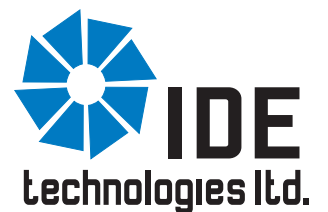




IDE'S New Desalination Model:

Floating Desalination Plant

The MDU-50 Marine Desalination Unit



# IDE's New Desalination Model: The Floating Desalination Plant The MDU-50 Marine Desalination Unit

IDE is proud to present its bold new desalination concept: the MDU-50 RO desalination plant-on-a-ship - delivered 9-12 months after receipt of an order.

The MDU-50 is a ship that is equipped with a state-of-the-art Reverse Osmosis (RO) desalination system capable of producing 50,000 m<sup>3</sup>/day of potable water. The MDU-50 can be sailed to any destination, and moored offshore using a Single Buoy Mooring (SBM). As long as it remains stationed in one location, it can deliver a continuous stream of potable water to shore-based resources through an underwater pipeline. Then, when needs change, the ship can be conveyed to the next location.

## Benefits

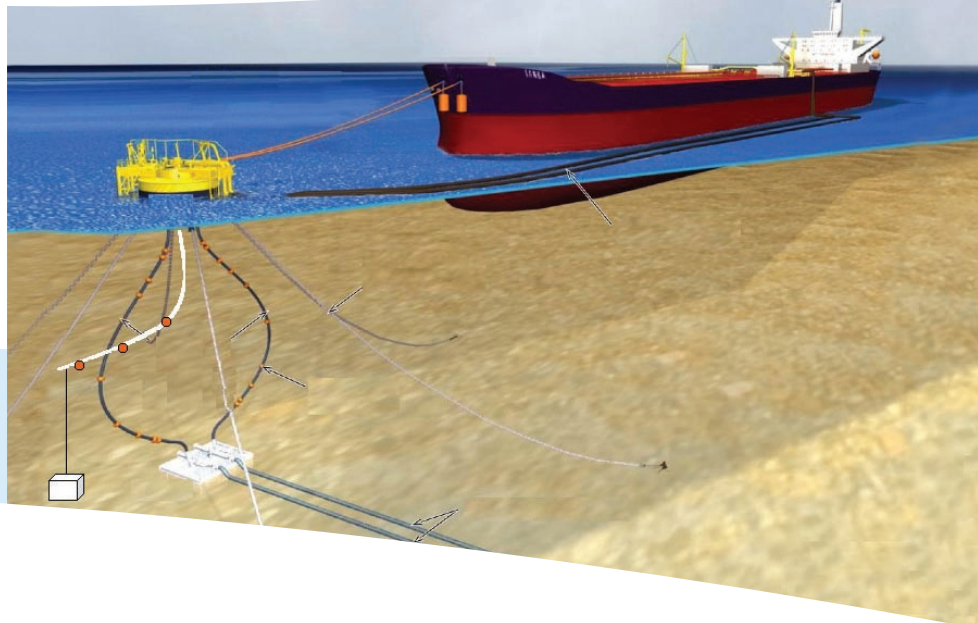
- **Rapid Time-to-Market:** The MDU-50 can be delivered and operational within 9-12 months of signing a purchase contract.
- **Technology Leadership:** utilizes IDE's cost-leading RO technologies - the same as deployed in Ashkelon, Hadera and other mega-SWRO projects.
- **Cost Effective:** delivers 50,000 cubic meters of potable water per day, at a lower cost than importing the same quantity. Therefore, use of the MDU-50 eliminates dependence on water exporters.
- **Self-Powering:** on-board power generation unit makes the MDU-50 independent of any external power source.
- **Small Footprint:** as a free-standing vessel moored offshore, the MDU-50 can operate without coastal and land permits.
- **"Clean & Green":** all MDU-50's operations are eco-friendly. Its offshore location eliminates considerations regarding brine disposal, excess emissions and noise levels.
- **Mobile:** can be easily relocated as needed to address evolving water requirements.



## Features of IDE's "Floating" Reverse Osmosis Process

The MDU-50 implements the latest advances in IDE's field-proven RO Desalination technologies:

- Robust, highly efficient Pre- & Post-Treatment systems.
- Optimal selection of RO membranes.
- Advanced Energy Recovery System.
- Simple brine disposal.
- Cost-effective intake system.
- Ease-of-operation & ease-of-maintenance features.
- High pressure operations for reduced noise levels.
- Mixing tank and outlet for dilution and eco-friendly discharge of waste brine.
- On-board facilities for membrane cleaning, waste neutralization, laboratory & testing requirements.



## IDE: The Reverse Osmosis (RO) Leader

The groundbreaking MDU-50 concept is just the latest demonstration of IDE's clear leadership of the desalination industry.

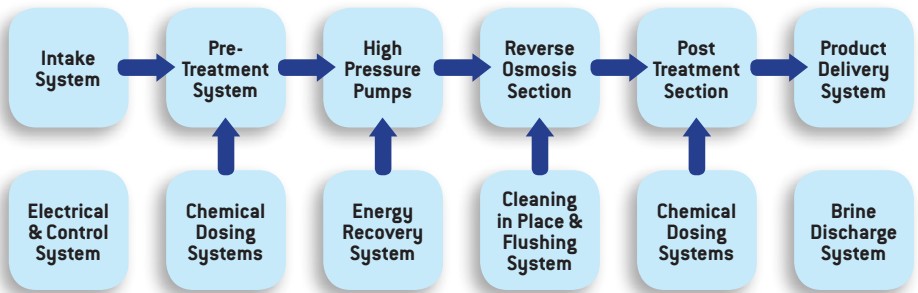
IDE's state-of-the-art RO technologies leverage 45 years of desalination know-how and experience, including deployment of 400 desalination plants in 40 countries and most of the world's mega-SWRO plants. Through ongoing technology development, IDE has been able to continuously drive down desalination costs while increasing plant capacity and efficiency.

### Reverse Osmosis

When two solutions of different concentrations are separated by a semi-permeable membrane, the less concentrated water will diffuse through the membrane into the concentrated solution. However, when the right pressure is mechanically applied to the concentrated solution, pure water will flow through the membrane to the diluted solution, leaving behind dissolved salts and impurities. This phenomenon is called "reverse osmosis."

### The Process

The following diagram illustrates the principal components of a typical IDE RO plant:



IDE's innovative MDU-50 desalination unit implements each of these process steps on a seaworthy ship that can be transported from port to port as needed.

## About IDE

IDE Technologies is a world leading desalination company. Since 1965, we have built 400 desalination plants throughout the world, with a cumulative installed capacity of over 2,000,000 m<sup>3</sup>/day - projects that have honed our technologies, our engineering know-how, our project management/operation skills and our financial expertise.

Our technologies for optimized, high-end thermal and membrane (Reverse Osmosis) desalination are recognized as the most advanced in the world, and we have designed, built and currently operate most of the world's mega-sized SWRO desalination plants. In addition, we are leading providers of advanced thermal distillation solutions used for industrial applications.

Our customized desalination plants and self-contained desalination units provide high-quality water for use in industries, mines, refineries, and power stations, as well as for potable water applications and agriculture. IDE is jointly owned by two of Israel's largest industrial enterprises: ICL Group (50%), one of the world's leading fertilizer and specialty chemicals companies, and the Delek Group (50%), a leading international energy, real estate and financial services group.



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OUR MARK  
IN WATER

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