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Next-gen geothermal: using European momentum to unlock UK potential

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Wood Mackenzie is the global leader in analytics, insights and proprietary data across the entire energy and natural resources landscape.

For over 50 years, our work has guided the decisions of the world's most influential energy producers, utilities companies, financial institutions and governments.

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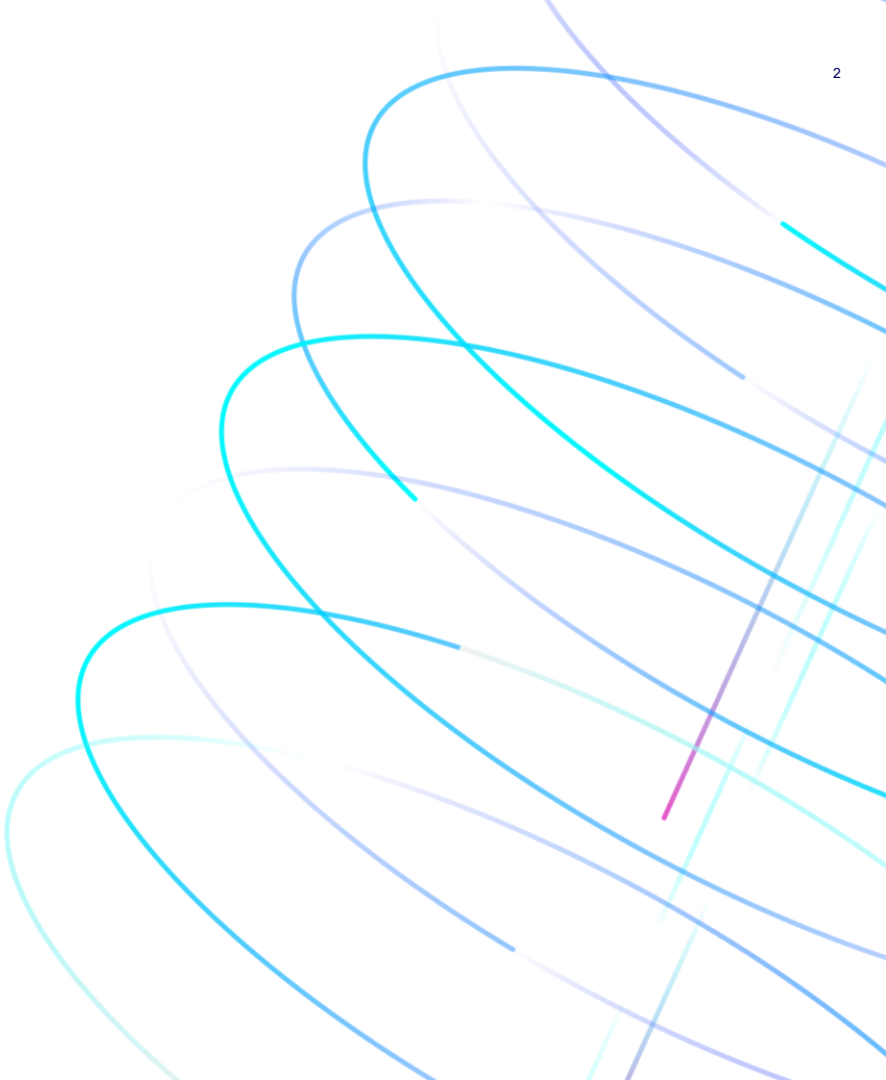
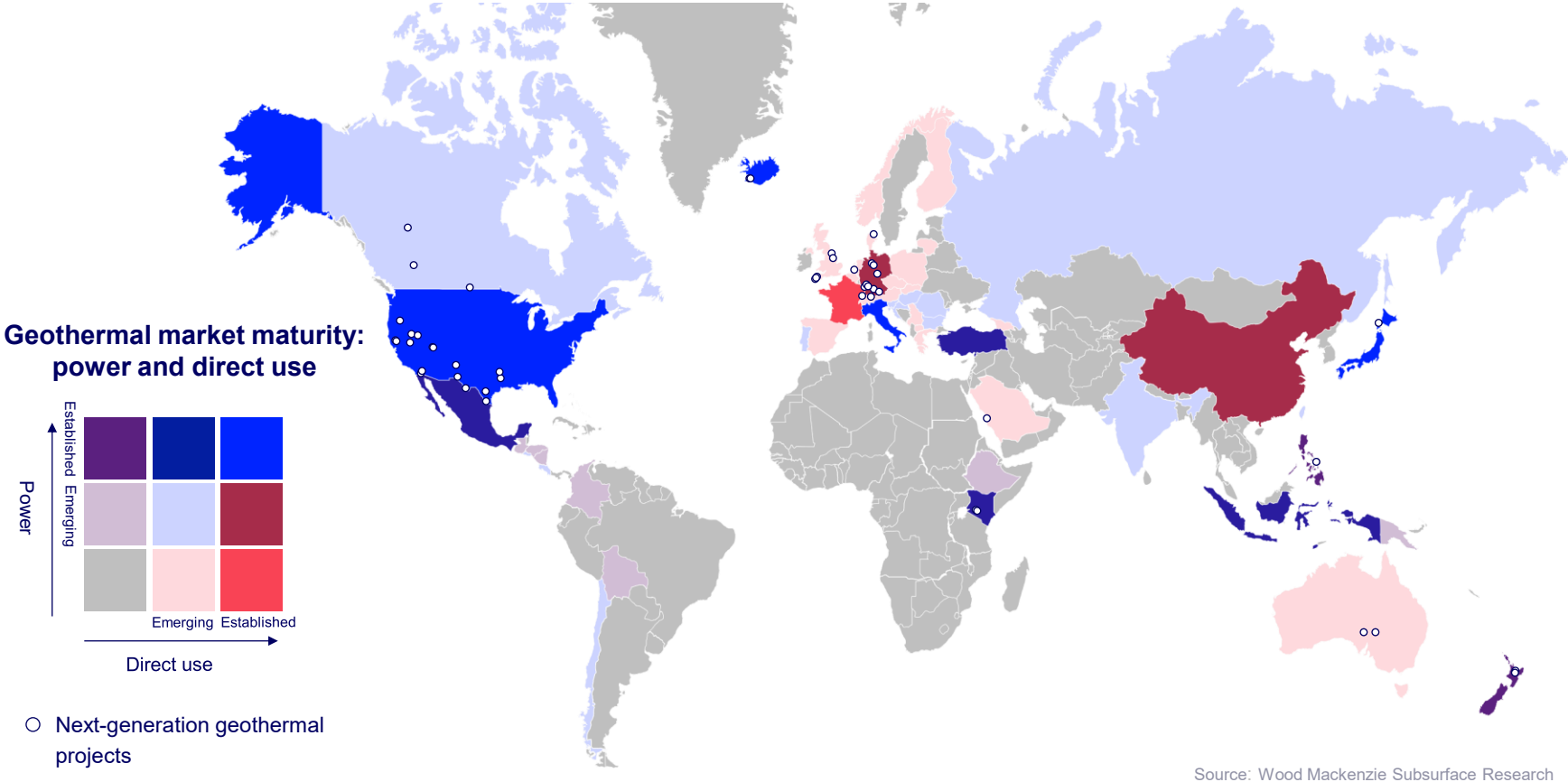
This empowers our customers to identify risk sooner, spot opportunities faster and recalibrate strategy with confidence – whether planning days, weeks, months or decades ahead.



