

AGUA

YOUR PARTNER
IN THE
WATER CYCLE



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ACCIONA: we do invest in our planet

ACCIONA is a global company with a business model based on sustainability. Its aim is to respond to society's main needs through the provision of renewable energy, infrastructure, water and services. With a presence in more than 40 countries, it carries out its business activities based on the commitment to contribute to the economic and social development of the communities in which it operates.

The sustainability strategy at ACCIONA is executed through the Sustainability Master Plan, a road map which incorporates all of the company's initiatives in this field. ACCIONA's goal is to lead the transition towards a low-carbon economy, which is why it equips all its projects with quality criteria and innovation processes intended to optimise the efficient use of resources and respect for the environment. The company has been carbon neutral since 2016, offsetting all CO₂ emissions generated which it could not reduce.

ACCIONA features in selective sustainability indices such as the FTSE4Good, the CDP Climate & Water A List 2017, and the STOXX Global Climate Change Leaders Index, among others.

SUSTAINABILITY AND WELFARE

KEYS TO GENERATING H₂O IN ACCIONA AGUA

ACCIONA Agua is the ACCIONA business division responsible for managing the complete water cycle to serve end users in areas from water collection and water purification—including desalination—to wastewater treatment and return to the environment.

Thanks to innovation in the design, implementation and operation of water treatment, purification and desalination plants, the company is a leader in global solutions which contribute to sustainable development in the water industry.

ACCIONA Agua's strategy is to maintain its presence in the complete water cycle—construction, operation and services—both in Spain and in international markets.

Today, ACCIONA Agua serves the supply needs of a total population of 100 million people in more than 30 countries across the world. In 2018, it had a portfolio which totalled 3,779 million euros and a turnover of 639 million euros. Its main business activities are:

DESIGN AND CONSTRUCTION OF WATER TREATMENT PLANTS

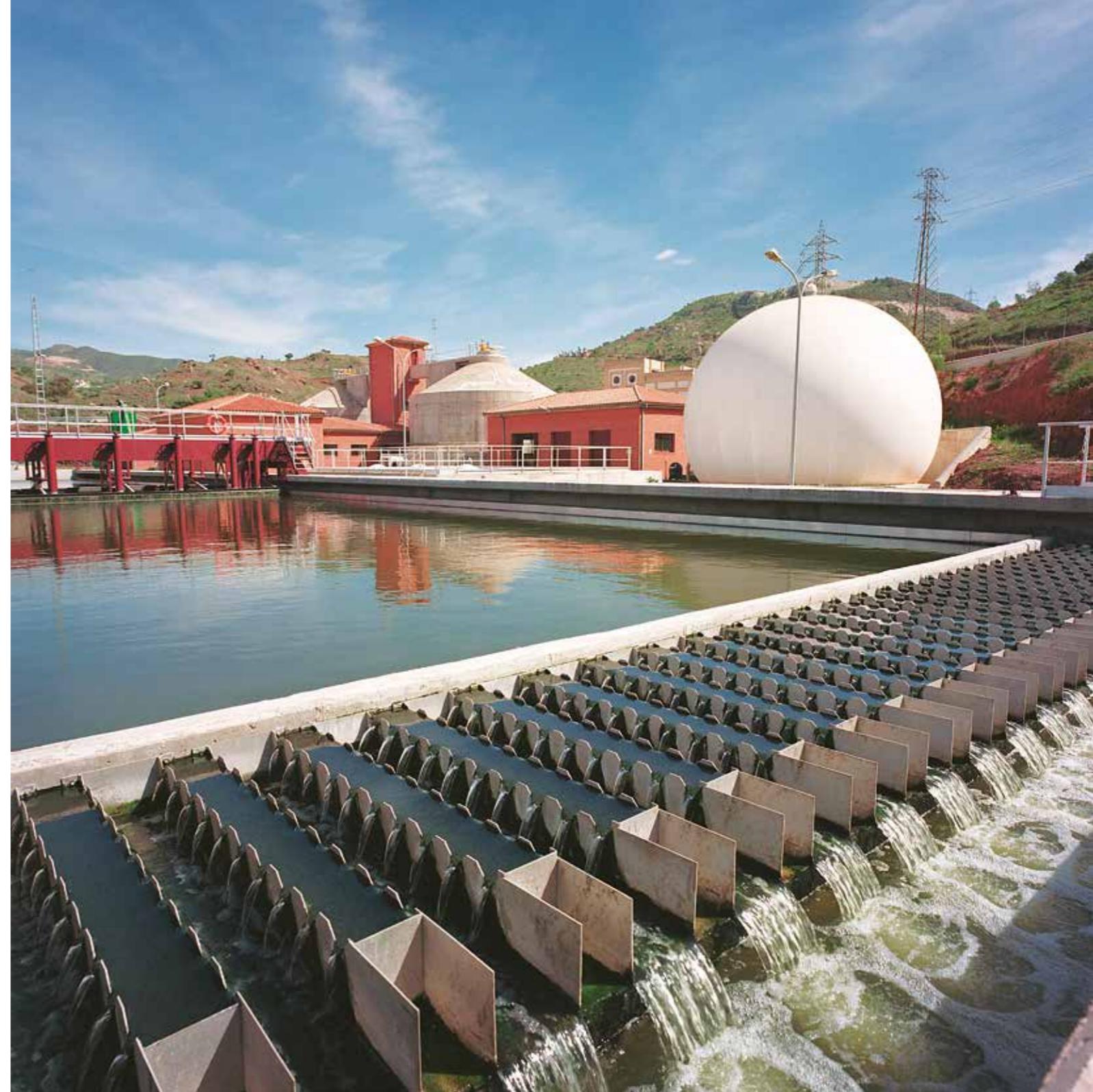
- Sea water and brackish water desalination plants.
- Drinking water treatment plants.
- Wastewater treatment plants.
- Tertiary treatments and reuse.
- Treatment of waste from processing plants.

MANAGING THE COMPLETE WATER CYCLE SERVICES

- Water Infrastructure Concessions.
- Operation and Maintenance Contracts.

The company has branches on five continents and a significant presence in several markets, including Latin America, Middle East, North Africa, Spain, Italy, Portugal and Australia. The company's professionals are also highly experienced and knowledgeable in all stages of the water life cycle:

- Research and Development.
- Design.
- Detail Engineering.
- Construction.
- Commissioning.
- Operation and Maintenance (O&M).



ACCIONA AGUA, CHOSEN AS
THE "2018 BEST DESALINATION
COMPANY" BY THE MAGAZINE GWI
(GLOBAL WATER INTELLIGENCE)

TECHNOLOGICAL INNOVATION

Protecting the environment has become a priority for ACCIONA Agua in every one of its projects. The aim is to minimise the consumption of resources while reducing the amount of waste.

The Company's strategy is based on two main lines of action—sustainability and social welfare—geared to promoting wealth, environmental improvement and social progress.

ACCIONA Agua is certified to the ISO 14001 environmental management standard, the OHSAS 18001 occupational health and safety standard, the ISO 50001 energy management standard and the ISO 9001 quality management in all its operation and maintenance activity, and in the management of drinking water supply services.

ACCIONA Agua focuses on:

- Optimising the use of natural resources.

- Minimising the production of polluting waste.
- Achieving environmental management standards suitable for wastewater, waste and water treatment by-products.
- Organising training for personnel and awareness-raising campaigns.
- Carrying out internal audits in process improvements.

The R&D Department's support in all phases of the water cycle sets ACCIONA Agua apart from its competitors. In desalination, the company works with state-of-the-art membrane models and new energy recovery devices. In addition, this department is continuously researching new water treatment techniques. The R&D Department's support provides fundamental technical support and is responsible for the first steps in designing large-scale desalination plants. ACCIONA Agua cooperates with universities and public research centres in national and international

research projects, positioning the company at the forefront of technology and as the leader in the sector.

ACCIONA Agua has developed various R&D projects which have been selected by the European Commission to form part of the LIFE+ programme, such as OFREA, aimed at improving the quality of treated water to foster reuse in coastal areas, implemented together with ESAMUR. ACCIONA Agua is also partnering with this agency on the RENEWAT project. This project aims to adapt several sources of renewable energy—such as solar panels and small wind farms—to a wastewater treatment plant and integrate them with a smart management system to coordinate water treatment processes with available energy. Another LIFE+ project coordinated by the R&D centre is BRAINYMEM, which focuses on reducing the energy dependence of the wastewater treatment plants



by 20% to 50% through advanced biological process control systems.

The research carried out has resulted in more than 19 patents related to desalination technologies, membrane bioreactors and reuse, including:

- ELFA (Treatment).
- SEPAFLOC (Desalination / Pre-treatment).
- BIOFILPAS (Drinking water).
- MEMPACK (Wastewater).
- ENERGY OPTIMISATION BLIND SPLIT (Desalination).
- ACTIDAFF/ULTRAFLOT (Desalination).

