

Emefcy Group Limited (ASX: EMC): Transforming Wastewater Treatment



Richard Irving, Executive Chairman

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An aerial photograph showing a lush green golf course on the left, with several sand traps and winding paths. To the right of the golf course is a wide, dry riverbed filled with light-colored sand and gravel. The background features a vast, flat desert landscape extending to a range of blue mountains under a clear sky. A dark blue rectangular box is overlaid on the right side of the image, containing white text.

Emefcy offers a commercially ready wastewater treatment solution potentially disrupting the economics of large existing markets while addressing a growing global need for clean water

Our Vision



Replace This...



Large, centralized wastewater treatment plant:

- **Huge footprint** – Not in my backyard
- **Very high capex** for long-term capacity
- **Very energy-intensive** – high opex
- **Noisy, smelly, very obvious**
- **Very hard to reuse water** without huge new pipe network – more capex

...With This



Small, distributed wastewater treatment plant:

- Small, flexible footprint **blends into neighborhood**
- **Just-in-time capex** for near-term capacity
- **Very energy-efficient** – low opex
- **No odor, quiet, neighborhood-friendly**
- **Local water reuse** means short pipe network

Emefcy Summary

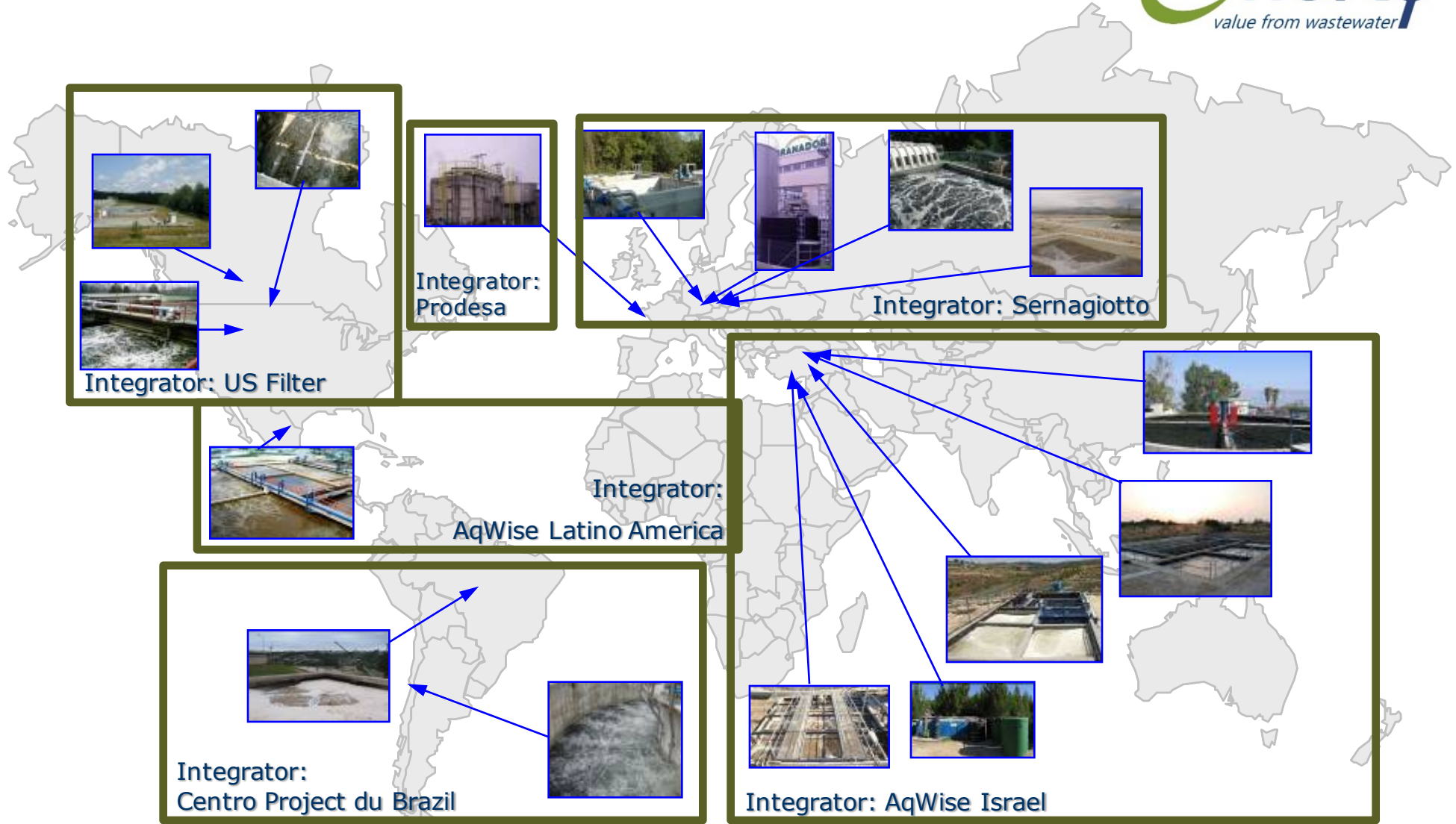


