



Pitch Deck - Jan 2024

Sirona Technologies

We move faster to build machines that remove CO₂ from the air.

We remove CO₂ from the air

\$1T opportunity by 2050



We will win thanks to

Exceptional team
with hardcore
engineering culture



Fast iterations on
de-risked
technology to
reduce costs

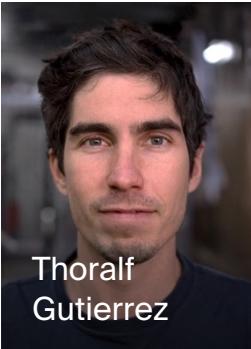
- Using solar energy and low capex machines with a modular design, that are sorbent agnostic
- Reducing costs by 70% by 2030
- Cost-efficient execution: Built 3 prototypes in first 10 months (100x capture capacity)

Set up to scale
as fast as possible

- Leveraging exceptional fundamentals for DAC in Kenya
- Agreement with CO₂ storage partner and ongoing talks with project developers
- Commercial plant operational in early 2026

We have a hardcore engineering team

CO-FOUNDER & CEO

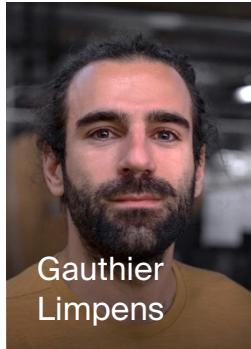
Thoralf
Gutierrez

Worked for 5y at Tesla HQ, through Model 3 ramp up. Built engineering team of 10+. Built Safety Score used by Autopilot team, reporting progress to Elon.



TESLA

CO-FOUNDER & CTO

Gauthier
Limpens

PhD in Thermodynamics. Modeled energy transition pathways. Very hands on: Spent 1y building solar & battery systems in rural Africa.



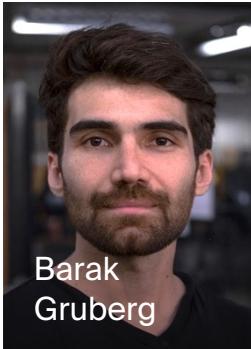
COO

Pierre-Louis
Christiane

6y of impact investing. 2y strategy consulting in energy and industrial goods. Experienced in early-stage venture, with focus on org and bus dev.



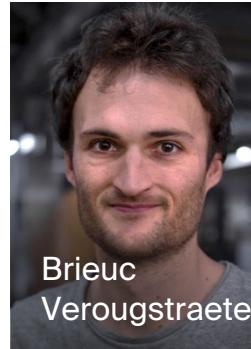
ENGINEER

Barak
Gruberg

PhD in Particle Physics. 8y of research at CERN. First principles thinker.



CHEMICAL ENGINEER

Brieuc
Veroustraete

PhD in Carbon Capture. Comes with 5y of domain expertise in solid sorbents for carbon capture.



VUB

VRIJE

UNIVERSITEIT

BRUSSEL

SYSTEMS ENGINEER

Pierre
Ceysens

Built satellites that are already flying through space.



FOUNDERS' ASSOCIATE

Sibylle
Soers

Background in chemical engineering, management, and operational excellence.



Key funds and angels

- XAnge
- VOYAGERS Climate Tech Fund
- Tesla and SpaceX engineers
- Renaud Visage (Co-Founder, Eventbrite)
- Thibaud Elziere (Co-Founder, Hexa)

