



Earths Energy and Baker Hughes to collaborate on geothermal technology

Delivering clean geothermal energy:
Renewable, continuous, flexible,
abundant, now

Technology Agreement Presentation
March 2024

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ACKNOWLEDGEMENT OF COUNTRY

Earths Energy acknowledges the traditional custodians throughout Australia and their continuing connection to the land, waters and community. We pay our respects to all members of the Aboriginal communities and their cultures; and to Elders both past and present.

Technology Partner – A Major Milestone Achieved

Strategic relationship with Baker Hughes announced

- Earths Energy is pleased to announce a strategic relationship with Baker Hughes through a MoU
- Baker Hughes is renowned for its innovative energy technology solutions across 120 countries
- This collaboration is further strengthened by Baker Hughes' 2022 investment in GreenFire Energy, a global leader in Advanced Geothermal Systems (AGS)
- Under the MoU, EE1 and Baker Hughes will collaborate to assess the application of AGS technology on EE1's prospective Australian geothermal exploration portfolio
- Technology is key to unlocking vast untapped geothermal potential, a renewable energy source that provides 24/7 baseload power
- EE1 is planning to explore, develop, and commercialise its strategically located Australian geothermal projects by leveraging the technology capabilities of Baker Hughes
- The parties will review the geothermal field evaluation work performed to date, along with well construction plans, and will progress subsurface and surface development planning and execution phases



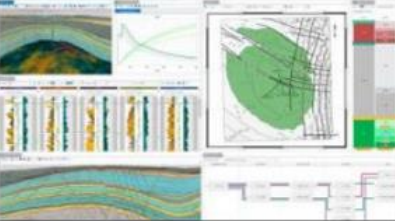





Managing Director Matt Kay commented: "We are very excited to be able to collaborate with Baker Hughes, a long-trusted world leader in energy technologies including geothermal. We are also highly impressed by the Advanced Geothermal Systems capability that Baker Hughes brings through its investment in GreenFire Energy. GreenFire Energy is the global leader in Advanced Geothermal Systems, having completed proven projects and now with activities underway in more than 10 countries. This collaboration provides the opportunity to catapult EE1 and the geothermal industry in Australia"

Graham Gillies, Vice President of Baker Hughes – Asia Pacific commented: "Baker Hughes has operations in over 120 countries, our innovative technologies, including Advanced Geothermal Systems, are taking energy forward – making it safer, cleaner, and more efficient for people and the planet. We are excited by the opportunity to collaborate with the proven energy leaders at EE1 to advance Australia's progression to a Net Zero future."

Bringing Advanced Geothermal Systems to Australia

Baker Hughes brings extensive industry capability

- Built on a century of experience and with over 58,000 employees, Baker Hughes innovative technologies and services are taking energy forward – making it safer, cleaner, and more efficient for people and the planet
- Baker Hughes has been involved in the geothermal industry for more than 40 years, adapting oil and gas technology to develop geothermal power

DESIGN AND SOFTWARE SERVICES		SUBSURFACE SYSTEMS		SURFACE SYSTEMS	
					
RESERVOIR MODELING	WELL CONSTRUCTION	EVALUATION & MONITORING	COMPLETION & PRODUCTION	EQUIPMENT	PLANT ENGINEERING & MONITORING
JewelSuite™ subsurface modeling JewelSuite geomechanics JewelSuite reservoir modeling Connection to simulation engines	Drill bits Drilling services Drilling & completion fluids Cementing	Wireline services Coring Wellbore monitoring Integrated reservoir characterization	Completions & well intervention Hydraulic fracturing/stimulation Artificial lift Specialty chemicals	Surface trees Wellhead systems Flow control Field service	Steam turbines Turboexpander generator Digital solutions Artificial intelligence application Microseismic and fiber-optic monitoring

Baker Hughes technology portfolio¹

Earths Energy and Baker Hughes collaboration

Next Steps

- Joint Steering Committee to govern the relationship and drive towards execution phase and binding agreements over the next 2 years
- Governance arrangements in place to ensure both EE1 and Baker Hughes' commit the time and resources required to progress opportunity assessment

Next Steps – De-risk Project

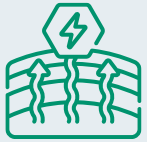
1. The parties will review the geothermal field evaluation work performed to date
2. Review well construction plans to identify potential risks, opportunities and areas for further assessment and improvement
3. The Committee will review field development, and well design plans, supply of services and technology for subsurface evaluation, drilling, well completion, steam production, steam gathering and power generation, for both planning and execution phases.



Earths Energy

- a unique geothermal portfolio in Australia

Earths Energy has secured a substantial geothermal tenement footprint near potential customers in South Australia and Queensland



Why Geothermal?

