From the Ground Up

A draft strategy to unlock New Zealand's geothermal potential

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Cover image: Mud pools in Rotorua, New Zealand.
Image supplied by Earth Sciences New Zealand.

Ministerial foreword

Unlocking our abundant geothermal resources presents game-changing opportunities for economic growth and energy security

New Zealand was at the forefront of innovation in harnessing geothermal energy for electricity generation when our first geothermal plant – only the second in the world – Wairakei, opened in 1958.

Our history of utilising geothermal resources, however, significantly precedes that. Central North Island Māori used geothermal waters for heating, cooking and therapeutic purposes, and European settlers discovered the healing benefits of thermal springs with spa baths established in the Rotorua area from about 1870.

Today, geothermal is an integral part of New Zealand's energy landscape in and beyond electricity generation, with direct geothermal energy used in industrial, commercial, agricultural and residential applications.

We know we have a comparable geological advantage and internationally renowned geothermal expertise – yet we have barely scratched the surface when it comes to how we could sustainably utilise this resource.

To unlock further potential for New Zealand and New Zealanders, we need to take a holistic view of where we could go next.

The opportunities are wide reaching, from traditional and tourism uses to innovative opportunities including minerals in geothermal brine and world-leading research into geothermal microorganisms. With advancing science, we can lead the world again on the potential of supercritical geothermal, which may offer significantly more energy than conventional geothermal fluids.

I want to see our regions, primary sectors and Māori economies utilise this unique advantage as an opportunity to diversify, transition to renewable, low-carbon energy, and support industry to thrive.

This strategy represents the Government's commitment to supporting that work while addressing our energy challenges, having sensible regulatory settings that are both sustainable and enabling, and continuing to build on our world-leading expertise.

I acknowledge the ongoing National Freshwater and Geothermal Resources inquiry (Wai 2358) and reiterate that this strategy does not pre-empt any Waitangi Tribunal findings. I am excited to start this conversation about how we work together to remove barriers, support collaboration and innovation, and ensure this unique sector remains at the global forefront.

Hon Shane Jones
Minister for Resources

Strategy at a glance

A focused pathway to geothermal leadership and sustainable growth.

This section provides a high-level overview of the draft strategic framework, outlining the direction, ambition, and outcomes to coalesce around. It sets out a long-term vision to sustainably maximise New Zealand's unique geothermal advantage and highlights how targeted actions and collaboration will help bring that vision to life.

VISION: New Zealand is a global leader in sustainable geothermal development, delivering innovation, resilience and inclusive growth for future generations.

STRATEGIC OUTCOMES

1. Extend New Zealand's position as a world-leader in geothermal **innovation.**
2. Accelerate **energy resilience** through the development of increased electricity generation and harnessing geothermal heat to support New Zealand's energy transition.

   GOAL: Double geothermal energy use by 2040
3. Strengthen **regional economies and te Ōhanga Māori** by advancing geothermal development in collaboration with tāngata whenua, and unlock industrial growth, tourism and trade to support New Zealand's goal of doubling exports.

How will we get there? Five ACTION PLAN GOALS have been identified to focus the Government's approach.

Improving access to geothermal data and insights	**Ensuring regulatory and system settings are fit for purpose**	**Advancing knowledge and uptake of geothermal technologies**	**Enabling place-based geothermal clusters**	**Driving science, research and innovation, including supercritical geothermal technology**

What is geothermal and how is it important to New Zealand?

Our unique geology provides New Zealand with an extraordinary opportunity to harness a powerful and versatile natural resource with diverse applications. Stunning vistas showcasing our globally significant taonga, combined with early innovation in energy development, laid the foundation for New Zealand's energy profile and propelled us forward as a global geothermal leader.

A long utilised taonga

Derived from the Greek words *geo* (earth) and *therme* (heat), geothermal energy comes from deep within the Earth's crust, where magma heats surrounding rocks and water to extremely high temperatures in reservoirs deep underground. The water and steam from geothermal reservoirs can rise to the surface, causing geysers, hot springs, boiling mud pools, and sinter terraces.[1] Now phenomenal tourism attractions, these geothermal features are taonga to Māori, who have used them for cooking, bathing, therapeutic and heating purposes for centuries.

