oret Technologies: Revolutionizing Thermal Fluid Refining

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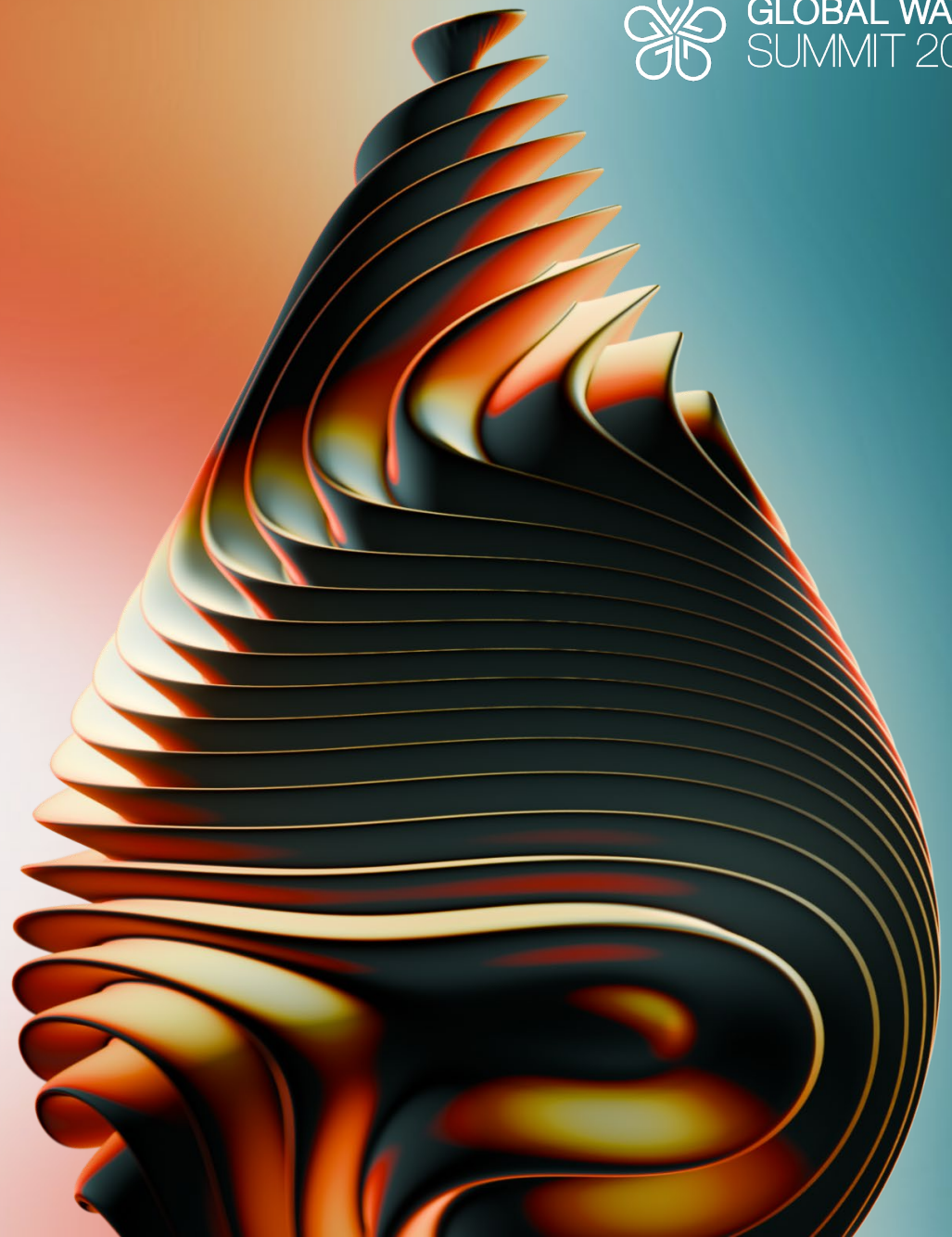

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SORET TECH

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100%

Heat < 70°C

Hundreds of terawatt-hours every year

Wasted!

This heat could **END global water scarcity**

ChatGPT
Copilot
Claude
perplexity
Gemini

The problem?