- ✓ Market-ready municipal wastewater product (SABRE) shipping in Q1 CY16
- ✓ Production facilities in place to support \$20M/year in SABRE sales
- ✓ First commercial demo plant in operation for 17 months proving in-field product reliability
- ✓ Experienced and successful management team with a strong track record in the global water technology industry
- ✓ Strong balance sheet with \$8.5M in cash as at 31 Dec 2015
- ✓ Listed on Australian ASX market: EMC - strong investor base, including Pond Ventures, Israel Cleantech Ventures, & GE Ventures



Emefcy CEO & CTO Also Founded AqWise:

Now has 350 Installations in >30 Countries



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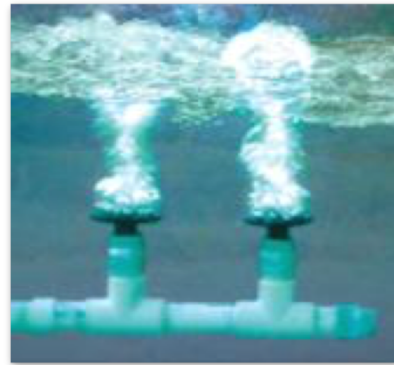
Wastewater Aeration: SABRE Saves 90% Energy, Often Halves Plant Opex



Surface Aerators

3 kWh/kg COD

1950-1970



Coarse Bubble Diffusers

2 kWh/kg COD

1980-1990

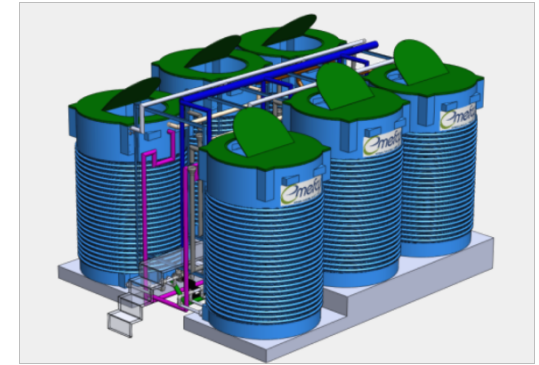


Fine Bubble Diffusers

1.5 kWh/kg COD

Including nitrification

1990-2010



Membrane Aerated Bioreactor

SABRE – Emefcy

0.15 kWh/kg COD

Including nitrification

2015

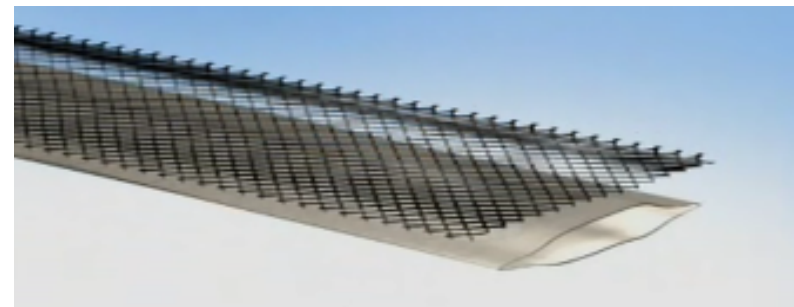


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SABRE Technology is Biomimicry: Works Like A Human Lung



- ▶ Wastewater flows next to an aerated sleeve made of oxygen-permeable material
- ▶ Aerobic bacteria develop on the walls and treat the wastewater using negligible power

