

## FCC Aqualia R&D

R&D management in **FCC Aqualia** is determined by the company's contact with various interested agents – end users, governments, employees and other organisations with which it collaborates. It is therefore an open activity.

At this time, **FCC Aqualia** is developing 20 projects with a total value of more than €70 million and related to various areas of knowledge:

- Quality: re-use, desalination, measurement and analysis, indicators, etc.
- Sustainability: reduction of energy consumption and of emissions, use of waste water as resources and alternative technologies.
- Intelligent management: management, optimising of resources and information and communication technologies (ICT).

To develop these areas of knowledge, **FCC Aqualia** collaborates with leading national and European institutions through FP7 financing programmes, Life, Innpronta, Innpacto and CENIT, among others.



## Main R&D projects

### → ALL-GAS

One of our most ambitious research lines examines the possibility of using waste water as the key factor to obtaining bio fuels. Our objective is to attain the highest possible level of sustainability and efficiency.

### 7th EUROPEAN UNION FRAMEWORK PROGRAMME (FP7):

The Seventh European Union framework programme (FP7) plays a crucial role in attaining objectives of growth, competitiveness and employment.

### → IISIS

IISIS has driven the concept of "future urban development" and includes self-sufficiency and sustainability as key factors in the creation of a city that can evolve and respond to the changes that occur during its life cycle. As such, IISIS offers the first integrated vision of an intelligent city.

### INNPRONTA

The INNPRONTA programme was designed to encourage public/private cooperation in research and development (R&D) projects in areas of strategic importance for the development of the Spanish economy, providing finance through loans and grants to important research projects in the industrial sector.

### → REMEMBRANE

Development and innovation project for the re-use of water. The main objective consists of extending the life of the membranes used in the reverse osmosis technology, converting a waste into something of value through its re-use in other applications.

### PROGRAMA LIFE

The LIFE programme is the European Union's financial instrument for the environment. The latest phase of the programme, Life+, ran continuously from 2007 to 2013.



# The world of water



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Leading edge, innovative, committed. **FCC Aqualia** is a leading company in the water management sector. A company that continuously seeks to improve effectiveness in production processes and in optimising resources.

**FCC Aqualia**, one of the main water management companies in the world, forms part of the three large business lines of **FCC**, one of the largest public services groups.

Using the most advanced technology and clearly customer-oriented, **FCC Aqualia** offers the market all the solutions to the needs of public and private organisations in all phases of the integral water cycle and for all uses - human, agricultural and industrial.

From obtaining water, its preparation for human consumption according to strict quality controls, distribution and later treatment for returning it to nature in suitable quantity and quality, making efficient and sustainable use of the resources and materials used in the process.



## Areas of activity

### Management of the integral water cycle

As well as managing public utilities, the main activity of **FCC Aqualia**, the company has opted for diversification, becoming the only company in Spain and one of the few in the world that can offer any service connected to the various uses of water.

- Public water utilities.
- Water infrastructure concessions.
- Water quality control.
- Municipal water and sports facilities.
- Maintenance and operation of irrigation infrastructures.

### Design and building of water infrastructures

The company develops technologies and designs and builds various infrastructures.

- Waste water treatment plants.
- Drinking water treatment plants.
- Desalination plants.
- Infrastructures for taking in, lifting and transporting water.

### Global services for industry

It offers industry global solutions and operational capacity to design, develop and undertake projects and installations with a marked orientation to serving industry.

- Process water solutions.
- Waste water and re-use solutions.
- Operation and maintenance solutions.

Sectors: energy, paper and coal, chemical and petrochemical industries, mining, surface treatment, agriculture and food, wastes and effluents and petroleum and gas.

## Management models

### Public water utilities concessions

We use leading edge commercial systems to optimise all the services we manage. We monitor energy efficiency in all our processes, calculating our carbon footprint to reduce our effect on climate change as far as possible.

### Water infrastructures concessions (BOT)

Capacity recognised worldwide to attract funds in emerging markets.

### Building of water infrastructures (EPC)

Prepared to build any infrastructure for treating, transporting and distributing water without technological restrictions.

### Operation and maintenance of water infrastructures (O&M)

Wide experience in the operation and maintenance of water infrastructures. Efficiency in undertaking public and private investment.

### Industrial

Customised solutions using our own technology and teams for any industrial customer anywhere in the world.

## Customers

### Central government

Organisations responsible for administering water and/or the environment nationally.