Every thermal desalination process ever built requires boiling, above 70°C (~70% vacuum)

40–60°C (too cold!)

Thousands of years of evaporation ponds

- × Water loss to the atmosphere
- × Excessive land use
- × Slow process (low evaporation rates)

Wasted!

Hundreds of years of industrial evaporators

- × Scalability is expensive
- × Scaling and fouling of materials
- × **Energy intensive** because phase change needs a lot of heat (> 70°C)

Aiming for perfection in water treatment

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What's an ideal process?

- ✅  **Powered by free or cheap energy: *low-temperature heat* (< 60°C)**
  - → **Reduced OPEX**
  - → Reduced corrosion
  - → Unlock **waste heat from data centers**!
- ✅  **All-liquid process (single phase)**
  - → Lower thermal needs
  - → Simplify the operation
- ✅  **Free of membranes**
  - → No materials degradation
  - → Reliable long-term operation
- ✅  **Free of chemicals**
  - → No chemical hazards (safe)
  - → Environmentally friendly
- ✅  **Scalable, mass production**
  - → Standard manufacturing and materials
  - → **Reduced CAPEX**

Our tech ticks all boxes

Multichannel thermodiffusion

will **unlock enormous value**, because of it is

- ✓ Energy-smart – seamless integration with data centers
- ✓ Energy-efficient – better than evaporation
- ✓ Water-saving – zero mass loss to the atmosphere
- ✓ Easy to manufacture and scale up

It has enormous potential to improve incumbent desalination, mining, and oil & gas processes

Currently engaging with: SO4 RioTinto أرامكو السعودية saudi aramco

A low-temperature process

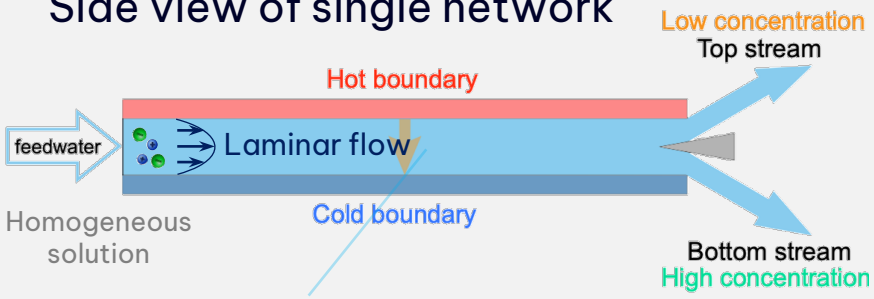
The problem?

Single-channel thermodiffusive separation is below 1,000 ppm

TRL 1–2: New phenomenon

Proof-of-concept development

Side view of single network

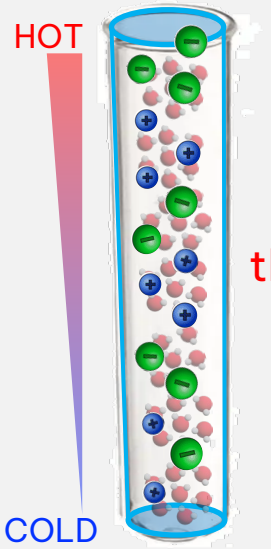


Thermodiffusive mass flux

Validated concept (*Nature Communications*)

Soret effect or thermodiffusion:
Transports ions, driven by temperature gradients

$T \gtrsim 10\ °C$



NaCl is thermophobic 😱

The solution: Multichannel thermodiffusion

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TRL 1–2: New phenomenon
Basic proof-of-concept

TRL 3: Multichannel device
Device proof-of-concept

Soret Tech's IP:

PATENTED

Network of channels

Top view (mass balance)

Validated device (*Nature Water*, *npj Clean Water*)

Scalability demonstration: Large and modular

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TRL 1–2: New phenomenon
Basic proof-of-concept

