



Global Water, Wastewater & Reuse Treatment Solutions

Texas Desal Conference



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- Innovative Technology Company
- Highly differentiated, high margin products
- Strong balance sheet
- Proprietary treatment technology
- Chinese partners (5 signed) established for China roll-out
- Positive customer momentum with a strong sales pipeline
- Strong institutional and international shareholder base

- Proven execution with 7,000 installed systems for clients in more than 70 countries
- Standardized solutions enable fast path from booking to revenue
- Integrated range of services
- Strong international sales and delivery platform
- Highly experienced management team and staff base of more than 250 water professionals globally

- Global leader for decentralized water & wastewater solutions
- Ability to serve all aspects of the water market value chain
- Differentiated product offering with high margin
- Recurring revenue business will offer a differentiated value proposition
- High quality combined board and management team
- Well capitalized to be able to pursue growth opportunities

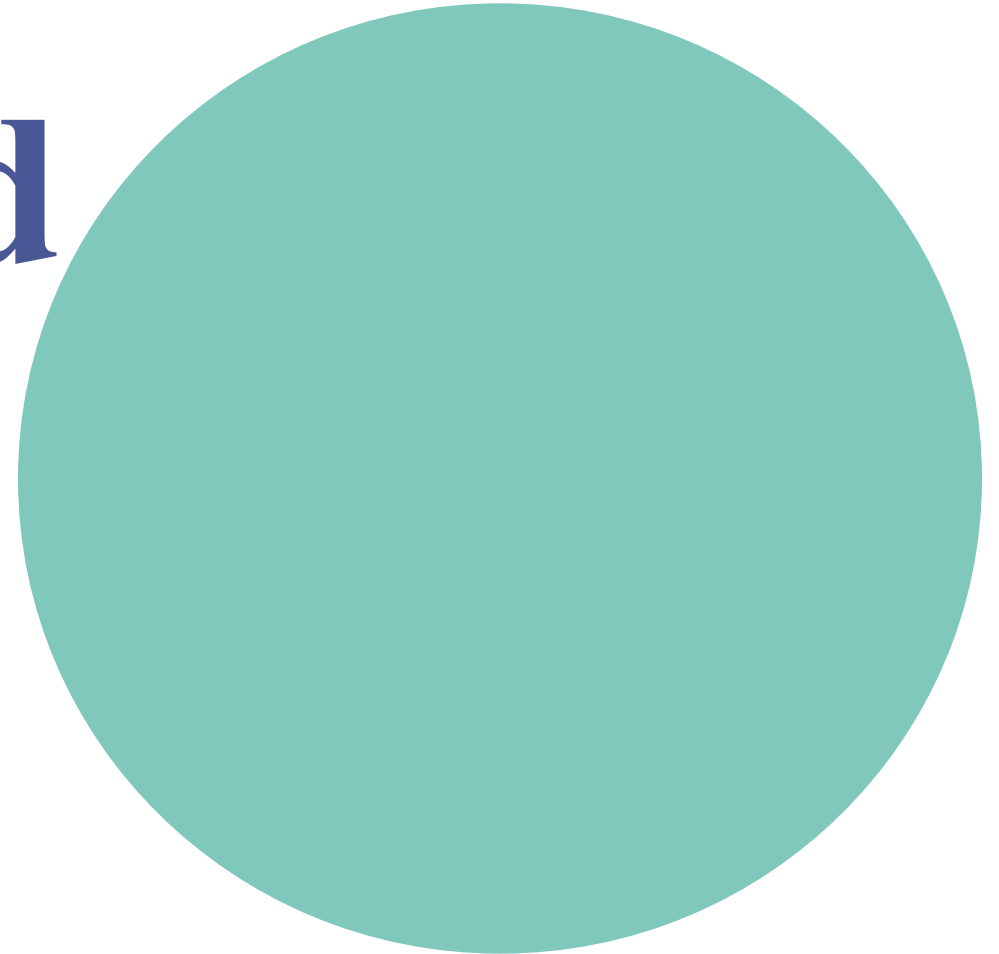


Solutions



Innovation: Containerized Desalination

NIROBOX™



NIROBOX Containerized Desalination Systems

The growing demand for potable water due to climate change require fast deployment of robust, reliable water desalination solutions



