



ASX Announcement

19 September 2024

Earths Energy Initiates Study of Geothermally Powered Data Centres in Queensland

Earths Energy Limited (ASX: **EE1**) (**Earths Energy** or **Company**) advises it has commenced an internal scoping study (**Study**) to explore the potential development of geothermally powered data centres at the Company's strategically located Queensland project. This initiative aligns with the Company's strategy to leverage innovative commercialisation opportunities for its geothermal projects.

HIGHLIGHTS

- The Company has commenced a Study of its Queensland projects suitability for the development of geothermally powered data centres
 - *Earths Energy's Queensland tenure near Brisbane and Gold Coast enhances the commercial attractiveness for data centre operations*
- Geothermal powered data centres are currently being developed by Google, Microsoft and Meta
- Incorporating geothermal power into data centres may include:
 - *Centres powered directly (and primarily) from geothermal electricity production*
 - *Direct use geothermal applications to supplement a data centre's reliance on an electricity grid*
- Geothermal cooling through vapour absorption chillers¹ may potentially offer significant cost reductions and environmental benefits to data centre cooling
 - *Data centre power is estimated to represent 20% to 38% of a data centre's operational expense²*
 - *Direct use geothermal can lower carbon emissions, reduce reliance on external electricity sources, and improve overall feasibility*
- The Company has identified areas of interest within its Queensland project and will develop and trial its own multi factor model for assessing the feasibility of geothermal powered data centre development
- Industry experts in both geothermal development and data centre development will assist the Company in the Study

¹ Energy Conversion and Management, Volume 174, 15 October 2018, Pages 886-896

² Arcserve, 31 October 2013, "Data Centers -- What are the Costs of Ownership?"

Josh Puckridge, Earths Energy CEO, commented:

“Incorporating geothermal energy sources into data centre designs and operations has become popular with global leaders like Google, Microsoft and Meta who are each developing large scale new data centres incorporating geothermal energy.

Geothermal power sources offer the potential for reliable 24/7 baseload power to data centres regardless of the status of the local grid. This power independence provided by geothermal resources is an important aspect of data centres achieving data sovereignty, a significant strategic priority in developing modern data centres.

The data centre market itself has also never been more buoyant – evident by Blackstone's \$24 billion purchase of Airtrunk and NextDC's \$750 million raising to continue expansion plans throughout Asia.”

EE1 COMMENCES DATA CENTRE STUDY TO LEVERAGE QUEENSLAND

Earths Energy is embarking on a scoping study to assess the viability of constructing geothermally powered data centres at its strategically located Queensland projects. This study aims to capitalise on the unique geothermal resources available at these sites, combined with proximity to major population centres, to support the growing demand for sustainable and cost-effective data centre infrastructure.

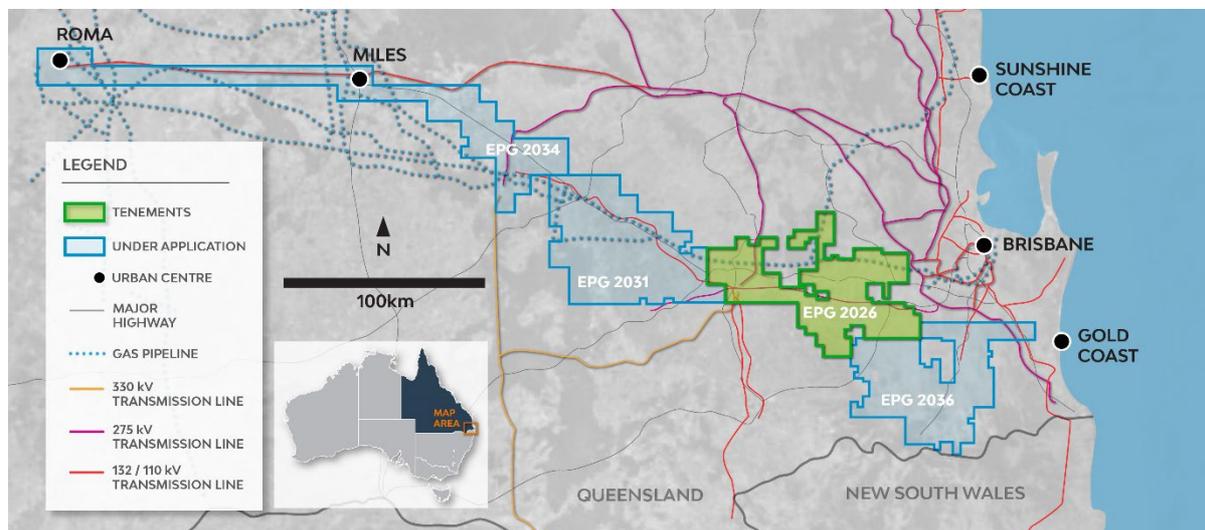


Figure 1: EE1's Queensland footprint

The data centre industry is experiencing rapid growth, driven by increasing global data demands and the proliferation of digital services. However, traditional data centres face significant challenges, particularly in managing operational expenses associated with cooling systems, which account for a substantial portion of energy consumption.