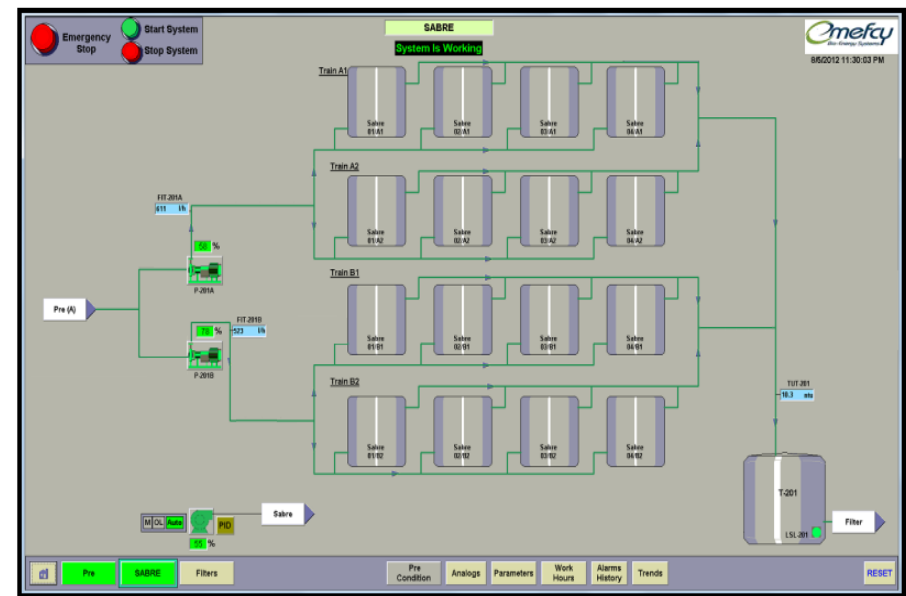


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Simple, Modular, Scalable



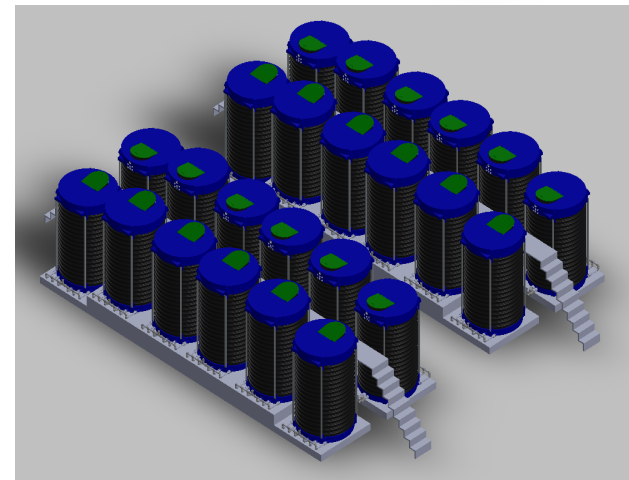
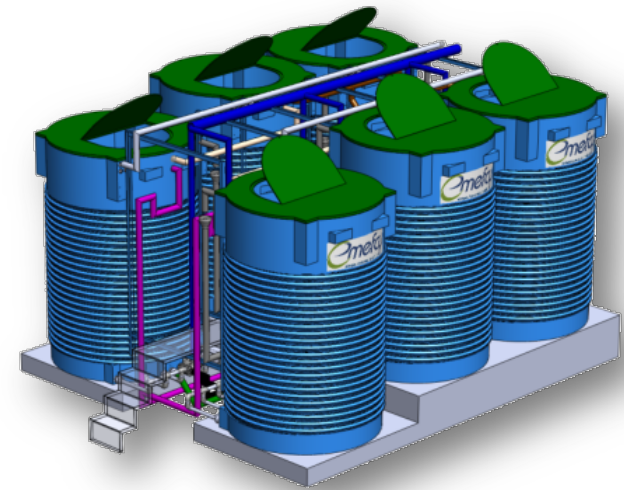
- ▶ Neighborhood-friendly: quiet, odorless, easily concealed
- ▶ Just-in-time solution: Scale up as the community/resort grows
- ▶ Automated: Unattended operation means one person can support many small plants