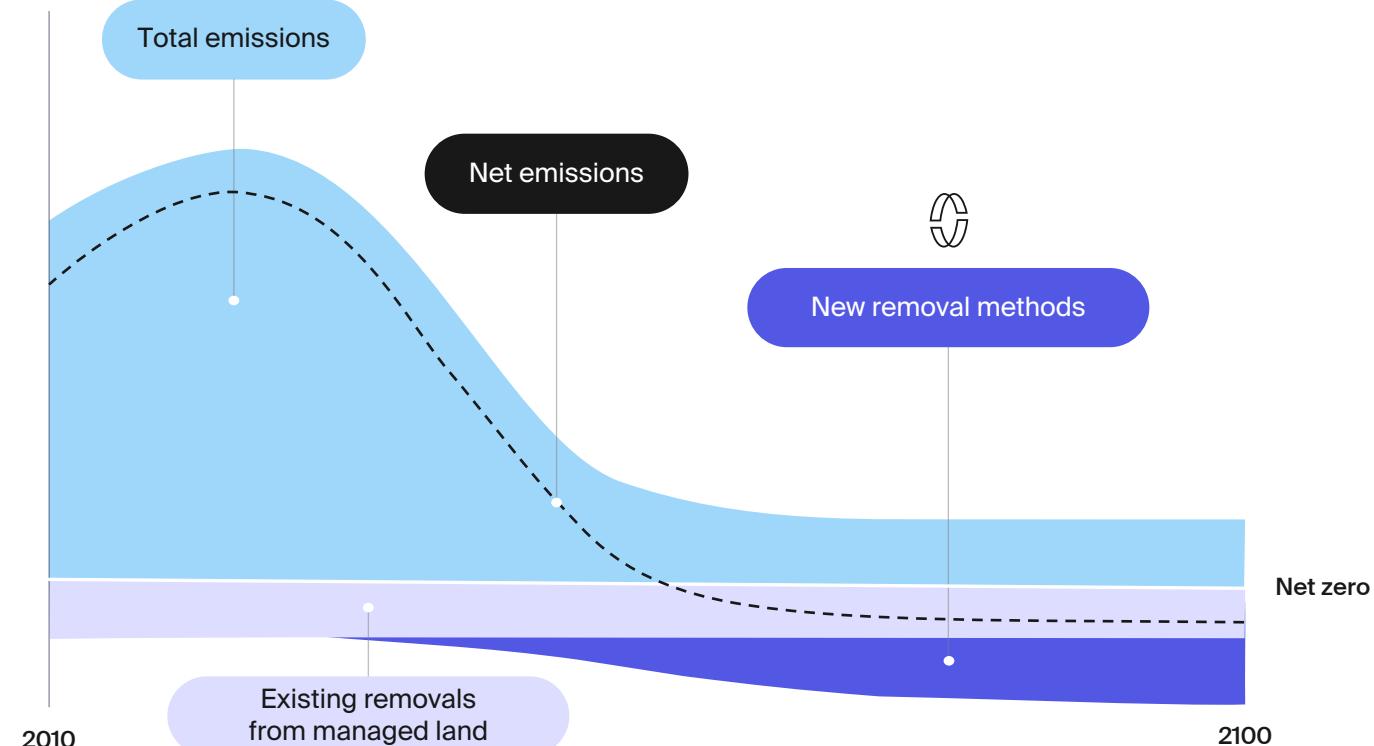
- Benoit Deper (CEO, Aerospacelab)
- Adrien Roose (CEO, Cowboy)
- AFI Ventures (Ventech VC)
- Climate Club
- Syndicate One and more

Advisors



We need to
remove CO₂
from the air
NOW, to reach
net-zero ASAP

Greenhouse gas emissions



- Pathway that limits warming to 1.5°C:
- Remove 10 GtCO₂/year by 2050
 - At 100\$/ton

