French-run water plant launched in Israel

Original article: www.ejpress.org/article/4873

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Updated: 28/Dec/2005 16:05

An innovative new water plant in the Israeli city of Ashkelon, operated by French company Veolia Water, is now fully operational.

The new Ashkelon Sea Water Reverse Osmosis plant will provide drinking water for 1.4 million people in southern Israel through the desalination of local sea water.

It produces 320,000 cubic meters of drinking water a day, 108 million cubic meters a year, which represents about six percent of the country's water demands.

The estimated 1.5 billion Euro contract signed by Veolia and its Israeli partners covers the finance, construction and operation of the plant and the overall revenue for the first 25 years. After this initial period, the plant will be transferred to the client, the government of Israel.

Worldwide provider

The Ashkelon unit is the first major step in the Israeli government's desalination master plan.

North Africa and the Middle East are facing water shortage problems. They hold more than six percent of the world's population but less than two percent of the planet's renewable fresh water.

Israel decided to address this problem five years ago by launching a desalination project which plans the construction of several seawater treatment sites along its Mediterranean coastline.

The Ashkelon unit is the first of the series. Its production represents 25 percent of Israel's initial goal of 400 million cubic meters if drinking water a year. By 2020, the country aims to produce 750 million cubic meters.

Worldwide, only one percent of drinking water is produced by desalination and Veolia Water believes this technology should be developed. Seawater could become one of the main alternative sources in the decades ahead.

Its desalination is a priority area of research and development for Veolia. The French company won the Ashkelon plant tender launched by the Israeli Ministry of Infrastructure in 2001 with its Israeli associates IDE technologies and Dankner Ellern Infrastructure.

Desalination plan

Veolia believes the Ashkelon plant is a decisive step towards the recognition of its expertise in seawater desalination, using either membrane technology as in Ashkelon, or the thermal process, which is widely used in the Middle East.

The plant is comprised of two parallel treatment units that function separately. It includes membrane desalination units, facilities for seawater pumping, brine removal and water treatment.

The system utilises three parallel pipes. From the pumping station raw seawater flows to the pre-treatment facilities through two separate lines. Filtration is performed in two stages, with gravity and cartridge filters. The filtered water then passes to the seawater reverse osmosis process via high-pressure

pumps.

Post treatment is used to re-mineralise the water, which then enters the national water system.

The Ashkelon factory designers planned maximum saving of energy and money.

Osmosis requires a high level of energy, because of the pumps, but the costs were reduced by the construction of a dedicated power station.

The drinking water that is produced in Ashkelon costs around 52.7 cents per cubic meter, which has been evaluated as the lowest price in the world for this kind of operation.
