

DOCUMENTATION IN FILE

ACQUEDOTTO PUGLIESE

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Contact: Vito Palumbo
Communication and Media Director
Acquedotto Pugliese SpA
Tel 080 5723442
E-mail: v.palumbo@aqp.it - relazioni.media@aqp.it - comunicazione@aqp.it

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ACQUEDOTTO PUGLIESE

Acquedotto Pugliese, serving the territory for more than a century

A key European player

In terms of size and complexity, Acquedotto Pugliese SpA (AQP) is a **key European player** in the field of **integrated water system management**, and one of the **largest and longest-established companies in Italy**.

100% Regione Puglia

With more than **2,250 employees**, a production value of more than 741 million euros and **EBITDA of 230.4 million euros**, AQP is a publicly owned company that is 100% controlled by the Puglia Region. It has **served the area** for more than a century.

Investments for the community at large

With the 2022 investment plan of **312.8 million euros** (+ 41% vs 2018), Acquedotto Pugliese in 2022 once more consolidated its role as **a catalyst for the local economy**.

The new resources used have generated benefits for the community: in 2022, Acquedotto Pugliese made investments totalling approximately **80 euros per inhabitant** (double the average in 2019 and in 2020). This leading figure at national level highlights the growing ability of AQP to promote development for the economy and the communities it operates in.

Serving 4 million

AQP manages the integrated water service of **Puglia** and of 12 municipalities in **Campania**, for a total **population of more than 4 million**, and a **surface area of 20,000 square kilometres**, including various ATO administrative zones, among which ATO Puglia (the largest such area in Italy).



33,000-km grid

The water grid covers **more than 20,000 km** (including 5,000 km for adduction alone), with approx. **1,500 installations** including tanks, dividers and pumping plants plus a **sewer grid of more than 12,000 km**, and **700 pumping installations**.

The company also has **5 potabilizing plants located in three regions** (Fortore, Sinni, Pertusillo, Locone and Conza della Campania), **10 laboratories** for analysis, **184 purification plants**, **9 treatment plants** for re-use

of the treated water, 5 treatment plants providing resources and 1 composting plant.

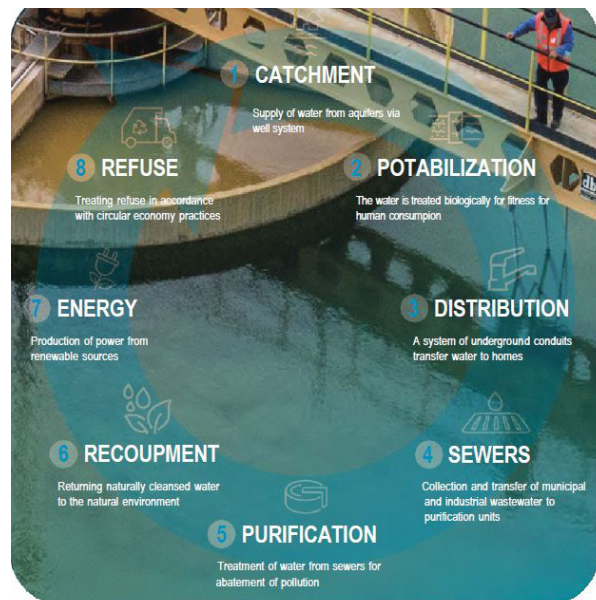
Also part of the Group is the **subsidiary ASECO SpA, a leader in the treatment and recovery of organic waste.**

AQP becomes a Multiutility

The medium-term growth strategy is to turn AQP into a **public multi-utility company operating** not only in the **refuse sector**, in which it is already a player, but also in the **energy sector**. This will entail the creation of a holding company controlling the various specialist subsidiaries.

Integrated water cycle

Acquedotto Pugliese **guarantees a water cycle that is integrated at all its stages**: from catchment, potabilization and distribution of drinking water to sewers and purification of wastewater and possible wastewater re-use.



A unique region

Puglia is the largest southern Italian region. The soil and subsoil have always been unsuited to the accumulation or storage of water.

AQP manages a complex, advanced supply system structured into **six water schemes**: SeleCalore, Pertusillo, Sinni, Fortore, Locone and Ofanto. The key feature of the system is its interconnectivity, **unrivalled nationwide**.