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SABRE Cost & Capacity

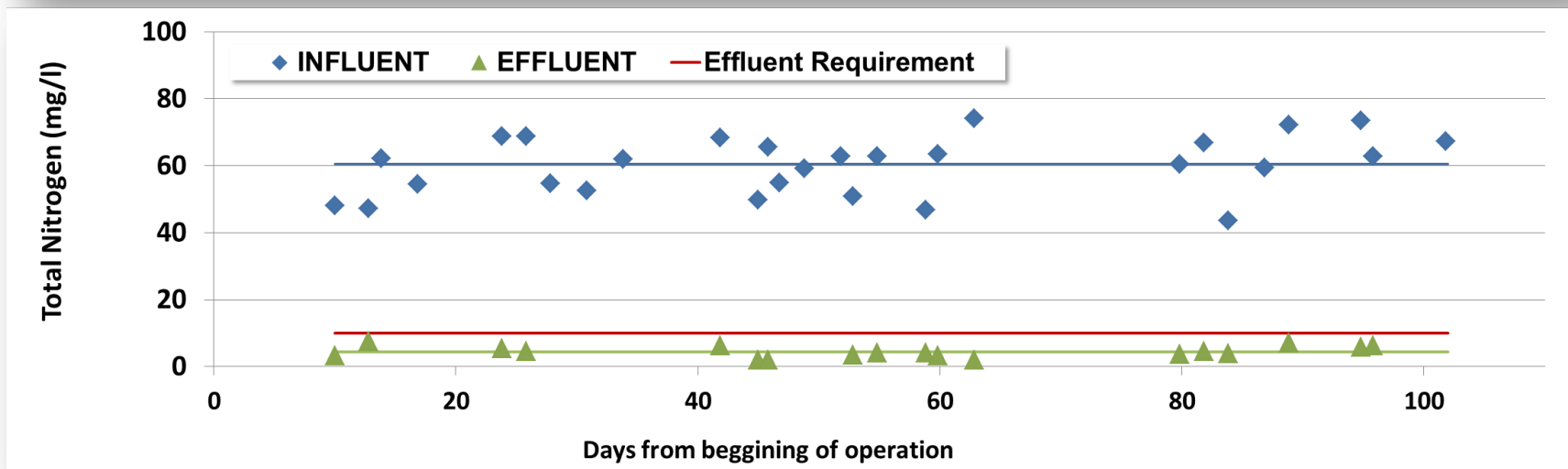
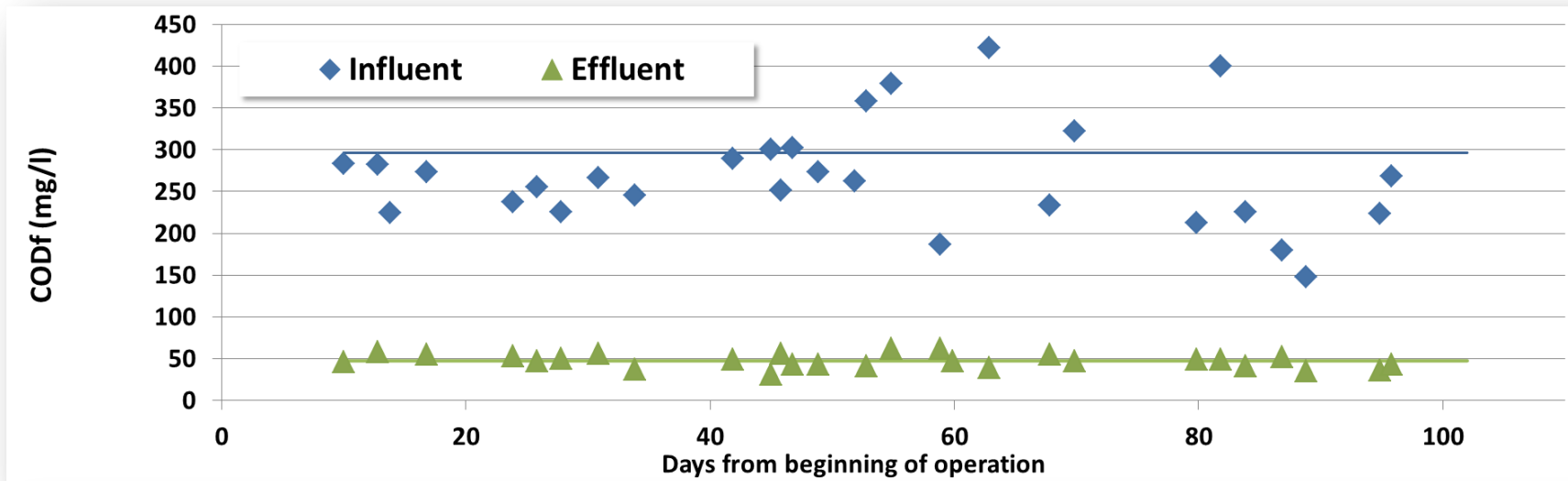
- ▶ Typically halves opex & 20% lower capex (90% less electricity, 50% less sludge)
- ▶ Capacity 12K – 125K gpd (50 – 500 m³/day) municipal wastewater
- ▶ 2017: handles up to 1 MGD (4,000 m³/day)
- ▶ High effluent quality allows reuse



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Results: COD and Nitrogen Removal

