earths energy

ASX Announcement

6 November 2024

Red Flag Assessment Confirms Paralana's Geothermal Attractiveness

Earths Energy Limited (ASX: **EE1**) (**Earths Energy** or **Company**) is pleased to announce initial results from the first phase of its Techno-Economic Feasibility Study (**TEFS**) over its Paralana and Flinders West projects in South Australia. GLJ Ltd (**GLJ**), a recognised global energy leader in geothermal project evaluation and assurance, is undertaking the TEFS.

HIGHLIGHTS

- **The TEFS on Paralana and Flinders West, as announced previously[1], has completed its Red Flag assessment**
    - **Paralana and Flinders West have had $40 million spent to date on fieldwork and studies making them the most advanced geothermal projects in Australia**

- **The initial phase of the TEFS has independently confirmed the suitability of Paralana as an open loop Enhanced Geothermal System (EGS) target**
    - **EGS is currently being tested commercially at scale in the USA**

- **The remaining TEFS work has been scoped to focus on the EGS development of Paralana which presents itself as the nearest term development option for the Company**
    - **TEFS on track for completion late December 2024**

Josh Puckridge, Earths Energy CEO, commented:

"GLJ's preliminary findings affirm our belief in Paralana's potential as an Enhanced Geothermal System project. Independently validating Paralana's permeability and stress conditions for EGS development is both significant and valuable.

"Momentum around EGS is building, spurred by pioneering successes in the USA, where projects in Nevada and Utah are setting the stage. Paralana stands alongside these leading efforts, and our collaboration with GLJ will showcase this further.

"Earths Energy is dedicated to rapidly advancing Paralana as a world-class EGS project, backed by GLJ's expertise and our skilled team."

[1] See ASX announcement 5 September 2024

INITIAL PHASE OF TEFS HAS CONFIRMED PARALANA AS THE PRIORITY EGS TARGET

The Company's South Australian projects, Paralana and Flinders West, are Australia's most advanced geothermal projects, with more than $40m spent to date on fieldwork and studies by previous project owners.

GLJ's work has confirmed that the Paralana Project, drilled to 3,685 metres with a bottom hole temperature of 171°C, has favourable characteristics for an EGS development. The TEFS has highlighted favourable permeability at Paralana, where zones of existing fractures have been interpreted from borehole image data and micro seismic monitoring during stimulation below the 150°C isotherm depth in the Paralana-2 well. In-situ stress fields with a principal horizontal stress approximately in the E-W direction were observed above the target depths, which appear to provide a favourable horizontal well drilling stress environment for EGS implementation.

