Global Water, Wastewater & Reuse Treatment Solutions

Focus on Decentralized Desalination Water Treatment

September 2021

June 2021

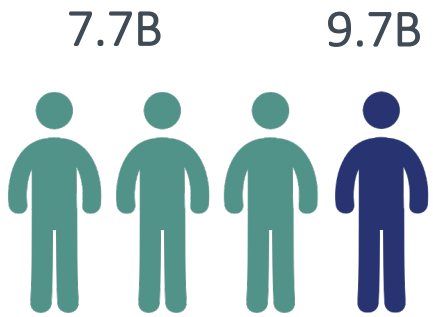
Water Stress: Widespread & Growing

2.2B People Lack Safe Drinking Water

4.2B People Lack Safe Sanitation

NOW

Population Growth
2019 → 2050



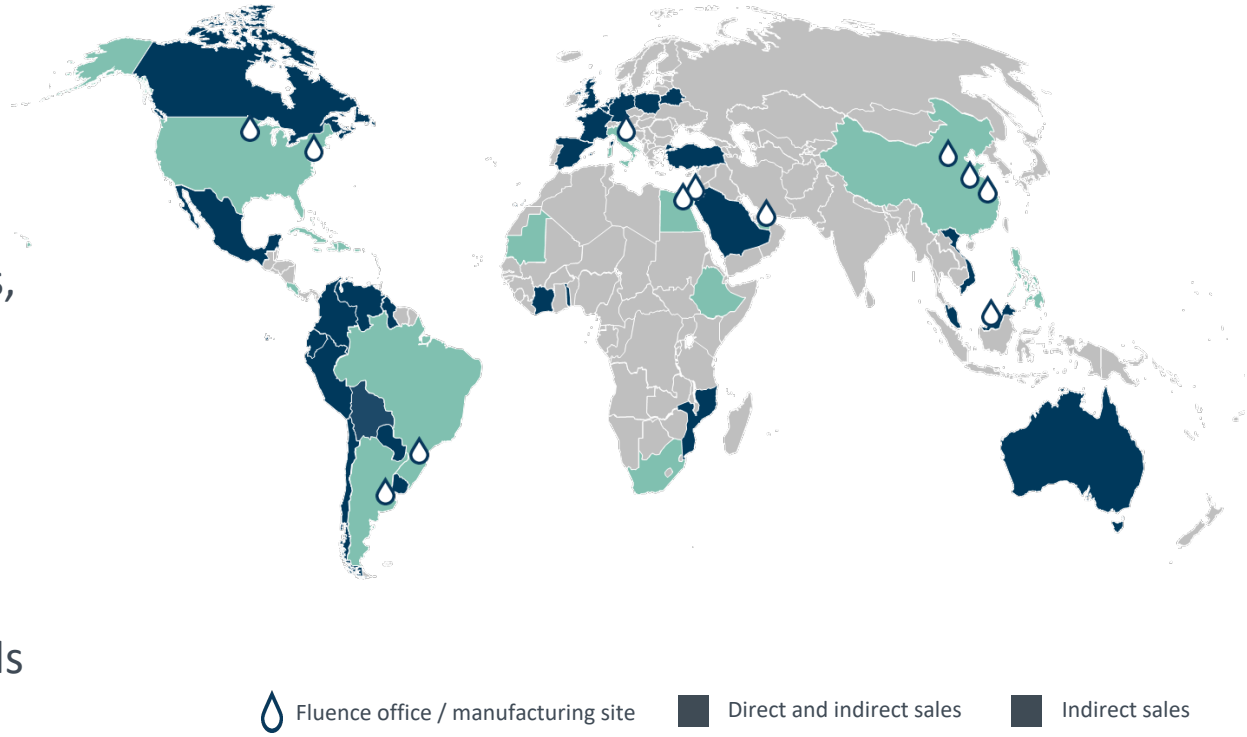
Global Water
Consumption by 2050

water
deficit by
2030

fluence

Fluence Overview

- 350-person company, US$100M/year run rate, EBITDA profitable, ASX listed (FLC)
- Have deployed 280 best in class wastewater treatment solutions
- Proprietary technology serves widest range of customers, from small cluster of homes to 800,000+ people
- Also have sold 120 units of containerized desalination: smallest footprint solution, energy efficient, fastest time to deliver
- Plants can be delivered and installed in weeks, operate remotely, produce no odor, can blend into neighborhoods



fluence

Proven, Proprietary & Quality Water Treatment Products

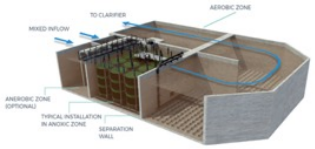
Smart & Automated • Fast-to-deploy • Low Maintenance

Wastewater Treatment Products

aspiral™

Containerized
Smart Packaged Plants

subre



Retrofit / Newbuild
Fixed Facility

KEY ADVANTAGES

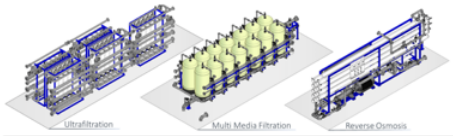
- **Cost savings of ~30-70%** on a total cost of ownership (TCO) basis
- Pre-engineered and modular, allowing speedy deployment of plants. **Installed in weeks, not years.**
- **Automated operation, minimal maintenance and energy** requirements, resulting in quiet, odorless operation
- **Meets highest regulatory standards** & enables sustainable reuse (California Title 22 compliant)

