



# 2009 SUSTAINABILITY REPORT

Company Fact Sheets Italy-Overseas







# 2009 SUSTAINABILITY REPORT

Company Fact Sheets Italy-Overseas





**Company Fact Sheets  
Italy-Overseas****Introduction 4****Company Fact Sheets Italy**

<b>5</b>	AceaElectrabel Produzione SpA
<b>10</b>	Tirreno Power SpA
<b>14</b>	EALL. Srl
<b>17</b>	Terni En.A
<b>20</b>	Acea Distribuzione SpA and Public Lighting
<b>22</b>	Acea Ato 2 SpA
<b>24</b>	LaboratoRI SpA
<b>25</b>	Acea Ato 5 SpA
<b>31</b>	Gori SpA
<b>36</b>	Acque SpA
<b>44</b>	Acquedotto del Fiora SpA
<b>50</b>	Publiacqua SpA
<b>55</b>	Umbra Acque SpA

**Company Fact Sheets****Overseas 60**

<b>61</b>	Consorcio Agua Azul SA
<b>62</b>	Aguas De San Pedro SA
<b>63</b>	Acea Dominicana SA
<b>63</b>	Aguazul Bogotà SA ESP

This section, attached to the *2009 Sustainability Report*, provides technical fact sheets and quality-related information on the key Acea Group companies and a brief description of the operations carried out by companies operating overseas.

This ensures compliance with indications from the GRI-G3 Guidelines – used to prepare the *Sustainability Report* – suggesting that the most complete possible view of the structure of the Group should be provided, including when the information and figures relating to subsidiary companies are not managed centrally by Holding Company.

These fact sheets provide information concerning Financial Year 2009 and include a brief description of company operations and assets, economic and social quality and quantity and figures concerning the environment.

Additional information concerning the operations and performances of **AceaElectrabel Produzione**, **Acea Distribuzione** (including Public Lighting) and **Acea Ato 2** – in this section solely in relation to plants and systems – can be found in the *Socio-economic Relations with Stakeholders* and *Environmental Issues* sections in the *2009 Sustainability Report*.

The Sustainability Report also provides additional information on **Tirreno Power**, **EALL** and **Terni En.A**, which are only briefly described in these Fact Sheets.

Finally, all information concerning the environment (products, resources, waste and indicators) are included in the *Environmental Accounts* attached to the Report on a CD.

human resources (no.)	156
value of production (millions of euro)	333.3
net result for Financial Year (millions of euro) (7.6)	

AceaElectrabel Produzione SpA was established in 2002 further to a Joint Venture involving Acea SpA and Electrabel (Suez Group) and is responsible for producing electricity and heat.

This company's production plants have overall capacity of **782 MW**<sup>1</sup>:

- **614 MW thermoelectric energy**

- Tor di Valle plant (Rome): 145 MW
- Montemartini plant (Rome): 78 MW
- Leini plant (Turin): 391 MW

There are also two plants in Voghera (Pavia) - 376 MW – and Rosignano (Livorno) - 384 MW indirectly controlled by AceaElectrabel Produzione through Voghera Energia SpA and Roselectra SpA. These Stations have combined gas-vapour cycles fuelled by natural gas.

- **139 MW hydroelectric energy**, with an average production capacity of 400 GWh of electricity per year. Hydroelectric plants are located in the provinces of Rome, Terni, Chieti and Rieti.
- **29 MW wind energy**
  - Monte della Difesa Wind Farm in Serre (Salerno).

There are also two operational Wind Farms in Monte Cavuti – 10.2 MW - and Capracotta – 9.35 MW -, both in the province of Isernia and owned by subsidiary Longano Eolica SpA; the "Piano del Cornale" Wind Farm (province of Salerno, around 20 MW) is currently under construction and designs for the "Cresta del Gallo" Wind Farm (provinces of Salerno and Avellino), 15 MW have been completed.

The Tor di Valle and Montemartini Thermoelectric plants, the Salisano Hydroelectric plant and – as of July 2009 – the Thermoelectric plant in Leini and the G. Marconi Hydroelectric plant all have **Environmental Certification according to Standard UNI EN ISO 14001/04**.

AceaEletrabel Produzione SpA produced around 4,714 GWh gross electricity in 2009, around 4,150 GWh of which from fossil fuels and 564 GWh from renewable sources (water and wind). Furthermore, 118.5 GWh of thermal energy was distributed to around 25,000 inhabitants in the Torrino and Mostacciano districts in Rome and to around 8,000 inhabitants in the area surrounding the Leini plant.

<sup>1</sup> These 782 MW exclude the plants (and systems) controlled by AceaElectrabel Produzione: Voghera Energia SpA, Roselectra SpA and Longano Eolica SpA.

## HYDROELECTRIC PRODUCTION

---

### A. VOLTA PLANT IN CASTEL MADAMA (ROME)

---

plant type	running water
use for produced energy	to cover basic needs
nominal flow rate (rated power)	9.4 MW
volume in basin or reservoir served	148,000 m <sup>3</sup>
available head (by agreement)	40.29 m
maximum design flow	25 m <sup>3</sup> /s
gross electricity produced in 2009	26.59 GWh

### G. FERRARIS PLANT IN MANDELA (ROME)

---

plant type	running water
use for produced energy	to cover basic needs
nominal flow rate (rated power)	8.5 MW
volume in basin or reservoir served	6,400 m <sup>3</sup>
available head (by agreement)	27.15 m
maximum design flow (by agreement)	30 m <sup>3</sup> /s
gross electricity produced in 2009	18.81 GWh

### SALISANO PLANT (RIETI)

---

plant type	running water (aqueduct)
use for produced energy	to cover basic needs
nominal flow rate (rated power)	24.6 MW
available head	85.94 m Capore 242.50 m Peschiera
maximum design flow (by agreement)	5.5 m <sup>3</sup> /s Capore 10 m <sup>3</sup> /s Peschiera
gross electricity produced in 2009	178.50 GWh

### G. MARCONI PLANT IN ORTE (TERNI)

---

plant type	running water
use for produced energy	to cover basic needs
nominal flow rate (rated power)	20 MW
volume in basins or reservoirs served	6 million m <sup>3</sup>
available head (by agreement)	11.45 m
maximum design flow (by agreement)	180 m <sup>3</sup> /s
gross electricity produced in 2009	57.74 GWh

### SANT'ANGELO PLANT (CHIETI)

---

plant type	Reservoir
use for produced energy	to cover peak needs
nominal flow rate (rated power)	58.4 MW
volume in basins or reservoirs served	83.30 million m <sup>3</sup> Bomba 21 million m <sup>3</sup> Casoli
available head (by agreement)	141.20 m
maximum design flow (by agreement)	40 m <sup>3</sup> /s
gross electricity produced in 2009	203.73 GWh



## HYDROELECTRIC PRODUCTION – MINOR PLANTS

---

### CECCHINA (ROME)

---

plant type	running water (aqueduct)
use for produced energy	to cover basic needs
nominal flow rate (rated power)	0.4 MW
maximum design flow (by agreement)	1.1 m <sup>3</sup> /s
available head (by agreement)	30 m
gross electricity produced in 2009	0.93 GWh

---

### MADONNA DEL ROSARIO (ROME)

---

plant type	running water (aqueduct)
use for produced energy	to cover basic needs
nominal flow rate (rated power)	0.4 MW
maximum design flow	0.825 m <sup>3</sup> /s
available head (by agreement)	43 m
gross electricity produced in 2009	1.82 GWh

---

## THERMOELECTRIC PRODUCTION

---

### TOR DI VALLE PLANT – COMBINED CYCLE (ROME)

---

fuel type	natural gas
use for produced energy	mid-merit (electricity) and district heating (thermal energy)
nominal flow rate of a.c. generators (rated power)	41.04 MW turbogas 1 41.04 MW turbogas 2 43.6 MW vapour group
station surface area	35,000 m <sup>2</sup>
chimney stack height	30 m
amount of fuel consumed in 2009	39.04 MNm <sup>3</sup>
gross electricity produced in 2009	155.36 GWh
overall efficiency in 2009	38.18%

---

### TOR DI VALLE PLANT – CO-GENERATION (ROME)

---

fuel type	natural gas
use for produced energy	to cover peak needs (electricity) and district heating (thermal energy)
nominal flow rate of a.c. generators (rated power)	19.32 MWe
chimney stack height	20 m
amount of fuel consumed in 2009	12.44 MNm <sup>3</sup>
gross electricity produced in 2009	24.43 GWh
overall efficiency in 2009	24.89% solely electricity 68.57% with heat recovery

---

**(continues) THERMOELECTRIC PRODUCTION**

## MONTEMARTINI PLANT (ROME)

fuel type	diesel fuel with low sulphur content
use for produced energy	to cover peak needs
nominal flow rate of a.c. generators (rated power)	26.1 MW turbogas 1 26.1 MW turbogas 2 26.1 MW turbogas 3
chimney stack height	1 x 13.35 m + 2 x 20 m
amount of fuel consumed in 2009	1.18 Ml
gross electricity produced in 2009	3.07 GWh
overall efficiency in 2009	26.29%

## LEINÌ PLANT (TURIN)

fuel type	natural gas
use for produced energy	mid-merit (electricity) and district heating (thermal energy)
nominal flow rate of a.c. generators (rated power)	391 MW <sub>e</sub>
chimney stack height	55 m
amount of fuel consumed in 2009	231.92 MNm <sup>3</sup>
gross electricity produced in 2009	1,264.19 GWh
overall efficiency in 2009	52.91%

## VOGHERA PLANT (PAVIA)

fuel type	natural gas
use for produced energy	mid-merit
nominal flow rate of a.c. generators (rated power)	376 MW <sub>e</sub>
chimney stack height	80 m
amount of fuel consumed in 2009	208.20 MNm <sup>3</sup>
gross electricity produced in 2009	1,151.26 GWh
overall efficiency in 2009	53.50%

## ROSELECTRA PLANT (LIVORNO)

fuel type	natural gas
use for produced energy	mid-merit (electricity) and district heating (thermal energy)
nominal flow rate of a.c. generators (rated power)	384 MW <sub>e</sub>
chimney stack height	55 m
amount of fuel consumed in 2009	273.12 MNm <sup>3</sup>
gross electricity produced in 2009	1,551.31 GWh
overall efficiency in 2009	54.19%

## WIND FARM PRODUCTION

---

### MONTE DELLA DIFESA WIND FARM (SALERNO)

---

use for produced energy	to cover basic needs
nominal flow rate per wind turbine	n.a.
number of turbines	n.a.
nominal flow rate of station (rated power)	28.9 MW
net electricity produced in 2009	41.13 GWh

### MONTE CAVUTI WIND FARM (ISERNIA)

---

use for produced energy	to cover basic needs
nominal flow rate per wind turbine	850 kW
number of turbines	12
nominal flow rate of station (rated power)	10.2 MW
net electricity produced in 2009	18.85 GWh

### CAPRACOTTA WIND FARM (ISERNIA)

---

use for produced energy	to cover basic needs
nominal flow rate per wind turbine	850 kW
number of turbines	11
nominal flow rate of station (rated power)	9.35 MW
net electricity produced in 2009	16.56 GWh

## Environmental Expenditures

Investments amounting to around 4.26 million euro were made to improve the effects of operations on the environment in 2009. Philanthropic initiatives and sponsorships also required costs of 53 thousand euro, thereby bringing the overall amount to 4.31 million euro.

Environmental operational costs amounted to around 7.6 million euro.

human resources (no.)	591
value of production (millions of euro)	1,267.5
net result for Financial Year (millions of euro)	80.1

Tirreno Power SpA is an electricity production company with thermoelectric and hydroelectric generating plants along the Tyrrhenian Coast. It is controlled by a consortium owned by Energia Italiana SpA (50%) and Eblacea SpA (30% Acea, 70% Electrabel)<sup>2</sup>.

The thermoelectric plants – Vado Ligure, Torrevaldaliga Sud and Napoli Levante – comprise traditional units, two of which fuelled by coal and one by gas, and 4 combined cycles fuelled by gas; there are 17 hydroelectric stations for renewable sources in Genoa (equally divided among “running water” and “regulation”), which are located along the entire Appenine chain in Liguria.

Once the 400 MW Naples combined cycle plant became fully operational in the second half of 2009, the Repowering Plan implemented over the last few years was substantially completed. Tirreno Power currently has nominal power rating of 3,416 MW.

#### PLANTS: SUMMARY

plant	power (MW)	fuel/resource	average efficiency 2009
<b>thermoelectric plants</b>			
Torrevaldaliga Sud	1,494	natural gas, fuel oil	48.19%
Vado Ligure	1,455	coal, fuel oil, natural gas	43.85%
Napoli Levante(*)	401	natural gas	53.53%
<b>hydroelectric plants</b>			
Hydroelectric Group in Genoa (17 production systems)	66	artificial lakes	92.02%

(\*) The Napoli Levante Station became fully operational with the Electricity Grid on 28 April 2009.

#### Commitment to Improvement

Tirreno Power has adopted an **Environmental Policy** focussing on company operations and the conduct of employees to fulfil production needs while safeguarding the natural environment for some time now. Careful checking of industrial processes, using resources and raw materials correctly and adopting the best technologies available ensure the best environmental management possible.

This also means pursuing better energy efficiency, streamlining waste, adopting programmes to check and control emissions and wastewater and carefully applying technical and management procedures to ensure ongoing improvement in performances.

<sup>2</sup> Further to reorganization of the Italian electricity market pursuant to Italian Legislative Decree no. 79 dated 16 March 1999, the consortium companies established by Energia Italiana and Eblacea received authorization from the Electricity and Gas Authority to acquire the third Enel Gen.Co. – Interpower – which became Tirreno Power SpA in January 2003.

The main tools used to implement environmental policies are:

- **environmental management systems:** all plants have an Environmental Management System, the Vado Ligure and Torrevadliga sites have **Environmental Certification** according to Standard **UNI EN ISO 14001** and are registered with EMAS (Eco Management and Audit Scheme), the most accredited scheme in Europe and the procedure to obtain both the above have commenced for the Napoli Levante Station, which became operational in 2009;
- **training and information:** in 2009, training in the environmental field led to a number of collaborators operating in both the head office and on production sites becoming qualified as CEPAS<sup>3</sup> Environmental Auditor or Qualified Environmental Auditor. Staff also attended conventions and seminars organized by important public institutions and leading private training companies;
- **environmental reports:** further to adoption of environmental management, the certified sites regularly produce reports on environmental figures and performances for examination by the management in order to identify and, if necessary, take action with a view to ongoing improvement.

Another particularly important element for Tirreno Power is encouraging **communication with local communities** to ensure better understanding and agreement for corporate choices. The various initiatives undertaken for this purpose every year – including cooperation with universities and the local press – particularly involved creation of the VadoEnergia website filled with online information and documents to inform the public of the important project to increase the production capacity and improve the environment at the Vado Ligure plant. The new [www.tirrenopower.com](http://www.tirrenopower.com) corporate website is also under construction.

An important task is carried out by a workgroup under the Deputy Managing Director, which oversees matters relating to health and safety in the workplace and the environment by coordinating the teams responsible for such matters on production sites. Tirreno Power aims to maintain a standard of excellence by raising awareness, training, controlling and monitoring, supervising and progressively adopting safety management systems. A training project concerning “Safety in the Workplace” for all employees and another to consolidate technical skills in the Operations and Maintenance Areas commenced in 2009. There were 11 minor accidents throughout the year and the average severity of these decreases constantly. The costs relating to safety for the year amounted to around 2.7 million euro.

The main events concerning the environment occurring throughout the year included the Ministry for the Environment issuing a Decree concerning environmental compatibility for a new coal unit at the Vado Ligure plant with output of around 460 MW. An application for Authorization was made and procedures concerning Assessment of Environmental Impact for a 6.9 MWp photovoltaic system in Sessa Aurunca, Campania, commenced and a new company – Tirreno Solar Srl, 100% owned by Tirreno Power Spa –, was established for such purpose.

In addition to managing a hydroelectric group, the Tirreno Power Renewable Sources Division is responsible for designing and installing new systems using renewable sources to fulfil the objective of increasing production capacity through a more balanced combination of energy resources. A programme to renew hydroelectric generation systems continued in 2009 through renovation of a number of systems that not only ensure increased efficiency, but also qualify the energy produced as “green energy”. As far as photovoltaic production is concerned, in addition to the important project mentioned above, a system was also supplied and installed at the Vado Ligure plant. Finally, with regard to biomass, a feasibility study concerning a biomass plant in Tuscany is underway.

The works carried out to improve plants included delivery of turbogas burners with low NO<sub>x</sub> emissions for units 5 and 6 at Torrevadliga and completion of reconversion to a combined cycle of unit 5 at Vado Ligure plant.

By way of complying with EC REACH Regulation (Registration, Evaluation and Authorization of Chemicals) 1907-06, Tirreno Power became associated with Eurogypsum and VGB-Evonik for REACH registration of respectively chalk and ash from coal.

The company took specific action to promote or protect biodiversity by co-funding the P.A.R.C. Plan (Petromyzon and river continuity), which was approved as part of the European Commission Life Plus Natura Project. This project involved the Inter-regional Authority for the River Magra and the Montemarcello-Magra Park in Liguria, the Genoa University DIP.TER.IS, La Spezia Provincial Council and environmental association Legambiente.

<sup>3</sup> CEPAS: organization responsible for Auditor Certification in compliance with Standard UNI EN ISO 19011:2003.

## TIRRENO POWER SPA 2009 ENVIRONMENTAL ACCOUNTS

Around 67% of the energy placed on the networks in 2009 was produced by combined-cycle units. There was an overall reduction in energy production due to the general drop in demand throughout Italy. A five-month stop was also planned for unit no.3 in Vado Ligure in order to perform a general inspection of the vapour turbine, replace the control system and carry out maintenance on a number of boiler components. The Napoli Levante plant was closed in 2008 to install a combined cycle, and became again operational at the end of April 2009. Hydroelectric production of the renewable section benefitted from the increased availability of water with respect to the previous year, ensuring a rise in production of over 27%.

The increased amount of waste with respect to 2008 was due to removal of the Napoli Levante worksite.

### PRODUCTS

	u.m.	2007	2008	2009	%2009/2008
<b>thermoelectric energy</b>					
GROSS OVERALL ENERGY A = (B+C+D)	GWh	12,089.264	13,115.092	11,311.202	-13.7
Torrevaldaliga (B)	GWh	6,877.529	6,282.317	4,303.326	-31.5
Vado Ligure (C)	GWh	5,211.735	6,806.195	5,768.883	-15.2
Neaples (D)(*)	GWh	-	26.580	1.239.003	-
internal consumption and losses during initial transformation (E)	GWh	451.909	685.81	632.279	-7.8
<b>hydroelectric energy</b>					
gross overall energy (G)	GWh	112.236	187.889	239.636	27.5
in-house consumption and losses during initial transformation (F)	GWh	2.181	2.791	3.329	19.3
net overall electricity I = (A+G)-(E+F)	GWh	11,747.406	12,614.38	10,915.24	-13.5

(\*) The Napoli Levante plant only became fully operational on 29.11.09

### RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
<b>fuels to generate electricity</b>					
coal	kt	1,441.629	1,462.483	1,214.218	-17.0
natural gas	Msm <sup>3</sup>	1,322.333	1,784.802	1,581.294	-11.40
fuel oil	kt	43.547	16.793	20.882	24.35
diesel	kt	1.693	1.583	3.077	94.38
<b>chemicals</b>					
deoxygenating substances	t	0	4	5	25.0
stabilizers and bio-dispersing agents	t	24	25	29	16.0
caustic soda	t	188	250	333	33.2
sodium hypochlorite	t	63	95	118	24.2
hydrochloric acid	t	217	220	231	5,0
<b>sundry materials</b>					
sundry oils, greases / lubricants	t	52	99	125	26.3
SF <sub>6</sub>	t	0.03	0.17	0.03	-82.4
<b>fuels used for purposes other than generating energy (transport)</b>					
diesel (*)	t	196,555	213,395	275,674	29.2

(\*) Used for equipment with wheels to compact coal.

