

# Renewable Resources for Desalination

## Future of Desalination



# About IDWT

For more than **38 years** International Desalination and Water Treatment (IDWT) group has been active in the water industry, providing solutions for numerous ranges of water related issues. In 1988 we introduced to Egypt the first desalination plant using reverse osmosis membranes, in the Sinai Peninsula. In our projects we have been covering all the process stages.

IDWT has executed in the Sultanate of Oman more than 45 SWRO Plants. Most of them are Containerized Compact Solutions. Ranging from 50 m<sup>3</sup>/D to 10,000 m<sup>3</sup>/D.



**IDWTGROUP**  
MORE WATER, LESS ENERGY, ZERO WASTE



TIWI - Sultanate of Oman  
3 X 500 m3/D



Qarn Allam - Sultanate of Oman  
4 X 600 m3/D

SUR - Sultanate of Oman  
1 X 2400 m3/D



QURIYAT - Sultanate of Oman  
4 X 500 m3/D

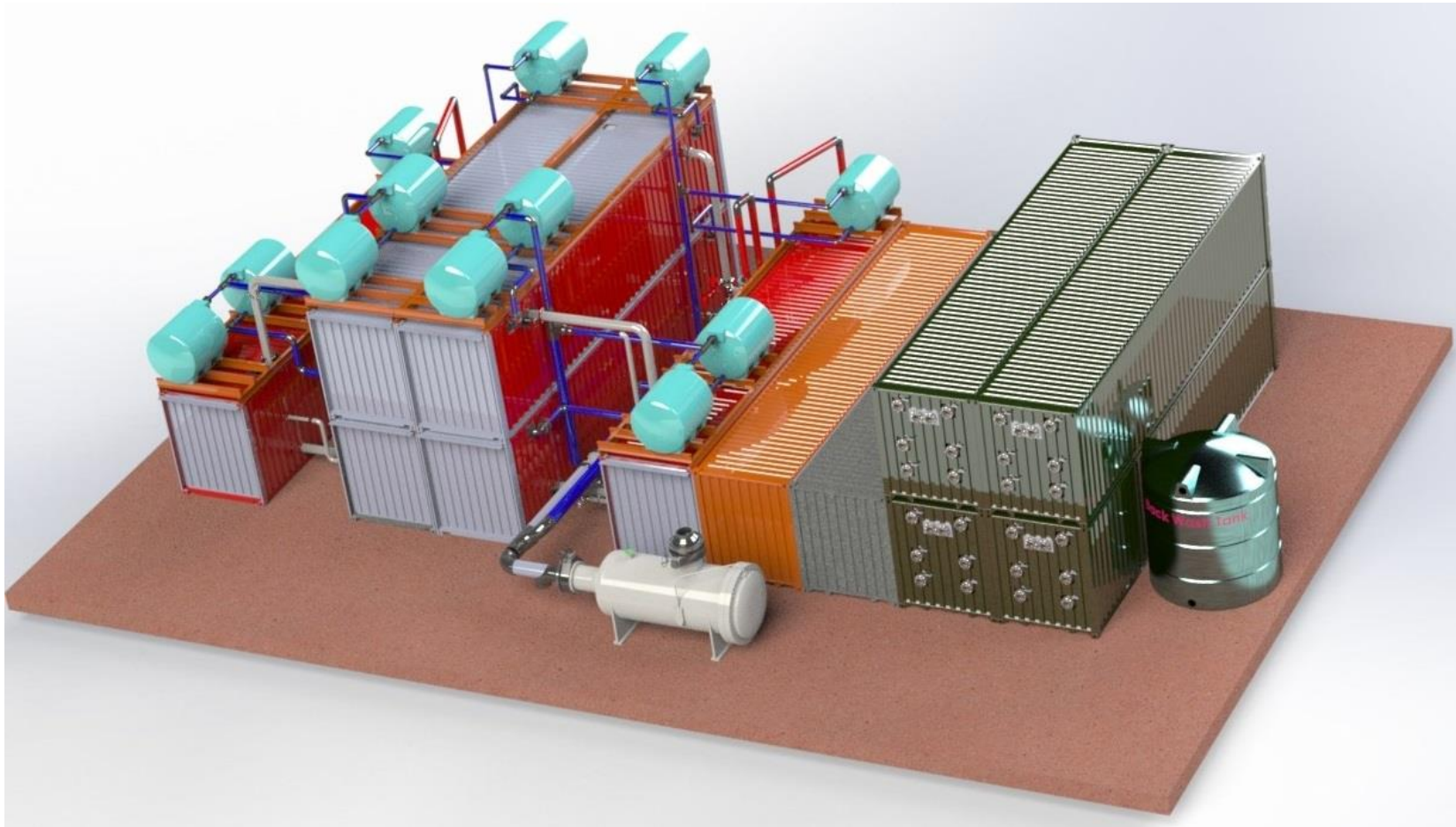


Containerized UP TO 10,000 m3/D



Hij - Sultanate of Oman  
3 X 500 m3/D

# Our Modularized 10,000 m<sup>3</sup>/D SWRO Plant



# Introduction

- Desalination Plants are very important now and some countries like Egypt are now searching for Opportunities to localize the manufacturing and fabrication of Desalination Plants
- Desalination technologies are always developing for one purpose which is reduce the Power Factor
- If the Power Factor decreases this will affect the overall view on Desalination Plants
- Renewable Energy such Solar Energy, Wind Turbines and BioGas can be a Solution.
- Desalination Plants can affect the Environment and the Marine Life



Shared Prosperity Dignified Life



SUSTAINABLE  
**WATER &  
ENERGY**  
SOLUTIONS  
NETWORK



# The African Continent

- Desalination is becoming the water source for some countries because of the decrease of Fresh Water sources.
- Desalination and Water Reuse are now options for Agriculture
- East African region is now searching for Desalination Opportunities to cover their deficits. The main issue there is the power is very expensive and not enough for the big Plants.
- East Africa must add wheeling to their grid for Solar Energy option, to solve the energy deficit during night.
- East Africa is very green so they can use the plants wastes to produce Biogas for the Future planned SWRO Plants



# Problems of SWRO Plants can be solved by Power

- The Brine rejected from the SWRO plants can be decreased by using higher power consumption.
- The existing technologies now for Brine Treatment are the Forward Osmosis and High Pressure RO Membranes.
- These technologies have not been tried on large scale plants
- The Electrical consumption is between 8 – 12 kWh/m<sup>3</sup>. Compared to 3.5 kWh/m<sup>3</sup> in normal SWRO Plants