ACCIONA Agua has a highly qualified team with more than 30 years' experience in applying R&D to water treatment and the use of membranes, from the most basic laboratory techniques to industrial-scale studies in pilot plants.



Nereda® is an advanced wastewater treatment technology that purifies water using the unique features of aerobic granular biomass. Unlike conventional processes, the purifying bacteria is concentrated naturally in compact granules, with excellent settling properties, as a result of the large variety of biological processes that simultaneously take place in the granular biomass.

Nereda® is capable of meeting stringent effluent quality requirements. Extensive biological phosphorus and nitrogen reduction is an intrinsic attribute of this technology, resulting in chemical-free operation.

The technology is also highly recommended for performance and capacity upgrades of existing sequential biological reactor (SBR) facilities.

FARO-OLHÃO WASTEWATER TREATMENT PLANT Algarve, Portugal

The Faro-Olhão WWTP is the first plant in which ACCIONA Agua uses Nereda® technology.

Thanks to this new technology, it is possible to reduce the plant's carbon footprint by 50%, and there is an energy saving of between 20% and 30% in the energy consumed in the water treatment process. The plant also has solar panels that, with an installed capacity of 50 kW, produce energy for use by auxiliary services.

Faro WWTP,
Algarve, Portugal



AUTOMATION AND CONTROL

In response to new technological needs posed by plant operation and design, ACCIONA Agua has created a department for automation and control projects.

Water cycle process automation is what sets the company apart from competitors, and is also one of the company's know-how repositories.

Automation and control systems are fundamental in ACCIONA Agua projects. The automation and control teams are in charge of each

process and installation, requiring specialised maintenance, updates and continuous relations to optimise the plants and processes.

They work horizontally with many departments in the company in order to support specialist services or to provide added value to proposals in order to help the competitiveness and optimisation of designs.

In ACCIONA Agua, external tenders are studied to be integrators of

automation and remote control solutions. This creates a business line which is compatible with the company's business activities and starts to position it within the industry sector.

Desalination Plant
In Adelaide, Australia



THE COMPLETE WATER CYCLE

At ACCIONA Agua, we assume client satisfaction as the key aspect of our corporate management. Providing services to water users, and an effective solution to their problems, is an essential management tool in our business.

This is why we always stay close to our clients, both in the analysis of

problems to be resolved and in the detailed design of the best solution, the development, the execution, operation and maintenance, as we are certain that collaboration is essential if we wish to fully meet their needs.

The complete water cycle begins by collecting water from nature. This

is followed by water purification or desalination, transport, and supply to users, and ends with wastewater treatment and its return to nature in the same condition it was collected.

Jávea Desalination Plant,
Alicante, Spain



DESIGN AND CONSTRUCTION OF WASTEWATER TREATMENT PLANTS

ACCIONA Agua is a water treatment industry leader which designs, builds and operates drinking water treatment plants, wastewater treatment plants, tertiary treatments for water reuse

and reverse osmosis desalination plants. ACCIONA Agua is firmly committed to innovation and the application of state-of-the-art technologies, as well as to quality in all its activities.

Its Design and Construction (D&C) activities are deployed in two business models:

- Municipal.
- Industrial.

Ras Abu Fontas A3
Desalination Plant, Qatar



From the beginning, ACCIONA has applied innovative solutions to the numerous problems posed by drinking water treatment. ACCIONA Agua built the first facilities in Spain with chlorine preoxidation processes, and also pioneered the use of intermediate ozonation, between decanting and filtration.

DRINKING WATER TREATMENT PLANTS FOR MUNICIPAL USE

In total, ACCIONA Agua has built more than 120 drinking water treatment plants with a total capacity of 8.5 million m³/day to supply more than 31 million people.

The Alcantarilha drinking water treatment plant, built by ACCIONA Agua and located in the Algarve region of southern Portugal, is one of the largest in the Iberian Peninsula, with a capacity of 259,200 m³/day.

ACCIONA Agua is currently building drinking water treatment plants in the Dominican Republic, Morocco, Philippines, Central America, Canada and Africa.



Sollano DWTP, Biscay, Spain

CONSTRUCTION: DRINKING WATER TREATMENT PLANTS			
PLANT	COUNTRY	CAPACITY (m ³ /day)	POPULATION
Valmayor Extension (Madrid)	Spain	1,036,800	2,960,000
Torrelaguna (Madrid)	Spain	518,400	1,728,000
New Cairo (Cairo)	Egypt	500,000	3,000,000
Oum Azza (Rabat)	Morocco	432,000	2,000,000
Pu-Dong, Shanghai	China	400,032	1,800,000
El Bodonal Extension (Tres Cantos, Madrid)	Spain	345,600	100,000
Santillana (Madrid)	Spain	345,600	100,000
Canal Bajo (Madrid)	Spain	345,600	100,000
Alcantarilha	Portugal	259,200	1,050,000
Esmeraldas	Ecuador	276,000	200,000
José Rodríguez (Arrajan)	Panama	227,000	283,000
Amerya	Egypt	200,000	2,000,000
Casablanca (Zaragoza)	Spain	172,800	690,000
Mundaring (Perth)	Australia	165,000	100,000
Putatan 2 (Muntinlupa)	The Philippines	150,000	1,000,000
Zaragoza	Spain	144,288	912,072
Sollano DWTP (Zalla - Biscay)	Spain	129,600	450,000
El Cuartillo (Jerez de la Frontera - Cádiz)	Spain	114,912	400,000
Sabanitas II (Colón)	Panama	114,000	150,000
Marbella (Málaga)	Spain	110,592	124,333
Mostorod - Cairo	Egypt	110,000	1,200,000
Reggio Calabria	Italy	108,000	360,000
Rod el Farag, Cairo	Egypt	100,224	900,000
Campotéjar (Murcia)	Spain	100,000	1,000,000
Helwan North I	Egypt	100,000	1,000,000
Helwan North II	Egypt	100,000	1,000,000
El Perelló (Tarragona)	Spain	95,904	383,616
Peravia	Dominican Rep.	86,400	138,000
Albacete (Albacete)	Spain	86,400	345,600
Carambolo (Seville)	Spain	76,032	253,440
Saint John (New Brunswick)	Canada	75,000	70,000
Akashat	Iraq	71,712	
Pedramaiore	Italy	64,800	259,200
Arenillas (Cádiz)	Spain	64,800	259,200
92 additional plants		1,228,284	4,243,814
TOTAL		8,559,510	31,027,275

HIGHLIGHTED PROJECTS

SAINT JOHN DRINKING WATER TREATMENT PLANTS

Saint John, Canada

- **Capacity:** 75,000 m³/day.
- **Inhabitants:** 70,000.
- **Client:** City of Saint John.

The project involves the renewal of part of the water distribution system in the city (the largest city in the province of New Brunswick and the oldest in the country) and consists of a drinking water treatment plant with a capacity of 75 million litres per day and a storage capacity of 33 million litres.

OUM AZZA DRINKING WATER TREATMENT PLANT

Rabat-Casablanca Coastal Region Morocco

- **Capacity:** 432,000 m³/day.
- **Client:** Moroccan National Electricity and Drinking Water Office.

The project is part of the drinking water supply improvement plan for the Rabat-Casablanca coastal area. The plant is located in the municipality of Oum Azza, about 30 km from Rabat. It will reinforce drinking water supply in one of the areas with fastest population growth in the country, which already has more than 5 million inhabitants.

PUTATAN 2 DRINKING WATER TREATMENT PLANT

Muntinlupa, Manila

- **Capacity:** 150,000 m³/day.
- **Client:** Maynilad Water Services Inc. (MWSI).
- **Type of contract:** design, construction and operation.

The plant is located in Muntinlupa, in the south of the metropolitan area of Manila, next to an existing water treatment plant (Putatan 1). The new plant will provide drinking water to almost 6 million people. The plant will have a capacity of 100,000 m³ per day, expandable to 150,000 m³ per day.

One of the main characteristics of the new plant is the advanced treatment of raw water from Laguna de Bay, the biggest lake in the Philippines and the second-biggest inland freshwater lake in South-East Asia, to deliver clean drinking water with a very low carbon footprint. The treatment plan for the new plant includes a number of advanced technical processes to ensure clean potable water. These techniques include Dissolved Air Flotation (DAF), Biological Aerated Filter (BAF), Ultrafiltration (UF), Reverse Osmosis (RO) and disinfection in different stages through the oxidation of particular compounds.

MUNDARING DRINKING WATER TREATMENT PLANT

Perth, Australia

- **Capacity:** 165,000 m³/day, expandable to 240,000 m³/day.
- **Client:** Water Corporation.
- **Type of contract:** public-private funded project (PPP).

