



Decarbonizing gas-to-power for data centers

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01 - THE OPPORTUNITY

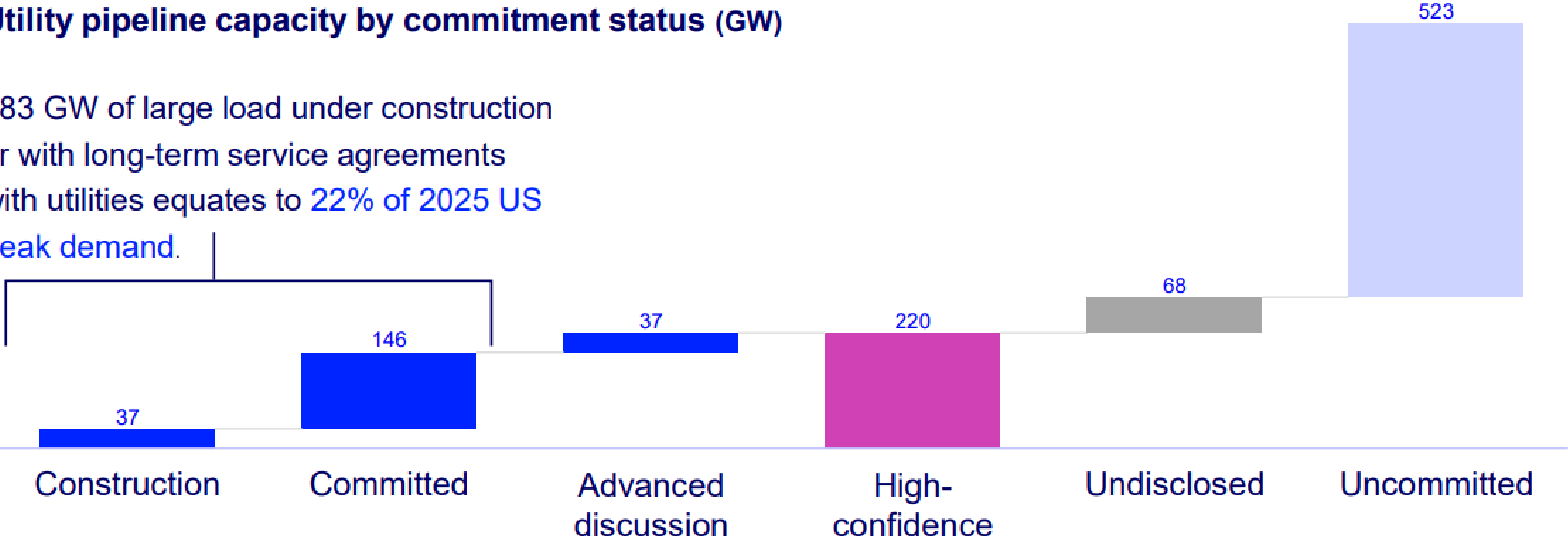
**Power demand is
outrunning the grid**

Demand for firm power continues to grow at unprecedented levels for US utilities

with 183 GW of large-load demand already under construction or committed

Utility pipeline capacity by commitment status (GW)

183 GW of large load under construction or with long-term service agreements with utilities equates to 22% of 2025 US peak demand.



Forecasted total load growth of ~90GW by 2030; Utilities redirecting capital towards these commitment

Source: Wood Mackenzie, "US data center pipeline: Q4 2025 Report" (published 16 March 2026)

Gas turbines power the next wave of U.S. electricity demand

Capsol’s strongest applications for decarbonizing gas turbine power across utilities, data centers, and pipelines

	Utility power and combined cycle 	Utility power and open cycle 	Data centers 	Midstream pipelines / O&G 	Industrial CHP 
Use case	Near baseload power	High-efficiency baseload and load-following grid supply	Reliable prime or backup power for hyperscale and AI-driven data centers	Mechanical drive: pipeline compressors, and refinery compression	Onsite electricity and steam/heat for campuses, refineries, manufacturing
Capacity (MW) – capacity factor	200-550 60%	20-90 20%	5-100; >100 greenfield 95%	4-40 90%	1-40 90%
Gas turbine application	Combined cycle	Open cycle	Mix of simple cycle and heat recovery; combined cycle greenfield	Open cycle	Combined cycle
U.S. capacity (GW) Incorporating expected capacity additions through 2030	Brownfield ~295 Greenfield ~ 23	Brownfield ~130-140 Greenfield ~5-8	Brownfield ~3 Greenfield ~30-40	Brownfield ~20 Greenfield ~3-5	Brownfield ~53-56 Greenfield ~3-6

