



CARBON REMOVAL AT SCALE

FASTEST, CHEAPEST, AND MOST ENERGY EFFICIENT CDR

Ceal's CDR Solution In a Nutshell



Innovative **electrochemical mineralization** and **circular economy** practices for top **environmental impact** and **economic value**

The Problem

No existing CDR technology meets all three criteria set by the US Department of Energy:^[1]

- Energy inefficiency and high costs limit scalability.
- Lack of verified long-term sequestration solutions.

< 1,156 kWh/tCO₂

RESPONSIBLE

Carbon-negative **capture** and **sequestration** regardless of the energy source.

>> 100 yrs

EFFECTIVE

Guaranteed and verified long-term sequestration with **simple** and **scientifically** proven MRV.

< \$100 /tCO₂

AFFORDABLE

Cost-effective solutions that are **scalable** and **sustainable**.

[1] US Department of Energy (DOE) - Carbon Negative Shot

Ceal: Delivering on All Criteria

Our technology is the most energy-efficient and cost-effective solution for Gigaton-scale (Gt-scale) carbon removal.

250 kWh/tCO₂

RESPONSIBLE

Deep carbon-negative capture and sequestration under **all energy sources**.

> 10,000 yrs

EFFECTIVE

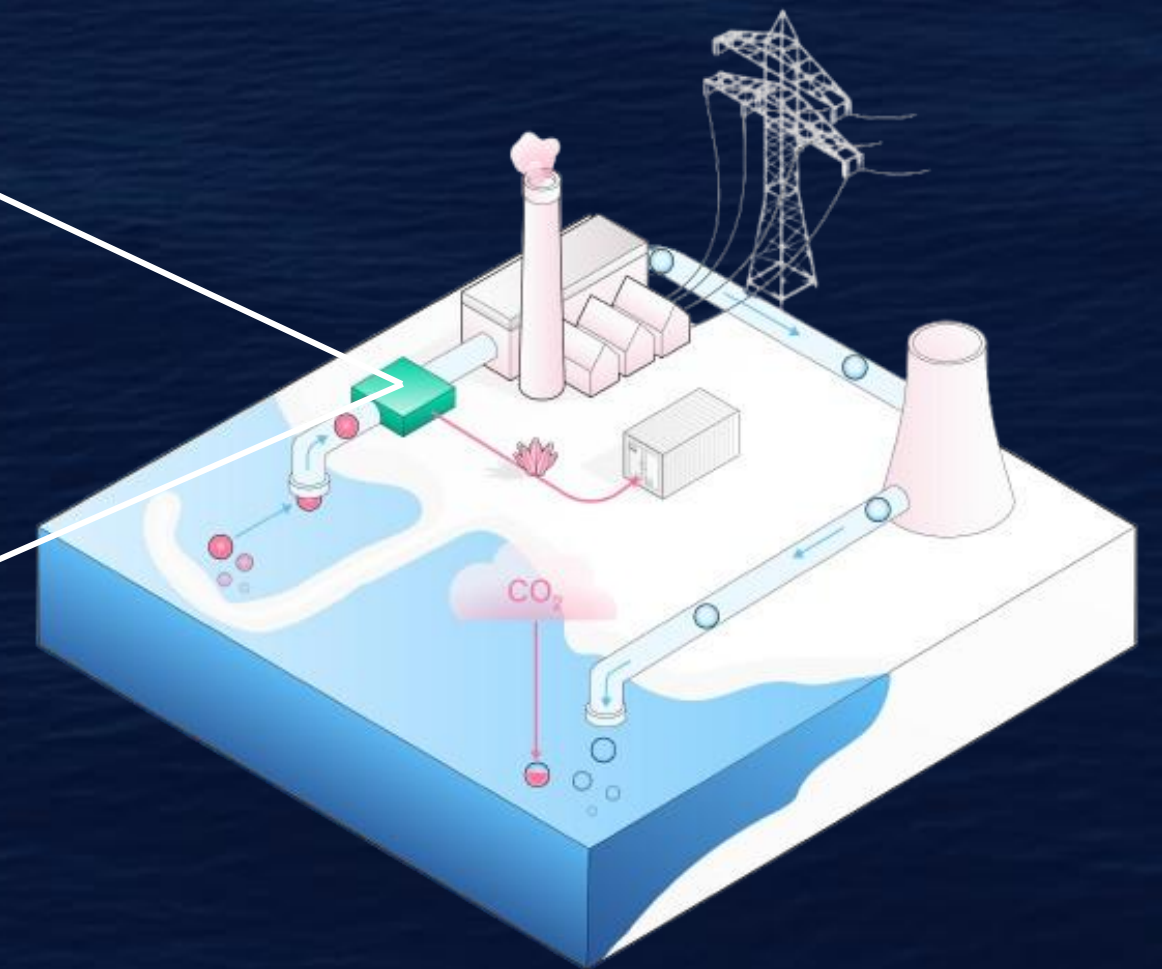
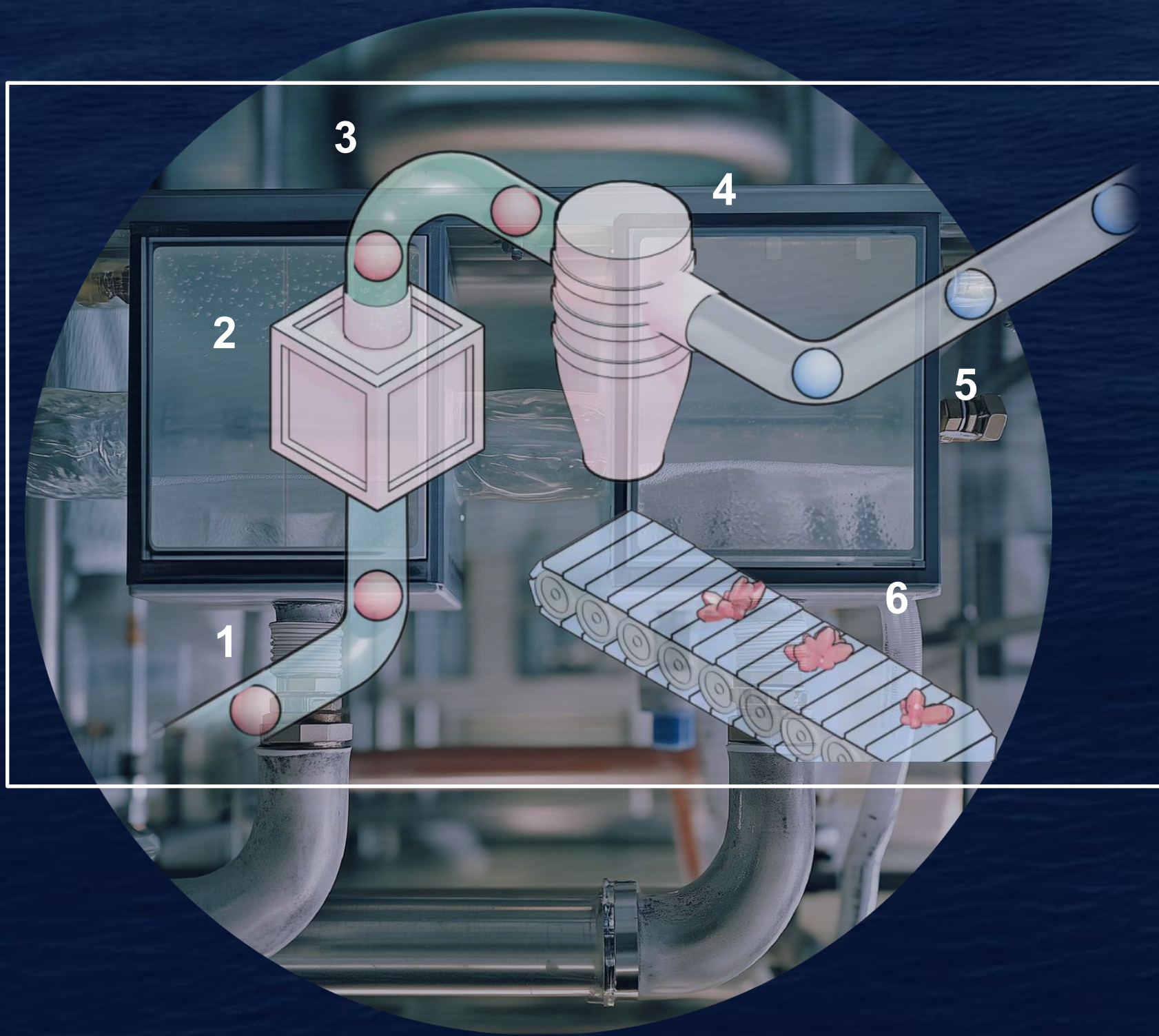
Simple, cheap and scientifically proven MRV.

