



# Fervo Energy

## ENHANCED GEOTHERMAL SYSTEMS (EGS): A STEP CHANGE IN THE GEOTHERMAL INDUSTRY

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# Fervo's Enhanced Geothermal Systems (EGS) technology massively expands geothermal's potential



Fervo's approach to geothermal energy development relies on many of the same technologies that enabled the North American shale revolution, including:



- Horizontal drilling with advanced composite materials
  ✓ Reduce drilling risk
  - ✓ Increase resource access and contact area with the geothermal reservoir
- Reservoir engineering using multistage completions with extreme limited entry and proppant
   ✓ Increase flow rates and heat transfer efficiency
- Distributed fiber optics downhole
  - ✓ Increase subsurface monitoring, characterization, and flow control

1. EGS OVERVIEW



## Next-Generation Enhanced Geothermal Systems (EGS)

## THE PROCESS

Wells are drilled vertically before turning and extending horizontally. Fractures are created to enhance the permeability of the geothermal reservoir to form a strong connection between the injection and production wells.

Fluid is then pumped down injection wells, flowing through the fractures.

As it flows through fractures, surrounding hot rock heats the fluid, which is returned to the surface through production wells.

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At the surface, hot geothermal fluid is run through a heat exchanger, where its heat is transferred to a working fluid used to spin turbines and generate electricity.

100% of the geothermal fluid is pumped back into injection wells, creating a closed-loop cycle where water is not lost to evaporation.



# By applying the EGS approach the U.S. market potential increases to 7,500+ GW





Fervo P50 Reserve Potential of **~16 GW** resource **~475,000 net acres** of the US's best geothermal leases

<sup>1</sup> University of Michigan Geothermal Energy Factsheet, EIA Monthly Energy Report.

## Geothermal checks all the boxes for clean firm capacity





Source: U.S. Department of Energy

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#### 1. EGS OVERVIEW

Due to the application of modern drilling technology to geothermal reservoirs, EGS an extremely low land use footprint per MW produced compared to other resources, including conventional geothermal.



Land Use	Efficiency of Electric	city Generating Technolo	ogies (acres/MW)	Electricity Generating Technology	Land Use Efficier (acres/MW)
	Offshore Wind	Land-based Wind		Offshore Wind	49.2 acres/MW
	Conventional Geotherma	al 🛛 🗧 Existing Solar (2022 Tech	inology)	Land-based Wind	46.4 acres/MW
	New Solar (2045 Technol	logy) EGS		New Solar (2045 Technology)	10 acres/MW
				Conventional Geothermal	9 acres/MW
				Existing Solar (2022 Technology)	7.6 acres/MW
				Enhanced Geothermal Systems (EGS)	1.5 acres/MW
			New Solar (2045 Technology), 10		
			Conventional Geothermal, 9		
Offeh	ore	and-hased	Capacity Data Sources	: Quarterly Fue	

land Energy Report (QFER) database, 2021 SB 100 Joint Agency Report, EGS Capacity Data Sources: Fervo Energy Estimates from Cape Station Current Estimates Between 1-1.5 acres/MW.





## Fervo Energy At-a-Glance





# Manufacturing Drilling Approach: Fervo rapidly moves down anticipated cost curves

With 300,000+ feet of geothermal wells drilled, Fervo has consistently reduced drilling times and costs in horizontal, high-temperature, deep granite drilling. Increased drilling efficiency translated to significant cost reductions.



