FERVO ENERGY

Powering Nevada with Enhanced Geothermal

Joint Interim Standing Committee on Growth and Infrastructure

May 29, 2024

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Government Affairs and Policy

Developing next-generation geothermal projects to deliver 24/7 carbon-free energy.

Agenda

1. Overview of Enhanced Geothermal Systems (EGS)
2. Revolutionizing Geothermal with EGS
3. Nevada’s Breakthrough Leadership at Project Red
4. Bringing EGS to Scale at Project Cape (UT)
5. Policy Recommendations for Nevada

Fervo Energy's Next-Gen Geothermal Approach

Traditional Approach

Reliant on rare reservoir conditions

Next-Gen Approach

High flow capacity in any geologic setting

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

- **Horizontal drilling** to increase contact area with the geothermal reservoir
- **Multistage zonal isolation** to increase flow rates and heat transfer efficiency
- **Distributed fiber optics** for monitoring, characterization, and downhole flow control

Fervo is Revolutionizing Geothermal

Select Characteristics	Conventional Flash Geothermal *Unreliable & Dependent on Rare Reservoir Conditions*	Fervo Geothermal Approach *Drives High Flow Capacity in any Geology*
Formation Temperature Requirements	▪ Highly Limited: 400°F+	▪ Highly Flexible: 300°F+
Permeability Requirements	▪ Requires natural, highly-permeable formations	▪ No permeability requirements
Relevant Resource Depth	▪ Near surface ▪ Depth <5,000’	▪ Not constrained
U.S. Potential Power Capacity	▪ 28 GW	▪ 7,500 GW+
“Dry Hole” Risk	▪ ~30% ▪ Mitigation limited to selection of specific resources	▪ 0% ▪ Horizontal drilling and stimulation enable mitigation
Primary Core Competency	▪ Surface equipment	▪ Sub-surface analysis and operations ▪ Surface equipment is off-the-shelf
Power Conversion Emissions	▪ Some emissions and evaporative water loss	▪ No emissions or evaporative water loss
Development Style	▪ Small, localized projects	▪ Large projects, developed through manufacturing model
Typical Project Size	▪ 30 – 50 MW	▪ 1 GW +

- Delivers repeatable, consistent commercially viable projects by leveraging:
  - Modern directional drilling
  - Multi-zone well stimulation
  - Advanced data analytics
- Eliminates resource specificity that limits the scalability of conventional geothermal development
- Fills market demand for 24/7 clean firm power geothermal

Source: Company Disclosure, USGS factsheet 2008-3082, Department of Energy Geovision Study

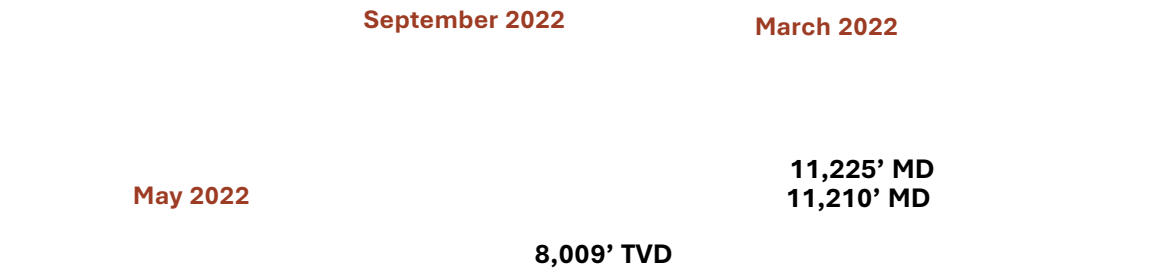
Commercial Pilot “Project Red”: Most Successful EGS Project in History

Blue Mountain Power Plant Overview

- The Blue Mountain Power Plant was developed by Nevada Geothermal Power and commissioned in 2009
  - Binary cycle, water-cooled, geothermal power plant
  - Long-term offtake with NV Energy and financed in part through a DOE Loan Guarantee
  - Initial design for 40MW, but natural field decline and limitation of conventional geothermal development have reduced output over time
  - Cyrq Energy acquired the plant in 2018 and is the current field operator
- The lithology of the Blue Mountain site is materially similar to majority of Fervo’s acreage – making it an ideal candidate for trialing Fervo’s approach
- Fervo’s commercial Project Red connects a two well system to the existing Blue Mountain power plant

