

US GEOTHERMAL ENERGY MARKET INTELLIGENCE REPORT

A Comprehensive Market Analysis - March 2026

PREPARED FOR: NES Supply Chain Businesses

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SCOPE STATEMENT

This Intelligence Briefing covers the United States geothermal energy market, providing a comprehensive analysis of market size, investment trends, technological developments, the regulatory landscape, key commercial players, and strategic outlook to 2050. It is designed to support North East Scotland (NES) energy supply chain companies and senior executives in identifying export sales opportunities, technology partnerships, and strategic market positioning. Coverage includes Enhanced Geothermal Systems (EGS), conventional hydrothermal power, geothermal heat pumps, power purchase agreements, competitive landscape analysis, and future capacity projections.

EXECUTIVE SUMMARY

The United States geothermal energy market has entered a pivotal growth phase characterised by technological breakthroughs, record investment levels, and accelerating commercial deployment.

Installed geothermal power capacity has reached 3,969 MWe, representing an 8% increase from 3,673 MWe in 2020 — a significant acceleration compared to the mere 1% growth observed between 2015 and 2019.

The market is experiencing transformational momentum driven by Enhanced Geothermal Systems (EGS) technology, which has unlocked vast untapped resources beyond traditional hydrothermal sites.

North America's geothermal sector shattered investment records in Q1 2025, attracting \$1.7 billion in public funding — representing 85% of 2024's entire annual allocation. This investment surge reflects growing recognition of geothermal energy as a critical solution for baseload renewable power, particularly for energy-intensive AI data centres and industrial applications.

Market projections indicate substantial expansion potential, with the US Department of Energy targeting 90 GW of capacity by 2050, sufficient to power approximately 65 million American homes. The market is valued at approximately \$6.99 billion in 2026 and is projected to grow at a CAGR of 5.7% to 9.2%, reaching \$8.74 billion to \$10.5 billion by 2030–2033.

For NES energy supply chain companies, the US geothermal market represents a significant export opportunity.

The parallels between North Sea oil and gas expertise — particularly in drilling, subsea engineering, reservoir management, and project services — and geothermal development requirements position Scottish companies to enter this rapidly growing sector.

1 MARKET SIZE AND GROWTH DYNAMICS

► Current Market Valuation and Forecasts

The US geothermal energy market demonstrates robust growth across multiple valuation models. The global geothermal market stands at \$6.99 billion in 2026, forecast to reach \$8.74 billion by 2030 (CAGR 5.7%). The US geothermal power market specifically was valued at \$1.45 billion in 2024 and is projected to reach \$2.92 billion by 2033 at a CAGR of 9.2%. North America in total represents \$6.5 billion (2024), forecast at \$10.5 billion by 2033 (CAGR 5.6%).

Market Segment	2024–2026 Value	Forecast (2030–2033)	CAGR
Global Geothermal Market	\$6.99B (2026)	\$8.74B (2030)	5.7%
US Geothermal Power Market	\$1.45B (2024)	\$2.92B (2033)	9.2%
North America Total	\$6.5B (2024)	\$10.5B (2033)	5.6%

Table 1: US Geothermal Market Valuations and Growth Projections

► Installed Capacity Growth Trajectory

In 2024, total installed nameplate capacity reached 3,969 Mwe (3.97 Gwe), representing 246 Mwe of net capacity additions since 2020. Nine new geothermal plants were commissioned, alongside 132 Mwe from facility upgrades, partially offset by 82 Mwe in plant retirements. Summer and winter annualized mean net generation capacities improved from 2.56 Gwe and 2.96 Gwe in 2019 to 2.69 Gwe and 3.12 Gwe in 2023 respectively.

As of March 2026, there are 66 utility-scale geothermal power plants operating across the United States, with the highest concentrations in California’s Mayacamas Mountains and Imperial Valley, and in Western Nevada. Industrial tracking data indicates 146 operating geothermal units with an additional 112 projects in various planning stages.

► Future Capacity Projections

Scenario / Source	2030 Capacity	2050 Capacity	Growth Factor
DOE Enhanced Geothermal Shot	8–10 GW	90 GW	23x (2024–2050)
McKinsey Continued Momentum	<1 GW	80–85 GW	80x+
McKinsey Sustainable Transform	—	110 GW	28x (2024–2050)
USGS Great Basin Assessment	—	135 GW	34x (2024–2050)

Table 2: Long-term US Geothermal Capacity Growth Scenarios

EXPORT OPPORTUNITY: The 23x projected growth from 3.97 GW to 90 GW represents a multi-decade procurement pipeline for drilling services, reservoir engineering, turbine components, and project management — all areas of established North East Scotland expertise.

