

GLOBAL_GT

SEPTEMBER 2025

Unlocking Australia's Hidden Heat: From Showcase to Action



Table of Contents

AGA Showcase in
Canberra 2025 -
Five Opportunities
for Geothermal in
Australia

04

Policy Spotlight:
Australia's Net Zero
Needs More
Than Wind & Solar -
Enter Geothermal

07

Tech & Innovation:
Mine-Based
Geothermal in
Australia: Turning
Legacy into
Leadership

09

Closing Wrap:
Australia's
Geothermal
Crossroads -
From Potential to
Action

11

This Month's Hot Spot

September Focus: Australia

Australia's mining heritage and world-class geoscience community give it a unique edge in the clean energy transition. This month, GLOBAL_GT shines a spotlight on how the country's vast subsurface heat can move from potential to practice - with highlights from the AGA Showcase in Canberra, emerging mine-based geothermal ideas, and new policy debates shaping its energy future.

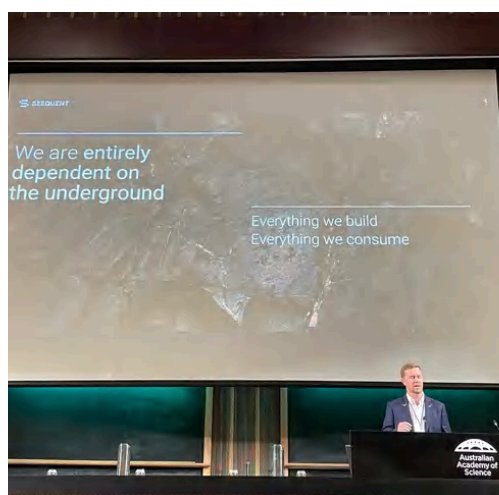
AGA Showcase in Canberra 2025 – Five Opportunities for Geothermal in Australia

The AGA Showcase in Canberra gathered global geothermal leaders for a focused day exploring the latest advances in the sector. Speakers discussed how established and emerging technologies can help unlock Australia's geothermal resources to support energy security and a clean, renewable energy future.

Seequent's Segment Director for Energy, Jeremy O'Brien presented, 'Global Geothermal Projects: A Subsurface Perspective,' to highlight geothermal potential and the crucial contribution of geoscience to support Australia's climate and energy goals.

He emphasised the impact of geoscience and 3D modelling technology and its impact on emerging technologies like EGS and AGS including Fervo Energy. He also highlighted the Paris basin, where lower temperature heat from sedimentary aquifers has been providing homes south of Paris with heat since the 1970s.

'We're in a pivotal time for geothermal energy, with new drilling and simulation technologies improving project outcomes. A deeper understanding of subsurface conditions is now more critical than ever for efficient and streamlined geothermal exploration and project delivery,' said Jeremy.



The ongoing evolution of subsurface data integration and innovative solutions will be crucial in unlocking the full potential of geothermal energy in Australia.

Seequent's broader, global impact across the energy sector is evident in case studies such as geothermal in California, offshore wind projects in the Netherlands, carbon capture in Brazil, and oil and gas exploration in the Gulf of America.

Five key opportunities for geothermal energy development in Australia:

01 Unlocking Australia's hidden heat

Australia's subsurface holds immense geothermal promise—particularly in regions like the Cooper, Canning and Great Artesian Basins. With high thermal gradients and accessible hot rocks, these areas offer a real chance to tap into long-term, scalable energy solutions. The resource is there – we just need to unlock it.

02 Driving innovation where it matters

Geothermal development is no longer constrained by traditional limitations. Advances in drilling, reservoir modelling, and energy conversion are reshaping what's possible. With the right investment in technology and data, Australia can lead the way in making geothermal more efficient, more affordable, and more deployable.

03 Building resilience through energy security

Geothermal offers stable, dispatchable energy – a critical asset in a grid increasingly reliant on intermittent renewables. For remote communities and industries, it's a pathway to energy independence, reducing reliance on diesel and imported fuels while improving reliability.

04 Supporting Australia's net-zero future

As a very low-emissions energy source, geothermal aligns directly with Australia's climate goals. It's not just about power – it's about sustainable heat, cooling, and industrial applications that reduce carbon across sectors. The case is clear, and the time to act is now.

05 Driving economic value from the subsurface

Geothermal projects bring more than energy – they bring jobs, infrastructure, and investment to regional Australia. From exploration to operations, the sector has the potential to boost local economies and create long-term employment in clean energy.

Voices from the Ground



**ANDREW
MULDER**

“Whether it’s the Ijen field in East Java or legacy mines in Western Australia, the story is the same: geothermal success depends on how well we understand the ground beneath us. Seequent has a strong legacy of supporting the geothermal industry across Asia Pacific, and we’re proud to continue that work through advanced subsurface intelligence and integrated data solutions.” — Andrew Mulder, Seequent

Industry leaders and advocates are clear: Australia’s geothermal moment is about more than energy. It’s about resilience, innovation, and shaping a sustainable future.



