - SUMMARY DATA)	u. m.	2016	2017	2018	Δ% 2018/2017
Waste water treated in the principal treatment plants of Acea Ato 2, Acea Ato 5 and Gesesa (88) <sup>(*)</sup>	Mm <sup>3</sup>	621.9	574.7	603.9	5.1

(\*) The Gesesa company does not currently have flow meters at the entrance of the purification plants.

WASTE WATER TREATED BY ACEA ATO 2	u. m.	2016	2017	2018	Δ% 2018/2017
Waste water treated in the principal treatment plants (89)	Mm <sup>3</sup>	514.3	467.1	490.1	4.9
<i>Rome South</i>	Mm <sup>3</sup>	288.1	276.9	279.1	0.8
<i>Rome North</i>	Mm <sup>3</sup>	95.7	75.2	85.9	14.2
<i>Rome East</i>	Mm <sup>3</sup>	94.8	83.0	83.5	0.6
<i>Rome Ostia</i>	Mm <sup>3</sup>	24.9	20.9	25.7	23.0
<i>CoBIS</i>	Mm <sup>3</sup>	6.7	7.0	7.1	1.4
<i>Fregene</i>	Mm <sup>3</sup>	4.1	4.1	8.8	114.6
Other - Municipality of Rome	Mm <sup>3</sup>	14.8	14.0	11.6	-17.1
Other - outside the Municipality of Rome	Mm <sup>3</sup>	66.1	72.5	81.0	11.7
Total waste water treated by Acea Ato 2 (90)	Mm <sup>3</sup>	595.2	553.6	582.7	5.3

WASTE WATER TREATED BY ACEA ATO 5	u. m.	2016	2017	2018	Δ% 2018/2017
Waste water treated in the principal treatment plants (91)	Mm <sup>3</sup>	26.7	21.1	21.2	0.5

ANALYTICAL DETERMINATIONS ON DRINKING WATER AND WASTE WATER IN THE GROUP IN ITALY - SUMMARY DATA <sup>(*)</sup>	u. m.	2016	2017	2018	Δ% 2018/2017
Analytical determinations on Group total drinking water (92)	no.	1,197,567	1,159,833	1,328,950	14.6
Analytical determinations on Group total waste water (93)	no.	451,659	472,779	432,468	-8.5

(\*) The number includes both the determinations performed independently by each company, and those carried out by the in-house company, Acea Elabori. Some data of the preceding two-year period have been adjusted.

ANALYTICAL DETERMINATIONS ON DRINKING WATER AND ON WASTE WATER OF THE OPERATING COMPANIES IN THE DNF PERIMETER: ACEA ATO 2, ACEA ATO 5 AND GESESA - SUMMARY DATA	u. m.	2016	2017	2018	Δ% 2018/2017
Analytical determinations on drinking water of Acea Ato 2, Acea Ato 5 and Gesesa (94)	no.	462,320	409,375	480,937	17.5
Analytical determinations on waste water of Acea Ato 2, Acea Ato 5 and Gesesa (95)	no.	186,754	211,890	167,144	-21.1

ANALYTICAL DETERMINATIONS ACEA ATO 2	u. m.	2016	2017	2018	Δ% 2018/2017
Analytical determinations on Acea Ato 2 drinking water (96)	no.	370,720	311,929	359,491	15.2
Analytical determinations on Acea Ato 2 wastewater (97)	no.	151,446	184,201	127,378	-30.8

ANALYTICAL DETERMINATIONS ACEA ATO 5	u. m.	2016	2017	2018	Δ% 2018/2017
Analytical determinations on Acea Ato 5 drinking water (98)	no.	85,500	91,157	115,345	26.5
Analytical determinations on Acea Ato 5 wastewater (99)	no.	31,258	21,421	35,064	49.7

GESESA ANALYTICAL DETERMINATIONS	u. m.	2016	2017	2018	Δ% 2018/2017
Analytical determinations on Gesesa drinking water (100)	no.	6,100	6,289	6,101	-3.0
Analytical determinations on Gesesa wastewater (101)	no.	4,050	4,268	4,702	10.2

## THE RESOURCES USED - ENERGY SEGMENT

The data on the resources used refer to Acea Produzione, Acea Ambiente - Waste-to-energy and Areti.

GENERATION, TRANSPORT AND SALE OF ELECTRICITY AND HEAT, PUBLIC LIGHTING	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Natural gas</b>					
Electricity and heat generation (102) = (103+104)	Nm <sup>3</sup> x 1,000	14,849	18,351	23,760	29.5
Thermoelectric and AP heat production (103)	Nm <sup>3</sup> x 1,000	11,314	15,134	20,305	34.2
<i>Tor di Valle auxiliary boilers - for district heating</i>	Nm <sup>3</sup> x 1,000	7,958	4,334	0.00	-
<i>Tor di Valle cogeneration</i>	Nm <sup>3</sup> x 1,000	3,357	2,942	0.00	-
<i>Tor di Valle CAR module</i>	Nm <sup>3</sup> x 1,000	-	7,857	20,305	158.4
Waste-to-energy (104)	Nm <sup>3</sup> x 1,000	3,535	3,217	3,455	7.4
<i>San Vittore del Lazio waste-to-energy plant</i>	Nm <sup>3</sup> x 1,000	2,816	2,719	3,126	15.0
<i>Terni waste-to-energy plant</i>	Nm <sup>3</sup> x 1,000	719	498	329	-33.8
<b>Diesel for thermoelectric generation</b>					
Thermoelectric production and Terni plant (105)	l x 1,000	564	924	287	-69.0
<i>Montemartini power plant</i>	l x 1,000	492	865	230	-73.4
<i>Terni plant</i>	l x 1,000	72	60	56	-6.0
<b>CSS (Secondary Solid Fuel from waste) processed</b>					
San Vittore del Lazio waste-to-energy plant (106)	t x 1,000	281.917	345.639	357.174	3.3
<b>Waste-to-energy paper mill pulper</b>					
Terni waste-to-energy plant (107)	t x 1,000	99.768	99.970	99.971	-
<b>Biogas for the production of electricity</b>					
Orvieto plant (108)	Nm <sup>3</sup> x 1,000	10,459	12,695	10,766	-15.2
<b>Water</b>					
Derivation from hydroelectric production (109)	Mm <sup>3</sup>	3,176.99	3,234.29	4,221.71	30.5
Process water (110)	Mm <sup>3</sup>	0.1395	0.1607	0.2696	67.8
Water for civilian/sanitary uses (111)	Mm <sup>3</sup>	0.3078	0.2687	0.2697	0.4
<b>Miscellaneous materials</b>					
Dielectric mineral oil in operation (112)	t	9,871	9,979	9,957	-0.2
Dielectric mineral oil - reintegrations	t	3.96	1.56	1.89	20.9
SF <sub>6</sub> in operation (113)	t	29.75	29.80	21.70	-27.2
SF <sub>6</sub> - reintegrations	t	0.7	0.6	0.5	-16.7
Cooling fluids (HCFC type) in operation (114)	t	1.33	1.33	1.56	16.9
Cooling fluids (HCFC type) - reintegrations	t	0.000	0.000	0.015	-
various chemicals (115)	kg	8,604,027	10,359,390	10,026,359	-3.2
<i>Sodium chloride</i>	kg	93,000	79,500	8,000	-89.9
<i>Sodium hydroxide (caustic soda)</i>	kg	106,938	190,330	38,800	-79.6
<i>Sodium bicarbonate</i>	kg	7,007,300	8,035,000	7,795,510	-3.0

**GENERATION, TRANSPORT AND SALE OF ELECTRICITY AND HEAT, PUBLIC LIGHTING (follow)**

	u. m.	2016	2017	2018	Δ% 2018/2017
Hydrochloric acid	kg	111,760	198,770	84,910	-57.3
Ammonia solution	kg	725,340	793,090	636,630	-19.7
Activated carbon	kg	307,000	398,000	404,400	1.6
Carbamine	kg	231,430	664,700	866,810	30.4
<b>Miscellaneous oils and greases/lubricants</b>	<b>kg</b>	<b>1,098</b>	<b>3,851</b>	<b>46,887 (*)</b>	<b>-</b>
<b>electricity</b>					
Consumption for electrical distribution (117)= (28)	GWh	699.58	747.40	763.74	2.2
Consumption for electricity production (118)= (1)-(2)	GWh	58.28	64.58	68.20	5.6
Consumption for offices (50% of the electricity consumed by the Parent Company) (119)	GWh	4.96	5.01	4.83	-3.6
Other consumption (120)	GWh	-	1.16	1.20	3.2
Other personal uses (121)	GWh	32.45	40.39	39.63	-1.9
<b>total (122) = (117+118+119+120+121)</b>	<b>GWh</b>	<b>795.27</b>	<b>858.54</b>	<b>877.61</b>	<b>2.2</b>
<b>public lighting</b>					
Consumption for public lighting (123)	GWh	167.85	115.64	83.98	-27.4

(\*) The increase is due to the operation of the new CAR plant in Tor di Valle for all of 2018.

## THE RESOURCES USED - ENVIRONMENT SEGMENT

The data on the resources refers to the three composting plants of Acea Ambiente (all 100% Acea SpA): the one located in Aprilia and the two located, respectively, in Monterotondo

Marittimo and Sabaudia, and the waste management plant of Orvieto. In 2018 some data from Aquaser will be entered for the first time.

<b>WASTE MANAGEMENT - ORVIETO PLANT</b>	u. m.	2016	2017	2018	Δ% 2018/2017
Process water (124)	m <sup>3</sup>	3,425	6,251	9,663	54.6
Miscellaneous chemicals (125)	t	7.3	0.2	20.0	-
Electricity (126)	GWh	3.557	3.959	4.513	14.0
Diesel (127)	l	249,422	257,953	240,022	-7.0
Water for civilian/sanitary uses (128)	m <sup>3</sup>	4,227	1,330	1,261	-5.2
<b>PRODUCTION OF COMPOST</b>					
Process water (composting plants of Aprilia, Monterotondo Marittimo and Sabaudia) (129)	m <sup>3</sup>	3,946	13,193 (*)	17,762	34.6
Miscellaneous chemicals (posting plants of Aprilia, Monterotondo Marittimo and Sabaudia) (130)	t	70.83	101.50	31.48	-69.0
Electricity (composting plants of Aprilia, Monterotondo Marittimo and Sabaudia) (131)	GWh	1.924	3.691	3.392	-8.1
Diesel (composting plants of Aprilia, Monterotondo Marittimo and Sabaudia) (132)	l x 1.000	127.50	138.02	95.28	-31.0
Water for civilian use (composting plants of Aprilia, Monterotondo Marittimo and Sabaudia) (132 B)	m <sup>3</sup>	183.00	705.00	629.00	-10.8

(\*) The 2017 figure for the Aprilia plant has been adjusted. Includes 4,800 m<sup>3</sup> of recycled water from Aprilia and 45 m<sup>3</sup> from Sabaudia.

# THE RESOURCES USED - WATER SEGMENT

The data refers to the water companies of the Group included in the perimeter of the Sustainability Report: Acea Ato 2, Acea Ato 5 and Gesesa.

