PPP’s & Minimizing Carbon Footprint in SWRO Desalination

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Marseille CMI – 12 - 14 December 2016
Desalination: A long Commitment for SUEZ
Over 45 years

World Desalination:
Almost 15,000 plants in operation or under construction
Able to supply 85,500,000 m³/day
In 150 Countries

SUEZ’s Desalination:
More than 250 plants
Built or under construction
Able to supply over 4,200,000 m³/day
2,000,000 m³/day RO under SUEZ O&M

PIONEERS: OVER 45 YEARS EXPERIENCE FOR SUSTAINABLE DESALINATION

Installed capacity by country:
- < 10,000 m³/d
- > 10,000 m³/d
- < 50,000 m³/d
- > 50,000 m³/d
- < 100,000 m³/d
- > 100,000 m³/d
- < 500,000 m³/d
- > 500,000 m³/d

RO Leaders today: 12 RO Plants over 100,000 m³/day each

O&M
DB
DBO
BOT
Minimizing Energy & using Renewable Energies in Seawater Desalination

First large SWRO facility in the World to be powered by Renewable Energy (Wind)

First SWRO Plant @ “0” Carbon footprint

In Operation from 2006
Perth, Australia
145 000 m³/day

In Operation from 2012
Melbourne, Australia
450 000 m³/day

2nd largest SWRO in Europe.
Photovoltaic panels on roofs 1.3 MW, 20.372 m² of surface

3rd largest SWRO in the World.
Renewable Energy Certificate (REC) “Green Plant” in 225 Ha @ “0” Carbon footprint
Masdar: Coupling Renewable Energy & Desalination  
2 Innovation Projects: Pilots Plants and New Tools

The 1st Project covers the design, engineering, procurement, construction, commissioning, operation, maintenance and evaluation of 2 pilot plants, over a period of 18 months.

- In the 1st pilot SUEZ’s plant reaches the potable water production of 100m³ per day with the last generation of the RO technologies, having the target of reducing the energy consumption by a 10%.

- SUEZ has included a 2nd pilot to test a breakthrough technology in desalination (LIM) able to increase the overall permeate production using the bine as water source and very an small electrical energy consumption and a low grade thermal energy.

The 2nd Project to confirm the viability of large scale production of desalinated water from a plant fully powered by renewable energy. Select the most practical & economical solar technology and develop an optimized design of a full-scale solar energy powered plant coupled with the SWRO plant.
Desalination & BOT Case Studies

Victorian Desalination plant
Melbourne, Australia

$3.5 billion project
Largest Water BOT in the world. 30 years
450,000 m³/d of water produced
4 million of people served
3rd largest SWRO in the World
84 km underground water transfer pipeline, 87 km underground power line
225 ha ecological reserve
100% of the energy required offset through Renewable Energy (Wind)
2010, 2013 & 2014 Global Water Awards

Barka IV Desalination plant
Oman

IWP- BOO, 20 years
280,000 m³/d of water produced
Largest SWRO Plant in Oman
For Oman Power and Water Procurement (OPWP)
Contract signed in March 2016
SPC Partners: Itochu, Suez, Engie & Towell Eng. Suez TI in charge of 100% EPC
DAF, DMF and 2 stages RO.
Suez and Engie built also Barka II
To supply Drinking water in 2018.
Playas de Rosarito, Mexico

**SWRO BOT – 380 000 m³/day**

**40 years BOT** to built a Desalination plant in 2 phases: 190 000 m³/day + 190 000 m³/day

Rosarito will show the state of the Desalination Technology and will be the **Largest SWRO** in America’s to compensate the reduced resources of Colorado River

**O&M period of 37 years**

Partners: CW/NCS Agua + NuWater

Pretreatment: **DAF + UF**

Using part of the facilities of TE Benito Juarez Power Plant
Thank you for your attention

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