Desalination & Water Treatment Products

NIROBOX™

Containerized
Smart Packaged Plants

NIROFLEX



Retrofit / Newbuild
Fixed Facility

KEY ADVANTAGES

- Estimated **~65% shorter construction time** & **~40% less capex** than typical custom desalination plants
- Pre-engineered and modular, allowing speedy deployment of plants. **Installed in weeks, not years.**
- **Automated operation, minimal maintenance and energy** requirements resulting in quiet, odorless operation
- **Vastly reduces** process and related **risks**
- **Simple** to maintain and upgrade

fluence™

Fluence Asia Footprint

7 **Entities**

3 plants + 4 regional offices
Shanghai, Beijing, Manila, Singapore

250+ Projects since 2017

Including water & wastewater treatment

FLC regional offices

Manufacturing plants

Partnerships/Projects

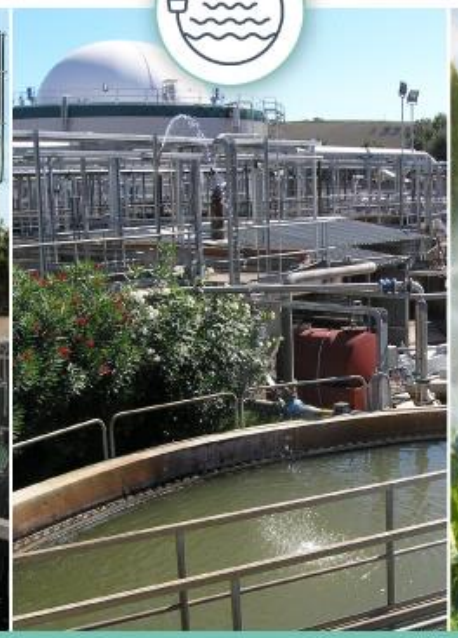
ISO9001:2015 Certified

Innovative Solutions

WATER TREATMENT

DESALINATION

WASTEWATER TREATMENT



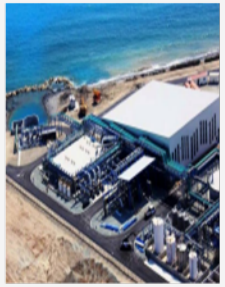
WASTE-TO-ENERGY

REUSE

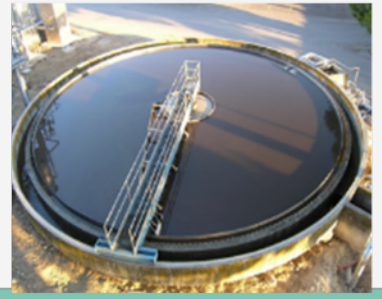
DECENTRALIZED TREATMENT

fluence

Installations Worldwide




>7,000 installations in >70 countries

fluence

Large Diversified Customer Base

State-owned Enterprise

四川生态环保集团
iTEST
中国国家铁路集团有限公司 CHINA RAILWAY
中国葛洲坝集团有限公司 CHINA GEZHOUBA GROUP COMPANY LTD.
ZHEJIANG ENERGY 天地环保
CASIC 航天凯天环保 AEROSPACE KAITIAN ENVIRONMENTAL
无锡国联环保科技股份有限公司 WUXI GUOLIAN ENVIRONMENTAL SCIENCE & TECHNOLOGY CO.,LTD.
湖北省交通投资有限公司 HUBEI PROVINCIAL COMMUNICATIONS INVESTMENT CO.,LTD
长江生态环保集团有限公司 Yangtze Ecology and Environment Co., Ltd.

Partner, Water Group

ADE Corporation 怡德視訊股份有限公司
MANILA WATER CARE IN EVERY DROP
Water Fleet
SINORICHEN 瑞霖环保
创业环保 Capital Environmental Protection
PARSONS

Local Government

中国雄安 www.xiongan.gov.cn
盘锦市人民政府 www.panjin.gov.cn
益阳市人民政府 People's Government of Yiyang City
柬埔寨城乡建设和规划部
Ministry of Land Management,Urban Planning and Construction (MLMUPC)

Financial

TodayTomorrow Ventures

Auto

GM

Food & Beverage

GLK FOODS GREAT FOOD, GREAT TASTE
pepsi
Coca-Cola
Florida's Natural
Chicken of the Sea
Maadanot
Carlsberg Group
GBI INCORPORATED
TNUVA
PERONI
CUTRALE
Cargill
Strauss
BUFFALO TRACE DISTILLERY
EDEN
Leprino Foods

Energy & Chemical

GE
P&G Procter&Gamble
EXXON
PACIFIC Rubiales Energy
PEMEX
HALLIBURTON
ArcelorMittal

Water & wastewater treatment solutions for customers across the industrial, commercial & municipal sectors.

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Market Segment Applications

Rural Villages

Municipalities Public Parks

Hotels, Resorts & Golf Courses

Housing Development

Highway / Railway System

And more..