<b>COLLECTION, SUPPLY AND DISTRIBUTION DRINKING AND NON-POTABLE WATER</b>	<b>u. m.</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Δ% 2018/2017</b>
<b>Miscellaneous materials and natural resources</b>					
Reagents for purification and disinfection (133)	t	2,922.00	2,996.35	2,661.84	-11.2
Reagents for chemical analyses (134)	t	1.40	1.50	1.50	-
Gas for chemical analyses (135)	MNm <sup>3</sup>	5.26	5.52	5.82	5.3
Cooling fluids (HCFC type) in operation (136) = (114)	t	1.33	1.33	1.56	16.9
Cooling fluids (HCFC type) - reintegrations	t	0.000	0.000	0.015	-
<b>electricity</b>					
Water pumping plants (137)	GWh	242.18	275.13	244.70	-11.1
Offices/personal uses (50% energy consumed by the Parent Company) (138) = (119)	GWh	4.96	5.01	4.83	-3.6
Chemical laboratory (139)	GWh	1.12	1.12	1.19	6.7
<b>Total electricity consumed (140) = (137+138+139)</b>	<b>GWh</b>	<b>248.27</b>	<b>281.26</b>	<b>250.73</b>	<b>-10.9</b>
<b>Drinking water</b>					
Civilian/sanitary uses (141)	Mm <sup>3</sup>	1.63	1.00	1.28	27.6
Process uses	Mm <sup>3</sup>	n.a.	0.83	n.a.	-
Offices (50% of the drinking water consumed by the Parent Company) (142)	Mm <sup>3</sup>	0.19	0.16	0.16	-
<b>Total drinking water consumed (143)</b>	<b>Mm<sup>3</sup></b>	<b>1.81</b>	<b>1.99</b>	<b>1.44</b>	<b>-27.7</b>
<b>WASTEWATER PURIFICATION</b>					
<b>Miscellaneous materials and natural resources</b>					
Reagents for purification waste water (144)	t	6,495	7,329	7,684	4.8
Polyelectrolyte for sludge dehydration	t	1,680	1,879	1,329	-29
Sodium hypochlorite for final disinfection	t	2,575	2,693	2,346	-13
Ferric chloride for sludge dehydration	t	86	9	0	-
Peracetic acid	t	1,969	2,332	2,855	22
Other (anti-foaming, etc.)	t	186	417	1,154	177
Reagent kit for on-site controls (144 B)	no.	77,620	49,497	57,271	16
Oil and fat (145)	t	5.3	5.7	12.0	110.1
<b>Electricity</b>					
Sewerage and purification (146)	GWh	189.4	184.0	194.3	5.6
<b>Fuels</b>					
Methane for dryers and power generators (147)	Nm <sup>3</sup> x 1,000	-	982.5	1,639.5	66.9
Biogas produced and consumed on site (148)	Nm <sup>3</sup> x 1,000	-	1,006.0	1,343.8	33.6

# FUELS USED BY THE COMPANIES OF THE GROUP FOR TRANSPORT AND HEATING

The figures refer to all the companies in the reporting scope.

TYPE OF FUEL	u. m.	2016	2017	2018	$\Delta\%$ 2018/2017
<b>Transport (Group car fleet)</b>					
<b>Petrol (149)</b>	l x 1,000	157.1	95.4	110.3	15.6
<b>Diesel (150) <sup>(*)</sup></b>	l x 1,000	1,711.4	3,602.1	3,458.3	-4.0
<b>Heating</b>					
<b>Diesel (151)</b>	l x 1,000	4.5	2.7	0.0	-
<b>Methane (152)</b>	Nm <sup>3</sup> x 1,000	463.0	461.0	361.5	-21.6
<b>LPG (153)</b>	l x 1,000	32.8	32.2	10.0	-69.1

(\*) The figure for 2017 has been adjusted and includes the fuel for heavy vehicles owned by Aquaser.

## EMISSIONS AND WASTE - ENERGY SEGMENT

The data on the emissions and waste refer to Acea Produzione, to the waste-to-energy plants of Acea Ambiente and Areti.

ATMOSPHERIC EMISSIONS	u. m.	2016	2017	2018	$\Delta\%$ 2018/2017
<b>CO<sub>2</sub> (154) = (155+156+157) <sup>(*)</sup></b>	t	272,295	369,546	360,969	-14.6
<i>Acea Produzione (155)</i>	t	24,610	33,507	42,553	27
<i>Areas - SF<sub>6</sub> reintegrations (156)</i>	t	14,820	14,100	11,233	-20.3
<i>HCFC reintegrations (156B)</i>	t	-	-	23	-
<i>Waste-to-energy (157)</i>	t	338,552	375,159	307,160	-18.1
<b>NO<sub>x</sub> (158) = (159+160)</b>	t	171.13	198.20	189.40	-4.4
<i>Acea Produzione (159)</i>	t	46.88	53.53	13.69	-74.4
<i>Waste-to-energy (160)</i>	t	124.25	144.67	175.71	21.5
<b>CO (161) = (162+163)</b>	t	6.28	6.82	6.38	-6.4
<i>Acea Produzione (162)</i>	t	3.56	2.19	2.02	-7.8
<i>Waste-to-energy (163)</i>	t	2.72	4.63	4.36	-5.8
<b>SO<sub>2</sub> (164) = (165+166)</b>	t	0.28	0.42	0.16	-62.4
<i>Acea Produzione (165)</i>	t	0.02	0.03	0.01	-66.7
<i>Waste-to-energy (166)</i>	t	0.26	0.39	0.15	-62.1
<b>Particles (167) = (168+169)</b>	t	0.55	0.55	0.50	-8.4
<i>Acea Produzione (168)</i>	t	0.03	0.05	0.01	-80.0
<i>Waste-to-energy (169)</i>	t	0.52	0.50	0.49	-1.1
<b>HCl (170)</b>	t	3.00	2.98	3.56	19.4
<b>HF (171)</b>	t	0.09	0.12	0.12	-
<b>Organic Carbon (172)</b>	t	1.40	1.88	1.75	-7.3

OTHER EMISSIONS AND WASTE	u. m.	2016	2017	2018	Δ% 2018/2017
Wastewater treated (173)	Mm <sup>3</sup>	0.0002	0.0010	0.0166	-
Electrical fields at 50 Hz	kV	<b>monitored</b> Commitment to maintain the value below the legal limit			
Magnetic fields at 50 Hz	μT	<b>monitored</b> Commitment to maintain the value below the legal limit			
Noise	dB	<b>monitored</b> Commitment to maintain the value below the legal limit			
Luminous flux dissipated	Mlumen	Commitment to design the plants in order to limit to the utmost the emission value dissipated upwards			

WASTE (LEGISLATIVE DECREE no. 152/06)	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Hazardous waste - excluding waste-to-energy area (174)</b>	<b>t</b>	<b>324.17</b>	<b>409.26</b>	<b>673.07</b>	<b>64.5</b>
Production energy own area <sup>(*)</sup>	t	323.58	406.42	671.61	65.3
Proportion for the activities performed by the parent company <sup>(**)</sup>	t	0.59	2.84	1.46	-48.6
<b>Hazardous waste from waste-to-energy (175)</b>	<b>t</b>	<b>73,035.04</b>	<b>80,031.71</b>	<b>85,757.73</b>	<b>7.2</b>
<b>Non-hazardous waste - excluding waste-to-energy area (176)</b>	<b>t</b>	<b>947.23</b>	<b>1,497.71</b>	<b>800.55</b>	<b>-46.5</b>
Production energy own area <sup>(*)</sup>	t	902.71	1,354.56	739.89	-45.4
Proportion for the activities performed by the parent company <sup>(**)</sup>	t	44.52	143.15	60.66	-57.6
<b>Non-hazardous waste from waste-to-energy (177)</b>	<b>t</b>	<b>7,381.94</b>	<b>16,640.18</b>	<b>14,577.97</b>	<b>-12.4</b>

(\*) The 2018 data of Acea Produzione and the Terni waste-to-energy plant are estimated; the 2018 data of San Vittore are measured at the chimney; the San Vittore data of the previous two years have been corrected.

(\*\*) 50% of the waste produced by the parent company.

## EMISSIONS AND WASTE - ENVIRONMENT SEGMENT

The data refer to the three composting plants of Acea Ambiente: the one located in Aprilia and the two located, respectively, in Monterotondo Marittimo and Sabaudia, and the waste management plant of Orvieto.

WASTE (LEGISLATIVE DECREE no. 152/06)	u. m.	2016	2017	2018	Δ% 2018/2017
Hazardous waste - composting plants of Aprilia, Monterotondo Marittimo and Sabaudia including leachate (178)	t	562.12	33.95	4.73	-86.1
Non-hazardous waste - composting plants of Aprilia, Monterotondo Marittimo and Sabaudia including leachate (179)	t	16,448.62	18,070.23	13,418.72	-25.7
Hazardous waste Orvieto Plant (180)	t	9.7	14.9	16.2	8.8
Non-hazardous waste Orvieto Plant including leachate (181)	t	20,193.2	16,500.2	24,355.0	47.6

ATMOSPHERIC EMISSIONS	u. m.	2016	2017	2018	Δ% 2018/2017
CO <sub>2</sub> - Orvieto plant and composting plants (182)	t	-	932	927	-0.5
Particles (183)	t	0.68	<0.012	<0.02	-
Total organic compounds (COT) (184)	t	0.28	<0.30	<1.04	-
Ammonia (185)	t	0.80	<0.10	<0.13	-
Volatile inorganic compounds (SIV) (186)	t	2.42	<1.64	<1.98	-



# EMISSIONS AND WASTE - WATER SEGMENT

The data refers to the Acea Ato 2, Acea Ato 5 and Gesesa water companies.

WASTE PRODUCED	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Specific waste from treatment of wastewater</b>					
<b>Total purification sludge (187)</b>	<b>t</b>	<b>136,502</b>	<b>118,915</b>	<b>152,992</b>	<b>28.7</b>
Acea Ato 2 purification sludge (188)	t	122,947	107,205	64,716	-39.6
Liquid sludge disposed of by third parties (188 B) <sup>(*)</sup>		-	-	71,666	-
Acea Ato 5 purification sludge (189)	t	13,098	10,580	15,987	51.1
Gesesa purification sludge (190)	t	457	1,130	623	-44.9
<b>Total sand and slabs from purification (191)</b>	<b>t</b>	<b>10,955</b>	<b>16,826</b>	<b>6,486</b>	<b>-61.5</b>
Acea Ato 2 sand and slabs (192)	t	10,813	16,733	6,340	-62.1
Acea Ato 5 sand and slabs (193)	t	120	81	80	-1.5
Gesesa sand and slabs (194)	t	22	12	66	-
<b>Waste (pursuant to Italian Legislative Decree no. 152/06)</b>					
<b>Total hazardous waste (195) = (196+197+198)</b>	<b>t</b>	<b>114.0</b>	<b>86.5</b>	<b>53.7</b>	<b>-37.9</b>
Acea Ato 2 and Acea Elabori production (196)	t	113.4	75.7	52.0	-31.3
Acea Ato 5 production (197)	t	0.02	8.0	0.3	-96.5
Proportion for the activities performed by the parent company (198) <sup>(**)</sup>	t	0.6	2.8	1.5	-47.9
<b>Total non-hazardous waste (199) = (200+201+202+203)</b>	<b>t</b>	<b>19,131</b>	<b>8,274</b>	<b>7,976</b>	<b>-3.6</b>
Acea Ato 2 and Acea Elabori production (200)	t	565.0	524.9	1,272.3	142.4
Acea Ato 5 production (201)	t	18,492.0	7,571.0	6,635.40	-12.4
Gesesa production (201)		28.7	34.6	8.06	-76.7
Proportion for the activities performed by the parent company (202) <sup>(**)</sup>	t	44.5	143.2	60.7	-57.6
<b>Other emissions and waste</b>					
<b>CO<sub>2</sub> from methane for dryers (204)</b>	<b>t</b>	<b>-</b>	<b>2,026</b>	<b>3,381</b>	<b>66.9</b>
<b>CO<sub>2</sub> HCFC reintegrations (204 B)</b>	<b>t</b>	<b>-</b>	<b>-</b>	<b>23</b>	<b>.</b>
<b>noise</b>	<b>dB</b>	<b>monitored</b> Commitment to maintain the value below the legal limit			
<b>odours</b>		<b>monitored</b> Commitment to maintain the value below the limit of perception and in the areas adjacent to the treatment plants			

(\*) Sludge disposed of to third parties due to both regulations and the weather in 2018. See Box in Relations with the Environment for more details.

(\*\*) 50% of the waste produced by the parent company.

## THE EMISSIONS OF CARBON DIOXIDE FROM TRANSPORT AND PACKAGING

COMPANIES OF THE GROUP	u. m.	2016	2017	2018	Δ% 2018/2017
<b>Transport</b>					
<b>CO<sub>2</sub> (205)<sup>(*)</sup></b>	<b>t</b>	<b>4,890.6</b>	<b>9,753.0</b>	<b>9,406.6</b>	<b>-3.6</b>
<b>Heating</b>					
<b>CO<sub>2</sub> (206)</b>	<b>t</b>	<b>1,018</b>	<b>1,008</b>	<b>751</b>	<b>-25.5</b>

(\*) The figure for 2017 has been adjusted to include fuel emissions from the heavy vehicles owned by Aquaser.