► Geographic Distribution

Operational geothermal capacity is currently concentrated in California (largest installed base), Nevada (significant conventional and EGS development), Utah (major EGS project hub), and Hawaii. Projected expansion states by 2030–2040 include western states leading initial growth, with south-central states and the eastern seaboard (Virginia to New York) contributing significantly by 2040 as EGS technology matures, reducing regional concentration risk and improving national grid resilience.

2 INVESTMENT LANDSCAPE AND CAPITAL FLOWS

► Record Investment Performance

The US geothermal sector experienced unprecedented investment acceleration in 2025. Q1 2025 alone attracted \$1.7 billion in public funding — 85% of the entire 2024 annual allocation — representing an 85% year-on-year increase. Since 2021, over \$1.5 billion in private capital has been invested in EGS development. Equity funding in H1 2025 reached \$78 million, driven specifically by AI data centre demand. This investment surge represents a fundamental shift in capital market perception of geothermal technology viability and commercial scalability.

► Regional Investment Leadership

Between 2020 and 2025, North America attracted \$1.6 billion in geothermal funding, vastly exceeding Europe's \$299 million during the same period. The United States dominates this regional investment, with Texas-based companies — Fervo Energy, Sage Geosystems, and Seismos — emerging as breakthrough innovators positioning Texas as a technology hub for next-generation geothermal systems.

► Federal Policy and Investment Context

Key federal initiatives driving investment include the DOE's Enhanced Geothermal Shot program (targeting cost reduction and deployment acceleration), over \$990 million in EGS-specific R&D since 2021, America's AI Action Plan promoting geothermal as baseload power for data centres, and the 100% carbon-free power sector target by 2035.

On 12 February 2026, President Trump repealed the EPA's 'Endangerment Finding' on greenhouse gases, removing the legal basis for many US climate protection measures. Despite this federal policy shift, market momentum continues driven by state-level renewable energy mandates, corporate sustainability commitments, and fundamental economics favouring firm renewable baseload power. Fervo's achievement of \$79/MWh unsubsidised cost competitiveness partially mitigates subsidy dependency concerns.

► Project Development Activity

Commercial activity accelerated dramatically in Q1 2025: 47 new wells were announced (80% increase year-on-year), with the US and Turkey accounting for nearly half of planned wells globally. This drilling activity surge indicates a robust near-term project pipeline and growing developer confidence in technology performance and market demand.

RELEVANCE FOR NE SCOTLAND: *The drilling activity surge creates direct service market opportunities. North East Scotland companies with directional drilling, well engineering, and completion expertise — skills directly transferable from North Sea oil and gas — are naturally positioned to serve this market.*

3 TECHNOLOGICAL INNOVATION AND ENHANCED GEOTHERMAL SYSTEMS

► Enhanced Geothermal Systems (EGS) Breakthrough

Enhanced Geothermal Systems represent the most significant technological advancement in geothermal energy, unlocking hot dry rock resources beyond traditional hydrothermal sites that require naturally occurring water and permeability. The domestic EGS potential of 5,000+ GW exceeds total current US power generation capacity nearly fourfold, demonstrating the transformational scale of this resource if successfully commercialised.

Resource Category	Estimated Potential	Context
Conventional Hydrothermal	40 GW	DOE ultimate domestic potential
Enhanced Geothermal Systems	5,000+ GW	125x conventional potential
Great Basin (6km depth)	135 GW	USGS 2025 assessment

Table 3: US Geothermal Resource Potential Comparison

► Fervo Energy's Cape Station — Commercial Viability Demonstrated

The 500 MW Cape Station project in Utah represents a watershed moment for EGS commercialisation. It is the world's largest enhanced geothermal development, achieving a levelised cost of \$79 per megawatt-hour (unsubsidised) — cost-competitive with traditional power sources. Electricity delivery begins in 2026, with 500 MW fully contracted through power purchase agreements. State regulatory approval was secured in May 2025. This pricing achievement demonstrates EGS technology's commercial viability without relying on subsidies, fundamentally altering investment risk profiles.