The water arrives from sources in Campania, and is taken from surface water, pondage and wells (deep aquifers).

Interconnectivity enables transfers of water among schemes in response to varying demand, and by **offsetting the variable production rates** from the various sources.

The main canal

Sele-Calore's key artery is the **Canale Principale** (main canal). This is an **extraordinary hydraulic engineering project**, with a total length of 244 km, including 99 tunnels and 91 canal-bridges.



Constructed between 1906 and 1918, the route of the **Canale Principale** crosses the Appenine and Murgesse massif. It reaches Puglia, near Monte Fellone in the province of Brindisi, and **meets more than 25% of all the region's water needs.**

Tara desalination plant

History teamed with innovation. In response to the need to diversify supply sources and conserve groundwater, AQP has planned an **inverse osmosis desalination plant on the Tara River**. This will be partially funded by National Recovery and Resilience Plan [PNRR] funding, and should be completed in 2026. It envisages a high-tech plant, with the potential of around **55,400 m³/day** of drinking water, which will produce the equivalent of the daily water requirement for over 350,000 people.

Water quality

Close attention is paid to the quality of water. **More than 1 million** chemical and microbiological parameters were monitored during 2022 in approx. **58,000 samples collected.**



In 2021, Acquedotto Pugliese started an innovative experimental project at the Locone plant, in close collaboration with the Istituto Superiore di Sanità (Italian National Institute of Health), the Region and the ASL Bari/BAT healthcare authority. This project **will entail full-scale use of Chloramine – already widely used in the United States - to disinfect the drinking water** distributed. The idea is to verify Chloramine's potential as an alternative to the disinfectants generally used, and to assess any benefits both from an operational point of view and in terms of the formation of fewer by-products of the disinfection processes.

Digital twin

Approx. 11,000 remote-controlled sensors monitor 1,544 water plants of the primary, secondary and urban adduction grid, **129 pumping plants, 101 purification plants and 105 meters** of large consumers. The implementation of control systems and devices enables **supervision of the flow**

of the water schemes, **energy monitoring** and the **monitoring of the key potability and purification indicators**, in turn enabling immediate intervention in the event of malfunctions and more rational water management.

The technology applied also enables **remote and automatic adjustment of flows** over most of the grid.

Acquedotto Pugliese has also deployed **underwater drones for video inspection of the main canal**, as well as **robots remote-controlled** externally for **cleaning the pumping tanks of the sewers** and the purification plants, as well as the routine activities of inspection and work on the very long pipes that transport the water from the sources.



The lack of large rivers in the region also means AQP must comply with **stricter purification criteria** than in other areas in Italy. This challenge is met successfully every day by **investing in leading-edge purification systems** and with **one of the cleanest of all coastlines for bathers in Italy**.

Leading-edge purification

184 purification systems are managed by means of advanced, sustainable technologies.

In 2010, Acquedotto Pugliese created, and has since managed, **the largest civil wastewater bio-phyto-purification plant in Italy, in Melendugno (LE)**. The project received the top national award at the Pianeta Acqua 2011 event, organised by Forum Nazionale per il Risparmio e la Conservazione della Risorsa Idrica (National Forum for Water Saving and Conservation).

Specifically, AQP is committed to the circular economy, with a **project for re-use of purified water**. Five plants are already operational (Acquaviva, Corsano, Gallipoli, Ostuni, and Castellana Grotte). In 2022, these plants **recovered a total of almost 600,000 cubic metres of water for irrigation**. A further 11 purification plants have already been modified and configured in line with the limits for re-use as per Italian Ministerial Decree no. 185/2003. For about 39 other plants, procedures are underway for wastewater treatment for re-use, within the ambit of infrastructural interventions for enhancement.

Also in the area of purification, 28 plants target the soil via **draining trenches** (with release limits that are more rigorous than the current regulatory requirements); the results are most encouraging, with the **creation of new green lungs**.

**Target:
reducing
sludge by 30%**

One of AQP's ongoing actions to reduce waste was the **purchase of 60 new high-performance mechanical drying plants, aimed at reducing purification sludge by up to 30%** (an 8.2% reduction was already achieved in 2022).



