

American Supercritical

sCO₂ Power Systems for the **AI Revolution**

50% more power

from every gas turbine

Pre-seed · 2026

The team

Energy and aerospace startup veterans



Simon Shuham
CEO

Head of Product at Exowatt

Propulsion Engineer - BE-3U, BE-4 at Blue Origin

Commercial and Government Sales at Ursa Major

Harvard BS+MBA, CU Boulder MS

Helped build and scale multiple hardware startups
across aerospace and energy



Matt Carlson
CTO

Acting Director of Power Generation at Kairos Power

Chief Engineer at Heliogen

Principal Member of Technical Staff at Sandia

UW-Madison BS + MS

Leading expert in sCO₂ power systems with 8
patents granted and 19 technical publications



AI data centers are spending billions on gas turbines and **losing more than half** the energy as waste heat.

56 GW

of behind-the-meter generation planned at U.S. data centers through 2030

60-65%

of energy exits simple cycle turbines as 500-600°C waste heat

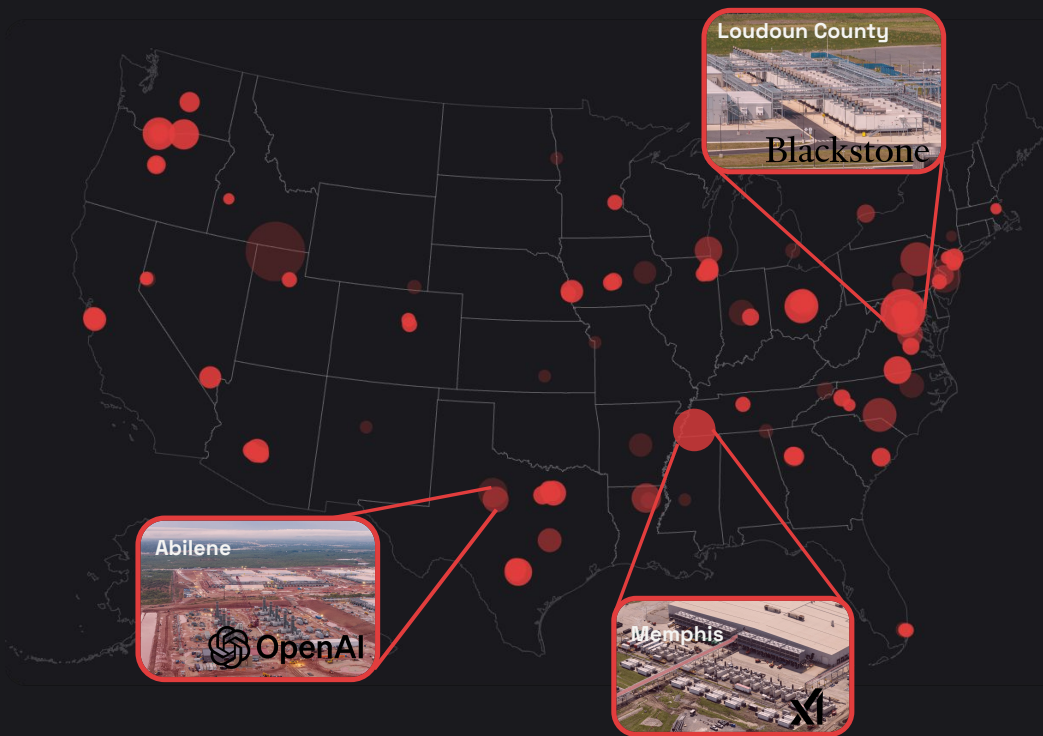
\$12B/yr

in fuel wasted by data center gas turbines

We fix that by recovering waste heat to generate **50% more power** from every gas turbine. Saving data center customers **hundreds of millions of dollars** every year.