Large, tailor made desalination plants require long development time - environmental, site, interconnection and financing



NIROBOX™

- **NIROBOX** is a field proven solution that addresses the mid market
- **Shorter time-to-water** the ideal solution for drought stricken areas
- **Lower Initial CAPEX**
- **Modular & Scalable** approach that can suit any site requirements, enabling fast delivery, integration, commissioning and operation.

Advanced Technology:

- High availability
- Lower OPEX costs
- On-line monitoring for improved & enhanced efficiency



NIROBOX Family of Containerized Water Treatment Solutions

NIROBOX Family of pre-engineered water treatment solutions fully assembled in a standard 40ft container, ready for rapid deployment and operation



NIROBOX SW

- Sea Water RO desalination
 - Municipal & industrial applications
 - Ready-to-use plant in a single container
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- 3 std. Models:
 - 500 m3/d
 - 1,000 m3/d
 - 1,500 m3/d
 - Modular Approach to accommodate any required capacity



NIROBOX BW

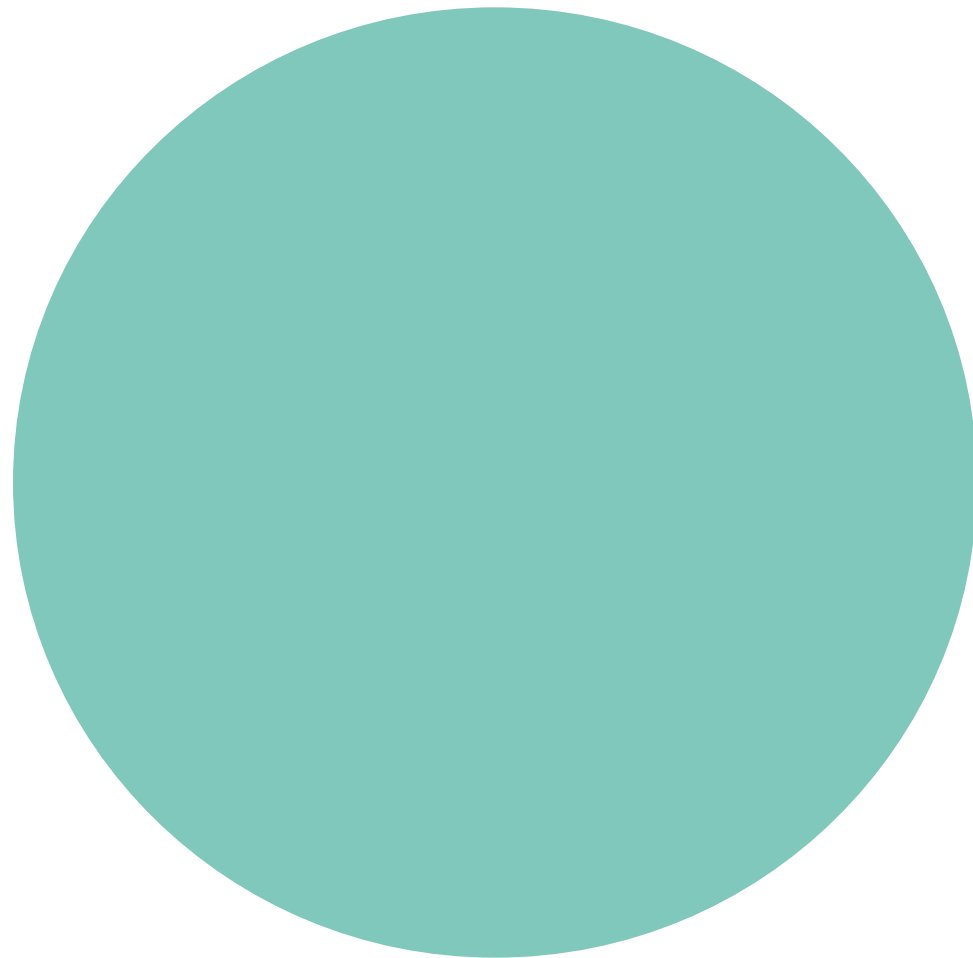
- Brackish Water RO desalination
 - Municipal and industrial applications
 - Ready-to-use plant in a single container
-
- 4 std. Models:
 - Low salinity: 1,000 & 2,000 m3/d
 - High salinity: 1,000 & 1,500 m3/d
 - Modular approach for any required capacity