Capsol target area

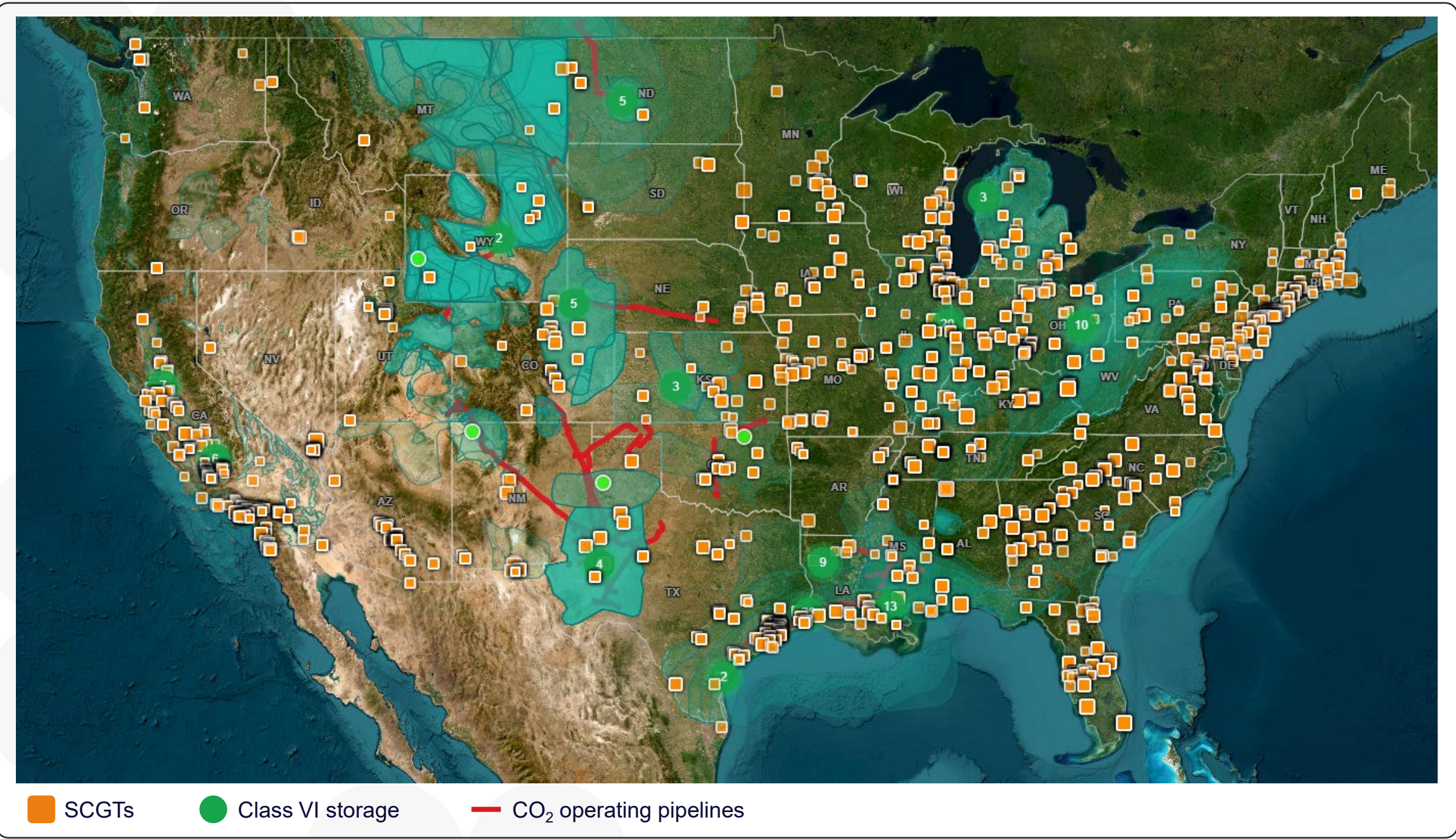
Source(s): Ingaa; Company information Images: 1) https://www.powerprogress.com/news/12-gw-power-plant-now-in-operation/8031050.article?zephrr_sso_ott=F1G04H 2) <https://www.shakticorporation.org.in/about.php> 3) <https://news.az/news/elon-musks-ai-data-center-in-tennessee-faces-lawsuit-over-air-pollution> 4) <https://auto.economictimes.indiatimes.com/news/oil-and-lubes/india-invites-bids-to-set-up-gas-sales-network/88761095> 5) <https://www.cardiff.ac.uk/research/explore/research-facilities/gas-turbine-testing>

02 - THE CHALLENGE

**A fleet built for peaks,
not baseload**

Large brownfield opportunity from underutilized, grid-connected US gas turbines

~2,300 simple-cycle gas turbines represent ~161 GW of existing capacity, with ~65 GW assessed as attractive for CCUS



Attractive for CCUS¹: ~950 simple cycle gas turbines (~65GW capacity)

~55GW of unused viable capacity

Existing grid connection and low utilization create a near-term pathway to add firm, low-carbon generation without relying on new-build turbines

Sources: EIA, DOE/NETL EDX, NATCARB, carbonstorage.io and Capsol analysis.

1: GTs between 20 – 150 MW with either 100miles radius to existing or proposed CO2 infrastructure or within area capable of geological storage

CapsolGT[®] converts simple-cycle peaker assets into low-carbon baseload units

TODAY | PEAKER

Simple-cycle gas turbine • <150 MW

~15% utilized
~85% unused potential

UNABATED CO₂ EMISSIONS

High marginal cost

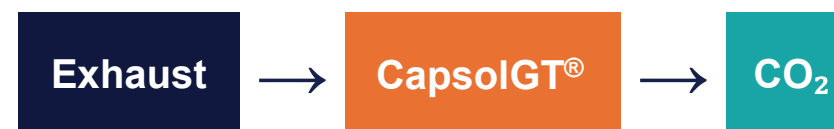
Fuel cost per MWh limits dispatch.