Organisations responsible for river basins and public companies under central government for water administration.

### Regional governments

Governments of regions, states or departments that administer water in their territories.

### Municipal governments

Infrastructures municipal infrastructures run by local councils.

Water services user groups for human and agricultural consumption.

### Public and private customers anywhere in the world

Organisations and institutions and private project promoters.

Oil and gas and mining industries with special needs for water treatment or large water infrastructures.

**FCC Aqualia's** water management work has been recognised internationally and awarded on many occasions by some of the most prestigious publications in the industry.

## Main awards

In 2007 the magazine *Global Water Intelligence* awarded it the "**Best Company in the World**" prize and in 2012, the same publication awarded **aqualia** the "**Best Contract of the Year**" prize for the financial closure of the El Realito system (Mexico). Also in 2007, Frost & Sullivan awarded **FCC Aqualia** the prize for "**management based on excellence in customer service**", and in 2012 the magazine prised the expansion of **aqualia** in the Middle East and North Africa.

It has also received notable awards from the Euromoney magazine *Project Finance*. The first, in 2011, was the "**PPP (APP) water contract of the year in Africa**" for the waste water treatment plant in New Cairo (Egypt) and a year later, the "**Water contract of the year in Latin America**" for the financial closure of El Realito (Mexico).

## Management systems

**FCC Aqualia** has designed a strategic quality plan to provide services to its customers with maximum efficiency. This plan contains a series of monitoring indicators covering four categories, quality of drinking water, quality of the service provided, technical performance of the water system and customer service level.

## FCC Aqualia in figures

### INTAKE

763.751.430 m<sup>3</sup>/year of water taken in

### DRINKING WATER

215 drinking water plants managed

5 Laboratories accredited as per ISO-17025

### PRODUCTION

752.507.106 m<sup>3</sup>/year of drinking water produced

690.000 m<sup>3</sup>/day desalination capacity

### DISTRIBUTION

656.860.380 m<sup>3</sup> of drinking water distributed per year

40.412 km of distribution system managed

### CUSTOMERS

> 1.100 municipalities served

> 240 personalised service offices worldwide



### SEWERAGE

20.230 km of sewerage system

### TREATMENT

364 waste water treatment plants in operation

557.073.556 m<sup>3</sup> of water treated/year

### RE-USE AND RETURN TO THE ENVIRONMENT

10.174.859 m<sup>3</sup> of waste water generated/year

- Algeria
- Bosnia-Herzegovina
- Chile
- China
- Czech Republic
- Egypt
- Italy
- Kosovo
- Mexico
- Montenegro
- Peru
- Poland
- Portugal
- Qatar
- Romania
- Saudi Arabia
- South Africa
- Serbia
- Spain
- Tunisia
- United Arab Emirates
- Uruguay



- Public water utilities concession
- Water infrastructures concessions
- Operation and maintenance of infrastructures
- Building of water infrastructures (EPC)
- Industry

### Public water utilities concession

- Italy: Caltanissetta. 22 municipalities.
- Portugal: Abrantes, Campo Maior, Elvas, Cartaxo and Fundao.
- Spain: More than 800 municipalities.
- Czech Republic: 236 municipalities.

### Water infrastructures concessions

- Egypt: New Cairo.
- Argelia: Cap DJinet, Mostaganem
- Mexico: Realito aqueduct, Queretaro II aqueduct

### Operation and maintenance of infrastructures

- Saudi Arabia: Ryhad.
- United Arab Emirates: Emirate of Abu Dhabi (city of Al-Ain and periphery).

### Building of water infrastructures (EPC)

- Baix Llobregat (Barcelona): 420.000 m<sup>3</sup>/d
- Loiola (San Sebastián): 388.000 m<sup>3</sup>/d
- New Cairo (Egypt): 250.000 m<sup>3</sup>/d

### Drinking water treatment:

- Ablaneda (Asturias): 259.000 m<sup>3</sup>/d

- Realito (Mexico): 86.400 m<sup>3</sup>/d
- Querétaro (Mexico): 129.600 m<sup>3</sup>/d

### Sea water desalination:

- Bajo Almanzora (Almería): 60.000 m<sup>3</sup>/d
- Mostaganem (Algeria): 200.000 m<sup>3</sup>/d
- Cap D'jinet (Algeria): 100.000 m<sup>3</sup>/d

### Industry:

More than 200 references worldwide in various sectors - energy, paper and coal, chemical and petrochemical industries, mining and agriculture and food.