Leading global IT companies Google³, Microsoft⁴ and Meta⁵ are developing new data centres that incorporate geothermal energy, leveraging the benefits of geothermal energy including being a renewable energy source that can provide 24/7 baseload power.

The Company believes that its geothermal wells in Queensland could provide a compelling opportunity to address these challenges by leveraging direct geothermal energy to cool data centres efficiently. Unlike conventional cooling methods that rely on electricity, geothermal cooling uses the Earth's stable temperatures to maintain ideal conditions for servers, reducing both energy consumption and costs.

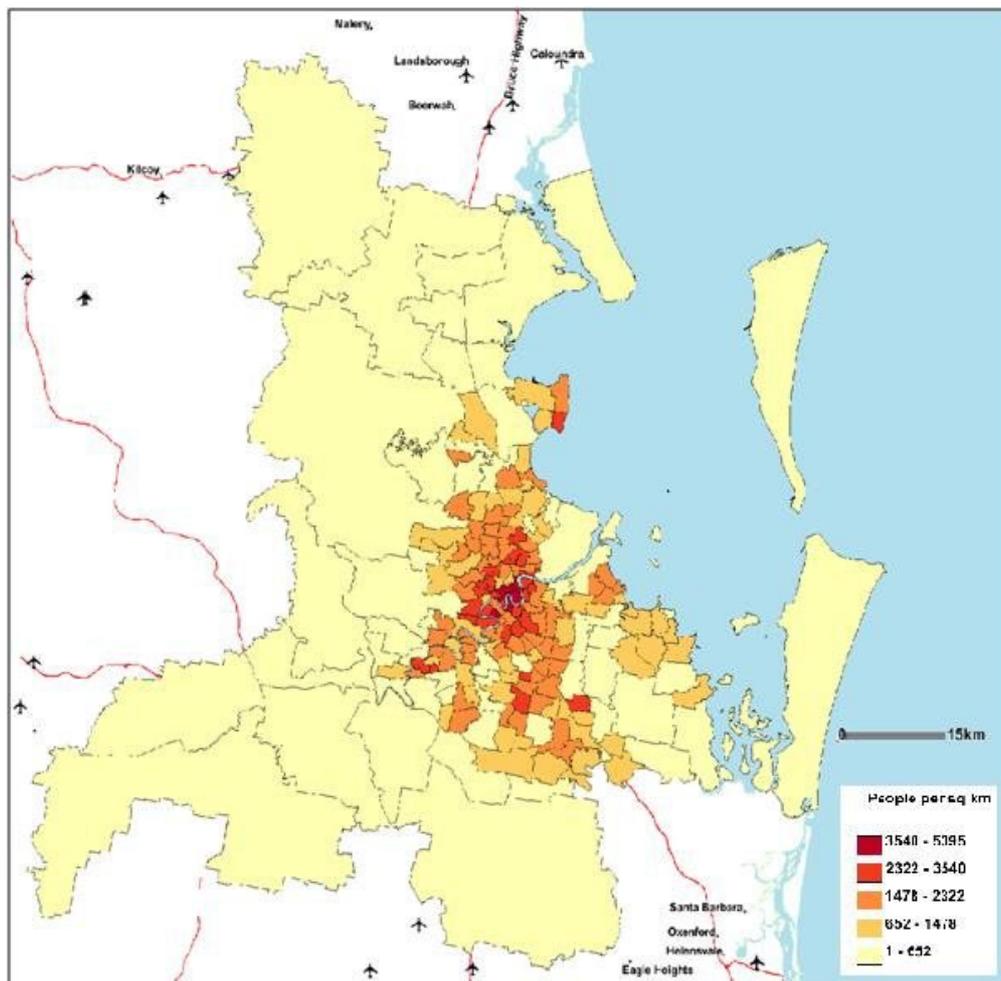


Figure 2: Queensland population density

³ <https://www.thinkgeoenergy.com/fervo-and-google-geothermal-power-facility-starts-grid-supply/>

⁴ <https://www.thinkgeoenergy.com/microsoft-g42-to-invest-on-geothermal-powered-data-centre-in-kenya/>

⁵ <https://about.fb.com/news/2024/08/new-geothermal-energy-project-to-support-our-data-centers/>

Potential Benefits of Geothermal Cooling

The benefits of incorporating geothermal power in data centres could provide several strategic advantages, including:

- **Reduced Operational Costs:** Direct geothermal cooling minimises the need for energy-intensive refrigeration systems, significantly lowering electricity usage and associated costs.
- **Enhanced Sustainability:** This approach aligns with the Company's commitment to reducing carbon emissions and promoting sustainable energy solutions by decreasing reliance on fossil fuels.
- **Improved Reliability and Resilience:** Geothermal systems offer a stable, continuous cooling source, enhancing data centre reliability even during peak demand periods or external power disruptions.

Study Objectives and Strategic Deliverables

The study aims include:

- Evaluate the geological suitability and technical requirements for implementing geothermal cooling at targeted sites.
- Analyse potential cost savings and return on investment compared to conventional cooling methods.
- Quantify potential reduction in carbon emissions.
- Establish potential data sovereignty advantages at specific sites.