NIROBOX FW

- Fresh water treatment for municipal & industrial applications
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- std. model: 5,000 m3/d
 - Modular approach to accommodate any required capacity

Nirobox Case Studies



Desalination (SWRO) for Potable Water Conchal, Costa Rica

Customer	Reserva Conchal Hotel & Resort
Technology	NIROBOX™ : 3 units of 500 m³/day - Ultrafiltration, Seawater Reverse Osmosis, Energy Recovery, Remineralization post treatment.
Capacity	1,500 m³/day (400,000 GPD)
Overview	<p>Reserva Conchal is located in Guanacaste, a province that has suffered droughts since 2014. The water shortage posed a serious threat to the resort and they turned to Fluence for an immediate potable water solution that would not hurt the environment or burden the water grid.</p> <ul style="list-style-type: none">○ Environmental solution: High recovery, Lowest chemical usage, less energy consumption (40%)○ Only 8 months from order to commission○ Scalable: Allowing staged expansion to support capacity upgrades○ Fully automated system for easy , cost efficient operation & maintenance
Commissioned	2016



NIROBOX™

fluence™

Desalination (SWRO) for Potable Water , South Africa



Customer	Connority
Technology	NIROBOX™: Ultrafiltration, Seawater Reverse Osmosis, Energy Recovery, Remineralization post treatment
Capacity	10,000 m ³ /day (2.6 MGD)
Overview	<p>A high-output desalination plant was urgently needed to solve an acute potable water shortage on the parched southeast coast of Africa</p> <ul style="list-style-type: none">○ Only 10 NIROBOX units, high flow of 1,000 in each single unit - the most compact plant-in-a-box with an extremely small footprint○ Patent-pending process design - reduced energy and chemical usage, recovery rate up to 50%○ Lower O&M costs – pre-designed with centralized intake, post-treatment and remote monitoring○ A 10,000 m³/day plant was ordered and commissioned in just 6 months
Commissioned	2016



NIROBOX™

fluence™

Sea Water Desalination for Industrial Process

Salina Cruz, Mexico



Customer	Quimica Apollo for PEMEX Salina Cruz Refinery
Technology	2 x NIROBOX™ SW-XL (each unit: up to 1,000 m³/day): Ultrafiltration, Seawater Reverse Osmosis, Energy Recovery
Capacity	2,000 m³ per day (0.5 MGD)
Requirement	Water required for process at PEMEX Salina Cruz refinery in southwest Mexico. Previously, the water was pumped from a nearby river, but due to current drought conditions the refinery is facing a water shortage that inhibits the refinery's proper operation
Solution	<p>PEMEX chose NIROBOX seawater containerized solution due to its short delivery time, short time-to-water and the ability to move the units to other PEMEX locations as needed.</p> <ul style="list-style-type: none">○ Water source: Seawater will be supplied from an existing beach well, later mixed with river water resulting in an TDS of 20,000 ppm○ PEMEX will rent the units from Quimica Apollo
Commissioned	Scheduled 2017