Complex conventional upgrade

Combined-cycle conversion adds capital and complexity.

CapsolGT[®] RETROFIT

Capture carbon and recover exhaust heat



Capture CO₂

Integrated post-combustion capture.

Recover heat

Generate incremental electricity.

Simplify integration

No steam turbine required. No gas turbine modification needed. Added water.

TARGET | BASELOAD | LOW-CARBON

Near-full utilization plus incremental output

80–90% utilized
+10–15% more capacity

90%+ CO₂ CAPTURED

Faster firm-power route

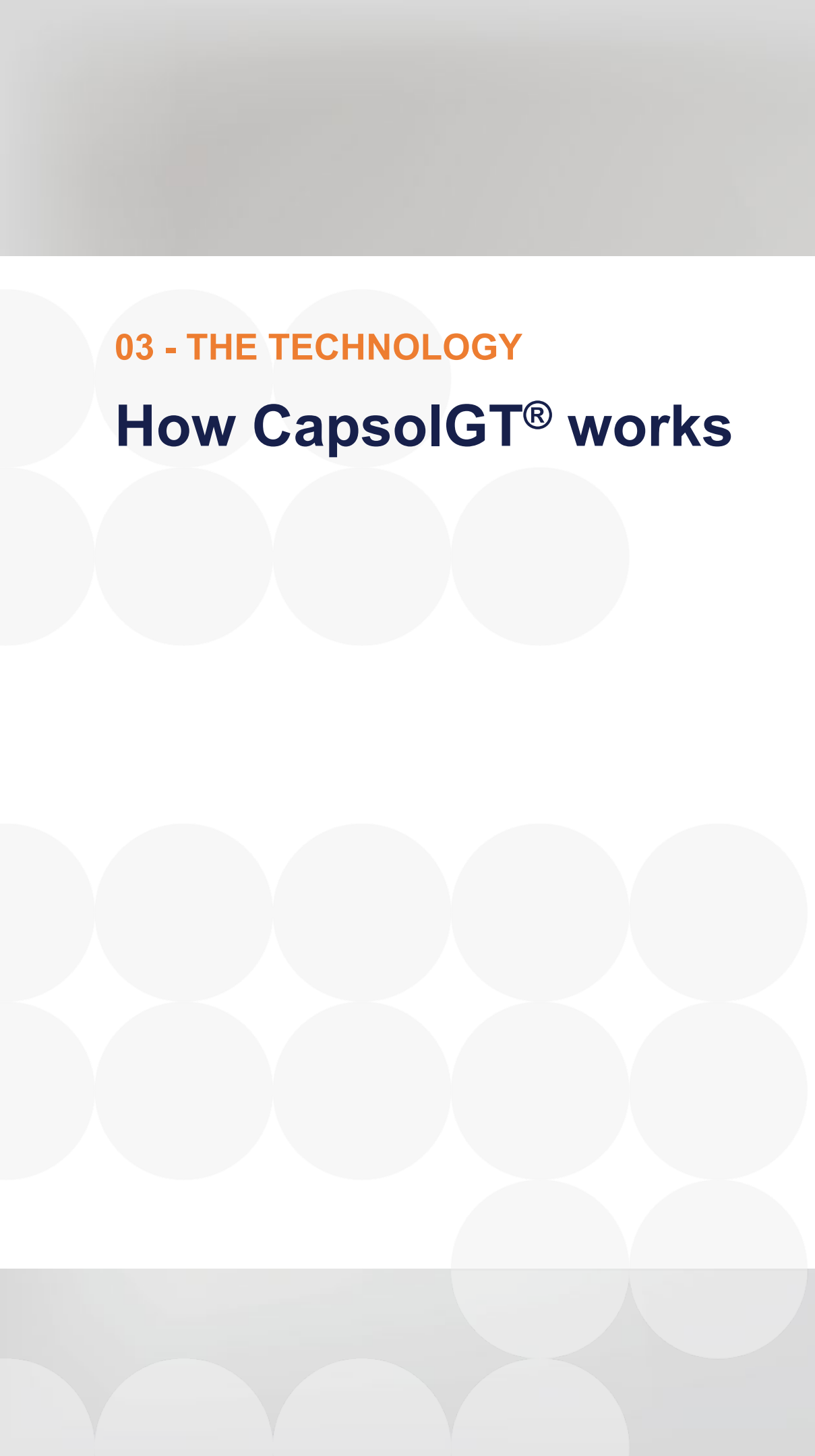
Potentially quicker than greenfield supply.

Multiple revenue streams

Power, low-carbon premium and US 45Q.

Indicative LCOE < \$80/MWh with 45Q

Illustrative only. Utilization and output depend on site conditions; 90–150 MW cases may require exhaust-gas recirculation.