Future of Decentralized Water Management

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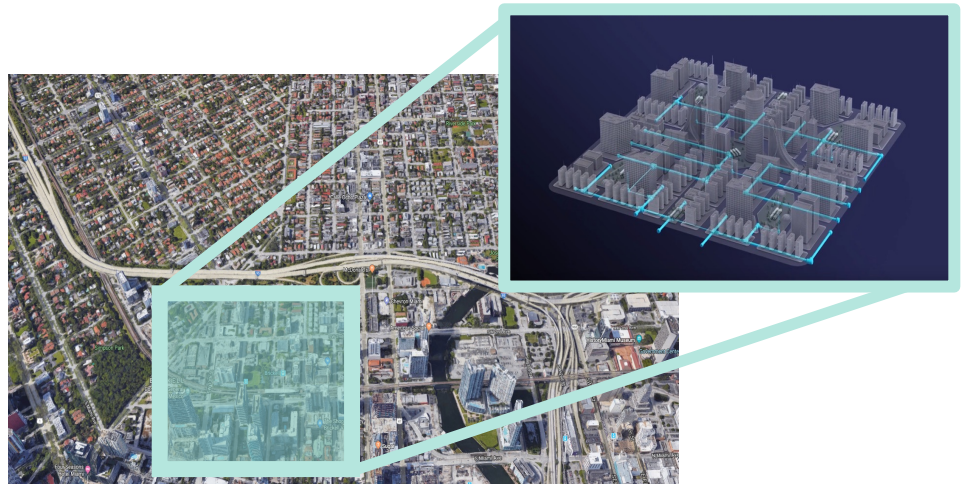
Decentralized systems are the only solution



Entirely Off-grid, solar-powered systems to treat wastewater and supply water for remote communities

Fast improvement in water stress with no need for long and complex projects

Start with a decentralized approach:

- Cost efficient
- Simple, fast
- Independent
- Sustainable

It can meet the needs of:

- New or Expanding Cities
- Upgrading of Existing Infrastructure
- Countries and territories without existing infrastructure

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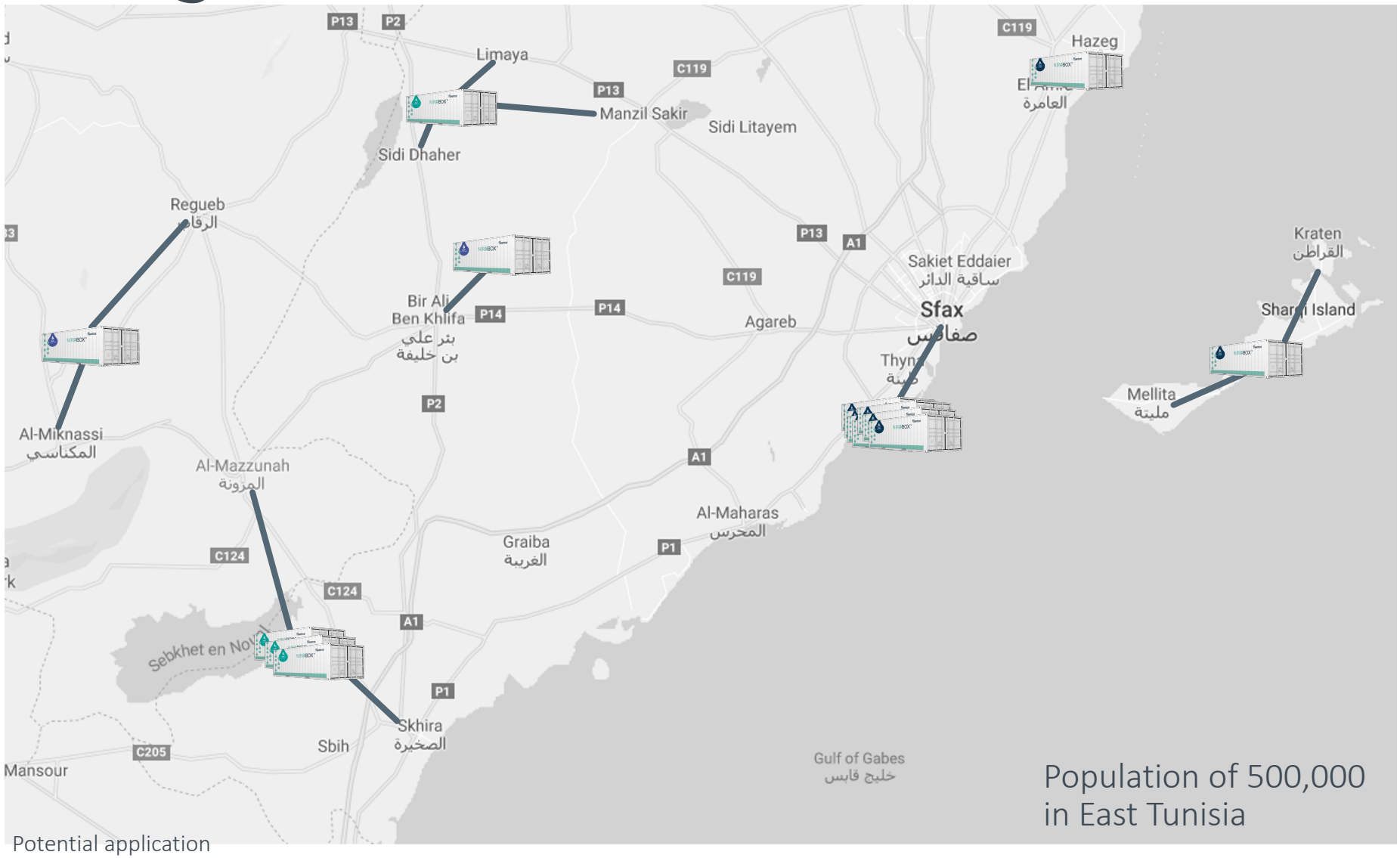
The Decentralized Approach to Water Management



Population of 500,000 in East Tunisia

Potential application

Water Sources

Seawater, Brackish Water and Fresh Water treatment close to end users

Non-revenue water

Cut from 35% to nearly zero with minimal water network

Brine management

Avoiding negative consequences from large brine fields and discharges

MLD / ZLD

Opportunity to treat brine locally maximizes economical and environmental benefits

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Fluence Decentralized Water Treatment Solutions

Fluence Water Solutions

Fluence provides both pre-engineered and custom-designed water treatment solutions, which reliably deliver high-quality, safe water for any application and from almost any water source.