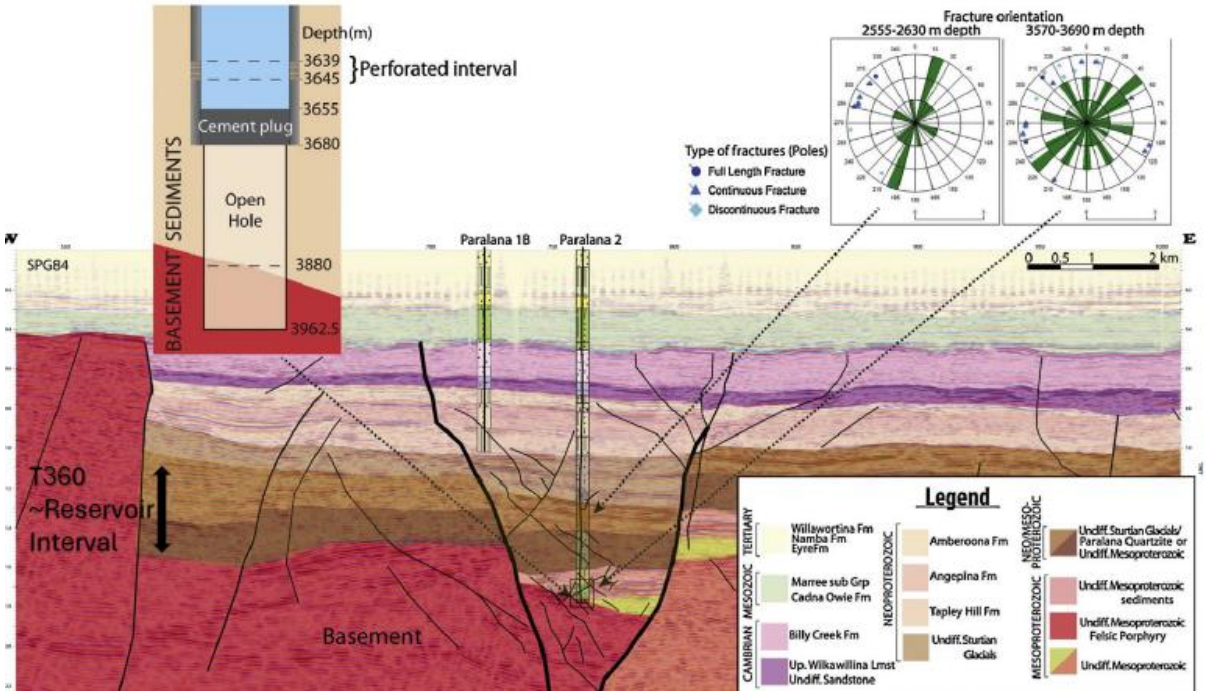


Figure 1: Paralana wells and fracture orientation

The TEFS has also shown that the Flinders West licenses require additional subsurface evaluation and potentially exploration drilling to further derisk the geothermal potential for EGS.

As such, development of Paralana will be prioritised, while the Company will look at options to firm up the subsurface data available for Flinders West, including collaboration with other groups in the area.

EGS IS CURRENTLY BEING COMMERCIALISED AT SCALE IN THE US

Enhanced geothermal systems introduce water to the hot and dry reservoir. The cool water (or other geo-fluid such as CO_2) is injected down through the injection well where it interacts with the hot dry reservoir and builds pressure. As the pressure and heat of the fluids increase, they are channelled through the production well and brought to the surface. At the surface, the steam expands to power a turbine to generate electricity and as the steam cools the newly cooled water is re-injected back into the injection well to repeat the cycle.

Horizontal drilling increases heat and pressure build up in the reservoir by increasing the surface area of the geo-fluids interacting with the hot dry reservoir, meaning that projects such as those held by Earths Energy have the potential to be greatly improved using modern methods like horizontal drilling.