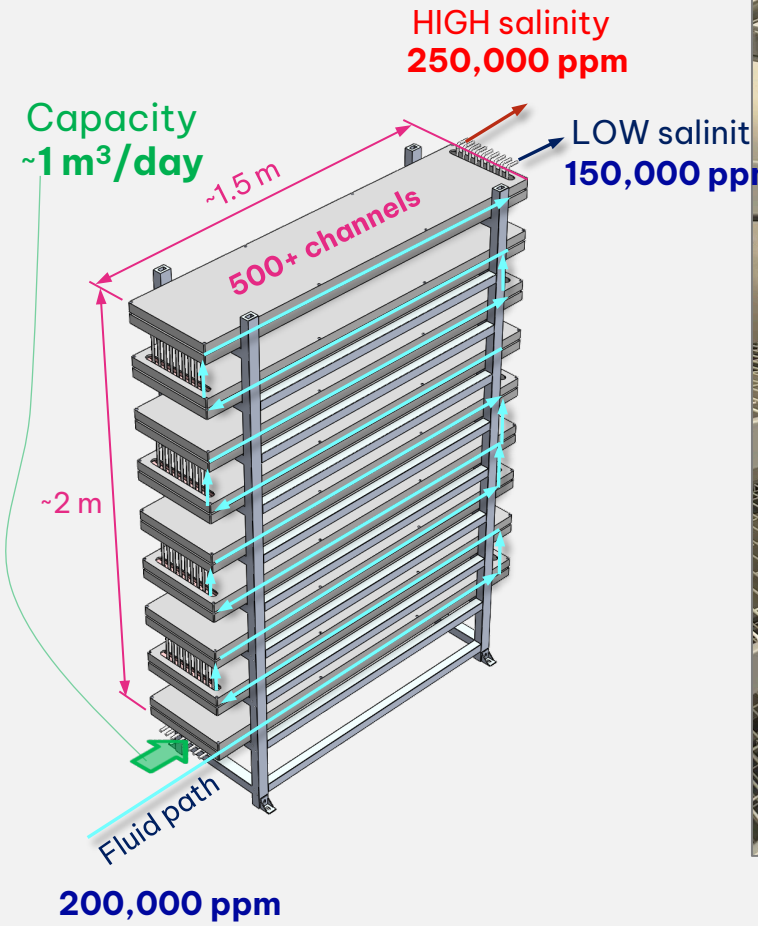
TRL 3: Multichannel device
Device proof-of-concept

Today

TRL 4: Scalable prototype
Scalability

TRL 5–6 : Pilot
Scalability

Sustainable fluid refining



Let’s compare with evaporation ponds (EP)