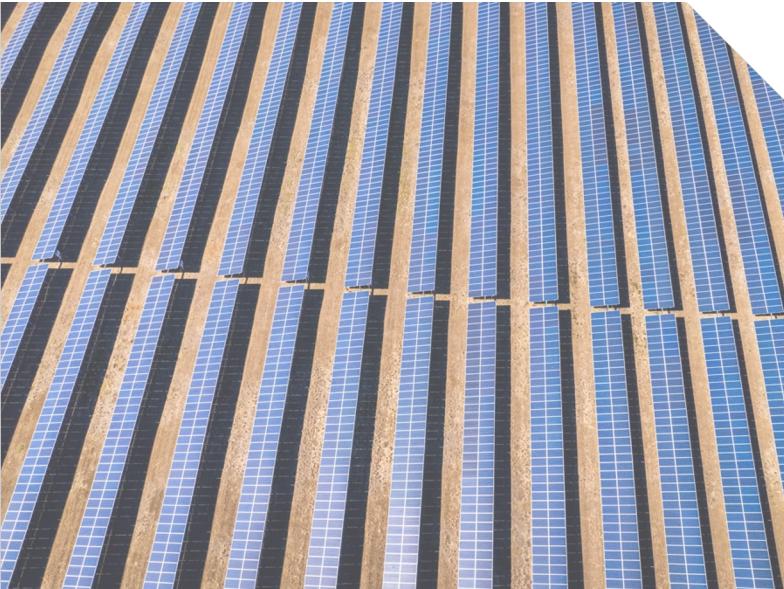
→ **\$1 trillion market**



Direct Air Capture (DAC) is the highest standard of carbon removal

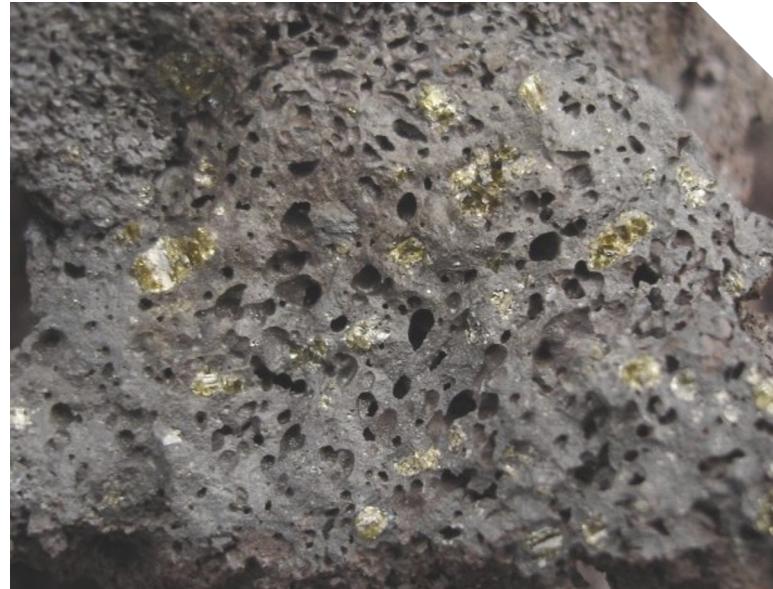
Scalable

- Use 100x+ less land than forests
- Doesn't compete with arable land



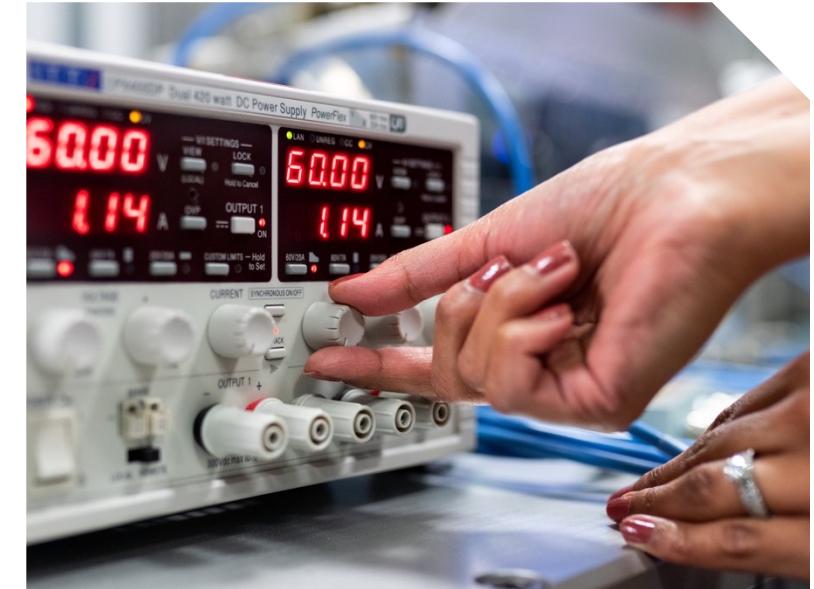
Permanent

- Sequester emissions for millennia
- Most permanent of all removal options



Verifiable

- Straightforward to track
- More verifiable than soil or ocean-based solutions



DAC is already here, it works, and it's selling out

There are already 3 large DAC facilities up and running ...



... capturing 10x more CO₂ than they emit.

And these plants are selling out like hotcakes.

- Climeworks (Orca): sold out for **next 20 years**
- CarbonCapture Inc (Bison): sold out until **2029**
- Heirloom (Tracy): sold out until **2030**

Pioneering companies are buying these credits at a premium.