# KEY ENVIRONMENTAL PERFORMANCE INDICATORS (KPI) - ENERGY SEGMENT

Environmental Key Performance Indicators

INDICATOR	u. m.	2016	2017	2018
<b>Energy used for the processes</b>				
A consumption in distribution of electricity		1,283.8 (356.6)	1,244.9 (345.8)	1,204.6 (334.6)
B consumption in the production of electricity (118)		209.8 (58.3)	232.5 (64.6)	245.5 (68.2)
C heat lost in the district heating network (23)		86.2 (23.9)	72.5 (20.1)	91.0 (25.3)
D Consumption for public lighting (123)		604.3 (167.9)	416.3 (115.6)	302.3 (84.0)
E Environment Segment consumption (126+131)		19.7 (5.5)	27.5 (7.7)	28.5 (7.9)
F water distribution (140-138)		875.9 (243.3)	994.5 (276.2)	885.2 (245.9)
G water purification (146)	TJoules (GWh)	681.7 (189.4)	662.4 (184.0)	699.6 (194.3)
H electricity for offices (Item 119+138)		35.7 (9.9)	36.1 (10.,0)	34.8 (9.7)
I consumption for heating offices		18.1 (5.0)	17.9 (5.0)	13.5 (3.8)
II water area dryer consumption		-	36.3 (10.1)	60.6 (16.8)
L mobility (149+150)		66.5 (18.5)	132.6 (36.8)	127.9 (35.5)
<b>Indirect consumption + consumption through mobility + heating</b>		<b>3,881.8 (1,078.3)</b>	<b>3,873.5 (1,076.0)</b>	<b>3,693.5 (1,026.0)</b>
M loss of energy in the conversion from primary source to electricity		5,394.4 (1,498.4)	6,358.5 (1,766.3)	7,116.0 (1,976.7)
<b>Total energy consumption (sum A: M)</b>		<b>9,276.2 (2,576.7)</b>	<b>10,232.0 (2,842.2)</b>	<b>10,809.5 (3,002.6)</b>

## EMISSIONS, EFFLUENTS AND WASTE

<b>Greenhouse gas (CO<sub>2</sub>) emissions (154+182+204+205+206)</b>	t	<b>383,891</b>	<b>436,485</b>	<b>375,435</b>
<b>Emissions of SO<sub>2</sub>, NO<sub>x</sub> and other significant gases by type</b>				
NO <sub>x</sub> (158)	t	171.13	198.20	189.40
CO (161)	t	6.28	6.82	6.38
SO <sub>2</sub> (164)	t	0.28	0.42	0.16
<b>Emission indicators/Acea Produzione (Acea Produzione and Acea Ambiente - Waste-to-energy)</b>				
NO <sub>x</sub> /thermoelectric production	g/kWh	0.51	0.47	0.41
CO <sub>2</sub> /thermoelectric production	g/kWh	1,078	964	755.3
CO <sub>2</sub> /gross total production	g/kWh	480.9	487.7	361.1
SO <sub>2</sub> /thermoelectric production	g/kWh	0.0	0.0	0.0

INDICATOR	u. m.	2016	2017	2018
<b>PRODUCTS AND SERVICES: ELECTRICITY</b>				
<b>Performance of the electrical production process of Acea Produzione</b>				
<b>Gross average performance thermoelectric production (calculation 1)</b>		<b>25.0</b>	<b>37.3</b>	<b>41.1</b>
Tor di Valle power plant (electrical performance cogeneration only)		25.2	38.3	41.3
Tor di Valle power plant - CAR module		-	46.0	45.8
Montemartini power plant	%	24.2	25.7	24.9
<b>Gross average thermoelectric production out included thermal energy recovered (calculation 2)</b>		<b>73.3</b>	<b>86.6</b>	<b>71.9<sup>(*)</sup></b>
<b>Gross average performance hydroelectric production (calculation 3)</b>		<b>81.9</b>	<b>82.4</b>	<b>78.7</b>
<b>Gross average performance overall production (calculation 4)</b>		<b>80.4</b>	<b>78.1</b>	<b>73.6</b>
<b>Gross average total production performance including thermal energy recovered (calculation 5)</b>		<b>81.1</b>	<b>83.2</b>	<b>77.5<sup>(*)</sup></b>
<b>Performance of the electrical production process - waste-to-energy plants</b>				
<b>San Vittore del Lazio</b>				
CSS produced/gross energy produced - San Vittore	kt/GWh	1.157	1.148	1.164
<b>Gross performance CSS conversion into electricity (calculation 6)</b>	<b>kWh /kg CSS</b>	<b>0.86</b>	<b>0.87</b>	<b>0.86</b>
<b>Electrical performance (calculation 7)</b>	<b>%</b>	<b>19.6</b>	<b>19.4</b>	<b>19.5</b>
<b>Total waste produced/hours worked</b>	<b>t/h</b>	<b>3.57</b>	<b>3.32</b>	<b>3.47</b>
<b>Terni</b>				
<b>Gross performance Pulper conversion into electricity (calculation 8)</b>	<b>kWh /kg pulper</b>	<b>0.83</b>	<b>0.83</b>	<b>0.82</b>
<b>Electrical performance (calculation 9)</b>	<b>%</b>	<b>16.5</b>	<b>17.1</b>	<b>14.7</b>
<b>Total waste produced/hours worked</b>	<b>t/h</b>	<b>2.0</b>	<b>2.0</b>	<b>1.8</b>
<b>Performance of the electrical production process - photovoltaic</b>				
<b>Average efficiency photovoltaic modules</b>	<b>%</b>	<b>14.0</b>	<b>14.0</b>	<b>14.0</b>
<b>Other indicators (territory, public lighting, controls, losses)</b>				
<b>Protection of the land</b> (Total length HV lines in cable / length HV overhead + cable lines) x 100	<b>%</b>	<b>43.1</b>	<b>43.9</b>	<b>46.3</b>
<b>Public lighting illumination efficiency</b> (Item 34 / Item 123)	<b>Lumen/kWh</b>	<b>16.4</b>	<b>17.2</b>	<b>23.9</b>
<b>Average performance lamps installed</b> (Item 34 / electrical power)	<b>Lumen/W</b>	<b>84.3</b> (32,641 kW)	<b>101.8</b> (19,556 kW)	<b>112.7</b> (17,830 kW)
<b>Specific consumption per lamp</b> (item 123/no. lamps)	<b>kWh/ no. lamps</b>	<b>761.31</b> (220,474)	<b>515.15</b> (224,480)	<b>372.22</b> (225,619)
<b>Percentage of roads illuminated<sup>(**)</sup></b>	<b>% (km of roads illuminated/ total km of roads)</b>	<b>86.7</b> (6,165/7,110)	<b>88.3</b> (6,281/7,110)	<b>88.6</b> (6,297/7,110)
<b>No. operating and laboratory checks /GWh net electricity sold</b> (35) / (32)	<b>no./GWh</b>	<b>0.15</b>	<b>0.14</b>	<b>0.22</b>
<b>Reintegrations of SF<sub>6</sub>/km electricity distribution network</b>	<b>kg/km</b>	<b>0.0211</b>	<b>0.0194</b>	<b>0.0161</b>
<b>Total losses of electricity</b> (28) / (27) <sup>(***)</sup>	<b>% energy requested</b>	<b>6.5</b>	<b>6.9</b>	<b>7.2</b>

(\*) The 2018 global yields are not comparable with the yields of the previous two years because before the new CAR plant came on stream (September 2017) thermal energy was produced almost exclusively by boilers and not in cogeneration mode.

(\*\*) It is an estimate.

(\*\*\*) The total losses of electricity include: transformation losses, transport losses and commercial losses, these last due to fraud and incorrect readings.

# KEY ENVIRONMENTAL PERFORMANCE INDICATORS (KPI) - WATER SEGMENT

Environmental Key Performance Indicators

INDICATOR	u. m.	2016	2017	2018
<b>Carbon footprint</b>				
<b>WATER SERVICE</b>				
total CO <sub>2</sub> /m <sup>3</sup> of water supplied (integrated water service) <sup>(1)</sup>	kgCO <sub>2</sub> /m <sup>3</sup>	0.38	0.42	0.41
CO <sub>2</sub> /m <sup>3</sup> of water supplied (water distribution process)	kgCO <sub>2</sub> /m <sup>3</sup>	0.22	0.25	0.23
CO <sub>2</sub> /m <sup>3</sup> of water treated (purification process)	kgCO <sub>2</sub> /m <sup>3</sup>	0.11	0.11	0.12
<b>SERVICE: DRINKING WATER</b>				
Assessment parameters according to Ministerial Decree no. 99/97 and in conformity with the ARERA requirements				
<b>Acea Ato 2 network</b>				
Primary performance (R1): (74) / (73)	%	55.8	57.2	57.9
performance at consumption (R2): (74 + A 11) / (73) A 11 = 26.18 Mm <sup>3</sup> for 2018	%	58.2	62.2	62.2
net performance (R3): (74 + A 11 + A 12) / (73) A 12 = 1.48 Mm <sup>3</sup> for 2018	%	58.4	62.4	62.5
<b>PRODUCT: DRINKING WATER</b>				
<b>Acea Ato 2 network</b>				
Linear index of the total losses during distribution (according to Ministerial Decree no. 99/97: A 17 / km network) (75) / (km network from GIS, excluding waterworks and branches to Rome and Fiumicino)	Mm <sup>3</sup> x1,000/km	33.8 (9,583 km)	28.7 (10,365 km)	26.0 (10,515 km)
Linear index of the actual losses during distribution (according to Ministerial Decree no. 99/97 and ARERA provisions): (A15) / km network (item 76) / (km network from GIS, excluding waterworks and branches to Rome and Fiumicino)	Mm <sup>3</sup> x1,000/km	32.8 (9,583 km)	27.8 (10,365 km)	25.1 (10,515 km)
specific electricity consumption per water network (energy consumption of Acea Ato 2's network) / (73)	kWh/m <sup>3</sup>	0.264	0.314	0.290
Intensity of the checks on drinking water distributed (94) / (73)	no./Mm <sup>3</sup>	567	495	601
Index of drinking water additive (133 - Acea Ato 2 network) / (73)	g/m <sup>3</sup>	4.0	4.3	3.8
<b>Acea Ato 5 network</b>				
Linear index of the total losses during distribution (according to Ministerial Decree no. 99/97: A 17 / km network)	Mm <sup>3</sup> x1,000/km	-	15.0 (4,330 km)	16.4 (5,200 km)
Linear index of the actual losses during distribution (according to Ministerial Decree no. 99/97 and ARERA provisions): (A15+A13) / km network)	Mm <sup>3</sup> x1,000/km	-	13.4 (4,330 km)	14.9 (5,200 km)
specific consumption of electricity per water network (Acea Ato 5 network energy consumption) / input (78)	kWh/m <sup>3</sup>	0.630	0.750	0.567
Intensity of the checks on drinking water distributed (98) / (78)	no./Mm <sup>3</sup>	886	1,017	1,081
Index of drinking water additive (133 - Acea Ato 5 network) / (78)	g/m <sup>3</sup>	2.7	2.9	2.9
<b>Gesesa network</b>				
Linear index of the total losses during distribution (according to Ministerial Decree no. 99/97: A 17 / km network)	Mm <sup>3</sup> x1,000/km	4.5 (1,220 km)	5.3 (1,270 km)	4.4 (1,375 km)
Linear index of the actual losses during distribution (according to Ministerial Decree no. 99/97 and ARERA provisions): (A15+A13) / km network)	Mm <sup>3</sup> x1,000/km	4.5 (1,220 km)	5.3 (1,270 km)	4.4 (1,375 km)
Specific electricity consumption per water network (energy consumption) / (input 83)	kWh/m <sup>3</sup>	0.623	0.625	0.639