Data centers need hundreds of GW

When the grid can't keep up, onsite gas turbines fill the gap



BTM PROJECTS

46

90% announced in 2025 alone

DEMAND SHARE

>25%

Data center projects with onsite baseload power by 2030

Savings

5 years

For grid interconnection and large gas turbines

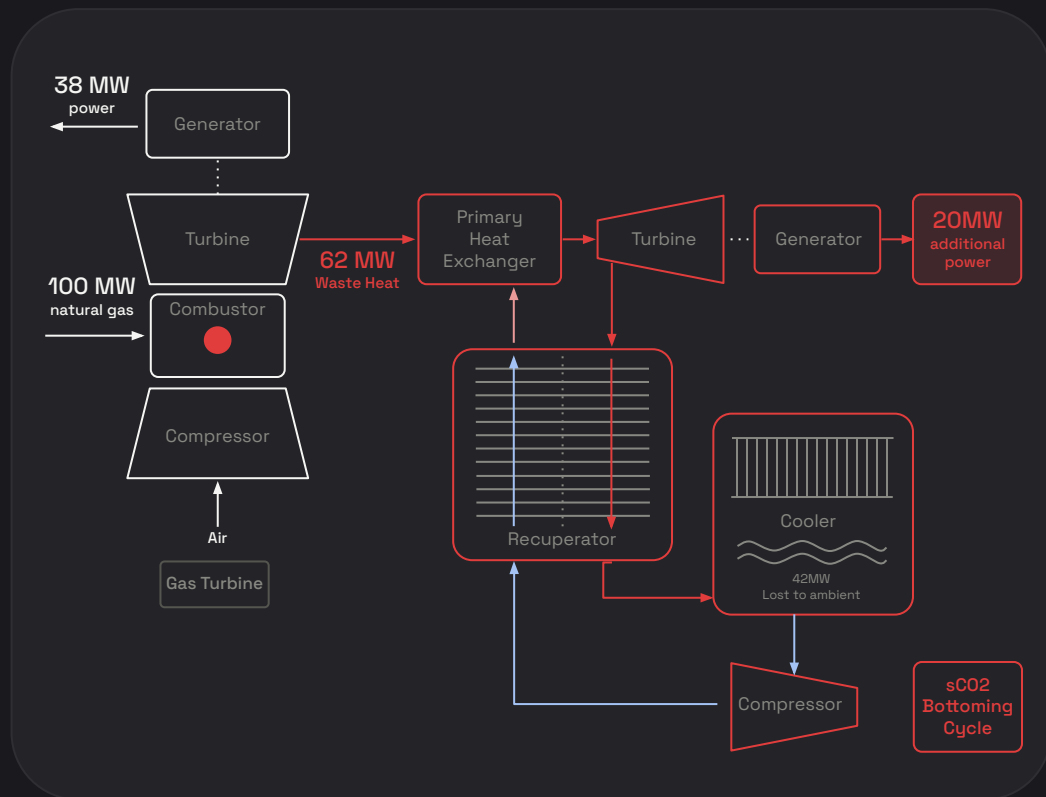
GAS INVESTMENT

\$35B/yr

Annual investment in natural gas plants by 2026

Same fuel in, more power out

100 MW of fuel in - with and without an sCO₂ bottoming cycle



WITHOUT sCO₂ BOTTOMING CYCLE

38 MW

62 MW

38 MW

to data center

62 MW

lost to atmosphere

WITH sCO₂ BOTTOMING CYCLE

38 MW

20 MW

42 MW

58 MW

to data center

42 MW

lost to atmosphere

+\$150M / year

additional revenue per 100 MW campus

Hyperscale data centers earn \$6-10M/MW/year

Introducing

SC-10

10 MW modular sCO₂ power block for gas turbine bottoming



\$20-30

\$/MWh LCOE Reduction

Modular

Skidded design for faster builds and deployments

Compact

1/10th the size of competing technologies

Efficient

High power density recuperative heat exchangers

Scalable

Factory built, proven manufacturing methods

Data Center Ready

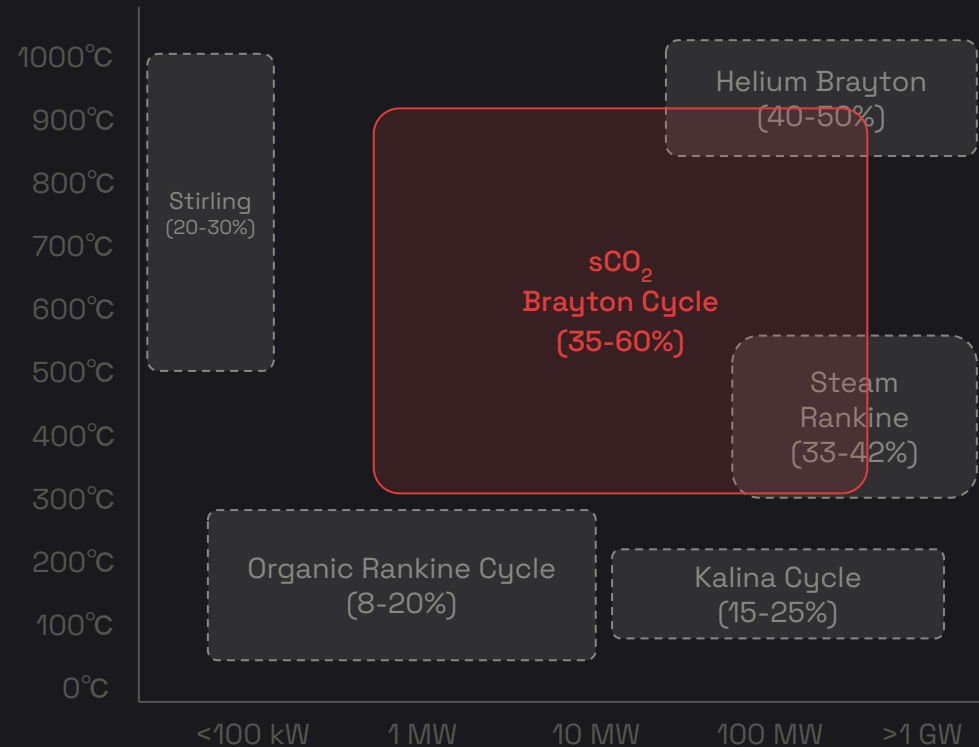
High speed generators for 800-1000 VDC rectification