As well as large-scale water treatment plants, we specialize in decentralized water solutions that are modular, scalable, and quick to deploy.

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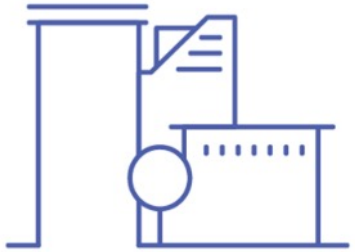
Fluence Water Sectors

Municipal

Applications include small cities, communities and residential areas



Commercial

Applications include hotels, school campuses, shopping centers and campsites

Industrial

Applications include food, beverage, pulp & paper, textile, mining and more

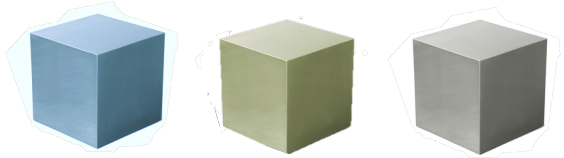
Fluence Water Solutions

NIROBOX™

Plug and play, ready to shipped containerized water treatment solution

- OPEX Optimization
- Small Footprint

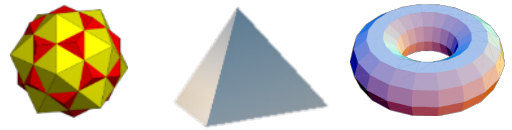
NIROFLEX



Pick our pre-engineered building blocks to design water treatment plant

- Economical
- Flexible Design

CUSTOM ENGINEERED SOLUTIONS



Design any type of water solution you need with tailored made design

- Customized Treatment
- Variety of Technologies

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Packaged Water Treatment

Fluence's NIROBOX™ is a state-of-the-art, plug-and-play water treatment plant housed in a standard 40-foot shipping container.

The NIROBOX is designed to maximize production capacity with a minimal footprint, and to have low operation and maintenance requirements.

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NIROBOX™ Product Family

NIROBOX SW
Sea Water
RO desalination

Up to 42,000 TDS

Up to 1,500 m^3/d

NIROBOX BW
Brackish Water RO
desalination

Up to 7,000 TDS

Up to 2,000 m^3/d

NIROBOX FW
Fresh water
filtration

Up to 1,000 TDS

Up to 15,000 m^3/d

NIROBOX™ containerized treatment plants are self-contained and scalable for growing / large treatment capacities.

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NIROBOX™ Packaged Water Treatment

Model	NIROBOX SW-M	NIROBOX SW-XL	NIROBOX SW-MEGA
Permeate rate	400-500 m^3/d 73-91 gpm	720-1000 m^3/d 132-183 gpm	1200-1500 m^3/d 220-275 gpm
Feed rate	42 m^3/h	84 m^3/h	125 m^3/h
Recovery	40-50%		
Population served	2,500	5,000	7,500
Energy consumption	~ 2.5 kWh/m^3		
Turbidity	<20 NTU		
Oil and grease	<1.5 ppm		
TDS	32,000 – 42,000 ppm		
Temperature	From 5° to 35° C (41° to 95° F)		

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NIROBOX™ - Standard Units in SW

- Disc filters pretreatment
- Ultrafiltration (UF) pretreatment
- Seawater reverse osmosis (SWRO)
- High efficiency energy-recovery device
- Positive displacement high-pressure pump
- Variable frequency devices (VFD)
- PLC based HMI with remote monitoring
- Mobile app
- IP-54 MCC
- Clean-in-place (CIP) system

Optional pretreatments include dissolved air flotation, multimedia filtration, activated carbon filtration, clarification, and post-treatments include remineralization, pH adjustment, and ultraviolet or chlorine disinfection.

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NIROBOX™ - Unique Advantages

Application
Potable use, industrial process water

Unique Advantages

- **Reliable System**: Seawater compatible materials with High-end equipment
- **Low Opex**: high efficiency piston HP pump, Isobaric ERD, minimal waste flow
- **Smart Operation**: enabling plant optimization and improved performance
- **"Plug and Play" solution**: Minimizes Civil and site installation requirements
- **Small Footprint**: the largest capacity packaged in a single 40ft container
- Additional features to fit specific water requirements - upon request

