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The UK's geothermal gap
A global comparison of potential vs activity

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SPE Accelerating Geothermal Energy

NGC mission and vision

National Geothermal Centre

Durham University

REECE FOUNDATION

Net Zero Technology Centre
Technology Driving Transition

shift GEOTHERMAL

Mission: Accelerate UK geothermal growth through collaboration and innovation to deliver low-carbon heat and power

Vision: Geothermal as a secure locally available energy resource for decarbonising homes and businesses

Established 2004 as a not for profit company

The global geothermal gap

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World geothermal potential of ~600TW

less than 1% is currently developed

		
World	**173 GW**	**16 GW**
UK Current	1 GW	3 MW
2035 UK Target	4.5 GW	750 MW
2050 UK Target	10 GW	1.5 GW

Reasons to close the gap

- Available everywhere
- Low carbon
- Jobs and business opportunities
- Technology ready
- Improves energy security

UK energy security

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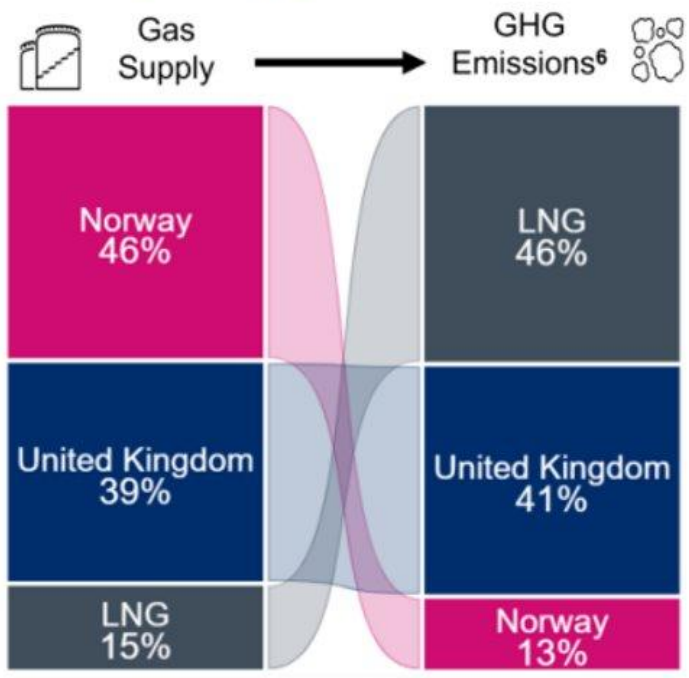
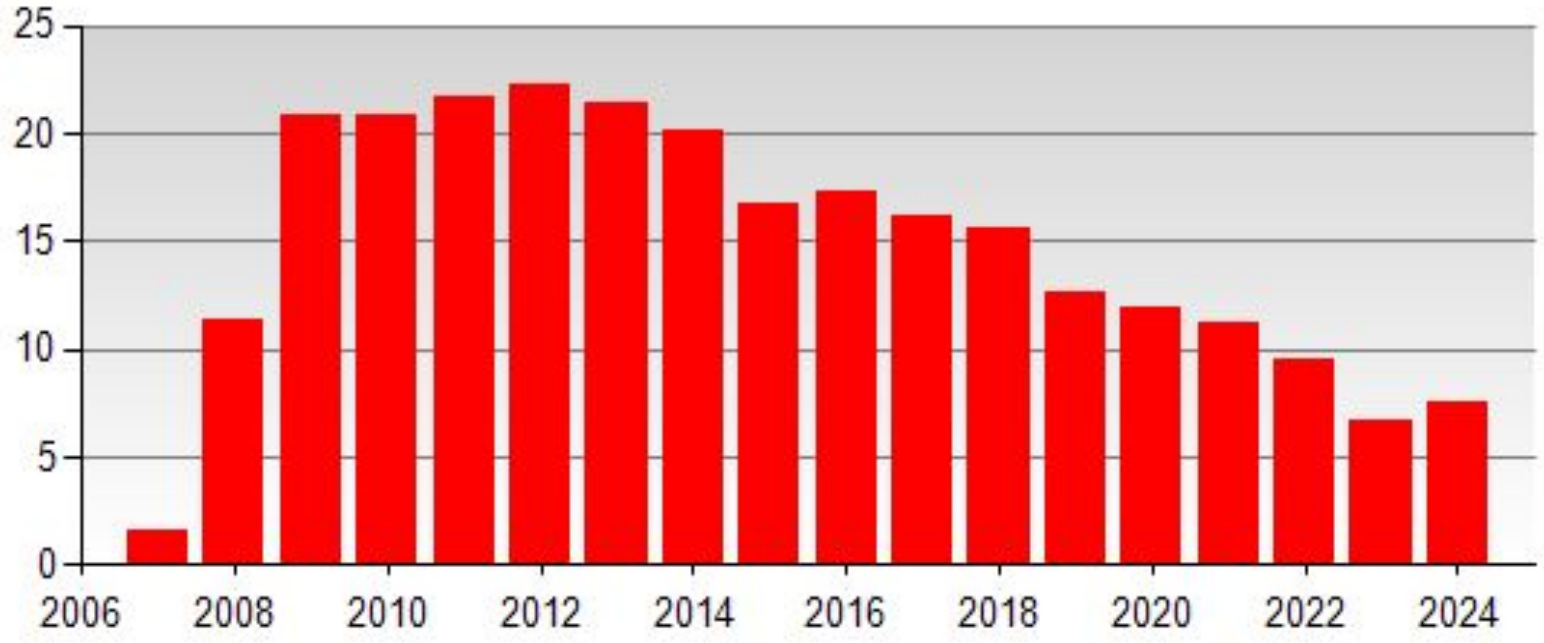
Emissions intensity of producing natural gas