Deliverables will include a comprehensive report detailing the viability, benefits, and strategic value of integrating geothermal cooling into data centre operations.

Exploring Partnerships and Joint Ventures

Earths Energy is actively exploring early-stage discussions with potential partners, including data centre operators and key stakeholders in the cooling technology supply chain. The Company aims to identify collaboration opportunities, joint ventures, or strategic alliances that could accelerate the commercial deployment of geothermal cooling solutions.

The Company believes this initiative has the potential to set a new standard for sustainable data centre development in Australia and beyond.

Josh Puckridge
Chief Executive Officer
Earths Energy Limited

Authorised for release by Earths Energy Ltd Board of Directors.

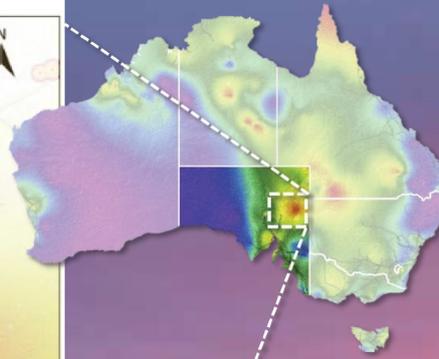
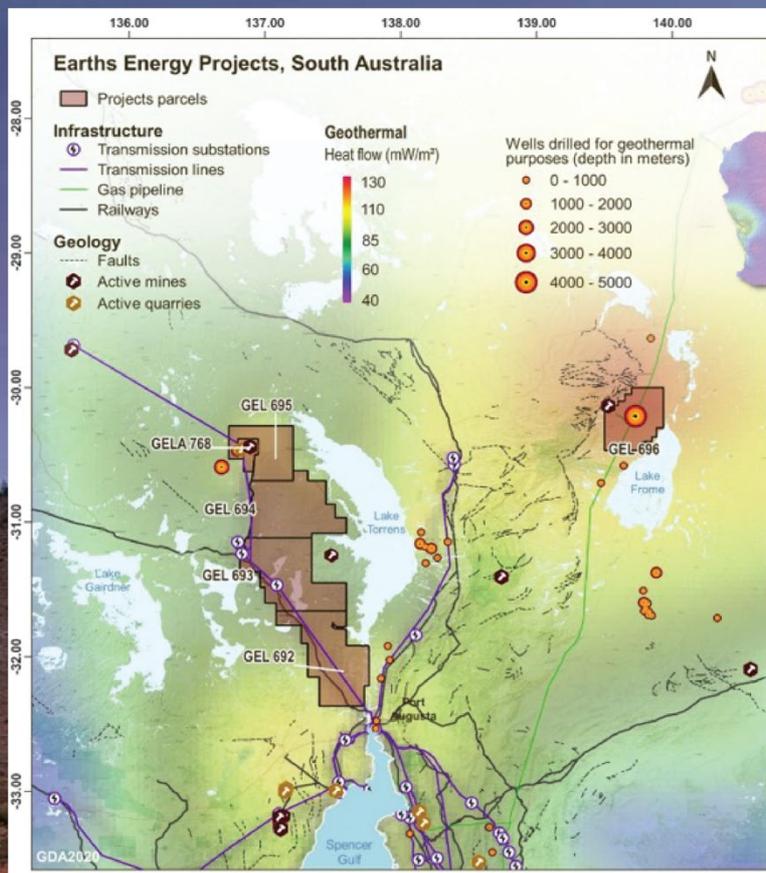
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About Geothermal

Geothermal Projects provide green baseload power to electricity grids around the world. The USA produces 17.2 TWh of geothermal power per annum, equivalent to Western Australia's entire annual electricity demand.

The USA, Indonesia and Philippines combined produce enough geothermal power to meet over 17% of Australia's annual electricity demand.

About Earths Energy (ASX: EE1)

Australia's Most Advanced Geothermal Explorer and Developer

Committed to the production of green baseload power in Australia

EE1 holds 84% of the Paralana and Flinders West geothermal projects located in South Australia, which stand as Australia's most advanced geothermal projects and have outstanding development potential.

EE1 also holds an 84% interest in geothermal projects located in Queensland.

EE1's landholdings comprise prospective geothermal exploration licences, surrounded by key existing infrastructure including powerlines and power substations.

The Company is focused on assessing the feasibility of commercial scale geothermal power generation capacity at multiple sites, including the suitability of its projects for carbon capture.

Shares on Issue

Total Shares on Issue	750.3m
Escrowed until 7 Feb 2026	220.4m
Escrowed until 7 Feb 2025	73.8m
Tradeable Shares	456.1m

Top 5 shareholders

- Mimo Strategies** 10.6% (fully escrowed until Feb 2026)
- Stephen Biggins** 9.4% (fully escrowed until Feb 2026)
- Grant Davey** 7.2% (partially escrowed until Feb 2025)
- Jadematt Investments** 5.9% (fully escrowed until Feb 2026)
- Sunset Capital** 5.8%

For more information see

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