With the same aim, AQP has also embarked on the **construction of solar greenhouses to naturally dry** the sludge at 14 purification plants, **enabling a reduction in water content from 75% to 20%. These greenhouses are a sustainable alternative** to other drying technologies such as kilns, since they **use only natural solar energy**.

Lastly, AQP is engaged in innovative research projects to **turn sludge to best account through re-use**, including the creation of 8 plants for the production of chalk.

Thanks to these investments, AQP has managed to reduce the tonnage of landfill sludge **by 98.5%**.

ASECO

AQP Group's wholly controlled subsidiary ASECO **has extended the water cycle chain by producing fertilizers for agriculture**. ASECO S.p.A. manages a composting plant in Ginosa Marina, in the province of Taranto. The plant is authorised to treat up to 80,000 tonnes of waste per year. Revamping work is currently under way, with the adoption of optimal technological resources, and the plant will be operational in 2023.

**Energy-saving
and renewable
sources**

In recent years, AQP's **commitment to consuming less energy has intensified**, with various interventions undertaken to reduce its energy needs.

The objective to increase the quantity of energy produced from renewable sources was set at 11 GWh for 2022, with the aim of reaching 91 in 2026 and becoming completely independent over the longer term, with significant benefits in terms of the impact on service tariffs and the environment.



Significant investments will be made over the coming three-year period to boost energy efficiency. These will include the commissioning of new plants for the self-production of energy from renewable sources, with the construction of over **100 photovoltaic plants and around 30 purification sludge biogas cogeneration plants**. AQP currently produces over **2% of its own energy, with the aim to increasing this figure to 17% by 2026**.

Nine hydroelectric power stations are currently operational (total installed power: 5.2 MW), as well as **7 photovoltaic plants** (totalling 1.2 MWp), and **3 purification-sludge biogas cogeneration plants (0.9 MW)**.

These investments have also made it possible to **avoid 3,622 tons of CO2 emissions**.

Local development-driver

The figures are also positive with regard to the direct economic impact of AQP's activities: there were more than **480 tenders called in 2022 with starting prices totalling over 1 billion**.



More than 60% of the value of contracts were awarded to firms based in the Puglia region.

These figures highlight the Group's key role as a **driver for local development**.

Innovation and research

In 2022, 9.5 million was invested in research and development projects. AQP's innovation processes focus on **digitization, reducing the production of purification sludge, reusing waste water, energy efficiency, reducing water leaks** and introducing advanced systems from an **Industry 4.0 perspective**.

Digitalization

In particular, AQP is engaged in a **major digitization plan involving the various aspects of its operations, ranging from customer care and sustainability projects to the creation of a Smart Water Grid**.

The scope of the new **Smart Water Management** includes a **digital twin** of the water grid, which makes it possible to apply predictive technologies and analyse ordinary and extraordinary maintenance data. **80% of the project has currently been completed**.

Smart meters and smart grids

In this regard, a project is also under way to install **1 million smart meters**. This is a strategic project for Acquedotto Pugliese, which plans to **replace all meters over the next 10 years with latest-generation digital meters**, at no cost to the customer.

The project may be completed in advance of the deadline, in 2027. The aim is to have continuous metering capable of monitoring variations in consumption and detecting any malfunctions, guaranteeing a greater capacity for analysis. **The meters are geo-referenced and tagged, which enables localization and meter-interfacing with the grid for optimal water distribution.**

In due course, **a smart grid for water will also be created**. This long-term project will involve the creation of a control room that collects not only the operational data for the water and sewer grids, but also customer management data, a key element of which will be obtained from the **smart meters**.

More specifically, February 2022 saw the start of the Smart Metering Plan in the provinces of Taranto and Brindisi, with over **160,000 electronic meters** installed by mid-2023. These are managed on a walk-by remote metering basis, and as from the end of 2023, will be managed via the fixed LoRaWAN network.

2022 figures

The consolidated financial statements for 2022 showed a **net profit in excess of 20 million euros for the fifth year running (standing at 24.1 million euros)**.

The Shareholder assigned the operating profit for **use by the company on ongoing improvement of the water grid and to support investments**.

The value of production exceeded 741 million euros (+14.8% vs 2021), also thanks to the extension of the integrated water service and careful upgrading of the overall efficiency of structures throughout the area served.