New Zealand's geographical location on the boundary of the Australian and Pacific tectonic plates means we have dynamic volcanic activity, giving us a unique geothermal advantage. Particularly in the Taupō Volcanic Zone (TVZ), Earth's crust has stretched and thinned, allowing us to access significant geothermal resources and heat at much shallower depths.

In 2024, 27.5 per cent of international visitors reported experiencing a geothermal attraction while in New Zealand.[2]

A surge in development

Modern geothermal development in New Zealand began in the 1950s. A Crown-led explorative drilling programme between 1949 and 1986 jumpstarted our understanding of our geothermal fields in Ngāwhā and the TVZ. This work established the potential for electricity generation in these areas, utilising geothermal steam to power turbines.

New Zealand's first, and the world's second, geothermal power station was Wairakei, just outside Taupō, which first generated electricity in 1958. It is still operating nearly 70 years later and is now one of 17 geothermal power plants across eight geothermal fields – delivering a combined generation capacity of 1,207 MW.[3] Unlike wind and solar, geothermal energy is consistently[4] available and, in 2024, accounted for 8,741 GWh, or 19.9 per cent, of New Zealand's annual electricity generation.[5]

[1] Sinter terraces are silica deposits formed as silica precipitates out of geothermal fluid as it cools – the most famous sinter deposits were the Pink and White Terraces which were destroyed in the eruption of Mount Tarawera in 1886.
[2] From MBIE's International Visitor Survey.
[3] Capacity figure from Transpower's '2025 SOSA – Final Supplementary Data – Final Version' document which can be accessed here: https://www.transpower.co.nz/invitation-comment-security-supply-assessment-2025-closed
[4] Geothermal power stations are occasionally shut down for periods of maintenances or upgrades.
[5] From MBIE's 'Data tables for electricity' which can be accessed here: https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/electricity-statistics

Partnering with tāngata whenua is an increasingly integral component of geothermal development, bringing a rich blend of economic insight, Māori development priorities and values to the forefront. This collaboration enables Māori, as kaitiaki, to actively shape the future and catalyse innovation across the industry.

Advances in reinjection technology are enhancing the sustainability profile of geothermal energy. In addition to being reliable and renewable, geothermal can now offer low-carbon electricity generation, as the naturally occurring greenhouse gases in geothermal fluids can be returned to the reservoirs rather than released to the atmosphere.

In 2024, geothermal accounted for 8,741 GWh, or nearly one-fifth of New Zealand's annual electricity generation.

Beyond electricity generation

The potential of our geothermal resources does not end at electricity generation. In Kawerau and Taupō, renewable geothermal heat and steam powers industrial processes, such as timber drying and tissue manufacturing. In 2023, direct use of geothermal energy (across industrial, agricultural, commercial, and residential sectors) amounted to 7.45 PJ, with an additional 1.25 PJ[6] used for co-generation.[7]

The full spectrum of geothermal heat can be used in a variety of applications – including bathing, aquaculture, horticulture, and heating for water and our built spaces (see Figure 1). This strategy seeks to incorporate all these opportunities, including indirect use[8], and uses the term '***geoheat***' to capture these wider applications.