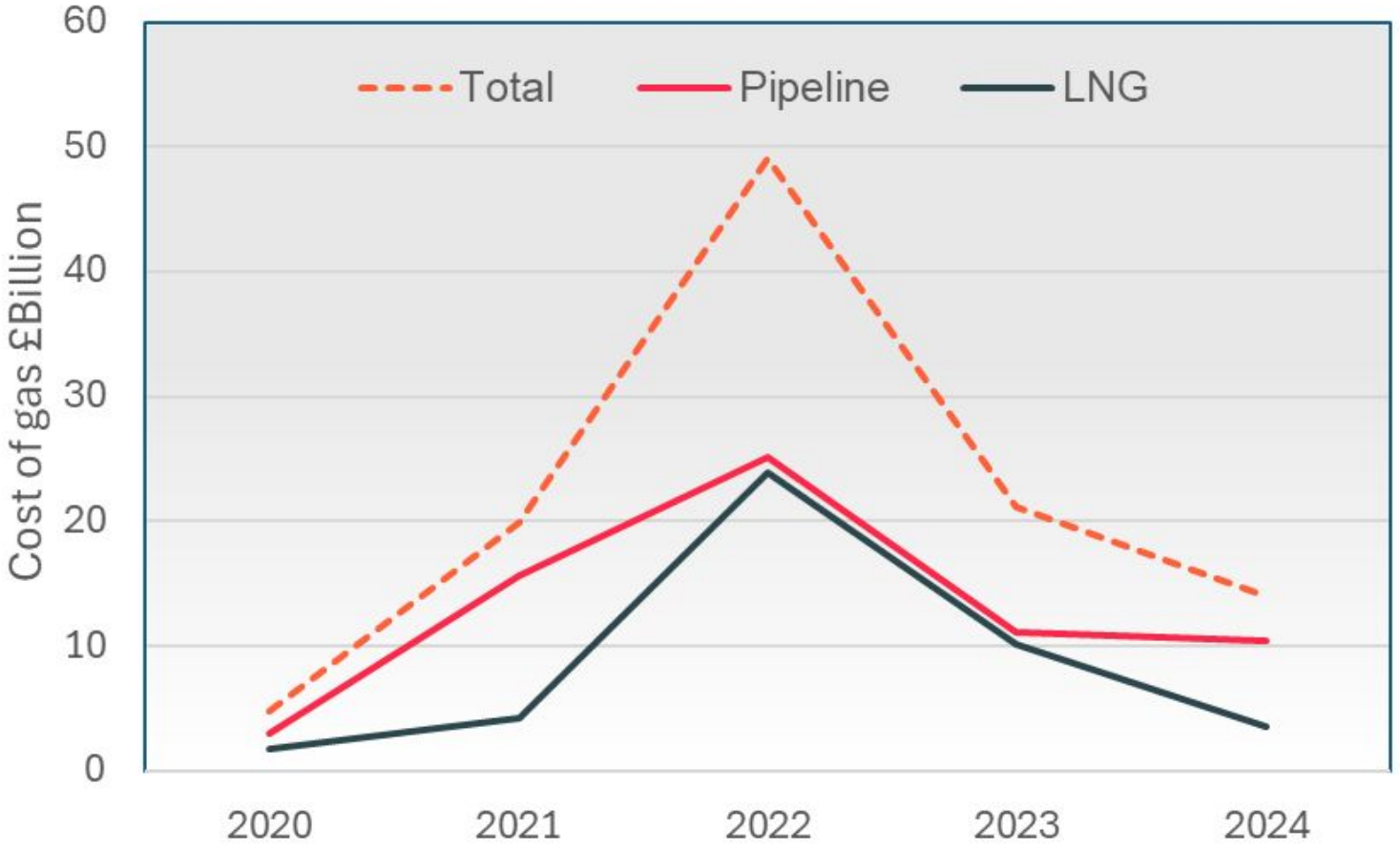
Source: NSTA 2024 Emissions intensity of producing natural gas