\$30 /tCO₂

AFFORDABLE

Cheap. Period.

Our Patented Solution



- 
1. Water input.
 2. Electrochemical cell.
 3. CO₂ rich alkaline pH.
 4. Mineralization cell.
 5. Ca- and Mg-depleted water ready for cooling.
 6. Ca- and Mg-based minerals shipped to industry / long-term sequestration.

Much more than CDR

For a typical **1GW** thermal power plant, Ceal:

- Captures and sequesters **0.5M tCO₂/y**.
- Produces **1.1M tCaCO₃/y**.
- Processes **140,000 m³/h** for cooling.

These benefit the power plant with:

- **Revenues** – \$110M /y by selling minerals.
- **Climate Positive**
 - Power plant's carbon footprint reduction – Over %10.
 - Avoid marine pollution.
- **Operations**
 - 4% increase in energy efficiency.
 - \$3M /y reduction in maintenance and OpEx.



UVP to Power Plants

For a typical **1GW** peak capacity thermal power plant, Ceal will:

Save ~\$3M/y OpEx

INDUSTRIAL EFFICIENCY

- Increase energy efficiency by ~4%.
- Abate maintenance effort of clogged pipes.
- Eliminate use of environmentally hazardous chemicals for water treatment.
- Reduce regulatory efforts and save money.

**Increase by 30%
net profit**

SUSTAINABLE MINERALS

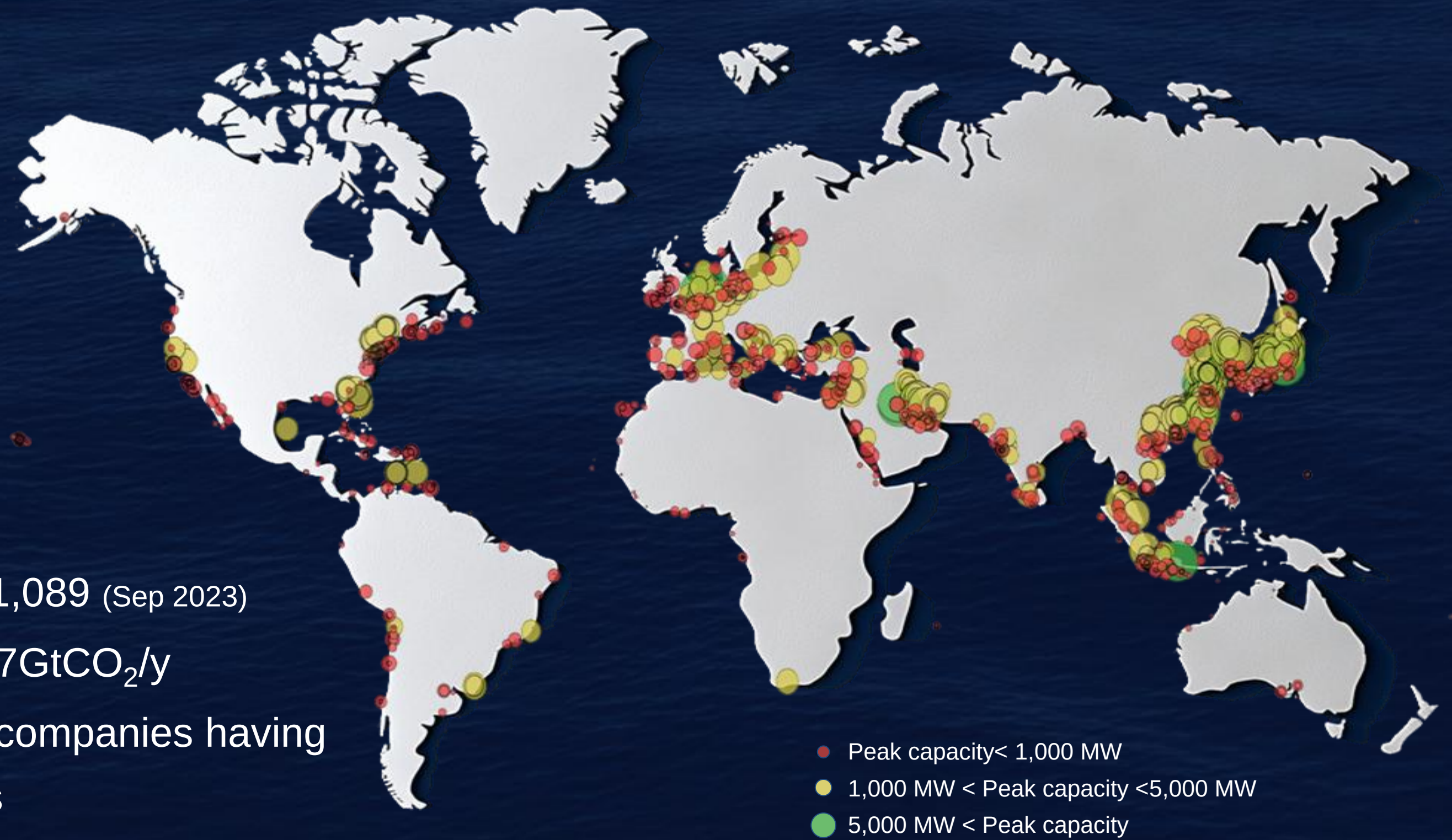
- Facilitate the sell of minerals as an essential feedstock to other industries.
- Lead profitable operation without reliance on carbon credits.
- Increase plant's revenues by > 10%.