### WATER – sundry uses

	u.m.	2007	2008	2009	%2009/2008
derived water for hydroelectric production	Mm <sup>3</sup>	nd	1.009	1.292	28.0
cooling water	Mm <sup>3</sup>	1,716.07	1,944.02	1,843.65	-5.2
water for industrial production (with description: to top-up, thermal cycles, etc.)	Mm <sup>3</sup>	nd	1.406	1.316	-6.4
water for civil use	Mm <sup>3</sup>	nd	0.132	0.183	38.6

## EMISSIONS AND WASTE

	u.m.	2007	2008	2009	%2009/2008
<b>emissions into the atmosphere</b>					
<b>OVERALL EMISSIONS</b>					
CO <sub>2</sub>	t	6,615,785	6,936,673	5,963,667(*)	-14.0
NO <sub>x</sub>	t	4,184	4,381	3,520	-19.6
CO	t	1,561	1,868	1,532 (**)	-18.0
SO <sub>2</sub>	t	5,403	5,126	4,153	-19.0
dust	t	271	261	206	-21.1
<b>partial emissions by Station</b>					
<b>TORREVALDALIGA STATION</b>					
CO <sub>2</sub>	t	2,790,958	2,570,429	1,818,446	-29.3
NO <sub>x</sub>	t	1,150	1,150	831	-27.7
CO	t	150	156	180	15.4
SO <sub>2</sub>	t	441	3	3.9	30.0
dust	t	41	3	1.6	-46.7
<b>VADO LIGURE STATION</b>					
CO <sub>2</sub>	t	3,824,827	4,341,087	3,673,242	-15.4
NO <sub>x</sub>	t	3,034	3,216	2,552	-20.6
CO	t	1,411	1,701	1,342	-21.1
SO <sub>2</sub>	t	4,962	5,123	4,149	-19.0
dust	t	230	258	204	-20.9
<b>NAPOLI LEVANTE STATION</b>					
CO <sub>2</sub>	t	-	25,157	471,979	-
NO <sub>x</sub>	t	-	15	137	-
CO	t	-	11	10	-
SO <sub>2</sub>	t	-	0	0	-
dust	t	-	0	0	-
<b>other emissions / waste</b>					
treated wastewater	m <sup>3</sup>	1,440,967	1,432,067	1,214,203	-15.21
sludge, sediment and other	t	4,144	1,654	0	-
<b>rifiuti recuperati</b>					
light ash	t	122,250.80	135,588.61	112,312.00	-17.2
heavy ash	t	1,735.66	1,243.26	2,330.00	87.4
chalk	t	29,132.12	34,981.30	33,997.00	-2.8
<b>waste to the effects and purposes of Italian Legislative Decree no.152/06</b>					
hazardous waste	t	2,148.27	1,759.08	2,406.91	36.8
sent for recycling (***)	t	-	-	305.27	-
non-hazardous waste	t	27,937.68	9,808.06	27,240.19	177.7
sent for recycling (***)	t	-	-	24,178.79	-

NB: recycled waste (ash and plaster) all comes from the Vado Ligure Station and is sent to cement works.

(\*) Figure from Certiquality Certificate. - (\*\*) Figure from Ops Databank. - (\*\*\*) Figure reported in 2009 for the Sustainability Report.

## Environmental Expenditures

“Environmental Expenditures” are intended in the strict sense established in Recommendation 2001/453/EC<sup>4</sup>. Investments to improve the effects of operations on the environment amounting to around 472 thousand euro were made and other operating costs strictly related to the environment amounting around 785 thousand euro were paid in 2009, thereby amounting to 1.25 million euro.

environmental investments	in euro
Vado Ligure Plant: equipment and RQA (Air Quality Network) adaptation (*); plant revamping	408,354
Renewable Sources: civil water outlets improved	63,878
total	472,232

(\*) This is the Network placed around Stations. In addition to measuring chemical and physical parameters, it also measures weather-related parameters (air temperature, pressure, wind speed and direction, rainfall).

<sup>4</sup> According to European Commission Recommendation 2001/453/EC, the “environmental expenditures” of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These expenditures also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.



<b>human resources (no.)</b>	<b>37</b>
<b>value of production (millions of euro)</b>	<b>19.7</b>
<b>net result for Financial Year (millions of euro)</b>	<b>1.4</b>

EALL belongs to A.R.I.A. SpA Group (100% owned by Acea SpA) and, since 2002, has managed an electricity generating plant fuelled by WDF (Waste-Derived Fuel) in San Vittore del Lazio (Frosinone), generating net electricity of around 10 MWe. This Waste-to-Energy Plant is qualified as powered by Renewable Energy Sources in December 2009.

It has potential capacity of around 100,000 tons per year of waste, thereby considerably reducing the amount of waste to be sent to dumps.

### **Plant Operating Figures**

In 2009, this plant treated 77,601 tons of waste, operating for 7,899 hours alongside the general electricity network (391 hours more than in 2008). Two standstills were scheduled to carry out maintenance and a number of emergency repairs to the boiler and the plant worked 38 hours “separately” from the national electricity network, amounting to 353.2 MWh of missed production due to a failure on the latter. The electricity bonus system (CIP 6) expired for EALL in November 2010 and M.D. dated 18/12/2008 obliges new IAFR qualification (impianto alimentato da fonti rinnovabili – Plant Powered by Renewable Energy Sources) to access a new bonus scheme (Green Certificates). For this purpose, the GSE approved a project for complete revamping of the Station (replacement of grill, furnace, boiler, turbine, alternator), further to which such qualification will be received.

Works to improve the existing Waste-to-Energy line (line 1) and install two more lines (line 2 and line 3) to deal with around 100,000 tons of waste a year are underway. Once line 2 becomes operational, works to bring line 1 into compliance with AIA provisions and IAFR requirements will also commence.

In addition to complete revamping, the main changes involving line 1 involve reconstructing the smoke line with an electro-filter and a dry absorber with bicarbonate of soda, treating other types of waste (sludge from water purification processes) and overall improvement of the plant in terms of environmental impact. The water plant underwent 8 inspections in 2009 to check the main environmental parameters and acquire documentation; no controversies concerning environmental matters arose.

### **Commitment to Improvement**

EALL manages the plant and Waste-to-Energy operations in compliance with the principles established in international Standard **UNI EN ISO 14001** and **EMAS Regulation 761/01** through an Environmental Management System certified in 2008. EMAS registration was renewed in December 2009.

A “Safety Project” involving all employees was also implemented to fulfil the following objectives:

- limit emissions into the atmosphere according to the technologies available;
- ensure efficient use of energy and natural resources used in production processes;
- ensure compliance with provisions by law and applicable standards concerning the environment and safety;
- minimize risks to the environment and the health and safety of workers and prevent potentially hazardous situations through appropriate management procedures;
- reduce waste and guarantee proper management of such;



- encourage employees to respect the environment and safeguard health and safety by involving them in achieving corporate objectives, planning training campaigns and capitalizing on their tasks and responsibilities;
- raise the awareness of suppliers and contractors to ensure that they actively contribute towards reducing effects on the environment deriving from the operations they perform on behalf of the Company.

As in previous year, interviews and on-site audits demonstrated the high level of involvement from staff in achieving the aforementioned objectives.

### Integration with the surroundings

A requalification programme with criteria concerning environmental quality and limiting/compensating effects on the environment is underway to ensure that EALL's plant will be perfectly integrated with the surrounding area.

Improvements to the plant involve adding a green space to cover over 3 hectares of land around the premises to help transition of the area on which the plant is located to the "natural" surrounding area. The roofs will also be of a particular colour to visually blend with the surroundings.

EALL ensures the best possible transparency by opening the plant to the general public and informing any local authorities that wish so of its environmental performance figures.

## EALL SRL 2009 ENVIRONMENTAL ACCOUNTS

### PRODUCTS

	u.m.	2007	2008	2009	%2009/2008
<b>electricity</b>					
gross energy produced	GWh	80,515	78,492	79,928	1.8
internal consumption	GWh	8,849 +0.503 (*)	8,420+0.380 (*)	9,281+0.124 (*)	6.9
		= 9.952	= 8.800	= 9.405	
net energy produced/sold (**)	GWh	71,665	70,071	70,647	0.8
WDF calorific value (minimum)	kJ/kg	15,000	15,000	15,000	-
<b>conversion efficiency</b>					
net electricity efficiency (***)	%	24.0	25.9	24.7	-4.6

(\*) Electricity withdrawn from the network.

(\*\*) Electricity sold to General Electricity Network.

(\*\*\*) Ratio between net MWh produced and thermal load introduced through fuels.

While the energy output from WDF was lower than the year before due to the type of WDF used, the energy channelled to the national electricity grid increased by around 570 MWh.

### RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
WDF (undergoing Waste-to-Energy process)	t	78,112	72,675	77,601	6.8
natural gas	Nm <sup>3</sup>	679,560	873,551	2,052,440	134.9
water	m <sup>3</sup>	57,678	65,646	69,651	6.1
calcium oxide	t	2,316	2,142	1,571.98	-26.6
activated charcoal	t	96	99	93.11	-6.0
caustic soda	t	22	28	28.92	3.3
hydrochloric acid	t	28	40	50.57	26.4
carbamine (NO <sub>x</sub> reduction)	t	218	224	239.50	6.9

There was a considerable increase in natural gas consumption, mainly due to maintenance work carried out in 2009.

## EMISSIONS AND WASTE

	reference parameter (Leg. Decree 133/2005, 2000/76/EC) for co-incineration (daily average)	u.m.	2007	2008	2009	%2009/2008
<b>emissions into the atmosphere (key pollutants)</b>						
HCl	10	mg/Nm <sup>3</sup>	5.69	5.05	4.30	-14.8
NO <sub>x</sub>	200	mg/Nm <sup>3</sup>	106.51	95.50	101.64	6.4
SO <sub>2</sub>	50	mg/Nm <sup>3</sup>	10.66	4.06	6.70	65.0
total powders	10	mg/Nm <sup>3</sup>	0.370	0.630	1.05	66.7
PAH (polycyclic aromatic hydrocarbons)	0,01	mg/Nm <sup>3</sup>	0.00500	0.00011	0.00011	-
dioxins and furans (PCDD +PCDF)	0,1	ng/Nm <sup>3</sup>	0.005	0.027	0.016	-40.7
heavy metals (Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V)	0,5	mg/Nm <sup>3</sup>	0.010	0.018	0.022	22.22
<b>waste (Leg. Decree 152/06)</b>						
light ash (hazardous)		t	5,047.8	4,808.0	4,572.36	-4.9%
heavy ash (non- hazardous)		t	12,389.0	10,487.7	8,049.120	-23.2
heavy ash (hazardous)		t	0	0	1,896.88	-
other hazardous waste		t	2.76	2.80	4.94	76.4
other non-hazardous waste		t	1808.7	1549.2	766.13	-50.6
total hazardous waste		t	5,050.56	4,810.80	6,474.18	34.6
total non-hazardous waste		t	14,197.70	12,036.90	8,815.25	-26.8

Wastewater only involved the water used to clean the premises.

Heavy ash (called slag) and light ash are sent to treatment plants and disposed of in dumps in accordance with current laws.



<b>human resources (no.)</b>	<b>34</b>
<b>value of production (millions of euro)</b>	<b>26.6</b>
<b>net result for Financial Year (millions of euro)</b>	<b>4.7</b>

Terni En.A. belongs to A.R.I.A. Group SpA (100% owned by Acea SpA) and has managed a 10 MWe Waste-to-Energy Plant in Terni fuelled by pulper from the paper industry since 2002.

This Plant uses a now-consolidated technology ensuring good performances with a low impact on the environment; it receives around 100,000 tons of pulper and paper waste a year to extract energy, most of which is transformed into electricity.

It qualified as Plant Powered by Renewable Energy Sources in December 2009.

### **Station Operating Figures**

This plant operated for 8,120 hours alongside the general electricity network in 2009 and was stopped for 356 hours due to scheduled maintenance operations and 284 hours for other faults.

Supervisory bodies carried out 6 inspections on the site and found it fully complied with provisions concerning the environment and health and safety in the workplace. There were no controversies concerning environmental matters between the parties involved.

The energy needs for the Waste-to-Energy Plant are covered by a photovoltaic system installed in 2008, which covers an overall surface area of 10,000 m<sup>2</sup> and power of 458 kWp; the energy produced by this system in 2009 amounted to 449,812 kWh.

### **Commitment to Improvement**

Improvements involving the following continued throughout the year:

- reducing wastewater disposal;
- reducing the amount of slag and light ash produced with respect to treated fuel;
- improving control over combustion and consequently reduce pollutants.

The strategy to improve plant management from safety and environmental viewpoints is based on the following objectives:

- limiting emissions into the atmosphere according to the technologies available;
- ensuring efficient use of energy and natural resources used in production processes;
- ensuring compliance with provisions by law and applicable standards concerning the environment and safety;
- minimizing risks to the environment and the health and safety of workers and prevent potentially hazardous situations through appropriate management procedures;
- reducing waste and guarantee proper management of such;
- encouraging employees to respect the environment and safeguard health and safety by involving them in achieving corporate objectives, planning training campaigns and capitalizing on their tasks and responsibilities;
- raising the awareness of suppliers and contractors to ensure that they actively contribute towards reducing effects on the environment deriving from the operations they perform on behalf of the Company.

On-site audits carried out over the last two years and interviews with employees and top-down and bottom-up communication demonstrated the high level of involvement from staff in achieving the aforementioned objectives.

### **Integration with the surroundings**

The Terni plant has been certified **according to Standard UNI EN ISO 14001:2004** since 2005 and registered with **EMAS** (EC Regulation 761/01) since 2006.

A new audit to renew environmental certification is due in 2010.

In line with the principles behind environmental management, the Company ensures that environmental information can be tracked and transparent communication with the general public and local authorities is guaranteed, also by way of ensuring ongoing improvement in plant management.

Terni En.A. publishes the EMAS environmental statement every year, opens the plant for guided tours and offers students internships.

**PRODUCTS**

	u.m.	2007	2008	2009	%2009/2008
<b>electricity</b>					
gross energy produced	GWh	78,912	81,159	78,016	-3.9
internal consumption	GWh	8,319 + 0,274 (*) = 8,592	8,180+0,199 (*) = 8,379	7,916	-5.5
net energy produced/sold (**)	GWh	70,593	72,979	70,100	-4
calorific value from pulper (minimum) (***)	kJ/kg	12,500	12,500	14,003	-13
<b>conversion efficiency</b>					
net electricity efficiency (****)	%	20.3	21.9	18.5	n.a.

(\*) Electricity withdrawn from the network.

(\*\*) Energy sold to the General Electricity Network.

(\*\*\*) The NCV (net calorific value) discovered through analyses was used for 2009.

(\*\*\*\*) Ratio between net MWh sold to the General Electricity Network and thermal load introduced through fuels.

**RESOURCES USED**

	u.m.	2007	2008	2009	%2009/2008
pulper sent for WtE treatment	t	99,979	95,801.31	97,153.56	1.4
pulper received	t	100,176.83	118,682.03	117,835.12	-0.7
natural gas	Nm <sup>3</sup>	4,810,000	3,788.33 (*)	3,513,056	-7.3
water	m <sup>3</sup>	57,746	46,910	52,273	11.4
calcium oxide	t	2,345	1,807	1,830	1.2
activated charcoal	t	81	72	51	-29.2
caustic soda	t	36	33	41	24.2
hydrochloric acid	t	41	47	50	6.4
carbamine (NO <sub>x</sub> reduction)	t	149	200	185	-7.5

(\*) This value was recalculated and amended with respect to that published last year.

**EMISSIONS AND WASTE**

	reference parameter (Leg. Decree 133/2005, 2000/76/EC) for co-incineration (daily average)	u.m.	2007	2008	2009	%2009/2008
<b>emissions into the atmosphere (key pollutants)</b>						
HCl	10	mg/Nm <sup>3</sup>	5.42	5.76	6.30	9.4
NO <sub>x</sub>	200	mg/Nm <sup>3</sup>	128	116	119	2.6
SO <sub>2</sub>	50	mg/Nm <sup>3</sup>	5.3	7.1	8.0	12.7
total powders	10	mg/Nm <sup>3</sup>	0.72	0.65	1.095	68.5
PAH (polycyclic aromatic hydrocarbons)	0,01	mg/Nm <sup>3</sup>	0.0000181	0.0000284	0.0000389	36.9
dioxins and furans (PCDD +PCDF)	0,1	ng/Nm <sup>3</sup>	0.0391	0.0333	0.0210	-37.0
heavy metals (Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V)	0,5	mg/Nm <sup>3</sup>	0.02582	0.01798	0.0152	-15.5
<b>carbon dioxide emissions</b>						
CO <sub>2</sub>		t	9,472	125,869	65,642	-47.8
<b>waste (Leg. Decree 152/06)</b>						
hazardous waste	-	t	6,491	5,915	5,797	-2.0
non-hazardous waste	-	t	13,457	21,122	21,729	2.9

NB: the amount of waste recycled in 2009 (mainly iron, steel and inert materials) amounted to around 53 tons.



## Acea Distribuzione SpA

<b>human resources (no.)</b>	<b>1,561</b>
<b>value of production (millions of euro)</b>	<b>391.8</b>
<b>net result for Financial Year (millions of euro)</b>	<b>36.7</b>

Acea Distribuzione SpA is the Group Company responsible for managing electricity distribution in Rome and Formello; it is the second leading electricity distributor in Italy, serving around 3 million inhabitants via a network of underground and overhead cables extending over 29,000 km and providing around 12,000 GWh electricity per year.

The table below illustrates the figures concerning systems as at 31.12.2009, while information concerning operations and performances is extensively covered in the *Socio-economic Relations with Stakeholders* and *Environmental Issues* section in the *Sustainability Report*. Figures concerning the environment are provided in the *Environmental Accounts* attached to the report on a CD.

### SYSTEMS (2009)

<b>type</b>	<b>u. m.</b>	<b>number</b>
receivers	no.	3
primary HV/HV sub-stations	no.	65
HV/HV and HV/MV transformers	no.	170
transformation power	MVA	7,623
HV network – overhead lines	Km	372
HV network – cables	Km	241
MV network – overhead lines	Km	499
MV network – cables	Km	9,336
LV network – overhead lines	Km	1,708
LV network – cables	Km	16,860
operating secondary sub-stations	no.	12,896
MV/LV transformers	no.	12,436
transformation power	MVA	4,547

NB: with respect to 2007, the indicator concerning “protection of the surrounding area”, in other words the ratio between the kilometres of HV cables and overhead lines, **continuously increased** – from 57.8% in 2007 to 63.1% in 2008, in line with the Modernisation Plan involving switching to underground cables to improve and safeguard the surrounding area.

The ratio between the number of kilometres of HV cables and overhead lines continues to increase, taking into account a “territory protection” indicator: it was 64.8% in 2009 and 63.1% in 2008 in accordance with the Modernization Plan for underground cables.

## Public Lighting - Rome

Acea Distribuzione SpA manages the public lighting service in the municipality of Rome<sup>5</sup> through a specific business unit; it is responsible for almost 170,000 lights and around 194,000 street lamps, with installed capacity of 35.5 MW and luminous flux of around 2,770 Mlumens.