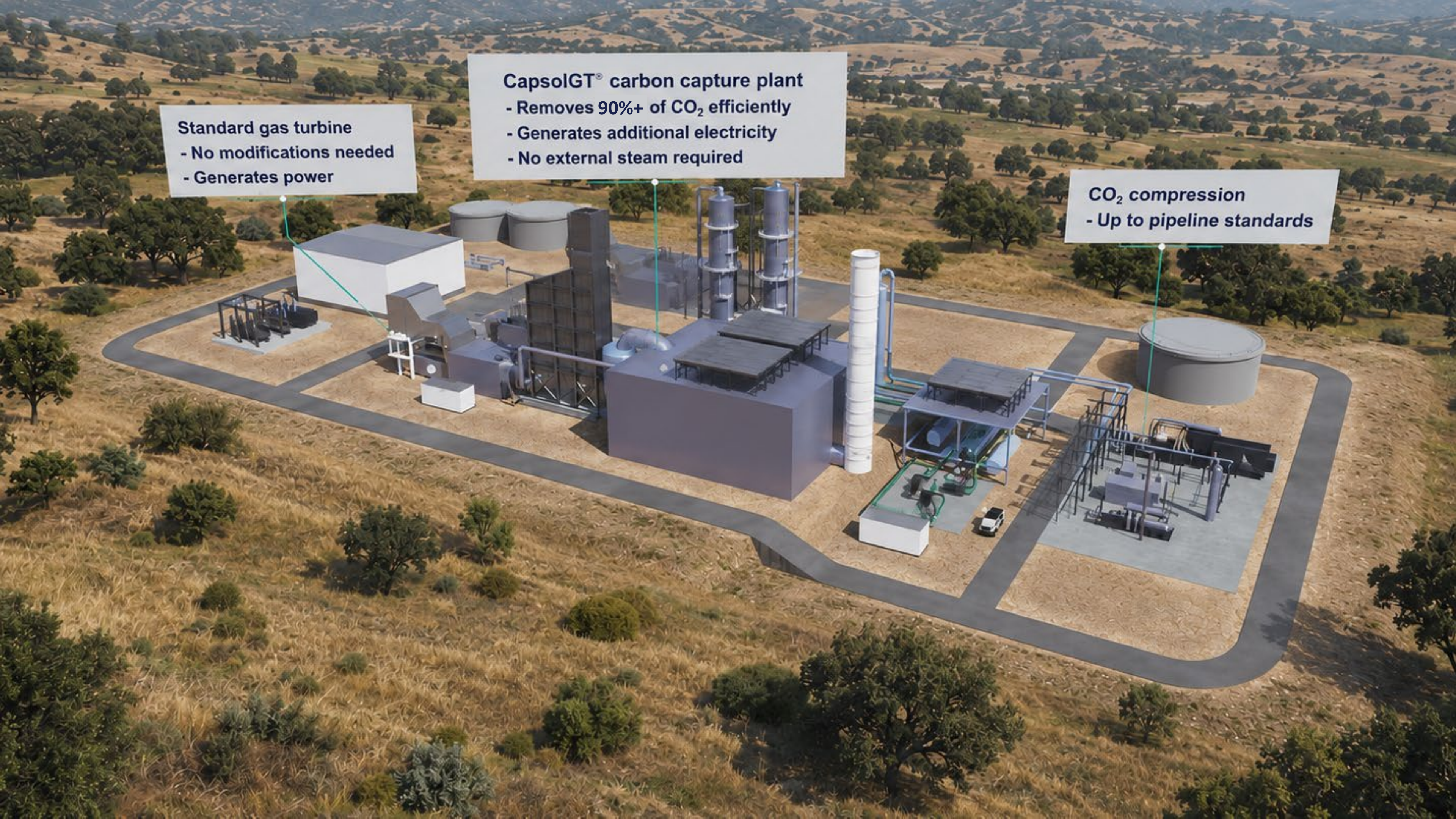
03 - THE TECHNOLOGY

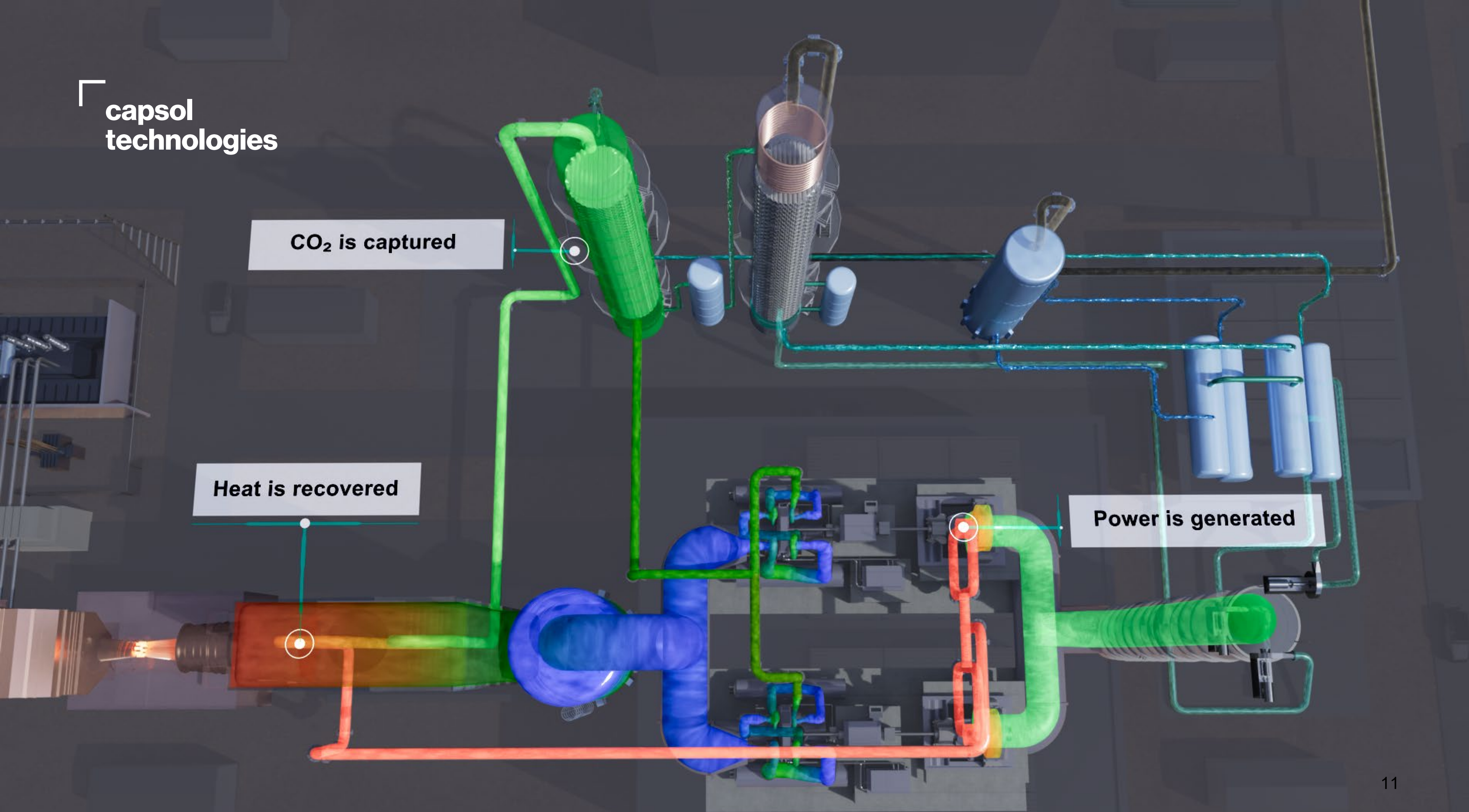
How CapsolGT[®] works

Standard gas turbine
- No modifications needed
- Generates power

CapsolGT[®] carbon capture plant
- Removes 90%+ of CO₂ efficiently
- Generates additional electricity
- No external steam required

