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Challenges for the Islands in the era of the Circular Economy

Decentralized Water and Wastewater smart Package solutions

Ilan Wilf

Fluence Corporation

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The key to Island sustainability, self sufficient operation and long term dependability:

- Low Energy Water and waste water technologies
- High quality effluent
- Small footprint
- No Odors
- Low maintenance
- Modularity
- Reuse
- Fast deployment – plug and play
- Remote monitoring

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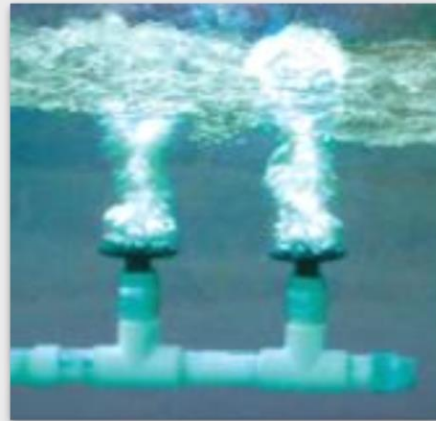
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Surface Aerators

2-3 kWh/m³



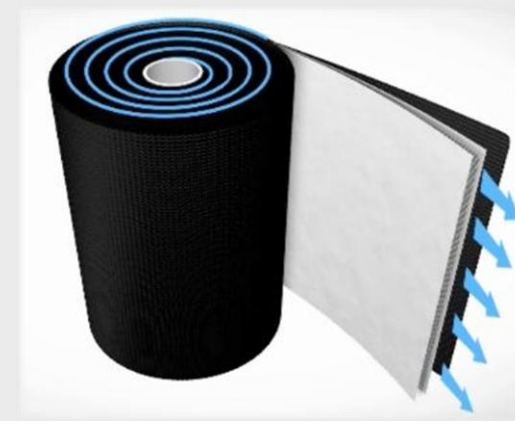
Coarse Bubble
Diffusers

1.5 kWh/ m³



Fine Bubble
Diffusers

0.4 kWh/ m³
Including nitrification



X Company MABR

< 0.25 kWh/ m³
Including nitrification

1950-1970

1980-1990

1990-2010

2015 -

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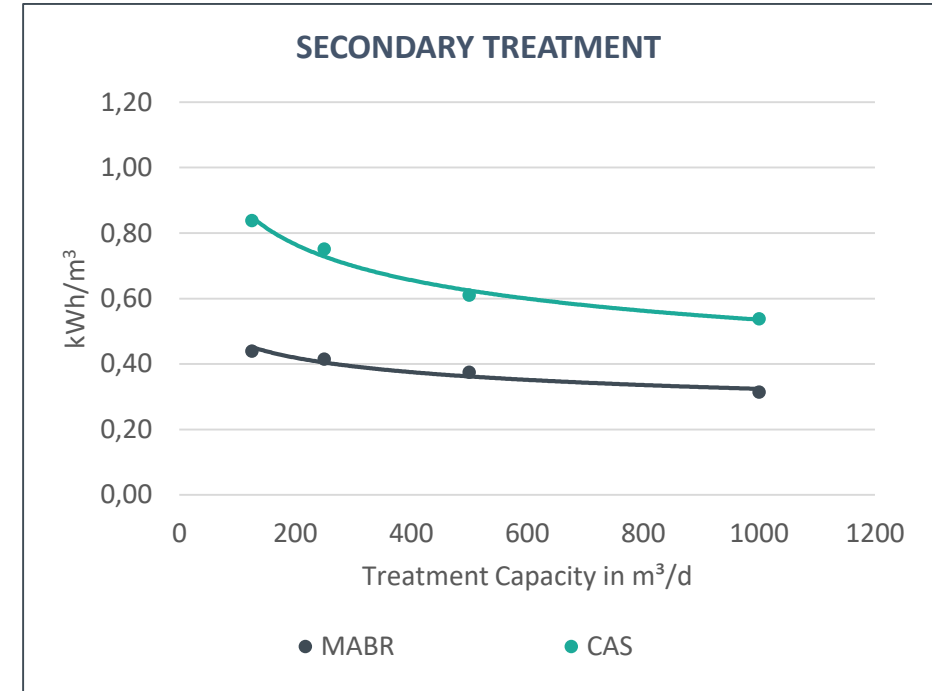