► EGS Operational Advantages

Enhanced Geothermal Systems offer decisive advantages over competing technologies:

- Deployment speed: months vs. years for small modular reactors (not operational before 2030)
- Baseload power: 24/7 firm capacity, unlike intermittent solar and wind
- Geographic flexibility: not limited to volcanic or hydrothermal regions
- Minimal land footprint and zero direct greenhouse gas emissions during operation
- Decades-long operational lifespan providing long-term energy security

► Parallel Technology Developments

Geothermal Heat Pumps (GHPs) are expanding the total addressable market, with 1.27 million residential units installed nationwide. Ormat Technologies launched its first solar-and-battery storage hybrid project at the Arrowleaf facility in California (January 2026), combining approximately 42 MW solar capacity with a 35 MW/140 MWh battery storage system — demonstrating industry evolution toward integrated clean energy solutions. Critical minerals co-production (lithium recovery, rare earth elements from geothermal brines) is emerging as an additional revenue stream improving project economics.

4 MARKET STRUCTURE AND COMPETITIVE LANDSCAPE

► Market Concentration and Leading Players

The US geothermal market exhibits moderate concentration among established operators. Ormat Technologies and Calpine together control 69% of installed capacity and 61% of all operating US geothermal plants. The remaining 31% is distributed across 41 plants operated by a range of participants, including emerging EGS innovators.

Company	Capacity Share	Plant Count	Technology Focus
Ormat Technologies	~38%	89 units	Conventional + hybrid + solar/storage
Calpine Corporation	~31%	16 plants	Conventional geothermal + retail energy
Other Operators	~31%	41 plants	Various (incl. Fervo EGS, Enel, Terra-Gen)

Table 4: US Geothermal Market Share Distribution

► Key Company Profiles

Ormat Technologies (NYSE: ORA): Global portfolio of 1,520 MW total generating capacity with 1,230 MW in geothermal and solar across the US, Kenya, Guatemala, Indonesia, Honduras, and Guadeloupe, plus 290 MW energy storage. In February 2026, Ormat signed a landmark 150 MW geothermal PPA with NV Energy to power Google data centres. In January 2026, Ormat completed the Arrowleaf solar-plus-storage hybrid project.

Fervo Energy (Private, Texas): EGS technology pioneer. Its 500 MW Cape Station in Utah (commercial operations 2026) is the world's largest enhanced geothermal development with 500 MW fully contracted. Major PPAs include Southern California Edison (world's largest geothermal PPAs), Shell Energy (31 MW, 15-year term, April 2025), Clean Power Alliance (18 MW expansion), and NV Energy (115 MW EGS expansion, 2025–2026).

Calpine Corporation: Second-largest US geothermal operator with 16 plants, integrated generation-to-retail business model. Completed a 10-year PPA with Ormat for 15 MW from Mammoth 2 (January 2025). Additional significant players include Enel Green Power North America (25 MW California project), Terra-Gen LLC, US Geothermal Inc. (AI monitoring deployment), Sage Geosystems, and Seismos (both Texas-based EGS innovators).

► Stock Market Performance

The broader RENIXX (Renewable Energy Industrial Index) gained 15.1% in 2025, recovering strongly from prior weak years and reflecting improved sentiment toward renewable energy investments. Ormat Technologies demonstrated consistent weekly appreciation during 2025–2026, driven by technology advancement recognition and data centre PPA execution.

5 POWER PURCHASE AGREEMENTS AND COMMERCIAL DEMAND

► PPA Activity and Pipeline

Since the 2021 US Geothermal Market Report, 26 new power purchase agreements have been signed as of June 2025, representing significant commercial momentum and utility confidence in geothermal technology. Total contracted next-generation capacity stands at 984 MWe, with California leading at 439 MWe, and 545 MWe distributed across western and southwestern states.