ACCIONA Agua forms part of Helena Water Consortium together with Trility. This consortium has built, designed and is operating the plant, under a 35-year concession.

The plant supplies the Goldfield and Agricultural Water System (G&AWS), including Kalgoorlie. The plant was recognised as Best Contract of the year by GWI magazine in 2011.



Mundaring DWTP, Perth, Australia

ACCIONA Agua has been a pioneer in the development of reverse osmosis (RO) desalination of both seawater and brackish water. The R&D department plays a fundamental role in each stage of the project: plant design, construction, commissioning, operation and maintenance



Port Stanvac desalination plant, Adelaide, Australia

DESALINATION PLANTS FOR MUNICIPAL AND INDUSTRIAL USE

ACCIONA Agua has more than 80 reference plants in this sector, with an installed capacity of 4.1 million m³/day, supplying more than 22 million people.

Many of the technological innovations that are included in today's designs of this type of plants have been developed and implemented by ACCIONA Agua.

CONSTRUCTION AND O&M: DESALINATION PLANTS					
PLANTS	COUNTRY	CAPACITY (m ³ /day)	POPULATION	TYPE OF CONTRACT	
				EPC	BOO/BOOT
Al Khobar 2	Saudi Arabia	600,000	2,000,000	■	
Shuqaiq 3	Saudi Arabia	450,000	2,000,000	■	■
Port Stanvac, Adelaide	Australia	300,000	2,000,000	■	
Umm Al Houl, Doha	Qatar	284,000	1,800,000	■	
Torre Vieja, Alicante	Spain	240,000	1,600,000	■	
Al Khobar 1	Saudi Arabia	210,000	350,000	■	
Jebel Ali	UAE	182,000	700,000	■	
Ras Abus Fontas A3, Al Wakrah	Qatar	165,000	1,000,000	■	
Beckton phase 1 and 2 - London	United Kingdom	150,000	1,000,000	■	
Putatan II	The Philippines	150,000	1,000,000	■	
Fujairah 1 Extension	UAE	137,000	900,000	■	
Fouka, Algiers	Algeria	120,000	800,000	■	■
Carboneras, Almería	Spain	120,000	800,000	■	
Tampa Bay, Florida	USA	108,831	733,000	■	
Al Jubail	Saudi Arabia	100,000	666,000	■	
Paraguaná	Venezuela	75,000	500,000	■	
Cartagena Canal phase I, Murcia	Spain	65,000	433,000	■	■
Cartagena Canal phase II, Murcia	Spain	65,000	433,000	■	
Alicante Canal, Alicante	Spain	65,000	380,000	■	■
Copiapó, Atacama	Chile	51,840	340,000	■	
Almería Capital	Spain	50,000	333,000	■	■
Las Palmas III, Las Palmas	Spain	42,750	285,000	■	
Southeast of Gran Canaria	Spain	33,000	220,000	■	
Ibiza and San Antonio	Spain	29,800	200,000	■	
Jávea, Alicante	Spain	26,000	185,000	■	■
Reggio Calabria	Italy	25,000	166,000	■	
Lanzarote V	Spain	24,000	160,000	■	
Santa Cruz de Tenerife	Spain	20,000	133,000	■	
Campo de Dalías, Almería	Spain	20,000	130,000	■	
Ceuta, Ceuta	Spain	16,000	105,000	■	
Almuñécar, Granada	Spain	16,000	105,000	■	
Denia, Alicante	Spain	16,000	105,000	■	
Teide phase II, Las Palmas	Spain	16,000	105,000	■	
Martos, Jaén	Spain	15,552	103,000	■	
Arucas and Moya, Las Palmas	Spain	15,000	100,000	■	■
Bocabarranco and Roque Prieto, Las Palmas	Spain	15,000	100,000		
Sarroch, Cagliari	Italy	12,000		■	
Cape Verde	Cape Verde	20,000	100,000	■	
Ciudadela, Minorca	Spain	10,000	66,000	■	■
Jacarilla, Alicante	Spain	9,000	60,000	■	
Damm Brewery, Barcelona	Spain	7,200	55,000	■	
Lampedusa and Linosa	Italy	6,576	6,600		
Praia	Cape Verde	5,000	40,000	■	
Sataria	Italy	3,014	3,849		
Talara	Peru	2,200	25,000	■	
37 additional smaller plants		51,444	333,000		
TOTAL CAPACITY		4.1 M	22 M	3.9 M	409,000

■ EPC Engineering, Procurement and Construction
 ■ BOO / BOOT Build Own Operate / Build. Own. Operate and Transfer

HIGHLIGHTED PROJECTS IN MUNICIPAL USE

PORT STANVAC DESALINATION PLANT Adelaide, Australia

- **Capacity:** 300,000 m³/day.
- **Type of Contract:** design, construction, operation and maintenance (for 20 years).
- **Client:** SA Water.

ACCIONA Agua, together with the Australian company Trility, as members of the AdelaideAqua project, have built the Port Stanvac plant (Adelaide, state of South Australia). The plant meets a quarter of the annual water requirements of the city of Adelaide, with a population of more than one million inhabitants.

TAMPA DESALINATION PLANT Tampa, Florida, USA

- **Capacity:** 108,831 m³/day.
- **Type of Contract:** design, construction, operation and maintenance (for 18 years).
- **Client:** Tampa Bay Water.

ACCIONA Agua, together with the North American company American Water, has rebuilt the desalination plant in Tampa Bay (Florida). It is the largest facility of this type in the United States, built to cover 10% of the drinking water demand in the region. From 2005 to 2008, both companies rebuilt the desalination unit so that it would have a fully automated operation. Older designs were improved upon and processes and systems were corrected and optimised. In 2008, it was chosen Best Desalination Plant of the Year by the prestigious industry magazine, Global Water Intelligence.

TORREVIEJA DESALINATION PLANT Torrevieja, Alicante, Spain

- **Capacity:** 240,000 m³/day.
- **Client:** Spanish Ministry of the Environment.

The aim of the project is to install a plant to cover an irrigation deficit in the Tajo-Segura transfer irrigation area and 60 hm³/year and a supply shortage in the Vega Baja Oeste area of 20 hm³/year. The Torrevieja complex is the largest plant in Europe.

AL KHOBAR 2 DESALINATION PLANT Al Khobar, Saudi Arabia

- **Capacity:** 600,000 m³/day.
- **Type of contract:** EPC.
- **Client:** Saline Water Conversion Corporation (SWCC).

The installation incorporates reverse osmosis technology and will have a capacity of just over 600,000 m³ per day – which will make it one of the largest in the country–, to serve a population of 3 million inhabitants.

Beckton Desalination Plant,
London, United Kingdom



**FUJAIRAH
DESALINATION PLANT**

Fujairah, United Arab Emirates

- **Capacity:** 137,000 m³/day.
- **Type of contract:** design, construction and operation during 7 years.
- **Client:** Emirates Sembcorp Water & Power Company.

ACCIONA Agua, in consortium with ACCIONA Infrastructure, was awarded the design, construction, commissioning and operation (for seven years) for the enlargement of the Fujairah desalination plant.

The increase to a 137,000 m³/day additional capacity makes it possible to serve a population of 600,000 inhabitants.

**AL JUBAIL
DESALINATION PLANT**

Jubail, Saudi Arabia

- **Capacity:** 100,000 m³/day.
- **Type of contract:** design, construction and commissioning.
- **Client:** Marafiq Power & Water Utility Company for Jubail & Yanbu.

The plant produces drinking water from seawater using reverse osmosis technology and supply both the city and its associated industrial complex located in the Eastern Province on the Saudi coast of the Persian Gulf. The plant, with a capacity of 100,000 m³/day, doubles the combined capacity of all five desalination plants in existence today.

**RAS ABU FONTAS A3
DESALINATION PLANT**

Al Wakra, Qatar

- **Capacity:** 164,000 m³/day.
- **Type of contract:** design, construction and operation during 10 years.
- **Client:** Qatar General Electricity & Water Corporation (KAHRAMAA).

The plant is a real milestone in the world of desalination, as it is the first time that reverse osmosis

technology will be used on a large scale in Qatar. To date, only evaporation technology was used to desalinate water.

**UMM AL HOUL
DESALINATION PLANT**

Doha, Qatar

- **Capacity:** 284,000 m³/day.
- **Type of contract:** design, construction and operation during 10 years.

Umm Al Houll produces 284,000 m³/day as part of a large-scale Independent Water & Power Project (IWPP) that will produce around 2,500 MW of electric power and will reach 614,000 m³/day after the start-up of the new facility. The contract covers the design, construction and later operation and maintenance of the facility.

The plant is a real milestone in the world of desalination, as it is the first time that reverse osmosis technology will be used on a large scale in Qatar. To date, only evaporation technology was used to desalinate water.