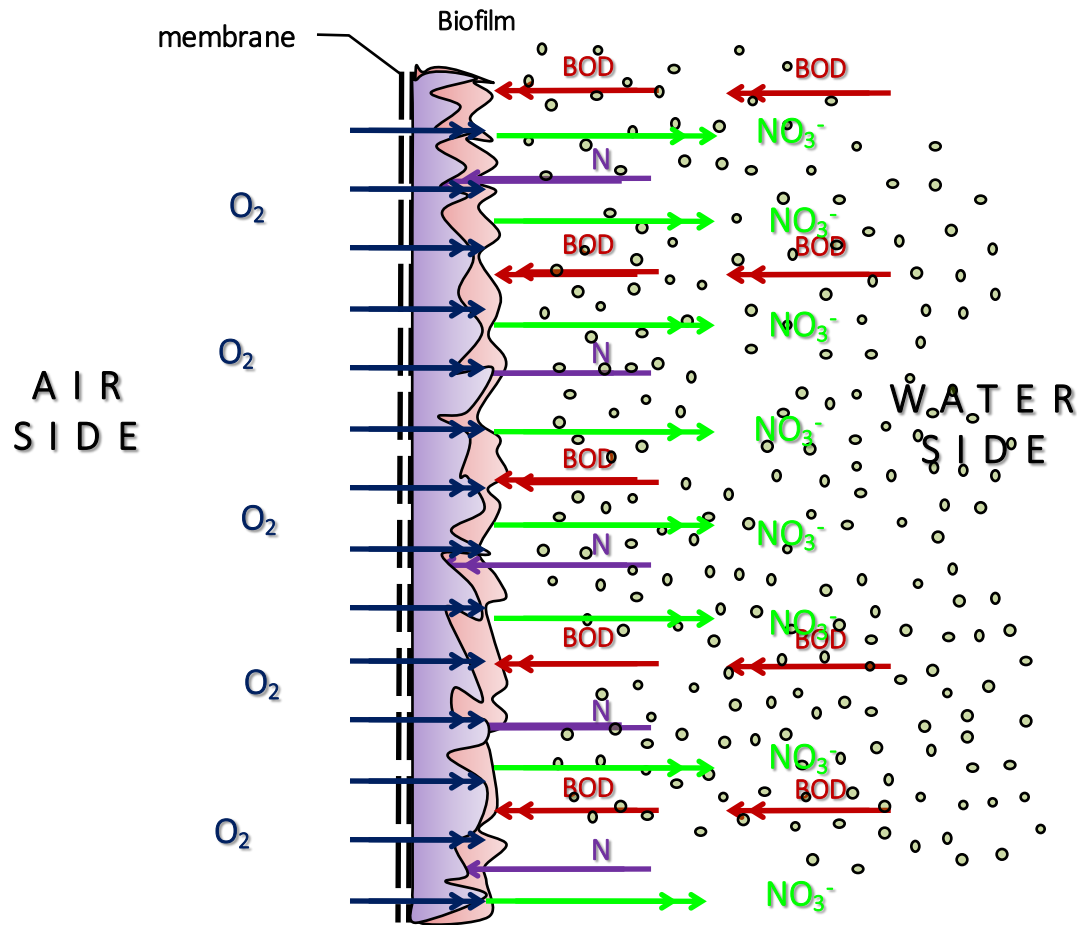
Less nitrogen than Perrier!



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MABRs Are Unique Biofilm Reactors

Simultaneously Removes Bio Load & Nitrogen



Autotrophic biofilm nitrifies in oxygen rich, low BOD conditions

Heterotrophic biofilm oxidizes BOD in aerobic conditions

Heterotrophic biomass denitrifies in suspension at anoxic conditions

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Caesaria – First Resort Deployment

Flawless Operation Since Sept 2014



SABRE: Current small-scale version has potential for upgrade to 200 m³/day



Once health permits received, recycled water can be used to irrigate this golf course

50% lower OPEX in 1 year trial

90% less energy

Estimated 2.1 year CAPEX payback

Quiet, odourless

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Ha-Yogev: First Municipal Deployment

Target Full Operation By End Q2 2016



Production line in operation



Manufactured spirals await testing



Finished modules ready to ship to site

- ▶ Booking value to Emefcy A\$380K
- ▶ Successful commissioning helps drive municipal reference sales – many such off-grid communities worldwide
- ▶ Modules have been manufactured, ready to ship to site
- ▶ Site construction in progress



Illustration of Emefcy plant at Ha-Yogev, Israel

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Selling Water Instead of Product



SABRE Pricing Guideline*

Capacity	130,000 gallons /day
Capex	\$1M
Opex	\$40K/year
Or Buy Recycled Water*	
Buy recycled water & wastewater treated – 10 year agreement, no capex	\$6,600/Million gallons (0.7 cents/gallon)

*Exact pricing depends on influent and effluent specs, operating temperature & other factors

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