Buyer	Capacity	Term	Supplier / Project
NV Energy (for Google data centres)	150 MW	15 years	Ormat — conventional
Southern California Edison	Major (undisclosed)	Long-term	Fervo — Cape Station EGS
Shell Energy	31 MW	15 years	Fervo — Cape Station EGS
Clean Power Alliance	18 MW	Long-term	Fervo — expansion project
Calpine Energy Solutions	15 MW	10 years	Ormat — Mammoth 2

Table 5: Representative Major Geothermal Power Purchase Agreements (2025–2026)

► AI Data Centres — Primary Growth Driver

The proliferation of artificial intelligence infrastructure represents the single most significant demand catalyst for geothermal power. Data centres require 24/7 baseload electricity with high reliability standards, and technology companies have committed to net-zero emissions targets. Geothermal's deployment speed (months, not years), geographic flexibility, and carbon-free baseload character make it decisively superior to small modular reactors for data centre power — the Ormat-NV Energy 150 MW agreement for Google's Nevada operations exemplifies this strategic alignment.

SUPPLY OPPORTUNITY: *Traditional utilities increasingly recognise geothermal as essential for meeting renewable portfolio standards, providing grid stability, and supporting decarbonisation mandates. Beyond electricity, geothermal serves district heating, agricultural applications, and industrial process heat — expanding total addressable market for NE Scotland service companies.*

6 REGULATORY ENVIRONMENT AND POLICY LANDSCAPE

► Federal Policy Framework — Current Status

The US geothermal regulatory environment reflects competing federal and state-level priorities. Supportive federal initiatives include the DOE Enhanced Geothermal Shot programme (ongoing, targeting 90 GW by 2050), over \$990 million in EGS-specific R&D appropriations since 2021, America's AI Action Plan promoting geothermal for data centre power needs, and the Biden-era 100% carbon-free power sector by 2035 target.

On 12 February 2026, President Trump repealed the EPA's 'Endangerment Finding' which classified greenhouse gases as threats to health and climate, removing the central legal basis for many US climate protection measures. Despite this, market momentum continues driven by state mandates, corporate sustainability commitments, and fundamental economics. Fervo's achievement of \$79/MWh unsubsidised cost competitiveness is a critical milestone that reduces long-term policy dependency.

► State-Level Support and Leadership

California: Largest installed base; 439 MWe next-generation capacity contracted; strong renewable portfolio standards and climate leadership legislation.

Nevada: Major conventional and EGS project hub; NV Energy's landmark 150 MW Google data centre PPA; favourable geological resources and pro-development environment.

Utah: Host state for Fervo's 500 MW Cape Station; 2,000 MW Fervo Cape project planned expansion; state regulatory approval secured May 2025.

► Technology Demonstration and R&D Progress

Successful testing at both laboratory and commercial demonstration scales indicates industry readiness for growth: lab-scale research proving EGS technical concepts, commercial-scale demonstrations at Fervo and other sites, AI-driven monitoring and predictive maintenance systems, advanced turbine technology integration, and enhanced drilling and reservoir management techniques — all reducing investment risk and supporting policy confidence in geothermal scalability.

7 CHALLENGES AND MARKET CONSTRAINTS

► Technical and Operational Challenges

- Resource exploration risk: identifying viable sites requires significant upfront geological investment
- Drilling costs: deep well drilling remains capital-intensive despite technological improvements
- Reservoir management: long-term resource sustainability requires sophisticated monitoring systems
- Geographic limitations: conventional hydrothermal resources remain concentrated in western states
- Technology maturity: EGS systems still scaling from demonstration to commercial deployment at scale

► Economic and Financial Constraints

- Capital intensity: high upfront investment requirements relative to solar and wind
- Development timelines: multi-year project cycles from exploration to operation
- Complex project finance requiring long-term revenue certainty (PPAs essential)
- Competition: solar and wind offering lower levelised costs in non-baseload applications
- Grid integration: transmission infrastructure requirements for remote geothermal resources

► Policy and Regulatory Uncertainties

Key uncertainties include federal policy volatility following the February 2026 EPA Endangerment Finding repeal; historical reliance on tax credits and incentives (partially mitigated by Fervo's \$79/MWh unsubsidised achievement); permitting timelines varying by jurisdiction; transmission queue delays for grid interconnection; and NEPA and state-level environmental assessment requirements.

► Market Adoption Barriers

- Awareness gap: limited understanding of geothermal capabilities among potential buyers
- Track record: EGS technology requiring more operational history for risk-averse utilities
- Supply chain scaling: manufacturing and service capacity for rapid deployment requires investment
- Workforce development: skilled labour requirements for specialised drilling and plant operations

8 OPPORTUNITIES AND STRATEGIC IMPLICATIONS

► Energy Security and Baseload Reliability

Geothermal energy addresses critical electricity system needs that solar and wind cannot: 24/7 firm capacity, grid stability through frequency regulation and voltage support, predictable output with minimal weather-related variability, domestic resource independence reducing import dependency, and decades-long operational capability. These attributes position geothermal as complementary to variable renewables rather than a direct competitor.