\$1000+ per ton

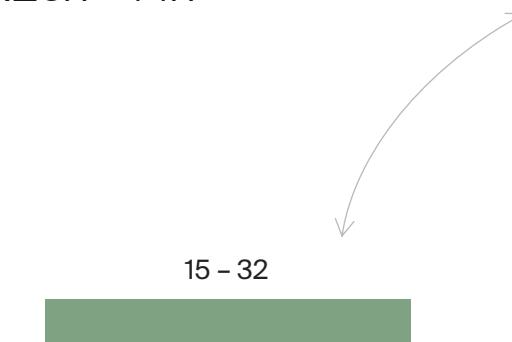


DAC market will continue to be supply constrained

There is a CDR supply and demand gap in 2030



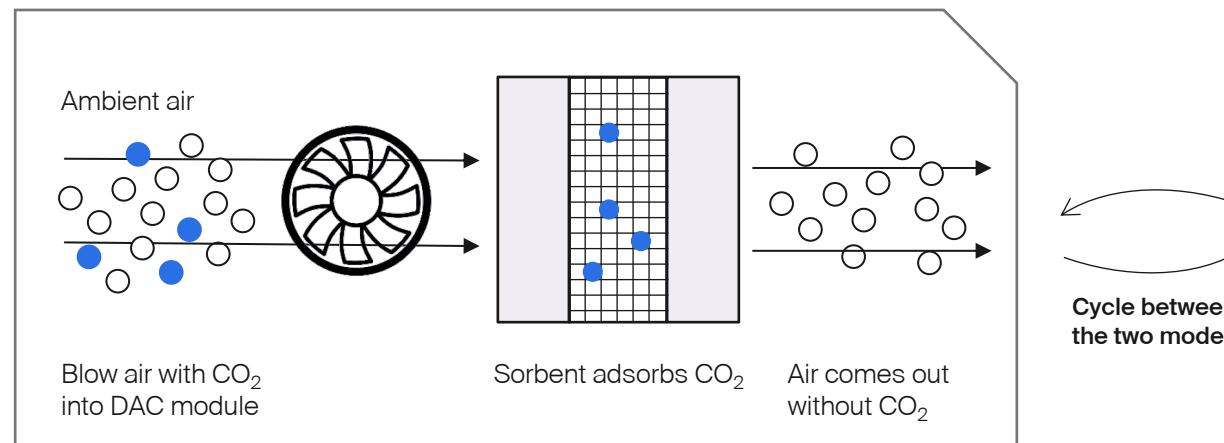
Expected supply
is way below
expected demand
 $1.25x - 14x$



We develop de-risked technology to focus on speed and scale

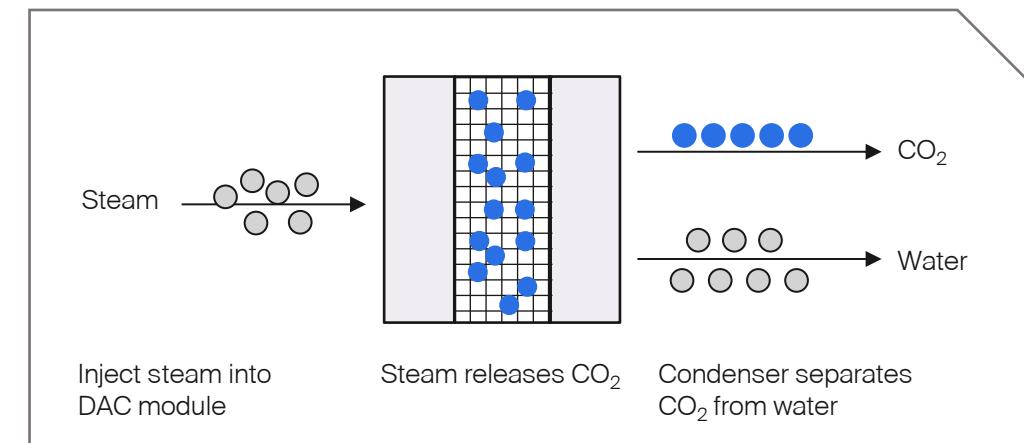
Adsorption step: CO₂ is captured by a chemical filter