- **24/7 renewable energy production:** Differentiated from other renewables
- **Proven Base Load Power:** 16.3GWe installed capacity in over 30 countries¹
- **Advantages over other Renewables:** Flexible, not weather dependent, small land footprint, abundant, scalability, low ongoing capex and carbon intensity, modular
- **Advanced Geothermal Systems:** Significant recent technology advancements (Advanced Closed Loop Technologies) to enable access to a greater resource in more locations
- **Regulatory and Capital Support:** from Governments and major international investors for a rapid energy transition

EE1 positioned to succeed in the renewable energy industry



- **Early mover in Australia:** Assembled prospective and advanced geothermal opportunities across both Queensland and South Australia
- **Leading Technology Partner:** Collaboration with Baker Hughes and GreenFire Energy, a global leader in Advanced Geothermal Systems (ASG)
- **Existing infrastructure:** Portfolio of assets is near existing infrastructure and customers for early commercialisation
- **Proven team:** Established a high calibre team of energy industry leaders



“...the amount of heat within 10 km of the Earth's surface...estimated to contain **50,000 times more energy than all oil and gas resources worldwide**”
International Renewable Energy Agency²

“... we think global **geothermal capacity has the potential to exceed 1,000 GW by 2050**, bigger than either global nuclear or hydro capacity today.”
Wood Mackenzie³

“...if geothermal goes global, we estimate that cumulative investment through 2050 could be **US\$1 trillion.. a technological breakthrough** that could catapult today's tiny, exclusively hot-spot energy source into a global industry may now be near at hand.”
Wood Mackenzie⁴

Corporate Snapshot

- a high calibre team of energy industry leaders

Board and Management



Matt Kay

Managing Director

A seasoned energy industry executive with +30 years of experience. Most recently Mr Kay was the Managing Director of Beach Energy, having quadrupled the size of the company over a 6-year period, to a circa A\$4 billion listed ASX company.



Grant Davey

Executive Chair

Entrepreneur with 30 years in mining and energy project leadership, Chairman of Frontier Energy (ASX:FHE), Director of Lotus Resources (ASX:LOT), and is a member of the Australian Institute of Company Directors.



David Wheeler

Non-Executive Director

Over 30 years of experience in executive management and advisory, working with Pathways Corporate for family offices and ASX-listed companies. Mr Wheeler has international project experience in major regions and is a Fellow of the Australian Institute of Company Directors, holding multiple directorships.



Chris Bath

Finance Director

A Chartered Accountant with over 20 years of senior management experience in energy and resources, including financial reporting, commercial management, project acquisition, and ASX compliance. Mr Bath is Executive Director and Company Secretary of Frontier Energy Limited (ASX:FHE) and Company Secretary of Copper Strike Limited (ASX:CSE)

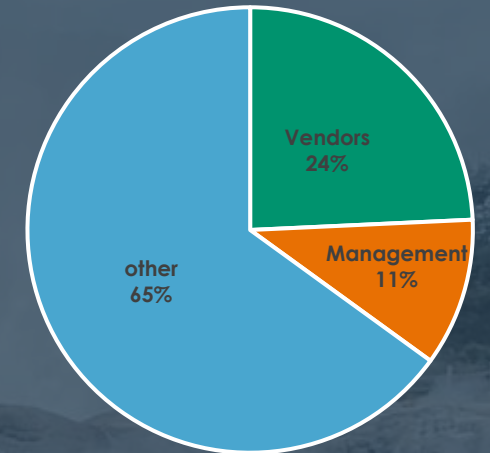


Dr Lawrence 'Trey' Meckel

Head of Subsurface

A geologist with over 30 years in global energy, specialising in decarbonization, petroleum E&P, and R&D. Dr Meckel has been a Subject Matter Expert for Strike Energy, Storage Program Manager at CO2CRC, and Vice President at Pluspetrol, a leading energy company in Latin America. Dr Meckel is Secretary of the Australian Geothermal Association

Capital Structure



Shareholders

750.3m

Shares on issue

\$12.0m

Market Cap at \$0.016ps

116.5m¹

Options

~\$6m

Cash at Dec 2023

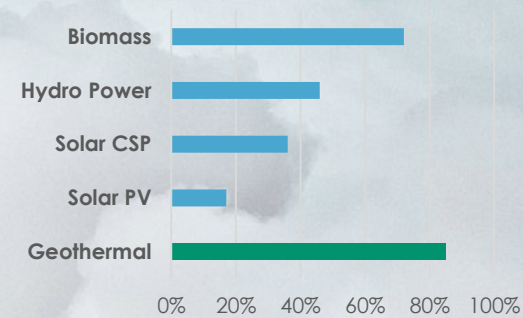
Geothermal

- a structurally advantaged source of renewable energy

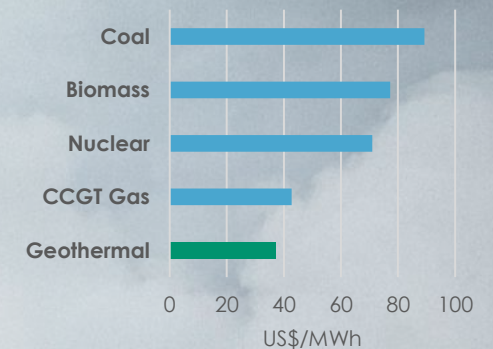
Structural advantages - high capacity factor and low cost

- 24/7 renewable energy production
- Geothermal has the highest capacity factor of renewables
 - *Geothermal capacity factor is > 80%, compared to < 50% for other key renewable energy sources such as wind and solar¹*
- Geothermal is the lowest cost dispatchable source of power in the USA
 - *Lowest levelized cost of electricity (LCOE) for dispatchable technologies in the USA at US\$37.3 per MWh²*