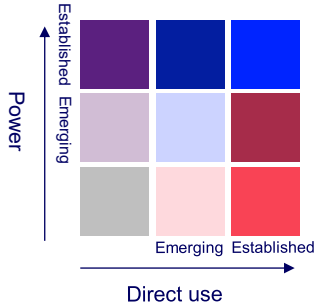
Geothermal market maturity: power players in Americas and heating hubs in Europe



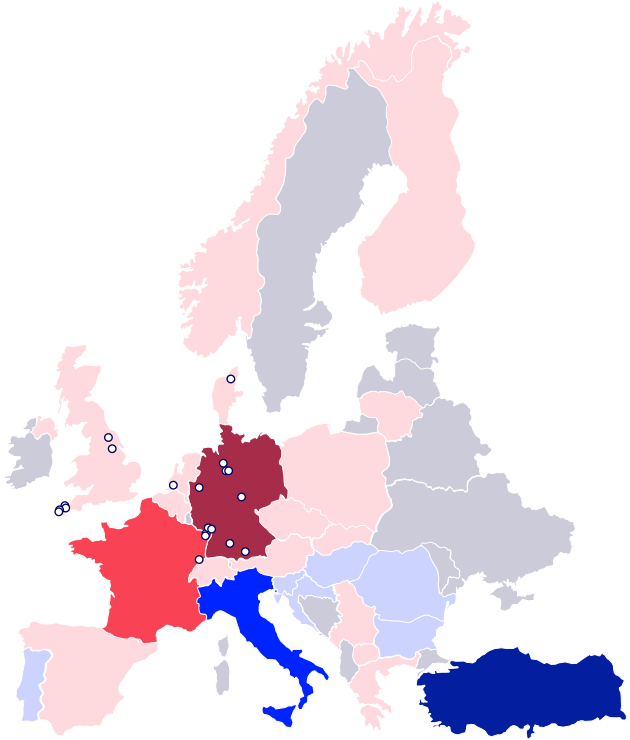
Source: Wood Mackenzie Subsurface Research