► Decarbonisation and Climate Goals

- Direct emissions reduction: zero greenhouse gas emissions during operation
- Coal plant displacement: can replace retiring fossil baseload capacity cost-competitively
- Industrial process heat: direct-use applications reducing fossil fuel consumption
- District heating: low-carbon thermal energy for buildings and urban centres
- Carbon offset potential: estimated 266 million tonnes CO₂ annually for 30 GW deployment

► Economic Development and Employment

Projected geothermal expansion offers substantial economic benefits: \$70+ billion in estimated investment capital for 30 GW development, 130,000 full-time permanent positions projected, significant construction employment during build-out, manufacturing opportunities in equipment production and supply chain development, and rural economic activity in western states hosting geothermal resources.

► Technology Transfer and Export Potential

- Licensing intellectual property and EGS technology platforms to international markets
- Engineering and construction service exports from US to Pacific Rim, East Africa, Latin America
- Equipment manufacturing for global geothermal markets

- Technical assistance, capacity building, and specialist consultancy services
- Strategic positioning as US EGS expertise is sought in emerging market developments

► Critical Minerals Co-Production

An emerging opportunity gaining significant attention: geothermal facilities can extract lithium and rare earth elements from geothermal brines as a co-product of power generation. This additional revenue stream improves project economics and contributes to strategic mineral supply chain diversification — identified by the 2025 US Geothermal Market Report as a key technology to watch over the next five years.

ACTION REQUIRED FOR NE SCOTLAND: *Companies with oil and gas subsea engineering, drilling, reservoir management, and project services capabilities should proactively investigate US geothermal market entry now — before capacity constraints and competitive positioning reduce addressable opportunities. The GBE Supply Chain Fund (up to £300M) and ETZ Ltd resources may support strategic market development activities.*

9 COMPETITIVE LANDSCAPE ANALYSIS

► Geothermal vs. Other Power Generation Technologies

Attribute	Geothermal	Solar PV	Wind	Natural Gas
Capacity Factor	70–90%	15–25%	25–45%	50–60%
Dispatchability	High	Low	Low	High
Land Footprint	Very Low	High	Moderate	Low
Emissions (ops)	Zero	Zero	Zero	Moderate-High
Geographic Flexibility	Moderate	High	High	Very High
Cost LCOE (\$/MWh)	\$79–120	\$30–60	\$30–80	\$40–70

Table 6: Comparative Analysis of Power Generation Technologies

► Geothermal vs. Small Modular Reactors (SMRs)

For AI data centres and industrial applications, geothermal demonstrates decisive advantages over SMRs: deployment timeline of months (geothermal) vs. unavailable before 2030 (nuclear); lower permitting burden; fewer community opposition challenges; modular deployment without nuclear fuel cycle requirements; and no radioactive materials or catastrophic failure scenarios. This competitive positioning explains strong data centre operator preference for geothermal solutions, as evidenced by the Ormat-NV Energy-Google transaction.

► Strategic Market Positioning Approaches

Technology Leadership (Fervo Model): Pioneering EGS commercialisation; attracting innovation-focused customers; premium pricing justified by technology advantages; rapid scaling based on proof-of-concept success.

Operational Excellence (Ormat Model): Integrated engineering-manufacturing-operations capabilities; geographic diversification across multiple countries; technology portfolio expansion; long-term utility relationships.

Market Integration (Calpine Model): Vertical integration from generation to retail; customer relationship leverage for procurement; portfolio diversification supporting client sustainability goals.

10 EXPORT AND SUPPLY OPPORTUNITIES FOR NE SCOTLAND COMPANIES

The following table maps US geothermal market developments to specific export and supply opportunity categories for North East Scotland energy supply chain businesses. NE Scotland companies possess transferable capabilities from North Sea oil and gas operations that are directly applicable to geothermal development.