INDICATOR (follow)	u. m.	2016	2017	2018
Intensity of the checks on drinking water distributed (100) / (input 83)	no./Mm <sup>3</sup>	462	415	377
Drinking water additive index (133 Gesesa network) / (input 83)	g/m <sup>3</sup>	3.41	3.96	6.03
<b>SERVICE: WASTEWATER PURIFICATION</b>				
<b>Acea Ato 2</b>				
Sludge disposed (188)	t	122,947	107,205	64,716
Liquid sludge disposed of to third parties	t	-	-	71,666
Sand and slabs removed (192)	t	10,813	16,733	6,340
COD input	t	198,946	203,889	221,357
COD removed	t	180,755	181,639	209,180
Efficiency of COD removal	%	91	89	93
SST input	t	121,876	137,117	135,698
SST removed	t	113,284	127,695	126,330
Efficiency of SST removal	%	93	93	93
Efficiency of BOD removal	%	90	89	89
Total N input (such as NH <sub>4</sub> +NO <sub>2</sub> +NO <sub>3</sub> + organic matter)	t	22,870	18,871	20,276
Total N removed	t	17,365	13,076	14,133
Efficiency of N removal	%	72	70	70
Acea Ato 2 additivation index	g/m <sup>3</sup>	9.8	12.2	12.0
Acea Ato 2 specific consumption of electricity by purification process	kWh/m <sup>3</sup>	0.288	0.300	0.299
<b>Acea Ato 5</b>				
Sludge disposed (189)	t	13,098	10,580	15,987
Sand and slabs removed (193)	t	120	81	80
COD input	t	9,012	9,772	8,884
COD removed	t	7,000	7,842	7,709
Efficiency of COD removal	%	78	84	87
Total N input	t	1,172	1,167	779
Total N removed	t	1,013	1,003	600
Efficiency of N removal (NH <sub>4</sub> <sup>+</sup> )	%	89	91	89
SST input	t	-	7,876	8,365
SST removed	t	-	7,096	7,872
Efficiency of SST removal	%	82	95	96
Acea Ato 5 additivation index	g/m <sup>3</sup>	24.3	27.8	31.4
Acea Ato 5 specific consumption of electricity by purification process	kWh/m <sup>3</sup>	0.620	0.787	0.817
<b>Gesesa<sup>(**)</sup></b>				
Disposed of sludge (190)	t	457	1,130	623
Sand and slabs removed (194)	t	22	12	66

(\*) Emissions defined "Scope 2", in other words resulting from the consumption of electricity by the water companies in question.

(\*\*) Gesesa has an investment plan scheduled that includes the installation of input flow meters at the purification plants during 2019.

# KEY ENVIRONMENTAL PERFORMANCE INDICATORS (KPI) - ENVIRONMENT SEGMENT

Environmental Key Performance Indicators.

INDICATOR	u. m.	2016	2017	2018
Non-hazardous waste disposed in landfill/total incoming waste (38+39)/(36)	t/t	0.73	0.49	0.56
Waste disposed in landfill/energy consumer net of photovoltaic energy (38+39)/(126)	t/kWh	0.02	0.01	0.00
Compost produced/incoming waste (41+47)/(36+43)	t/t	0.10	0.12	0.12
Compost produced/electricity consumed (41+47)/(126+131)	kg/kWh	2.55	2.24	1.81

## ENVIRONMENTAL COMPLIANCE

INDICATOR	u. m.	2016	2017	2018
GROUP COMPLIANCE				
Penalties paid for non-conformities relative to rules/agreements of an environmental nature (*)	Euros	414,491	326,166	139,938

(\*) Penalties paid in 2018 by Acea Ato 2, Acea Ato 5, Gesesa and Acea Ambiente for the Terni waste-to-energy plant and the Aprilia and Monterotondo composting plants.

## DESCRIPTION OF THE CALCULATIONS USED TO DETERMINE THE ELECTRICAL GENERATION EFFICIENCY

calculation 1

$$\text{Efficiency}_{(thermoelectric)} = \frac{\text{Energy}_{thermoelectric} \text{ (kWh)}}{\text{Energy}_{diesel} \text{ (kWh)} + \text{Energy}_{methane} \text{ (kWh)}}$$

Where:

$\text{Energy}_{thermoelectric}$  = gross electrical energy produced by the thermoelectric cycle

$$\text{Energy}_{diesel} \text{ (kWh)} = \frac{\text{diesel (l)} \times 0.835 \times \text{PCI}_g \text{ (kcal/kg)}}{860 \text{ (kcal/kWh)}}$$

Energy equivalent to diesel consumed (105)

$$\text{Energy}_{methane} \text{ (kWh)} = \frac{\text{methane (Nm}^3\text{)} \times \text{PCI}_m \text{ (kcal/Nm}^3\text{)}}{860 \text{ (kcal/kWh)}}$$

Energy equivalent to methane consumed (103)

$\text{PCI}_g$  = 10,000 kcal/kg (lower heating value of diesel fuel)

$\text{PCI}_m$  = 8,500 kcal/Nm<sup>3</sup> (lower heating value of methane)

860 = energy conversion factor from kcal to kWh

0.835 = specific gravity of diesel fuel (kg/l)

NB The calorific values used for Acea Production are the real values derived from measurements made by gas and diesel suppliers.



### calculation 2

$$\text{Efficiency}_{(thermoelectric)} = \frac{\text{Energy}_{thermoelectric} \text{ (kWh)} + \text{Energy}_{thermal} \text{ (kWh)}}{\text{Energy}_{diesel} \text{ (kWh)} + \text{Energy}_{methane} \text{ (kWh)}}$$

$\text{Energy}_{thermal}$  = Gross thermal energy produced

$\text{Energy}_{thermoelectric}$  = Gross thermoelectric energy produced

$$\text{Energy}_{diesel} \text{ (kWh)} = \frac{\text{diesel (l)} \times 0.835 \times \text{PCI}_g \text{ (kcal/kg)}}{860 \text{ (kcal/kWh)}}$$

Energy equivalent to diesel consumed: (105)

$$\text{Energy}_{methane} \text{ (kWh)} = \frac{\text{methane (Nm}^3\text{)} \times \text{PCI}_m \text{ (kcal/Nm}^3\text{)}}{860 \text{ (kcal/kWh)}}$$

Energy equivalent to methane consumed: (103)

$\text{PCI}_g$  = 10,000 kcal/kg (lower heating value of diesel fuel)

$\text{PCI}_m$  = 8,500 kcal/Nm<sup>3</sup> (lower heating value of methane)

860 = energy conversion factor from kcal to kWh

0.835 = specific gravity of diesel fuel (kg/l)

NB The calorific values used for Acea Production are the real values derived from measurements made by gas and diesel suppliers.

### calculation 3

$$\text{efficiency (hydroelectric)} = \frac{\text{Hydroelectric energy (MWh)} \times 3,6 \times 10^9}{[\text{m(kg)} \times 9.8 \text{ (m/s}^2\text{)} \times \text{h(m)}] \text{ (Joule)}}$$

where:

$3.6 \times 10^9$  = conversion factor of hydropower from joules to MWh

m = derived water for hydroelectric production

9.8 = acceleration of gravity at sea level

h = height of water fall (exposed surface - turbine)

$\text{Energy}_{hydroelectric}$  = energy produced by the hydroelectric cycle

calculation 4

$$\text{efficiency (average)} = \frac{E_i}{(E_i + E_t)} \times \eta_i + \frac{E_t}{(E_i + E_t)} \times \eta_t$$

Where:

$E_i$  = total hydroelectric energy produced

$E_t$  = total thermoelectric energy produced

$\eta_i$  = hydroelectric efficiency

$\eta_t$  = thermoelectric efficiency

efficiency (average) = average production efficiency

calculation 5

$$\text{efficiency (average)} = \frac{E_i}{(E_i + E_T)} \times \eta_i + \frac{E_T}{(E_i + E_T)} \times \eta_T$$

Where:

$E_i$  = total hydroelectric energy produced

$E_T$  = sum of the total energy produced (thermoelectric and thermal)

$\eta_i$  = hydroelectric efficiency

$\eta_T$  = efficiency (thermoelectric + thermal)

efficiency (average) = average production efficiency

calculation 6

$$\text{recovery efficiency (kWh/kg)} = \frac{\text{Gross electricity produced (kWh)}}{\text{CDR (kg)}}$$

Energy<sub>gross electricity produced</sub> (kWh) = gross electrical energy produced in San Vittore = (item 15)

calculation 7

$$\text{electricity efficiency} = \frac{\text{Electricity produced (kWh)}}{\text{Internal CSS energy (kWh)} + \text{Internal methane energy (kWh)}}$$

Where:

Electricity produced = electricity produced in San Vittore = (item 15)

$$\text{Internal methane energy} = \frac{\text{CH}_4 (\text{Sm}^3) \times \text{PCI}_m (\text{kcal/Sm}^3)}{860 (\text{kcal/kWh})}$$

$\text{PCI}_m$  = PCI methane = approx. 8,500 kcal/Sm<sup>3</sup>

860 = energy conversion factor from kcal to kWh

$$\text{Internal CSS energy (kWh)} = \frac{\text{CSS (kg)} \times \text{PCI}_{\text{css}} (\text{kcal/kg})}{860 (\text{kcal/kWh})}$$

$\text{PCI}_{\text{css}}$  = 3,583 kcal/kg (15,000 kJ/kg) - lower average calorific value of the CSS

860 = energy conversion factor from kcal to kWh

calculation 8

$$\text{recovery efficiency (kWh/kg)} = \frac{\text{Gross electricity produced (kWh)}}{\text{pulper (kg)}}$$

Gross electricity produced (kWh) = electricity produced in Terni = (item 16)

calculation 9

$$\text{efficiency} = \frac{\text{Electricity produced (kWh)}}{\text{Internal pulper energy (kWh)} + \text{Internal methane energy (kWh)}}$$

Where:

Electricity produced = Electricity produced in Terni = (item 16)

$$\text{Internal methane energy (kWh)} = \frac{\text{CH}_4 (\text{Sm}^3) \times \text{PCI}_m (\text{kcal/Sm}^3)}{860 (\text{kcal/kWh})}$$

$\text{PCI}_m$  = PCI methane = approx. 8,500 kcal/Sm<sup>3</sup>

860 = energy conversion factor from kcal to kWh

$$\text{Internal pulper energy (kWh)} = \frac{\text{pulper (kg)} \times \text{PCI}_p (\text{kcal/kg})}{860 (\text{kcal/kWh})}$$

$\text{PCI}_p$  = PCI pulper = 3,635 kcal/kg (15,216 kJ/kg) - lower average calorific value of the pulper

860 = energy conversion factor from kcal to kWh

# EXPLANATORY NOTES TO THE ENVIRONMENTAL ACCOUNTS

The numerical data presented in the *Environmental Accounts* is produced and certified by the competent Departments.

The responsibility for the correct preparation of the data pertains to the individual production units, pending the implementation of a standardised Environmental Management System, capable of coding the procedures in order to obtain a regular flow of numerical information.

Before their final acceptance, however, the official data underwent a validation process that anticipated four control steps:

- Comparison with historical data to highlight and justify possible large deviations;
- At least two repetitions of the acquisition process;
- Feedback to the Departments responsible for the final validation of the data;
- Random check carried out by auditing firm.

The numerical data have been divided into the three categories:

- Estimated;
- Calculated;
- Measured.

In the event of data resulting from estimates, the utmost attention was paid to the verification of the reasonableness of the basic criteria used, with the objective of resorting as little as possible, in the future, to this type of measurement of the sizes of environmental significance.

When data was achieved through calculation, the algorithm used was briefly explained to permit full understanding of the mathematical result.

Lastly, when the data was measured, an uncertainty estimate to be associated with the number was provided.