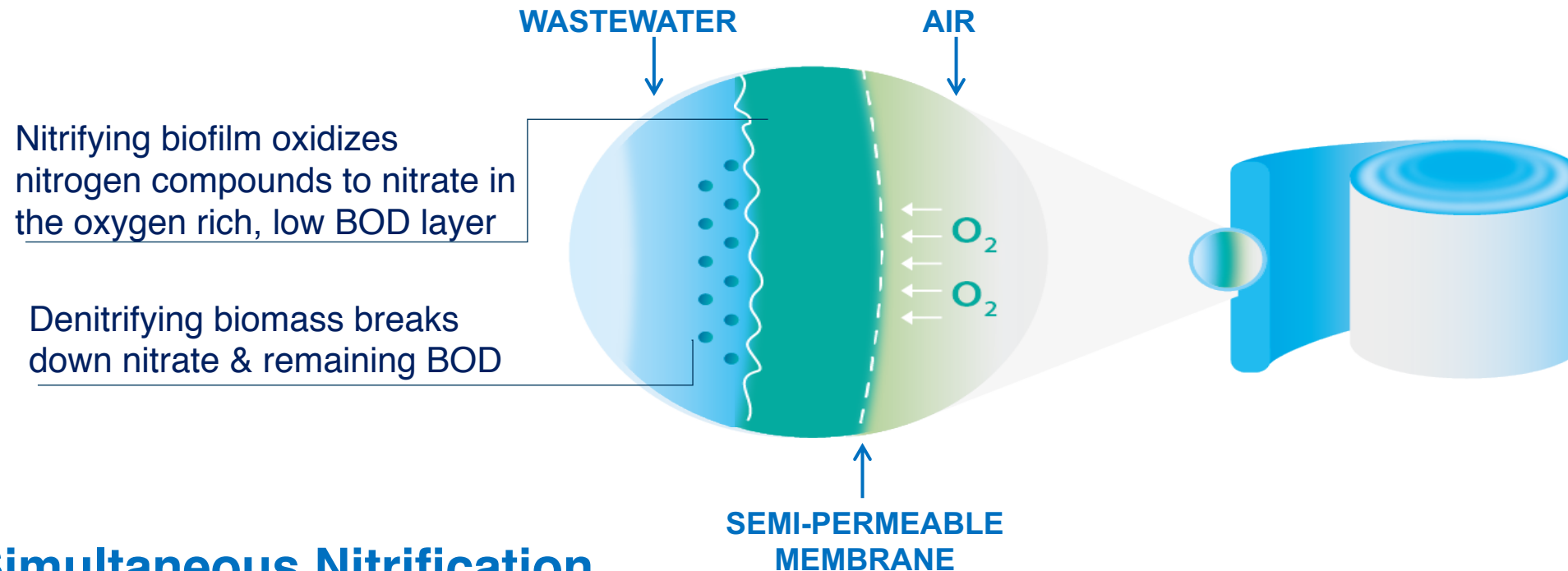
NIROBOX™

fluence™

Innovation: Membrane Aerated Biofilm Reactors (MABR)

Membrane Aerated Biofilm Reactors (MABR)