**MARIT
BROMMER**

“Australia’s geothermal opportunity is not just about energy — it’s about resilience, innovation, and leadership. By connecting global expertise with local ambition, we can turn Australia’s hidden heat into a driver for communities, industries, and the clean energy transition across the Asia-Pacific.” — Dr. Marit Brommer, IGA



Australia’s Net Zero Needs More Than Wind & Solar - Enter Geothermal

Australia has made global headlines for its rapid deployment of solar and wind power. Rooftop PV is now the most widespread in the world, and utility-scale projects are booming across the continent. Batteries and hydrogen pilots have joined the mix, painting a picture of an energy transition well underway.

But behind the optimism lies a structural gap: Australia’s clean energy system still lacks firm, 24/7 power. As coal plants retire and natural gas prices swing with international markets, the country risks a future where reliability is compromised, and costs remain volatile.

This is where geothermal enters the conversation. Unlike solar and wind, geothermal provides constant output regardless of time of day or weather conditions. It can act as a stable foundation beneath variable renewables, reducing the need for costly peaking plants or oversized storage.

The case for geothermal in Australia is particularly strong in three areas:

01

Remote communities and industries:

Hundreds of towns and Indigenous communities rely on imported diesel fuel, a costly and carbon-intensive lifeline. Geothermal could replace this dependency with locally sourced, resilient energy. Mining operations across the Pilbara, Northern Territory, and Queensland could similarly benefit from firm heat and power directly at site.

02

Industrial decarbonisation

From alumina processing to agriculture, Australia’s heavy industries need high-temperature heat — a service geothermal can provide directly, without conversion losses. The economic gains extend beyond emissions reductions: cleaner processes improve competitiveness in a world shifting to low-carbon supply chains.

03

Grid stability and national goals

The government’s net-zero roadmap calls for a diversified mix, yet geothermal is still missing from most policy frameworks. Supporting demonstration projects, de-risking exploration, and integrating geothermal into national and state-level strategies would give Australia a reliable, long-term asset in its energy portfolio.

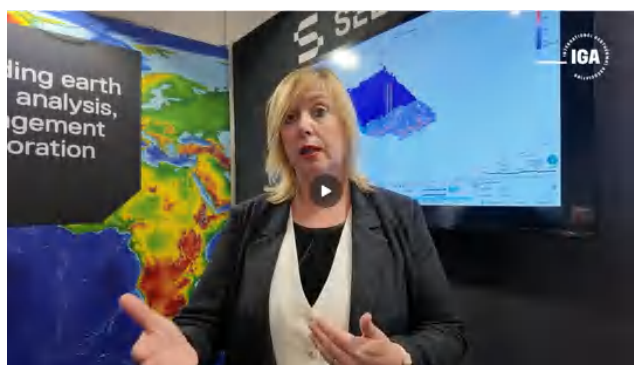
“Policy can make the difference between a sleeping giant and a thriving industry.”

In short, policy is the hinge between promise and reality. The subsurface heat is there. The expertise exists in Australia’s strong geoscience community. What is missing is recognition at the same level as solar, wind, and hydrogen.

If Australia wants to secure a net-zero future that is not just clean but also reliable, geothermal must move from the margins into the mainstream.

Watch: Australia’s Geothermal Story can make the difference between a sleeping giant and a thriving industry.”

This month’s feature video takes you inside the AGA Showcase in Canberra, where industry experts, policymakers, and innovators came together to explore how geothermal can power Australia’s clean energy future.



<https://www.youtube.com/@iga-geothermal>

Mine-Based Geothermal in Australia: Turning Legacy into Leadership

Australia's mining sector is world-renowned. From gold and copper to lithium and rare earths, the country has built its economy on what lies beneath the surface. But there is another treasure hidden underground: heat. Across Australia, thousands of abandoned or active mines present an overlooked opportunity to generate geothermal energy.

