

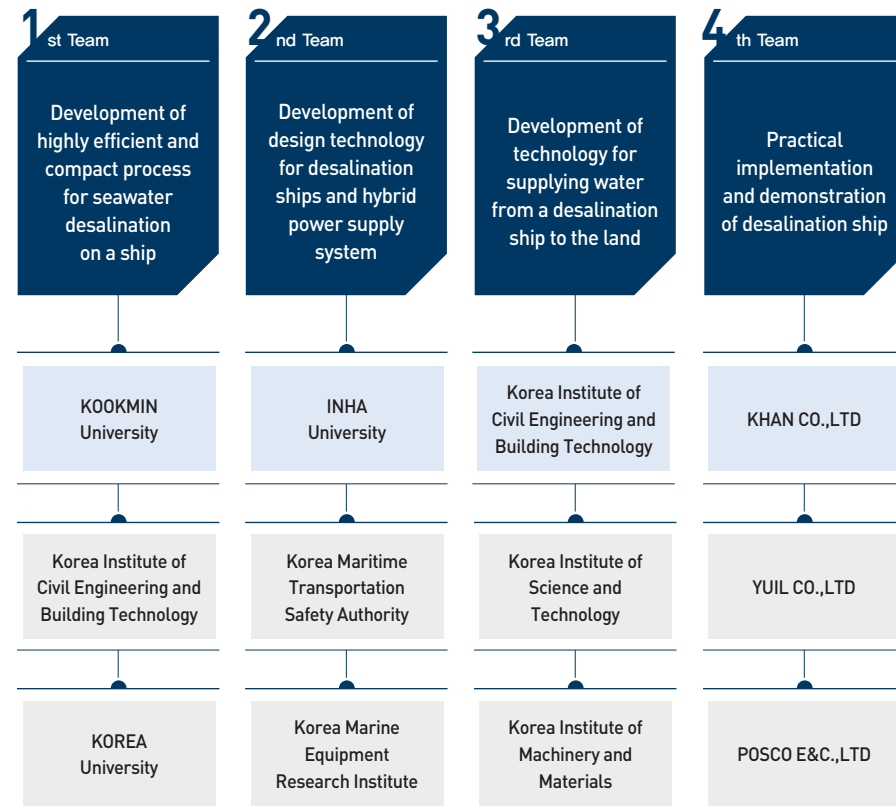
OVERVIEW

Project Title	Industrial Facilities & Infrastructure(Desalination) Research Program
Subject Title	Development of Shipboard Seawater Desalination Plant Technologies
Supporting Organization	Ministry of Environment, Korea Environment Industry & Technology Institute
Principal Institution / Investigator	KOOKMIN University, Republic of Korea / Prof. Sangho LEE
Period	April 2018 ~ December 2023 (5years 9months)
Period Total budget (from Korean Government)	167.7million UDS (22.2billion KRW)

GOALS

- Construction and Operation of a Desalination Ship (300 m³ /day)
- Reduction of Small-scale Desalination Costs by 15%
- Development of Design Technologies for Floating Desalination Plant

RESEARCH GROUP



Development of Shipboard Seawater Desalination Plant

A device that can be moved on the sea by being mounted or towed on a ship, and produces fresh water from sea water and supplies it to the outside.



Water welfare

Water production and supply by moving to the coastal areas or islands when a drought occurs due to climate change



Water security

Use as a mobile facility for emergency water supply in the event of a disaster in the coastal area



Water industry

Instead of installing desalination facilities on land, construction of a seawater desalination plant on a floating body



Industrial Facilities
& Infrastructure(Desalination)
Research Program

Desalination by Resilient,
Energy-efficient & Advanced Mobile System

Development of Shipboard Seawater Desalination Plant Technologies



[DREAMS Research Group]

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Development of Shipboard Seawater Desalination Plant Technologies

Design and development of a 300 m³/day self-propelled desalination plant

[Specification]

Length O.A	70.895m
Length B.P	62.7m
Breadth, MLD	24m
Depth, MLD	4.5m
D.L.W.L	4m
Gross Tonnage	1,800ton
Desalination Production	300m ³ /day

Final Outcome



[Demonstration]

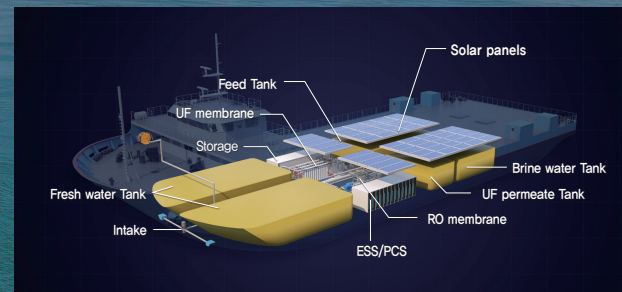
Our technologies will be verified, and the foundation for commercialization will be secured by establishing a marine self-propelled desalination plant with a capacity of 300m³/day.