Tampa desalination plant, USA

HIGHLIGHTED PROJECTS IN INDUSTRIAL USE

COPIAPÓ DESALINATION PLANT Copiapó, Chile

- **Capacity:** 51,840 m³/day.
- **Type of contract:** design, construction, commissioning and operation.
- **Client:** Grupo Cap Minería.

The plant was built in Cerro Negro Norte, in the Copiapó valley, Atacama, III Region, Chile. This project aims to meet water requirements for the region's mining operations. It uses reverse osmosis technology and is subject to stringent environmental and quality standards. The commissioning of a desalination plant in the area is a significant water solution, as the mineral-rich Atacama desert is considered the driest in the world.

PARAGUANÁ REFINERY DESALINATION PLANT Paraguaná, Venezuela

- **Capacity:** 75,000 m³/day.
- **Type of contract:** design and construction.
- **Client:** Petróleos de Venezuela.

The contract allowed for the ACCIONA team to work closely with the PDVSA engineering teams, recognised for their technical excellence in the implementation of systems for industrial processes at the Cardón refinery. The project

is mixed and is part of the resource optimisation and management excellence programmes.

AL KHOBAR 1 DESALINATION PLANT

Al Khobar, Saudi Arabia

- **Capacity:** 210,000 m³/day.
- **Type of contract:** EPC.
- **Client:** Saline Water Conversion Corporation (SWCC).

This is a turnkey contract plus a one-year warranty. It will have a capacity of 210,000 m³ per day, of which 110,000 will serve several neighbourhoods in the region, and the rest will be part of the projects to improve the quality of drinking water in the area. This plant will become one of the largest in the country, to serve a population of 350,000 inhabitants. Furthermore, the plant will serve Aramco, the largest oil company in the world.

TALARA DESALINATION PLANT

Talara, Peru

- **Capacity:** 2,200 m³/day.
- **Type of contract:** design, construction, operation and maintenance.
- **Client:** PETROPERÚ.

This is the first industrial reverse osmosis desalination plant to be built in Peru. The north of Peru is

an arid area with a dearth of water resources, leading to a generalised water shortage.

SARROCH DESALINATION PLANT

Sardinia, Italy

- **Capacity:** 12,000 m³/day.
- **Type of contract:** design, construction, operation and maintenance.
- **Client:** Sarlux S.r.l.

The treated water will be used in the industrial processes that the Italian energy company (Saras) carries out in its refinery located near Cagliari (Sardinia), one of the largest and most complex installations of this kind in Europe. The installation, which has a total surface area of approximately 1,260 m², is the largest industrial desalination plant in the Mediterranean. In its design and construction, ACCIONA Agua has incorporated solutions which minimise the environmental impact, the installation costs and terms, and improve the efficiency in the global operation, reducing the loss of pressure and optimise energy consumption, among other factors.



Copiapó
Desalination Plant, Chile

ACCIONA Agua has provided solutions to the broad and diverse problems arising in the wastewater treatment. Towns of very different sizes, urban domestic water or water with high industrial load, highly seasonal populations, plants located with limited space available or high visual and/or environmental impact issues, as well as different discharge levels, are some of the challenges that the company has faced.



Atotonilco WWTP, Mexico

WASTEWATER TREATMENT PLANTS

ACCIONA Agua has built plants for small towns and big cities like Barcelona, Santander, León, Huelva, Málaga and Almería in Spain, as well as plants in Portugal, Italy, Morocco, Brazil, Peru and Colombia. It has also implemented more than 300 wastewater treatment projects with a total capacity of more than

15 million m³/day, serving a population of more than 59 million people.

ACCIONA Agua has thorough knowledge of the various processes involved and the necessary technology to provide solutions for different problems, combining minimum capital outlay

with optimised operation and maintenance.

ACCIONA has recently built the world's largest wastewater treatment plant (42 m³/s) in the State of Mexico, which is self-sufficient in electricity using gases from sludge digestion.

WASTEWATER PROJECTS			
PLANTS	COUNTRY	CAPACITY (m ³ /day)	POPULATION EQUIVALENT
Atotonilco	Mexico	4,320,000	10,500,000
Pradera WWPS	Ecuador	553,000	870,000
El Besós (Barcelona)	Spain	525,000	3,199,220
La Chira	Peru	544,320	2,500,000
Gabal el Asfar	Egypt	500,000	2,000,000
Nhieu Loc Thi Nghe (Ho Chi Minh City)	Vietnam	480,000	1,000,000
Bello	Colombia	432,000	3,880,000
Butarque (Madrid)	Spain	432,000	1,980,000
Baix Llobregat (Barcelona)	Spain	420,000	2,275,000
Arrudas (Minas Gerais)	Brazil	388,800	1,600,000
Lions Gate	Canada	320,000	600,000
La China (Madrid)	Spain	300,000	1,400,000
Cagliari (Sardinia)	Italy	260,000	1,150,000
Los Tajos	Costa Rica	242,784	1,490,000
Guadalhorce (Málaga)	Spain	210,000	700,000
Santander (Cantabria)	Spain	194,400	428,294
Arroyo Culebro (Madrid)	Spain	172,800	1,350,600
Temuco, Angol and Villarica	Chile	158,232	443,722
Loja	Ecuador	125,280	350,000
Maqua (Asturias)	Spain	123,811	214,979
Katameya	Egypt	120,000	800,000
León and its metropolitan area and efficient thermal drying of its sludges (León)	Spain	107,100	330,000
Guadalquivir WWTP Extension	Spain	105,665	665,000
Jerez de la Frontera (Cádiz)	Spain	103,680	691,200
Alcántara (Brazil)	Brazil	103,680	250,000
Kutahya (Turkey)	Turkey	100,000	450,000
Las Rejas (Madrid)	Spain	92,000	250,000
Bens - A'Coruña Marine Outfall (A'Coruña)	Spain	89,000	250,000
Casaquemada (Madrid)	Spain	83,199	211,492
Abnoub & el Fath	Egypt	80,000	750,000
Lugo Extension (Lugo)	Spain	76,500	200,000
Torrejón de Ardoz (Madrid)	Spain	75,000	450,000
Alcalá de Henares	Spain	74,818	374,090
Albacete	Spain	74,356	371,280
Montcada Extension (Barcelona)	Spain	72,600	423,500
L'Horta Nord Extension (Valencia)	Spain	72,000	400,000
Entremuros (Doñana - Huelva)	Spain	72,000	240,000
4th Line WWTP Arroyo de la Vega (Madrid)	Spain	65,000	
Zarandona (Murcia)	Spain	62,500	200,000
Santillana (Madrid)	Spain	60,667	13,992
Fuengirola (Málaga)	Spain	60,000	350,000
Biological WWTP (Madrid- Alcalá)	Spain	59,000	236,000
Huelva (Huelva)	Spain	58,500	180,000
Almería (Almería)	Spain	54,000	250,000
Peñón del Cuervo (Málaga)	Spain	51,840	100,000
Itapecerica (Divinópolis)	Brazil	51,840	212,598
Albacete (Extension)	Spain	49,500	200,000
Casaquemada WWTP (Madrid)	Spain	46,000	268,300
Trinidad and Tobago	Trinidad and Tobago	45,000	111,600
Ibarra	Ecuador	43,200	197,809
+ 280 additional plants		2,284,193	11,673,443
TOTAL		15,187,425	59,008,364

HIGHLIGHTED PROJECTS

ALCANTARA WASTEWATER TREATMENT PLANT

São Gonçalo, Brazil

- **Capacity:** 103,680 m³/day.
- **Equivalent Population:** 250,000 inhabitants.
- **Client:** State Secretariat for the Environment in Rio de Janeiro.

The works foresee the construction of a sewerage system which includes the plant and relevant pump station with a flow rate of 1.99 m³/second, as well as collector networks, collectors, a Yamagata 1,560 l/s pumping station, 8 small pumping stations and connections to households.

PRADERA WASTEWATER TREATMENT PLANT

Guayaquil, Ecuador

- **Capacity:** 6.4 m³/second.
- **Client:** Empresa Municipal de Agua Potable y Alcantarillado de Guayaquil

The construction of La Pradera Pump Station forms part of the system for the future Wastewater Treatment Plant (WWTP) of Las Esclusas in Guayaquil (Ecuador),

which will replace the existing pump station and will contribute to modernising the treatment network.

ATOTONILCO WASTEWATER TREATMENT PLANT

Hidalgo, Mexico

- **Capacity:** 4,320,000 m³/day.
- **Equivalent Population:** 10,500,000 inhabitants.
- **Client:** CONAGUA (Comisión Nacional del Agua). [National Water Commission]

The Atotonilco WWTP has an average rated treatment capacity of 35 m³/s and a maximum of 50 m³/s, including the final disposal of solid waste and sludge. The plant is also equipped with a cogeneration system to take advantage of the biogas produced in the digester for maximum energy savings. The plant is the largest in the world and one of the largest works in the Mexico Valley Basin Water Sustainability Programme.