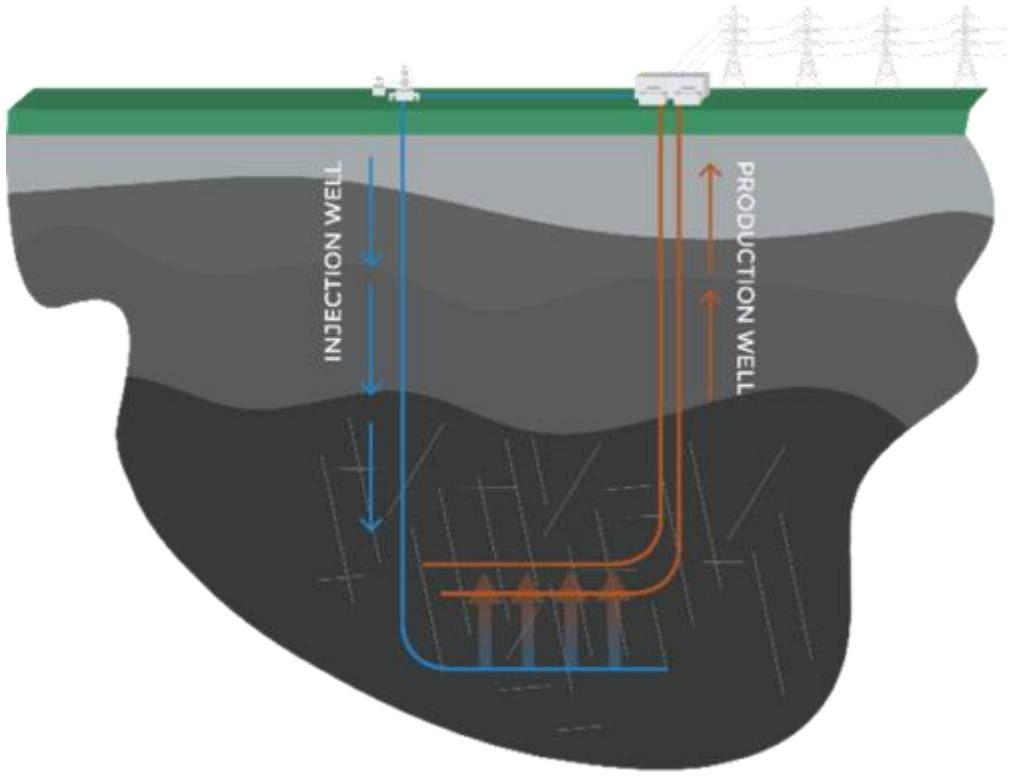


Figure 2: Enhanced Geothermal System (EGS) schematic[2]

A utility scale EGS development is currently underway in the US, with the >400MW Cape Station project currently under development by Fervo Energy[3].

[2] https://acee.princeton.edu/acee-news/flexible-geothermal-power-approach-combines-clean-energy-with-a-built-in-battery/
[3] https://fervoenergy.com/fervo-energy-breaks-ground-on-the-worlds-largest-next-gen-geothermal-project/

ECONOMIC EVALUATION

The TEFS work is now moving on to development of reservoir simulations, cost estimation for well design and surface facilities, and economic modelling, and is on track to be finalised by late December 2024.

The benefit of the work completed under the TEFS include the further de-risking of the Paralana Project and a clear commercialisation pathway to generate shareholder value and make clear the Project's position on the development curve (see Figure 3 below).

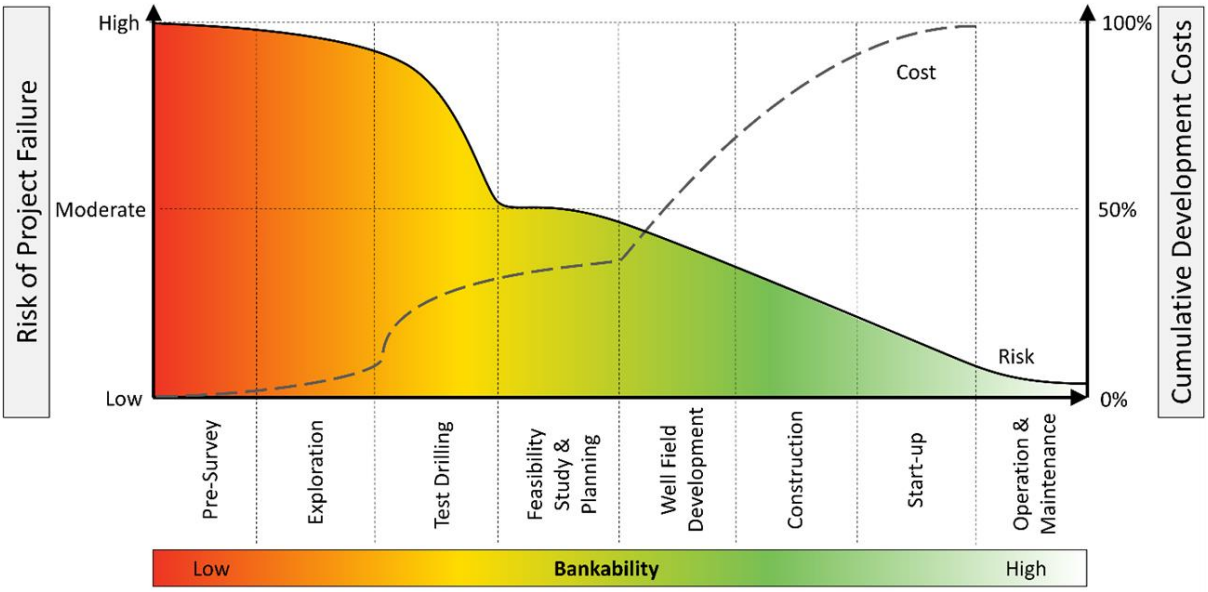


Figure 3: Geothermal project development curve

Earths Energy is confident that the comprehensive analysis will provide a strong foundation for advancing the development of its South Australian projects and unlocking their full potential for sustainable energy production and carbon capture.