Fluence proprietary treatment technology



**Simultaneous Nitrification
and De-Nitrification**

MABR Products

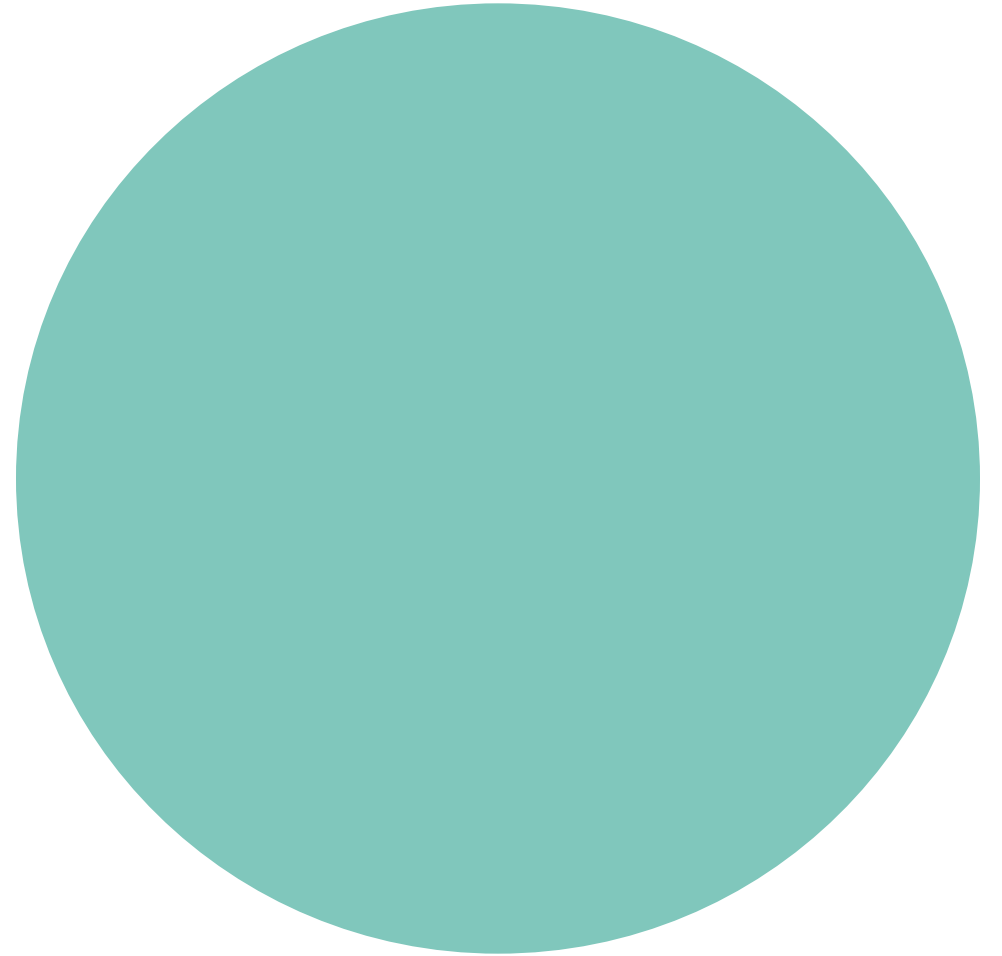
Energy Efficient Wastewater Treatment Product Solution for Agriculture, Discharge to the Environment and Reuse

Unique Benefits

- High effluent quality enabling water reuse
- Up to 90% less energy
- Decentralized solution
- Ideal for small-medium sized plants treating domestic sewage
- Simple to Operate
- Water scalping capability
- Modular structure enabling gradual expansion
- Low CapEx & OpEx



MABR Case Studies



Decentralized Wastewater Treatment Ha'Yogev, Israel

Customer	Palgei Maim, Municipal Water Authority
Project	Replacement of a pond system which faced difficulties in wastewater treatment
Design Parameters	<ul style="list-style-type: none">○ Flow: 125 m³/day (33,000 GPD)○ Wastewater characteristics: Dairy farming○ Wastewater minimum temperature: 200 ° C
Waste water Influent Characteristics	<ul style="list-style-type: none">○ BOD_{5,t}: 600 mg/l○ TSS: 670 mg/l○ Ammonia: 112 mg/l
Effluent Requirements	<ul style="list-style-type: none">○ Effluent Requirements:○ BOD_{5,t}: 35 mg/l○ TSS: 30 mg/l○ Ammonia: 50 mg/l
Solution	MABR
Results	<ul style="list-style-type: none">○ Up to 90% less energy consumption○ High effluent quality