# ADDITIONAL INFORMATION ON THE NUMERICAL DATA PROVIDED IN THE ENVIRONMENTAL ACCOUNTS

## THE PRODUCTS - ENERGY SEGMENT

item no.	explanation - comment
1	Gross total energy produced by Acea Ambiente and Acea Produzione. The figure is calculated.
2	Electricity produced net of the losses due to just the production phase. The figure is calculated.
3=4+5	Total electricity produced, inclusive of the losses, by the Acea Produzione power plants. Includes thermoelectric and hydroelectric energy. The figure is measured with an uncertainty of less than $\pm 0.5\%$ .
6=7+8+9	Losses of electricity attributable to just the production phase of the Acea Produzione power plants. Includes: the self-consumption (thermal and hydro) and the losses of initial transformation. The figure is measured with an uncertainty of less than $\pm 0.5\%$ .
10	Electricity produced by the Acea Produzione power plants net of the losses. The figure is calculated.
11	Gross energy produced by photovoltaic installations. Note that the FV of Parco della Mistica is not reported because it is outside the perimeter. The figures for the previous two years have been adjusted and include the plants at Orvieto (Acea Ambiente) and Acea Ato 2. The figure is measured with an uncertainty of less than $\pm 0.5\%$ .
12	Total losses during photovoltaic generating phase, due in particular to joule effect (dissipation during heating) in the equipment. Estimated figure.
13	Net photovoltaic electricity made available by the generating installations. The figure is calculated.
14=15+16	Electricity produced by the Waste-to-Energy installations: waste-to-energy of San Vittore del Lazio and waste-to-energy of Terni of Acea Ambiente. We wish to specify that the fuel used in the two installations (CSS - secondary solid fuel - for San Vittore del Lazio and paper mill pulp for the Terni plant) is composed of both biodegradable organic material, therefore neutral on the balance of the CO <sub>2</sub> , and by non-biodegradable organic substance (plastic, resins, etc.). In 2018, the renewable quota for San Vittore was equal to around 51%, the Terni quota was approx. 42%.
17	Self-consumption of the two waste-to-energy plants of San Vittore del Lazio and Terni + initial transformation losses at San Vittore. The figure is measured with an uncertainty of less than $\pm 0.5\%$ .
18	Electricity produced by the two waste-to-energy plants of San Vittore del Lazio and Terni, net of the self-consumption and initial transformation losses at San Vittore. The figure is calculated.
19	Electricity produced from biogas by the waste management plant of Orvieto (Acea Ambiente). The figure is calculated.
20	Self-consumption, including small dissipations. The figure is measured with an uncertainty of less than $\pm 5\%$ .
21	Net electricity produced from biogas and transferred to network. The figure is measured with an uncertainty of less than $\pm 5\%$ .
22	Thermal energy produced in the cogeneration plant of Tor di Valle including losses. The figure is measured with an uncertainty of $\pm 2\%$ near the delivery piping of the generators. The thermal energy is produced by Galleri boilers and the cogeneration plant, composed of a gas turbine and a regenerative heated water generator supplied by hot discharge fumes of the gas turbine.
23	Losses of thermal energy of the district heating systems, due to: thermal dissipation, losses on the network, technical releases for maintenance operations, thermal reintegrations of the heat accumulation systems. The figure is calculated as the difference between the thermal energy produced and that actually supplied to the clients (invoiced).
24	Net thermal energy supplied to the final clients. The figure, calculated, is obtained from the consumption invoiced.
25	Electricity supplied to Acea Produzione to Acea Energy with inter-Group exchange. The figure is marginal as a result of the choice made by the Acea Group to sell the electricity produced by the generating companies on Borsa (Stock Exchange) or through bilateral agreements.
26	Net electricity acquired on the market by: <ul style="list-style-type: none"> <li>· Single Buyer of 2,321.8 GWh</li> <li>· Import of 389.1 GWh</li> <li>· Market of 7,899.1 GWh</li> </ul> The figure is measured with an uncertainty of $\pm 0.5\%$ .
27	Energy requested on the electrical distribution network of Rome and Formello by all the clients connected (open market + managed). The figure is estimated.
28	Losses of electricity that occur during the distribution and transmission phase. They are attributable to: losses of transformation and transport, fraud and incorrect measurements. The figure is estimated.
29	Personal use of electricity for the implementation of the distribution activities. The figure is estimated.
30	Electricity transferred to third parties. These are exchanges of energy between distribution companies. The figure is measured with an uncertainty of $\pm 0.5\%$ .

## THE PRODUCTS - ENERGY SEGMENT

item no.	explanation - comment
31	Total net electricity conveyed to final clients of the open market connected to the electrical distribution network of Rome and Formello. Includes both the quota of electricity sold by Acea Energy, and that sold by other operators active on the open market. The figure is measured with an uncertainty of $\pm 5\%$ according to Standard CEI 13-4.
32	Net electricity transferred to managed final clients. The decrease is the result of the progressive passage of managed clients to the open market. In other words, it is a direct consequence of the deregulation process of the electricity market in effect in Italy since 1999 (Italian Legislative Decree no. 79/99). The figure is estimated based on the consumption invoiced.
33	Net electricity sold by Acea on the open market nationally in Italy. Includes the electricity sold in Rome and Formello (figure 28). The total sale on the open market and managed market is obtained by adding the figures (29) and (30). The figure is estimated.
34	Luminous flux supplied by the public lighting system in Rome. The figure, calculated, is the product of the number of lamps installed and the relative value of "rated" luminous flux.
35	Total number of measurements/controls performed in favour of the energy area. The figure is calculated as the sum of the individual determinations carried out by the competent laboratories.

## THE PRODUCTS - ENVIRONMENT SEGMENT

item no.	explanation - comment
36	Total incoming waste. They are the quantities arriving at the Orvieto plant which include: unsorted urban solid waste, organic fraction, green, non-hazardous industrial waste. The figure is calculated.
37	Waste partly sent for shredding only, partly just for aerobic treatment, partly both to the anaerobic digester and the aerobic treatment. The figure is calculated.
38	Waste disposed directly in landfill. The figure is measured with an uncertainty of $\pm 1\%$ .
39	Waste disposed of in landfill after treatment. The figure is measured with an uncertainty of $\pm 1\%$ .
40	Waste recovered and not sent to landfill. It is glass, paper and cardboard, iron and plastic. In 2017, only iron was recovered. The figure is calculated.
41	Compost produced at the Orvieto plant. Passing only through the aerobic process to the combination, in 2016, of the anaerobic process with the aerobic one, an optimization of the product was achieved, now High Quality Compost. The figure is measured with an uncertainty of $\pm 1\%$ .
42	Reduction due to stabilization. This represents the loss of mass due to the natural transformations of the material and the loss of water through evaporation. The figure is calculated.
43	Total incoming organic waste. They are the amounts arriving at the plants of Aprilia, Monterotondo Marittimo and Sabaudia, which include: sludge, green and organic fraction. At the end of 2017, the Monterotondo Marittimo plant started work on the construction of a new anaerobic digestion section, suspending deliveries to the plant by 2018. The Aprilia plant – placed by the Latina Public Prosecutor's Office under preventive seizure in 2017 for aspects related to odorous emissions – despite the validity of the provisions of the Public Prosecutor's Office was able to restart practically full operations in April (Acea having responded to the notices of compliance prescribed by the relevant authorities), thus working less than in a normal situation. The figure is calculated.
44	Incoming sludge. It is the quantity of sludge entering the composting plants of Aprilia (LT), Monterotondo Marittimo (GR) and Sabaudia (LT). The sharp decrease in 2018 is due to the suspension of contributions to Monterotondo Marittimo. The figure is measured with an uncertainty of $\pm 1\%$ .
45	Incoming green. It is the quantity of green matter coming from the parks, woods or other areas arriving at the plants of Aprilia, Monterotondo Marittimo and Sabaudia. The figure is measured with an uncertainty of $\pm 1\%$ .
46	Organic fraction of sorted collection (FORSU) entering the composting plant of Aprilia and FORSU and other agrifood waste arriving at the Monterotondo Marittimo plant. The figure is calculated.
47	High Quality Compost. It is the quantity of high quality compost produced at the Aprilia, Monterotondo Marittimo and Sabaudia plants. The data represents the quantities produced during the three-year period (not the amount sold). The production of compost is estimated based on the quantities transported daily to maturation. During that phase, process losses occur so that at the time of the sale the compost will be approx. 20-25% less. At the end of 2017, the Monterotondo Marittimo plant started work on the construction of a new anaerobic digestion section, suspending deliveries to the plant by 2018. The plant was operational only to process material that had previously entered the site. The figure is measured with an uncertainty of $\pm 1\%$ .
48	Non-compostable material for disposal. It is the non-biodegradable material (for example plastics) which is separated from the compostable material sent for disposal. The figure is measured with an uncertainty of $\pm 1\%$ .
49	Reduction due to stabilization. This represents the loss of mass due to the natural transformations of the material and the loss of water through evaporation. The figure is calculated.



## THE PRODUCTS - ENERGY SEGMENT

item no.	explanation - comment
50	Liquids entering the Sabaudia plant and sent to purification. Sabaudia's liquid waste treatment section – which has been revamped – is still inactive pending the conclusion of the AIA review process. The figure for 2016 is calculated.
51	Total analytical determinations. They are the total of the analytical determinations performed at the following plants: Orvieto, Aprilia, Monterotondo Marittimo and Sabaudia. The figure is calculated.

## PRODUCTS - WATER SEGMENT

item no.	explanation - comment
52	Total drinking water collected from the environment or from other systems. It is the sum of the water collected by the companies of the Group: Acea Ato 2 (Rome), Acea Ato 5 (Frosinone); Gesesa (Benevento), Gori (Sarnese Vesuviano); Acque (Pisa); Publiacqua (Florence); Acquedotto del Fiora (Grosseto); Umbra Acque (Umbria). The figure is calculated.
53	Total drinking water transported to the distribution networks of the companies listed at number 52, without the losses due to the supply phase at the sources. The figure is estimated.
54	Total drinking water supplied to the respective clients by the companies listed in number 52. The figure is estimated.
55	Total drinking water collected from the environment or from other systems. This is the sum of the water taken from the companies Acea Ato 2 (Rome), Acea Ato 5 (Frosinone) and Gesesa (Benevento). The figure is calculated.
56	Total drinking water transported to the distribution networks of the companies listed at number 55, without the losses due to the supply phase at the sources. The figure is estimated.
57	Total drinking water supplied to the respective clients by the companies listed in number 55. The figure is estimated.
58	Total drinking water collected at the sources, without the high discharges, by the Acea Ato 2 company and released into the aqueduct system of the “historic” network of Rome and Fiumicino. It includes the water collected from Lake Bracciano, purified. The figure is measured with an uncertainty of $\pm 3\%$ , except for the smaller sources - 2017, for which it is estimated.
59	Total drinking water transferred to Municipalities located along the route of the aqueducts. The 2017 figure is estimated and may undergo consolidation after publication.
60	Drinking water released into non-potable network. These are events that occur at the time of extraordinary maintenance or interventions which make the dedicated non-potable resource insufficient. The figure is estimated.
61	Drinking water returned to the environment / technical operating amounts with reference to the “historic” distribution network of Rome and Fiumicino. The figure is calculated.
62	Drinking water released (Quantity A09 of Ministerial Decree 99/07). This is the total drinking water transported to the “historic” distribution network of Rome and Fiumicino less the losses due to the supply phase at the sources. The figure is estimated.
63	Total drinking water supplied in the “historic” network of Rome and Fiumicino. The figure includes consumption due to the Acea Ato 2 users, the water fountains, the water houses, etc.
64	Total distribution losses - “historic” network of Rome and Fiumicino. It is the A17 size of Ministerial Decree no. 99/97 defined as the quantity of water lost during distribution: <ul style="list-style-type: none"> <li>• <math>A17 = A09 - (A10 + A11 + A12)</math>, overall distribution losses where, for the data starting in 2016, the following applies:</li> <li>• Quantity A09 of Ministerial Decree 99/97 - total volume of water released into network;</li> <li>• Quantity A10 of Ministerial Decree 99/97 - measured amount of water delivered to the user;</li> <li>• Quantity A12 of Ministerial Decree 99/97 - amount of water consumer, invoiced, but not measured;</li> <li>• Quantity A12 of Ministerial Decree 99/97 - As per provisions of ARERA (formerly AEEGSI), the Item is identified with the “amount of the water consumed (authorised) not measured and not invoiced”, estimated as <math>0.005 * A10</math>;</li> <li>• Quantity A14 of Ministerial Decree 99/97 - amount of water apparently lost due to unauthorised consumption and therefore not invoiced (fraud), estimated by the ARERA as <math>0.002 * A10</math>;</li> <li>• Quantity A16 of Ministerial Decree 99/97 - amount of water apparently lost due to measurement errors attributable to the meters installed on the utilities, estimated by the ARERA as <math>0.03 * A10</math> (Resolution 5/2016).</li> </ul> The figure is estimated.
65	Actual distribution losses - amount defined by the ARERA as $A13 + A15 = A09 - A10 - A11 - A12 - A14 - A16$ . The figure is estimated.
66	Total non-potable water derived from the environment including losses. The figure is estimated.
67	Total non-potable water supplied to Rome and Fiumicino. The figure, calculated, corresponds to the total amount of water invoiced.
68	Total non-potable water supplied to Municipalities other than Rome and Fiumicino. It is a small estimated quantity.
69	Total drinking water collected at the sources, without the high discharges, by the Acea Ato 2 company and released into the aqueduct system of the Ambito Territoriale Ottimale 2 of Central Lazio (“historic” network of Rome and Fiumicino + Municipalities acquired). The figure is measured with an uncertainty of $\pm 3\%$ , except for the smaller sources, for which it is estimated.