The chemical filter is a solid sorbent, functionalized with amines



Desorption step: CO₂ comes out in a high purity stream

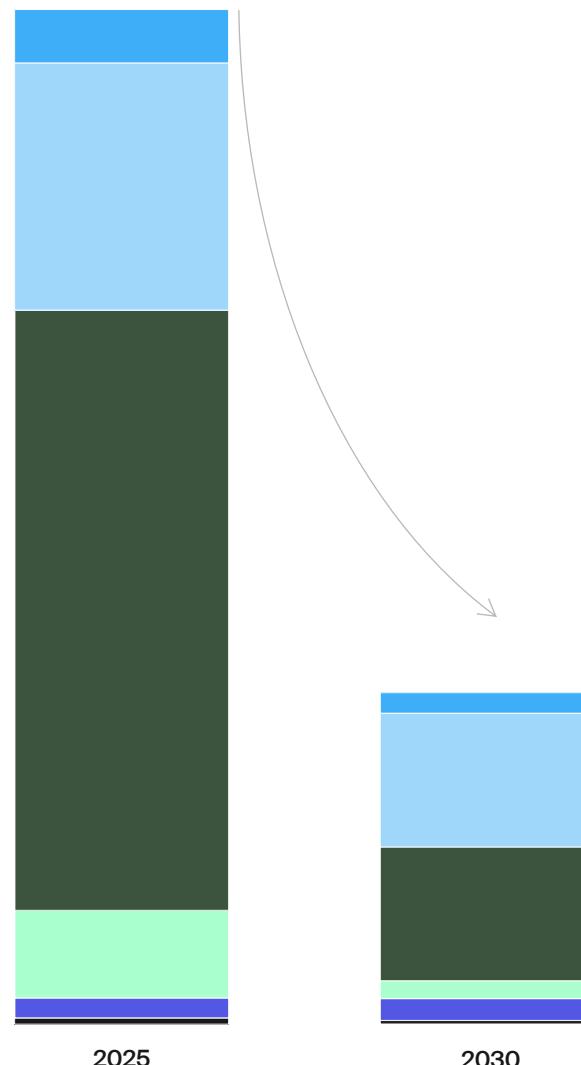
The chemical filter is regenerated with a temperature-vacuum swing adsorption cycle