CO₂ compression
- Up to pipeline standards



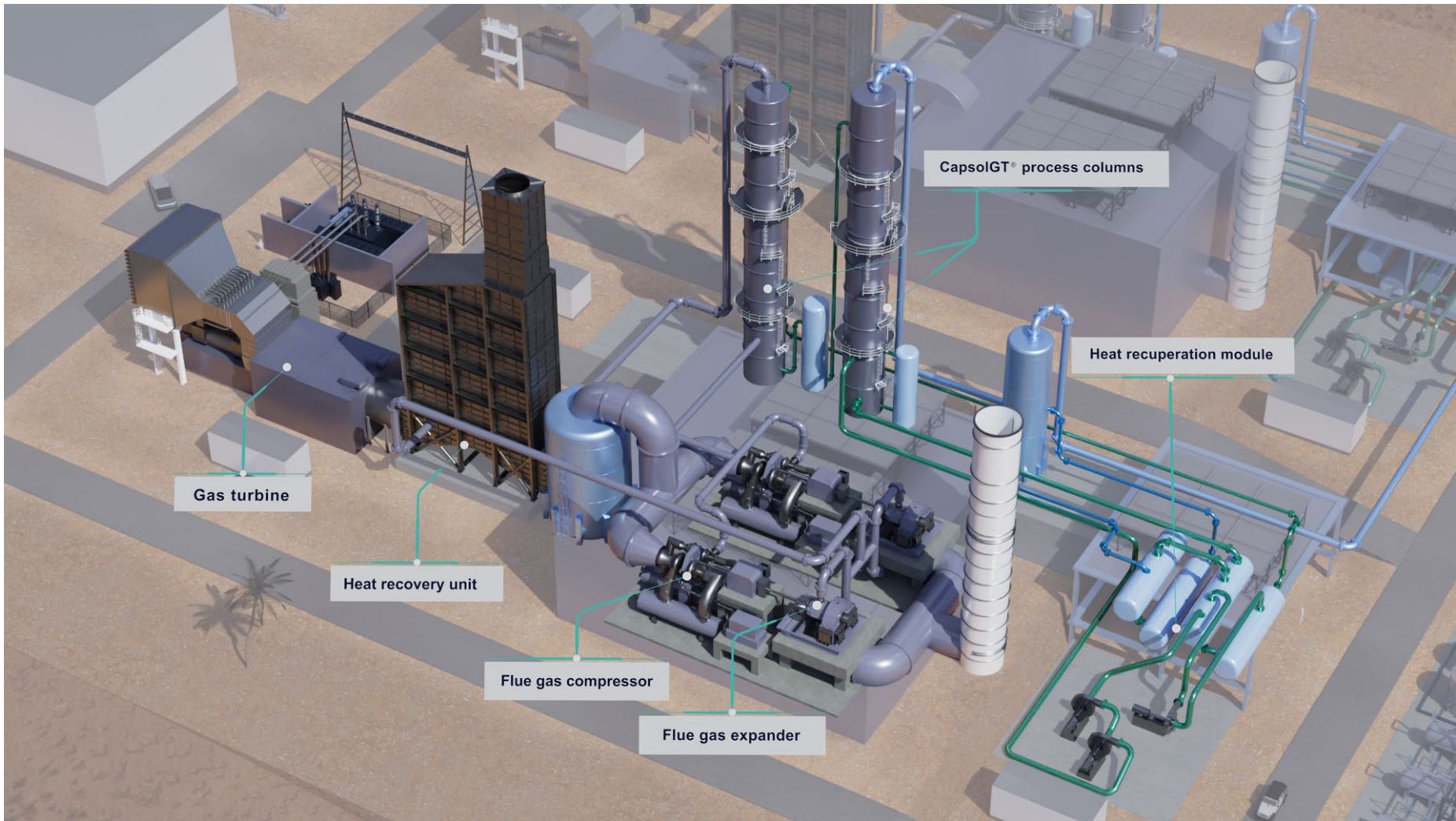


Performance across turbine sizes

	25MW Turbine ISO @ 15°C	60MW Turbine ISO @ 15°C
Gas turbine power produced (MWel)	24.0	60.9
CO ₂ capture rate (%)	90.4	91.4
CapsolGT® power produced (MWel) ¹	3.2	10.5
Net power after CO ₂ purification (MWel)	1.7	7.4
CapsolGT® share of total plant output	6.7%	10.8%

¹ Includes compressor-expander, pumps, steam compressors, and 1.2 MW of auxiliary power.

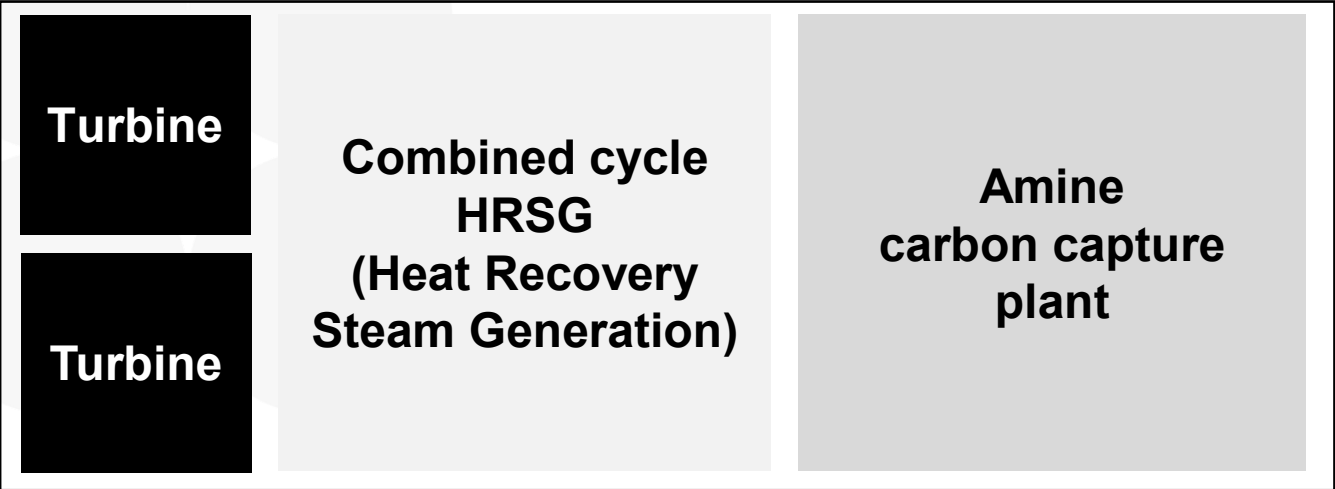
In both turbine classes, CapsolGT® captures 90%+ of CO₂ while adding net power and not consuming it.