## PRODUCTS - WATER SEGMENT

item no.	explanation - comment
70	Total drinking water transferred to other aqueduct systems. The 2018 figure is estimated and may undergo consolidation after publication.
71	Drinking water released into non-potable network. These are events that occur at the time of extraordinary maintenance or interventions which make the dedicated non-potable resource insufficient. The figure is estimated.
72	Drinking water returned to the environment / technical operating amounts with reference to the Acea Ato 2 distribution network (Rome and Fiumicino + municipalities acquired at 31.12.18). The figure is calculated.
73	Total of the drinking water transported to the Acea Ato 2 distribution network (Rome and Fiumicino + municipalities acquired at 31.12.18). The figure is calculated.
74	Total drinking water supplied (in other words measured at the meters, where present) to the clients connects to the Acea Ato 2 network (Rome and Fiumicino + municipalities acquired at 31.12.18). The figure represents the estimated consumption due to the entire territory served. Since 2014, the amount supplied includes the "other aqueduct systems", as per provisions of the ARERA.
75	Total distribution losses - Acea Ato 2 network (Rome and Fiumicino + municipalities acquired at 31.12.18). It is the A17 quantity of Ministerial Decree no. 99/97 defined as the quantity of water lost during distribution.
76	Real distribution losses - Acea Ato 2 network (Rome and Fiumicino + municipalities acquired at 31.12.18) - volume defined by ARERA as A13+A15=A09-A10-A11-A12-A14-A16. The figure is estimated.
77, 78, 79	Respectively: quantity of water collected from the environment, released into the distribution network and supplied to their clients by Acea Ato 5 (Frosinone).
80	Overall distribution losses of Acea Ato 5 (Frosinone). It is the A17 quantity of Ministerial Decree no. 99/97 defined as the quantity of water lost during distribution.
81	Actual distribution losses of Acea Ato 5 (Frosinone) - amount defined by the ARERA as A13+A15=A09-A10-A11-A12-A14-A16. The figure is estimated.
82, 83, 84	Respectively: quantity of water collected from the environment, released into the distribution network and supplied to their clients by Gesesa (Benevento).
85	Global losses of distribution of Gesesa (Benevento). It is the A17 quantity of Ministerial Decree no. 99/97 defined as the quantity of water lost during distribution.
86	Actual distribution losses of Gesesa (Benevento) - amount defined by the ARERA as A13+A15=A09-A10-A11-A12-A14-A16. The figure is estimated.
87	Total waste water treated in the principal treatment plants of the Group's water companies: Acea Ato 2, Acea Ato 5, Gesesa, Gori, Umbra Acque, Publiacqua, Acque, Acquedotto del Fiora. The figure is calculated.
88	Total waste water treated in the principal treatment plants of the Group's water companies: Acea Ato 2, Acea Ato 5. At the moment, Gesesa does not have any flow meters at the entrance of the treatment plant.
89	Total waste water sent to the principal treatment plants of Acea Ato 2 and treated. The total figure is calculated.
90	Total waste water send to the treatment plants and treated by Acea Ato 2, including the quantities treated in the small plants of the municipalities of Rome and in those outside the municipalities of Rome. The total figure is calculated.
91	Total waste water sent to the treatment plants and treated by Acea Ato 5. The figure is calculated.
92	Number of analytical determinations conducted overall on the drinking water by the Acea Group. The figure includes the analyses performed by Acea Elabori and the analyses performed independently by the companies. The figure is calculated.
93	Number of analytical determinations conducted overall on the waste water by the Acea Group. The figure includes the analyses performed by Acea Elabori and the analyses performed independently by the companies. The figure is calculated.
94	Number of analytical determinations conducted overall on the drinking water by Acea Ato 2, Acea Ato 5, Gesesa.
95	Number of analytical determinations conducted overall on the waste water by Acea Ato 2, Acea Ato 5, Gesesa.
96	Number of analytical determinations conducted overall on the drinking water by Acea Ato 2. The figure from 2018 also includes analyses of recently acquired aqueducts (Civitavecchia and others).
97	Number of analytical determinations conducted overall on the waste water by Acea Ato 2.
98	Number of analytical determinations conducted overall on the drinking water by Acea Ato 5.
99	Number of analytical determinations conducted overall on the waste water by Acea Ato 5.
100	Number of analytical determinations conducted overall on the drinking water by Gesesa.
101	Number of analytical determinations conducted overall on the waste water by Gesesa.

## RESOURCES USED - ENERGY SEGMENT

item no.	explanation - comment
102 = 103 + 104	Total quantity of natural gas used to generate the electricity and heat at the Acea Produzione plants and at the waste-to-energy plants of Acea Ambiente. The figures expressed in normal cubic metres (volume at 0° C and 1 Atm), is measured with an uncertainty of ± 0.5%. Estimated figure.
103	Total quantity of natural gas used in the Tor di Valle power plant (of Acea Production).
104	Total quantity of natural gas used by waste-to-energy plants. The figure is measured with an uncertainty of about 2%.
105	Total quantity of diesel used to generate electricity at the Montemartini power plant (turbogas) of Acea Produzione and for operations at the waste-to-energy plant of Terni. The consumption of the Montemartini power plant is significant during those years when the power plant produces more electricity in order to fulfil the normal scheduled periodic tests, and to conduct the inspection activities. The consumption pertaining to the waste-to-energy plant increased during 2016 due to the internalisation of the transport service of a sector of the plant. The figure is measured with an uncertainty of ± 2%.
106	Quantity of CSS (Secondary Solid Fuel from waste) sent to waste-to-energy in the San Vittore del Lazio plant. The figure is measured with an uncertainty of ± 1%.
107	Quantity of pulp sent to waste-to-energy in the Terni plant. The figure is measured with an uncertainty of ± 1%.
108	Quantity of biogas used to produce electricity. The figure is measured with an uncertainty of ± 1%.
109	Total water derived from surface resources and aqueducts (as in the case of the hydroelectric power plant of Salisano) for the production of hydroelectric energy. The figure is calculated.
110	Total quantity of water used in the industrial processes. The various contributions are due to: <ul style="list-style-type: none"> <li>reintegration of losses in the district heating network. It is aqueduct water;</li> <li>various uses in the waste-to-energy plants of San Vittore del Lazio and Terni. It is aqueduct and well water.</li> </ul> The figure is calculated.
111	Quantity of aqueduct water used by the companies included in the energy area, for civilian/sanitary uses. It is consumption of the Acea Produzione and Areti companies of the waste-to-energy plants and 50% of the consumption of the Holding Company. The figure, calculated, refers to the consumption invoiced.
112	It represents the total quantity of dielectric mineral oil present in the primary and secondary cabins. The figure also includes the quantity of oil present in the Petersen coils installed in certain primary cabins is also included: approx. 225 tons in 256 Petersen systems. The data relative to the reintegrations is estimated. The total quantity of new dielectric mineral oil released into the production circuit (transformers, capacitors, storage deposits etc.) includes both the Areti and the Acea Produzione figure. The figure is estimated.
113	It represents the total quantity of gaseous insulation (SF <sub>6</sub> ) in the Areti plants. The figure is estimated. The figure referred to the reintegrations represents the total quantity of SF <sub>6</sub> released ex-novo into the production circuit during the year. The figure is estimated.
114	It represents the total quantity of cooling fluids in operation. The reintegrations represent the quantity of cooling fluids used for the maintenance of the air-conditioning equipment, during which the gas in operation is recovered and replaced with the new one. The data necessarily refer to the previous year compared to the year of publication as they are based on ISPRA annual statements following the publication of the Sustainability Report. The slight increase in quantities and reintegrations in 2018 compared to the previous year is attributable to an expansion in data retrieval. Both figures are calculated by attributing all the gas supplied overall by the parent company in equal parts (50%) to the energy area and the water area.
115	Total chemical substances used in the electrical and thermal generating process in the Acea Produzione power plants and the waste-to-energy plants of Acea Ambiente. The figure is calculated.
116	Quantity of lubricating oils and fats used by Acea Produzione. In 2018 the sharp increase is due to the entry into operation of the new Tor di Valle CAR plant. The figure is measured with an uncertainty of ± 0.5%.
117	The figure matches Item 28.
118	Matches the difference between Items 1 and 2.
119	Electricity consumed by the processes not directly connected to the production phase (offices). The figure is calculated at 50% of the electricity consumed overall by the parent company. The remaining 50% is attributed as consumption to the water area.
120	Consumption of electricity at other sites and plants, including the consumption of the waste-to-energy plants (Terni and San Vittore). The figure is estimated.
121	Other uses of the electricity in the energy area. The figure is calculated.
122	Total electricity consumer by the product systems included in the energy area. The figure is calculated.
123	Total electricity consumed for public lighting in the municipality of Rome. The significant reduction in 2017 is the result of the replacement of tens of thousands of lamps with LED technology, starting at the end of 2016. The figure is calculated based on the consistencies of the installations in operation during the year.

## RESOURCES USED - ENVIRONMENT SEGMENT

item no.	explanation - comment
<b>ORVIETO PLANT</b>	
124	Quantity of water consumed at the Orvieto plant. It is specified that this resource comes partly from roofs (rainwater) and partly from the riverbed (river water). The figure is estimated.
125	Total chemical substances used at the Orvieto plant. The 2015 figure is discontinuous (decreasing) because of the revamping of the site which ended in November of that year. The figure is calculated.
126	Electricity consumed in the Orvieto plant. The figure is measured with an uncertainty of $\pm 1\%$ .
127	Total quantity of diesel consumed at the Orvieto plant. The figure is measured with an uncertainty of $\pm 2\%$ .
128	Quantity of water used for civilian purposes in the plant region of Orvieto. It is supplied by tanker trucks since the plant is not connected to the aqueduct. The figure is estimated.

## COMPOST PRODUCTION

129	Quantity of water consumed at the Aprilia, Monterotondo Marittimo and Sabaudia plants. The quantities of water recycled are included. The figure is estimated.
130	Total chemical substances used at the Aprilia, Monterotondo Marittimo and Sabaudia plants. The figure is calculated.
131	Electricity consumed at the Aprilia, Monterotondo Marittimo and Sabaudia plants. The figure is measured with an uncertainty of $\pm 1\%$
132	Total quantity of diesel fuel consumed at the Aprilia, Monterotondo Marittimo and Sabaudia plants. The figure is measured with an uncertainty of $\pm 2\%$ .
132 B	Quantity of water used for civil purposes in the composting plants of Aprilia, Monterotondo Marittimo and Sabaudia. The value is partially estimated.

## RESOURCES USED - WATER SEGMENT

item no.	explanation - comment
133	The figure represents the sum of the consumption of reagents for the purification and disinfection of the water in the water companies: Acea Ato 2, Acea Ato 5 and Gesesa. In particular they are sodium hypochlorite - used as disinfectant at the request of the Health Authorities, aluminium polychloride, caustic soda and ozone. The figure is calculated.
134	Total quantity of chemical reagents used by the Acea Elaborasi company to carry out the official duties, namely the analytical checks for the companies of the Acea Group. The figure is measured.
135	Total volume of pure gases for analysis, used by the Acea Elaborasi company. The figure is measured.
136	It represents the total quantity of cooling fluids in operation. The reintegrations represent the quantity of cooling fluids used for the maintenance of the air-conditioning equipment, during which the gas in operation is recovered and replaced with the new one. The data necessarily refer to the previous year compared to the year of publication as they are based on ISPRA annual statements following the publication of the Sustainability Report. The slight increase in quantities and reintegrations in 2018 compared to the previous year is attributable to an expansion in data retrieval. Both figures are calculated by attributing all the gas supplied overall by the parent company in equal parts (50%) to the energy area and the water area.
137	Electricity used for the drinking water and non-potable water pumping stations. The figure is measured with an uncertainty of $\pm 1\%$ .
138	Electricity consumed by the processes not directly connected to the production phase (offices). The figure is calculated at 50% of the electricity consumed overall by the parent company.
139	Electricity used by the Acea Elaborasi company. It includes all the energy relative to the various fields of activity Acea Elaborasi, not only the analytical laboratory activities. The figure is estimated.
140	Total energy consumed in the water area. The figure of the preceding year was modified for adjustments in measurements of the partial data. The figure is calculated.
141	Quantity of drinking water used by the companies: Acea Ato 2 for civilian/sanitary uses. The figure, calculated, refers to the consumption invoiced.
142	Quantity of water consumed for civilian/sanitary uses within facilities not directly tied to production phases (offices). The figure is calculated at 50% of the water consumed overall by the parent company. The figure is estimated.
143	This is the sum of the quantity of drinking water for civilian/domestic and process uses.
144	Total quantity of chemicals used in the purification process of the waste water. It is obtained from the sum of the consumption registered for the following substances: polyelectrolytes, hypochlorite of sodium, iron chloride, lime. The figure is calculated.

