IDE PROGREEN™

Cutting Edge Chemical Free Seawater Desalination

IDE Technologies | Your Water Partners

Desalinating Water Since 1965 with Excellence

www.ide-tech.com

Pro Environment. Pro Simplicity.
IDE PROGREEN™

IDE promotes sustainable, environmentally-friendly water treatment solutions.
IDE PROGREEN™ is a unique, chemical-free SWRO desalination technology, utilizing IDE's patented DOC technology, and chemical free pretreatment, to provide high quality, clean water to a variety of municipalities, resorts and industries.

The Desalination Challenge

- Chemical handling is a financial, operational and regulatory burden
  - »Obtaining permits for the use of chemicals is a long, painful process
- High OPEX - related to SWRO energy consumption & ongoing operational costs
- Conventional desalination has a noticeable environmental impact

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How it Works

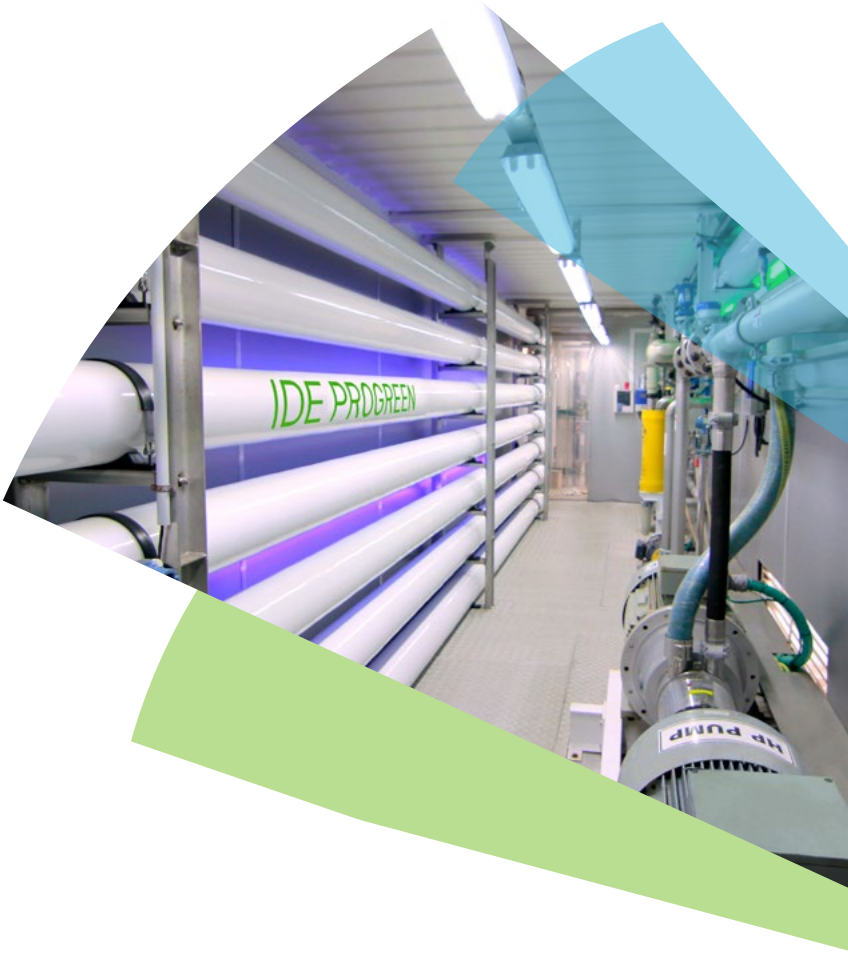
IDE PROGREEN™ chemical free SWRO is based on two innovative and novel principles in water desalination:

Chemical free Pretreatment

This process harnesses nature to generate eco-friendly coagulation. Bio-flocculation is the creation of flocs caused by the reaction between certain bacteria and algae, which excrete a sticky substance called EPS. The bio-flocculation process utilizes this EPS as glue that coagulates fine suspended solids in seawater and allows the efficient removal of these particles in the media filter (MF).