Europe’s geothermal industry is still finding its feet

Geothermal market maturity: power and direct use



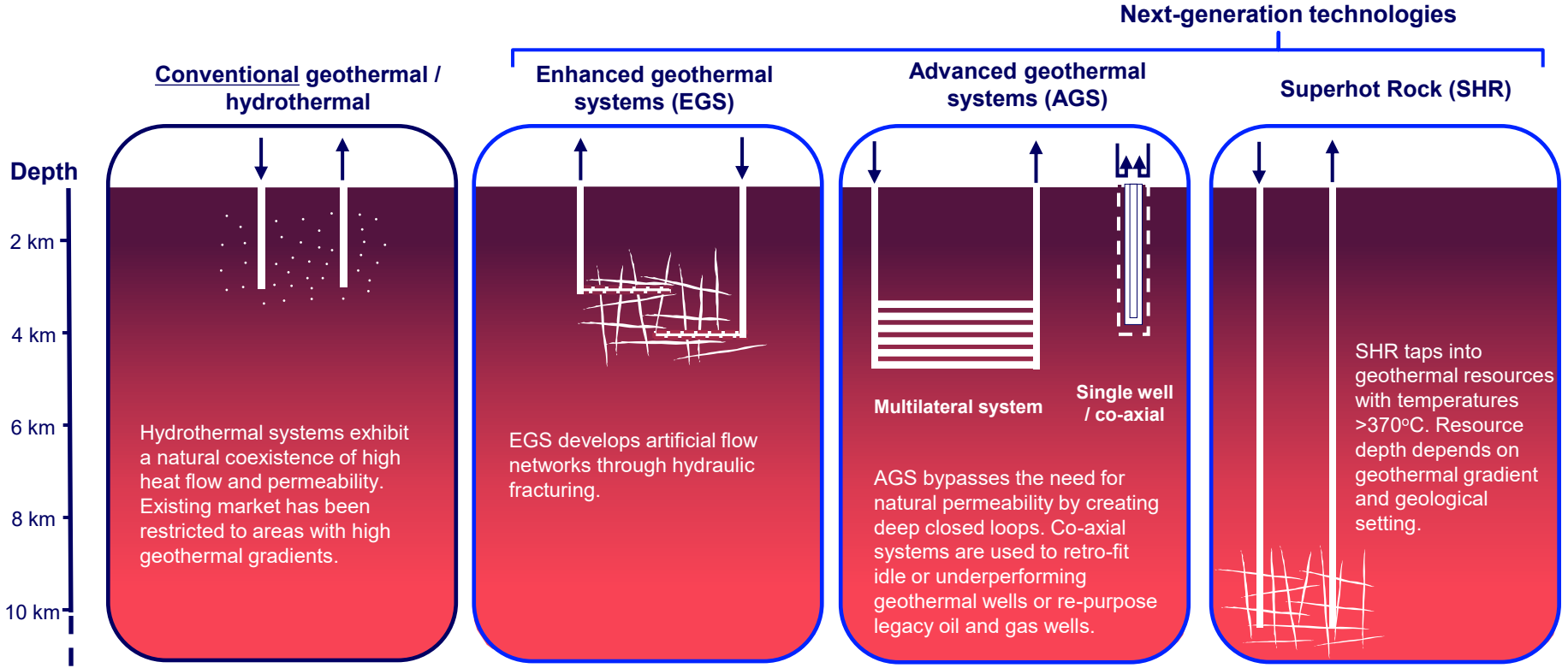
○ Next-generation geothermal projects



- Resources remain largely **underdeveloped**
- Growth driven by **energy security** and heating **decarbonisation**
- **France** and **Germany** were largest contributors to market development in 2025

Source: Wood Mackenzie Subsurface Research

Technology innovation to disrupt the conventional market



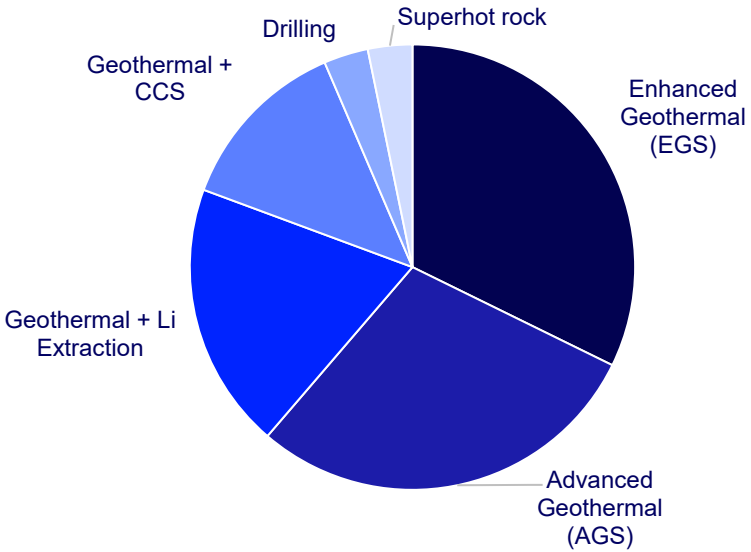
Source: Wood Mackenzie Subsurface Research

Decreasing Technology Readiness Level (TRL)