We are hyper focused on lowering costs fast to improve industrialization



Indicative prices, taken from our
techno-economic analysis



Energy -65%

Electricity & heat

Machines & plant -50%

Primary equipment &
Plant setup, engineering

Sorbent -80%

Sorbent production and
replacement

Labor -80%

CO₂ transport & storage costs

Other

Ride the wave of solar photovoltaics

+ heat pumps + thermal storage

Low capex machines with fast learning rates

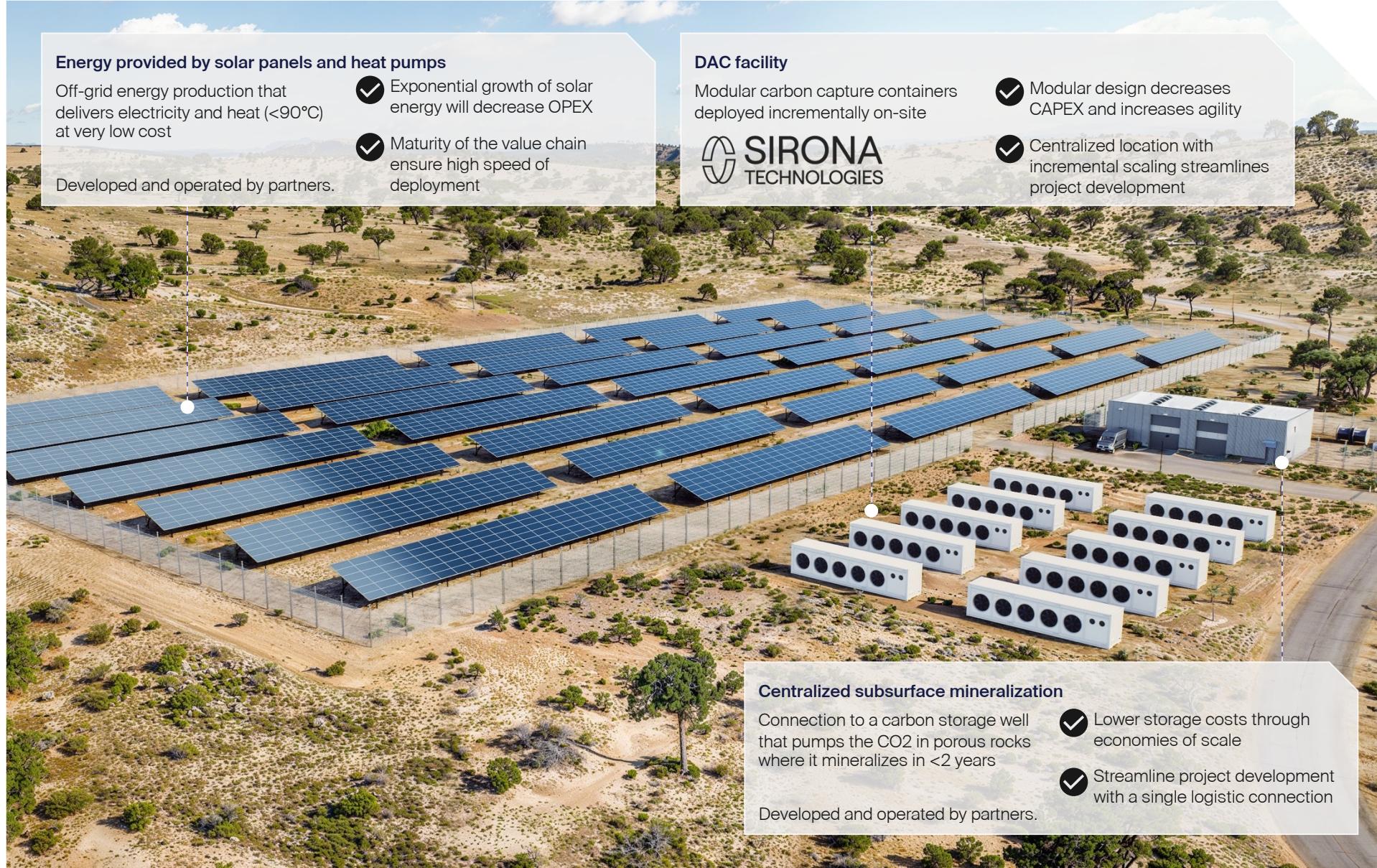
- Simple machines with low capex
- Modular design

Sorbent agnostic

- Increased stability
- Increased CO₂ capture capacity
- Reduced manufacturing cost

Incremental scaling of centralized location

We build a fully operational capture facility optimized for low costs, speed of deployment, streamlined project dev.