This service is also provided to road or residential consortiums with private roads for public transit.

Around 11,000 lights are used to light the artistic/archaeological heritage of Rome by night, thereby guaranteeing that world-famous monumental sites are perfectly lit. A new artistic lighting system using LED technology was also installed in the Foro di Traiano archaeological area.

Information concerning performances and other operations are available in the *Socio-economic Relations with Stakeholders* and *Environmental Issues* in the *Sustainability Report*.

### LIGHTING FIGURES

	u.m.	2007	2008	2009
Overall capacity of lamp system	MW	33.7	34.7	35.5
Overall luminous flux	Mlumen	2,359	2,573	2,766
average lamp luminous flux	lumen	12.923	13.633	14.242
average lamp capacity	W	185	184	183
average lamp efficiency	lumen/W	70	74	78

### SYSTEM FIGURES

	u.m.	2007	2008	2009
supply stations for Public Lighting (*)	no.	456	426	415
network	km	7,122	7,190	7,281
lights	no.	159,588	165,218	169,841
overall lamps		180.539	188,731	194,211

(\*) The number of P.L. supply stations was adjusted for the three-year period in question: the figures published up to 2007 also included panels.

<sup>5</sup> In February 2007, a new agreement between Acea and Rome City Council was signed for the period 2005-2015, regulating public lighting services.



## Acea Ato 2 SpA

<b>human resources (n.)</b>	<b>1,720</b>
<b>value of production (millions of euro)</b>	<b>441.0</b>
<b>net result for Financial Year (millions of euro)</b>	<b>41.98</b>

Acea Ato 2 SpA manages the Integrated Water Service in ATO 2 – central Lazio, which is the largest in Italy comprising 112 municipalities – including Rome – and a consumer base of around 3.7 million inhabitants.

As at 31.12.2009, management was taken over in 76 municipalities and the aqueduct systems of Consorzi Simbrivio, Doganella, Nemi-Genzano, C.E.P (Consorzio Ecologico Prenestino) and the Consorzio Acquedotto del Peschiera and in another 9 municipalities even if partially.

The Integrated Water System covers the entire water cycle and includes all the operations required to provide drinking water and dispose of wastewater.

In addition to the Integrated Water Service, Acea Ato 2 was also appointed by Rome City Council to manage accessory water services (sprinkler systems, water fountains and fire hydrants), the water in artistic and monumental fountains and the 2,500 drinking water fountains throughout the city to the effects and purposes of Italian Legislative Decree no.163/06.

The real average rate applied to consumers for Integrated Water Service items (aqueduct, purification and sewerage system) in 2009 amounted to 0.99 euro/m<sup>3</sup>.

Additional information concerning performances and other operations are available in the *Socio-economic Relations with Stakeholders* and *Environmental Issues* in the *Sustainability Report*, as well as in the *Environmental Accounts* attached to the report on a CD.

### WATER SYSTEM MANAGED BY ACEA ATO 2 SPA (2009)

<b>drinking water</b>		<b>non-drinking water (Rome and Fiumicino alone)</b>	
maximum derivable delivery (m <sup>3</sup> /s)	21	maximum derivable delivery (m <sup>3</sup> /s)	1.3
volume of water delivered (Mm <sup>3</sup> /year)	599.1	volume of water delivered (Mm <sup>3</sup> /year)	24.5
Rome and Fiumicino alone (Mm <sup>3</sup> /year)	474.2	volume of water delivered outside municipality (Mm <sup>3</sup> /year)	0.03
volume of water delivered outside municipality (Mm <sup>3</sup> /year)	71.6	aqueducts (km)	102
aqueducts (km)	208	transportation network (km)	1.8
transportation network (km)	1.306.0	distribution network and transfer to customer base (*) (km)	272.1
Rome and Fiumicino alone (km)	890.4	pumping stations (*) (no.)	24
distribution network and transfer to customer base (km)	9,349.3	reservoirs (*) (no.)	8
Rome and Fiumicino alone (km)	6,130.7	treatment plants (*) (no.)	1
pumping stations (no.)	186		
Rome and Fiumicino alone (no.)	44		
piezometres (n.)	11		
Rome alone (no.)	5		
reservoirs (n.)	328		
Rome alone (no.)	37		
treatment plants (n.)	11		
Rome and Fiumicino alone (no.)	1		

(\*) Rome alone.

NB: figures include the municipalities in which Integrated Water Service was taken over (76 as at 31.12.2009) unless otherwise specified.



## TREATMENT CAPACITY OF PLANTS MANAGED BY ACEA ATO 2 SPA - ROME MUNICIPALITY (2009)

treatment plant	average treatment capacity (m <sup>3</sup> /s)
Rome North	3.49
Rome South	9.14
Rome East	2.99
Ostia	0.73
CoBIS	0.20 (*)
minor plants	0.50 (**)
<b>total</b>	<b>17.05</b>
other municipalities	3.50 (**)

(\*) Mainly sewage from other municipalities.

(\*\*) Potential.

## NUMBER OF PURIFICATION PLANTS AND SEWERAGE SYSTEMS MANAGED BY ACEA ATO 2 SPA (2009)

water purification plants (no.)	176
	(35 of which in Rome municipality)
sewage raising systems (no.)	466
	(158 of which in Rome municipality)
sewage transportation systems (km)	300
sewage systems (km)	5,979
	(around 1,953 km of which serving municipalities outside Rome)

## OUTGOING PARAMETERS FOR KEY WATER PURIFICATION PLANTS MANAGED BY ACEA ATO 2 SPA – ROME MUNICIPALITY (2009)

	Rome South plant	Rome North plant	Rome East 1 <sup>st</sup> section	Rome East 2 <sup>nd</sup> section	Ostia
parameter	average (mg/l)				
BOD <sub>5</sub>	22	17	14	28	6
COD	50	29	31	45	31
SST	32	24	15	23	12
nitrogen NH <sub>4</sub> <sup>+</sup>	11	12	12	12	10
phosphorous	5	1	1	1	2

### Environmental Expenditures

The investments made to improve impact on the environment from operations as established in Recommendation 2001/453/EC<sup>6</sup> amounted to 19,860,239 euro.

### Fines concerning the Environment

The Company paid 248.368 euro in fines concerning the environment in 2009.

<sup>6</sup> According to European Commission Recommendation 2001/453/EC, the "environmental expenditures" of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These costs also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.

<b>human resources (n.)</b>	<b>145</b>
<b>value of production (millions of euro)</b>	<b>20.6</b>
<b>net result for Financial Year (millions of euro)</b>	<b>3.7</b>

LaboratoRI SpA is 100% owned by Acea SpA and operates in the sector for laboratory services, research, advisory and engineering linked to environmental issues and the entire water cycle – from safeguarding resources to optimizing their use and designing and carrying out works. This company works on behalf of both Group companies and other parties.

Planning and directing works comply with international standards **UNI EN ISO 9001:2008**; the laboratory is **accredited by ACCREDIA formerly SINAL** (over 80% of all analyses are subject to ACCREDIA accreditation) and operates in accordance with standard **UNI CEI EN ISO/IEC 17025**.

This laboratory has also received two other acknowledgments: validation by the Institute for Plant Nutrition for analyses on lands and leaves and by the Institute for Plant Pathology for analyses on pesticide residues on fruit and vegetables.

The main task of this laboratory is to check drinking water, wastewater and surface water under the responsibility of Acea SpA.

More specifically, the following are carried out:

- analyses on water supply sources;
- analyses on drinking water and wastewater;
- special analyses on waste, land, contaminated sites, fruit and vegetables and other elements of an environmental nature;
- analyses on commodities.

Around 600,000 analyses were performed in 2009.

Research and advisory concerning the environment focussed on: safeguarding water resources, optimizing distribution networks, optimizing urban and non-drinking wastewater treatment processes, assessing and reducing collateral impacts from water purification plants, sewage systems (see *Sustainability Report, Environmental Issues*).

This company also planned and directed engineering works for a number of Group companies, especially Acea Ato 2 SpA and Acea Ato 5 SpA.



Acea Ato 5 SpA

<b>human resources (no.)</b>	<b>244</b>
<b>value of production (millions of euro)</b>	<b>48</b>
<b>net result for Financial Year (millions of euro)(15.6)</b>	

Acea Ato 5 SpA - 94% of which is controlled by Acea SpA – was established in December 2002 to manage the Integrated Water Service in ATO 5 – southern Lazio Frosinone, comprising 86 municipalities, a population of around 461,000 and a consumer base of around 188,000.

Technical investigations prior to taking over management of the Paliano municipality commenced and was completed in 2009 and S. Biagio Saracinisco integrated water system was handed back in accordance with that established in Decision 1/09 by the Conference of Mayors. The number of municipalities managed by Acea Ato 5 thereby reached 85.

Technical management involves 5 operational centres (see Diagram); the number of water and treatment systems and networks are illustrated in the tables below.

The real average rate applied to consumers for Integrated Water Service items (aqueduct, water purification and sewerage system) in 2009 amounted to 1.41 euro/m<sup>3</sup>.

**Diagram – OPERATIONAL CENTRES IN ATO 5-SOUTHERN LAZIO**



## WATER SYSTEM MANAGED BY ACEA ATO 5 SPA (2009)

aqueducts and transportation networks (km)	573
distribution network (km)	3,682
offtake structures – wells (no.)	70
offtake structures – springs (no.)	47
pumping stations (no.)	92
piezometres (no.)	1
reservoirs (no.)	356
treatment plants (no.)	2 (Ceccano - filtration)

## NUMBER OF WATER PURIFICATION PLANTS AND SEWERAGE SYSTEMS MANAGED BY ACEA ATO 5 SPA (2009)

water purification plants (no.)	130
sewage raising systems (no.)	128
sewage networks (km)	1,720

### **Commitment to Improvement**

Commitment by Acea Ato 5 mainly focussed on the following in 2009:

- **safeguarding areas (wells and springs):** inspections, surveys and technical data assessments were completed with cooperation from Cassino University to establish the areas from which water to be used for drinking purposes could be pumped at the Posta Fibreno site.  
This research is currently in its final stages and, once completed, will undergo the relative procedures for validation by the Lazio Regional Council;
- **purifying wells:** works to purify the wells in Ceccano (filtering and absorption) to keep the concentration of arsenic within legal limits and thereby avoid dilution and increase the volume of good quality water available successfully passed tests in 2009.  
Work to open a new well commenced at the Fabratera Vetus site, with water drawn at a depth of 97 metres and delivery at 32 l/s. This well will become operational in 2010 and involved implementation of specific technical procedures to minimize the problem of turbidity and thereby benefit the overall quality of water delivered to the network;
- **control system and network loss reduction:** operations to check and monitor water pressure and flow levels that began the year before on a number of pilot sites continued in order to identify and repair network losses through the CARP Consortium (Consorzio Acea Ricerca Perdite – Acea Leak Identification Consortium);
- **energy savings:** an energy efficiency programme to streamline energy consumption in the more energy-intensive plants (purifiers, raising systems, wells, etc.) continued throughout the year; more specifically, this programme involved implementation of power factor correction, introduction of inverters and replacement of a number of motors with high-efficiency one and involved the systems in 19 municipalities.

### **Human Resources**

The number of human resources employed by the company in 2009 amounted to 244 (254 in 2008) plus one external worker: 9 new resources were hired in 2009 and 20 resources retired.

With regard to staff training, all the categories working in this Company received training by the company or Holding Company.

Meetings between Acea Ato 5, Trade Unions and corporate trade union representatives were also regularly held to discuss matters concerning the management of employer-employee relations, thereby complying

with a policy for correct interlocution between parties.

## Customer care

### Acea Ato 5 SpA free-phone numbers

- **commercial free-phone number: 800.639.251**
- **to report water faults/request technical assistance: 800.191.332**

The free-phone number service levels in 2009 – represented by the ratio between calls answered by an operator and the overall number of calls received - were once again very good. The commercial free-phone number received 46,876 calls, achieving a service level of 92% and average waiting time of around 37 seconds, while the fault report free-phone number received 60,432 calls, achieving a service level of 98% and average waiting time of around 10 seconds.

Acea Ato 5 paid particular attention to improving its primary channel for contact with customers in 2009. Actions involved a project to make the physical counters in various municipalities managed by the company more fitting to welcome the general public and provide more consistent information. The number of visits and length of time spent there were monitored, according to which the company changed opening days and times. This new organization meant that counters were open to the public longer and two new counters were opened, thereby bringing the overall number of counters available to 17 in just as many municipalities.

This project also involved completing online connection of counters to ensure that staff has immediate access to information and is thereby able to fulfil customers' requests (information concerning supply agreement, type of agreement, rates, statements, meter readings, copies of bills) despite their municipality of residence.

With regard to telephone calls, the call centre service was divided into two areas in 2009, implementing a free-phone number for fault reports and requests for technical assistance (800.191.332) and leaving the free-phone number 800.639.251 for commercial procedures only.

The corporate website – [www.aceato5.it](http://www.aceato5.it) – received new graphics and contents to provide important and user-friendly information; an online counter and a special area for complaints were enabled. The website is constantly monitored and received 44,283 clicks with 349,096 pages viewed – 43.3% of which concerning the online counter.

The company intensified actions to solve complaints, solving 11,980 complaints in 2009.

These initiatives involved a communication campaign whereby information was provided through the press, leaflets at commercial counters and in customer bills.

The fact that interaction with customers improved is demonstrated by the decrease in customer meter readings, which amounted to 13,659 in 2009 (compared to 24,145 the previous year); the increased number of readings made by the company ensured more compliance between billed readings and real consumption.

Various initiatives to streamline the billing procedure were carried out throughout the year:

- an extensive campaign to replace 10,860 illegible or faulty meters further to a survey on water consumption or reports from customers;
- two meter-reading cycles were completed in all the municipalities managed;
- work to monitor and update information concerning public and private customers continued.

This led to solution of a number of technical and administrative problems and delivery of more precise bills.

Finally, a draft concerning Supply Regulations and an updated version of the Service Charter were prepared, which will be subject to approval by the Conference of Mayors once they have been seen by the Technical Operational ATO Office and the Regional Authority for Integrated Water Service.

## Customer Satisfaction Surveys

The quality perceived by customers with respect to the Acea Ato 5 water service was subject to a survey in November 2009, which involved a sample base of 1,678 customers representing the entire range of customers.

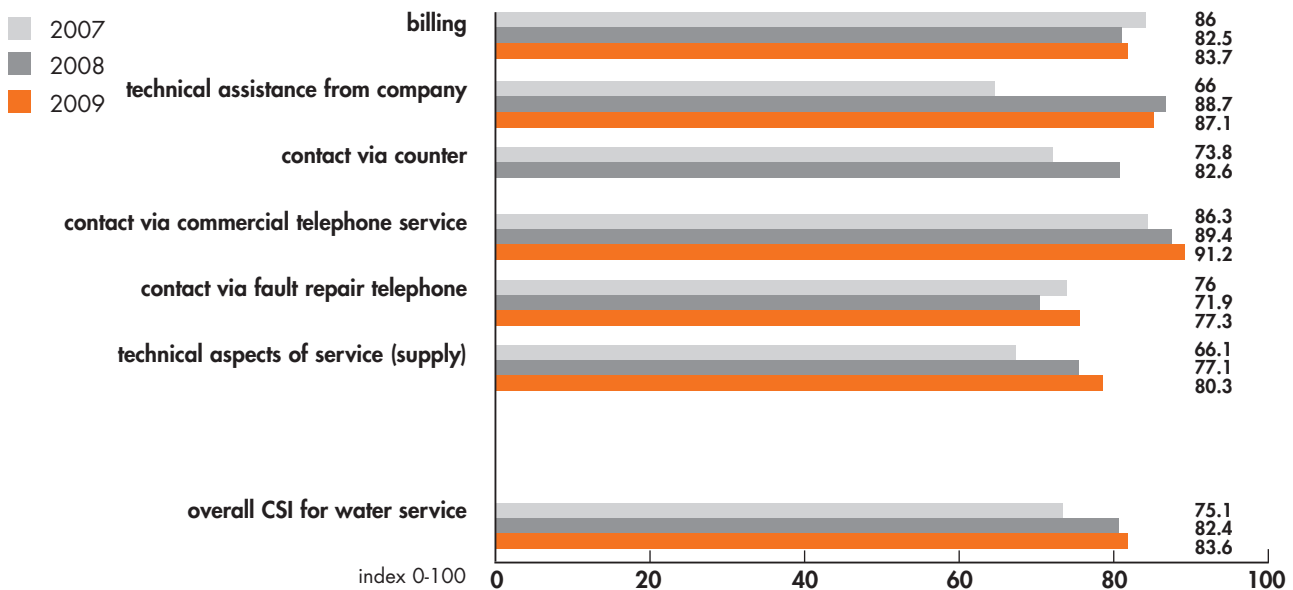
This survey was divided into three stages, involving interviews on the following targets:

- 1,200 individual domestic consumers (with direct supply agreement);
- 432 customers that called the commercial free-phone number on the days preceding the interview;
- 46 customers that visited the counters on the days preceding the interview.

The relative results<sup>7</sup> were used to create a summary of the overall customer satisfaction with the water service (overall CSI) and a number of partial indicators concerning individual aspects of the service (partial CSI), expressed on a scale of 0 - 100:

- billing
- technical assistance from company
- contact via counter
- contact via commercial free-phone number
- contact via fault report free-phone number
- technical aspects of the service (supply).

### ACEA ATO 5 SPA – WATER SERVICE: OVERALL CSI AND CSI FOR SPECIFIC ASPECTS (2007-2009)



NB: the figure concerning "contact via counter" is not provided as it cannot be statistically represented due to the low number of customers that replied.

This chart illustrates constant improvement in overall customer satisfaction with the service and for almost all the aspects involved over the three years in question. The only slight decrease involved technical assistance from the company between 2008 and 2009, while the highest improvements involved contact via fault report telephone service and technical aspects.

<sup>7</sup> CATI procedure - Computer Assisted Telephone Interviewing, using a structured questionnaire and layered sample base with different variables (such as area of residence, consumption group), with a statistical error rate of 3% and a significance of 95%.

## Initiatives Concerning Socio-environmental Responsibility

The most important initiative in which Acea Ato 5 took part as main sponsor throughout the year was the Fiuggi family festival.

A stand was set up to illustrate how the water service is managed using various forms of communication (graphics, plastic models, photographs, etc.), paying particular attention to the virtuous cycle on which the company focuses.

## Natural Protected Areas

The Company particularly focuses on making as little impact as possible in the following protected areas:

- Posta Fibeno Lake natural reserve;
- Cantemo Lake natural reserve;
- Monti Aurunci Regional Park;
- Monti Ausoni Regional Park.

## Procurement Policies

This company complies with the procurement and tender policies established by the Holding Company. These procedures were definitively approved in compliance with Law 262/05 and actions concerning implementation of the procedures for the active cycle are currently underway.