Next-generation project tracker: European pipeline has tripled since 2020

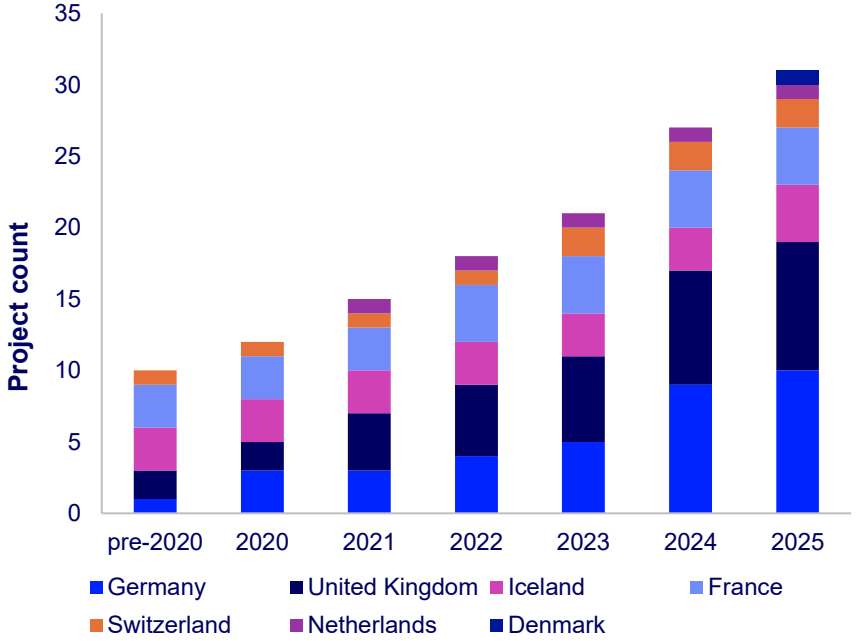
New technologies aim to commercialise concepts first explored in 1970s Hot Dry Rock research

Pipeline breakdown by technology type



Source: Wood Mackenzie Subsurface Research

Next-generation geothermal project tracker

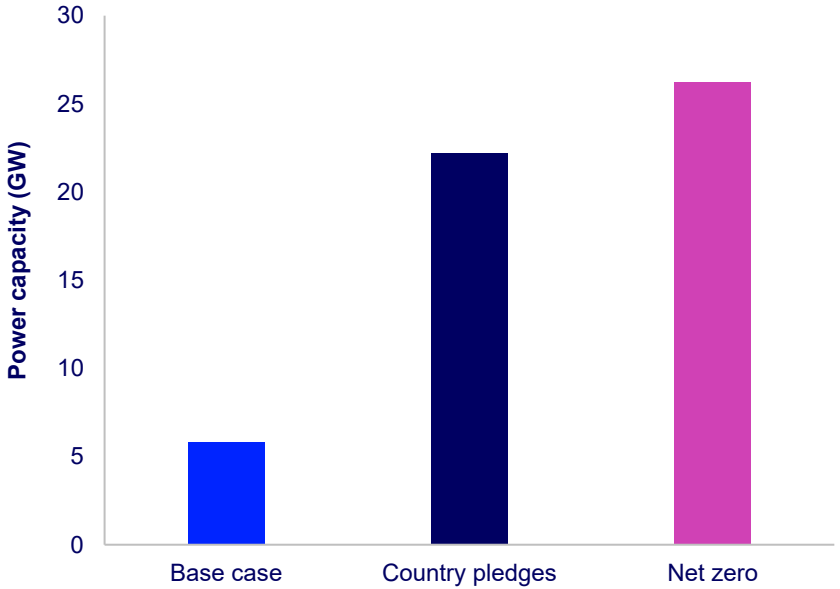


Source: Wood Mackenzie Subsurface Research

Geothermal growth beyond 2030 is driven by next-generation expansion

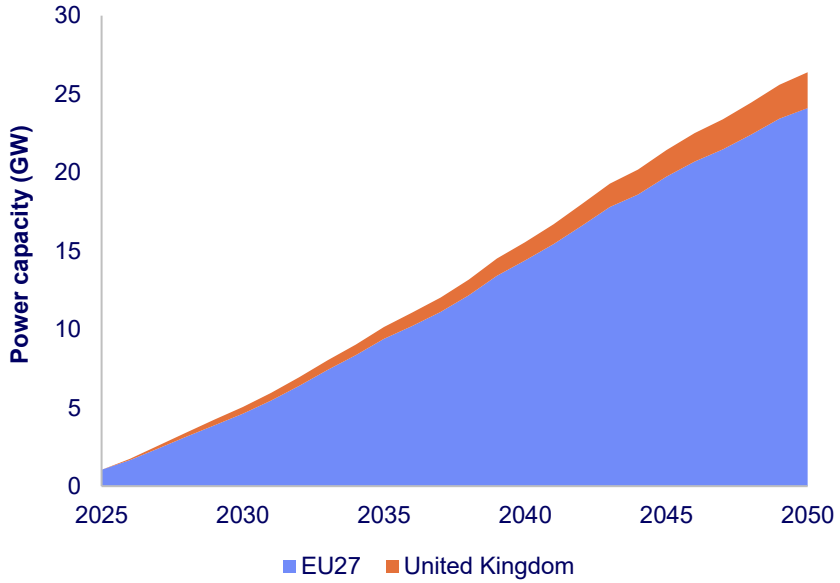
In a net zero world, installed geothermal power capacity could reach 26 GW in Europe by 2050