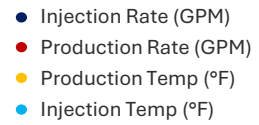
Blue Mountain Power Plant

Cross Section View of Fervo Activity: Project Red Subsurface

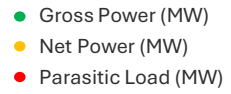


Project Red: Most Successful EGS Project in History

Operational Data



Power Data



Project Red Results

- Project Red has continuously produced commercial quantities of thermal power since start up in November 2023
- After a 14°F increase in produced fluid temperatures through November, December fluid temperatures increased 3°F and maxed at 344.8°F in the final week of December 2023
- As production flows and temperatures have increased, net power has approached 1.5MW based on Blue Mountain Plant thermal to electric conversion
- Google GEDA COD achieved on November 1, 2023

Cape Station: 400MW of Clean Firm Capacity

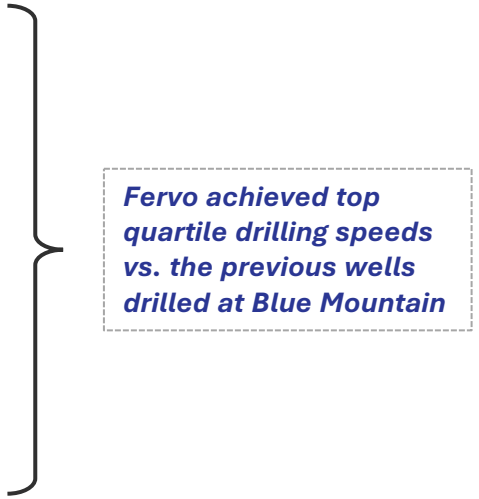
- Phase 1 drilling campaign underway
- First large scale EGS project ever
- Strategically located in the Milford Renewable Energy Corridor (Beaver County, UT)
- Successful local, state, federal partnership
- Full capacity contracted to CA LSEs

	Phase 1	Phase II
Capacity:	**90 MW**	**283 MW**
Online Date:	**2026**	**2028**

Ava Community Energy · Desert Community Energy · CPA Clean Power Alliance · Southern California Edison

Early Drilling Results Demonstrate Best-In-Class Performance Vs. Conventional Geothermal

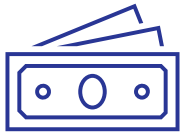
Blue Mountain/Cape: Days on Well



Project Red (Nevada)

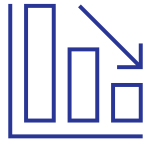
Project Cape

Learning by doing unlocks project economics

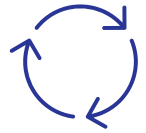


Drilling costs can account for up to 50% of project capex

Drilling time accounts for over 75% of total well cost



60% reduction in drilling time over just eight wells



Virtuous cycle of Deployment, learning and cost reduction to scale

*Well 6 – Cape represents a well with a barefoot completion design, with no production liner capital/installation costs incurred
**Well 7 – Cape represents a well with 1500 ft of additional granite drilled, and casing design optimization to increase power per producer by 0.5MW

Fervo Has ~16 GW of P50 Reserve Potential Across Its Existing Acreage Position

[1] NREL Enhanced Geothermal Shot Analysis for the Geothermal Technologies Office.

Building Nevada's Next Geothermal Industry: Recommendations for the State Legislature

- **Modernize and resource permitting agencies**
  - Support efficient permitting of innovative geothermal projects
  - Increase staff resources, right-size application review process and streamline interagency coordination
- **Encourage investment in energy innovation**
  - Tax credits for clean firm generation
  - Financing for resource de-risking
  - Anticipate labor demand with apprenticeship programs
- **Enable NVE and customers to lead on clean firm resources**
  - Market leadership requires a dependable procurement signal and transmission access
  - Abundance of in-state resources available to power the growing NV economy