Sustainability

In 2021, Acquedotto Pugliese subscribed to the Global Compact, an international agreement among companies worldwide and the United Nations, with the aim of **pursuing initiatives, projects and behaviours aligned with the 17 Sustainable Development Goals (SDGs)** of the UN's Agenda 2030.

The BOD of Acquedotto Pugliese approved the company's **Sustainability Plan for the three years 2022-2024**, with the intention of **creating a new growth model conducive to creating value within the areas**

AQP operates in. The corporate actions in the Plan focus on 3 closely interconnected macro areas: **Ambiente, Qualità e Persone (A.Q.P) (environment, quality and people)**. Key aims include guaranteeing an **increase in the production of electrical energy, sustainable water management, reducing the company's environmental footprint**, creating **circular processes** via new, innovative waste management plants, boosting the quality of customer care (also through technological innovation), and, lastly, improved landscaping for the various installations. A key people-policy aim is **fostering policies conducive to welfare and well-being** to enhance the quality of life, health and well-being of staff, as well as **sustainable mobility** to mitigate the environmental, social and economic impacts of private vehicles.

International actions

Over the years, the focus has been on **the countries of the Mediterranean basin and the Balkans**. More recently, and during 2022, business has also intensified with the Middle Eastern countries and the Arab Emirates.

Many international collaboration activities are also under way, **such as the Cross Water project**, of which the **Puglia Region is lead partner, with the participation of Acquedotto Pugliese, the Molise Region, the Municipality of Tirana, Tirana Water and Wastewater Utility (UKT) and Montenegro Regional Aqueduct (PE RWMC)**. The goal of the transnational Cross Water project (value 5.5 million euros) is to foster the joint development of new infrastructures and technologies, as well as new control and measuring systems.

To aid developing countries, AQP has also helped support national authorities in the formulation of **international aid policies regarding water**, and has organised advanced training sessions.

Also worthy of note is **AQP's participation in Interreg Greece and Interreg IPA with Albania and Montenegro**, with a view to actively fostering the dissemination of good practices relating to the use of treated waste water and the design of grids and control systems.

TVA – a new approach to communication

In 2022, Acquedotto Pugliese **launched TVA**, the world's first web TV dedicated to the topic of water.

This **innovative new communication project** aims at providing in-depth information on topics relating to sustainability, the environment and innovation. This web TV station provides **a weekly listing with various hours of previously unseen content**, relating not so much to the company as to water itself. With this open, inclusive communication project, Acquedotto Pugliese seeks user involvement. The listing features reports, news bul-

letins and weekly features, and further material may be provided by the Puglia community as a whole, with its institutions, businesses, districts and inhabitants encouraged to look into and reflect on issues relating to sustainability and the optimal use of water.

The latest addition to the listing is the LIS edition of the news, which aims to **make the information service** provided by AQP **more inclusive**, with the objective of promoting full participation and removing communication barriers.

Certifications

Acquedotto Pugliese has an Integrated Management System that operates in accordance with international standards governing Quality (**ISO 9001**), the Environment (**ISO 14001**), Energy (**ISO 50001**) and occupational Health and Safety (ISO 45001).

During 2022, AQP Group also confirmed the efficiency of its Integrated Management System, maintaining and consolidating the certifications obtained (issued by the Bureau Veritas certification body, accredited by Accredia).

AQP Water Academy

On the strength of a century of significant professional experience and its key expertise, Acquedotto Pugliese's HR Management founded **AQP Water Academy – Centro di Eccellenza di Cultura e Formazione sulla Gestione del Servizio Idrico Integrato (Centre of Excellence, Culture and Training on Management of Integrated Water Services)**.

This Academy provides **networking opportunities**, and manages and promotes projects with the involvement of local, national and international players.

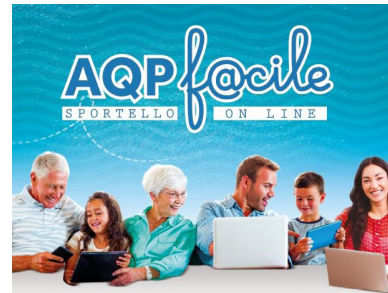
The commitment to human capital in 2022 resulted in a **7.5% increase in resources**, enhancing talents through respect for **uniqueness and inclusion, as well as continuous training**, of which approximately 37,000 hours were provided. Four hundred and forty-one women are employed in the company, up 9.2% compared to 2021 and up 54% in the under 30 category alone. Acquedotto Pugliese also began the preparation of its first gender balance report in 2022.

