

Soluciones tecnológicas innovadoras para el desarrollo sostenible

Abengoa, international leader in desalination

- With a portfolio of desalination projects installed and under execution that exceeds three million cubic meters.
- It has developed Rabigh 3, which has obtained a Guinness World Record for the largest reverse osmosis desalination plant in the world.
- With more than 75 years of experience in the water sector, developing large-scale projects in countries such as Spain, Algeria, Morocco, Ghana, Tunisia, United Arab Emirates, China, United States, and Mexico, among others.

March 22, 2022 - Abengoa, an international company that applies innovative technology solutions for sustainable development in the infrastructure, energy and water sectors, leads the water sector and, more specifically, the reverse osmosis and desalination water treatment sector, as shown in its portfolio of references.

Awarded projects of worldwide reference

In consortium with ATNER (Atlas Energie), Abengoa has been awarded the extension of the Tan-Tan desalination plant (Morocco) by the National Office of Electricity and Drinking Water (Office National de l'Électricité et de l'Eau potable, ONEE) of the Kingdom of Morocco. The project includes the expansion of the Sehb Lharcha demineralization station from a flow rate of 50 l/s to 150 l/s. These works are part of a comprehensive project to strengthen the water supply of the city of Tan-Tan.

It has also been selected by Ausenco Chile Ltda. to develop the project to expand a desalination plant at the Mantoverde copper mine from 120 L/s (10,400 m³/day) to 380 L/s (33,000 m³/day). The plant is in the Atacama region (Chile), and is owned by the company Mantos Copper.

In Brazil, Abengoa is executing a desalination plant of more than 86,000 m³/day and will operate and maintain it for 30 years in the Region of Fortaleza, in the State of Ceará. The project is being developed in consortium with PB Construções and led by Marguise.



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Successful completion

Abengoa has recently obtained, from ACWA Power, the acceptance certificate for the 600,000 m³/day Rabigh 3 desalination plant, together with its partners, Sepcolll (Power China) and Sidem (Veolia). Located in the city of the same name in Saudi Arabia, it is the largest reverse osmosis desalination plant in commercial operation in the world. Rabigh 3, which is already supplying water to the network at full capacity, ensures the supply of drinking water to more than three million people in the cities of Makkah, Al-Mokarramah, Jeddah and Mastorah. This project is a global benchmark because of its design, which allows it to reduce energy consumption and increase plant availability. It has also recently obtained a Guinness World Record for being the largest reverse osmosis desalination plant in the world.

Abengoa, also in consortium with SEPCOIII, has started producing drinking water at the Taweelah desalination plant (United Arab Emirates, UAE) in record time, three months ahead of schedule, for ACWA Power. Taweelah is the largest reverse osmosis desalination plant in the world (909,000 m³/day) and the first to combine the production of drinking water with the generation of clean energy.

In Salalah (Oman), Abengoa has built a 113,500 m³/d reverse osmosis desalination plant for a consortium led by ACWA Power and comprising Veolia and Dhofar International for Investment and Development Co SAOG. The Oman Power and Water Procurement Company (OPWP) acted as offtaker. Its design and construction have been a challenge for the company as the plant is able to adapt to the worsening seawater quality caused by the "Khareef" weather phenomenon.

Since 2019, the Shuaibah desalination plant in Saudi Arabia, with a capacity of 250,000 m³/day and reverse osmosis technology, has been in operation. Abengoa and Fisia Italiampianti were responsible for the engineering, supply, and construction of the project, in which the Saudi Water Partnership Company (SWPC) acted as offtaker, while ACWA Power is the owner and operator.

Projects in progress

In Morocco, Abengoa is finalizing the construction of the Agadir desalination plant, the largest plant designed and conceived for the combined use of drinking water and irrigation water in the world. It has a capacity of 275,000 m³/day (150,000 m³/day of drinking water and 125,000 m³/day of irrigation water), with the possibility of expansion to 400,000 m³/day and employs reverse osmosis technology. The project also includes an irrigation network for a surface area of



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15,000 ha. Abengoa will also be responsible for its operation and maintenance for 30 years.

The National Water Exploitation and Distribution Company (SONEDE), under the aegis of the Tunisian Ministry of Agriculture, Water Resources and Fisheries, selected Abengoa in 2017, in consortium with Engineering Procurement & Project management (EPPM), to develop a 50,000 m³/day desalination plant in the city of Sousse (Tunisia), designed for a possible expansion to 100,000 m³/day. The project is progressing well.

Abengoa, also together with SEPCOIII and for ACWA Power, is currently constructing the 600,000 m³/day reverse osmosis desalination plant, Jubail 3, in Saudi Arabia. This will be the second largest plant with reverse osmosis technology in the country (it will have the same capacity as Rabigh) and will guarantee the supply of drinking water to the Eastern provinces, Riyadh and Qassim, all year round.

In the United Arab Emirates, Abengoa is finalizing the construction of another reverse osmosis seawater desalination plant, with a capacity of more than 47,000 m³/day, at the industrial complex of the world's largest premium aluminum producer, Emirates Global Aluminiun (EGA), located in Jebel Ali (Dubai). Abengoa is developing this project for SEPCOIII.

A portfolio of more than three million cubic meters

Abengoa is a recognized company in the international water market. In desalination alone, it has built more than 30 desalination plants to produce drinking or industrial water from seawater or brackish water, using conventional and advanced membrane processes. All these plants have a total installed capacity of more than 2.3 million m³/day of desalinated water, which will be increased by a million more when Abengoa completes the portfolio it currently has under construction.

In this regard, the prestigious specialized magazine Engineering News-Record (ENR) awarded Abengoa the first international position in desalination projects in its December 2021 ranking.

Abengoa has more than 75 years of experience in the water sector, providing sustainable solutions to the integral water cycle, both to the scarcity of water resources, through large desalination plants, drinking water treatment, reuse and hydraulic infrastructures for storage, transport and distribution, and to environmental protection, with the construction of urban and industrial wastewater treatment plants.

ABENGOA

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In recent years, Abengoa has developed large-scale projects in Spain, Algeria (three desalination plants totaling 500,000 m³/day), Morocco, Ghana, Turkey (400 km intelligent supply project in Denizli), Tunisia, United Arab Emirates, China, India, United States (water treatment plant for the Solana solar thermal power plant of 14,000 m³/day), Mexico (water treatment plant for the Solana solar thermal power plant of 14,000 m³/day), and the United States (water treatment plant for the Solana solar thermal power plant of 14,000 m³/day), Mexico (1,700 m³/day water treatment plant for the Durango combined cycle plant), Brazil, Chile and Peru (130,000 m³/day extension of the Arequipa drinking water system), among others.

Abengoa has always been committed to reverse osmosis desalination. Based on its firm commitment to technology and innovation as a competitive advantage, Abengoa develops conventional and advanced seawater and brackish water reverse osmosis processes to produce drinking water and process water, using the solution that best suits the client. And from its position as a world leader in this technology, Abengoa will continue to maintain its commitment to contribute to improving the well-being of the population in regions with water scarcity or limited access to this resource, contributing its experience and technology.

About Abengoa

Abengoa applies innovative technology solutions for sustainability in the infrastructures, energy and water sectors. (<u>www.abengoa.com</u>)

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