Capacity Factor – renewable¹

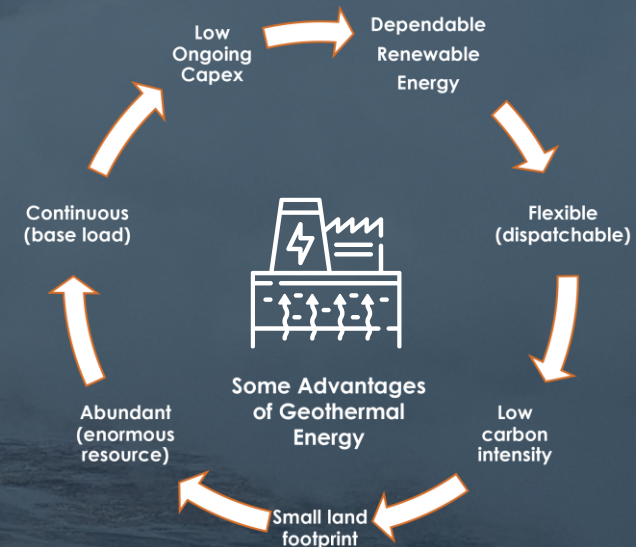


LCOE – dispatchable²



Advantages over alternative sources of Renewable Energy

- Small land footprint - Minimal land use
- Abundant (enormous resource) - Scalability
 - *“There’s enough heat flowing from inside the earth to meet total global energy demand twice over.” (MIT Technology Review)³*
- Low ongoing capex
- Modular
- Low Carbon Intensity



Geothermal growth

- steady, constrained to favourable locations

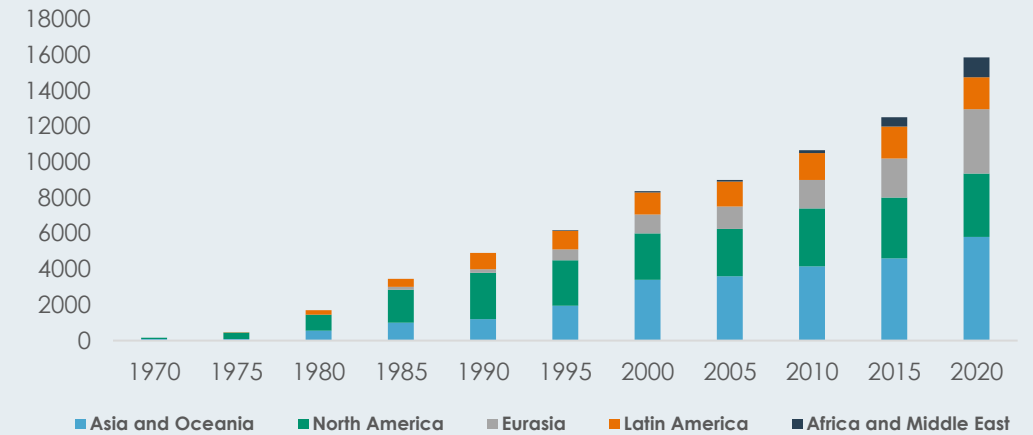
Geothermal energy is well established globally

- Geothermal energy has been produced for over 100 years and geothermal power plants have been installed in 30 countries
- As of January 2024, global geothermal power generation capacity stood at 16,335 MWe with 208 MWe capacity installed during 2023¹
- Over 400 plants worldwide, on average ~40MWe

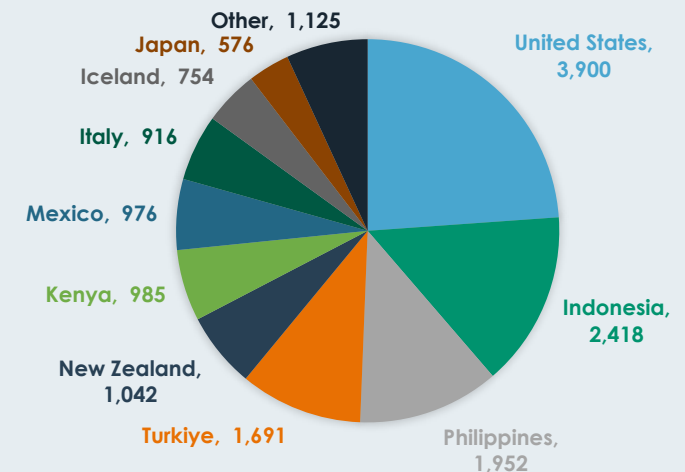
Has historically been constrained to specific environments

- Despite its huge potential, growth over the last decade of geothermal electricity generation has been steady rather than spectacular compared to other renewable sources of energy such as wind or solar.
- Historically the global industry focused on “hot rocks”, >200°C in tectonically and volcanically active areas, e.g. Pacific Ring of Fire
- Permeability of rocks has been key to enable transport of heat through the rocks to surface in fluid