Customer care

Through its **Online Municipal Help Desks and 13 Front Offices**, AQP meets the needs of its customer base, handling requests for information and conducting commercial operations.

AQP's **CodaQ app** seeks to reduce queues at the desks as much as possible, and the **AQPf@cile platform and dedicated app** offer a service designed to respond increasingly effectively to customer's needs online.

AQP has also recently proposed the **"Acqua che ascolta" (Listening Water) project**, with the **Pedius app**, designed to allow deaf customers to communicate with Customer Care.



ACQUEDOTTO PUGLIESE

History and development over time

Serving southern Italy

The many links between the history of Acquedotto Pugliese **and that of Italy's south are deep-seated**, with AQP playing a key role in the process of the south's economic and social modernization.



The water supply system to bring water from upper Irpinia to Puglia was the brainchild of engineer Camillo Rosalba, It was then brought into existence thanks to the determined efforts of local politicians such as Matteo Renato Imbriani MP.

On 26 June 1902, the Kingdom of Italy passed Law no. 245 “for construction and the managing of the Acquedotto Pugliese”.

The first Europe-wide call for bids

In 1906 following the very first Europe-wide call for bids, work began on a canal across the Apennine range, of a length of more than 200 km, bringing water from the sources of the river Sele to Puglia, employing a workforce of more than 20,000.

On 24 April 1915 running water reached Bari for the first time, at the iconic fountain in the piazza Umberto I square. It was a local sensation. A new era had dawned in Puglia and the neighbouring districts.

The autonomous Puglia aqueduct authority

In 1919 the *Consorzio* (consortium) became the autonomous body, ***Ente Autonomo per l'Acquedotto Pugliese***, with the aim of creating and maintaining an increasing number of conduits and sewer systems.

Running water came to Foggia in 1924 and to Lecce in 1927. During the 1930s and 1940s water was supplied to the homes of 350,000 in Puglia. The water no longer stopped in the town squares. It reached the newer homes and condominiums, in which the first bathrooms were installed.

The Palazzo dell'Acqua

During that same year, it was decided to construct a building to attest permanently to the arrival of this water in Puglia.

This was the work of the **internationally renowned and talented Roman artist, Duilio Cambellotti**, including many murals, sculptures, other adornments and furniture.



In the city centre, the **Palazzo dell'Acqua** has since become not just a part of Bari's but of Italy's artistic heritage as a whole.

A system of integrated water grids

By the 1970s, Acquedotto Pugliese **had already evolved into a complex system of integrated spring- and pondage-drinking water systems**. In 1974 the Pertusillo water supply system was inaugurated, extending to Taranto. Concurrently, the Foretore water supply system came to serve the north.



These same years saw the creation of the first potabilizing units to treat water of artificial pondage origin.

AQP becomes an S.p.A. (joint-stock company)

In July 1999, AQP became a joint-stock company. In January 2002, the government assigned ownership of the system to Regione Puglia e Basilicata.

In 2011, Basilicata transferred its shares to the Puglia region (hence Puglia became the sole proprietor of AQP).

The new strategic plan, toward 2026

Acquedotto Pugliese's new 2023-2026 strategic plan foresees investments totalling 2 billion euros to implement energy transition, regulation of water as a resource, and the circular economy. For the purpose of augmenting the number of new water sources, feasibility studies commenced regarding **construction of two new supply lines from Albania and Abruzzo**. Lastly, **reorganisation of the activities and of the structure of the Group is planned, via the founding of a holding company** controlling the subsidiaries (including Aseco).

ACQUEDOTTO PUGLIESE
Data sheet

President	Domenico Laforgia
CEO	Francesca Portincasa
Value of production	741 million Euros
Net profit	24.1 million Euros
Investments	312.8 million Euros
Calls for bids	1 billion Euros
Research projects	9.5 million Euros
Employees	2,255
Inhabitants served	4 million
Users	1 million
Water grid	more than 20,000 km
Sewer grid	more than 12,000 km
Potabilization units	5
Purification units	184
Treatment plants	9