Decentralized Wastewater Treatment Bourdeaux, USVI

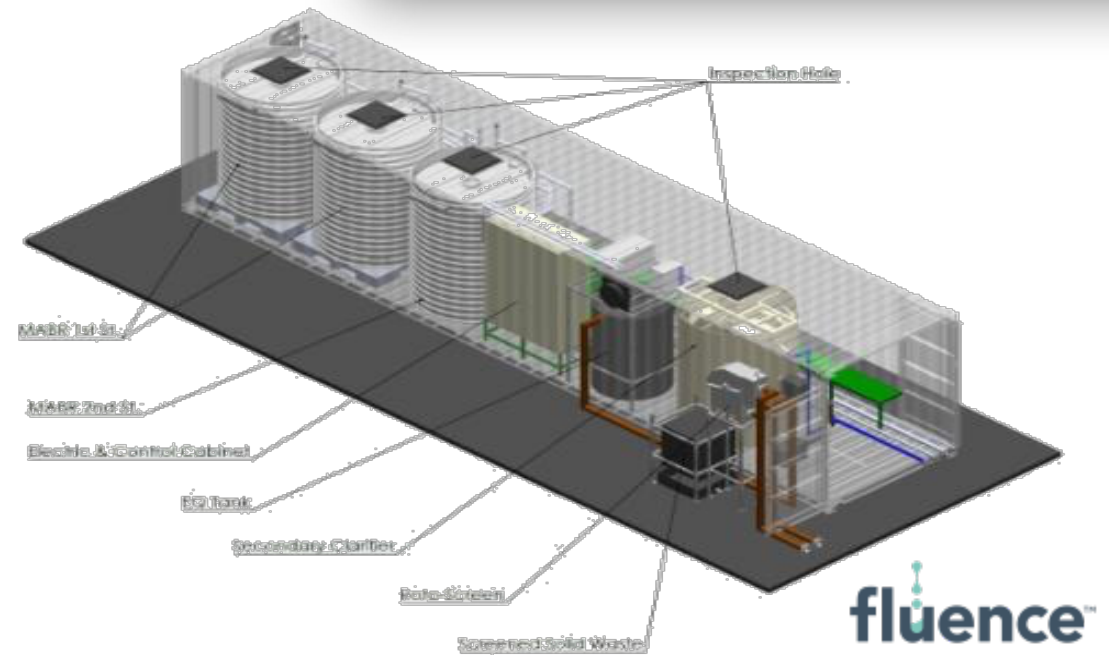
Customer	VIWMA- Virgin Island Waste Management Authority
Project	Replacement of an old failed conventional wastewater treatment plant
Design Parameters	<ul style="list-style-type: none">Flow: 95 m³/D (25,000 GPD)Wastewater characteristics: municipal wastewaterWastewater minimum temperature: 240 ° C
Raw waste water Influent	<ul style="list-style-type: none">BOD_{5,t}: 220 mg/lTSS: 180 mg/lTN: 45 mg/lPhosphorous: 14 mg/l
Effluent Requirements	<ul style="list-style-type: none">BOD_{5,t}: 10 mg/lTSS: 10 mg/lTN: 10 mg/lPhosphorous: 1 mg/l
Solution	MABR
Results	<ul style="list-style-type: none">Up to 90% less energy consumptionHigh effluent quality