Results are:

- Natural process - No coagulants needed
- Improved filtration process due to increased time between backwashes
- Reduced OPEX due to savings on chemicals



PATENTED

Direct Osmosis Cleaning (DOC)

DOC is a patented, automatic process that utilizes the natural direct osmosis principle to keep the membranes constantly clean. By equalizing the pressures on both sides of the membrane for a short period, DOC allows the osmosis process to backwash the membranes with permeate water, removing any fouling from the membrane surface. Results are:

- Improved membrane performance and increased lifetime
- Long-term energy consumption reduction
- Uninterrupted operation and stable performance
- Chemical-free membrane cleaning

Main References

- **Nirsa, Ecuador**
  Capacity: 2,080 m^3/day (0.5 MGD) | Commissioned: 2018
- **Aguas de Arguineguin, Canary Islands, Spain**
  Capacity: 1,000 m^3/day (0.3 MGD) | Commissioned: 2018
- **Koh Tao Water, Thailand**
  Capacity: 1,000 m^3/day (0.3 MGD) | Commissioned: 2015
- **D-Rubber Products, Koh Sichang, Thailand**
  Capacity: 1,000 m^3/day (0.3 MGD) | Commissioned: 2015
- **Mulpha Hotels, Hayman Island, Australia**
  Capacity: 1,000 m^3/day (0.3 MGD) | Commissioned: 2014

Key Features

- Can be integrated into an existing SWRO desalination facility
- Remote operation and performance monitoring
- Energy recovery and high efficiency electric motors, coupled with electronic VFDs
- Optional cladding for noise reduction
- Top quality equipment and materials of construction

Project types

- Potable water for municipalities and resorts
- Boiler feed water (BFW) for industrial needs
- Power plants, refineries and more
- Water for agricultural irrigation

The Clear Choice

Eco-Friendly

- Chemical & antiscalant free
- Natural bio-flocculation process
- Reduced carbon footprint

Cost Effective

- Reduced OPEX by up to 10%
  - » Reduced energy consumption
  - » Savings on chemicals
  - » Reduced maintenance
- Available in cost effective modular configuration

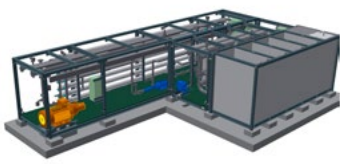
Regulation Friendly

- Shorter and simplified permitting process
- No need for chemical handling

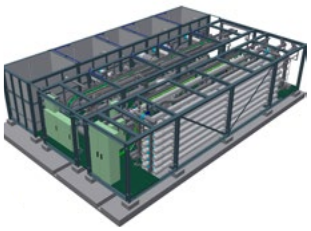
IDE PROGREEN™ Configurations

Complex Desalination Made Simple

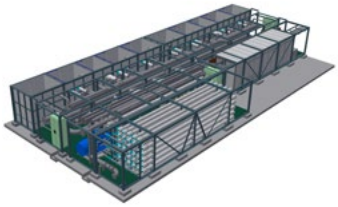
IDE PROGREEN™ available under IDE MPD platform, or any large scale SWRO design



500 - 1,000 m^3/day



1,100 - 2,000 m^3/day



3,500 - 5,000 m^3/day

From Ocean to Tap

Aguas de Arguineguin Plant in the Canary Islands Goes Green

Arguineguin is one of the most picturesque towns along the south coast of Gran Canaria, Spain.

Due to increased water demand and high environmental awareness, a more sustainable and eco-friendly water supply was needed.

IDE Technologies, which has been providing seawater desalination plants in the Canary Islands for the past 50 years recently provided the IDE PROGREEN™ solution that supplies Arguineguin with an additional 1,000 m^3/day (0.3 MGD) of high quality desalinated water. By early 2018, the Aguas de Arguineguin plant began producing water for the town, and to date the performance and reliability of IDE PROGREEN™ have exceeded expectations.

IDE - Over 50 Years of Experience

A world leader in desalination and water treatment solutions, IDE is at the forefront of the development, engineering, construction and operation of enhanced desalination, industrial water treatment and water reuse facilities. IDE's headquarters are in Israel, with offices in the USA, China, India, Chile and Australia, facilitating client partnerships across the globe.

- Innovative water treatment technologies that provide our clients with end-to-end solutions
- Developed some of the most advanced membrane-based and thermal solutions
- Designed, built and operates some of the world's largest desalination plants
- Successful implementations in more than 400 plants in over 40 countries

MIT Technology Review 2015 -16
50 Smartest Companies

2016 Fortune Change the World List
2nd place

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