Net gas production in the Ormen Lange Gasfield [bill Sm^3]



Source: Norwegian offshore directorate

UK gas import spend



Source: ONS commodity imports data

"LNG and interconnector imports to play an increasingly important role in meeting demand"

Source: UK Govt gas transition consultation document (Feb 2026)

Benchmarking and comparison

Global top 5 electricity and heat producers

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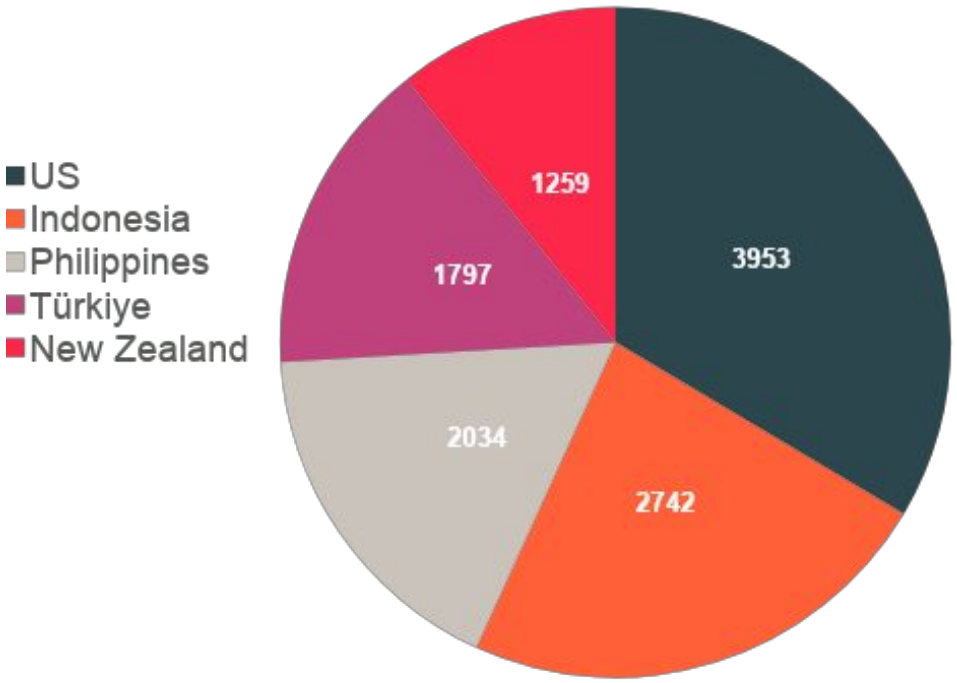
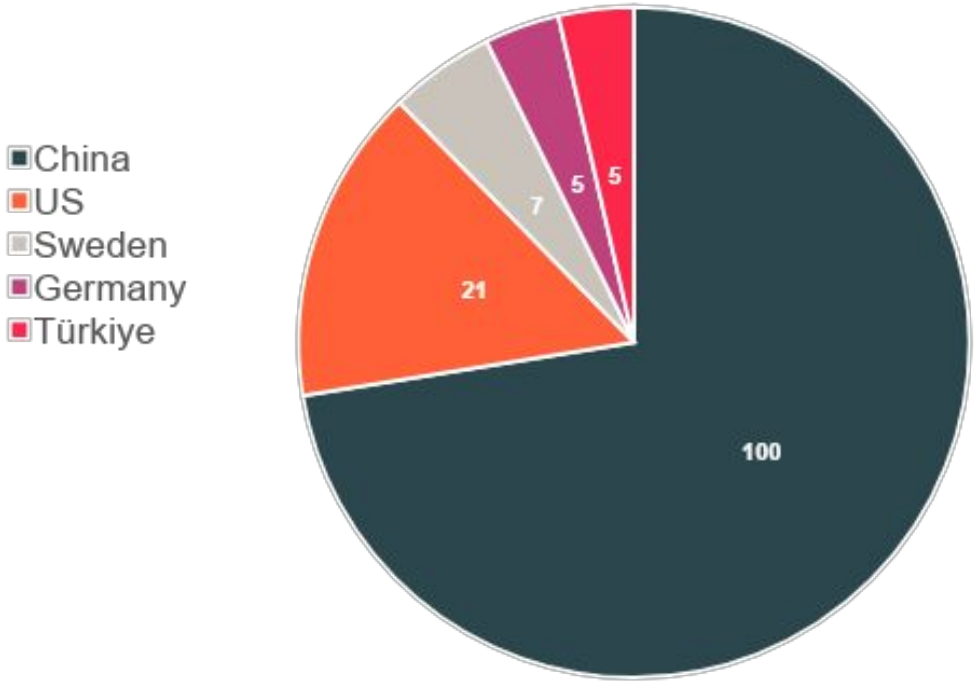
World geothermal potential of ~600TW less than 1% is currently developed

Top 5 producers of geothermal electricty (MW)



Source: Think Geoenergy

Top 5 producers of geothermal heat (GW)



Source: International Geothermal Association

Benchmarking

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Germany

- Incentive frameworks
- Municipal ownership models
- State-level strategies

France

- Decades of experience
- Risk mitigation schemes
- Simplified permitting

	Heat	Electricity	Risk Insurance	Roadmap
UK	~900 MW	3 MW	X	X
Germany	5381 MW	47 MW	✓	2022
France	2868 MW	17 GW	✓	2025
Netherlands	1830 MW	0 MW	✓	2018

Netherlands

- Green deal process

Success enablers

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Coordinated national strategies

- Government support
- National risk mitigation schemes

Supportive regulation

- Streamlined permitting
- Licensing aligned/ bespoke to geothermal needs

Consistent investment/ finance mechanisms

- Feed-in tariffs or heat incentives
- Public underwriting of drilling risk

District heating infrastructures

- High uptake correlates with established heat networks

Credit: GPC IP

Transposing to the UK

UK opportunities

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Existing subsurface skills & infrastructure

- Experienced oil and gas and mining workforce
- Legacy infrastructure
- Export opportunity

