





# Moncofar Desalination Plant

(Castellon)

## Major technological contributions

### ERI PX 300 Energy recovery system

The plant's major technological innovation is an isobaric chamber type of energy recovery system providing higher performance in comparison to the Pelton turbine and other previously used systems.

Spanish suppliers:

- AP and Booster pumps: Flowserve (partly manufactured in Spain)
- GRP Sand filters, GRP cartridge filters and GRP reagent tanks:

- Plavisa
- Male valve: IVALSA/ARFLU
- Pressure vessels: Bel
- Superduplex AP piping: Grupo cuñado
- Osmosis rack structures: Mainsier
- Outdoor GRP pipes: Uralita
- Sulphuric Acid tank: Talleres Lérida
- Butterfly valves: KSB-AMVI
- Bridge crane: Vinca
- GRP plant piping: Amitech

### GENERAL TABLE

Current status	Under operation
Maximum production	Current: 30,000 m <sup>3</sup> /day. Extensible: 60,000 m <sup>3</sup> /day
Benefited population	120,000 inhabitants
Desalination process	Two-pass reverse osmosis
Number of Reverse Osmosis frames	Current: 3 units. Extensible: 6 units
Number of high pressure racks	Current: 3 units. Extensible: 6 units
Type of intake	Open intake tower (height: 4.50 m, maximum depth of top of tower -12.456 m).
Desalinated water pumps	Current Moncófar: 2+1 units, 550 m <sup>3</sup> /h, 20.59 mWC. Future Moncófar: 3+1 units, 550 m <sup>3</sup> /h, 20.59 mWC. Current Chilches / Almenara: 2+1 units, 698.33 m <sup>3</sup> /h, 78.6 m. Future Chilches / Almenara: 3+1 units, 698.33 m <sup>3</sup> /h, 78.6 mWC
Pump pipeline (seawater intake)	Stretch on land: 2,756 m of 2 Ø 1000 mm Stretch at sea: 3,162 m of 2 Ø 1200 mm
Outfall pipe	Stretch on land: 2,756 m of 1 Ø 1,000 mm Stretch at sea: 876 m 1 of Ø 1200 mm and 284 m de 1 Ø 1000 mm
Regulator tank	28.850 m <sup>3</sup> m <sup>3</sup> .
Total installed capacity	1,443.48 KW current intake. 886,5 KW current product water distribution pumps. 5,926.61 KW current desalination plant. 2,509.2 KW future intake. 1,182 KW future product water distribution pumps. 10,343.87 KW future desalination plant.
Exploitation term	2 + 2 years
Investment	55,2 million euros (without VAT)
Financing from European funds	16,2
Distribution capacity	
Cubic metres per day	Current: 30,000 m <sup>3</sup> /day. Future: 60,000 m <sup>3</sup> /day
Cubic hectometres per year	Current: 9.9 Hm <sup>3</sup> / year. Future: 19.8 Hm <sup>3</sup> /year
Energy data	
Electric power (kw)	Current: 6,539.01.32 KW. Future: 11,104.4 kWp
Voltage (kv)	Intake supply 6 KV. Desalination plant supply 20 KV Intake voltage 0.4 KV. Desalination plant voltage. 6, 0.69, 0.4 KV
Specific energy consumption	4.75 KWh/m <sup>3</sup> total. 3.36 KWh/m <sup>3</sup> osmosis
Distribution network	
Moncofar	621 ml de tubo PRFV Ø 600 mm
Xilxes / Almenara	4.650 ml tubo PRFV Ø 500 mm