## ACEA ATO 5 SPA 2009 ENVIRONMENTAL ACCOUNTS

### PRODUCTS AND ANALYSES

	u.m.	2007	2008	2009	%2009/2008
<b>drinking water</b>					
OVERALL DERIVED DRINKING WATER					
drinking water withdrawn from the environment	Mm <sup>3</sup>	83.9	90.8	95.4	5.1
from wells	Mm <sup>3</sup>	50.7	60.5	65.7	8.6
from springs	Mm <sup>3</sup>	33.2	30.3	29.7	-2.0
drinking water introduced to the network	Mm <sup>3</sup>	83.9	87.5	86.4	-1.3
<b>overall drinking water supplied</b>	<b>Mm<sup>3</sup></b>	<b>32.0</b>	<b>20.9</b>	<b>21.0</b>	<b>0.5</b>
ASSESSMENT OF LOSSES ACCORDING TO MINISTERIAL DECREE 99/97					
overall losses					
(parameter A17 MD 99/97)	Mm <sup>3</sup>	n.d.	63.7	63.10	-0.9
real losses					
(parameter A15 MD 99/97)	Mm <sup>3</sup>	n.d.	59.0	50.20	-14.9
<b>wastewater</b>					
water treated at key treatment plants	Mm <sup>3</sup>	18.0	19.1	28.5	49.2
<b>analyses</b>					
analyses on drinking water	n.	41,000	76,653	74,396	-2.9
analyses on wastewater	n.	7,014	18,210	27,358	50.2
<b>distribution and transportation network</b>	km	n.d.	4,255	4,255	-

## RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
<b>collection, transportation and distribution of drinking and non-drinking water</b>					
materials					
sodium hypochlorite	t	280	261	247	-5.4
electricity					
electricity used for pumping water	GWh	64.7	57.4	58.8	2.4
<b>wastewater treatment</b>					
materials					
polyelectrolyte powder	t	5.5	9.3	12.7	36.6
sodium hypochlorite for final disinfection	t	5	0	0	-
other (liquid oxygen)	t	n.d.	141	95	-32.6
electricity					
electricity for treatment	GWh	12.0	15.1	15.4	2.0
electricity for pumping stations	GWh	nd	nd	2.26	-

## WASTE

	u.m.	2007	2008	2009	%2009/2008
<b>specific waste from wastewater treatment</b>					
sludge from treatment	t	4,137	2,903	5,752	98.1
sand and sediment from treatment	t	253.3	231.5 (*)	96.73	-58.2
<b>waste (according to Leg. Decree 152/06)</b>					
hazardous waste	t	-	18.6	0	-100
non-hazardous waste	t	-	23.5	0	-100

(\*) This figure was adjusted with respect to that published in the previous Sustainability Report..

## OUTGOING PARAMETERS FOR THE KEY WATER PURIFICATION PLANTS MANAGED BY ACEA ATO5 SPA (2009)

parameter	average (mg/l)
BOD <sub>5</sub>	26.5
COD	77.2
TSS	28.7
nitrogen NH <sub>4</sub> <sup>+</sup>	5,87
phosphorous	0.40

## Environmental Expenditures

“Environmental Expenditures” intended in the strict sense established in Recommendation 2001/453/EC<sup>8</sup> are not calculated.

## Fines Concerning the Environment

The company paid 23,175.20 euro in fines concerning the environment in 2009.

<sup>8</sup> According to European Commission Recommendation 2001/453/EC, the “environmental expenditures” of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These costs also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.



<b>human resources (no.)</b>	<b>704</b>
<b>value of production (millions of euro)</b>	<b>148.0</b>
<b>net result for Financial Year (millions of euro)</b>	<b>12.9</b>

Gori SpA manages the Integrated Water Service in ATO 3 - Sarnese Vesuviano in Campania. It is a joint-stock company with a predominantly public-owned share capital, for which the private minority shareholder - Sarnese Vesuviano Srl (95.79% owned by Acea SpA) - was identified in view of its technical-industrial and management abilities.

ATO 3 - Sarnese Vesuviano comprises 76 municipalities (59 in the province of Naples and 17 in the province of Salerno), all of which were managed as at 31/12/2009, and covers around 1,450,000 inhabitants, with over 500,000 customers; the water and sewage networks respectively cover over 4,300 km and 2,400 km.

The real average rate applied to consumers for Integrated Water Service items (aqueduct, water purification and sewerage system) in 2009 amounted to 1.18 euro/m<sup>3</sup>.

#### **WATER SYSTEM MANAGED BY GORI S.P.A. (2009)**

aqueducts and transportation networks (km)	223
distribution network (km)	4,361
offtake structures – wells (no.)	82
offtake structures – springs (no.)	9
pumping stations (no.)	96
reservoirs (no.)	162

#### **NUMBER OF WATER PURIFICATION PLANTS AND SEWERAGE SYSTEMS MANAGED BY GORI S.P.A. (2009)**

water purification plants (no.)	15
sewage raising systems (no.)	138
sewerage systems (km)	2,440

### **Human Resources**

The number of human resources employed by the company in 2009 amounted to 70, of which 7 executives, 17 middle managers, 386 white-collar workers and 294 blue-collar workers, with women counting for 9.2% of the overall workforce.

The company transferred a branch of the business to Acea-Gori Servizi in 2009, which involved 63 human resources and implementation of a bonus retirement policy (13 employees) and thereby led to a decrease in the workforce (780 resources in 2008).

Particular attention was paid to training staff on safety in the workplace in relation to the hazards deriving from specific operations. Training to improve the quality of relations with customers was also carried out and involved over 80% of the workforce.

## Customer care

### Gori SpA Free-phone number

- **free-phone number 800.21.82.70** (for information, telephone assistance, complaints and faults).

This free-phone number covers both commercial aspects and fault reports and provided an excellent service level: the ratio between calls answered by an operator (276,120) and the overall number of calls received (295,957) was around 93%, with average waiting time before reply of 34 seconds, which is much lower than the average 1.5 minutes established in the current Service Charter.

There are 27 counters throughout the area, 14 of which in company offices and 13 in municipality offices. There were around 223,00 visits to counters in 2009 with waiting times of around 11 minutes, which is in line with the times established in the Service Charter.

Around 3,000 complaints were received throughout the year, most of which received replies; the pending complaints were mainly received at the end of the year further to year-end adjustment billing and will be covered in the initial months of 2010.

The corporate website received 125,849 visits, an increase with respect to 2008 (102,353 visits). Site renewal was also planned and involves implementation of an online counter.

### Customer Satisfaction Surveys

The level of customer satisfaction with the water service provided by Gori was subject to a Customer Satisfaction Survey in November 2009 and involved a sample base of 1,680 domestic customers living in the municipalities in ATO 3-Sarnese Vesuviano.

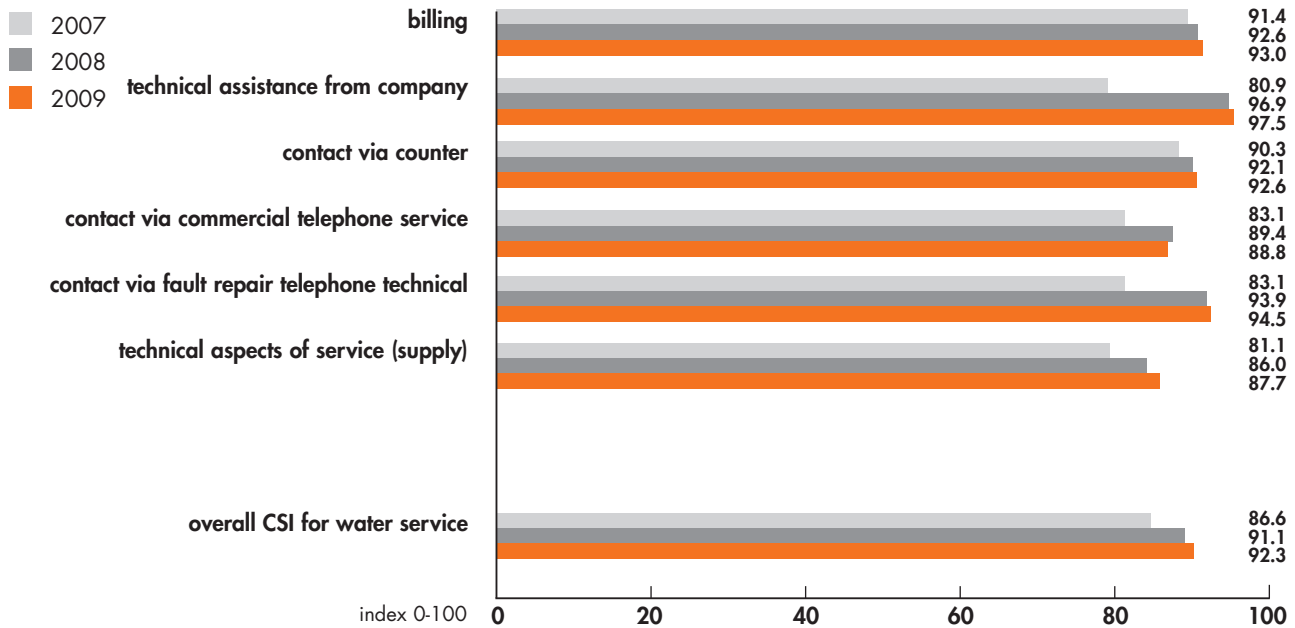
This survey was divided into three stages, involving interviews on the following targets:

- 1,200 individual domestic consumers (with direct supply agreement);
- 403 customers that called the commercial free-phone number on the days preceding the interview;
- 77 customers that visited the counters on the days preceding the interview.

The relative results<sup>9</sup> were used to create a summary of the overall customer satisfaction with the water service (overall CSI) and a number of partial indicators concerning individual aspects of the service (partial CSI), expressed on a scale of 0 - 100:

- billing
- technical assistance from company
- contact via counter
- contact via commercial free-phone number
- contact via fault report free-phone number
- technical aspects of the service (supply).

<sup>9</sup> CATI procedure - Computer Assisted Telephone Interviewing, using a structured questionnaire and layered sample base with different variables (such as area of residence, consumption group), with a statistical error rate of 3% and a significance of 95%.



The satisfaction indexes (CSI) in the above chart illustrate improvement in the overall service and in the opinions concerning individual aspects, which are all at high levels.

#### Initiatives Concerning Socio-environmental Responsibility

Conclusion of the gradual transferral of Integrated Water Service management to Gori meant that the company had to face the problems arising in the new areas managed. Gori continued to become deeply involved in the social context, aiming to provide a quality service while respecting the rights of the people living there. Transparent and straightforward conduct with respect to customers was consolidated through institutional information channels, such as counters, free-phone number and website publishing information concerning management of the Integrated Water System for customers in their specific area.

The **"Your Number for Water"** Project commenced in the first half of 2009 and involved posters being placed in all the municipalities managed to inform customers of the operations they could perform from home by calling the free-phone number.

Together with the ATO Authority for Sarnese Vesuviano, relative municipalities, the Protected Marine Area and Harbour Offices, Gori held a campaign throughout the summer season to raise awareness in coastal towns along the Gulf of Naples – including in resorts - entitled **"Together for the Sea"**. An information leaflet was published to inform people how to avoid causing pollution through everyday actions. This information campaign was also developed in schools, which participated in study days concerning the water cycle.

As far as humanitarian initiatives are concerned, Gori funded an "AMREF Italia" project to build water districts in Uganda by buying Christmas cards.

#### Procurement Policies

Works and public works are contracted according to the principles of fair competition, fair treatment, non-discrimination and publication established in Italian Legislative Decree no.163/06 and subsequent amendments and integrations. Works are carried out according to the principles of good economy, effectiveness, promptness and correct conduct, thereby warranting the quality of all operations.

Each agreement and relative technical requirements and procedures for execution and contracting complies with the needs of the various in-house divisions involved.

In order to warrant compliance with the aforementioned principles, Gori awards tender contracts through

a system to qualify entrepreneurs, suppliers and service providers through which a Suppliers' Register is drawn up.

## GORI SPA 2009 ENVIRONMENTAL ACCOUNTS

### PRODUCTS AND ANALYSES

	u.m.	2007	2008	2009	%2009/2008
<b>drinking water</b>					
OVERALL DERIVED DRINKING WATER					
drinking water withdrawn from the environment	Mm <sup>3</sup>	31.47	31.02	40.78	31.5
from wells	Mm <sup>3</sup>	29.92	25.82	36.41	41.0
from springs	Mm <sup>3</sup>	1.55	5.20	4.37	-16.0
water withdrawn from other aqueduct systems	Mm <sup>3</sup>	144.23	158.89	168.30	5.9
drinking water introduced to the network	Mm <sup>3</sup>	175.70	189.91	209.08	10.1
<b>overall drinking water supplied</b>	<b>Mm<sup>3</sup></b>	<b>85.60</b>	<b>91.91</b>	<b>94.33</b>	<b>2.6</b>
ASSESSMENT OF LOSSES ACCORDING TO MINISTERIAL DECREE 99/97					
overall losses					
(parameter A17 MD 99/97)	Mm <sup>3</sup>	89.31	97.20	113.74	17.0
real losses					
(parameter A15 MD 99/97)	Mm <sup>3</sup>	78.59	80.77	92.82	14.9
<b>wastewater</b>					
water treated at key treatment plants	Mm <sup>3</sup>	9.8	8.2	7.4	-9.8
<b>analyses</b>					
drinking water analyses	n.	2,189	2,816	2,410	-14.4
wastewater analyses	n.	302	284	210	-26.1
<b>distribution and transportation networks</b>	km	4,265	4,511	4,584	1.6

### RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
<b>collection, transportation and distribution of drinking and non-drinking water</b>					
materials					
sodium hypochlorite	t	184.72	108	151	39.8
electricity					
electricity for water pumping systems	GWh	8.70	42.40	45.29	6.8
<b>wastewater treatment</b>					
materials					
polyelectrolytes	t	17	1.2	28.5	-
sodium hypochlorite for final disinfection	t	74.5	64.0	110.0	71.9
oxygenated water	t	-	-	.8	-
peracetic acid	t	-	-	25.0	-
soda	t	-	-	2.4	-
anti-foaming agents	t	0.5	1.5	4	185.7
mineral oil and grease	t	-	1	1	0.0
polyamine	t	-	-	36	-
deodorants and covers	t	-	-	4.0	-
electricity for wastewater					
electricity for treatment and sewage raising systems	GWh	5.10	7.30	7.8	1.1

## WASTE

	u.m.	2007	2008	2009	%2009/2008
<b>specific waste from wastewater treatment</b>					
sludge from treatment	t	2,079	3,405	3.925.9	15.3
sand and sediment from treatment	t	253	449	287.5	-36.0
<b>waste (according to Leg. Decree 152/06)</b>					
hazardous waste	t	0.208	0.60	5.7	850.0
non-hazardous waste	t	9,551	8,570.5	23.4	-

### OUTGOING PARAMETERS IN KEY WATER PURIFICATION PLANTS MANAGED BY GORI SPA (2009)

parameter	average (mg/l)
BOD <sub>5</sub>	16.1
COD	51.9
TSS	20.1
nitrogen NH <sub>4</sub> <sup>+</sup>	6.0
phosphorous	2.0

#### MARINA GRANDE WATER PURIFICATION PLANT – SORRENTO (\*)

parameter	average (mg/l)
BOD <sub>5</sub>	13.4
COD	39.1
TSS	11.3
nitrogen NH <sub>4</sub> <sup>+</sup>	3.4
phosphorous	1.1

(\*) This plant treats water for 30,000 equivalent inhabitants.

#### MASSA CENTRO WATER PURIFICATION PLANT – MASSA LUBRENSE (\*)

parameter	average (mg/l)
BOD <sub>5</sub>	14.1
COD	35.1
TSS	14.4
nitrogen NH <sub>4</sub> <sup>+</sup>	3.9
phosphorous	nd

(\*) This plant treats water for 28,800 equivalent inhabitants.

### Environmental Expenditures

“Environmental Expenditures” intended in the strict sense established in Recommendation 2001/453/EC<sup>10</sup> are not calculated.

### Fines Concerning the Environment

The company paid no fines concerning the environment in 2009.

<sup>10</sup> According to European Commission Recommendation 2001/453/EC, the “environmental expenditures” of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These costs also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.



human resources (no.)	372
value of production (millions of euro)	121.5
net result for Financial Year (millions of euro)	10.93

Since 2002, Acque SpA has been responsible for managing the Integrated Water Service in ATO 2 - Basso Valdarno, an area comprising 57 municipalities in the provinces of Florence, Lucca, Pisa, Pistoia and Siena with around 785,000 inhabitants. Acque is a Joint-stock company and its public shareholders – holding the majority share capital (55%) – represent the municipalities it serves; Acea SpA has a shareholding in the capital through Acque Blu Arno Basso SpA.

Acque warrants improvement in the quality standards of the aqueduct service and an efficient sewage and treatment system throughout the area it serves with a twenty-year plan. Acque SpA has established a Group to manage this complex system by establishing a number of subsidiaries (Acque Ingegneria Srl, Acque Industriali Srl, Acque Servizi Srl, B.S. Billing Solutions Srl, C.C.S. Scrl ICT Solutions) and holding shares in equivalent companies (Aquaser Srl, Tirreno Acque Srl, Tiforma Srl).

The real average rate applied to consumers for Integrated Water Service items (aqueduct, water purification and sewerage system) in 2009 amounted to 1.83 euro/m<sup>3</sup>.

Acque SpA and its subsidiaries maintained the efficiency of the **Best 4 Integrated Management System** already certified the year before according to four Standards: **Quality** (UNI EN ISO 9001), **Environment** (UNI EN ISO 14001), **Health and Safety in the Workplace** (OHSAS 18001) and **Social Responsibility** (SA 8000) and updated both quality management and social responsibility systems **to the 2008 editions**. These updates were assessed positively by certifying agency RINA in November 2009, which noted improvement in works management.

Acque SpA has independently published a *Sustainability Report* since 2008, which can be consulted online at [www.acque.net](http://www.acque.net) for additional information, while some information concerning quality and quantity, socio-environmental performance figures and environmental account items for 2009 are provided below.

#### **WATER SYSTEM MANAGED BY ACQUE SPA (2009)**

aqueducts and transportation networks (km)	903
distribution network (km)	4,801
offtake structures – wells (no.)	603
offtake structures – springs (no.)	305
offtake structures – rivers (no.)	19
offtake structures – lakes (no.)	5
pumping stations (no.)	409
reservoirs (no.)	596
treatment plants (no.)	290

## NUMBER OF WATER PURIFICATION PLANTS AND SEWERAGE SYSTEMS MANAGED BY ACQUE SPA (2009)

water purification plants (no.)	142
sewage raising systems (no.)	477
sewage systems (km)	3,000

### Human Resources

The Acque workforce slightly increased from 364 in 2008 to 372 in 2009. Acque hired 2 resources under permanent employment contracts and 10 with temporary employment contracts, which tends to progressively become stable, in line with the company's commitment to creating guaranteed and safeguarded employment.

The company provided 1,107 hours of training in 2009 (261 hours on safety in the workplace), a 35% increase with respect to 818 hours in 2008.

### Commitment to Improvement

Acque identified and pursued the following objectives in relation to environmental performances:

- reducing withdrawal of water resources;
- reducing energy consumption;
- reducing raw materials with an impact on the environment;
- reducing losses through industrial processes;
- constantly monitoring and improving drain compatibility;
- reducing the amount of waste produced;
- reducing the sound pollution from systems;
- managing impact on the environment from works on systems and networks;
- involving suppliers in reducing impact on the environment from worksites by signing environmental clauses and voluntary provisions for sustainability.

Research and technological innovation became strategic and involved numerous projects, some of which are briefly described below:

- **Mini RTU:** Remote Terminal Units (R.T.U.) are an essential component in remote control systems: they gather information from sensors installed on outlying equipment, process such information locally and carry out an initial system check. They then forward information to the remote control room, which then sends commands to the RTU, ensuring that the local systems and main systems interact. This is evolved and sophisticated technology and Acque currently has 700 RTUs along the water network, which is a much higher number than the average units used by other national operators.

RTUs available on the market are not gauged to the needs of water networks, therefore Acque Ingegneria, with cooperation from B.R.E. Elettronica Srl., has designed a small RTU (mm 160 x 110 x 60) with low energy consumption specifically for the water service. Software modules particularly designed to programme specific power saving algorithms were implemented in 2009, thereby improving the energy efficiency of numerous systems.