Industrial clusters and heat zones

- Align with industry needs (40-100°C)
- Geothermal as a place-based solution

Academic and R&D strength

- >20 universities
- Regional specialisms
- Leading by example

Credit: DESNZ

UK challenges

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Policy and regulation

- Lack of specific policies and a need for streamlined regulation/ licensing

Market and finance

- Gaps in funding mechanisms and lack of investor confidence

Knowledge, education and skills

- Visibility of geothermal

Technology, research and innovation

- Lack of coordinated project pipeline

Infrastructure

- Lack of heat network density

Role of the NGC

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Training

- Job targets
- Information sharing
- Identifying training needs

Project support

- Geothermal surgeries
- Connecting the sector
- DESNZ Task Force

Roadmap

- Clear plan for accelerating geothermal
- Timescales and targets/ KPIs to monitor progress

A geothermal world…

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Impact on geopolitics

- **Less hierarchical** - without domination from a small group of energy-rich states
- **More stability** – fewer conflicts over energy resources
- **More localise** – geothermal cannot be shipped or weaponised
- **Technology driven** – innovation and engineering capacity drives success rather than geothermal luck

Credit: Geothermal Engineering Ltd.

Bridging the gap

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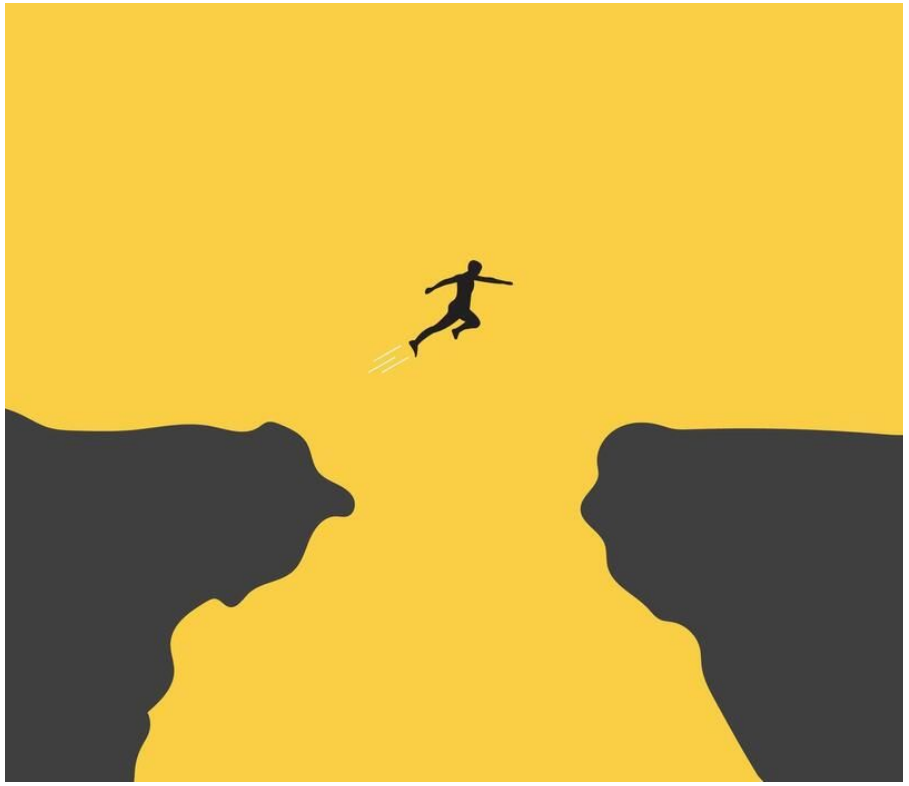
Conclusions

- Ample resource but the deployment environment requires change
- Geothermal success overseas has been policy-led and infrastructure-enabled
- Geothermal should form an essential component UK energy security and heat decarbonisation
- Close the gap by adopting a geothermal strategy and development plan
- Strategic action



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Thank You

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