2011: *Global Water Intelligence* award for Best Contract of the Year.

NORTH SHORE WASTEWATER TREATMENT PLANT

Vancouver, Canada

- **Capacity:** 320,000 m³/day.
- **Equivalent Population:** 600,000 inhabitants.
- **Client:** Metro Vancouver

The contract includes the design, construction and financing of the new North Shore plant, which will have secondary treatment and energy recovery installations.

The new WWTP will have a treatment capacity of 102 million litres per day in normal conditions, with a peak of up to 320 million litres per day in conditions of high rainfall. The new plant is being built under the Leadership in Energy and Environmental Design (LEED) standards, and its design incorporates solutions for energy efficiency and recovery, water conservation and reuse, on-site handling of rainwater and measures to minimise waste generation. The biogas generated from the treatment of wastewater will be used to generate electricity to make the plant work and heat the installation.

Wastewater treatment plant in Lugo, Spain



BELLO WASTEWATER TREATMENT PLANT Medellín, Colombia

- **Capacity:** 432,000 m³/day.
- **Type of Contract:** construction, design, operation and maintenance.
- **Client:** Aguas Nacionales EPM de Medellín.

The objective is for the river to surpass the levels of dissolved oxygen which are globally accepted as indicators of contaminated rivers. By reducing the organic load received by the river, the water quality levels established by metropolitan area of the Aburra Valley will be achieved. The goal is to raise dissolved oxygen levels to a minimum average of 5 mg/l.

LUGO WASTEWATER TREATMENT PLANT Lugo, Spain

- **Capacity:** 76,500 m³/day.
- **Equivalent Population:** 200,000 inhabitants.
- **Client:** Ministry of the Environment, Confederación Hidrográfica del Norte.

The construction of the new WWTP is one of the activities included in the Lugo Sewerage Improvement Project. The installation will treat urban and industrial wastewater from the municipality of Lugo.



LA CHIRA WASTEWATER TREATMENT PLANT Chorrillos, Lima, Peru

- **Capacity:** 544,320 m³/day.
- **Equivalent Population:** 2.5 million inhabitants.
- **Client:** SEDAPAL.

ACCIONA Agua designed, built, and has been operating La Chira WWTP for the last 25 years, as well as having built an underwater discharge pipeline.

The wastewater treatment plant contributes to resolving the environmental and sanitary problems of Lima caused by the effluent of the Surco and Circunvalación collectors that discharge directly into the sea without prior treatment.

The new plant aids in the environmental recovery of the existing beach areas that are currently polluted, so as to increase their use as recreational and tourism areas, and for tourism projects to be promoted in the areas of influence.

Bello wastewater treatment plant, Medellín, Colombia

SAN FERNANDO WASTEWATER TREATMENT PLANT San Fernando, Trinidad and Tobago

- **Capacity:** 45,000 m³/day.
- **Equivalent Population:** 111,600 inhabitants.
- **Client:** Water and Sewerage Authority (WASA).

The installation will consist of 16.3 km of collectors, out of which 12.5 km will be maintained via a micro-tunnel, with 11,964 service connections and seven pumping stations, with a flow of 7 l/sec to 203 l/sec. The project also includes the dismantling and remodelling of the existing WWTP and pumping stations.

GABAL EL ASFAR WASTEWATER TREATMENT PLANT Cairo, Egypt

- **Capacity:** 500,000 m³/day.
- **Equivalent Population:** 2,000,000 inhabitants.
- **Client:** Construction Authority for Potable Water and Wastewater (CAPW).

The contract includes the design, construction, operation, maintenance and commissioning of the WWTP. The Gabal El Asfar complex has a treatment capacity of 2.5 million cubic meters per day, making it the largest treatment complex in the Middle East and Africa, and the third-largest in the world.

The growing demand for water for agriculture, urban parks, golf courses and for refilling aquifers against saline intrusion, has led ACCIONA Agua to research, develop, and carry out innovative technologies for tertiary treatment of wastewater, so that it can be recycled to many different uses.



Bakio WWTP, Biscay, Spain

WASTEWATER TREATMENT AND REUSE PLANTS

The company has extensive expertise in both the design and implementation of tertiary treatment, using the following processes:

- Conventional gravity or lamellar decanting.
- Monolayer, bilayer, suspended bed filtering.
- Filter aid precoat filters, microfiltration and ultrafiltration.
- Disinfection with ozone, UV or chlorine.
- Reverse osmosis for removing salts.



TERTIARY TREATMENT OF WATER FROM THE WWTP OF THE SURESTE REGION Gran Canaria, Spain

The tertiary treatment plant of the wastewater treatment plant of the Sureste region was built in 1999 due to a need to condition the water treated in the wastewater treatment plant belonging to the Mancomunidad Intermunicipal del Sureste employing reverse osmosis, so it could be used for irrigation. The plant was a pioneer in using a precoat microfiltration system prior to reverse osmosis for urban wastewater treatment.

TERTIARY TREATMENT OF WATER FROM LA CHINA WWTP Madrid, Spain

The tertiary treatment plant for reuse of water from La China WWTP has a production capacity of up to 24,498 m³/day of regenerated water. The treated water is stored in a 5.700 m³ tank before being transported through five pumping stations to water the gardens of Madrid's main parks. This water is also used for street cleaning in the city, as well as internal use at the WWTP itself.

To obtain the water quality required by law for these uses, the reuse plant employs a physical-chemical lamellar decanting treatment, followed by sand filtration using rapid pulsed bed filters and disinfection through ultraviolet radiation, before sodium hypochlorite is added.

Tertiary treatment of waters from the WWTP in Campo Dalías, Almería, Spain

WASTE TREATMENT: THERMAL DRYING AND COMPOSTING

Increasingly stringent national and international laws on the disposal of urban waste and sludge from urban wastewater treatment plants has accelerated the integration of new technologies for waste treatment.

The aim of these new devices is to minimise the volume of waste while neutralising it. The processes employed by ACCIONA Agua include mechanising, sanitising, thermal drying and composting.

WASTEWATER TREATMENT. THERMAL DRYING

	CAPACITY (m ³ /day)
Loeches (Madrid)	10,320
Guadalhorce (Málaga)	7,250
Quart Benager (Barcelona –2 units–)	4,000
Fuengirola (Málaga)	2,350
Montornés Vallés (Barcelona)	2,000
Maqua (Asturias)	2,000
León	1,940
Costa Tropical de Granada (Motril WWTP)	1,200
Middle basin of the River Guadarrama (Madrid)	1,000
Baiña (Asturias)	500
TOTAL	32,560

WASTE TREATMENT

	TREATED WASTE (Tm/year)
Ecoparque (La Rioja)	75,000
Loeches (Madrid)	50,000
TOTAL	125,000





MANAGEMENT OF COMPLETE WATER CYCLE SERVICES

Serving citizens is a maxim for ACCIONA Agua.

Research and a commitment to technological innovation back efficient management and sustainable development. Comprehensive service management covers all the stages involved in treating water to make it suitable for human consumption.

Once the water has been treated, it is supplied to the population and subsequently collected and transported to wastewater treatment plants.

The different stages of the water cycle are:

- Collection.
- Purification.
- Distribution.
- Sewerage.
- Treatment.
- Reuse.

To check the condition of the water and ensure the highest quality and the tap of the end user, ACCIONA

Agua performs continuous tests in their laboratories.

Also, in order to achieve high performance in the municipalities where the company manages water, supply and sewerage networks are systematically assessed. ACCIONA Agua uses the latest technologies available in the market to detect and repair leaks and minimise possible losses.

The tasks of a technical office, such as processing and approving projects related to new supplies and facility maintenance are also carried out.

The cycle closes with the treatment of the wastewater when it arrives at a WWTP. Suitable treatment can make it possible to return it to the natural environment or reuse it in irrigation with minimal environmental impact.

ACCIONA Agua is developing the complete water cycle in five continents, managing and operating drinking water and sewerage

services. It currently provides its services in more than 180 municipalities in Spain, Italy, Peru and Mexico, serving a population in excess of 13.5 million users.

SUSTAINABLE MANAGEMENT AND CARE OF THE ENVIRONMENT

Good, sustainable management of the water cycle contributes significantly to improving the environment:

- By collecting the minimum necessary resources to meet the needs of the citizens. This is achieved by increasing technical efficiency, i.e. reducing losses and leaks.
- With the use of the latest technologies to provide the necessary treatment to return the water to nature in better condition than it was collected.

ACCIONA AGUA IS
PRESENT IN THE
COMPLETE WATER
CYCLE IN ALL FIVE
CONTINENTS

WATER INFRASTRUCTURE CONCESSIONS

VALENCIA

- **Client:** Valencia City Council - Complete Water Cycle.
- **Population served:** 800,469 inhabitants.

