



Integration of Dow Components Uses Nile Water to Produce High-Purity Water for Power Industry in Egypt (Damietta)



DOW™ Ultrafiltration modules, DOW FILMTEC™ Reverse Osmosis elements and DOWEX™ Ion Exchange Resins are installed to produce more than 3,000 m³/day of high-purity water for Damietta Power Plant.

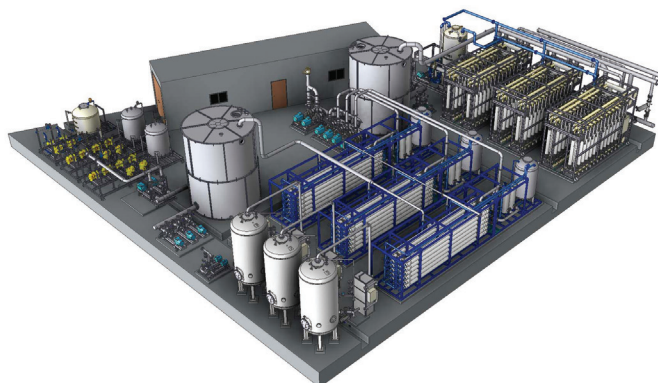
Fast Facts

Location:	Damietta, Egypt
Construction:	PROTECNO Srl (Italy) and EMIT SpA (Italy)
End-user:	Cogeneration Power Plant
Purpose:	Feed for NO _x Removal system and feed for Evaporate Air Cooler system
Water Source:	River Water (Nile)
Installed Capacity:	3,710 + 1,855 m ³ /day RO permeate flow 3,120 + 1,560 m ³ /day Mixed Bed product flow
Start-Up Date:	July 2011

Raw Water Quality and Specified Product Water Quality

Parameter	Unit	Raw Water	Required Product Water
Temperature	°C	20 – 30	20 – 30
Conductivity	µS/cm	476	< 0.1
Silica SiO ₂	mg/L	4	< 0.01
Sodium	mg/L	79	< 0.05
TSS	mg/L	< 40*	—
Turbidity	NTU	< 15*	—

*Possible high solid load peaks (seasonally) with higher values than ones indicated in the table.



3D Layout of the UF + RO + MB System in Damietta



System Information

Unit	Design Flux (lmh)	Design Recovery (%)	Number of Trains	Product Installed	Total Number of Modules
UF	40 ^a	85 ^b	2+1 standby	DOW™ UF SFP-2880	138
RO	23.5	75	2+1 standby	DOW FILMTEC™ BW30HR-440i	252

^aUF operating flux of all three UF trains on duty: Instantaneous filtrate flow (L/h) / total active area (m²)

^bUF recovery (related to UF feed) % of all three UF trains on duty: UF filtrate net flow / UF feed flow · 100

Unit	Trains	Product Installed	Regenerant	Total volume (L)
Mixed Bed Polisher	2 + 1 standby	DOWEX MARATHON™ C	H ₂ SO ₄	3,750 (H ⁺ form)
		DOWEX MARATHON™ A	NaOH	7,200 (OH ⁻ form)

Flow Diagram of the Plant