El-Sadi, Kareem, Brittany Gierke, Elliot Howard, and Christian Gradl. "Review Of Drilling Performance In A Horizontal EGS Development" (2024) Norbeck, Jack, Chrsitian Gradl, and Timothy Latimer. "Deployment of Enhanced Geothermal System technology leads to rapid cost reductions and performance improvements" (2025) Fercho et. al "Update on the Geology, Temperature, Fracturing, and Resource Potential at the Cape Geothermal Project Informed by Data Acquired from the Drilling of Additional Horizontal EGS Wells" (2025)



# Fervo has achieved NREL's Advanced scenario reservoir productivity rates decades in advance

Well design optimizations have led to unprecedented flow results of <u>107-120 kg/s</u>, 10+ MW per well production rates<sup>1</sup>



### 2024 NREL NF-EGS Input Assumptions<sup>2</sup>



<sup>1</sup> Norbeck, Jack, Chrsitian Gradl, and Timothy Latimer. "Deployment of Enhanced Geothermal System technology leads to rapid cost reductions and performance improvements" (2025) <sup>2</sup>2024 NREL Annual Technology Baseline (ATB) - Geothermal

## Fervo50 GeoBlocks<sup>™</sup>: Modular Approach to EGS

After a series of significant reductions in subsurface costs, 60% of Fervo's EGS costs are now in surface costs



Starting with Cape Ph. II, Fervo will collaborate with its supply chain partners to design a modular geothermal power plant, enabling standardized construction and delivery



### What Modularity Enables

- Standardization: Each Fervo project going forward will be built in 50 MW units, enabling unprecedented standardization in geothermal
- *Efficiency:* Pushing the boundaries on temperature and design unlock progressively higher levels of power plant efficiency
- Timeline: Elimination of time intensive boutique engineering and design for each project accelerates development timeline
- Fervo will target reducing surface costs by leveraging the same deployment-based learnings from the utility-scale solar industry

50 MWe	< 2 years	< \$3,000 \$/kW	30+ years
Standardized ORC unit	Estimated construction timeline per unit	Target construction costs	Estimated plant design life
	50 MW E	GS Units	

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## **Project Cape Station**, the world's largest nextgen geothermal project

Building on the success of Project Red with a scaleup of Fervo's enhanced geothermal system technology

Beaver County, Utah



## 500 MW Project

Fully contracted, with Phase I - 100 MW planned to begin production in 2026

CLEAN POWER ALLIANCE





#### 9 Wells Drilled

More than 75% of the Phase I well field has already been drilled

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### **Power Plants in Manufacturing**

Three Turboden Organic Rankine Cycle geothermal power plants in manufacturing with construction having commenced in Oct. 2024

## **GW of Resource Permitted**

The BLM has approved permitting for Cape Station for up to 2 GW of production which we see no technical limitations to develop

# Fervo Energy Mission & Core Values

Our mission is to leverage innovation in geoscience to accelerate the world's transition to sustainable energy. We will do this by providing cost-effective, reliable geothermal energy through development of new technology.

### Build Things that Last

We prioritize health, safet<mark>y, and</mark> the environment first. We think long term. We don't cut corners.

## Do What We Say We Are Going To Do

When we commit to something, we deliver it. We assess each task honestly. We are transparent and accountable.

### Innovate Through Collaboration

We seek out ideas from all sources. We are never territorial about our work or ideas. We ask questions to learn, we teach to grow.

## **Stop And Smell The Roses**

We celebrate wins.

We care for the mental, physical, and emotional well-being of our people.

We make community building a core part of doing business.

# Contact



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### **Sarah Harper (goes by "Harper")** Fervo Energy Government Affairs

# 4. Appendix

# Fervo's technology validated and operating for 12+ months

A 3.5 MW geothermal production uplift project in Nevada with Google as Fervo's development partner, is the most productive EGS system in history.

#### **First 12 months of Production**



### **Record-breaking production**

One year of operating the hottest well in the field with no thermal decline confirms the commercial viability of Fervo's drilling technology

### 2 First-of-kind horizontal wells

Established new drilling speed records within the field and utilized in-well fiber optics and data analytics tools to successfully establish and visualize fracture network cloud.

## **3** Project Red classified as TRL: 9

An independent engineering report by Jacobs classified Project Red as TRL 9, the highest rating possible in the Technology Readiness Level (TRL) framework for innovative technologies.



