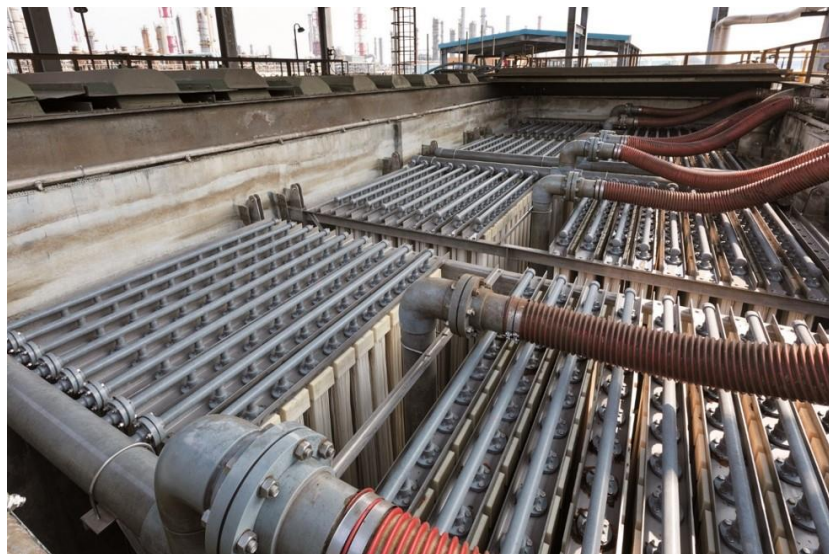




Environmental Solutions

-Sumitomo Electric Industries, Ltd.-

【Membrane Water Treatment System】



Wastewater reuse facility at oil refinery(Kaohsiung, Taiwan)
Capacity: 6,000m³ / day

【Redox Flow Battery System】



Location: Sumitomo Electric, Osaka Works
Capacity : 750kWh (250kW × 3h)

Features

- ① **Anti fouling** High porosity, high hydrophilicity and the special fine structure Prevents membrane fouling by oil and organics.
- ② **High durability & Long life** High strength and chemical resistance that can be cleaned with strong chemicals can provide the longer service life, thereby reducing LCC.
- ③ **Energy saving & space saving** Power consumption and installation area Approx. 2/3 due to larger membrane module (compared to our conventional type).

Introduction

POREFLON™ Membrane Treatment Systems are based on POREFLON™ membrane module with porous microfiltration membrane (MF membrane) using PTFE (polytetrafluoroethylene). The high level of removing turbidity can be utilized not only for water supply, but also for reuse of sewage and various industrial wastewater by combining with biological treatment, contributing to reduction of water cost and conservation of local water environment.

- ① **Long Lifetime** : Long design lifetime of 20 years, unlimited number of cycles over lifetime, and semi-permanent use of electrolyte.
- ② **Safety** : Extremely low possibility of fire because redox flow battery consists of non-flammable materials and electrolyte.
- ③ **Multi Purpose** : Design flexibility because of separation of power (W) and energy (Wh), applicable fast response and long duration application.

Redox flow battery which charges and discharges using the redox reaction of ions such as vanadium, is very safe and have a long life, so it is suitable for infrastructure use such as power grid. It is expected as a stabilization technology that will be necessary as the increasing of renewable energy such as solar and wind power generation.

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Product Information

POREFLON™ Membrane Treatment System (Contact us for specifications)

- Membrane Bioreactor (MBR),
- Poreflon™ Oil Separator
- Waste Coolant Recovery System
- Turbidity Removal Water Treatment system

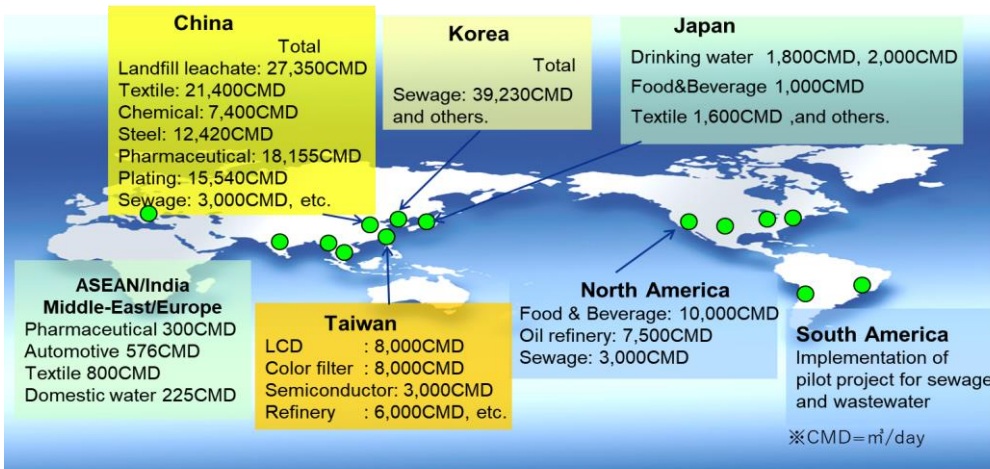
Individually designed water treatment systems according to application and scale

- Wastewater treatment and reuse systems for various factory, shopping mall, kitchen, etc.
- Water supply systems from river water or groundwater



Spec.	Output (kW)	Capacity (kWh)	Dimension (m)	Weight (ton)
3 hours model	250	750	L: 6.1 W: 4.9 H: 6.0	120
4.5 hours model	250	1,125	L: 9.1 W: 4.9 H: 6.0	170
6 hours model	250	1,500	L: 12.2 W: 4.9 H: 6.0	220

Projects and Activities



Capacity
8MWh (2MWx4h, Max 3MW)
Location
SDG&E, Miguel S/S (USA)
Start of operation
March, 2017



Capacity
1.5MWh (500kWx3h)
Location
John Cockerill (Belgium)
Start of operation
October, 2018



Capacity
0.5MWh (125kWx4h)
Location
MASEN (Morocco)
Start of operation
September, 2019

More than 600 plants under stable operation
Treatment systems for oil-contaminated and high concentrated organic wastewater which it is conventional membrane system has difficulty, is being introduced to users.

Applications



Wastewater treatment facility
Dyeing factory (Thailand)
Capacity: 800m³ / day



Sewage treatment facility (China)
Capacity : 15,000m³ / day