

June 17, 2026

Meidensha Corporation

To members of the media

## **Meiden Singapore to commence operation of demonstration plant with Flat-sheet Ceramic Membrane at PUB's Tuas Desalination Plant to improve energy efficiency for seawater desalination**

Meiden Singapore Pte. Ltd. (Meiden Singapore), an overseas subsidiary of Meidensha Corporation (Meiden) has completed the construction of a demonstration plant of Meiden's Flat-sheet Ceramic Membrane for pre-treatment of seawater at the Tuas Desalination Plant (TDP) in Singapore. Operations at the plant commenced from June 2026. Meiden Singapore will conduct approximately 6 months of operation to verify stable operation at the large-scale demonstration plant and validate energy-saving effects.

In 2010, Meiden signed a Memorandum of Understanding (MOU) with PUB, Singapore's National Water Agency, concerning the joint development of water treatment technologies. Since then, the two parties have conducted demonstration research at various water treatment plants in Singapore. Following the promising results from a collaborated pilot project with PUB from 2021, Meiden proceeded with the construction of the demonstration plant in 2024. The demonstration plant is co-funded by Meiden, National Research Foundation, Singapore and PUB under the Living Lab (Water) Programme.

### **Enhancing energy efficiency for treating desalinated water**

The demonstration plant involves retrofitting one of the existing Dissolved Air Flotation (DAF) Systems with Meiden's Flat-sheet Ceramic Membrane technology at TDP. It will have the capacity to treat seawater and produce up to 6 million gallons (nearly 28,000 cubic meters) per day of filtrate for the downstream treatment processes. As an alternative to the conventional pre-treatment technology of combining DAF and polymeric Ultrafiltration Membranes, using only the Flat-sheet Ceramic Membrane

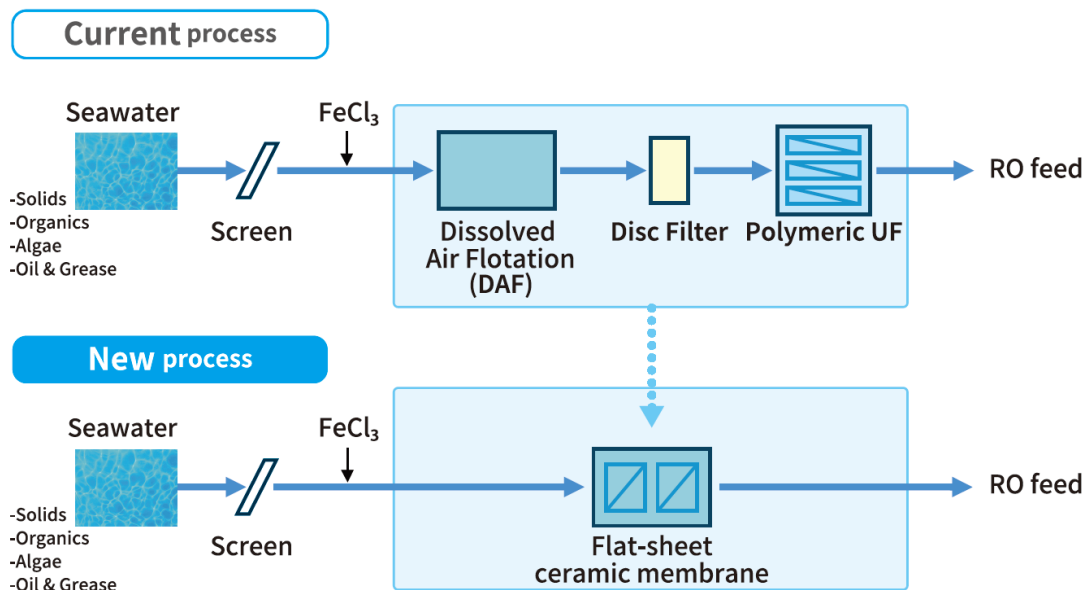
without DAF during the filtration process has the benefits of lower energy consumption and effective treatment of feed water in the event of algae blooms, oil and grease spills. In this demonstration project, Meiden Singapore will verify the performance of newly designed Membrane Units and Membrane Cassettes for seawater applications.



Overall view of demonstration plant



Membrane Tank



Process flow diagram

- Flat-sheet Ceramic Membrane

Meiden's submerged-type Flat-sheet Ceramic Membrane, which are known to have longer lifespans, higher permeability, and more robust properties, can be seamlessly installed into the existing tanks available in the desalination plants. These membrane features allow the installation costs to be minimized and contribute to higher economic performance.



Flat-sheet Ceramic Membrane Element



Flat-sheet Ceramic Membrane Unit

- Meiden Singapore Pte. Ltd.

Established in 1975, it is engaged in manufacturing and selling transformer and switch-gear products, engineering works. In addition, Meiden Singapore also assembles and sells Flat-sheet Ceramic Membrane Unit.