- **Wireless Counter:** this electronic device was designed by Acque Ingegneria and is used for remote readings of gas/water meters via text messages. It is guaranteed to provide 100,000 hours of service, is very small, has low energy consumption and is very easy to use. This Wireless Counter comprises a latest-generation system to communicate with the data center using a GSM telephone module and is attached to water/gas meters with impulse senders. Power is provided by a battery that can last for 10 years. This device counts impulses from the interface installed on the mechanical meter, which is currently the only device for measuring civilian drinking water certified in Italy and automatically and regularly sends a text message to the data center indicating the volume of water consumed, thereby ensuring that the supplier can check consumption and billing.

The Wireless Counter can precisely identify losses in end user systems by reporting anomalous consumption and sending an alarm to the operator, who can in turn inform customer to make an urgent check on their system.

An analysis to discover the prospects for industrializing this device was carried out, leading to identification of a supplier who can produce this device at competitive unit price and thereby ensure its use on a wide scale.

- **Data logger TDLO8:** this tool is used to monitor and check system performance parameters and was created through cooperation between Acque Ingegneria and B.R.E. Elettronica. It is used to solve problems concerning galvanic voltage losses and to record discontinuity and short-term events that may affect control system performances. Its capacity to store large amounts of data on USB devices and continuous sampling for over 72 hours with low energy consumption are particularly important features.
- **Water Wireless Sensor:** Acque SpA and Acque Ingegneria applied micro-electronic technologies to produce a new, very small and low-cost system for measuring flow precisely. The Water Wireless Sensor fulfils the need to control water flow in pipes to thereby face problems such as identifying losses, saving energy, analyzing consumption and monitoring pipes in real time. Seventy prototypes were produced and pilot installation was carried out along the networks of Acque and other operators (Acquedotto del Fiora and Acea Ato 5); once assessment is completed, a plan to industrialize and produce this device on a wide scale will be taken into consideration.
- **Picoturbina:** Acque Ingegneria and B.R.E Elettronica Telemetry Systems designed a hydroelectric device (Picoturbina©) to power equipment used to transport fluids, which have been installed in areas not served by the electricity network. Energy is produced using the difference in pressure generated between the entrance and exit of a regulation valve, which is accumulated in buffer batteries and guarantees reliable and ongoing service. This device has innovative software and has already been installed on Acque networks. Marketing outside the company commenced in 2009.

The "**FREEDOM Project**" also commenced in 2009 to share innovative technologies, processes and products among Acea Group partners by way of Open Source procedures, in other words providing access to the various skills pertaining to Group companies. In order to support this process, Acque SpA offered to share min-RTU hardware and software, which is essential for acquiring field data. A website will be used to share documents and algorithms and to implement a forum to share experiences. This FREEDOM Project should become fully operational within Acea Group in 2010 before becoming available to other subjects.

The important environmental operations involved in 2009 included Acque participating in the first-ever **International Platform for Comparing Energy Consumption in the Water Industry**. The "Measuring and Comparing Energy Efficiency" Project was coordinated by British Water Research Center WRc and involves a large number of European operators, aiming to provide water companies a simple and shared tool to assess and compare the energy efficiency of treatment plants using standardized performance indexes and comparing the technical strategies adopted to reduce consumption.

Acque SpA helped improve the software developed by WRc with regard to system modelling and calculating the energy efficiency indexes (EEI) and the Pagnana water purification plant (Empoli) was selected as a pilot plant to develop the project and experiment the best possible strategies for monitoring and data acquisition.

Electromechanical equipment was inspected and, if necessary, replaced with other high-performance electromechanical equipment **to reduce energy consumption in wastewater treatment** as part of the more general objective to control energy costs and the process cycles were adjusted to bring them in line with real treatment needs. The good results achieved in terms of energy efficiency at the Pagnana treatment plant through online meters with software developed by Acque Ingegneria – through cooperation from Florence University - led the company to repeat this experience in other water purification plants.

With regard to **limiting water losses**, the **ASAP Project** (Action for Systemic Aquifer Protection) implemented by Acque SpA, Acque Ingegneria, the Galicia Institute of Technology and Pisa provincial council continued in 2009. This research aims to develop a systemic approach based on the best possible regulation of pressure, which can be applied under any condition on the water network, including when it is impossible to renew the entire network. The operational stage of this project ended in 2009 and test will be carried out in 2010.



## Customer care

### Acque SpA free-phone numbers

- **commercial free-phone number: 800.982.982**
- **complaints/fault report free-phone number: 800.983.389**

In order to ensure easy access to customer care services, streamlining of the Contact Center operations managed by Customer Care Solutions (C.C.S.) continued.

The service level for the commercial free-phone number in 2009 deriving from the ratio between calls answered by an operator (150,352) and the overall number of calls received (167,209) reached 90%, with average waiting time for a reply of 51 seconds.

The fault report free-phone number service level was 83% (86,123 telephone calls answered by an operator with respect to 103,521 calls received), with average reply times of around 1 minute; this performance was however affected by the extraordinary number of calls received in December, when the particularly harsh weather conditions caused meters to break. The service level without these calls in December would have been 95% and the average time to reply 25 seconds.

With regard to complaints and written requests, 87% of complaints were solved and 95% of written requests received replies, despite the considerable increase in both elements (8,057 requests and complaints, +71% with respect to 2008), also further to action by the company: Acque sent a complaint form with bills to inform customers of the opportunity of contacting the customer in writing.

A number of initiatives that commenced the year before to fulfil the needs of customers continued in 2009:

- **Acque Stores:** the first-ever Water Store in Italy was opened in Pisa in April 2009 to develop the traditional customer counter with more satisfactory opening hours and the possibility of carrying out operations in a more practical and rapid manner: the Acque Store achieved its initial good results with average waiting times of around 7 minutes with respect to around 25 minutes at traditional counters. Another store is expected to open in Empoli next year.
- the **on-line counter** was inaugurated in June 2009 and already has 4,000 registered users. By way of informing users of interruptions to the water supply and expiry dates for bills, carried out through text messages for some time now, Acque began to send messages to landline phones as of the beginning of 2009.

The company is also committed to developing cooperation and relations with consumer associations through occasions for consultation and joint procedures to check and monitor the quality of the services it provides.

### Customer Satisfaction Surveys

The level of customer satisfaction with the water service provided by Acque was subject to a Customer Satisfaction Survey between October and November 2009 and involved a sample base of 1,692 customers living in the municipalities in ATO 2-Tuscany Basso Valdarno.

This survey was divided into three stages, involving interviews on the following targets:

- **1,210** individual domestic consumers (with direct supply agreement) and apartment buildings;
- **380** customers that called the commercial free-phone number on the days preceding the interview;
- **102** customers that visited the counters on the days preceding the interview.

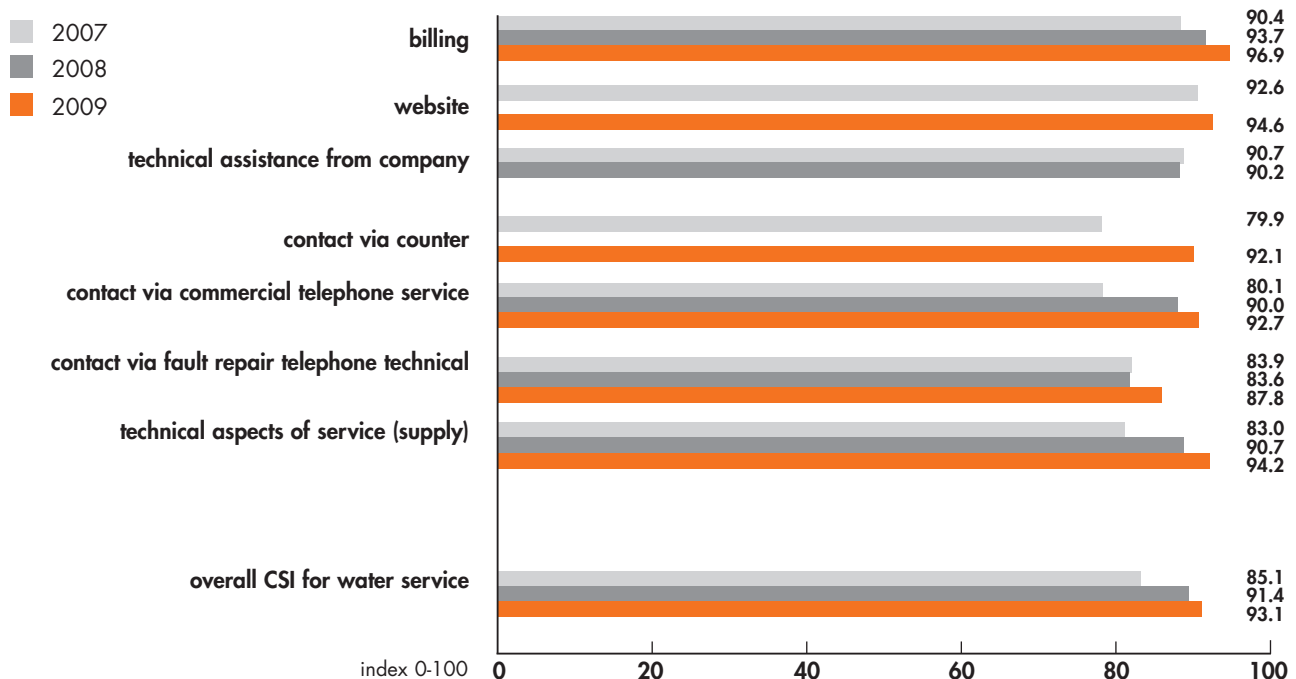
The relative results<sup>11</sup> were used to create a summary of the overall customer satisfaction with the water service (overall CSI) and a number of partial indicators concerning individual aspects of the service (partial CSI), expressed on a scale of 0 - 100:

- billing
- website
- technical assistance from company
- contact via counter

<sup>11</sup> CATI procedure - Computer Assisted Telephone Interviewing, using a structured questionnaire and layered sample base with different variables (such as area of residence, consumption group), with a statistical error rate of 3% and a significance of 95%.

- contact via commercial free-phone number
- contact via fault report free-phone number
- technical aspects of the service (supply).

#### ACQUE SPA – WATER SERVICE: OVERALL CSI AND CSI FOR SPECIFIC ASPECTS (2007-2009)



The Customer Satisfaction Indexes (CSI) in the chart demonstrate that both the overall opinion on the water service and that concerning the individual aspects improved. The increased satisfaction in contact via counter between 2007 and 2009 is particularly important, followed by improvement in the satisfaction concerning billing and technical aspects of the service. Results from the 2009 survey were illustrated to Consumer Associations.

#### Initiatives Concerning Socio-environmental Responsibility

In order to encourage customers to drink tap water, Acque organized a project entitled **“High-quality Water: water kiosks”**, installing systems to treat water – so called “water kiosks” – to supply particularly pleasant water in public areas, free of charge. These systems filter and reduce the chlorine compounds in water and sterilize it using UV rays. Ten of these have currently been installed and have been used by hundreds of people; another ten fountains are expected to be installed next year. The savings in economic terms – with people buying less mineral water – and benefits to the environment – less waste of plastic – are considerable. Acque SpA is responsible for maintenance on the plumbing, whereas the town councils are responsible for consumption, for which a special rate established by the ATO is applied.

**“Acque Tour”** is an environmental education project that aims to promote water as a primary resource, encourage its rational use and fight waste, mainly in schools. This project involves guided tours of company premises providing detailed descriptions of the historical and environmental aspects of the area in which they are located and lessons at schools concerning the natural and technological cycle of water. Around 5,000 young people and teachers were involved in school year 2008-2009. The project entitled **“Nice water at school”** aiming to encourage consumption of tap water rather than mineral water in school canteens and invest the money saved through this initiative in solidarity events or to buy materials for the school also continued. Acque guarantees regular quality analyses on water in the schools in municipalities participating in this project (13 in 2009, involving an overall number of around 30,000 pupils).

Environmental education concerning water provided in 2009 also involved a photography competition "**Water in an Instant**" with cooperation from the Italian Federation of Photographic Associations: 920 participants registered from throughout Italy and sent over 3,000 photographs, with the winners receiving their prizes in March 2010 during the events organized for the World Water Day.

Acque cooperates in various solidarity initiatives every year to facilitate access to water by populations without any including a project entitled **Water for Burkina Faso**, which began in 2002 with the Shalom Movement. Over the last few years, this has led to establishment of a drilling company in this African country, which has created a number of wells free of charge as well as others commissioned by public and private subjects, thereby ensuring access to drinking water for thousands of people. Contributions have also been made to training for the African technicians involved in these operations, while some pieces of equipment have been renewed and two drills have been bought to dig wells. Acque also took part in creating a dam in Godo, Burkina Faso, under coordination from the *Istituzione Centro Nord Sud*, a public institution sent by the Pisa Provincial Council. Acque appointed this Institution to identify, coordinate and manage cooperation projects providing access to water and made a contribution of 40,000 euro for this purpose in 2009.

### **Procurement Policies**

Commodities, services and works are contracted to the effects and purposes of current Laws. The selection process and management of suppliers are carried out according to the principles of transparency, integrity and non-discrimination. Acque complies with that established in the Code of Ethics and Code of Ethics for Tenders adopted in-house in all economic relations established and requires contractors to acknowledge such values as a condition for admission to Tenders and an integral part of all agreements.

Selection of Suppliers and commodities and services of any type must be made in full compliance with the principles of fair competition and equality in the conditions for presenting bids and on the basis of objective assessment of their competitiveness, quality, use and cost. The Company reserves the right to adopt a Suppliers' Register with qualification standards that do not prevent inclusion. Relations with suppliers, including financial and consultancy agreements, are also monitored to ensure that the services or commodities provided are in line with the relative amount charged.

Acque SpA undertakes to encourage respect for the environment in all services and commodities received and to ensure that they comply with ethical principles. All procedures and tenders are published in the Suppliers Section at [www.acque.net](http://www.acque.net).

## PRODUCTS AND ANALYSES

	u.m.	2007	2008	2009	%2009/2008
<b>drinking water</b>					
OVERALL DERIVED DRINKING WATER					
drinking water withdrawn from the environment	Mm <sup>3</sup>	74.70	73.57	75.61	2.8
from lakes/streams	Mm <sup>3</sup>	3.54	3.41	3.26	-4.4
from wells	Mm <sup>3</sup>	63.78	62.56	65.67	5.0
from springs	Mm <sup>3</sup>	7.38	7.60	6.68	-12.1
volume of water withdrawn					
from other aqueduct systems	Mm <sup>3</sup>	6.51	6.16	6.42	4.2
Overall amount of drinking water					
introduced to the network	Mm <sup>3</sup>	81.21	79.73	82.03	2.9
overall drinking water supplied (*)	Mm <sup>3</sup>	46.09	45.97	47.03	2.31
ASSESSMENT OF LOSSES ACCORDING TO MINISTERIAL DECREE 99/97					
overall losses (parameter A17 MD 99/97)	Mm <sup>3</sup>	28.29	26.99	27.75	2.8
real losses (parameter A15 MD 99/97)	Mm <sup>3</sup>	20.39	19.25	19.92	3.5
<b>wastewater</b>					
water treated at key treatment plants	Mm <sup>3</sup>	40.081 (**)	43.623	46.835	7.4
<b>analyses</b>					
drinking water analyses	n.	219,087	233,159	240,998	3.4
wastewater analyses	n.	73,864	81,195	94,395	16.3
<b>distribution and transportation network</b>					
	km	n.d.	n.d.	5,704	-

(\*) The 2008 figure differs from that published in the previous Sustainability Report: this figure was an estimate.

(\*\*) This figure differs from that previously published: this figure refers to all water treated whereas the previous figure referred to treatment plants with capacity of over 5,000 equivalent inhabitants.

## RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
<b>collection, transportation and distribution of drinking and non-drinking water</b>					
materials					
14-15% sodium hypochlorite	t	n.d.	n.d.	227.7	-
15% sodium hypochlorite in 60 kg drums	t	n.d.	n.d.	4.98	-
15% sodium hypochlorite in 10 kg drums	t	n.d.	n.d.	11.4	-
polyaluminium chloride	t	n.d.	n.d.	3.4	-
hydrochloric acid	t	n.d.	n.d.	146.11	-
electricity					
electricity for water pumping systems	GWh	60.8	58.28	57.26	-1.8
<b>wastewater treatment</b>					
materials					
polyelectrolyte powder	t	23	27	85.3	215.9
sodium hypochlorite for final disinfection	t	33	16	49.3	208.1
ferric chloride to dehydrate sludge	t	4	0	87.03	-
lime	t	0	0	0.020	-
18% polyaluminium chloride	t	32	54	55.2	2.2
anti-foaming agents	t	0	0.05	1.2	-
mineral oil and grease	t	0.8	0.4	0	-
electricity for wastewater					
electricity for treatment (including raising)	GWh	31.04	31.43	30.65	-2.5

## WASTE

	u.m.	2007	2008	2009	%2009/2008
<b>specific waste from wastewater treatment</b>					
sludge from treatment	t	22,085.51	19,378.60	20,799.90	7.3
sand and sediment from treatment	t	2,312.68	1,063.13	3,236.03	204.4
<b>waste (according to Leg. Decree 152/06)</b>					
hazardous waste	t	75.40	40.63	26.10	-35.8
non-hazardous waste	t	81,707.03 (*)	73,478.22	69,289.40	-5.7

(\*) Figure adjusted.

Inspections of water purification plants in 2009 involved analyzing 94,395 parameters. The Laboratory also checked the industrial wastewater in managed sewerage systems, involving analysis of around 600 samples.

#### OUTGOING PARAMETERS IN KEY WATER PURIFICATION PLANTS MANAGED ACQUE SPA (2009)

parameter	Pagnana plant Empoli municipality	Le Lame plant Poggibonsi municipality	Cambiano plant Castelfiorentino municipality	Intercomunale plant Pieve a Nievole municipality	Via Hangar plant Pontedera municipality
	average (mg/l)				
BOD <sub>5</sub>	<5	6	4	12	6
COD	31	28	26	84	49
TSS	8.5	7.7	7.8	36.1	18.9
nitrogen NH <sub>4</sub> <sup>+</sup>	1.3	0.8	2.5	16.3	5.3
phosphorous	1.4	2.0	1.0	1.9	2.7

#### Natural Environments with Extensive Biodiversity and Protected Areas

The area in which Acque operates comprises two important protected areas: the Padule Fucecchio swamp area between the province of Pistoia and the province of Florence and the Massaciuccoli Lake and Swamp area between the provinces of Pisa and Lucca.

There are no treatment plants in these swamp areas, however the water flowing into them are significantly affected by the water emissions from water purification plants. For this reason, the treatment plants that may affect these two important naturalist areas were included in a consortium project to centralize treatment involving closure of the small existing plants and treatment in just one, larger and more technologically suited plant.

A Programme Agreement involving the Ministry for the Environment, local Authorities and the ATO Authority and a supplementary agreement were signed for the Padule Fucecchio area in 2008. Closure of 49 civil water purification plants was established and, further to approval of an *Incidence Assessment for the Protected Area of Padule Fucecchio*, a new treatment plant was installed to support the water balance in the Swamps in drier summer months. The plant's location was subject to the procedure established to ensure coordinated participation from Tuscany Regional Council and will undergo environmental impact analysis in relation to the Padule protected area and Acque - with support from the authorities involved – is therefore outlining project designs.