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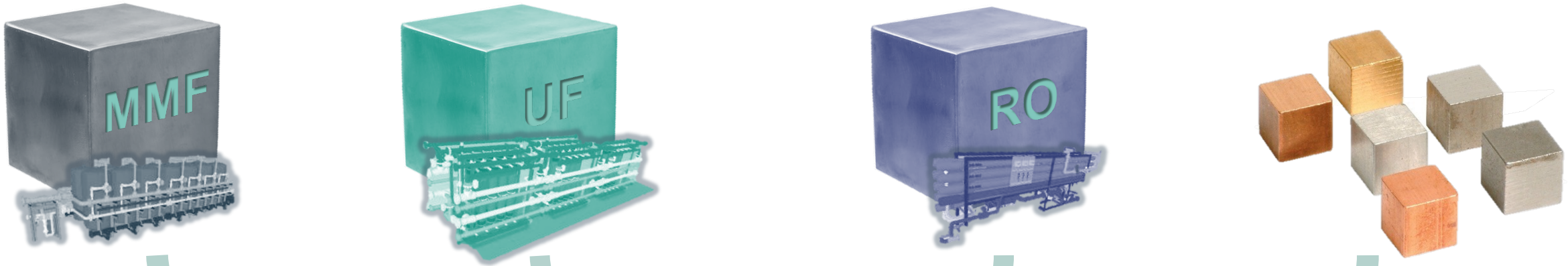
Niroflex - Flexible Seawater Treatment

Pre-engineered building blocks for the design of seawater desalination systems

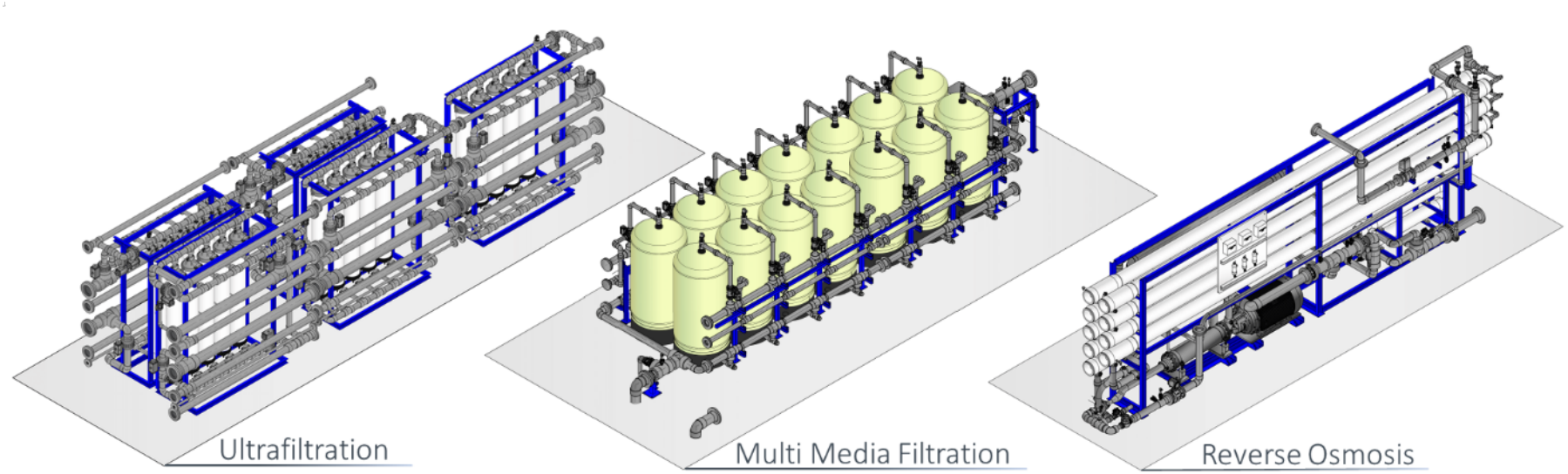
Multi-Media Filtration	Ultrafiltration	Reverse Osmosis	Optional Features



NIROFLEX

fluence

Modular, Scalable, Customized



NIROFLEX

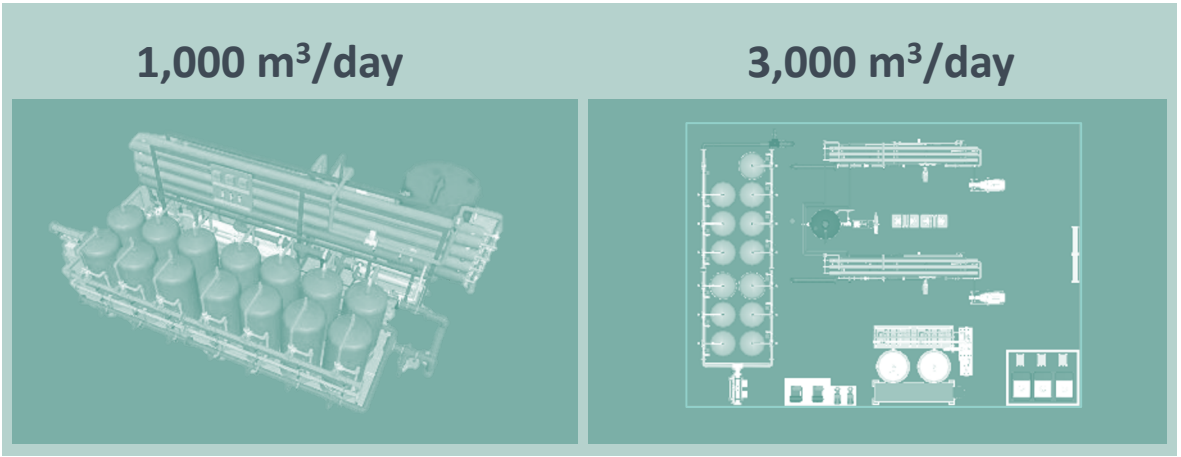
- Economical
- Smart and Flexible
- Easy to Operate
- Scalable

fluence

Niroflex – Unique advantages

- Flexible design to meet any customer need
- UF/MMF pretreatment units
- Efficient and economical RO treatment
- Capable of operating in wide TDS range
- High standard equipment manufactures
- Skid mounted or containerized
- Customized and cost effective
- Municipal, private and industrial application
- Short engineering leading time