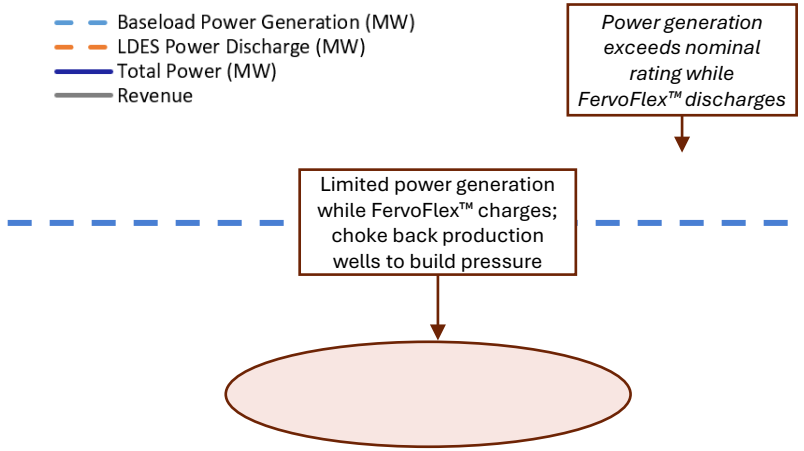
Appendix

FervoFlex™ – Geothermal + LDES

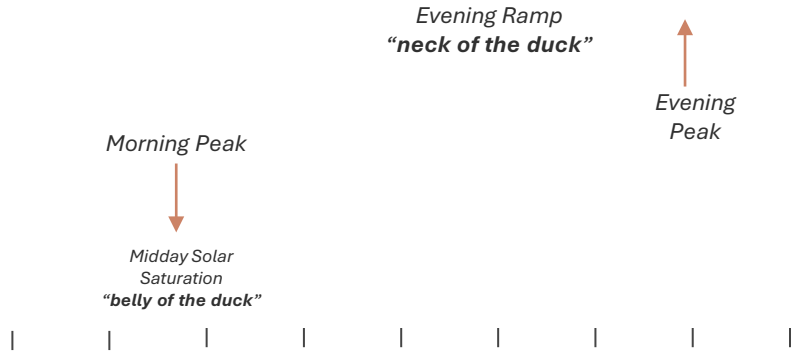
Fervo has validated a suite of proprietary FervoFlex™ technologies

- FervoFlex™ enables Fervo geothermal wells to transition seamlessly from typical firm power generation to efficient, long-duration energy storage, making FervoFlex™ a cost-effective complement to renewable energy systems like wind and solar
- Project Red test demonstrated ability to be a net energy consumer during the day; the reservoir charge cycle resulted in flush production phase during evening peak load hours, enabling Fervo to optimize for high power pricing
- Increased reliance on variable renewable energy throughout the energy transition will require increasingly flexible sources of power generation and storage to ensure grid stability throughout weather events that impact variable renewable power generation
- To "charge" the LDES attributes, power generation is curtailed by choking back production wells and running injection wells at increased rates during periods of high variable renewable power generation; during "discharge" excess pressure built during "charge" is harvested to produce power at a level beyond the nominal production capacity of the well system
- A collaboration with Princeton University's ZERO lab, led by Jesse Jenkins, and documented in the peer-reviewed journal Applied Energy
- ***Illustrative FervoFlex™ System***
  - 40 MW geothermal firm generation capacity
  - 14 MW discharge capacity FervoFlex™ battery system
  - 36+ hours of storage capability / 648 MWh storage capacity
  - Round-trip efficiency: ~80%
  - Ramp rate of 12 MW per minute (30% of nominal capacity per minute)

Illustrative Cycle for FervoFlex™ 24-hr Period



Actual Production Curve – May 4, 2023



Validation data through five FervoFlex™ cycles secured during Project Red test

FervoFlex™ Technology Validated – Project Red

FervoFlex™ Proof of Concept

We performed five FervoFlex cycles

- 3 cycles where production was curtailed to a fraction of steady-state
- 2 cycles where production was completely curtailed

Validated our ability to reliably flex our generation and consumption curves to deliver highly dispatchable power profiles

- Demonstrated ability to be a net energy consumer during the day
- Reservoir charge cycle resulted in flush production phase during evening peak load hours

Gross MWs

Net MWs

Development Considerations

Project Sizing

- ***Utility-Scale:*** Modular design in 30-40 MW tranches affords cost efficiencies and design optimization
- ***Prototype/Pilot:*** Fervo's Commercial Pilot serves as a case study for full-scale commercial applications for DoD installation projects

Pricing

- Price dependent on resource quality and development timeline

Contracting

- Experience with executing structured offtake agreements via power purchase agreements with 10-25-year terms
- Fervo open to other structures based on the preferences of the installation
- Alternative structures could include a joint venture arrangement or a traditional project financing structure

Land Use

- Power Station: 10 acres for 30-40 MW facilities
- Field Gathering Lines: 10 acres
- Well Pads: 6-10 acres per pad
- Fervo's use of horizontal and multi-well drilling per pad minimizes land use and surface disturbance relative to other geothermal projects

Facility Characteristics

- ***Power Facilities:*** Zero carbon and zero emissions Organic Rankine Cycle (ORC) generator systems
- ***Dispatchability:*** ORC systems are fully dispatchable and flexible, with ramping rates of up to 30% of nominal capacity per minute
- ***Cooling / Emissions:*** Facilities are air-cooled, producing no visible emissions, minimizing water consumption

Other Applications

- On-site geothermal resources can be used for other DoD installation applications requiring temperatures up to 200°C (direct use heating and cooling, etc.)
- Hybrid facilities combining solar PV and binary geothermal improve the system's generation profile cost-effectively
- Hybridization and **FervoFlex** provide additional opportunities to increase energy reliability on DoD installations