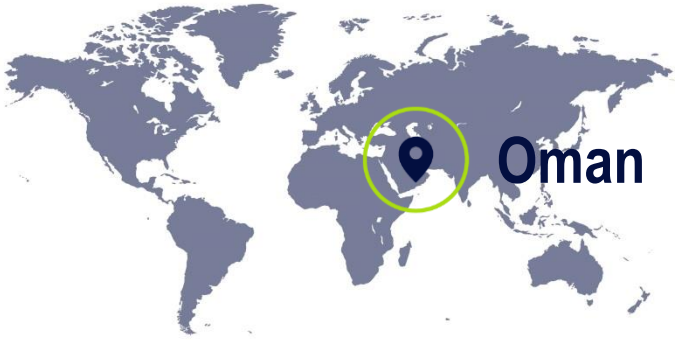
Barka IV
seawater **reverse osmosis** **desalination** plant



Oman Power and Water Procurement (OPWP), the company in charge of water and energy supply in the Sultanate of Oman, has chosen the Barka Desalination Company, a consortium made up of SUEZ and its partners (ITOCHU, ENGIE et Towell) to finance, build and operate a new seawater desalination plant in Barka.

The Sultanate of Oman has been suffering from a shortage of drinking water for several years, while demand is on the rise due to population growth and urbanisation. To take up the challenge of this scarcity of water resources, the authorities are turning to alternative solutions, including desalination.

The Barka desalination plant will treat turbid and algae-rich waters of the Gulf of Oman and will produce up to 281,000 m^3 of drinking water per day, the daily consumption of 1.5 million inhabitants. This plant will be the largest SWRO in Oman.
SUEZ will contribute to water security of the Sultanate of Oman for the next 20 years.

This is the second desalination plant built by SUEZ in the Sultanate of Oman, following the Barka II station (120 000 m^3/d) that was inaugurated in 2009.

suez

Client's benefits & SUEZ commitments

SUEZ as single interlocutor endorsing full responsibility in a long-term commitment

- integration of operating constraints in the design phase ensuring the performance guarantee on the whole project life span
- know-how & expertise transfer to local staff
- affordable water tariff

Protection of local ecosystem - Optimization of the use of resources

- respecting environmental and all regulations
- a design to optimize energy consumption

Contribution to a responsible economy enhancing In-Country Value

- engagement of SUEZ and its partners for local employment actions
- development of the Omani workforce and economic growth
- optimization of local sourcing of goods and services

Completion in **28** months
a very tight schedule for a plant of this size

Global Water Award 2017
Barka 4 IWP Financing
has been awarded for the
"Water Deal of the Year"

treatment process

marine works

intake tower (1.5 km from the plant), **intake piping and outfall**

inlet and pretreatment

- **coarse & fine screening (2+1)**
- **seawater pumping station (2+1 pumps):** 13,700 m^3/h
- **flotation:** 9 Seadaf™ and 2 coagulation chambers
- **filtration:** dual media gravity filter (16 cells)- filtered water and backwash water tank

reverse osmosis: two-pass configuration

- **23 Cartridge filters (11 for HP line + 12 for ERD line)**
- **RO overall recovery: 46%**
- **12 first-pass RO Trains**
  - 12 high pressure pumps (Q: 1110 m^3/h)
  - 20,832 seawater membranes (12x (7x248 membranes))
- **3 second-pass RO Trains**
  - 3 booster pumps (Q: 650 m^3/h)
  - 1,155 brackish water membranes (3x (7x55 membranes))

remineralization and permeate storage

2 permeate and flushing tanks and 5 limestone filters

sludge treatment:

2 Densadeg® units and 2 centrifuges

BOT stakeholders

End client : **Oman Power & Water Procurement Co**

SPC :**Barka Desalination Company S.A.O.C.**
(SUEZ, ENGIE, ITOCHU, Towell)

EPC Seawater RO plant	O&M Seawater RO plant
Degrémont S.A.S. (100%)	**Degrémont S.A.S.** (100%)

key dates & figures

- **plant inlet flow:** max. 656,500 m^3/day
- **plant outlet flow:** 218,000 m^3/day
- **seawater salinity:** 38 g/L (average)
- **seawater temperature**: 22 to 35°C
- **notice to proceed:** February 2016
- **commercial operation date:** 13/06/2018
- **O&M duration** : 20 years
- **total amount for EPC contract:** 252 M.USD

www.degremont.com

Since March 2015, all the Group brands (Degrémont, Ozonia, Aquasource, Ondeo IS, Ameriwater, Infilco, Poseidon…) became SUEZ.

Meanwhile, from now own, the technologies and know-how of our Treatment Solutions offer will be distinguished with the label degrémont®.

SUEZ