Historical Geothermal Generation – Installed Capacity MWe¹



Top 10 Geothermal Countries – MWe Installed Capacity end-2023²



Advanced Geothermal Technologies

– key to unlocking the vast resource

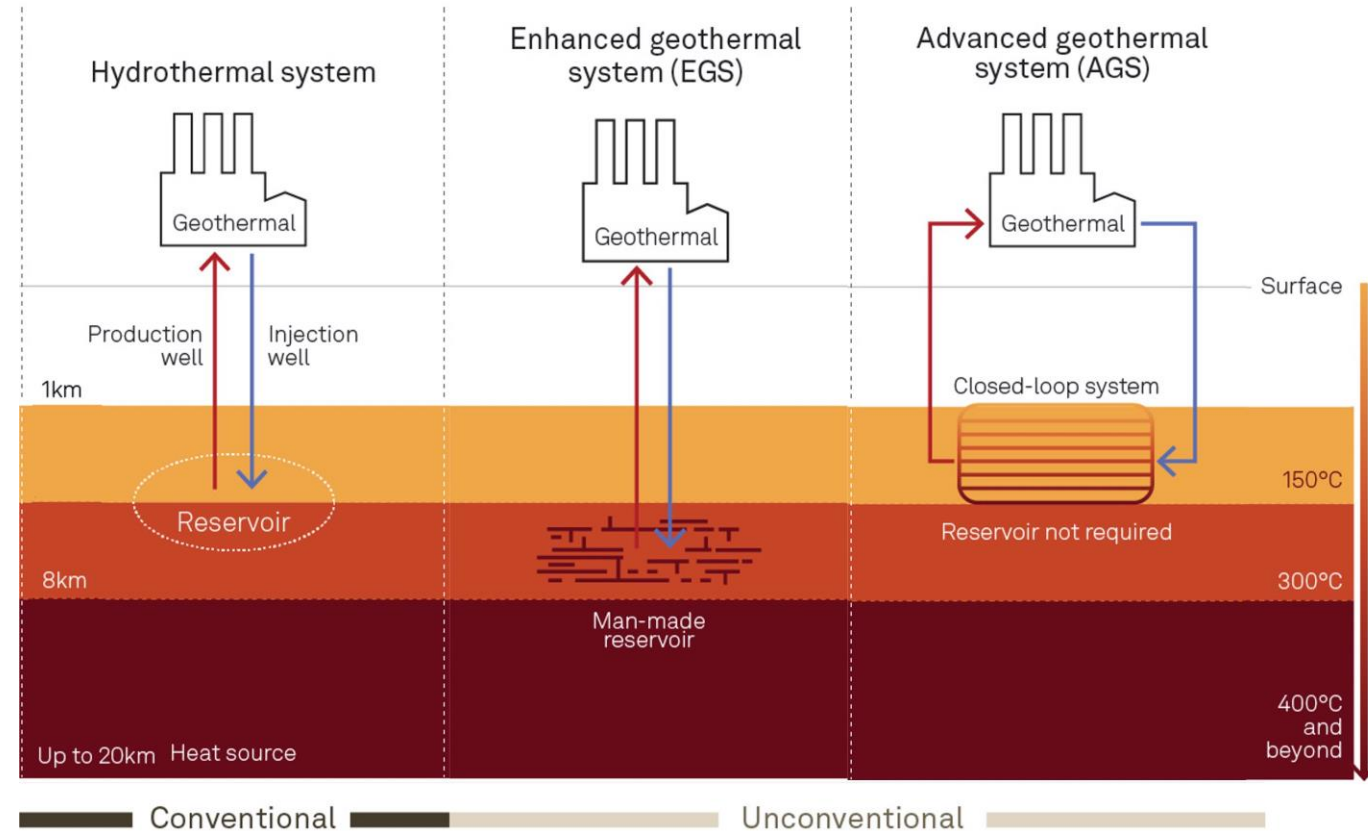
Binary cycle power plants and advanced closed loop technology

“The development of geothermal power has historically been confined to hydrothermal sites – shallower resources with high temperatures, naturally occurring water and sufficient rock permeability. However, these resources are highly constrained...

Next-generation geothermal technologies – like Enhanced Geothermal Systems (EGS) and Advanced Geothermal Systems (AGS) – aim to create conditions for geothermal energy in areas where natural exploitation was otherwise impossible. This has the potential to unlock geothermal energy for many countries.” BloombergNEF²

- Technological advancement, in the form of binary cycle power plants, have enabled use of geothermal fluids at lower temperatures (80°C - 180°C) and shallower depths
- In an Advanced Geothermal System, 100% of fluid flows in a closed cycle - *Does not require permeability of hot rocks, No fluid injection or emissions, Technology has been proven, is currently being scaled*

Next Generation Geothermal¹



Technology advancements

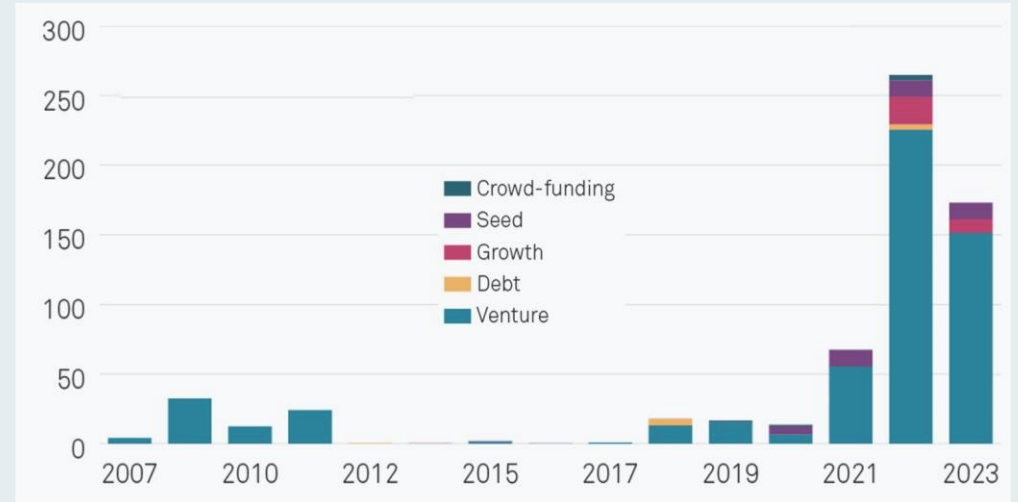
- driving increased drilling and investment