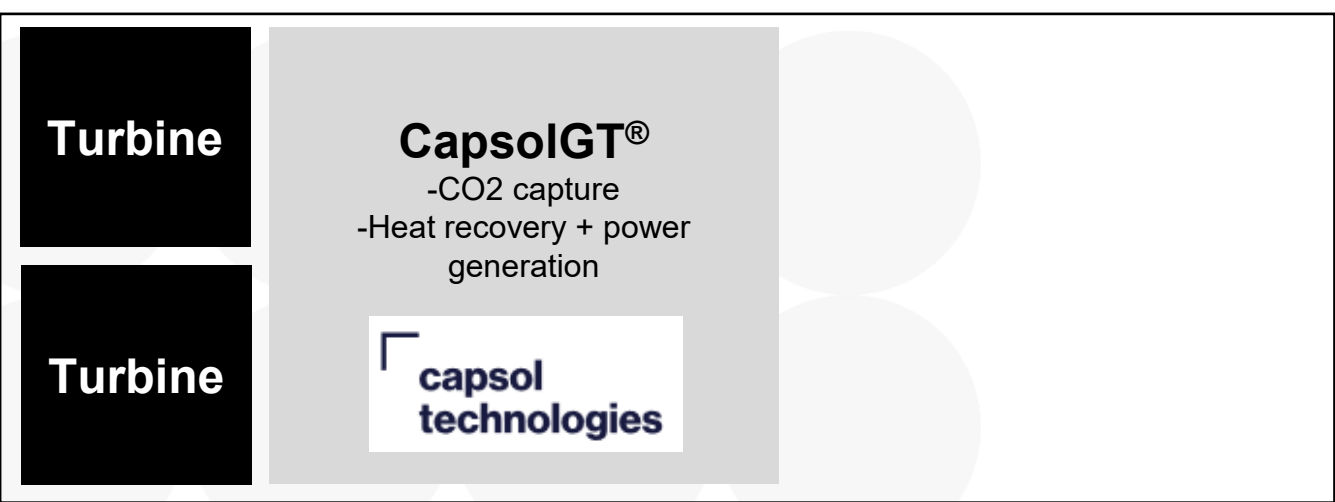
Source: Capsol Technologies internal process simulation and optimization analysis, 2026.

CCGT + amine capture vs CapsolGT

CCGT + Amine capture plant



SCGT + CapsolGT®



	CCGT + Amine	CapsolGT®
Total power output	Higher level of power output	Baseload + incremental power
CAPEX	Combined cycle + amine plant	Smaller plant
OPEX	Slightly lower energy use, but uses proprietary amine solvent	Slightly higher energy use, but open-sourced solvent, no external steam required
LCOE	Higher CAPEX → higher LCOE	Lower CAPEX → lower LCOE
Speed-to-build	Long GT lead time, larger plant	Smaller retrofit, smaller turbines are more available
Plot Space	HRSG + Steam Turbine + BoP	No HRSG
Brownfield suitability	Parasitic load for amine plant	Easily retrofit to OCGT
HSE / Permitting	Amine solvent	Non-toxic solvent, water neutral
Emissions	Potentially harmful solvent degradation products	Better LCA (Lifecycle Assessment)

Source: Capsol internal analysis

04 - THE PROOF

Already running at scale

GASTECH

Point source carbon capture technology

Carbon capture and heat generation in one for energy production and hard-to-abate sectors

Attractive capture cost
20-60%
Lower than amines¹

Demonstration hours
>24,000
Ten campaigns, proven chemistry 15 years+ experience²

Electricity consumption
0.7-1.5⁴
GJ per tonne of CO₂ captured³

North America: Focus on gas turbines



Europe: Focus on cement and biomass/EfW



1. Based on company estimates, internal and external studies (Swedish Energy Agency report "Conceptual study for Bio-CCS within Stora Enso's Swedish kraft pulp mills" and Sintef report "Reducing the Cost of Carbon Capture in Process Industry");
2. Capsol demonstration campaigns; 3. Source: Capsol; 4. 194-417kWh

Product portfolio meeting customer needs

CapsolGo®

Demonstration units



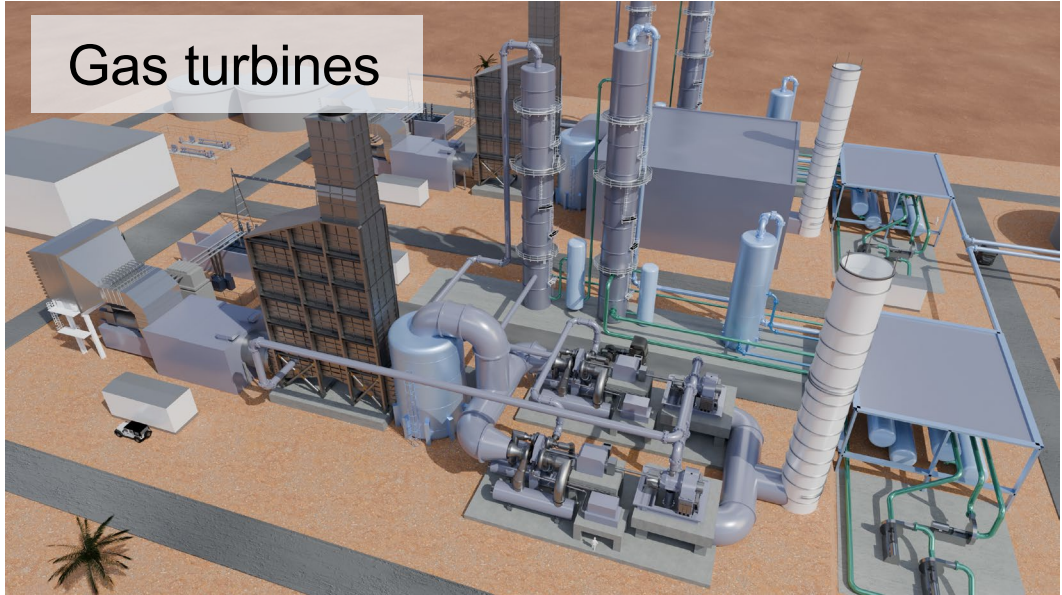
CapsolEoP®

Full-scale plant



CapsolGT®

Gas turbines



CapsolGo® carbon capture demonstrations



Baltic: Demonstrations with liquefaction at SCHWENK cement plants in Latvia/Lithuania