Versatile configurations based on pre-engineered building blocks

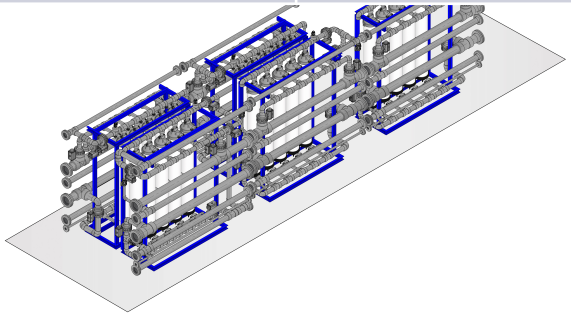


2 NIROFLEX Systems Examples

fluence

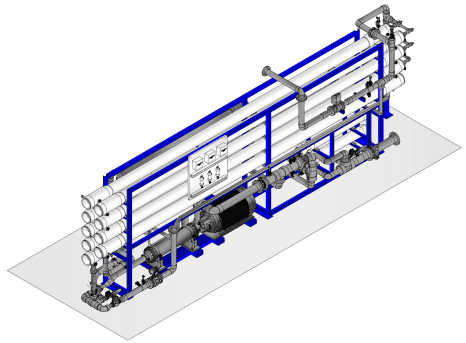
Flexible Niroflex

NIROFLEX UF	Flow Rate (m3/d)
UF-3-2-M12-TB	720
UF-4-2-M12-TB	1,080
UF-5-2-M12-TB	1,560
UF-6-2-M12-TB	1,920
UF-4-4-M12-TB	2,280
UF-6-3-M12-TB	2,880
UF-5-4-M12-TB	3,120
UF-7-3-M12-TB	3,480
UF-6-4-M12-TB	3,960
UF-7-4-M12-TB	4,800
UF-8-4-M12-TB	5,400
UF-6-6-M12-TB	5,760
UF-9-4-M12-TB	6,240



NIROFLEX RO-P	Flow Rate (m3/d)
Positive Displacment Pump and Isobaric Energy Recovery Device	
RO - P1102	265
RO - P2103	310
RO - P3103	410
RO - P4204	505
RO - P5205	625
RO - P6206	785
RO - P6307	910
RO - P7410	1,270
RO - P8412	1,560
RO - P9514	1,870
RO - P10515	2,000

NIROFLEX RO-C	Flow Rate (m3/d)
Centrifugal Pump and Turbocharger Energy Recovery Device	
RO - C1105	580
RO - C2107	820
RO - C3208	1,020
RO - C3311	1,350
RO - C4413	1,680
RO - C4415	2,000



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Global Operations and Maintenance Capabilities

Local O&M teams around the world providing complete range of services and maintenance for water, wastewater and reuse plants installations

- Start-up and commissioning
- Installation, supervision, and project management
- Maintenance and operations services
- Operators training
- Remote connectivity and monitoring
- Field service inspections, Technical support
- Process optimization
- Plant upgrades

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Fluence Remote Support, Monitoring and Optimization

Fully automated, remotely monitored and operated systems

- Smart operations and data analysis - Optimizes operational efficiency and performance
- Minimizes equipment, operation and maintenance costs
- PLC based HMI with remote monitoring
- Data reports and analysis easily accessible from anywhere on any platform
- Real-time alerts for system malfunctions or abnormal performance
- 24/7 support from Fluence experts

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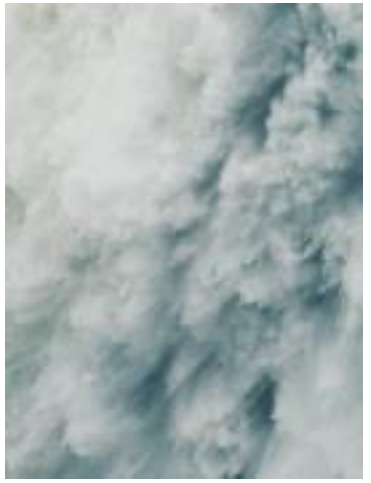
Case Studies



Case Study

Matsu Islands

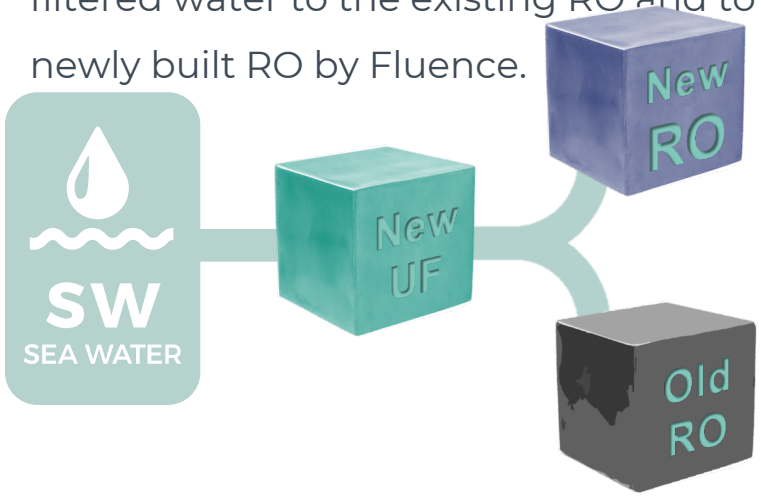
Client: G&F

Location: Nangan and Dong islands, Taiwan

Application: Drinking Water

Capacity: 2 X 2,000 m^3/day UF pretreatment
2 X 600 m^3/day RO product

Highlights: Two islands with existing RO skids. Fluence provides UF to supply filtered water to the existing RO and to a newly built RO by Fluence.