Investment is ramping up rapidly

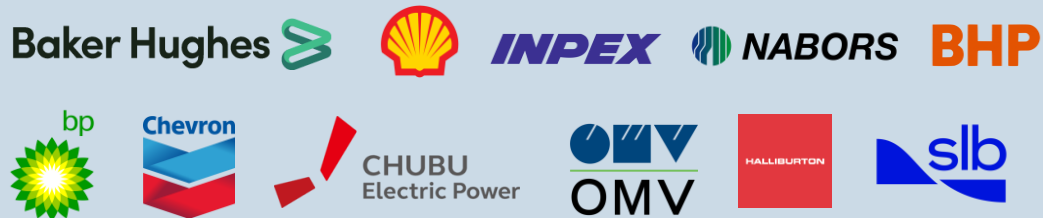
- Interest in next-generation geothermal technologies is driving record levels of geothermal drilling and R&D Investment.
- In the last 3 years, geothermal start-ups secured over half a billion US Dollars in early-stage funding
- Rystad Energy² has forecast that installed capacity for geothermal power generation will reach 32 gigawatt-electric (GWe) globally by 2030, nearly double the installed capacity today.
- They also estimate that the geothermal power industry is projected to record total investments for geothermal power projects of US\$6.4 billion in 2023 and is then expected to grow at a CAGR of approximately 10.2% until 2030, resulting in a market size of US\$14 billion.

Funding for next-gen geothermal has surged¹

Disclosed deal value for selected geothermal start-ups (US\$m)



Geothermal Potential is attracting Major Players



Investing in a number of exciting new technology providers



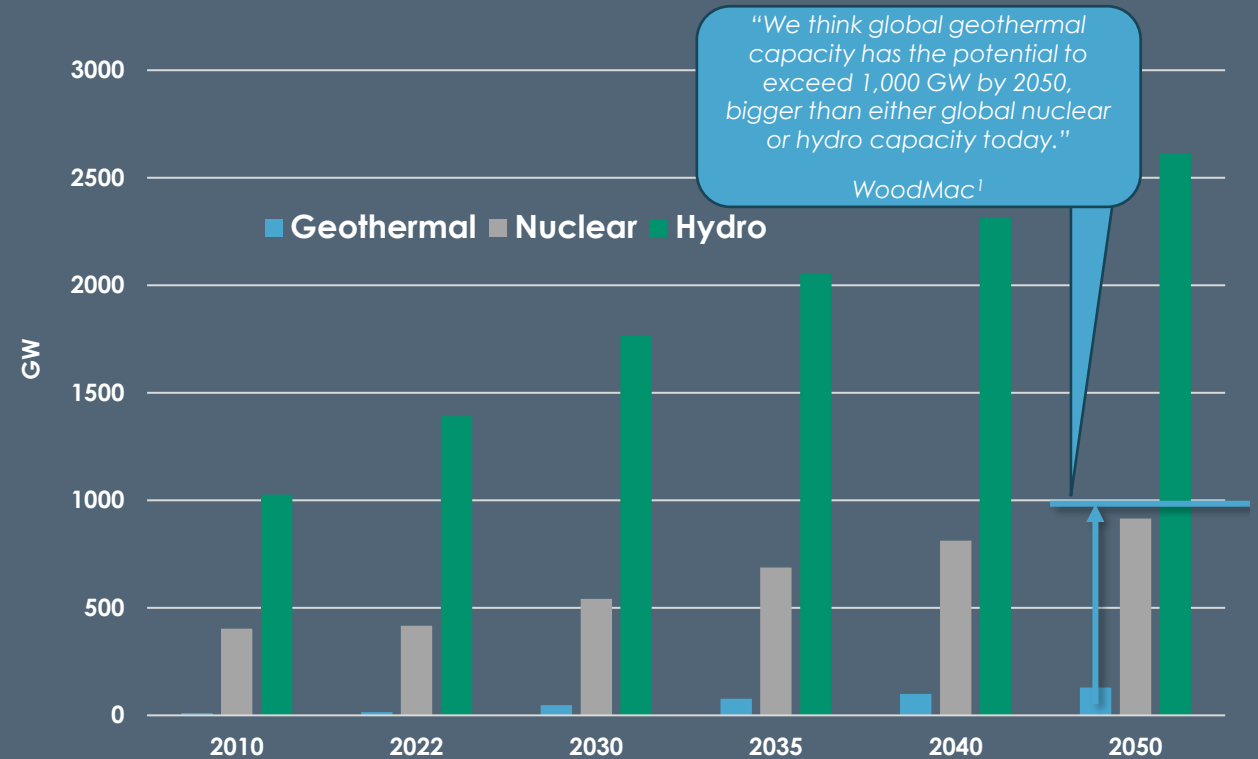
Potential impact of technology

– unlocking Australia and the World's vast Geothermal resource

The bulk of geothermal resources remain unexploited

- The International Energy Agency estimates that geothermal derived power generation will increase circa eight-fold between now and 2050²
- Unlocking the 'location restriction' by further technological advances has the potential to release a huge clean base-load geothermal resource.
 - *The International Renewable Energy Agency reported³ that the amount of heat within 10 km of the Earth's surface was estimated to contain 50,000 times more energy than all oil and gas resources worldwide.*
- Independent research firms such as Wood Mackenzie have written that this level of growth may only be the tip of the iceberg due to the impact of new technologies