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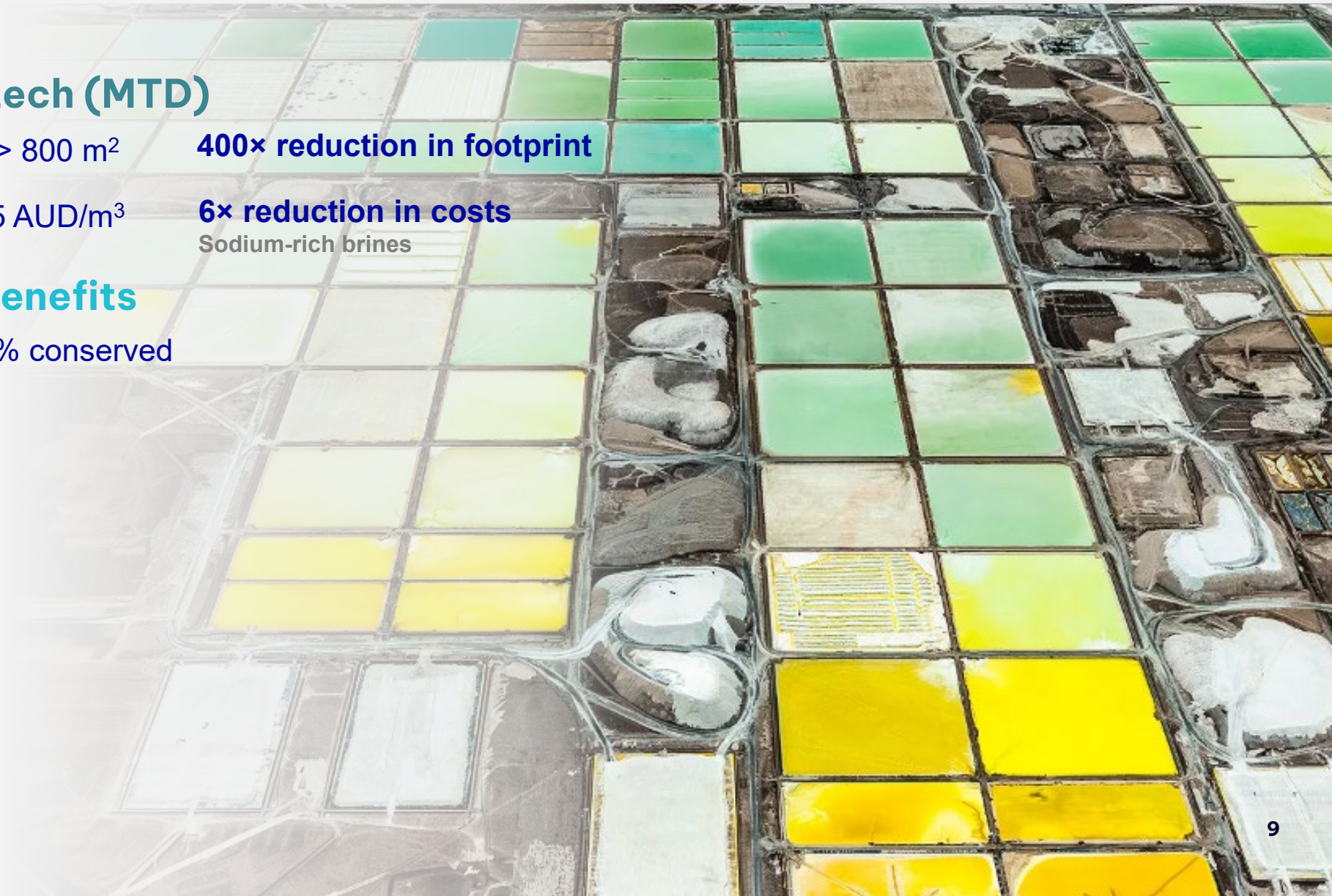
	EP	Our tech (MTD)	
Land use	350 000 m^2	> 800 m^2	**400× reduction in footprint**
Cost	30 AUD/m^3	5 AUD/m^3	**6× reduction in costs** Sodium-rich brines
		Benefits	
Water	100% lost	100% conserved	

Techno-economics

npj

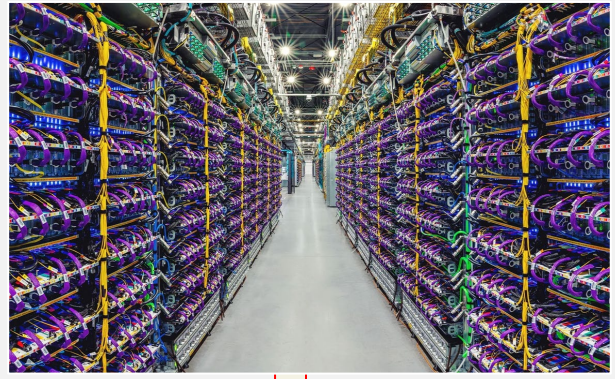


Our customers want to reduce desalination costs and valorise both brines and low-grade waste heat

Total Addressable Market in 2030: ~USD 120 billion

- **Desalination plants & equipment**: USD 32 billion (~10% CAGR)
- **Industrial evaporators**: USD 28.03 billion (~5% CAGR)
- **Evaporation ponds industry**: USD 2 billion (~6.2% CAGR)
- **Data centre cooling systems**: USD 56.15 billion (~16.4% CAGR)

*CAGR: Compound annual growth rate



We change the **landscape** with more **sustainable thermal processing**

We turn AI's **greatest waste stream** into its greatest **humanitarian opportunity**

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Revolutionizing Thermal Fluid Technology:

No Evaporation

No Membranes

No Chemicals

Maximum Sustainability

SORET TECH

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