The "Consortium Project for Treatment in North Pisa, San Giuliano Terme and Vecchiano and to Safeguard the Coast and Massaciuccoli Lake" is part of a programme agreement involving the Ministry for the Environment and Tuscany Regional Council. This also involves closure of the small plants currently located in the swamp crater and wastewater being sent to the San Jacopo treatment plant located north of Pisa. The capacity treatment of this plant will have to be expanded from the current level of 40,000 inhabitants to 135,000 inhabitants. The relative agreement was signed in June 2009 further to successful application for the relative tender.

#### Environmental Expenditures

"Environmental Expenditures" intended in the strict sense established in Recommendation 2001/453/EC<sup>12</sup> are not calculated.

#### Fines Concerning the Environment

The company paid administrative fines amounting to around 30,110 euro in 2009.

Acque also paid two fines amounting to 13,022 euro and 125 euro, the former for breaching Articles 190 (failure to register a drum containing mineral oil and oil from a dismantled machine in the load and unload register at the Vaiano Montopoli Treatment Plant), 192 (no dumping) and paragraph 2, Article 256 (fines for unauthorized waste management) of Italian Legislative Decree no.152/06 and the latter for breaching Article 674 of the same Decree for causing emission of smelly gas at the La Fontina Water Purification Plant.

<sup>12</sup>According to European Commission Recommendation 2001/453/EC, the "environmental expenditures" of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These costs also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.

human resources (average 2009)	364
value of production (millions of euro)	71.7
net result for Financial Year (millions of euro)	2.6

Since 2002, Acquedotto del Fiora SpA has managed the Integrated Water Service in the most extensive ATO in Tuscany (ATO 6 – Ombrone) comprising 56 municipalities, covering over 7,600 km<sup>2</sup> and a resident population of around 380,000 inhabitants, which almost doubles in the summer.

This territory is filled with protected areas with high levels of biodiversity, including the Maremma Natural Park and the Monte Labro Natural Park.

Water service management involves both the networks (aqueducts and sewerage systems) and plants (treatment plants, purifying plants, desalinators, etc.) in all 28 municipalities in the province of Grosseto and in 28 of the 36 municipalities in the province of Siena.

Acquedotto del Fiora operates in compliance with the corporate and environmental objectives established together with local authorities, paying particular attention to service quality, protecting the environment and sustainable development in the area.

In 2000, Acquedotto del Fiora adopted a Management System in accordance with Standard **UNI EN ISO 9001:2000**.

The real average rate applied to consumers for Integrated Water Service items (aqueduct, water purification and sewerage system) in 2009 amounted to 1.74 euro/m<sup>3</sup>.

#### **WATER SYSTEM MANAGED BY ACQUEDOTTO DEL FIORA SPA (2009)**

aqueducts and transportation networks (km)	4,784
distribution networks (km)	3,464
offtake structures – wells (no.)	226
offtake structures – springs (no.)	255
offtake structures – rivers (no.)	1
offtake structures – lakes (no.)	3
pumping stations (no.)	235
piezometers (no.)	13
reservoirs (no.)	710
treatment plants (no.)	32
seawater desalinators (no.)	1

#### **NUMBER OF WATER PURIFICATION PLANTS AND SEWERAGE SYSTEMS MANAGED BY ACQUEDOTTO DEL FIORA SPA (2009)**

water purification plants (no.)	126
sewage raising systems (no.)	236
sewage networks (km)	3,100
Imhoff pits (no.)	162

## Human Resources

The overall number of human resources working as at 31.12.2009 was 377 – 23.9% of which women. The company provided 37 training courses (61 editions) and mainly involved technical and specialist training, safeguarding privacy and health and safety in the workplace; around 22% of the overall participants were women.

The average number of hours of training per head amounted to 11.2.

Three apprenticeships commenced in 2009 and cooperation with the Tuscany Universities led to 2 apprenticeships for students from Pisa and Florence Universities.

Three resources that underwent in-house apprenticeships in 2008 continued their experience through cooperation contracts.

## Commitment to Improvement

By way of confirming ongoing attention to the needs in the area in which it operates and respect for the environment, Acquedotto del Fiora implemented stations to reduce arsenic in the municipalities of Abbadia S. Salvatore and Piancastagnaio (Siena), thereby ensuring that the quality parameters came into line with current laws and definitively exceeding the provisions authorized by the Ministry of Health and the Ministry for the Environment had established for the municipalities of Abbadia S. Salvatore, Arcidosso, Castel del Piano, Monterotondo Marittimo, Montieri and Piancastagnaio.

A new treatment plant was also opened for the water leaving the Follonica plant to reduce the impact from wastewater and save water by reusing treated wastewater.

## Customer care

### Acquedotto del Fiora SpA free-phone number

- **commercial and complaints/fault report free-phone number: 800.887.755**

The free-phone number service level in 2009, in other words the ratio between the calls answered by an operator and the overall number of calls received, was excellent both with respect to commercial and fault report calls. The service levels for both types of calls was 98%, in the former case with 171,822 calls answered by an operator with respect to 175,317 calls received and with average waiting times of 44 seconds, in the latter case with 30,965 calls answered by an operator with respect to 31,712 calls received and with average waiting times of 42 seconds.

Acquedotto del Fiora implemented numerous initiatives to increase the number of opportunities for contact with customers in 2009, including:

- implementation of a counter in Montalcino council offices to enhance the network operating in the province of Siena;
- implementation of a specific counter for apartment building administrators in the Acquedotto del Fiora offices;
- implementation of a procedure to reach an agreement with the Italian Mail System to domicile bill payment with Italian Mail current accounts;
- implementation of a technical structure for payment of bills at all counters open to the public;
- commencement of cooperation with the Tuscany Regional Council Ombudsman for an initiative entitled "Customer Relations. Conscious citizen = satisfied customer" to improve relations between customers and the company, involving representatives from the Chamber of Commerce Arbitration and Conciliation Board, the Grosseto and Siena Bar Associations and 56 partner municipalities of Acquedotto del Fiora SpA;
- implementation of a communication campaign to safeguard customers from fraud;
- implementation of an experiment entitled "phone-collection" involving the Grosseto Provincial Council to help recover debts from customers in arrears by offering the chance to avoid controversies.

## Customer Satisfaction Surveys

The level of customer satisfaction with the water service provided by Acquedotto del Fiora was subject to a Customer Satisfaction Survey in October 2009 and involved a sample base of 1,685 customers living in the municipalities in ATO 6-Ombone.

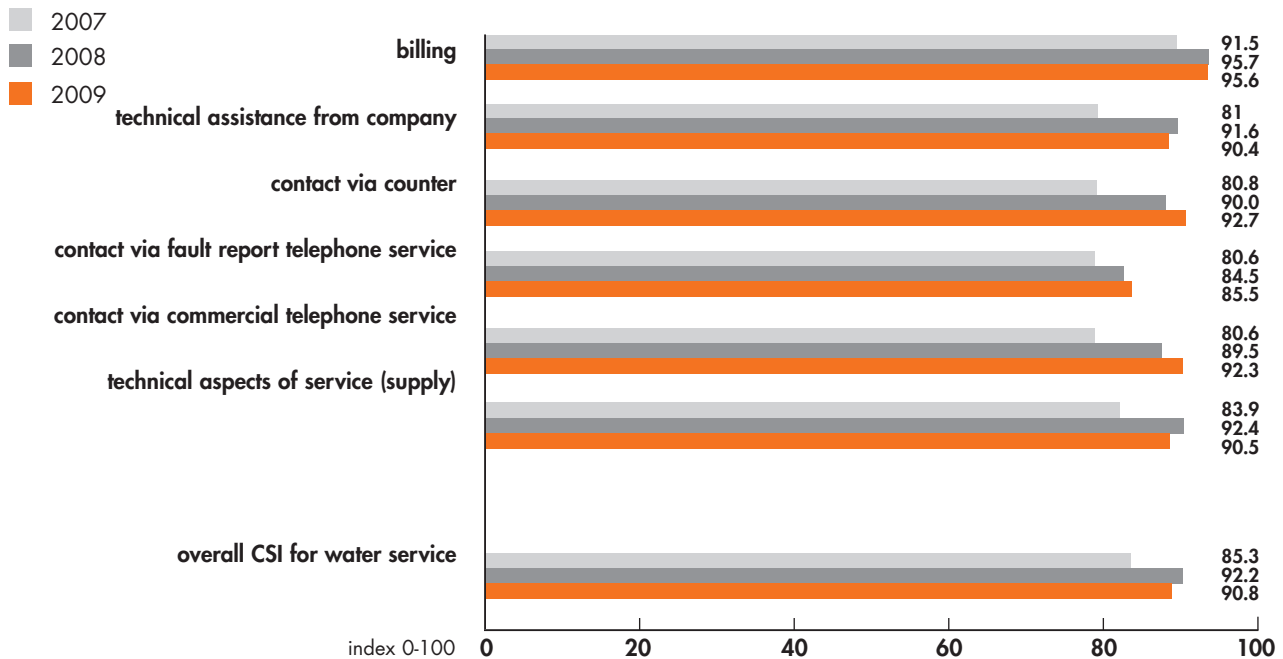
This survey was divided into three stages, involving interviews on the following targets:

- **1.200** individual domestic consumers (with direct supply agreement) and apartment buildings;
- **280** customers that called the commercial free-phone number on the days preceding the interview;
- **205** customers that visited the counters on the days preceding the interview.

The relative results<sup>13</sup> were used to create a summary of the overall customer satisfaction with the water service (overall CSI) and a number of partial indicators concerning individual aspects of the service (partial CSI), expressed on a scale of 0 - 100:

- billing
- technical assistance from company
- contact via counter
- contact via commercial free-phone number
- contact via fault report free-phone number
- technical aspects of the service (supply).

### ACQUEDOTTO DEL FIORA SPA – WATER SERVICE: OVERALL CSI AND CSI FOR SPECIFIC ASPECTS (2007-2009)



The charts illustrates that there was a slight decrease in satisfaction with the service on the whole, technical aspects and technical assistance from the company, although the levels of satisfaction are however high. All the other areas involved in this Survey improved constantly over the three-year period in question.

<sup>13</sup> CATI procedure - Computer Assisted Telephone Interviewing, using a structured questionnaire and layered sample base with different variables (such as area of residence, consumption group), with a statistical error rate of 3% and a significance of 95%.



## Initiatives Concerning Socio-environmental Responsibility

The initiatives concerning socio-environmental responsibility promoted throughout 2009 included the following:

- participating in institutional initiatives to **raise the awareness** of the general public with respect to **careful and conscientious use of water** and promote the use of the quality water distributed by the company;
- **opening the Santa Fiora and del Vivo springs to the public** on the World Water Day and other initiatives in the provinces of Grosseto and Siena, such as an event entitled "the Mayor's Water" in the municipality of Sovicille and inauguration of the "house of water" in Castellina Scalo (Monteriggioni), which offers water from the aqueduct that is treated to provide natural or sparkling water to the general public free of charge;
- presenting a **short film** entitled "**still Santa Fiora....mon amour!**", a project aiming to raise the awareness of young people with respect to water;
- cooperating in the exhibition organized by Siena City Council concerning the "del Vivo" aqueduct currently managed by Acquedotto del Fiora on its one hundredth anniversary.

## Procurement Policies

Works, services and supplies are contracted according to the principles of good economy, effectiveness, promptness and correct conduct, as well as the principles fair competition, fair treatment, non-discrimination and publication established in Italian Legislative Decree no.163/06 and subsequent amendments and integrations. Each agreement and relative technical requirements and procedures for execution and contracting complies with the needs of the various in-house divisions involved. The same qualification system through which a Suppliers' Register is drawn up implemented in Acea SpA is adopted by this company.

## FIORA SPA 2009 ENVIRONMENTAL ACCOUNTS

### PRODUCTS AND ANALYSES

	u.m.	2007	2008	2009	%2009/2008
<b>drinking water</b>					
OVERALL DERIVED DRINKING WATER					
drinking water withdrawn from the environment	Mm <sup>3</sup>	61.4	65.2	63.24	2.7
from lakes/ivers	Mm <sup>3</sup>	0.9	0.9	0.78	-13.3
from wells	Mm <sup>3</sup>	28.5	32.1	27.86	-13.2
from springs	Mm <sup>3</sup>	32	28.6	34.60	20.9
drinking water introduced to network	Mm <sup>3</sup>	59.3	59.4	59.68	0.5
overall drinking water supplied	Mm <sup>3</sup>	31.7	31.6	30.59	-3.2
ASSESSMENT OF LOSSES ACCORDING TO MINISTERIAL DECREE 99/97					
overall losses (parameter A17 MD 99/97)	Mm <sup>3</sup>	25.8	27.2	29.09	6.9
real losses (parameter A15 MD 99/97)	Mm <sup>3</sup>	23.0	24.5	25.84	5.5
<b>wastewater</b>					
water treated in key treatment plants	Mm <sup>3</sup>	19.4	13.2	12.5	- 5.3
water treated at plants with capacity exceeding 2,000 equivalent inhabitants	Mm <sup>3</sup>	-	-	25.8 (*)	-
<b>analyses</b>					
drinking water analyses	n.	4,050	3,290	3,795	15.4
wastewater analyses	n.	6,235	5,492	5,489	-0.1
surface water analyses	n.	25	22	18	-18.2
<b>distribution and transportation network</b>	km	8,181	8,212	8,248	0.4

NB: the 2008 figures differ slightly from those published in the previous report due to review by the Operations Division.

(\*) Amount relating to 79.5% of plants with capacity exceeding 2,000 equivalent inhabitants (comprising previous item).

## RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
<b>collection, transportation and distribution of drinking and non-drinking water</b>					
materials					
sodium hypochlorite	t	130	125.2	61.6 (*)	- 50.8
polyaluminium chloride	t	110.4	125.2	61.6 (*)	- 50.8
hydrochloric acid	t	37.5	33.5	35.2	5.1
powdered charcoal	t	0.8	5.4	8	48.1
other	t	-	39.5	67.6 (**)	71.1
electricity					
electricity used for water pumping systems	GWh	42.4	44.5	39.4	- 11.5
<b>wastewater treatment</b>					
materials					
polyelectrolyte powder	t	64.2	110.4	125.4	13.6
sodium hypochlorite for final disinfection	t	523.6	532.9	24.9 (*)	-95.3
ferric chloride to dehydrate sludge	t	2.8	6.5	0	-100.0
18% polyaluminium chloride	t	350	54.1	24.9 (*)	- 54.0
anti-foaming agents	t	5	1	1.9	90.0
mineral oil and grease	t	0	0.131	0	-100.0
other	t	0.96	7.036	1.1	-84.4
electricity for wastewater (***)					
electricity for purification	GWh	24.72	25.0	18.5	- 9.9
electricity used for water pumping systems	GWh			4,0	

(\*) Estimate.

(\*\*) Of which: 25 tons of calcium carbonate, 18.8 tons of carbon dioxide, 6 tons of anti-precipitant, 2.4 tons of permanganate, 2.2 tons of polyphosphates, 13.2 tons of other products.

(\*\*\*) The figures for electricity consumed for treatment plants and raising systems in 2007 and 2008 were given together.

## WASTE

	u.m.	2007	2008	2009	%2009/2008
<b>specific waste from wastewater treatment</b>					
sludge from treatment	t	13,227	15,221	17,954	18.0
sand and sediment from treatment	t	679	1,052	1,364	29.7
<b>waste (according to Leg. Decree 152/06)</b>					
hazardous waste (*)	t	5,045	21,96	218	892.7
non-hazardous waste (**)	t	3,172.43	3,214.47	6,277	95.3

(\*) The considerable increase is due to legislation updates in 2009, further to which some non-hazardous waste was classified as hazardous.

(\*\*) Including waste produced in WdF plants and treated to the effects and purposes of letter c), paragraph 3, Article 110 of Italian Legislative Decree no 152/06 (wastewater in liquid waste). The increase is due to high rainfalls in 2009.

## OUTGOING PARAMETERS FOR KEY WATER PURIFICATION PLANTS MANAGED BY ACQUEDOTTO DEL FIORA (2009)

	Castiglione della Pescaia plant	Follonica plant	Grosseto San Giovanni plant	Marina plant	Ponte a Tressa plant
<b>parametro</b>	<b>average (mg/l)</b>				
BOD <sub>5</sub>	6	15	10	16	7
COD	17	41	28	43	40
TSS	12	24	15	21	12
nitrogen NH <sub>4</sub> <sup>+</sup>	5	18	5	8	7
phosphorus	2	3	1	3	1

NB: figures refer to treatment plants with capacity exceeding 20,000 equivalent inhabitants.

## Sensitive Areas

Acquedotto del Fiora manages a number of plants in sensitive areas of high environmental importance. The plants listed in the table below are located in sites of European interest and in natural reserved in the province of Siena. The company takes special care to ensure that withdrawing water does not affect the ecosystems in each of such sites:

### PLANTS ON SITES OF EUROPEAN INTEREST AND IN NATURAL RESERVES

plants	location	surface area in m <sup>2</sup>
<b>sites of European interest</b>		
Aringo Well, Luco Well field; Springs: di Torri 1-2-3, Mallecchi	Municipality of Sovicille	14,380
Campo Lischioni Well, Onchianaia Well; Springs: Lavatoi, Scalvaia, Cesarino, val di Coppa, Cerbaia, Quarciglioni	Municipality of Monticiano	776
Campalli Springs	Municipality of Castellina in Chianti	230
Wells: Crognole, Porcinati, Badia a Montemuro; Springs: Degole, Lungagna, Acquaviva, Badiaccia a Montenuro, Ceppeto, Picciolo, S. Marco	Municipality of Radda in Chianti	1,872
Wells: di Lecchi, Galenda 1-2	Municipality of Gaiole in Chianti	156
Springs: Lame vecchie	Municipality of Montieri	100
Maggiano Well	Municipality of Casole d'Elsa	50
Wells: Pian dei Renai, Acqua Gialla; Springs: Galleria 8, Galleria 11	Municipality of Abbadia S. Salvatore	700
Wells: Lame, Contesse, Conicchio	Municipality of Cetona	1,215
Springs: Fonte Renza, Fonte Vetrana	Municipality of Sarteano	425
Springs: Seragio, Ermicciolo, Sambuchella, Sambuchellina, Acqua Regia, Acqua Gialla, Fonte dell'Oro	Municipality of Castiglione d'Orcia	2,970
Fonte Grande Spring	Municipality of Radicofani	110
<b>total</b>		<b>22,984</b>
<b>natural reserves</b>		
Tocchi Well	Municipality of Monticiano	20
Ripiombaiolo Spring	Municipality of Sovicille	70

## Environmental Expenditures

"Environmental Expenditures" are intended in the strict sense established in Recommendation 2001/453/EC<sup>14</sup>, and amounted to around 2 million euro in investments and operations.

### ENVIRONMENTAL EXPENDITURES (2009) (in euro)

	investment	operations
laboratory (*)	-	100,560
water plants	150,123	-
water purification plants	1,284,021.00	-
tlc systems	323,886.07	126,251.33
<b>total</b>	<b>1,758,030.07</b>	<b>226,811.33</b>

(\*) Estimate of costs paid by Acquedotto del Fiora, concerning the number of analyses carried out on water purification plants in addition to those established by law.

## Fines Concerning the Environment

The Company received 16 inspection reports and notices concerning non-compliance with current environmental laws. Acquedotto del Fiora presented the relative defence memorials and applied to the provincial authorities to withdraw such or to be heard on the matter.