Geothermal has potential to exceed 1,000 GW by 2050¹



"We think global geothermal capacity has the potential to exceed 1,000 GW by 2050, bigger than either global nuclear or hydro capacity today."
WoodMac¹

Columns in the chart show the latest International Energy Agency estimates for Power Generation by source in their Net Zero Scenario, 2000-2050²
The Arrow and Blue Line show the Wood Mackenzie potential 1,000 GW by 2050, shown as comparison

Geothermal

- This time it's different for Australia

Why are there no geothermal projects currently in Australia?

- **Not a supportive environment historically** - level of emissions was not a historical driver and fossil fuels were relatively low-cost i.e., coal
- **Not suitable for conventional technologies** - historic focus on remote “deep hot rocks” rather than “warm rocks” around infrastructure, negatives included;
 - (-) *Depth & High Cost: Deep hot rocks = 4,000 to 5,000m depth with temperatures >200°C*
 - (-) *Remote Drilling: Target resources were remote locations lacking infrastructure and far from customers*

Australia now has the building blocks in place for geothermal

- **Renewable target** of 82% renewable energy power by 2030
 - *in 2023 we were only at 35% ¹*
- **Geology is well understood** and generally supported by legacy oil and gas well and seismic data
- **Next-generation geothermal technologies** – aim to create conditions for geothermal energy in areas where natural exploitation was otherwise impossible, unlocking Australia's potential
 - *Binary cycle power plants can utilise lower temperature geothermal reservoirs*
 - *Closed loop technology can access non-permeable heat reservoirs*
- **Infrastructure in place**
 - *The East Coast has the world's longest interconnected power system (NEM), allowing direct access to market*
- **Financial assistance** is available from Federal and State governments to support energy transition
 - *Regional Communities Reliability Fund, National Clean Energy Fund, Commonwealth Capacity Mechanism, etc.*

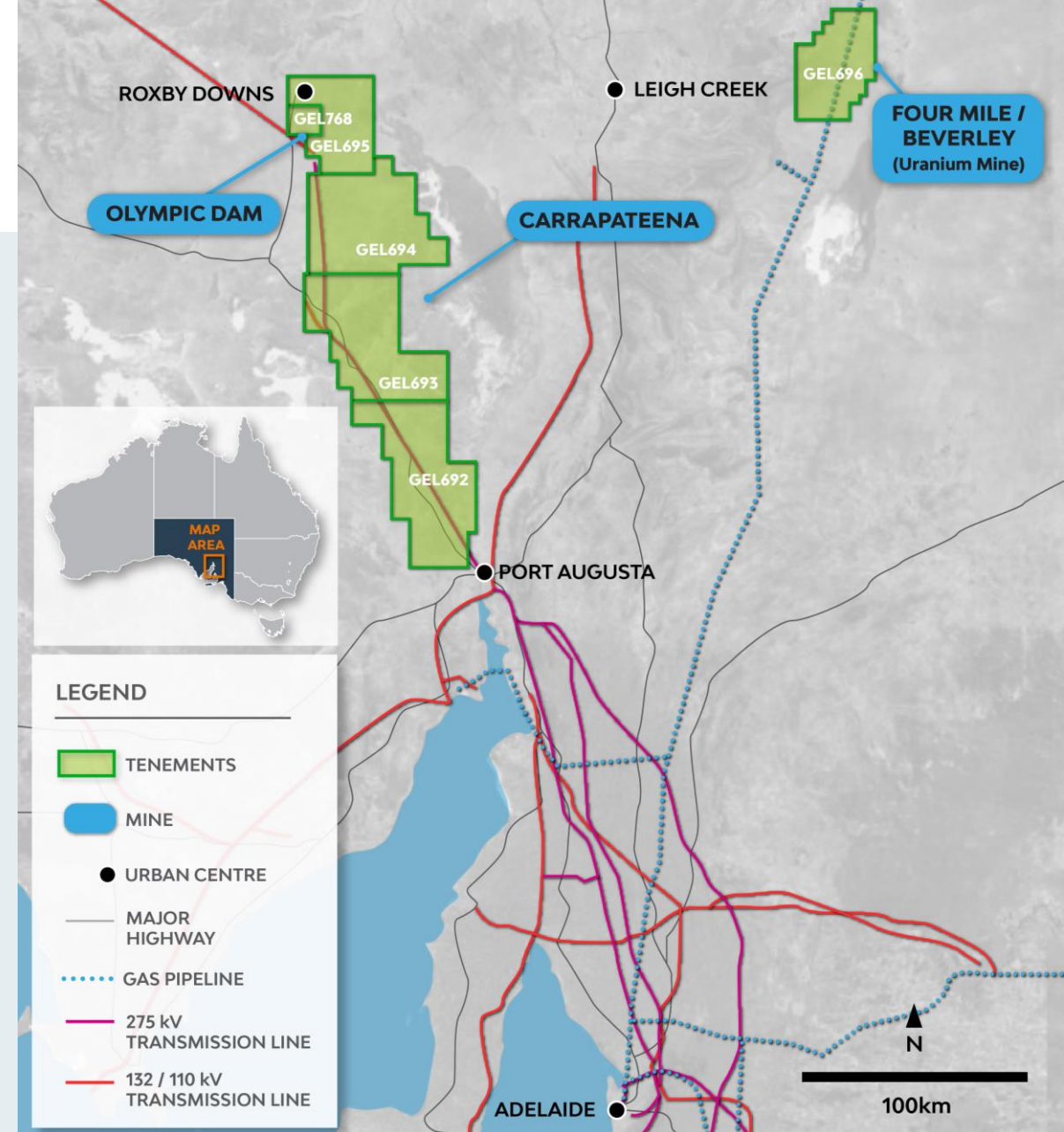
South Australia Portfolio: Close to Lines and Mines