ACCIONA Agua has been present in the city of Valencia since 2007, managing the operation, cleaning and conservation service of the municipal sewerage system. It manages and supervises the sewerage network and all related facilities, including wastewater and rainwater pumping stations, wastewater treatment plants, underpass pumping and sluice gates. Behind all these facilities is a team consisting of more than 250 professionals.

MADRID

- **Client:** Canal de Isabel II Management.
- **Population served:** 803,300 inhabitants.

ACCIONA Agua has been present in Madrid since 2009, managing

the city of Madrid sewer operation service, serving a population of more than 940,000 inhabitants. ACCIONA Agua is in charge of managing and operating the sewer network as well as storm tanks in the area of influence. The sewer service consists of a team of more than 100 professionals.

BOCA DEL RÍO Veracruz, Mexico

- **Client:** Boca del Río Town Council.
- **Population served:** 150,000 inhabitants.

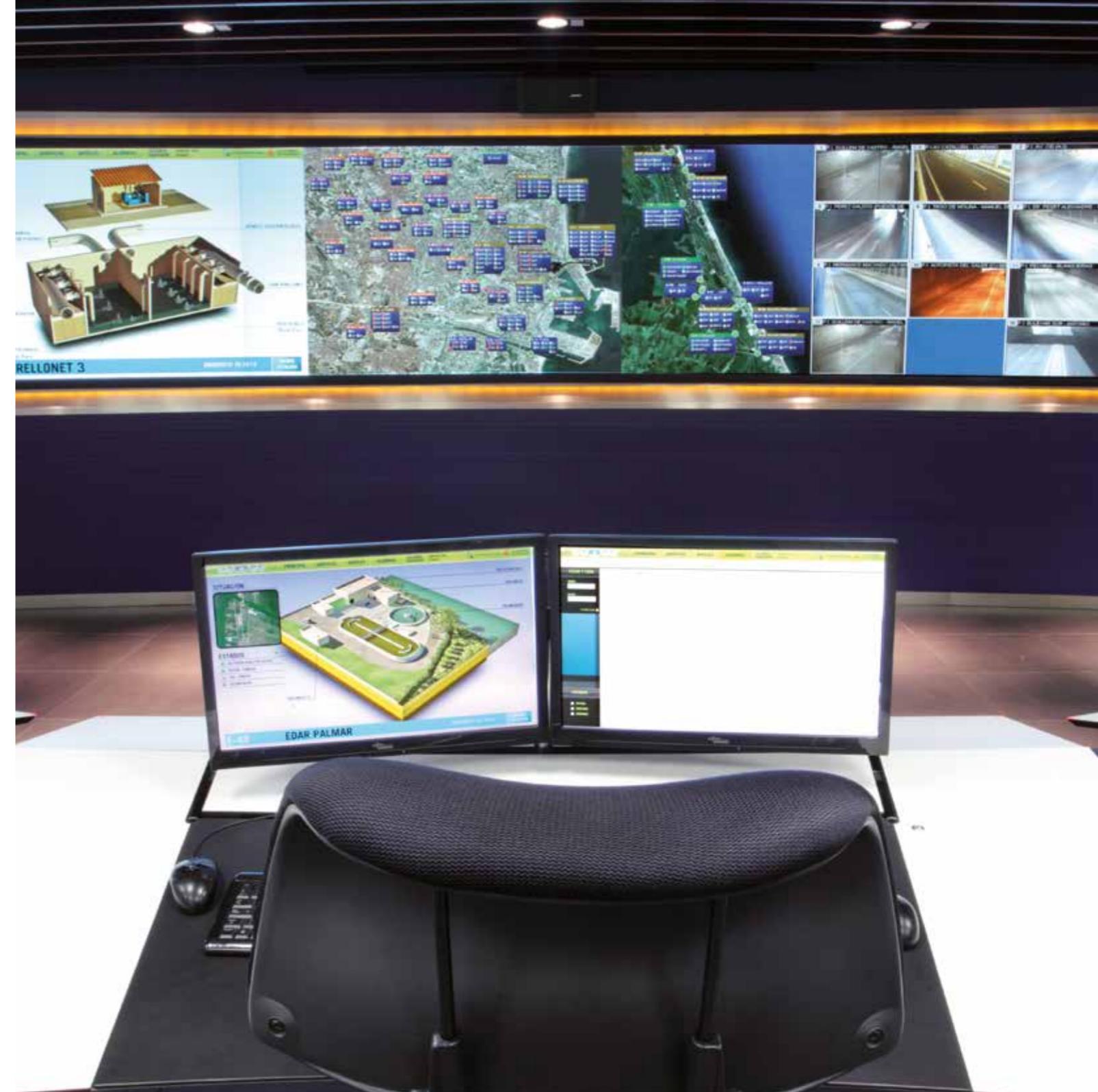
ACCIONA Agua will manage for the Town Council of Boca del Río in the state of Veracruz, Mexico, for a period of 30 years, the services of provision and distribution of drinking water, operation of the sanitary sewer and rainwater network, and treatment of wastewater, sewerage services, commercial services and reuse, preventative and corrective maintenance and related and connected services in the Municipality of Boca del Río.

TUSCANY Italy

- **Client:** PUBLIACQUA
- **Population served:** 171,000 inhabitants.

ACCIONA Agua serves 18 municipalities and a population of approximately 171,000 inhabitants in the areas of Mugello and Valdarno, in the province of Florence.

It also manages the ordinary and extraordinary maintenance of water and sewerage infrastructures, including emergency interventions 24 hours a day and extraordinary repairs.



Central Operativa de Saneamiento,
Valencia, Spain


SERVICES

SERVICES	INHABITANTS	TYPE OF CONTRACT					
		TREATMENT	UPSTREAM SUPPLY	DOWNSTREAM SUPPLY	SEWERAGE	TREATMENT	COMMERCIAL MGMT
SEDAPAL. (Lima, Peru)	9,861,892			•	•		•
C. Isabel II Gestión. Madrid sewer system, Lot B.	803,300				•		•
Sewerage in Valencia	790,201				•	•	
C. Isabel II Gestión. Urgent works and actions on supply and reuse networks Madrid, Lot 2	737,648			•			
Municipal Sewerage in Leganés	187,173						
Sewerage in Tuscany (18 municipalities)	171,000				•		
SOMAJASA (Jaén 34 municipalities)	165,637	•	•	•	•	•	•
Boca del Río, Veracruz (Mexico)	150,000	•	•	•	•	•	•
Costa Tropical, Granada	120,845	•	•	•	•	•	•
Molina de Segura (SERCOMOSA)	69,614			•	•	•	•
Úbeda (Jaén)	34,835			•	•	•	•
Pilar de la Horadada (Alicante)	21,348			•	•		•
Manzanares (Ciudad Real)	19,630		•	•	•	•	•
La Unión (Murcia)	18,734			•	•		•
Archena (Murcia)	18,475			•	•		•
Osuna (Seville)	17,738		•	•	•		•
Zafra (Badajoz)	16,855			•		•	•
Santomera (Murcia)	15,952			•	•		•
Villafranca de los Barros (Extremadura)	13,224			•			•
Andratx (Mallorca)	11,321			•			•
Villarrubia de los Ojos (Ciudad Real)	10,873			•	•	•	•
Ceutí (Murcia)	10,156			•	•		•
Yuncos (Toledo)	10,613			•	•		•
San Viçent de Castellet (Barcelona)	9,235	•		•	•		•
Toro (Zamora)	9,115		•	•		•	•
Suances (Cantabria)	8,579		•	•	•		•
Cabezón de la Sal, (Cantabria)	8,345			•	•		•
Arévalo (Ávila)	8,123			•	•	•	•
Dolores (Alicante)	7,264			•	•		•
Moraleja (Cáceres)	6,969			•	•		•
Lorquí (Murcia)	6,912			•	•	•	•
Almodóvar del Campo (Ciudad Real)	6,360			•	•		•
Montefrío (Granada)	5,601		•	•			•
Villanueva de Algaidas (Málaga)	4,325			•	•		•
Paguera (Mallorca)	3,880			•			•
Orba (Alicante)	2,560			•	•		•
Alfoz de Lloredo (Cantabria)	2,466			•	•	•	•
Favara (Valencia)	2,467			•	•		•
Villanueva del Río Segura (Murcia)	2,085			•	•		•
Sierra de Fuentes (Cáceres)	2,026			•	•	•	•
Ricote (Murcia)	1,332			•			•
Llaurí (Valencia)	1,212			•	•		•
Corrales del Vino (Zamora)	1,022			•	•		•
Ulea (Murcia)	913			•	•		•
Fontiveros (Ávila)	758			•	•	•	•
Deià (Mallorca)	642			•			•
Ojos (Murcia)	497			•	•		•
TOTAL	13,589,356						



OTHER PROJECTS

GOTA PROJECT

The GOTA Project, ACCIONA Agua's work management system, supported by the latest technology, is the fruit of the company's knowledge and expertise in maintaining water supply and sewerage networks worldwide.