Finished campaign: Demonstration at Holcim Cement plant in Germany



Ongoing: Demonstration at Dyckerhoff Cement plant in Germany with liquefaction - 2026

Hours in operation

>24,000

Number of CapsolGo® units

3

Number of liquefaction units

2

Campaigns contracted

10

Campaign duration (months)

3 - 12

Product portfolio meeting customer needs

CapsolGo®

Demonstration units



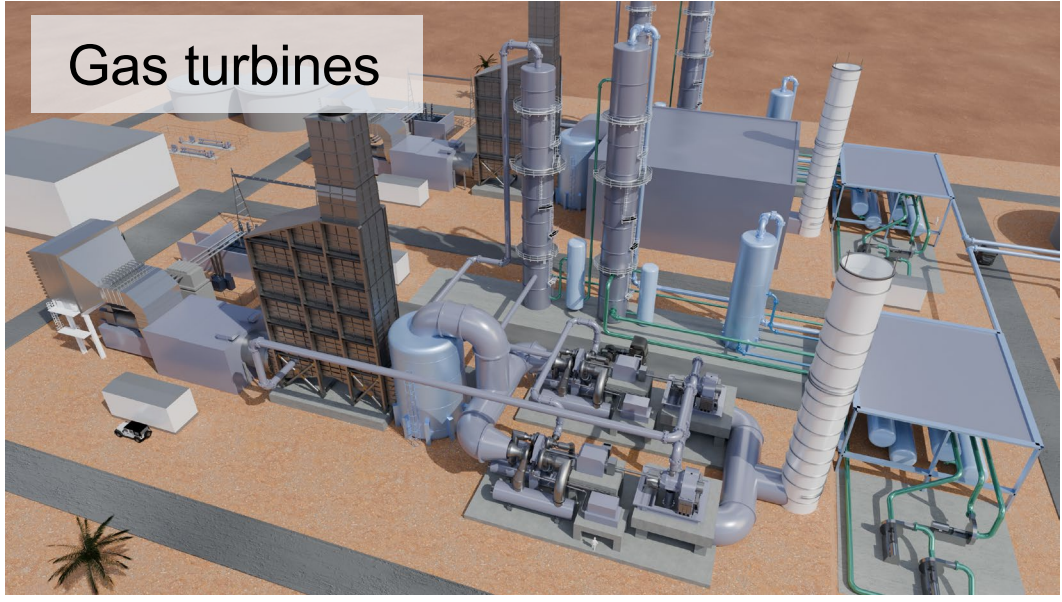
CapsolEoP®

Full-scale plant



CapsolGT®

Gas turbines



SIEMENS
energy

GE
VERNOVA

everllence

SAIPEM

STOREGDA

GASTECH

Stockholm Exergi BECCS



Plant/full-scale deployment	Värtaverket, 800,000 tonnes CO ₂ / year by 2028
Installation type	Combined heat and power plant
Storage	Northern Lights – Equinor, TotalEnergies and Shell JV



«(..) we are pleased with the efficiency of recovering heat from carbon capture and adding it into district heating networks»

Brian Marrs, Senior Director, Energy & Carbon Removal, Microsoft

- Retrofit to an existing bio-CHP (combined heat and power plant) – sustainable biomass sourcing
- No energy penalty – produces more heat for district heating
- HPC (hot potassium carbonate) – proven and environmentally friendly solvent
- Net producer of water

Funding:

- ✓ 180 million EUR awarded by EU Innovation Fund
- ✓ CDRs:
 - ✓ One of world's largest agreements with Microsoft for over 5m tons in a 10-yr period.
 - ✓ Agreement with Frontier for carbon removal
 - ✓ The Swedish Energy Agency committed EUR 1.7 billion, announced January 27, 2025

- Project is progressing according to plan, with targeted start-up in 2028
- Capsol supports the project with HPC technology, enabling [with safe solvent] CO₂ capture of up to 800,000 tonnes annually at an urban biomass facility
- Saipem leads project execution as EPC contractor, including the capture unit, CO₂ storage and out-shipment facilities, and installation of compression and liquefaction units
- Everllence provides the core compression package, enabling efficient flue gas handling and energy recovery at industrial scale



800 ktpa
To be captured, transported
and stored at Northern Lights

Turn idle peaking capacity into low-carbon baseload power

The opportunity

~161 GW of U.S. simple-cycle gas turbines run at only ~15% utilization, built for peaks, sitting mostly idle.

The technology

CapsolGT® captures 90%+ of CO₂ from turbine exhaust while producing net additional power. No boiler, no steam turbine, no parasitic load on the asset.

The path forward

Retrofitting existing, already-permitted turbines is faster than building new generation, and it turns a stranded asset into a paying one.



THANK YOU

GASTECH