[Target area]

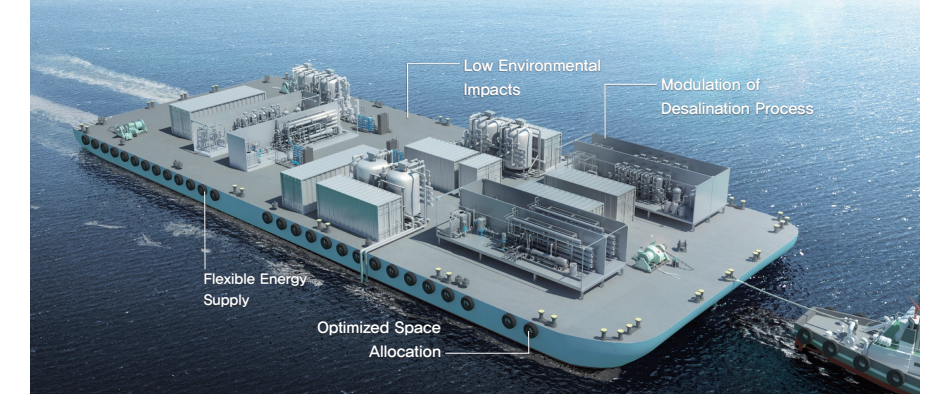
Freshwater will be supplied to two or more islands in Korea as part of this endeavor.
Daedudo Island & Sodura Island Nam-myeon, Yeosu-si, Republic of Korea
Soan Island, Soan-myeon, Wando-gun, Republic of Korea

[Period]

October.2022 ~ December.2023 (1years 3months)



Engineering development for 10,000m³/day scale offshore floating desalination plant



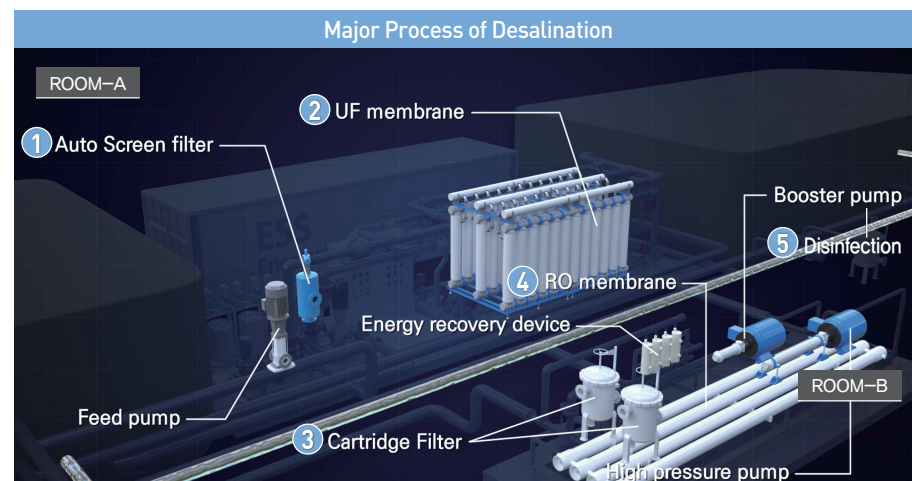
[Performance of development for design technology]

- Direct connection system for stabilizing drive pressure
- Standardization of device design by scale
- Development of RO-skid for Equal Distribution
- Engineering development for 10,000m³/day scale offshore floating desalination plant

[Initiatives for the development of a business model for commercialization]

Development of a model tool and derivation of seawater desalination commercialization strategies for each location

Highly efficient and compact process for seawater desalination plant



Intake



Auto Screen Filter

Removal of substances



Ultra-Filtration

Removal of solids and other suspended particles



Cartridge Filter

Removal of finer particles



Reverse-Osmosis

Removal of ions and production of fresh water



Disinfection

Removal, deactivation or killing of pathogenic micro - organisms



Fresh Water