The project concerns the introduction of a global information technology solution to manage the receipt, delegation and execution of orders for work in a planned and efficient way, based on the two-way transmission of information in real time, which allows the client and the end user to know the status of the work in progress at any moment.

The system has been installed on ACCIONA Agua's corporate infrastructure, from where the company can supply services worldwide through an Operations Centre that provides support 24 hours a day, 7 days a week.

CONTRACT WITH SEDAPAL Lima, Peru

In 2015, ACCIONA Agua was awarded its first tender in Peru. It was to carry out the maintenance service networks in Lima, the

drinking water and sewer systems in Gerencia de Servicios Sur, comprising eight districts in the Peruvian capital, grouped in the so-called Centro de Servicios Surquillo. The work to be carried out includes replacing 61 km of water supply and sewer piping, replacing more than 17,300 house connections and maintaining valves, fire hydrants and bulk water meters.

The corrective maintenance service is intended to assure the operability of the secondary drinking water supply and sewer systems and contributes to the SEDAPAL's strategic objective of "improving business management", which contributes to the efficient optimisation and reliability of the operation of the complete water cycle.

GESBA

The company has been providing drinking water and sewerage services to the municipalities of Andratx, Deià and Paguera (Calvià, Majorca) since 1994 through its subsidiaries GESBA, S.A. and Compañía de Aguas Paguera, S.L., serving a population of 23,000 people in the low season and 70,000 in the high season.

AGUAS Y SERVICIOS

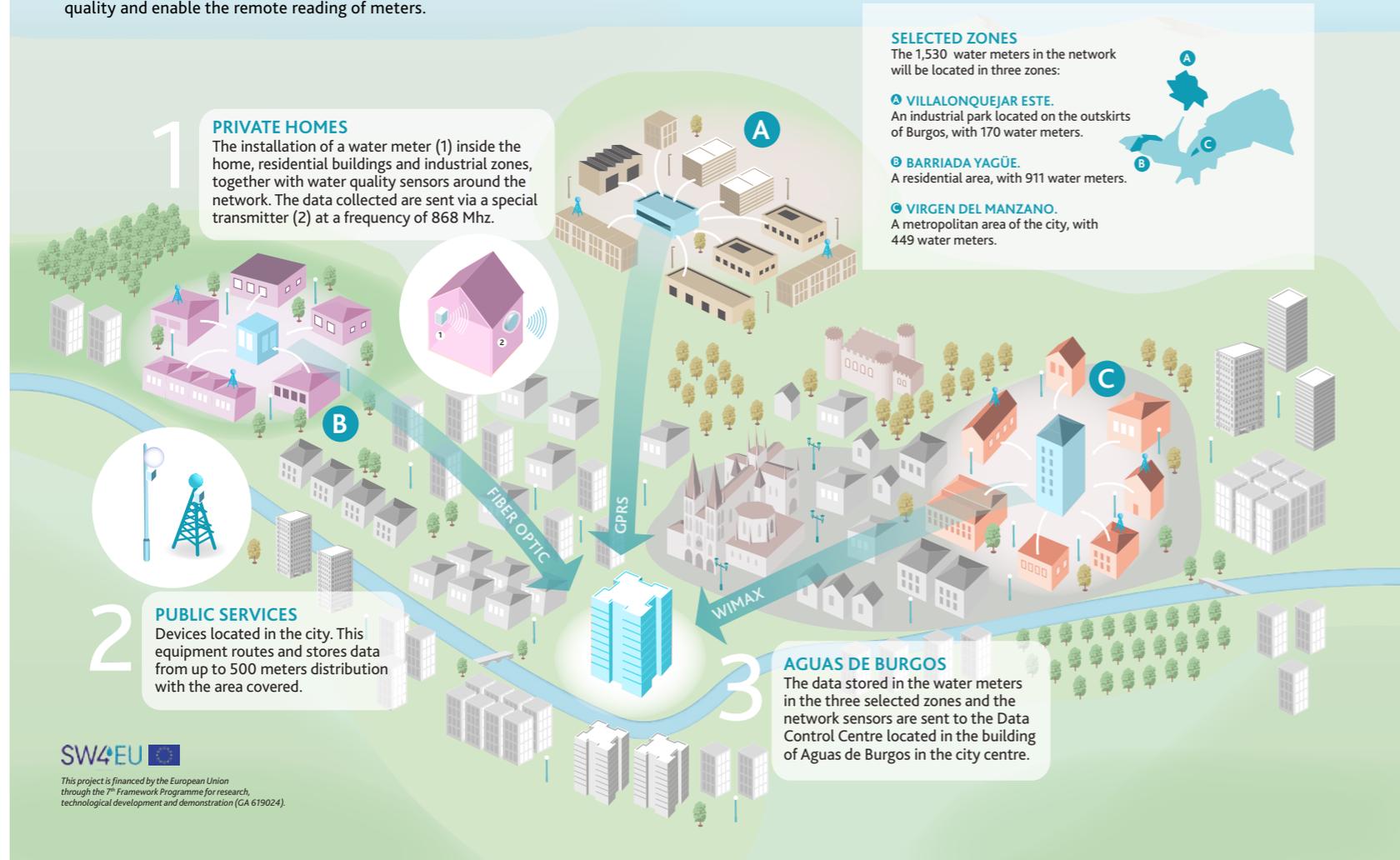
Since 1996, it manages the complete water cycle for the consortium of municipalities of the Costa Tropical in Granada. The service covers an area of 1,400 km² and serves a population of 110,000 inhabitants in the low season and 330,000 in high season. In 2016, Aguas y Servicios celebrated the 20th anniversary of the contract.

SOMAJASA

Thanks to the alliance forged in 2007 with the Jaén provincial government, ACCIONA Agua manages all the complete water cycle services in 34 towns in the province. The agreement means managing the water supply to more than 250,000 inhabitants in these towns for a period of 25 years.

ACCIONA Agua installs a smart water network in the city of Burgos

SWING (Smart Water Innovation Network in the city of BurGos) technology will make it easier to detect and repair faults, improve the control of water quality and enable the remote reading of meters.



Smart Water Burgos, Spain

ACCIONA AGUA IS WORKING ON THE DIGITAL TRANSFORMATION OF ALL AREAS OF THE COMPANY

SMART WATER BURGOS

This project, called SWING ("Smart Water Innovation Network in the city of BurGos"), is part of SmartWater4Europe, a European research project involving 21 entities, including water companies, technology companies, universities and research centres.

ACCIONA Agua has begun to implement a management system in the drinking water supply network, which allows for instant remote supervision of water quality, meter consumption and the condition of the network. A single software platform will integrate daily remote readings of user meters, the geographical information system (GIS), remote information,

algorithms for predicting demand and a large number of sensors to monitor the water quality.

The management system will be governed by a Business Intelligence platform to detect in real time any fault, jam or leak and know the point in which it occurs, which will reduce the time required to locate and repair it.

Another new feature brought by the project is remote meter reading and detection of abnormal consumptions, which will immediately alert consumers if there is a suspected water leak in their homes.

Non-domestic consumers will also benefit from the new system, since

they can consult their accumulated consumption through a website.

These innovations will also result in environmental benefits, since early detection of leaks will reduce the amount of water used for final consumption.

The project will also incorporate a new real time network monitoring system to ascertain water composition at any time for better quality assurance.

In addition, the company will improve its service management models and optimise investment plans to actual needs.

OPERATION AND MAINTENANCE CONTRACTS

In the field of service management, ACCIONA Agua seeks:

- To optimise processes by minimising energy consumption.
- To ensure water treatment yields.
- To test water quality.
- Proper environmental management of waste and by-products generated in the treatment processes.

The total management of a plant includes conservation and preventative maintenance activities.

The strategy of the company regarding maintenance focuses on minimising operational costs and maximising the life of the facilities.

O&M

Today, ACCIONA Agua has more than 160 operation and maintenance contracts for conventional and industrial water treatment plants.

Total capacity amounts to:
 WWTP: 6.7 million m³/d.
 DWTP: 0.8 million m³/d.
 SWRO: 2.1 million m³/d.