<sup>14</sup> According to European Commission Recommendation 2001/453/EC, the "environmental expenditures" of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These costs also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.

human resources (no.)	679
value of production (millions of euro)	178,008
net result for Financial Year (millions of euro)	12.372

Acea has holdings in Publiacqua SpA through Acque Blu Fiorentine SpA. This company has managed the Integrated Water Service in ATO 3 – Medio Valdarno since 2002, which comprises 49 municipalities in Florence, Prato and Pistoia and covers around 1.2 million inhabitants.

The real average rate applied to consumers for Integrated Water Service items (aqueduct, water purification and sewerage system) in 2009 amounted to 1.80 euro/m<sup>3</sup>.

#### WATER SYSTEM MANAGED BY PUBLIACQUA SPA (2009)

aqueducts and transportation networks (km)	1,130
distribution network (km)	5,845
offtake structures – wells (no.)	581
offtake structures – springs (no.)	836
offtake structures – rivers (no.)	59
offtake structures – lakes (no.)	26
pumping stations (no.)	388
reservoirs (no.)	998
treatment plants (no.)	112
dam (Bilancino) and minor reservoirs (no.)	1+ 9

#### NUMBER OF WATER PURIFICATION PLANTS AND SEWERAGE SYSTEMS MANAGED BY PUBLIACQUA SPA (2009)

water purification plants (no.)	130
sewage raisers (no.)	218
sewage networks (km)	4,197

#### **Human Resources**

The overall workforce employed by the company in 2009 amounted to 679 resources (of which 7 executives and 18 middle managers); the female workforce amounted to around 24 % of the overall workforce.

#### **Commitment to Improvement**

Publiacqua has **UNI EN ISO 9001:2000 Quality Certification** and **UNI EN ISO 14001:2004 Environmental Certification** for the large treatment plants in Anconella and Mantignano and the treatment plant for Florence (San Colombano).

## Customer care

### Publiacqua SpA free-phone numbers

- **commercial free-phone number: 800.238.238**
- **complaints/fault report free-phone number: 800.314.314**

The service level for the commercial free-phone number in 2009 deriving from the ratio between calls answered by an operator (216,289) and the overall number of calls received (236,681) was around 91%, with average waiting time for a reply of 57 seconds.

The fault report free-phone number service level was 83% (112,876 telephone calls received with respect to 93,350 answered by an operator), with average reply times of 48 seconds; this performance was however affected by the roughly 26,00 calls received in December, when the particularly harsh weather conditions caused problems. The service level taking into account solely the first 11 months of the year would have been 93% and the average time to reply around 34 seconds.

The service level for counters (ratio between tickets issued and customers effectively served) was 93%, with average waiting time of around 19 minutes.

Commitment to improving relations with customers continued throughout 2009, especially in relation to front office tasks, via:

- simplifying forms;
- establishing procedures for counter staff responsible for recovering credits;
- training staff to improve knowledge of the customer database and ability to enter information.

### Customer Satisfaction Surveys

The quality perceived by Publiacqua customers with respect to the water service was checked through interviews on a sample base of 2,006 customers living in the municipalities in ATO 3-Medio Valdarno in July 2009.

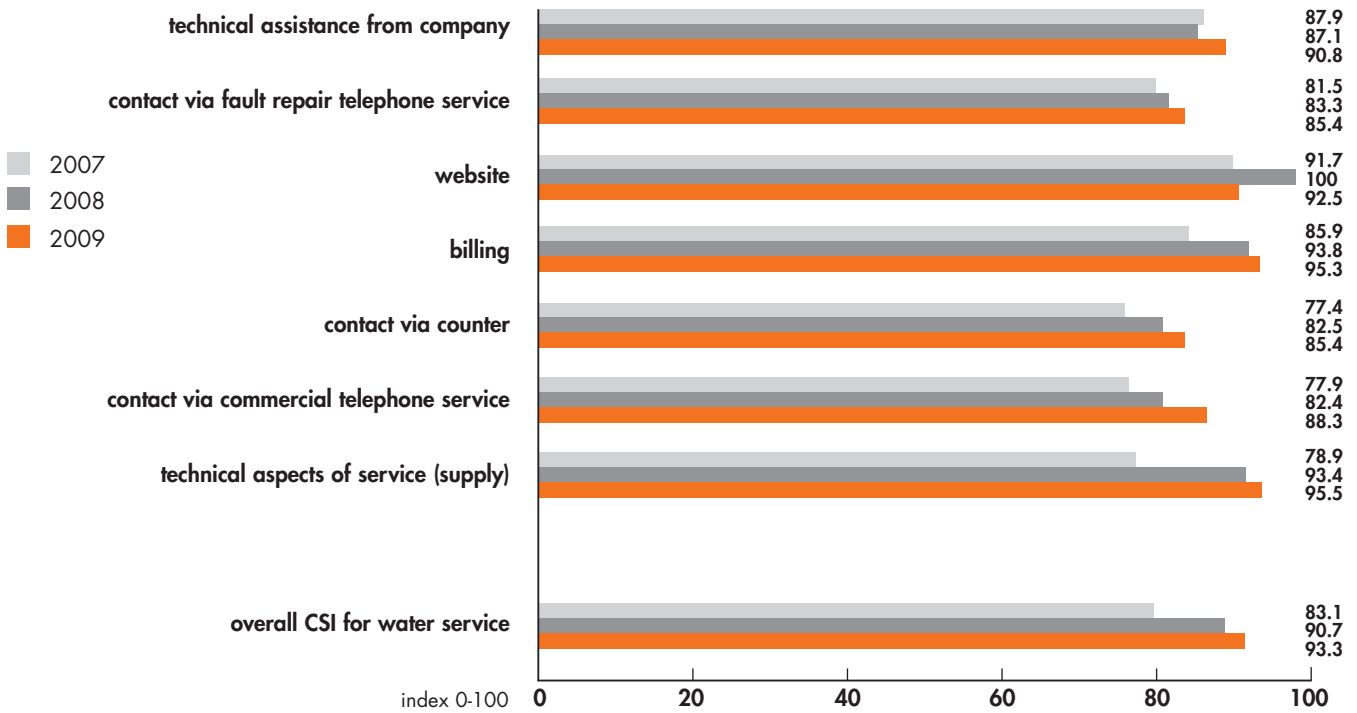
This survey was divided into three stages, involving interviews on the following targets:

- **1.652** individual domestic consumers (with direct supply agreement) and apartment buildings;
- **251** customers that called the commercial free-phone number on the days preceding the interview;
- **103** customers that visited the counters on the days preceding the interview.

The relative results<sup>15</sup> were used to create a summary of the overall customer satisfaction with the water service (overall CSI) and a number of partial indicators concerning individual aspects of the service (partial CSI), expressed on a scale of 0 - 100:

- technical assistance from company
- contact via fault report free-phone number
- website
- billing
- contact via counter
- contact via commercial free-phone number
- technical aspects of the service (supply).

<sup>15</sup> CATI procedure - Computer Assisted Telephone Interviewing, using a structured questionnaire and layered sample base with different variables (such as area of residence, consumption group), with a statistical error rate of 3% and a significance of 95%.



The above chart illustrates the results from this survey, highlighting a generally positive perception of the service, with considerable improvement in the overall CSI in relation to the three-year period in question. All the aspects taken into account received high levels of satisfaction, especially in relation to technical aspects of the service and billing.

### Social Responsibility Initiatives

In 2009, Publicacqua continued various environmental initiatives, including:

- **cooperating with the Water Right Foundation** which was established by Publicacqua. This Foundation generally aims to develop cooperation, research and training concerning the right to water and sustainable use of water and operates within the framework of "Development of Objectives for the Millennium", which was launched by the United Nations. In 2009, Publicacqua donated 250,000 euro of its profits to international cooperation projects concerning water;
- **promoting use of drinking water from aqueducts** by installing water kiosks;
- being involved in a project in cooperation with a number of local administrations to **promote the use of tap water in canteens** in schools and public buildings;
- supporting projects with the purpose of creating a network between companies and schools and local training institutions;
- providing **guided tours** of the key sites managed by the company (the dam at Bilancino and the Anconella treatment plant) for elementary and middle school students to make them more aware of the complexity of the water system and the meaning of sustainable development and correct use of water.

## PRODUCTS AND ANALYSES

	u.m.	2007	2008	2009	%2009/2008
<b>drinking water</b>					
OVERALL DERIVED DRINKING WATER					
drinking water withdrawn from the environment	Mm <sup>3</sup>	170.1	170.0	168.9	-0.6
from lakes/ivers	Mm <sup>3</sup>	113.4	110.2	111.5	1.2
from wells	Mm <sup>3</sup>	48.1	46.5	44.6	-4.1
from springs	Mm <sup>3</sup>	8.6	13.6	12.8	-5.9
drinking water introduced to the network	Mm <sup>3</sup>	154.6	154.3	153.3	-0.6
overall drinking water supplied	Mm <sup>3</sup>	86.7	86.0	86.0	-
ASSESSMENT OF LOSSES ACCORDING TO MINISTERIAL DECREE 99/97					
overall losses (parameter A17 MD 99/97)	Mm <sup>3</sup>	58.3	59.3	59.3	-
real losses (parameter A15 MD 99/97)	Mm <sup>3</sup>	48.2	48.7	48.8	0.2
<b>wastewater</b>					
drinking water analyses	Mm <sup>3</sup>	91.8	92.5	84.4	-8.8
<b>analyses</b>					
drinking water analyses	n.	246,850	249,600	234,560	-6.0
wastewater analyses	n.	32,215	34,776	34,826	0.1
<b>distribution and transportation network</b>	km	n.d.	6,766	6,975	3.1

## RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
<b>collection, transportation and distribution of drinking and non-drinking water</b>					
materials					
flocculant	t	4,343	5,019	5,363	6.9
hydrochloric acid	t	1,320	1,202	1,317	9.6
sodium chlorite	t	1,290	1,416	1,168	-17.5
sodium hypochlorite	t	855	640	785	22.7
charcoal powder	t	200	190	114	-40.0
electricity					
electricity for water pumping systems	GWh	89.734	87.727	86.895	-0.9
<b>wastewater treatment and extra services</b>					
materials					
polyelectrolytes	t	96	112	171	52,7
sodium hypochlorite for disinfection	t	18	19	156	721,1
lime	t	16	19	57,4	202,1
18% polyaluminium chloride	t	185	168	88,4	-47,4
anti-foaming agent	t	-	2	1,1	-45,0
electricity					
electricity for wastewater	GWh	34.663	39.406	38.321	-2.8

## WASTE

	u.m.	2007	2008	2009	%2009/2008
<b>specific waste from wastewater treatment and extra services</b>					
sludge from treatment	t	24,797	21,514	20,270	-5.8
sand and sediment from treatment	t	1,551	829	1,378	66.2
<b>waste (according to Leg. Decree 152/06)</b>					
hazardous waste (*)	t	109	175	624	256.6
non-hazardous waste		14,267	16,750	31,650	89.0

NB: a number of 2007 and 2008 figures were adjusted according to more precise methods for calculation used in 2009.

(\*) The considerable increase in hazardous waste in 2009 was due to a diesel spill of around 400 tons.

	S. Colombano plant (Florence area)	Aschieto plant (Val di Sieve area)	Rabatta plant (Mugello area)	S.Giovanni plant (Valdarno area)	Figline plant (Valdarno area)	Pistoia Centrale plant (Pistoia area)	Seano plant (Prato area)	P. Nicchieri plant (Chianti area)
parameter	average (mg/l)							
BOD <sub>5</sub>	3	4	4	8	5	4	7	3
COD	20	21	22	42	33	24	40	23
TSS	7	7	9	19	10	6	15	6
overall nitrogen	9	16	13	21	10	10	11	12
nitrogen NH <sub>4</sub> <sup>+</sup>	1	0	3	6	1	1	3	2
overall phosphorous	2	2	2	3	2	2	1	3

### Environmental Expenditures

“Environmental Expenditures” intended in the strict sense established in Recommendation 2001/453/EC<sup>16</sup> are not calculated.

### Fines Concerning the Environment

The company received 29 fines in 2009, two of which amounting to 25,876 euro have already been calculated.

<sup>16</sup> According to European Commission Recommendation 2001/453/EC, the “environmental expenditures” of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These costs also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.





human resources (no.)	341
value of production (millions of euro)	62.570
net result for Financial Year (millions of euro)	1.875

Umbra Acque SpA, 40% owned by Acea SpA, has managed the Integrated Water Service in ATO - Umbria 1 since 2003 comprising 37 municipalities in the province of Perugia and one municipality (San Venanzo) in the province of Terni and covering an overall population of around 500,000 inhabitants .

The real average rate applied to consumers for Integrated Water Service items (aqueduct, water purification and sewerage system) in 2009 amounted to 1.46 euro/m<sup>3</sup>.

#### WATER SYSTEM MANAGED BY UMBRA ACQUE SPA (2009)

aqueducts and transportation networks (km)	375
distribution network (km)	6,700
offtake structures – wells (no.)	195
offtake structures – springs (no.)	220
offtake structures – rivers (no.)	2
offtake structures – lakes (no.)	0
pumping stations (no.)	190
piezometres (no.)	1
reservoirs (no.)	505
treatment plants (no.)	34

#### NUMBER OF WATER PURIFICATION PLANTS AND SEWERAGE SYSTEMS MANAGED BY UMBRA ACQUE SPA (2009)

water purification plants (no.)	155
sewage raising systems (no.)	162
sewage systems (km)	3,180

#### **Commitment to Improvement**

Umbra Acque is certified according to new Standard UNI EN ISO 9001:2008 with respect to designing, building, running and carrying out maintenance on drinking water distribution networks and providing sewage and treatment services.

In 2008, this company commenced the procedure to obtain certification for the Pian della Genna Laboratory over the next three years and environmental (ISO 14001) and safety (OHSAS 18001) certification for the Città di Castello and Ponte Valleceppi water purification plants.

Integrated Environmental Authorization was also issued for the Canonica water purification plant in 2009 (Città di Castello – 60,000 equivalent inhabitants), with connected pre-treatment plant for non-channelled wastewater.

The ATO Authority approved the 2010-1012 Three-year Operational Plan involving around 39 million euro in investments from rates. Additional investments covered by public funding amounting to 36.5 million euro

have been earmarked to improve the larger water purification plants (with capacity exceeding 10,000 equivalent inhabitants) in order to ensure compliance with current legal parameters<sup>17</sup>. This Plan also earmarked around 3.3 million euro to solve a number of problems with water procurement and 4.6 million euro for strategic actions to improve the safety in a number of plants and improve knowledge concerning networks and plants (GIS, remote control, tools for video inspections, etc.).

Actions to make a number of plants efficient and improve the amount of dry sludge produced were carried out in 2009.

Umbra Acque participated in European Competition "LIFE 09 ENV" with a project entitled "Pump and leakage management".

## Human Resources

The number of human resources employed by the company in 2009 amounted to 341, 66% of which blue-collar workers, 9.6% middle managers and managers and 24.4% white-collar workers; women accounted for 15% of the overall workforce.

Training according to the SI.QU.A Plan (IT Systems, Quality and the Environment) funded by the For.Te Fund (inter-professional fund for ongoing training in service companies) concluded in 2009 and involved around 1,400 hours of training on sustainable company development, social and environmental reports, web marketing and environmental communication, quality, environmental and safety management systems, network management, and others.

Three training sessions and assessments were also carried out, involving executives, middle managers and top management to improve their ability to share objectives through teamwork and assess the potential of their skills.

Finally, specific workgroups were created with support from outside consultants to create methodological systems with managerial and organizational approaches.

## Customer care

In 2009, the following projects were implemented:

- **review of the web portal** in order to develop the services that customers can access via the web (payments, writing requests, contracts, etc.);
- **improvement of public relations with the press and local TV stations** in order to create structured relations with the media based on credibility and reliability, above all in the event of particular or critical situations.

## Customer Satisfaction Surveys

The **quality perceived** by customers with respect to the company's water service was subject to a survey between October and November 2009, which involved a sample base of 1,859 residents in the municipalities in ATO Umbra1.

This survey was divided into three stages, involving interviews on the following targets:

- **1,203** individual domestic consumers (with direct supply agreement) and apartment buildings;
- **200** non-domestic consumers (with direct supply agreement) and apartment buildings;
- **6** apartment building administrators;
- **450** customers that visited the counters on the days preceding the interview.

The relative results<sup>18</sup> were used to create a summary of the overall customer satisfaction with the water service (overall CSI) and a number of partial indicators concerning individual aspects of the service (partial

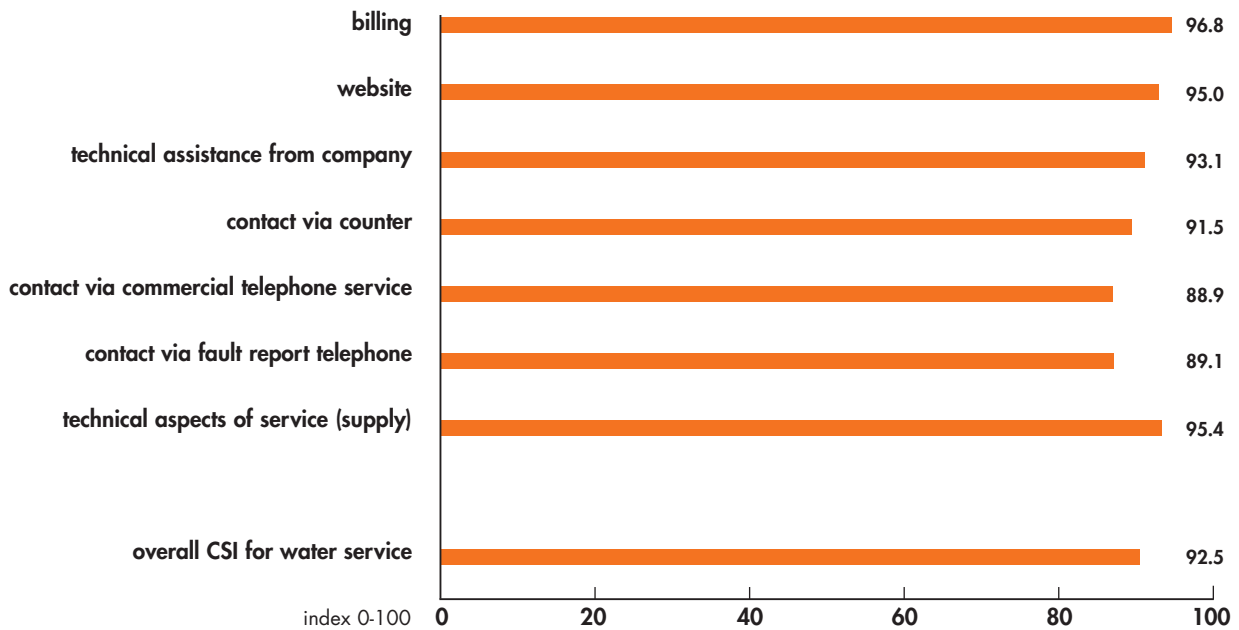
<sup>17</sup> Italian Decree no. 152/2006 for sensitive areas (Table 2).

<sup>18</sup> CATI procedure - Computer Assisted Telephone Interviewing, using a structured questionnaire and layered sample base with different variables (such as area of residence, consumption group), with a statistical error rate of 3% and a significance of 95%.

CSI), expressed on a scale of 0 - 100:

- billing
- website
- technical assistance from company
- contact via counter
- contact via commercial free-phone number
- contact via fault report free-phone number
- technical aspects of the service (supply).

#### UMBRA ACQUE – WATER SERVICE: OVERALL CSI AND CSI FOR SPECIFIC ASPECTS (2009)



The chart illustrates the results from this survey (CSI), highlighting a good level of satisfaction with the service, especially with respect to billing, technical aspects of the service and the website.