UF-3-7-M12-TB

2,000 m^3/day UF Pretreatment

Three Trains of UF membranes housed in a 20 ft container

RO-P-A9-I2

600 m^3/day RO Product

Positive Displacement Pump and Isobaric Energy Recovery Device

fluence

Seawater Desalination for Municipality, Cát Bà island, Vietnam

Client:
Vucico

Technology	One NIROBOX™ SW MEGA that includes UF prefiltration, Reverse Osmosis desalination, ERD (energy recovery) and post-treatment chlorination by chemical dosing
Capacity	1,500 m^3/day
Application	Drinking water
A to Z time	2 months
The challenge	The project had set a high product water quality to comply with the local Vietnamese and WHO standards – up to 400ppm TDS and 200mg/l Chlorides
Highlights	• The first municipal SW desalination project sold in Vietnam • The first UF prefiltration and SW desalination product that can produce up to 1,500 m3/d that fits within a single 40ft container

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Seawater Desalination for Hotels & Resorts

Costa Rica

Client:
Reserva Conchal hotel

Water source	Sea water
Technology	Ultrafiltration, Seawater Reverse Osmosis desalination, ERD (energy recovery), Remineralization post treatment
Capacity	1,500 m^3/day (0.39 MGD)
Application	Potable water – Drinking water & irrigation for golf course and landscape
A to Z time	8 Months
Highlights	• Reserva Conchal is located in Guanacaste, a province that has suffered droughts since 2014 • The water shortage posed a serious threat to the resort • Needed an immediate potable water solution that would not hurt the environment or burden the water grid

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BOOT Seawater Desalination for Hotel

Bimini, Caribbean

Client:
Rav Bahamas Limited

Project Type	Build, Own, Operate and Transfer (BOOT) project agreement for the supply of water for the Resorts World property including equipment supply, supervision during construction, operation, maintenance & services • Contract duration: 15 years
Capacity	3,000 m^3/day (0.79 MGD)
Application	Potable water: drinking water, irrigation, resort operations
Technology	• 3 X NIROBOX™-XL packaged seawater desalination units, each consist of: UF pretreatment, RO, ERD (Energy recovery), CIP. • Centralized post-treatment system composed of a remineralization unit and chlorination • Temperature controlled packaged NIROBOX systems
Highlights	Replacing an old SWRO plant at the Resorts World with the NIROBOX state of the art packaged SWRO units. The plant will be treating seawater from beach wells to provide potable water for drinking, irrigation and operations for the resort, including the newly built Hilton hotel, the local homeowner's association serving over 300 homes and condominiums. It will also serve the municipality of North Bimini.

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Seawater Desalination for Municipality

Island of Mayotte (Africa)

Client:
VINCI Construction Grands Projects

Water source	Sea water
Technology	NIROBOX™: Ultrafiltration, Seawater Reverse Osmosis desalination, ERD (energy recovery), Remineralization post treatment
Capacity	3,000 m^3/day (0.79 MGD)
Application	Drinking water
A to Z time	8 weeks
Highlights	• The island of Mayotte, situated between Madagascar and the coast of Mozambique, in the Indian Ocean, is an overseas department of France • Mayotte was forced to impose water restrictions due to the late arrival of seasonal rains. The island's resources were already under pressure from a rising local population and an immediate solution for high-quality potable water was needed. • Supply of 3 NIROBOX systems (comply with Attestation De Conformité Sanitaire (ACS) • The plant will be operated locally by the water utility SMAE (Société Mahoraise des Eaux). Treated water from the NIROBOX™ will serve the entire Petite-Terre island population.

Seawater Desalination for Municipality

Taiwan (ROC)

Client:
Water Resources Agency, MOEA

Water source	Sea water
Technology	NIROBOX™: Ultrafiltration, Seawater Reverse Osmosis desalination, ERD (energy recovery)
Capacity	3,000 m^3/day (0.79 MGD)
Application	Drinking water
A to Z time	8 weeks (Installation: 1 week, T&C: 1 week)

Highlights

- Taiwan was suffering several drought earlier this year.
- Supply of 3 NIROBOX systems
- Urgently deployed to Taiwan, installed, tested and commissioned in short period of time.
- Producing high quality water for municipal application

Sea Water Desalination Plant

Puerto Deseado, Santa Cruz, Argentina

Client:
State Public Utility Company of Santa Cruz

Overview	This region lacks a consistent and reliable potable water supply, inhabitants of Puerto Deseado receive drinking water for only two hours every other day (less than 2,000 l/week per family). This plant will supply water to a population of approximately 18,000 inhabitants
Technology	Ultrafiltration membranes pre-treatment, UV radiation, seawater reverse osmosis with energy recovery, Post treatment
Capacity	3,000 m3/day (0.79 MGD)
Contract	Turn-Key, fixed price date-certain contract for the design, supply, erection, start up and commissioning of the desalination plant.
Commissioned	2017

BOT

Seawater Desalination for Industrial Park

Paracas, Ica Peru

Client:
Compañia Aceros Arequipa & additional offtakers

Project Type	Build-Own-Operate Seawater desalination plant including a 10-year Water Purchase Agreement (WPA)
Capacity	5,000 m^3/day (1.32 MGD) future expansion to double capacity
Application	Desalinated water fit for industrial process
Technology	• 5 X NIROBOX™-XL units packaged seawater desalination systems: UF pretreatment, RO, ERD (Energy recovery) , CIP • Temperature controlled packaged NIROBOX systems
Highlights	Seawater desalination plant based on Fluence's NIROBOX packaged SWRO systems. The project will provide industrial grade water to Aceros Arequipa and other industries in this region, providing them with an independent, reliable and cost effective source of water for their operation. The project is composed of the intake/outfall infrastructure, Sea Water RO desalination and all necessary infrastructure including a 9 km long delivery pipeline to connect the plant to the end users.