The leading renewable energy transition State

- South Australia is the leading Australian state for renewable energy transition
- Earths Energy has secured blocks totalling 12,035 km²
- Located on trend with major transmission lines and mines including Olympic Dam, Carrapateena and Four Mile / Beverley

Significant geothermal resource potential

- Geothermal offset well data, available seismic and indicative, regional-scale geophysical mapping were applied by an Independent Technical Expert¹
- The Independent Technical Expert's indicative aggregate estimates of Electric Resource Potential for Earths Energy's granted South Australian acreage range from 9,700MW-e to 54,100MW-e^{2,3}



1 – these analyses have been performed by Dr. Arnout JW Everts who holds a PhD in Geology from VU University Amsterdam and has 33 years of industry experience – see Independent Technical Expert's Statement included in this presentation

2 - assuming a plant load-factor of 0.9 and a range (P90 to P10) 1.9 – 7.9MWe/km² (Megawatt electrical per square kilometer) for GELA696; assuming a plant load-factor of 0.9 and a range (P90 to P10) 1.1 – 6.9MWe/km² for GELA692/693/694/695/768

3 - The estimates of Electric Power-Resource Potential are strictly indicative and should not be construed to be compliant with UNFC

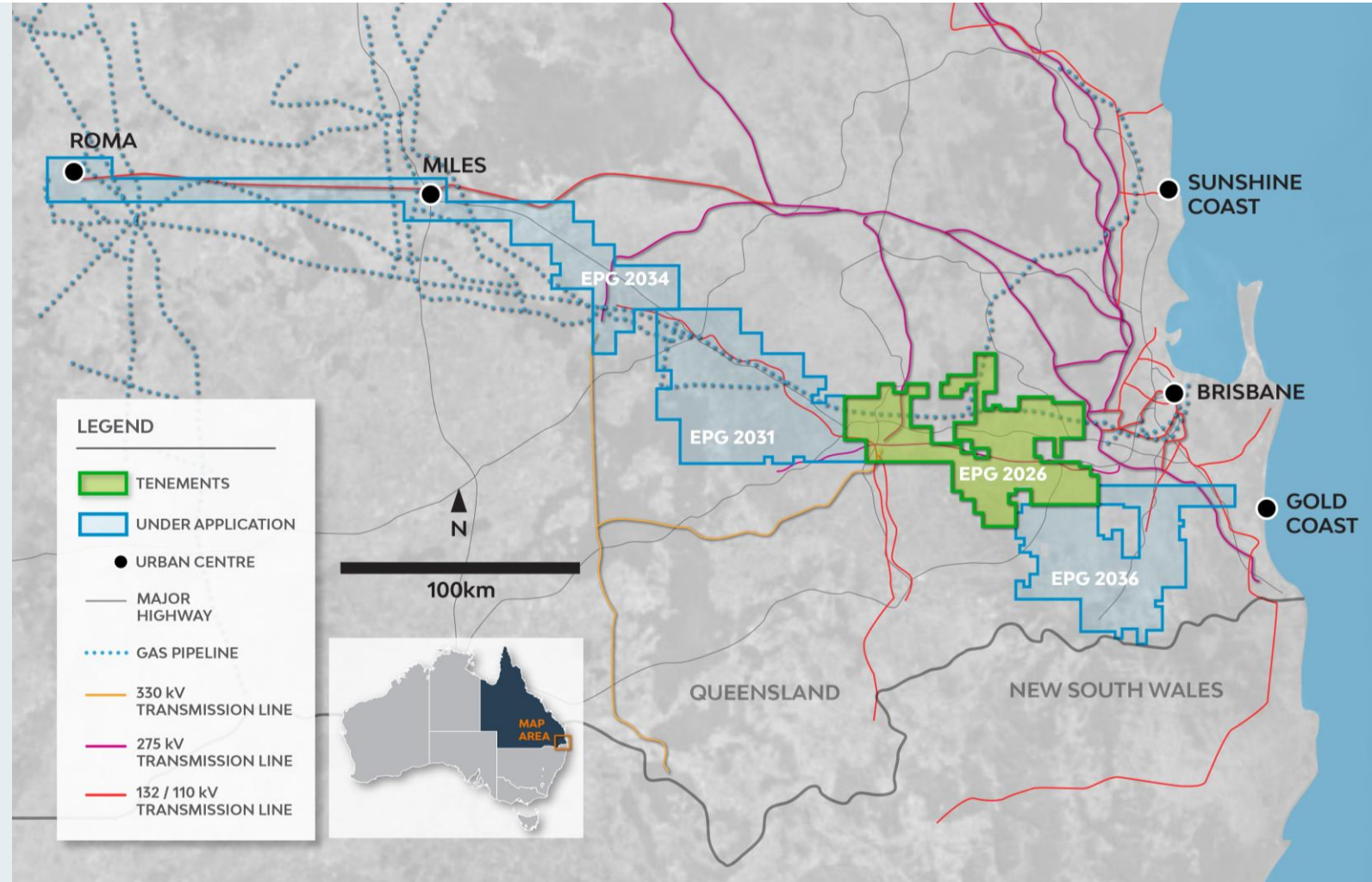
Queensland Portfolio: Meeting East Coast Australia's Growing Power Demand