#### Initiatives Concerning Socio-environmental Responsibility

Umbra Acque encourages respect for the environment in schools through training actions and organizes guided tours on corporate sites and plants.

With regard to cooperation with Universities, the company offers internships in its chemical and biological laboratory to graduates taking specializations at Siena and Perugia Universities.

The company also cooperates with the municipality of Costacciaro and CENS (Centro Escursionistico Naturalistico Speleologico – Centre for Naturalist Speleologist Excursions) to capitalize on the Monte Cucco Park and its water heritage and with Perugia City Council in relation to managing the historical museum of water.

The following projects were carried out in 2009:

- creation of bottle packaging and label for water distributed by the company (**L'acqua di Umbra Acque**), to be used in offices and during public initiatives;
- **organization** of an open day (**Spring Picnic**) for employees and their families;
- creation of a photo album with photos of company staff (**Sticker Album**) to use in social initiatives and

- donating profits from sticker sales;
- promotion of specific communication and awareness campaigns (e.g.: saving water, conscientious use of water, etc.) both for the general community and for "sensitive" targets (schools).

## Procurement Policies

Umbra Acque manages procurement of supplies, works and services through careful planning and organization. Contracts are awarded in compliance with that established in Italian Legislative Decree no.163/2006 and aim to ensure the best possible economic conditions with the best possible technical and quality standards.

## UMBRA ACQUE SPA ENVIRONMENTAL ACCOUNTS (2009)

### PRODUCTS AND ANALYSES

	u.m.	2007	2008	2009	%2009/2008
<b>drinking water</b>					
OVERALL DERIVED DRINKING WATER					
drinking water withdrawn from the environment	Mm <sup>3</sup>	60.235	58.4	59.13	1.3
from lakes/ivers	Mm <sup>3</sup>	0.965	1.1	1.068	-2.9
from wells	Mm <sup>3</sup>	39.870	45.9	44.337	-3.4
from springs	Mm <sup>3</sup>	19.40	11.4	13.722	20.4
drinking water introduced to the network	Mm <sup>3</sup>	60.055	58.4	58.887	0.8
overall drinking water supplied	Mm <sup>3</sup>	32.300	32.3	30.972	-4.1
ASSESSMENT OF LOSSES ACCORDING TO MINISTERIAL DECREE 99/97					
overall losses (parameter A17 MD 99/97)	Mm <sup>3</sup>	24.1	22.8	23.7	3.9
real losses (parameter A15 MD 99/97)	Mm <sup>3</sup>	22.5	21.2	22.1	4.2
<b>wastewater</b>					
water treated at key treatment plants	Mm <sup>3</sup>	62.0	62.0	62.0	-
<b>analyses</b>					
drinking water analyses	no.	92,230	115,047	116,769	1.5
wastewater analyses	no.	36,808	41,430	41,632	0.5
surface water analyses	no.	3,450	6,900	5,200	-24.6
<b>distribution and transportation network</b>	km	n.d.	n.d.	7,075	-

### RESOURCES USED

	u.m.	2007	2008	2009	%2009/2008
<b>collection, transportation and distribution of drinking and non-drinking water</b>					
materials					
sodium hypochlorite	t	174	105	100	- 4.8
polyaluminium chloride	t	33	19.8	15	- 24.2
hydrochloric acid	t	142	141	167,5	18.8
sodium chlorite	t	-	-	168,8	-
electricity					
electricity for pumping stations	GWh	82.2	75.9	71.79	- 5.4
<b>wastewater treatment</b>					
materials					
polyelectrolytes	t	34.15	36.45	38.8	6.4
ferric chloride	t	14.8	10.75	17.27	60.7
18% polyaluminium chloride	t	24	18.3	2.2	- 88.0
anti-foaming agents	t	1.2	0.3	2.3	666.7t
mineral oil and grease	t	1.2	5.35	4.9	- 8.4
freeze-dried reactivating bacteria	t			5.02	-
electricity					
electricity for treatment	GWh	18.8	18.5	17.2	-7.0
electricity for pumping stations	GWh	3.4	3.6	4.4	22.2

## WASTE

	u.m.	2007	2008	2009	%2009/2008
<b>specific waste from wastewater treatment</b>					
sludge from treatment (*)	†	41,871	39,829	41,987	5.4
sand and sediment from treatment	†	891	833	695	-16.6
<b>waste (according to ex D. Lgs. n. 152/06)</b>					
hazardous waste	†	4.5	7.93	6.36	-19.8
non-hazardous waste		76	413	362.86	-12.1

(\*) including liquid sludge.

### AVERAGE OUTGOING PARAMETERS FROM ALL WATER PURIFICATION PLANTS MANAGED BY UMBRA ACQUE SPA (2009)

parameter	average (mg/l)
BOD <sub>5</sub>	16.8
COD	54.2
TSS	14.7
nitrogen NH <sub>4</sub> <sup>+</sup>	7.4
phosphorous	2.2

### AVERAGE OUTGOING PARAMETERS FROM WATER PURIFICATION PLANTS WITH CAPACITY > 40,000 EQUIVALENT INHABITANTS (2009)

	Genna plant (Perugia)	Città di Castello plant (Canonica)	S.Sisto plant (Perugia)	Bastia plant (Costano)
parameter	average (mg/l)			
BOD <sub>5</sub>	8.4	11.1	10.1	10.0
COD	24.7	37.8	31.5	30.3
TSS	9.8	10.3	9.5	11.6
nitrogen NH <sub>4</sub> <sup>+</sup>	1.6	2.2	2.2	1.3
phosphorous	2.3	2.2	3.6	2.5

NB: plants have capacity between 40,000 and 90,000 equivalent inhabitants

### AVERAGE OUTGOING PARAMETERS FROM WATER PURIFICATION PLANTS WITH CAPACITY > 20,000 EQUIVALENT INHABITANTS (2009)

	Ponte S. Giovanni plant (Perugia)	Castiglione del Lago plant (Madonna del Soccorso)	Magione plant (Montesperello)	Umbertide plant (Plan d'Assino)	Gubbio plant (loc. S. Erasmo)	Perugia plant (Ponte Valle Ceppi)
parameter	average (mg/l)					
BOD <sub>5</sub>	10.6	11.3	10.5	9.8	9.5	8.7
COD	30.0	31.0	30.9	35.1	35.7	25
TSS	11.2	12.8	10.4	8.4	12.6	10.1
nitrogen NH <sub>4</sub> <sup>+</sup>	1.1	1.2	1.4	2.1	1.5	2.0
phosphorous	3.1	1.2	2.1	2.5	2.1	2.8

NB: plants have capacity between 20,000 and 30,000 equivalent inhabitants.

## Environmental Expenditures

"Environmental Expenditures" intended in the strict sense established in Recommendation 2001/453/EC<sup>19</sup> are not calculated.

## Fines Concerning the Environment

Procedures are currently underway in relation to the limits established by Italian Legislative Decree no. 152/2006 for exceeding the overall limits for phosphorous and nitrogen at the same time at the Taverne di Corciano Water Purification Plant (EI – 12,000), with a possible fine of between 3,000 and 30,000 euro.

<sup>19</sup> According to European Commission Recommendation 2001/453/EC, the "environmental expenditures" of a Company are costs involved in «actions taken to prevent, reduce or repair damage to the environment deriving from its operations. These costs also include waste disposal and training measures, protecting the land and surface and underground water, protecting the air and the climate from pollution, reducing sound pollution to safeguard biodiversity and the landscape». Costs that may positively affect the environment but whose main objective is to satisfy other needs, such as increased profitability, health and safety in the workplace, product safety or production efficiency are excluded.

**WATER SERVICES OVERSEAS**

country	Perù	Honduras	Dominican Republic	Colombia
<b>company</b>	<b>Consorcio Agua Azul SA</b>	<b>Aguas de San Pedro SA</b>	<b>Acea Dominicana SA, Consorcio Acea-Acea Dominicana</b>	<b>Aguazul Bogotá SA ESP</b>
<b>project</b>	building and managing a system for procuring drinking water using the Chillón River and underlying water tables	management of Integrated Water Service for the city of San Pedro de Sula	commercial management of water service	commercial management of water service; running and carrying out maintenance on distribution network
<b>area</b>	area north of Lima (Cono Norte)	San Pedro Sula	areas north and east of Santo Domingo	Bogotá, areas 2 and 5
<b>inhabitants served</b>	750,000	500,000	1,500,000	2,500,000
<b>customer</b>	Sedapal (Lima drinking water and sewage service, state-owned)	Municipal Authority	Corporación del Acueducto y Alcantarillado de Santo Domingo (CAASD)	Empresa de Acueducto y Alcantarillado de Bogotá (EAAB)
<b>source of funding</b>	own capital and issue of bond securities on Peruvian market	own capital and loans from commercial banks	own capital and funding from Acea SpA	own capital and bank loan
<b>date of project commencement – end of contract</b>	07/04/2000 18/06/2027	01/02/2001 01/02/2031	01/10/2003 01/10/2016	02/01/2003 31/12/2012 (two contracts)
<b>partners as at 31/12/2009</b>	Acea SpA 25.5% Impregilo International Infrastructure N.V. 25.5% AC Capitales SAFI S.A 29% Inversiones Liquidas S.A.C 20%	Acea SpA 31% Enia SpA 30% Astaldi SpA 15% Ghella SpA 15% Terra SA 5% C.Lotti & Associati 4%	Acea SpA 100%	Acea SpA 51% Gruppo Emdepa 29% V. Cavalli 10% L.E. Belalcazar 10%
<b>no. employees (as at 31/12/2009)</b>	31	386	146	535
<b>2009 business volume (in thousands of euro)</b>	8,981	14,220	2,375	9,753

company	2009 projects, progress in works and management	2009 important socio-environmental aspects
<p><b>Consortio Agua Azul SA (Perù)</b></p>	<p>According to BOT (<i>Build, Operate and Transfer</i>), Consortio Agua Azul built the structures required to provide drinking water in the area north of Lima using surface and underground water from the River Chillón. This Consortio is responsible for such infrastructures until 2027, when they will be transferred to the State, and produces drinking water that is subsequently sold to the local water company. In 2009, 49 Mm<sup>3</sup> of drinking water was produced - 14% more than in 2008. This increase is due to the extensive rainfall in 2009 and consequent availability of river water, including in generally dry months. This led to a decrease in withdrawal from wells and therefore in electricity consumption (-30% with respect to the previous year) and increased use of reagents (+60% aluminium sulphate and +35% of chlorine).</p>	<p>Consortio Agua Azul continued initiatives to support state organizations in 2009 (Policia Nacional, schools, local Ministry of Health among others), non-profit foundations (such as associations to support children, to help drug addicts, etc.), local farmers' associations, with which it shares use of water from the Valle del Chillón. The activities to support the community included distribution of materials in elementary schools in the area while raising awareness with regard to the environment, especially in relation to correct use of water and recycling and reusing materials. The day-sacks given to children were made from recycled plastic.</p> <p>This Consortio also hosted 9 university students or new graduates (2 technical and laboratory students and 7 agricultural students), giving them the chance to put into practice and expand what they learned.</p> <p>With regard to the in-house stakeholders, the number of employees remained stable with respect to the year before, with 31 human resources as at 31.12.2009. The incidence of women employees with respect to the overall workforce remained stable at 16%, while this increased to 25% when taking into account solely executives and middle managers.</p> <p>The social initiatives undertaken on behalf of employees involved integrating and improving the spirit of belonging to the company, such as recreational activities during religious and civil holidays such as Christmas, 1 May and the anniversary of Peru's independence.</p> <p>With regard to human resource management, Consortio Agua Azul operates in compliance with local legislation. Attention is paid to developing resources through professional updates. Over the year, 2,352 hours of training on various topics was provided, including the environment and safety in the workplace, which are the basis of the Integrated Quality, Environment and Safety Management System.</p> <p>The Safety in the Workplace Management System (by way of implementing Supreme Decree DS 009-2005-TR) is still under implementation, whereas Consortio Agua Azul already has an <b>Integrated Quality and Environment System certified according to Standards UNI EN ISO 9001 and 14001</b>. The ISO 9001 Quality System was updated to the 2008 version.</p>

company	2009 projects, progress in works and management	2009 important socio-environmental aspects
<b>Aguas de San Pedro SA (Honduras)</b>	Aguas de San Pedro (ASP) has a thirty-year agreement to manage the integrated water system in the city of San Pedro de Sula. The company has commenced a programme to extend and improve the water service to cover the whole city with an ongoing water service and to install systems to collect and treat sewage effluents.	<p>Aguas de San Pedro has continued its commitment to safeguarding the environment and supporting the community. Particular attention is paid to preserving Natural Reserve El Merendon, which was declared an area to protect for withdrawal of water for San Pedro Sula. At the beginning of 2009, a project to safeguard the Reserve was presented to the Institute for Forestry Preservation and Development (ICF) for approval and implementation. The operations carried out in the El Merendon Reserve also include:</p> <ul style="list-style-type: none"> <li>- the "Merendon" Reforestation Project, which commenced in 2004 and continues to progress and involved 190 hectares of the area on the riverbed of River Manchaguala as at 31.12.2009, with 239,412 trees for cutting and 76,072 fruit trees planted. On World Earth Day, an agreement for cooperation to protect cocoa plantations along the Rivers Manchaguala, Frio and El Palmar was signed. This operation involved 23 hectares of land and 35 APROCAFIM producers (Association of Merendon Fine Cocoa Producers);</li> <li>- improvement of the sewage system in two rural schools within the Reserve;</li> <li>- implementation of campaigns to protect against forest fires in 11,500 hectares of woodlands;</li> <li>- replacement of another 51 traditional ovens (used by families) with more efficient and eco-compatible ovens, thereby ensuring considerable savings in firewood (up to 70%) and safer-to-use products.</li> </ul> <p>With regard to human resources, Aguas de San Pedro (ASP) had 386 employees as at 31.12.2009 - 16% of which were women -, which was basically stable with respect to 2008. Around 49% of Aguas de San Pedro employees are under 40 and 46% between the ages of 40 and 60.</p> <p>The initiatives implemented to improve the motivation of employees included the following:</p> <ul style="list-style-type: none"> <li>- assigning study grants to workers with low wages and contributing towards buying books and school materials;</li> <li>- organization of training courses on technical and administrative matters, amounting to 2,756 hours over the year;</li> <li>- implementing health campaigns and vaccination campaigns (in 2009 against typhoid and flu) for employees and their families. Each employee has medical insurance - which also covers their families - including a convention with a local clinic, through which ASP undertakes to pay some of the related health costs;</li> <li>- organization of recreational events for employees and their families on holidays to encourage integration and in-house cooperation.</li> </ul>



company	2009 projects, progress in works and management	2009 important socio-environmental aspects
<b>Acea Dominicana SA</b> <b>(Dominican Republic)</b>	<p>Acea Dominicana is responsible for commercial management of water service customers in the north and east of Santo Domingo on behalf of CAASD, a water company operating in this capital city. Operations include billing, customer relations and installing meters. The agreement was changed with respect to the original agreement to extend duration and include additional matters such as planning and designing new meters, as well as drawing up estimates and directing works in relation to new customers.</p> <p>This project is one of the initial experiments of private participation in Dominican Republic water services.</p>	<p>The campaign to raise awareness of Dominican people promoted by Acea Dominicana to make people aware of the value of water and recognize the importance of paying for this service to ensure it can be managed and improved. A new potable water treatment was completed and became operational at the beginning of 2009. This ensured an increase in the amount of time that water is available, although with lower pressure due to the considerable losses in the distribution network.</p> <p>The human resources employed as at 31.12.2009 amounted to 146, with a high number of women employees - 42% and stable with respect to 2008 and with the same incidence in executives and middle managers.</p> <p>With regard to human resource management, Acea Dominicana complies with that established in the Dominican Employment and Social Law and adopts corporate policies to safeguard the rights and dignity of employees, e.g. all employees have private health insurance and a fund is set aside to ensure severance pay, although both are optional in the Dominican Republic.</p> <p>The company has also funded operations by the Atabey Foundation to safeguard the environment.</p>
<b>Aguazul Bogotá SA ESP</b> <b>(Colombia)</b>	<p>Aguazul Bogotá is responsible for managing customers and the distribution networks in two areas in Bogotá on behalf of EAAB, the water company operating in Colombia's capital city. The work involved includes managing the entire billing cycle, customer care – including a call center – running and carrying out ordinary and extraordinary maintenance on the water network, emergency repairs, identifying commercial losses and quality control. The agreement with EAAB involves reaching service standards assessed via management indexes leading to bonuses or penalties with respect to base payment.</p> <p>The new agreement became effective as of 1 January 2008, which has the same structure as the former agreement but is stricter in terms of targets.</p> <p>Results from the second year of management were satisfactory and the indexes exceeded the established targets, which were more even more demanding than the previous year.</p> <p>The number of complaints in 2009 remained below 0.4% with respect to the number of bills issued, while the average time to respond to complaints was below a day and a half. The times to repair faults also reduced considerably with respect to previous years, remaining at below 2.5 and 5 hours respectively for faults respectively below and above 3".</p>	<p>Operations to bring the company closer to local communities – especially the more unfortunate ones – continued. Interaction between the general public and public service companies led to explaining the main elements involved in the water service, thereby helping to solve problems and doubts and offering support in reading meters and checking consumption, which cause considerable resistance in customers, and making it easier to receive payment through personalized payment schemes.</p> <p>Students were once again hosted in 2009, giving the possibility to gain work experience in the company to 370 students (74 of which university students) as part of agreements with the Ministry for Social Protection National Learning Service (SENA) and other Institutes of Higher Education. With regard to human resource management, local unskilled labour was also used in 2009 to support development of more unfortunate areas. There were 535 employees as at 31.12.2009, with women employees counting for 34% of the workforce - a slight increase with respect to 2008 and rising to 42% with respect to executives and middle managers. 70% of Aguazul employees are under 35 years of age. By way of capitalizing on human resources, in-house training courses were carried out and other specialization courses held by outside parties were wholly or partially funded. The professional development policies adopted by Aguazul to motivate employees include the priority afforded to employees to take over vacant posts with more responsibility. Sport and recreation events were organized to create opportunities for aggregation and sharing.</p> <p>Aguazul Bogota operates according to Standard <b>ISO 9001</b>; Quality System certification was renewed in January 2009. A Health and Safety in the Workplace and Environmental Protection Management System also operates, which was verified by the Colombian Safety Council and thereby led to registration with the Unique Register for Contractors (RUC) with a high score. Campaigns to raise awareness and provide updated information concerning the main health and safety-related problems continued in accordance with that established in Guidelines from the Colombian Safety Council. The risks in the workplace were updated to identify the operations more exposed to risks and include elements to reduce the risk of accidents in the workplace in operational procedures, thereby raising the awareness of employees.</p>

**Acea**  
**2009 Sustainability Report**

*compiled by*  
Rapporti Istituzionali  
tel +39 06 57996440

*Co-ordination  
of editorial work*  
Irene Mercadante

*work team*  
Debora Sabatini  
Davide de Caro  
Silvia Fortuna

*edited by*  
Relazioni Esterne e Comunicazione  
Tiziana Flaviani

*graphic*  
EDB&RDB

*photographs*  
Fabio Anghelone - Archivio Acea

*Italian edition printed in october 2009 by*  
Unionprinting

on Fedrigoni Symbol Freelif  
environmental-friendly recycled 2-sided coated  
paper



Acea SpA piazzale Ostiense, 2 - 00154 Rome  
tel +39 06 57991  
fax +39 06 57994146  
[www.acea.it](http://www.acea.it)  
[www.ambientandoci.it](http://www.ambientandoci.it)  
[info@acea.it](mailto:info@acea.it)