## RESOURCES USED - WATER SEGMENT

item no.	explanation - comment
144 B	Total number of reagent kits purchased from the Acea Ato 2 wastewater treatment plants for additional controls beyond analytical testing. The use of the kits responds to the need of the laboratories connected to the treatment plants to be able to carry out complex analyses in a simple, fast manner. Acea Ato 2 uses photometers and rapid analysis systems for all the parameters of interest and to perform reliable monitoring of wastewater legal limits.
145	Total quantity of lubricating oil and fat used for the equipment of the water area (pumps, centrifuges, motors, etc.). The figure is calculated.
146	Electricity used to run the waste water purification plants and to operate the sewer network. The figure is measured with an uncertainty of $\pm 1\%$ .
147	Quantity of methane used in the dryers and generators. The figure is measured.
148	Quantity of biogas produced and consumed on site. The figure is measured.

## FUELS USED BY THE GROUP (TRANSPORT AND HEATING)

item no.	explanation - comment
149	Total quantity of petrol used for the vehicle fleet of the Acea Group. For the conversions from the unit of volume (litres) to that of mass (kg) a density value of 0.73 kg/l was used (source: Defra, conversion factors 2016).
150	Total quantity of diesel used for the vehicle fleet of the Acea Group. For the conversions from the unit of volume (litres) to that of mass (kg) a density value of 0.84 kg/l was used (source: Defra, conversion factors 2016). From 2017 the figure includes the fuel consumed by Aquaser's vehicles.
151	Total quantity of diesel used for heating work areas and for the supply of the generators. Only the consumption of Acea Ato 2 and Acea Ato 5 is included for the 2015-2016 two-year period. The figure is measured with an uncertainty of $\pm 0.5\%$ .
152	Total quantity of natural gas used for heating the work spaces. The scope includes: Acea, Areti, Acea Produzione (offices of Via Aeronautica), Acea Ato 2, Acea Ato 5, Acea Ambiente, Acea Elabori, Acea Energia. The figure is measured with an uncertainty of $\pm 0.5\%$ .
153	Total quantity of LPG (Liquefied Petroleum Gas) used to heat the work spaces. For the conversions from the unit of volume (litres) to that of mass (kg) a density value of 0.550 kg/l was used. The figure is measured with an uncertainty of $\pm 0.5\%$ .

## EMISSIONS AND WASTE - ENERGY SEGMENT

item no.	explanation - comment
154	Total quantity of carbon dioxide released into the atmosphere as a result of generating thermoelectric energy from fossil fuels and from the waste-to-energy process of CSS and pulper. Includes the equivalent CO <sub>2</sub> estimated on the basis of the reintegrations of SF <sub>6</sub> . The figure is calculated as the sum of Items 155, 156 and 157. The 2017 increase is due mainly to Line 1 going into operation (starting September 2016). Estimated figure.
155	Quantity of carbon dioxide released into the atmosphere by the Acea Produzione power plants. The figure is calculated in accordance with current legislation.
156	Quantity of equivalent CO <sub>2</sub> estimated based on the reintegrations of SF <sub>6</sub> , considering that the 1 t of this gas has a heating power 23,500 times the CO <sub>2</sub> .
156 B	Quantity of CO <sub>2</sub> equivalent estimated on the basis of HCFC replenishments, considering that 1 t of gas has a heating capacity of about 1,300-2,500 times CO <sub>2</sub> . The value depends on the specific type of gas (source: GHG protocol - 5 Assessment Report; for gas mixtures the factor is calculated on the primary source). Half of the emissions are included for the energy segment and half for the water segment, as is the case for the quantities of HCFCs. This figure corresponds to item 204 B.
157	Quantity of carbon dioxide released into the atmosphere by the Acea Ambiente waste-to-energy plants. The decrease in 2018 was mainly due to the use of a new method of determining CO <sub>2</sub> emissions at the San Vittore plant in Lazio: instead of calculating the value we now have the actual data from continuous monitoring of the chimney. At the Terni plant the item is measured.
158	Total quantity of nitrogen oxides (NO + NO <sub>2</sub> ) released into the atmosphere as a result of generating thermoelectric energy from fossil fuels and from the CSS and pulper waste-to-energy processes. Their presence in traces of the emissions is due to undesired secondary reactions which occur at high temperature between the nitrogen and the oxygen of the air. The figure is calculated.
159	Total quantity of nitrogen oxides (NO + NO <sub>2</sub> ) released into the atmosphere as a result of generating thermoelectric energy from fossil fuels in the Acea Produzione power plants. The figure is calculated.
160	Quantity of nitrogen oxides (NO + NO <sub>2</sub> ) released into the atmosphere by the Acea Ambiente waste-to-energy plants. The figure is calculated.

## EMISSIONS AND WASTE - ENERGY SEGMENT

item no.	explanation - comment
161	Total quantity of carbon oxide (CO) released into the atmosphere as a result of generating thermoelectric energy from fossil fuels and the waste-to-energy process. The existence of the pollutant in the emissions is due to incomplete fuel reaction and represents a symptom of deterioration in the performance of the combustion reaction. The figure is calculated.
162	Total quantity of carbon oxide (CO) released into the atmosphere as a result of generating thermoelectric energy from fossil fuels in the Acea Produzione power plants. The figure is calculated.
163	Quantity of carbon oxide (CO) released into the atmosphere by the Acea Ambiente waste-to-energy plants. The figure is calculated.
164	Total quantity of sulphur dioxide (SO <sub>2</sub> ) released into the atmosphere as a result of generating thermoelectric energy from fossil fuels and from the CSS and pulper waste-to-energy processes. The use of methane and diesel with low sulphur content in the power plants enables this type of emission to be contained. The figure is calculated.
165	Quantity of sulphur oxide (SO <sub>x</sub> ) released into the atmosphere as a result of generating thermoelectric energy from fossil fuels in the Acea Produzione power plants. The figure is calculated.
166	Quantity of sulphur dioxide (SO <sub>2</sub> ) released into the atmosphere by the Acea Ambiente waste-to-energy plants. The figure is calculated.
167	Total quantity of powders (microscopic particles with average aerodynamic diameter equal or less than 10 thousand of a millimetre) released into the atmosphere as a result of generating thermoelectric energy from fossil fuels and from the CSS and pulper waste-to-energy processes. Basically, it is amorphous unburned carbon, with traces of other compounds of various composition, obtained as sub-product of the combustion when it achieved completely. The figure is calculated.
168	Quantity of powders released into the atmosphere as a result of generating thermoelectric energy from fossil fuels in the Acea Produzione power plants. The figure is calculated.
169	Quantity of powders released into the atmosphere by the Acea Ambiente waste-to-energy plants. The figure is calculated.
170	Quantity of hydrochloric acid (HCl) released into the atmosphere by the Acea Ambiente waste-to-energy plants. The figure is calculated.
171	Quantity of hydrofluoric acid (HF) released into the atmosphere by the Acea Ambiente waste-to-energy plants. The figure is calculated.
172	Quantity of organic carbon released into the atmosphere by the Acea Ambiente waste-to-energy plants. The figure is calculated.
173	Total quantity of waste water, treated, resulting from the thermoelectric energy production activities. During the decommissioning of the old power station in 2017 and the start-up of the new plant, it was not possible to report on the parameter. Since 2018 it has been included. The figure is measured with an uncertainty of ± 2%.
174	Total quantity of hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by the companies of the Acea Group excluding the waste-to-energy area. The figure is measured with an uncertainty of ± 2%.
175	Hazardous waste (Italian Legislative Decree no. 152/06) disposed by the waste-to-energy area. It is essentially light ashes and slag resulting from the incineration processes. The figure is measured with an uncertainty of ± 2%.
176	Total quantity of non-hazardous waste (Italian Legislative Decree no. 152/06) disposed by the companies of the Acea Group excluding the waste-to-energy area. The figure is measured with an uncertainty of ± 2%.
177	Non-hazardous waste (Italian Legislative Decree no. 152/06) disposed by the waste-to-energy area. It is essentially heavy ashes and slag resulting from the incineration processes. The increase in the 2017 figure is attributable to the different classification of the water disposed (as non-hazardous waste in 2017 and as hazardous waste in 2016) at San Vittore del Lazio. The figure is measured with an uncertainty of ± 2%.

## EMISSIONS AND WASTE - ENVIRONMENT SEGMENT

item no.	explanation - comment
178	Hazardous waste (Italian Legislative Decree no. 152/06) disposed by the Aprilia, Monterotondo Marittimo and Sabaudia plants. The figure is calculated.
179	Non-hazardous waste (Italian Legislative Decree no. 152/06) disposed by the Aprilia, Monterotondo Marittimo and Sabaudia plants. The figure is calculated.
180	Hazardous waste (Italian Legislative Decree no. 152/06) disposed by the Orvieto plant. The figure is measured with an uncertainty of ± 2%.
181	Non-hazardous waste (Italian Legislative Decree no. 152/06) disposed by the Orvieto plant. The figure is measured with an uncertainty of ± 2%.
182	CO <sub>2</sub> emissions from the Orvieto plant and composting plants. Estimated figure.
183, 184, 185, 186	They are powders, Total Organic Compounds (COT), ammonia and volatile inorganic substances (SIV) issued at the Aprilia plant. The presence of the “≤” symbol identifies values of concentration equal or lower than the limits detectable by the instruments used in the laboratory, therefore it indicates only an upper limit. The data is calculated starting from the measurement of the concentrations.