Capability Area	US Market Application	Opportunity Type	Timeline
Drilling & Well Engineering	Fervo Cape Station + EGS Expansion Pipeline	Directional drilling, completion, well integrity	Active 2026–2030
Subsea & Reservoir Engineering	Next-gen EGS development sites (UT, NV, CA)	Reservoir characterisation, monitoring, management	2026–2032
Project Management Services	DOE EGS Shot target: 26+ projects in pipeline	EPCM, commissioning, O&M setup	2026–2030
Heat Exchanger & Turbine Supply	Ormat, Fervo plant-build programmes	ORC turbine components, HX manufacturing	2026–2030
Seismic & Survey Services	NSTA-equivalent geothermal exploration (BLM)	Geophysical surveys, reservoir appraisal	2026–2029
Digital & AI Monitoring	US Geothermal AI-driven plant monitoring	Predictive maintenance, digital twins, SCADA	Active now
Environmental Services	EGS consent and development programmes	EIA, water management, brine disposal	2026–2030
Critical Minerals Extraction	Lithium from geothermal brine (Salton Sea CA)	Process equipment, extraction technology	2027–2032
District Heating Systems	Urban geothermal heating (emerging eastern US)	Heat network design, distribution infrastructure	2028–2035
Technology Licensing / JV	Scottish geothermal development (with US IP)	EGS technology transfer to UK deep geothermal	2026–2030

Table 7: US Geothermal Export and Supply Opportunities for NE Scotland Companies

KEY STRATEGIC INSIGHT: *Approximately 90% of skills in oil and gas are directly transferable to geothermal development (source: Scottish Offshore Wind Skills Plan methodology). NE Scotland companies should approach US geothermal operators — particularly Fervo Energy (Texas), Ormat Technologies, and the DOE national laboratories — to explore subcontract and technology partnership routes.*

11 FUTURE OUTLOOK AND STRATEGIC RECOMMENDATIONS

► Short-Term Outlook (2026–2028)

Expected developments in the near term:

- Fervo Cape Station commercialisation: 500 MW facility begins operations, demonstrating EGS viability at scale
- Additional PPA execution: continued utility and data centre procurement agreements
- Technology cost reduction: learning curve effects reducing drilling and operational costs
- Geographic expansion: additional states beyond California, Nevada, Utah developing projects

- Installed capacity growth: movement toward 5–8 GW by 2030 under moderate scenarios

Key risk factors to monitor:

- Federal policy instability following EPA Endangerment Finding repeal
- Potential subsidy reductions or elimination under Trump administration
- Competition from rapidly falling solar and battery storage costs
- Supply chain constraints limiting deployment pace
- Interest rate environment affecting project financing costs

► **Medium-Term Outlook (2028–2035)**

Under the DOE Enhanced Geothermal Shot programme, installed capacity should reach 40–50 GW by 2035, representing approximately 3–4% of projected US electricity generation. This growth will be driven by mature EGS technology with proven multi-year operational track records, expanded geographic deployment including south-central states, integration with industrial decarbonisation initiatives, district heating and cooling applications in urban centres, and critical mineral co-production improving project economics.

Achieving this scale will require transmission infrastructure expansion connecting remote resources to load centres, supply chain development for drilling equipment and plant components, workforce training for specialised technical personnel, standardised permitting procedures, and financial market evolution supporting large-scale project finance.

► **Long-Term Outlook (2035–2050)**

The 90 GW DOE target by 2050 would represent power for 65 million American homes — approximately 8.5% of total US electricity generation and 23x growth from current 3.97 GW installed capacity. Under aggressive scenarios (McKinsey Sustainable Transformation, USGS assessments), capacity could reach 110–135 GW. Achieving upper-range projections requires: sustained policy support despite administration changes; technology cost reductions to \$60–70/MWh; successful demonstration of EGS long-term reservoir sustainability; integration with hydrogen production; and international market development supporting equipment exports.