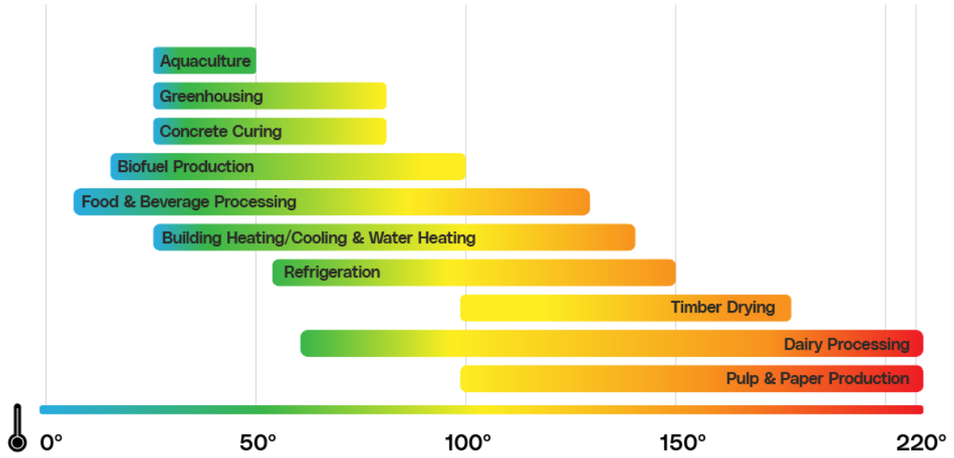


Figure 1: Examples of some uses of geoheat (image provided by Earth Sciences New Zealand)

[6] Direct use figure from MBIE's 'Energy balance tables' spreadsheet which can be accessed here: https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/energy-balances

[7] Co-generation means the use of geothermal energy to generate both electricity and heat.

[8] The *Resource Management Act 1991* defines 'geothermal water' as water heated within the earth to a temperature of 30 degrees Celsius or more. Usually, this resource can be used directly (e.g. for warm pool water, or for space and water heating) or for electricity generation. 'Indirect use' refers to the use of heat and energy sources that fall outside of this technical definition (for example, where heat pump technology is used to modify ambient ground temperatures for heating or cooling purposes).

Unleashing subsurface value

Beneath the surface lies further commercial potential – from extracting valuable minerals dissolved in geothermal fluids to pioneering biotechnology that leverages the resilience of microorganisms thriving in extreme conditions. These innovations open new economic pathways and position geothermal as a source of scientific advancement, environmental stewardship, and industry transformation.

A global leader in geothermal development

New Zealand's geothermal expertise is recognised globally, contributing to renewable energy development and building sector capability across the globe. Specifically, we have fostered partnerships with key regions including Indonesia, the Philippines, Africa, and the Caribbean. Through strategic partnerships, we strengthen trade relationships and gain access to international technology and expertise – critical advantages as we enter the next phase of geothermal advancement: supercritical geothermal.

Supercritical – the next frontier

New Zealand's geothermal reservoirs (up to 350 °C and located between 1km and 3.5km deep) have long powered renewable energy, but the next chapter lies deeper – within the largely unexplored realm of supercritical geothermal. In the TVZ, our unique geology and thinner crust offer a rare opportunity to access superhot fluids at depths beyond 5 km and temperatures exceeding 400 °C. These resources could deliver up to three times more energy than conventional systems.[9]

Backed by government investment, this bold exploration into uncharted subsurface territory could redefine our energy future and reinforce New Zealand's leadership in geothermal innovation on the global stage.

[9] https://www.gns.cri.nz/news/is-the-superhot-energy-solution-beneath-our-feet/

Geothermal and geoheat utilisation across New Zealand

Some examples of geothermal and geoheat[1] development and innovation across the motu

The map opposite shows surface heat flow across New Zealand. Surface heat flow measures how much heat from within the Earth is transferred to the ground surface. Along with the thermal properties of rocks and soils, it is influenced by how quickly temperature increases with depth below the surface. Areas with low surface heat flow are blue, and areas with high surface heat flow appear as red.

1 The Ngāwhā geothermal reservoir enables both tourism and energy security in the far north by feeding the Ngāwhā Springs mineral hot pools and Top Energy's Ngāwhā geothermal power station (57 MW). Notably, this is the first power station in New Zealand to achieve net carbon zero status due to 100 % reinjection of CO_2-containing gases into the Ngāwhā geothermal reservoir.

2 The Coromandel peninsula contains several small geothermal systems which feed popular tourist attractions such as the Lost Spring hot pools in Whitianga and Hot Water Beach.

3 A research project led by University of Auckland's Geothermal Institute is exploring how underground temperatures can be harnessed to reduce water heating costs in Auckland.