Containerized MABR Demo Plants in China

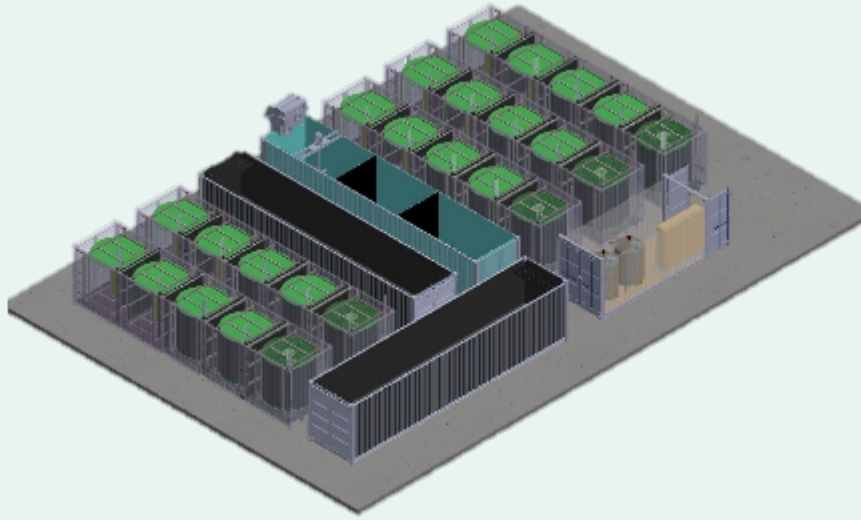
25 m³/d
(6600 GPD)
treatment
capacity

Secondary
quality:
TSS/BOD/TN
30/20/15 mg/l



Packaged & Containerized Water & Wastewater Treatment Advantages

How Smart Packaged Plants Accelerate Project Timeline



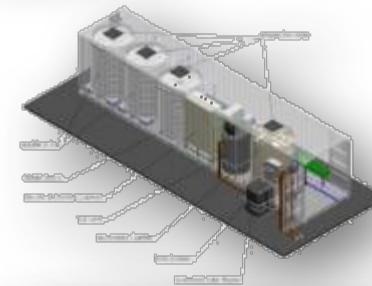
Packaged plant expertise helps speed rollout of MABR:

- Packaged solutions minimize engineering per plant, allow handling of bulk orders
- Minimal civil works accelerates commissioning
- Smart operation avoids need for onsite staff
- Energy savings minimize customer OpEx, increase IRR



NIROBOX

Packaged desalination plant designed & built by Fluence, deploying globally since 2015



Containerized MABR plant:

Packaged wastewater treatment plant designed & built by Fluence for Chinese and other partners



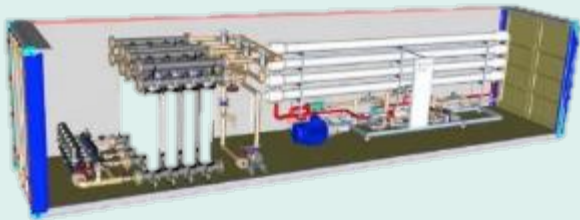
Why Fluence's Smart Packaged Plants Win: Case Study

Smart Packaged Plant deploys in 1/3 of the time, at 37% lower cost, and captures more of total plant value



Typical Custom Desalination Plant

- **18+ months** to complete
- Total Capex = **US\$1,600+/m³/day** of water produced of which **US\$500/m³/day** are site works
- Fixed site & hard to upgrade – cost & footprint

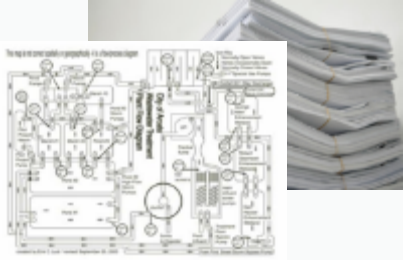


“Africa’s first mobile desalination plant”
Global Water Intelligence

Fluence Desalination Plant, South Africa

- **6 months** to complete
- Capex = **US\$1,000/m³/day** of water produced, **only US\$250/m³/day** of site works
- Large pipeline of similar projects
- Easy to upgrade or adjust as required
- Easy to relocate – a mobile solution
- Lower energy use, better price/performance than competition

Tailor Made versus Smart Packaged Plants



Complex, lengthy planning & proposal stage:
6-9 months



Intensive civil works:
>30% of project cost,
6-9 months

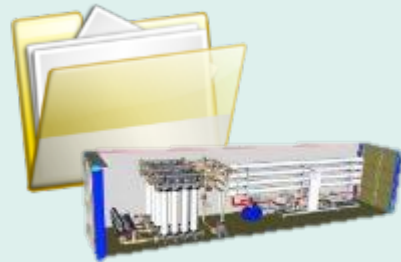


Lengthy installation & commissioning:
6-9 months

Custom Plant:



- 18-27 months from start to finish
- Long-term = High CapEx, fixed location
- High per-plant engineering costs
- Capture less project revenue
- Requires onsite staffing



Easy planning & proposal stage:
1-2 months



Minimal civil works:
Half of custom plant,
1-2 months



Fast installation & commissioning:
1-2 months

Smart Packaged Plant:



- 6-9 months from start to finish
- Near-term = Just-in-time CapEx, mobile plant
- Approx 35% lower CapEx, 30% lower opex
- Minimizes per-plant engineering costs
- Captures more project revenue
- Remote, unattended operation

Global Presence