Large and strategic footprint

- One tenement granted and three under application
- EPG2026 provides access to grid supplying power to >75% of QLD population
 - *Major transmission lines and power substations located on tenement*
- Tenements under application are located near major industrial activity in the Bowen and Surat Basin mining areas

Significant geothermal resource potential

- 'Sweet spots' for potential energy generation have been identified on EPG 2026 and EPG 2031
- Indicative aggregate estimates of Electric Resource Potential¹ on EPG 2026 range from 200 MW-e to 1,100 MW-e.^{2,3}





Key milestones for 2024

2023

- ✓ Secure fit for purpose team including Board
- ✓ Secure Australian acreage under application
- ✓ Completed Independent Technical Expert Report on Queensland and South Australia Resource Potential

2024

- ✓ **Secure international technology partner**

Complete Environmental, Native Title and Cultural Heritage approvals

Secure remaining QLD tenements under application

Undertake Scoping Study

- Conduct geological and geophysical studies
- Define highly ranked subsurface areas
- Complete infrastructure tie-in assessment
- Complete market studies
- Define preferred drilling/development locations

Progress potential government funding/support

Assess strategic partner farm-in potential

Conduct business development growth assessment

Drilling program ready

Earths Energy has delivered World Class Technology Partner as outlined at Relisting

Scoping Study to evaluate technology application, complete market assessment, resource ranking, economics

Technology Partner

Scoping Study

Exploration Drilling

FEED and FID

Drilling and Production

Investment Highlights

EE1 positioned to succeed in the renewable energy industry

- **Early mover in Australia:** Assembled prospective and advanced geothermal opportunities across Queensland and South Australia
- **Leading Technology Partner:** Collaboration agreement with Baker Hughes aligned with GreenFire Energy, a global leader in Advanced Geothermal Systems (AGS)
- **Existing infrastructure:** Portfolio of assets are near existing infrastructure and customers for early commercialisation
- **Proven team:** High calibre team in place of energy industry leaders

Why Geothermal?

- **24/7 renewable energy production:** Differentiated from other renewables
- **Advantages over other Renewables:** Flexible (dispatchable) - Not weather dependent, Small land footprint - Minimal land use, Abundant (enormous resource) – Scalability, Low ongoing capex, Modular, Low Carbon Intensity
- **Significant recent technology advancements** (Closed Loop Technologies) to enable access to a greater resource in more locations
- **Regulatory and Capital Support:** from both Federal and State Governments and major international investors for a rapid energy transition



Independent Technical Expert's Statement

The information in this release that relates to resource estimates through the mapping of prospective areas and gross rock volumes, review of reservoir temperature and properties of rock formations, pore fluids and fracture systems within the metasediments and basement rocks of Earths Energy's South Australian assets is based on analysis of data provided by Earths Energy and sourced from open-domain databases. These analyses have been performed by Dr. Arnout JW Everts who holds a PhD in Geology from VU University Amsterdam and has 33 years of industry experience and a proven track record of technical leadership, project management, and technical task and project delivery. His areas of expertise include techno-commercial project due-diligence, field (re)development, oil & gas reserve and resource assessments, geothermal resources and exploitation viability, underground storage of CO₂ (CCS) and hydrogen. Through his career, Dr Everts has participated in and/or led over 100 energy projects spanning the entire project life-cycle, from frontier exploration to late field-life including unconventional. In recent years his focus has shifted to renewables, i.e., geothermal and CCS. Dr Everts is an Active Member of AAPG (American Association of Petroleum Geologists), EAGE (European Association of Geoscientists and Engineers) and GSM (Geological Society of Malaysia), a Professional Member of AGA (Australian Geothermal Association) and he has contributed as lead author or co-author to around 30 research papers and extended abstracts in international scientific journals including papers on geothermal resource potential and assessment. As EuroGeologist title holder (registration no 1435) Dr Everts is entitled to sign off on Company Reserves and Resources reports submitted to regulatory bodies.

Dr. Everts has consented in writing to the inclusion in this release to the matters based on his information in the form and context in which it appears. Dr. Everts is engaged by Earths Energy as an independent consultant and is not employed by the Company.



For more information contact

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