Flexible

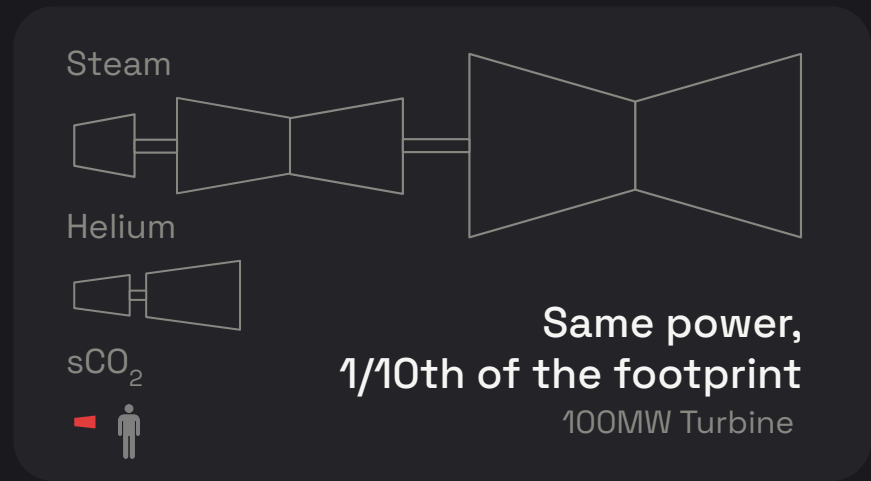
Brownfield retrofit capable to existing gas turbines

Why sCO₂?

The thermodynamics of supercritical CO₂ create a fundamentally better power cycle



The **most efficient** cycle that covers gas turbine exhaust temperatures at **MW-to-GW scale**



Why now?

Data centers provide a commercial path for validated sCO₂ temperatures

01 SUPPLY

Gas turbine supply is now constrained through 2030+

5-7 years

Lead times across major OEMs

Lead times for new gas turbines have grown 300% since 2023, driving the need to extract more power from existing assets.

02 TECH

STEP program sCO₂ demo produces power for first time

TRL 7

First run in 2024. Hundreds of hours at 4MW, >500°C,

After 12 years of R&D, SwRI ran a full sCO₂ loop, end-to-end, with all major components and controls validated.

03 COMPONENTS

Recuperator supply chain is now industrialized

3500+

Diffusion bonded recuperators in service

Heatric, VPE, and Alfa Laval now offer highly efficient, sCO₂ compliant heat exchangers, used in oil refining, hydrogen, and LNG.

04 PERMITTING

Water and land are preventing data center build outs

>60%

of new data center sites are in water-stressed counties

Permit denials, moratoriums, and regulatory exclusions have delayed >\$100B in data center projects.

05 ECONOMICS

Data centers run baseload, not peaking

90%+

capacity factors for behind-the-meter turbines

Data centers require baseload power, improving economics for FOAK sCO₂ bottoming cycle projects.

One platform, multiple heat sources

sCO₂ provides a single platform to convert heat above 500°C to electricity

- **Gas turbines**

Data centers, remote mining, offshore oil

- **Industrial Waste Heat**

Steel, cement, paper, petrochemicals

- **Advanced Nuclear**

Gen IV systems and SMRs

- **Concentrated Solar**

Molten salt and falling particle systems



800

TWh/year recoverable

Enough to power Germany

Market Opportunity

Assuming \$1500/kW average sCO₂ capital cost

TAM **Heat-to-Power Market**

\$100B

More than 100 GW of >500°C heat at scales where sCO₂ preferred
Across gas turbine bottoming, industrial waste heat, concentrated solar, and nuclear

SAM **Gas Turbine Bottoming**

\$25B

1-300MW simple cycle turbines and aeroderivatives
At data centers, peaker plants offshore oil rigs, and LNG compressor stations

SOM **Behind-the-Meter Data Centers**

\$4.5B

300 SC-10 units delivering 3GW of additional power
15-25GW of deployed gas turbine capacity in 2025
Brownfield installs at existing data center campuses

Pre-seed round

To reduce key technical and commercial risks

\$5M

01

Engineering Team

Key early hires across turbomachinery, thermofluids, and controls

02

System Architecture

10MW demo design, supplier qualification, and preliminary turbomachinery testing

03

Commercial

1-2 LOIs from turbine fleet operators and OEM supplier partnerships

Path to commercial scale

From feasibility to scaled manufacturing

2026-2027

Validate

\$5M

Core engineering team
buildout

10MW system
architecture design lock

Turbomachinery testing

LOIs with gas turbine
developers

2028-2029

Demonstrate

\$20M

10MW demo system build
and test

Validate manufacturing
and supply chain

First commercial deals
with gas turbine
developers or IPPs

2029 - 2030

Pilot

\$80M

Deploy at least one
commercial unit at a
customer site

Standardize design for
manufacturing

Scale manufacturing
processes

2030+

Scale

\$250M

5+ SC-10 units deployed

100 MW/yr
manufacturing capacity

Market expansion

10,000+ hour runtime
toward bankability

Today the world runs on steam.
We are building **better steam.**

American Supercritical

Revolutionizing how the world turns heat into power.
For AI data centers today, and the world tomorrow.