Europe installed geothermal power capacity, 2050



Source: Wood Mackenzie Lens Energy Transition Scenarios. Includes conventional and next-generation geothermal.

Europe installed geothermal power capacity, Net Zero Scenario



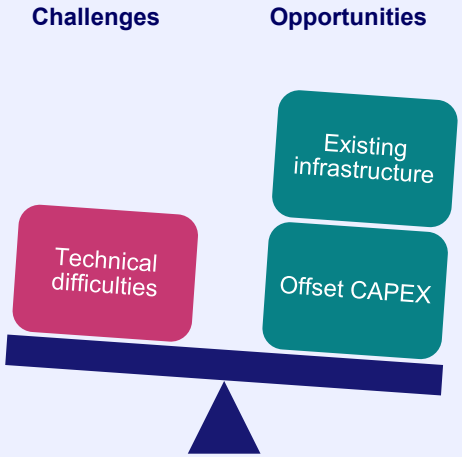
Source: Wood Mackenzie Lens Energy Transition Scenarios. . Includes conventional and next-generation geothermal.

Early projects are testing the pathways for next-generation geothermal

What lessons do these first-movers offer for the next wave of advanced geothermal development?

Eavor: Geretsried

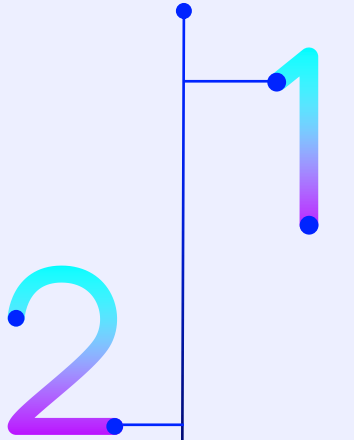
Advanced Geothermal | Germany | 8.2MWe / 64MWth



GeoEnergie Suisse: Haute-Sorne

Enhanced Geothermal | Switzerland | 5MWe

Building a blueprint for UK geothermal innovation



1 Clear policy direction

Clear policy direction ensures investment stability. **Implementing a national capacity roadmap** in the UK would mitigate political risk and attract the long-term private capital necessary for growth.

2 Funding for exploration

Deep geothermal is **CAPEX-intensive** and nascent next-generation technologies carry high-technology risks. Dedicated exploration grants – such as the Swiss federal grant which covers up to 60% of early-stage costs – are **essential to de-risk the subsurface and catalyse private investment**.

3 Offtake support

Secured revenue streams are crucial for attracting project finance. The UK should introduce **dedicated mechanisms** which provide offtake certainty **for both geothermal heat and power**

Biography

Kate Adie

Subsurface Research Analyst

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Since joining Wood Mackenzie in 2023, Kate has become a key contributor to our global research on established and developing geoenergy technologies. She provides insight and analysis on developing geothermal markets and supported the growth of our CCUS subsurface offering. Kate also monitors activity in the nascent natural hydrogen industry.

Prior to joining Wood Mackenzie, Kate spent two years in academic research, investigating the technical feasibility of subsurface hydrogen storage as a long duration energy storage technology.

Kate holds a BSc (Hons) in Geology and Physical Geography and an MSc in Geoenergy from the University of Edinburgh.

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