► **Strategic Recommendations — NE Scotland Context**

For Energy Producers and Developers

- Prioritise EGS capability development and technology partnerships over conventional reliance
- Establish data centre and industrial customer relationships in the US market early
- Explore geographic diversification into US geothermal beyond traditional service regions
- Consider integrated solutions combining geothermal, solar, storage, and critical minerals

For Utilities and Power Purchasers

- Integrate geothermal as baseload complement to variable renewables in portfolio planning
- Secure long-term US geothermal PPAs now before market tightening drives price increases
- Leverage geothermal's carbon-free baseload for corporate net-zero programme delivery

For Investors and Financial Institutions

- Current inflection point offers attractive risk-return profiles in EGS developers
- Prioritise companies with proven technical reservoir engineering capabilities
- Balance established operators (Ormat, Calpine) with innovation leaders (Fervo)
- Anticipate consolidation opportunities as the market matures post-2028

For Export-Oriented NE Scotland Organisations

- Explore partnerships with US EGS innovators (Fervo, Sage Geosystems) for technology licensing

- Position Scottish engineering and manufacturing firms in US geothermal supply chains
- Apply US commercial lessons directly to UK deep geothermal development initiatives
- Connect Scottish financial institutions with US project developers seeking capital
- Leverage geothermal district heating expertise for UK urban heating decarbonization

12 KEY TRENDS AND STRATEGIC OUTLOOK

► Trend 1: EGS Technology Has Reached Commercial Viability

Fervo Energy's \$79/MWh unsubsidised levelised cost at Cape Station marks the point where EGS shifts from demonstration to competitive commercial deployment. This fundamentally reduces reliance on policy subsidies and de-risks investment at scale.

► Trend 2: AI Data Centres Are the Game-Changing Demand Catalyst

Technology companies' need for 24/7 carbon-free baseload power — and their ability to sign long-term PPAs — is driving a rapid acceleration in geothermal procurement that was absent from prior market cycles.

► Trend 3: Investment Has Reached an Inflection Point

Q1 2025's \$1.7 billion in public funding (85% of the prior full year) signals that geothermal has moved from niche to mainstream within the US energy investment community. Private capital is following, with \$1.5 billion invested in EGS since 2021.

► Trend 4: Federal Policy Risk Is Real but Market Forces Dominate

The February 2026 EPA Endangerment Finding repeal creates uncertainty, but state-level mandates, corporate sustainability commitments, and market economics continue driving deployment — mirroring the offshore wind market's resilience to political headwinds.

► Trend 5: NE Scotland Has a Transferable Skills Advantage

The convergence of drilling expertise, subsea engineering, reservoir management, and project services positions North East Scotland companies as natural participants in the US geothermal supply chain — particularly for Fervo's EGS expansion and the broader 26-project PPA pipeline through 2030.

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This report has been prepared by ExportCentral AI to assist North East Scotland energy supply chain companies strategically evaluate the US geothermal energy market. Being an AI generated report, ExportCentral AI cannot be held responsible for the accuracy of information contained in the report. An extensive list of sources used in compiling the report has been provided. Our advice is to upload the report onto the AI platform you are using, provide background context about your company, then prompt AI to customise the report to the specific needs of your own business.

GLOSSARY OF KEY TERMS

Term	Definition
BLM	Bureau of Land Management — US federal agency managing public lands including geothermal leasing
CAGR	Compound Annual Growth Rate
CfD	Contract for Difference — UK mechanism for supporting renewable energy projects
DOE	US Department of Energy — principal funder and policy driver of geothermal R&D
EGS	Enhanced Geothermal Systems — technology unlocking hot dry rock resources beyond hydrothermal sites
EPA	Environmental Protection Agency — US federal regulator
EPCM	Engineering, Procurement, Construction, and Management — standard project delivery model
Fervo Energy	Texas-based private EGS pioneer; operator of the 500 MW Cape Station project in Utah
GHP	Geothermal Heat Pump — ground-source heating and cooling system for buildings
GW / GWe	Gigawatt / Gigawatt electric — unit of installed power capacity
LCOE	Levelised Cost of Energy — all-in average cost per MWh over a plant's lifetime
MWe	Megawatt electric — unit of electrical power output
NEPA	National Environmental Policy Act — US environmental review requirement
NV Energy	Nevada utility; signed landmark 150 MW geothermal PPA for Google data centres
ORC	Organic Rankine Cycle — heat-to-electricity conversion technology used in geothermal plants
Ormat Technologies	NYSE: ORA — largest US geothermal operator; integrated developer/manufacturer/operator
PPA	Power Purchase Agreement — long-term contract between generator and buyer for electricity supply
RENIXX	Renewable Energy Industrial Index — benchmark index for renewable energy equities
SMR	Small Modular Reactor — compact nuclear power plant (not operational before 2030)
USGS	US Geological Survey — federal scientific agency; published 2025 Great Basin EGS assessment