Asia's largest seawater desalination plant near Mamallapuram

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News

Construction is in full swing on a 400 MLD (400 million litres a day) seawater desalination plant at Perur (Nemmeli panchayat) on East Coast Road near Mamallapuram, Chengalpattu district – on a scale not found elsewhere in Asia. It covers 85.51 acres, is funded by the Japan International Cooperation Agency (JICA) and implemented by the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB).

Key facts

Place	Perur, Nemmeli panchayat, ECR, Chengalpattu district
Capacity	400 million litres a day (400 MLD)
Technology	Seawater reverse osmosis (SWRO)
Funding	JICA loan
Implementer	CMWSSB (Chennai Metrowater); contractor – VA Tech Wabag–Metito JV
Foundation	21 August 2023
Beneficiaries	About 22.67 lakh people in Chennai, Tambaram and nearby areas

Background

- Science: reverse osmosis pushes seawater under high pressure through a semi-permeable membrane, leaving the salt behind. Seawater averages about 35 g of salt per litre (3.5%).

- Chennai's desalination plants: Minjur (Kattupalli) – 100 MLD (2010, the first); Nemmeli – 100 MLD (2013). The existing plants meet a sizeable share of the city's drinking-water need.
- Geography: Chennai has no large river; it relies on the Poondi, Puzhal, Chembarambakkam, Cholavaram and Kannankottai–Thervoy Kandigai lakes, Veeranam, and Krishna water (Telugu Ganga), and depends heavily on the north-east monsoon.
- History: Mamallapuram was the Pallava port city (Narasimhavarman I 'Mamalla'); the Shore Temple and Five Rathas became a UNESCO World Heritage Site in 1984.
- Environment: the concentrated brine from desalination must be diffused far out at sea to protect marine life, and the plants need a lot of electricity.

Tamil Nadu link: in 2019 Chennai faced an acute water crisis (water was brought by train from Jolarpettai). Desalination gives a steady source that does not depend on rain.

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