Seawater Desalination for Municipality

Africa

Client:
Connority

Technology	NIROBOX™: Ultrafiltration, Seawater Reverse Osmosis desalination, ERD (Energy recovery), Remineralization post treatment
Capacity	10,000 m^3/day (2.64 MGD)
Application	Drinking water
A to Z time	A 10,000 m^3/day plant was ordered and commissioned in 6 months
The challenge	A desalination plant was urgently needed to solve an acute potable water shortage on the parched southeast coast of Africa
Highlights	Only 10 NIROBOX™ units, with high flow of 1,000 m^3/day per each single unit making it the most compact plant-in-a-box with an extremely small footprint Low O&M costs Pre-designed plant with centralized intake, post-treatment and remote monitoring

fluence™

Seawater Desalination for Municipality

Limassol, Cyprus

Client:
WDD Water Development Department

Technology	Ultrafiltration, Seawater Reverse Osmosis desalination, ERD (Energy recovery), Remineralization post treatment
Capacity	22,000 m^3/day (5.81 MGD)
Application	Potable water
A to Z time	8 Months
The challenge	• Severe water shortage in the city of Limassol as for growing population and tourism • Need for a temporary solution that can be moved at the end of contract
Highlights	Modular containerized SWRO facility with UF pretreatment, storage tanks, Sea Water RO desalination, post treatment product delivery to the city water grid

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Sea Water Desalination Plant

San Quintin, Mexico

Client:
State Water Commission of Baja California, Mexico

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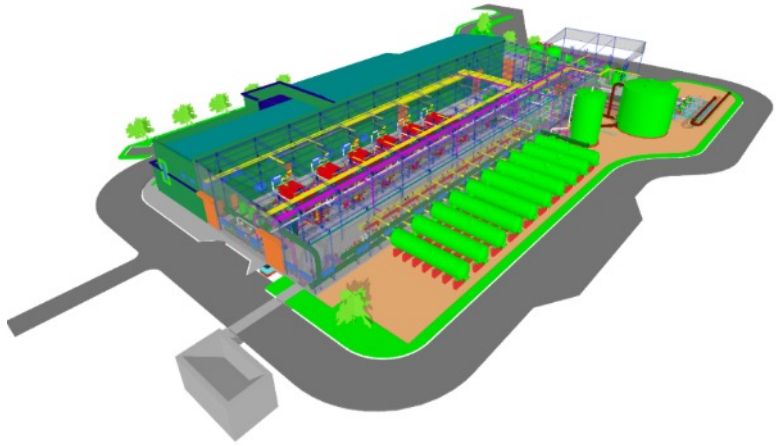
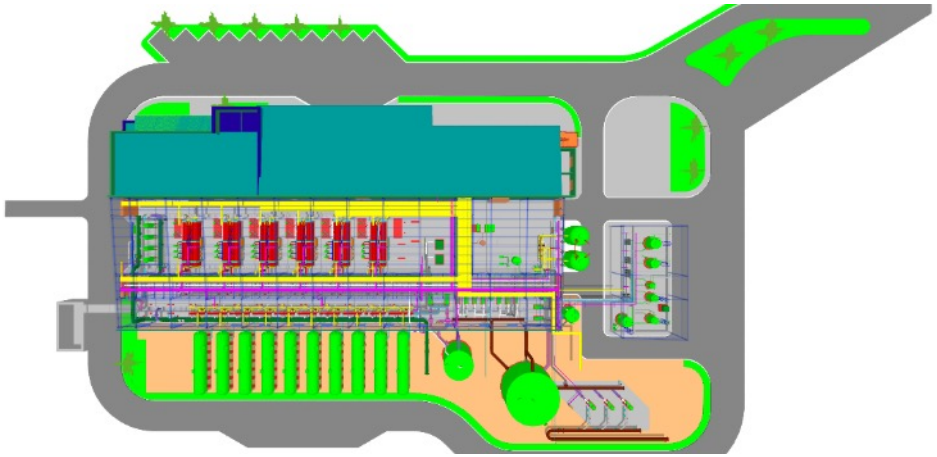
Overview	In 2014 the Government of Baja California had declared a state of water emergency for the region of San Quintín and the municipality of Ensenada. The purpose of the project is to increase access to sustainable drinking water service through the development of an additional water supply source, contributing to the preservation of groundwater resources and covering actual water demand for approximately 100,000 residents of Baja California.
Technology	Beach wells intake, Multi media slow sand filtration pre treatment, seawater reverse osmosis with energy recovery and remineralization post treatment.
Capacity	22,000 m3/day (5.8 MGD)
Contract	30 years BOOT contract
Commissioning	Late 2019





Thank you.

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