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Parameter	MABR	AAO (CAS)	MBBR	MBR
Feed Pump	“	“	“	“
Screening	“	“	“	“
Aeration scouring & mixing	0.27kWh	0.73kWh	0.85kWh	1.22kWh
Clarifier	0.02kWh	0.02kWh	0.02kWh	NA
Sludge recycling	0.05kWh	0.05kWh	0.05kWh	0.05kWh
Nitrate recycling	NA	0.15kWh	0.15kWh	0.15kWh
Tertiary filtration	0.10kWh	0.10kWh	0.10kWh	NA
TOTAL	0.44kWh	1.05kWh	1.17kWh	1.42kWh



- For nitrification and de-nitrification of incoming 50 ppm TN
- At 15°C design temperature
-
- For capacity of 250m³/d (66,000GPD)

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Aspiral™ 600 configuration



Treatment capacity - 240-900 m³/d
63,000 – 238,000 GPD
Minimal maintenance : 6-9 hours per week
Modular configuration for easy expansion
Procurement to Installation: 3-5 months
No odors
No noise
High effluent discharge
>50% OPEX savings (energy up to 90%)





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Seawater desalination smart package plant systems



- Modular water treatment plant based on 40 foot containerized solution
- Small footprint



- Portable
- Modular, pre-engineered
- Fast delivery & deployment - 4-6 months



- Requires minimal on-site construction work & time
- Plug & Play
- A Single unit produce up to 1,500 m³/d

Low CAPEX

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Seawater desalination smart package plant systems



- High recovery rate – up to 50%
- Less chemical consumption compared to conventional solutions



- Lower energy consumption = 2.45 kwh/m³
- High availability of over 95%



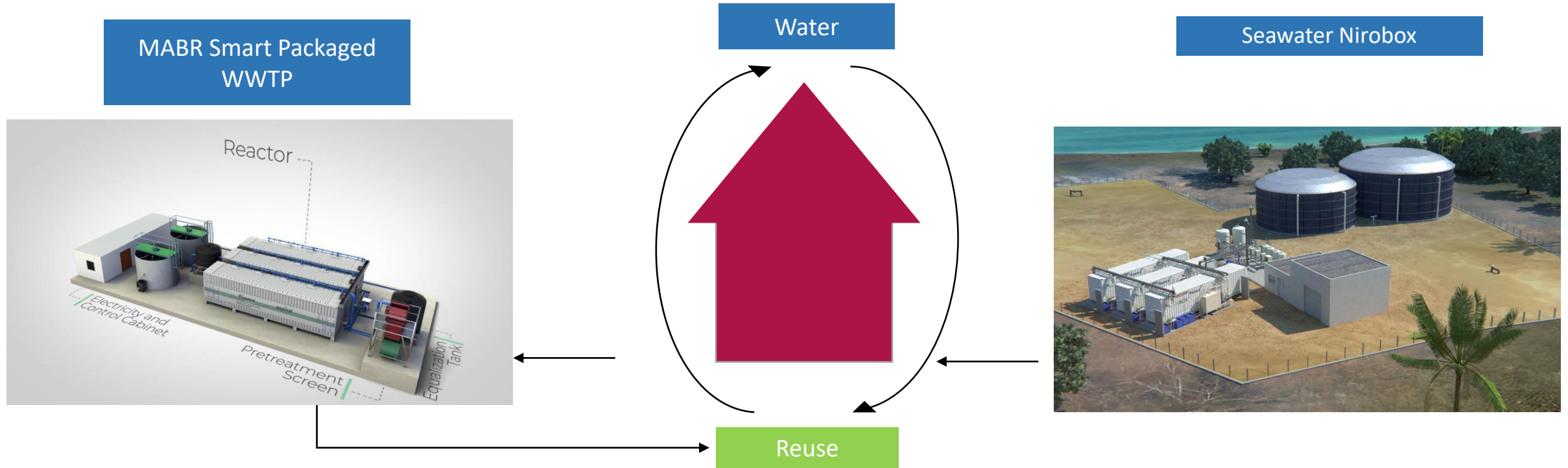
- Fully automated, remotely monitored and operated systems
- Minimal Labor than conventional treatment

Low OPEX





Optimize your water usage with reclamation effluent



Save over 30% in energy, capex, footprint, maintenance time and costs



Thank you for your attention

[logo of speaker's Institution]

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Thursday 28 - Friday 29 March 2019, Nicosia, Cyprus

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