



Solar Thermal Forward Osmosis

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- **Solar thermal forward osmosis system is used to clean sea (saline) water.** Recently, this method has been used in the 'Naripayyur' village of the drought-prone Ramanathapuram district located in the south-east corner of Tamil Nadu. With this, 20 thousand liters of clean drinking water will be available to the villagers daily.
- The Ramanathapuram district is severely affected by the scarcity of drinking water due to salinity and poor sources of ground water. It has a 265 km long coastline, which is about 1/4 of the total length of the coast line in the state.
- Tamil Nadu IIT Madras in collaboration with Empereal – KGDS Renewable Energy **have successfully established and demonstrated this system to address prevalent and emerging water challenges in Mission Mode in the village.** The initiative has been supported by the Department of Science and Technology (DST).
- The FO system facilitates high recovery, low energy consumption, potential for resource recovery, especially in solutions of high osmotic pressure, less fouling of the membrane because of low pressure operation, easier and more effective cleaning of the membrane, longer membrane life and lower operating costs.
- This technique RO Operates at about 2 bar of pressure as against 50 bar of pressure. Also, **it is highly energy efficient as compared to other technologies.**

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