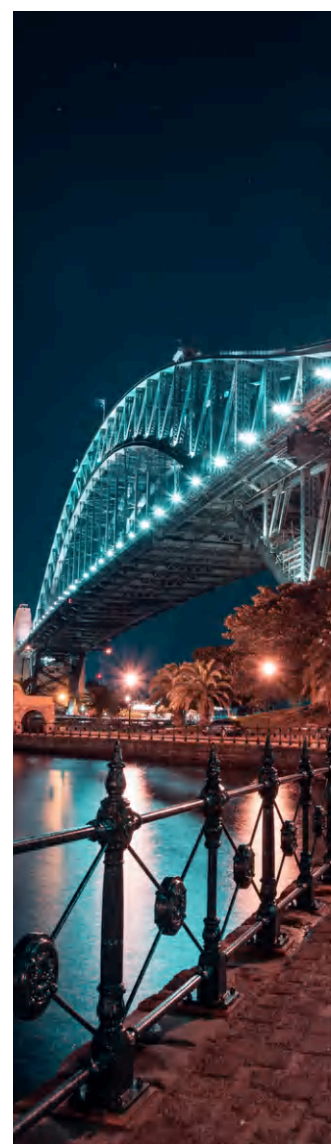
Why mines matter for geothermal

Mining operations leave behind extensive infrastructure: shafts, tunnels, water-filled cavities, and monitoring systems. These features create ready-made reservoirs that can be harnessed for both direct-use heating and power generation. Globally, former coal and metal mines are being reimagined as geothermal plants, district heating sources, or even as underground thermal storage systems.



Why Australia is primed

Few countries have as many large-scale mines and as much subsurface heat potential as Australia. Western Australia, Queensland, and the Northern Territory host hundreds of sites where conditions are suitable. Adding geothermal exploration into the rehabilitation and closure planning of mines could spark a new wave of investment.

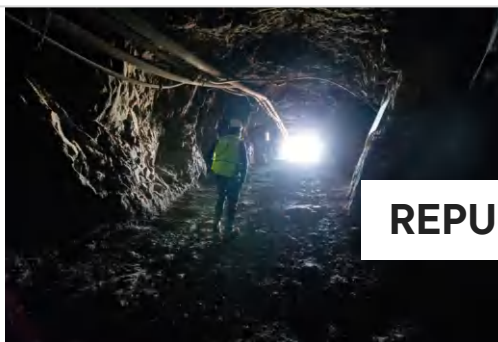


For Australia, Mine-Based Geothermal opens three major opportunities:



HEAT FOR COMMUNITIES AND INDUSTRIES

Abandoned mines near towns could provide low-cost heating and cooling for homes, greenhouses, and businesses. Active mines could reduce their diesel or gas reliance by using geothermal heat to power onsite operations.



REPURPOSING LEGACY SITES

Many disused mines are costly liabilities due to water management and land rehabilitation requirements. Converting them into geothermal projects transforms a burden into an asset — cutting long-term costs while creating jobs and innovation hubs in regional areas.



POWERING THE ENERGY TRANSITION

As Australia pushes for net-zero, geothermal from mines could become part of a diversified energy mix. This is especially relevant in regions where wind and solar have limits but the subsurface is rich with heat.

Australia's Geothermal Crossroads – From Potential to Action



Wrap-Up

As this month's issue has shown, Australia finds itself at a pivotal moment in its energy story. The subsurface holds vast and largely untapped heat resources. The nation's scientific community is globally respected. And its industries — from mining and manufacturing to agriculture and tourism — are hungry for clean, reliable, and cost-stable energy.

WRAP-UP

What emerged from the AGA Showcase in Canberra is clear: the conversation is shifting. Geothermal is no longer just a theoretical option for Australia. It is being recognised as a strategic opportunity to address three pressing challenges:

- Resilience for communities: From outback towns to island neighbours, replacing diesel with geothermal means more security, fewer emissions, and stronger sovereignty.
- Decarbonisation for industry: Mining, food processing, and heavy industries need high-temperature heat, and geothermal can deliver it without compromise.
- Stability for the grid: As coal exits and renewables scale up, firm geothermal power can anchor the system and reduce dependence on gas and oversized storage.

The opportunities are real, but so are the risks of inaction. Without targeted policy, demonstration projects, and investment incentives, Australia risks being overtaken by its neighbours. Indonesia is accelerating geothermal auctions, New Zealand is pushing supercritical research, and the Philippines continues to expand installed capacity.

Yet Australia has an edge: its mining heritage and geoscience expertise. As we explored in this issue, mine-based geothermal could become a flagship solution, transforming legacy sites into clean energy hubs. With the leadership of innovative companies and the growing interest of policymakers, the tools and knowledge are already here.

This issue also highlighted the global connections that matter: knowledge from East Java, Paris, and Kenya is directly relevant to Australia's journey. Partnerships with Indigenous communities, research institutions, and international developers will determine how quickly projects move from maps to megawatts.

The International Geothermal Association and our partners are committed to amplifying these opportunities. The path forward is not about asking whether geothermal fits into Australia's clean energy mix. The real question is: how quickly can Australia move from potential to practice?

As we close this edition, the message is simple: the heat is here, the knowledge is here, and the need is urgent. It's time for Australia to seize its geothermal moment.

GLOBAL_GT



WWW.WORLDGEOTHERMAL.COM/GLOBAL_GT