## EMISSIONS AND WASTE - WATER SEGMENT

item no.	explanation - comment
187	Total quantity of sewerage sludge disposed of by the companies Acea Ato 2, Acea Ato 5 and Gesesa. They are non-hazardous waste. The figure is measured with an uncertainty of $\pm 2\%$ .
188	Total quantity of purification sludge disposed by the Acea Ato 2 company. The figure that dropped sharply in 2017 results mainly from the Rome East treatment plants where an anaerobic digester and a dryer are in operation. The figure is measured with an uncertainty of $\pm 2\%$ .
189	Total quantity of purification sludge disposed by the Acea Ato 5 company. The figure is measured with an uncertainty of $\pm 2\%$ .
190	Total quantity of purification sludge disposed by the Gesesa company. The figure is measured with an uncertainty of $\pm 2\%$ .
191	Total quantity of sand and slabs disposed by the companies Acea Ato 2, Acea Ato 5 and Gesesa. The figure is measured with an uncertainty of $\pm 2\%$ .
192	Total quantity of sand and slabs disposed by the Acea Ato 2 company. The 2017 figure increased compared to 2016 for maintenance activity on the treatment plant of Rome East. The figure is measured with an uncertainty of $\pm 2\%$ .
193	Total quantity of sand and slabs disposed by the Acea Ato 5 company. The figure is measured with an uncertainty of $\pm 2\%$ .
194	Total quantity of sand and slabs disposed by the Gesesa company. The figure is measured with an uncertainty of $\pm 2\%$ .
195	Total quantity of hazardous waste (Italian Legislative Decree no. 152/06) disposed by Acea Ato 2, Acea Elabori and Acea Ato 5, to which was added an amount produced by the Parent Company and attributed in equal parts to the two Areas: Energy and Water. The figure is calculated.
196	Total quantity of hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by Acea Ato 2 and Acea Elabori. The figure is measured with an uncertainty of $\pm 2\%$ .
197	Total quantity of hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by Acea Ato 5. The figure is measured with an uncertainty of $\pm 2\%$ .
198	Proportion of hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by the parent company and attributed to the Water Segment. The same proportion was attributed to the Energy Segment. The quantity is much lower than the previous year because in 2017 the Valleranello site, one of Acea's historical logistics sites, was closed, with the consequent disposal of many different materials, some of them hazardous. In 2018 waste was still being produced by Valleranello, resulting from the demolition of the construction shacks in the area. From 2019 onwards lower quantities of waste will be produced, in line with production before 2017.
199	Total quantity of non-hazardous waste (Italian Legislative Decree no. 152/06) disposed by Acea Ato 2, Acea Elabori, Acea Ato 5 and Gesesa, to which was added an amount produced by the Parent Company and attributed in equal parts to the two main areas of business: energy and water. The figure is calculated.
200	Total quantity of non-hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by Acea Ato 2 and Acea Elabori. The increase in quantities in 2018 depends on waste from sewerage cleaning. The figure is calculated.
201	Total quantity of non-hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by Acea Ato 5. The figure is estimated.
202	Total quantity of non-hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by Gesesa. The figure is estimated.
203	Proportion of non-hazardous waste (pursuant to Italian Legislative Decree no. 152/06) disposed by the Parent Company and attributed to the Water Segment. The same proportion was attributed to the Energy Segment. The quantity is much lower than the previous year because in 2017 the Valleranello site, one of Acea's historical logistics sites, was closed, with the consequent disposal of many different materials, some of them non-hazardous. In 2018 waste was still being produced by Valleranello, resulting from the demolition of the construction shacks in the area. From 2019 onwards lower quantities of waste will be produced, in line with production before 2017.
204	Total amount of carbon dioxide emitted by Acea Ato 2 dryers, using methane as fuel. The 2018 figure is calculated using the consumption of fuel and the emission coefficients (ISPRA 2017).
204 B	Quantity of CO <sub>2</sub> equivalent estimated on the basis of HCFC replenishments, considering that 1 t of gas has a heating capacity of about 1,300-2,500 times CO <sub>2</sub> . The value depends on the specific type of gas (source: GHG protocol - 5 Assessment Report; for gas mixtures the factor is calculated on the primary source). Half of the emissions are included for the energy segment and half for the water segment, as is the case for the quantities of HCFCs. This figure corresponds to item 156B.

## CO<sub>2</sub> EMISSIONS FROM TRANSPORT AND HEATING

item no.	explanation - comment
205	Total quantity of carbon dioxide issued by the motor pool of the Acea Group. For the entire three-year period, it was calculated using the consumption of fuel and the emission coefficients (ISPRA 2017). The increase starting in 2017 depends first of all on both the WFM model which is now operational and determined an increase in the operating capacity against a larger number of vehicles on the road at the same time, and on the companies included in the year's parameter (Acea Ambient and Aquser).
206	Total quantity of carbon dioxide emitted by the systems used to air-condition the work spaces. The 2018 figure, calculated using fuel consumption and emission coefficients (ISPRA 2017), does not include the share of methane heating consumption in the Terni plant as it is already consolidated within the value reported for the purposes of the ETS.



**ACEA SPA**

**RELAZIONE DELLA SOCIETÀ DI REVISIONE  
INDIPENDENTE SULLA DICHIARAZIONE  
CONSOLIDATA DI CARATTERE NON FINANZIARIO AI  
SENSI DELL'ARTICOLO 3, C. 10, D.LGS. 254/2016 E  
DELL'ARTICOLO 5 REGOLAMENTO CONSOB N. 20267  
DEL GENNAIO 2018**

**ESERCIZIO CHIUSO AL 31 DICEMBRE 2018**



***Relazione della società di revisione indipendente sulla dichiarazione consolidata di carattere non finanziario ai sensi dell'art. 3, c. 10, D.Lgs. 254/2016 e dell'art. 5 Regolamento CONSOB adottato con delibera n. 20267 del gennaio 2018***

Al Consiglio di Amministrazione di Acea SpA

Ai sensi dell'articolo 3, comma 10, del Decreto Legislativo 30 dicembre 2016, n. 254 (di seguito "Decreto") e dell'articolo 5 del Regolamento CONSOB n. 20267/2018, siamo stati incaricati di effettuare l'esame limitato ("*limited assurance engagement*") della dichiarazione consolidata di carattere non finanziario di Acea SpA e sue controllate (di seguito il "Gruppo") relativa all'esercizio chiuso al 31 dicembre 2018 predisposta ex art. 4 del Decreto e approvata dal Consiglio di Amministrazione in data 6 marzo 2019 (di seguito "DNF").

***Responsabilità degli Amministratori e del Collegio Sindacale per la DNF***

Gli Amministratori sono responsabili per la redazione della DNF in conformità a quanto richiesto dagli articoli 3 e 4 del Decreto e dai "GRI-Sustainability Reporting Standards" definiti nel 2016 (di seguito "GRI Standards"), da essi individuati come standard di rendicontazione.

Gli Amministratori sono altresì responsabili, nei termini previsti dalla legge, per quella parte del controllo interno da essi ritenuta necessaria al fine di consentire la redazione di una DNF che non contenga errori significativi dovuti a frodi o a comportamenti o eventi non intenzionali.

Gli Amministratori sono responsabili inoltre per l'individuazione del contenuto della DNF, nell'ambito dei temi menzionati nell'articolo 3, comma 1, del Decreto, tenuto conto delle attività e delle caratteristiche del Gruppo e nella misura necessaria ad assicurare la comprensione dell'attività del Gruppo, del suo andamento, dei suoi risultati e dell'impatto dallo stesso prodotti.

Gli Amministratori sono infine responsabili per la definizione del modello aziendale di gestione e organizzazione dell'attività del Gruppo, nonché, con riferimento ai temi individuati e riportati nella DNF, per le politiche praticate dal Gruppo e per l'individuazione e la gestione dei rischi generati o subiti dallo stesso.

Il Collegio Sindacale ha la responsabilità della vigilanza, nei termini previsti dalla legge, sull'osservanza delle disposizioni stabilite nel Decreto.

***PricewaterhouseCoopers SpA***

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### **Indipendenza della società di revisione e controllo della qualità**

Siamo indipendenti in conformità ai principi in materia di etica e di indipendenza del *Code of Ethics for Professional Accountants* emesso dall'International *Ethics Standards Board for Accountants*, basato su principi fondamentali di integrità, obiettività, competenza e diligenza professionale, riservatezza e comportamento professionale. La nostra società di revisione applica l'*International Standard on Quality Control 1 (ISQC Italia 1)* e, di conseguenza, mantiene un sistema di controllo qualità che include direttive e procedure documentate sulla conformità ai principi etici, ai principi professionali e alle disposizioni di legge e dei regolamenti applicabili.

### **Responsabilità della società di revisione**

È nostra la responsabilità di esprimere, sulla base delle procedure svolte, una conclusione circa la conformità della DNF rispetto a quanto richiesto dal Decreto e dai GRI Standards. Il nostro lavoro è stato svolto secondo quanto previsto dal principio "*International Standard on Assurance Engagements ISAE 3000 (Revised) - Assurance Engagements Other than Audits or Reviews of Historical Financial Information*" (di seguito "*ISAE 3000 Revised*"), emanato dall'*International Auditing and Assurance Standards Board (IAASB)* per gli incarichi *limited assurance*. Tale principio richiede la pianificazione e lo svolgimento di procedure al fine di acquisire un livello di sicurezza limitato che la DNF non contenga errori significativi. Pertanto, il nostro esame ha comportato un'estensione di lavoro inferiore a quella necessaria per lo svolgimento di un esame completo secondo l'*ISAE 3000 Revised ("reasonable assurance engagement")* e, conseguentemente, non ci consente di avere la sicurezza di essere venuti a conoscenza di tutti i fatti e le circostanze significativi che potrebbero essere identificati con lo svolgimento di tale esame.

Le procedure svolte sulla DNF si sono basate sul nostro giudizio professionale e hanno compreso colloqui, prevalentemente con il personale della società responsabile per la predisposizione delle informazioni presentate nella DNF, nonché analisi di documenti, ricalcoli ed altre procedure volte all'acquisizione di evidenze ritenute utili.

In particolare, abbiamo svolto le seguenti procedure:

1. analisi dei temi rilevanti in relazione alle attività ed alle caratteristiche del Gruppo rendicontati nella DNF, al fine di valutare la ragionevolezza del processo di selezione seguito alla luce di quanto previsto dall'art. 3 del Decreto e tenendo presente lo standard di rendicontazione utilizzato;
2. analisi e valutazione dei criteri di identificazione del perimetro di consolidamento, al fine di riscontrarne la conformità a quanto previsto dal Decreto;
3. comparazione tra i dati e le informazioni di carattere economico-finanziario incluse nella DNF ed i dati e le informazioni inclusi nel Bilancio Consolidato del Gruppo Acea;
4. comprensione dei seguenti aspetti:
  - modello aziendale di gestione e organizzazione dell'attività del Gruppo, con riferimento alla gestione dei temi indicati nell'art. 3 del Decreto;
  - politiche praticate dall'impresa connesse ai temi indicati nell'art. 3 del Decreto, risultati conseguiti e relativi indicatori fondamentali di prestazione;
  - principali rischi, generati o subiti connessi ai temi indicati nell'art. 3 del Decreto.

Relativamente a tali aspetti sono stati effettuati inoltre i riscontri con le informazioni contenute nella DNF e effettuate le verifiche descritte nel successivo punto 5, lett. a);



5. comprensione dei processi che sottendono alla generazione, rilevazione e gestione delle informazioni qualitative e quantitative significative incluse nella DNF. In particolare, abbiamo svolto interviste e discussioni con il personale della Direzione di Acea SpA e con il personale di Acea Produzione SpA, Acea Ambiente SpA e Acea ATO 2 SpA e abbiamo svolto limitate verifiche documentali, al fine di raccogliere informazioni circa i processi e le procedure che supportano la raccolta, l'aggregazione, l'elaborazione e la trasmissione dei dati e delle informazioni di carattere non finanziario alla funzione responsabile della predisposizione della DNF.

Inoltre, per le informazioni significative, tenuto conto delle attività e delle caratteristiche del Gruppo:


- a livello di capogruppo
  - a) con riferimento alle informazioni qualitative contenute nella DNF, e in particolare al modello aziendale, politiche praticate e principali rischi, abbiamo effettuato interviste e acquisito documentazione di supporto per verificarne la coerenza con le evidenze disponibili;
  - b) con riferimento alle informazioni quantitative, abbiamo svolto sia procedure analitiche che limitate verifiche per accertare su base campionaria la corretta aggregazione dei dati.
- per Acea SpA, Acea Produzione SpA, Acea Ambiente SpA, Acea ATO 2 SpA e per l'impianto di termovalorizzazione di San Vittore del Lazio (Acea Ambiente SpA) che abbiamo selezionato sulla base delle loro attività, del loro contributo agli indicatori di prestazione a livello consolidato e della loro ubicazione, abbiamo effettuato visite in loco nel corso delle quali ci siamo confrontati con i responsabili e abbiamo acquisito riscontri documentali circa la corretta applicazione delle procedure e dei metodi di calcolo utilizzati per gli indicatori.

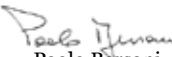
### **Conclusioni**

Sulla base del lavoro svolto, non sono pervenuti alla nostra attenzione elementi che ci facciano ritenere che la DNF del Gruppo Acea relativa all'esercizio chiuso al 31 dicembre 2018 non sia stata redatta, in tutti gli aspetti significativi, in conformità a quanto richiesto dagli articoli 3 e 4 del Decreto e dai GRI Standards.

Milano, 26 marzo 2019

PricewaterhouseCoopers SpA

  
Massimo Rota  
(Revisore legale)

  
Paolo Bersani  
(Procuratore)

# 2018

## SUSTAINABILITY REPORT

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### ACEA GROUP

#### ACEA SPA

Registered Office  
Piazzale Ostiense 2 – 00154 Rome

#### Share Capital

EUR 1,098,898,884 fully paid up

#### Tax Code, VAT No. and Rome Companies Registry No.

05394801004

#### Rome Economic and Administrative Index No.

882486

#### Under the responsibility of

Risk & Compliance, External Relations and Communication  
Acea SpA

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