**Reduce by >10%
carbon footprint**

ENVIRONMENTAL

- Capture and sequester atmospheric CO₂ in a single-step.
- Seal atmospheric CO₂ as a solid mineral practically permanently.
- Substantially reduce marine pollution.
- Abate mining industry pollution.

Seawater cooled thermal Power Plant Market



- Total number of plants: 1,089 (Sep 2023)
- Total CDR potential: $\sim 0.7 \text{ GtCO}_2/\text{y}$
- Validation with 6 Power companies having 79 relevant power plants

Validation – 7 power companies

- Total of 79 relevant power plants
- Total of ~8,515,000 m³/h
- Total of ~31 MtCO₂/y
- Total of ~71 MtCaCO₃/y



Multidisciplinary, Scientific and Biz Team

At Ceal, we began with a bold question: *how to capture gigatons of CO₂ profitably?* Our innovative electrochemical mineralization and circular economy practices, drive both environmental and economic benefits, positioning us as leaders in balancing profitability with global stewardship.



Mati Shani

CEO



Renowned leader, 20+ years in deep-tech, pioneering complex products and securing 2 patents. Renowned for driving commercial success with startups and global OEMs.



Charlotte Vogt PhD

Lead Scientist



Acclaimed scientist with an MBA, honored with the Beilby Medal, EuroTech Future Award, and C&EN's Talented 12, and featured in Forbes 30 Under 30.



Shany HersHKovitz PhD

CTO



PhD chemical engineering. Leading expert in energy related materials and catalysis with proven success in A-Z product development from idea to transfer to production.



Or Mayraz

Engineering



BSc Chemical Engineering. Graduate in CO₂ removal technologies. Expert in process engineering, system scale-up, MRV, and water treatment.



Noam Karo

Projects



BSc in Environmental Engineering. Graduate in mineralization. Expert in process environmental impact. Team manager for Engineers Without Borders.



Asaf Licht

Product Manager



BSc in Medicine and Bio-Medical Engineering. Graduate in seawater electrolysis. Expert in business strategy and development, with experience in startups and product development.

UVP as CDR Technology

Gt-scale

Only technology to meet ALL 3 DOE criteria.

Fast scaling

Validated co-location biz model.

MRV

Simplest, cheapest and scientifically backed.

Real Biz

Real customers with real problems.

Environmental

Multiple benefits providing holistic environmental remediation.

250
kWh/tCO₂

>10,000
years

30
\$/tCO₂

0
additives

Join us!

And be part of the change.
Let's make a lasting impact together.



www.Ceal.earth



sales@Ceal.earth



<https://www.linkedin.com/company/ceal-minerals>