We have increased our capture capacity by 100x in 8 months

JAN 2023

APRIL

JULY

OCT

JAN 2024

Founding

Prototype V1

Prototype V2

Prototype V3

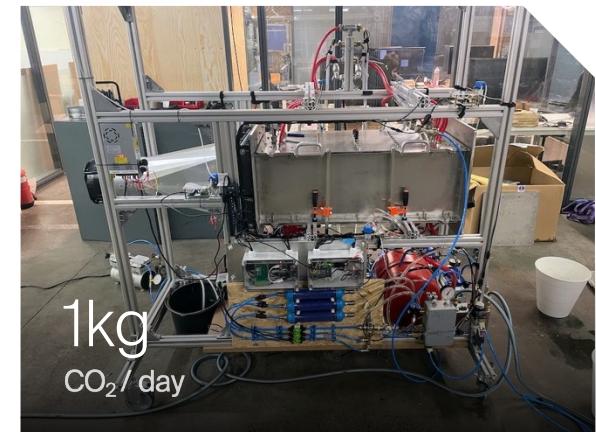
CO₂
Capture
Capacity



10X



10X



Ops and
Business

First hires



\$1m pre-seed
3x oversubscribed
Top EU funds
Tesla & SpaceX engineers

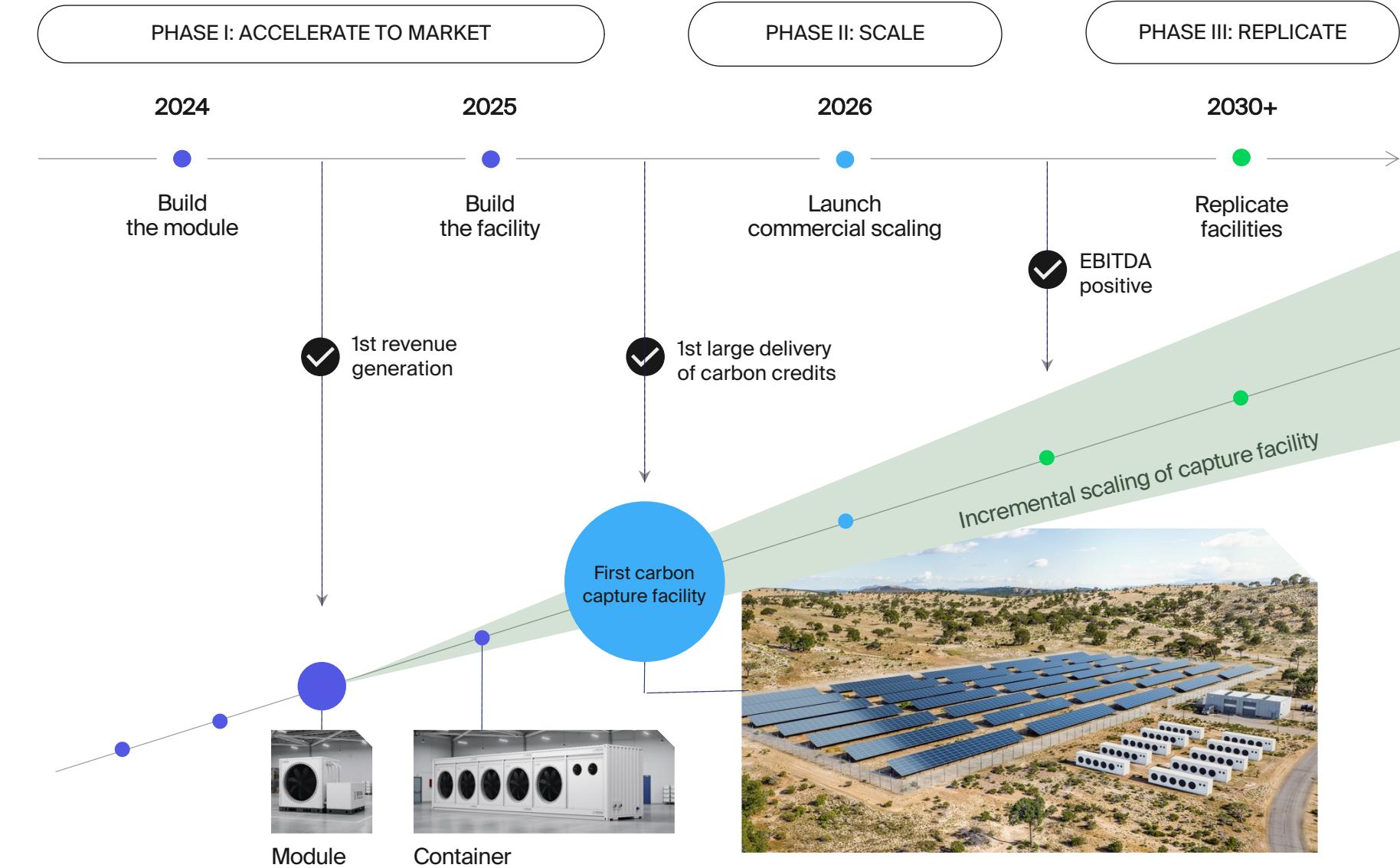
CEOs of
hardware cos
Strategic Angels

CO₂
storage LOI

Commercial
platform LOI

Project dev.
quote

We will scale 100x again to build our DAC module, then deploy capture facilities to very large scales



Kenya has exceptional fundamentals to scale DAC quickly



1. Abundance of renewable energy
2. CO₂ storage partner already on site
3. Local govt support, that can move quickly

Agreements with:

cella
↓

Ongoing discussions with:



We are raising a €4m seed round



Design and build our first production module with capture capacity of 80 tons of CO₂ per year

Sell our first carbon credits

Manufacture large quantities of our own sorbent with a chemical supplier

Build a pilot manufacturing line and extend our office

Grow our team with chemistry, engineering and machine design talents



Let's chat.

thor@sirona.tech