Josh Puckridge
Chief Executive Officer
Earths Energy Limited
Authorised for release by Earths Energy Ltd Board of Directors.

For more information contact:

JOSH PUCKRIDGE

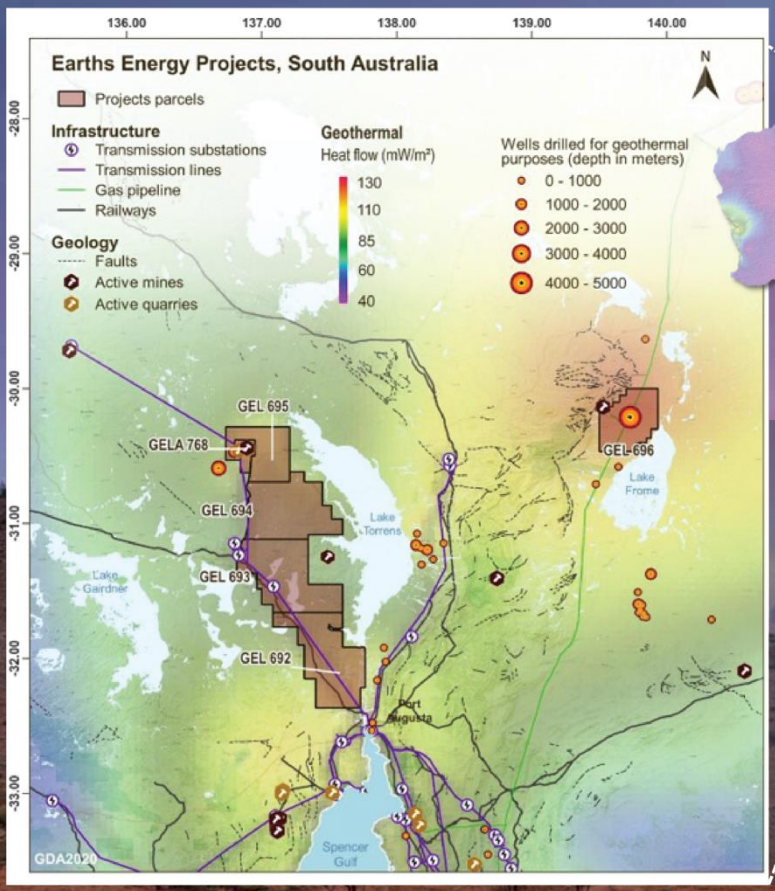
Chief Executive Officer
jrp@ee1.com.au

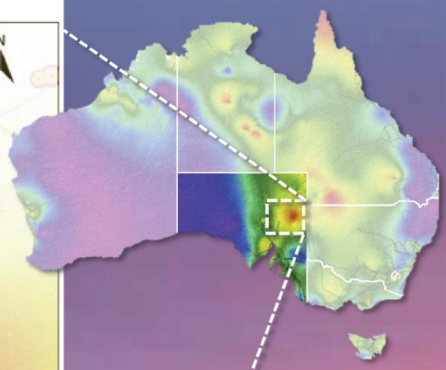
+61 (8) 9200 3425

MARTIN STULPNER

Business Development
mstulpner@ee1.com.au

+61 (8) 9200 3425





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

Company Website
www.ee1.com.au
LinkedIn
www.linkedin.com/company/earths-energy/
Phone
+ 61 (8) 9200 3425

Contact

Josh Puckridge, Chief Executive Officer
jrp@ee1.com.au
Martin Stulpner, Corporate Development
mstulpner@ee1.com.au