

GERMANY INNOVATION BRIEF

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Where Innovation Becomes Industry

THIS MONTH

Geothermal energy is CO₂-free, always-on, and land-efficient. The barrier has always been drilling costs. Two German startups — Hades Mining (Munich) and Telura Energy (Karlsruhe / Dresden) — are deploying fundamentally different technologies to slash those costs by up to 90 %. This is the most consequential clean-energy story you have not yet heard.

€15M

Hades Mining seed round

€100M

Telura fundraising target

~90 %

Potential drilling cost reduction

2.6 %

Annual geothermal growth globally

THE CASE FOR GEOTHERMAL

Geothermal energy offers something no other renewable can: baseload power — electricity that flows 24 hours a day, 365 days a year, regardless of weather or season. Unlike solar and wind, geothermal is not intermittent. The Earth's internal heat is effectively inexhaustible on any human timescale.

The challenge has always been cost. Drilling a geothermal well to commercially viable depths — typically 4 to 8 kilometres — is extraordinarily expensive, often tens of millions of euros per well using conventional rotary drill bits. Two German companies are independently attacking this problem with entirely different physics.

COMPANY SPOTLIGHT: HADES MINING

Hades Mining Technologies GmbH — Munich, Germany **[€15M Seed Round]**

Founded in 2022, Hades Mining is developing a high-powered laser drilling system designed to keep all sensitive electronics above ground — transmitting energy downward through optical fibres rather than sending vulnerable hardware into extreme heat and pressure.

The Technology: Conventional drill bits grind through rock mechanically, wearing down and requiring costly replacement. Hades uses focused laser energy to ablate — essentially vaporise —

rock at the drill face. The laser head above ground remains cool, safe, and serviceable. Only the optical delivery system goes underground.

The Business Case: Drilling costs represent 30 to 70 per cent of total geothermal project capital expenditure. Reducing these costs dramatically changes the economics of geothermal from a niche premium product to a mass-market clean energy source competitive with gas.

“Drilling costs make up 30 to 70 per cent of total capex. We are fixing that.”

— Max Werner, CEO, Hades Mining

Milestones: Target depth of 1 kilometre by 2028; first commercial deployment planned for 2029. The company has secured €15 million in seed funding — a significant commitment for a deep-tech hardware company at this stage.

Investor Signal: The seed round, led by European climate-tech specialists, positions Hades as Europe's most advanced laser-based geothermal drilling company. Its patent portfolio covers the above-ground laser architecture and optical delivery system.

COMPANY SPOTLIGHT: TELURA ENERGY

Telura Energy GmbH — Karlsruhe / Dresden, Germany [€100M Target]

Telura Energy emerged from research at the Karlsruhe Institute of Technology (KIT) and Technische Universität Dresden. The company applies high-voltage electrical impulse technology to geothermal drilling.

The Technology: Instead of mechanical grinding or laser ablation, Telura fires high-voltage electrical impulses into rock at the drill face. The impulses create plasma channels inside the rock that fracture it from within — like breaking rock with contained lightning. This non-mechanical approach dramatically reduces the wear-and-replacement cycle that drives up conventional costs.

Claimed Performance: Up to 90 per cent reduction in drilling costs — a figure that, if validated at commercial scale, would fundamentally restructure the economics of geothermal energy, mining, tunnelling, and civil engineering.

Current Status: First pilot projects planned for late 2026. The company is in active fundraising, targeting €100 million to fund pilot deployment and scale-up.

“We are not drilling through rock. We are convincing it to fall apart.”

— Telura Energy Technical Team

GLOBAL CONTEXT: QUAISE ENERGY AND MARKET CONVERGENCE

Quaise Energy — Cambridge, MA, USA — Global Relevance

Quaise Energy, a US company spun out of MIT's Plasma Science and Fusion Centre, is pursuing a third approach: using millimetre-wave energy — similar to that used in fusion research — to vaporise rock at drill depths.

The CEO of Hades Mining has publicly acknowledged Quaise's approach as 'clever', noting the global convergence of research effort around the same fundamental problem. When multiple well-funded teams converge on a problem, it typically means the problem is solvable and the prize is large. Germany holds two of the three strongest positions in this race.

WHY THIS MATTERS FOR INVESTORS

Three credibly-funded companies — Hades Mining (Germany), Telura Energy (Germany), Quaise Energy (USA) — are simultaneously attacking the same bottleneck using three different physics approaches. Germany holds two of the three strongest positions globally in next-generation geothermal drilling technology.

MARKET DATA

2.6 %

Annual geothermal growth globally since 2000

38 %

Annual solar growth — the benchmark to beat

15 yrs

Typical EU project cycle: exploration to production

~90 %

Claimed drilling cost reduction (Telura estimate)

Geothermal's 2.6 per cent annual growth is dwarfed by solar (38 per cent). The primary constraint is drilling cost. If either Hades or Telura validates its technology at commercial scale, geothermal's growth trajectory could follow a similar S-curve to solar following the cost-reduction advances of the 2010s.

EDITORIAL NOTE

Germany Innovation Brief is a monthly briefing on Germany's deep-tech innovation ecosystem, produced for the FOM University MBA Nation Branding programme and published for international investors, trade partners, and business decision-makers.

Sources: Handelsblatt (March 2026), company press releases, Fraunhofer Institute data, European Geothermal Energy Council.

Next Issue: April 2026 — Artificial Intelligence: Germany's Foundation Model Champions.