## Highly successful track record of capitalization



## Fervo's Technology Roadmap



A clear path exists to reach 8x subsurface productivity gains by utilizing enabling technologies to drill longer, deeper, faster, and hotter.



Tech Stage	Project Red 1.0	Cape Phase I 2.0	Cape Phase II 3.0	Fervo <b>4.0</b> +
Lateral Length (ft)	3,000'	5,000'	10,000'	15,000'
Casing Diameter (in)	5" x 7"	7" x 10 <sup>3</sup> / <sub>4</sub> "	8 <sup>5</sup> / <sub>8</sub> " x 10 <sup>3</sup> / <sub>4</sub> "	8 <sup>5</sup> / <sub>8</sub> " x 10 <sup>3</sup> / <sub>4</sub> "
Temperature (°F)	365°	400°	450°	500°
Bench Design	Doublet	Wine Rack	Wine Rack	Wine Rack

## Fervo Executive Leadership Team





#### **Tim Latimer** CEO & Co-founder

- Initial insights for Fervo while drilling dozens of wells in West Texas with BHP Billiton
- Helped launch successful subsurface startups Biota Technology and ResFrac
- Time with Boston Consulting Group
- MBA/MS from Stanford University. BS in Mechanical Engineering from University of Tulsa



### CTO & Co-founder

- Worked at the forefront of reservoir engineering with Shell, Idaho National Lab, and at the Geysers
- Published over 30 papers on subsurface optimization
- PhD in Energy Resources from Stanford University, MS in Civil Engineering from Colorado School of Mines, BS in Civil Engineering from University of Colorado



#### **David Ulrey** CFO

- 11 years of finance experience
- M&A, investor relations, and onshore renewables with NOV
- Investment banking with Simmons & Co
- Finance officer in U.S. Army
- MBA from Harvard Business School, BS in Economics from the United States Military Academv

#### **Gustavo Torres** VP. General Counsel

- 17 years of legal experience
- General Counsel at FlexSteel . Pipeline Technologies and Prime Natural Resources
- Transactional law at DLA Piper and Akin Gump
- JD from University of Texas Law School, BA in Economics from Grinnell College



#### Sarah Jewett VP, Strategy

- Began career managing traveling fracturing crew for Schlumberger, operating from Texas' Permian Basin to Alaska's North Slope
- Select Energy Services: corporate development and strategic initiatives
- MBA from Harvard Business . School, BE in Mechanical Engineering from Dartmouth College



#### Dawn Owens VP. Development

- 14 years of project development experience
- Five years at NRG as Senior Director of Development
- Developed over 800 MWs in the Western United States
- MBA from the University of San Francisco



#### **Christian Gradl** VP, Operations

- 15 years of drilling and completion experience
- Nine years with Hess supervising \$720M annual Bakken completions operation
- Five years with BP
- MBA from the University of Texas at Austin, MS and BS in Petroleum Engineering from the University of Leoben, Austria



#### **Ouinn Woodard**

Sr. Director. Power Generation and Surface Facilities

- 13 years of experience in Engineering, Operations, and Maintenance Functions at Chevron
- Supported detailed engineering design on an LNG Facility in Western Australia as well as Base Operations within Kazakhstan
- . MBA from the Kellev School of Business and BS in Electrical Engineering from the University of Tulsa



# Fervo takes local seismic monitoring seriously.

Total of 23 stations. 17 stations operated by University of Utah Seismograph Stations (UUSS) Six additional stations added in Q4 2023 by Fervo Energy Designed in collaboration with Berkeley Lab. Network includes a strong motion sensors located at the Milford High School. Fiber optic sensors installed to 9,000 ft in monitoring wells for high resolution monitoring

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Fervo's approach to Induced Seismicity Management is thorough and calculated.

## **Traffic Light Protocol**

Fervo Energy's operational response plan includes a traffic light system protocol with green, amber, and red seismic thresholds based on ground motion response in the local area.





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## Earthquakes in NV & UT versus at Cape since Jan. 1, 2023