DRINKING WATER PROJECTS (O&M)			
	COUNTRY	CAPACITY (m ³ /day)	INHABITANTS
Valmayor Extension (Madrid)	Spain	1,036,800	2,960,000
Torrelaguna (Madrid)	Spain	518,400	1,728,000
New Cairo	Egypt	500,000	3,000,000
Oum Azza	Morocco	432,000	2,000,000
Pu-Dong and channelling of water from the Changjiang river to the plant	China	400,032	1,800,000
El Bodonal Extension (Tres Cantos, Madrid)	Spain	345,600	100,000
Santillana (Madrid)	Spain	345,600	100,000
Canal Bajo (Madrid)	Spain	345,600	100,000
Alcantarilha	Portugal	259,200	1,050,000
Amerya, Egypt	Egypt	200,000	2,000,000
Esmeraldas	Ecuador	276,000	200,000
Jose Rodriguez	Panama	227,000	283,000
Casablanca (Zaragoza)	Spain	172,800	690,000
Mundaring	Australia	165,000	100,000
Gabón, Libreville	Gabon	140,000	1,000,000
Zaragoza	Spain	144,288	912,072
Sollano DWTP (Zalla - Biscay)	Spain	129,600	450,000
El Cuartillo (Jerez de la Frontera - Cádiz)	Spain	114,912	400,000
Sabanitas II	Panama	114,000	150,000
Marbella (Málaga)	Spain	110,592	124,333
Mostorod - Cairo	Egypt	110,000	1,200,000
Reggio Calabria	Italy	108,000	360,000
Rod el Farag, Cairo	Egypt	100,224	900,000
Putatan	The Philippines	100,000	1,000,000
Campotéjar (Murcia)	Spain	100,000	1,000,000
North Helwan I	Egypt	100,000	1,000,000
North Helwan II	Egypt	100,000	1,000,000
El Perelló (Tarragona)	Spain	95,904	383,616
Peravia Multiple Aqueduct	Dominican Rep.	86,400	138,000
Albacete (Albacete)	Spain	86,400	345,600
Carambolo (Seville)	Spain	76,032	253,440
Saint John	Canada	75,000	70,000
Akashat	Iraq	71,712	
Pedramaiore	Italy	64,800	259,200
Arenillas (Cádiz)	Spain	64,800	259,200
Jakarta	Indonesia	54,432	
86 additional projects		1,188,382	3,710,814
TOTAL		8,559,510	31,027,275

O&M: DESALINATION PLANTS		
PLANTS	COUNTRY	CAPACITY (m ³ /day)
Al Khobar 2	Saudi Arabia	600,000
Shuqaiq 3	Saudi Arabia	450,000
Port Stanvac, Adelaide	Australia	300,000
Umm Al Houll	Qatar	284,000
Torreveja, Alicante	Spain	240,000
Al Khobar 1	Saudi Arabia	210,000
Ras Abus Fontas A3	Qatar	165,000
Fujairah 1 Extension	UAE	137,000
Fouka	Algeria	120,000
Tampa Bay, Florida	USA	108,831
Paraguana	Venezuela	75,000
Cartagena Canal phase I, Murcia	Spain	65,000
Cartagena Canal phase II, Murcia	Spain	65,000
Alicante Canal, Alicante	Spain	65,000
Tordera, Girona	Spain	57,600
Copiapó	Chile	51,840
Almería Capital	Spain	50,000
Southeast of Gran Canaria	Spain	33,000
Ibiza and San Antonio	Spain	29,800
Jávea, Alicante	Spain	26,000
Reggio Calabria	Italy	25,000
Aruca and Moya, Las Palmas	Spain	15,000
Bocabarranco and Roque Prieto, Las Palmas	Spain	15,000
Sarroch, Cagliari	Italy	12,000
Ciudadela, Minorca	Spain	10,000
Cape Verde	Cape Verde	10,000
Lampedusa and Linosa	Italy	6,576
Sataria	Italy	3,014
Maggiuluveddi	Italy	3,014
Talara	Peru	2,200
TOTAL O&M		2,162,875



THE STRATEGY FOCUSES ON IMPROVING EFFICIENCY, REDUCING OPERATIONAL COSTS AND INCREASING THE SERVICE LIFE OF THE FACILITIES

Gueñes WWTP, Biscay, Spain



Desalination plant in Alicante, Spain

MAJOR O&M PROJECTS

SAN JERÓNIMO WASTEWATER TREATMENT PLANT

Seville, Spain

- **Capacity:** 90,500 m³/day.
- **Type of contract:** O&M
- **Client:** EMASESA.

In addition, it will take charge of the San Jerónimo I and II and El Manchón rainwater pumping stations on the right bank (El Muro, Guadalajara, San Juan Norte and San Juan Sur), the CEFORA WWTP and chlorination facility and the WWTP and WWPS at El Ronquillo. In total, service will be provided to an equivalent population of 240,000 people in the north area of Seville.

ABBANOIA WASTEWATER TREATMENT PLANTS

Sardinia, Italy

- **Capacity:** 300,000 m³/day.
- **Type of contract:** transport, supervision, control and maintenance services.
- **Client:** Abbanoa Spa.

The duration of the operation contract is 36 months and comprises more than 200 wastewater treatment plants and more than 500 pumping stations grouped into three lots.

The Nuoro-Oristano lot, through 104 wastewater treatment plants and 241 pumping stations, the Sassari-Olbia lot, through 109 wastewater treatment plants and 240 pumping stations, and Lanusei, with 16 wastewater treatment plants and 45 pumping stations. As a whole, the plants have a capacity of almost 300,000 cubic metres per day to provide service to an estimated population of 500,000 equivalent inhabitants.

SIMBRIZZI DRINKING WATER TREATMENT PLANT

Sardinia, Italy

- **Capacity:** 120,960 m³/day.
- **Type of contract:** O&M.
- **Population:** 604,000 inhabitants.
- **Client:** Construction Authority for Potable Water and Wastewater (CAPW).

ACCIONA operates and maintains the Simbirizzi drinking water treatment plant in Sardinia. It is Italy's second-largest potable drinking water plant.


WASTEWATER WATER PROJECTS (O&M)

PLANTS	COUNTRY	CAPACITY (m ³ /day)	EQUIVALENT POPULATION
Atotonilco	Mexico	4,320,000	10,500,000
Ebar Pradera	Ecuador	553,000	870,000
El Besós (Barcelona)	Spain	525,000	3,199,220
La Chira	Peru	544,320	2,500,000
Gabal el Asfar	Egypt	500,000	2,000,000
Nhieu Loc Thi Nghe (Ho Chi Minh City)	Vietnam	480,000	1,000,000
Bello	Colombia	432,000	3,880,000
Butarque (Madrid)	Spain	432,000	1,980,000
Baix Llobregat (Barcelona)	Spain	420,000	2,275,000
Arrudas (Minas Gerais)	Brazil	388,800	1,600,000
Lions Gate	Canada	320,000	600,000
La China (Madrid)	Spain	300,000	1,400,000
Cagliari (Sardinia)	Italy	260,000	1,150,000
Los Tajos	Costa Rica	242,784	1,490,000
Guadalhorce (Málaga)	Spain	210,000	700,000
Santander (Cantabria)	Spain	194,400	428,294
Arroyo Culebro (Madrid)	Spain	172,800	1,350,600
Temuco, Angol and Villarica	Chile	158,232	443,722
Loja	Ecuador	125,280	350,000
Maqua (Asturias)	Spain	123,811	214,979
Katameya	Egypt	120,000	800,000
León and its metropolitan area and efficient thermal drying of its sludges (León)	Spain	107,100	330,000
Guadalquivir WWTP Extension	Spain	105,665	665,000
Jerez de la Frontera (Cádiz)	Spain	103,680	691,200
Alcántara (Brazil)	Brazil	103,680	250,000
Kutahya (Turkey)	Turkey	100,000	450,000
Las Rejas (Madrid)	Spain	92,000	250,000
Bens - A'Coruña Marine Outfall (A'Coruña)	Spain	89,000	250,000
Casaquemada (Madrid)	Spain	83,199	211,492
Abnoub & el Fath	Egypt	80,000	750,000
Lugo Extension (Lugo)	Spain	76,500	200,000
Torrejón de Ardoz (Madrid)	Spain	75,000	450,000
Alcalá de Henares	Spain	74,818	374,090
Albacete	Spain	74,356	371,280
Montcada Extension (Barcelona)	Spain	72,600	423,500
L'Horta Nord Extension (Valencia)	Spain	72,000	400,000
Entremuros (Doñana - Huelva)	Spain	72,000	240,000
4th Line WWTP Arroyo de la Vega (Madrid)	Spain	65,000	
Zarandona (Murcia)	Spain	62,500	200,000
Santillana (Madrid)	Spain	60,667	13,992
Fuengirola (Málaga)	Spain	60,000	350,000
Biological WWTP (Madrid- Alcalá)	Spain	59,000	236,000
Huelva (Huelva)	Spain	58,500	180,000
Almería (Almería)	Spain	54,000	250,000
Peñón del Cuervo (Málaga)	Spain	51,840	100,000
285 additional plants		2,519,233	12,663,750
TOTAL		15,187,425	59,008,364

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