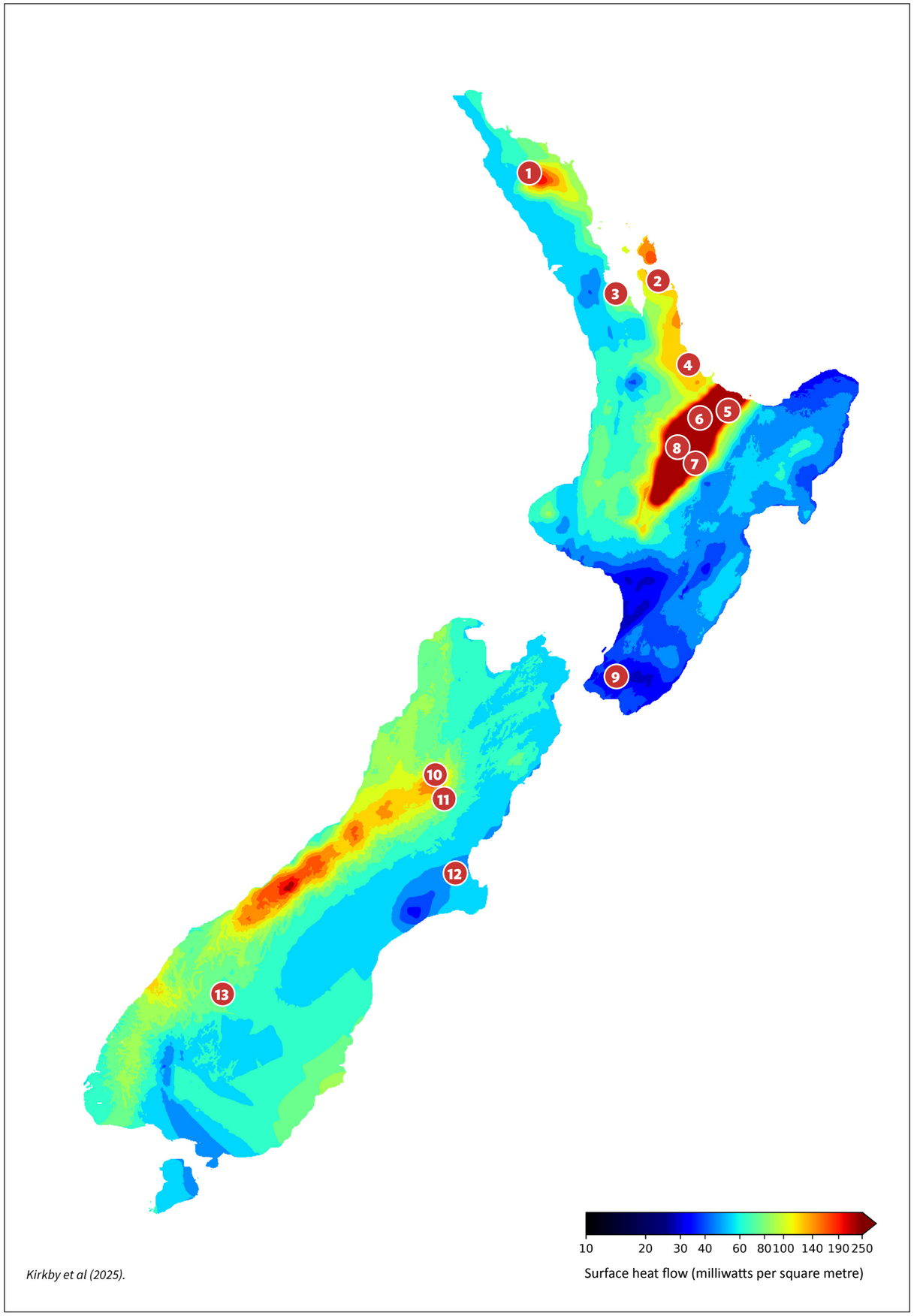
→ **4 to 8 Take a closer look at the Taupō Volcanic Zone over the page.**

9 Lower Hutt City Council's administration building is heated by ground source heat pumps, integrated into the building's structural piles.

10 - 11 Maruia Hot Springs and Hanmer Springs thermal pools are popular geothermal spa and wellness experiences in the South Island.

12 Numerous buildings in Christchurch, including Christchurch Airport, Tūranga central library, Environment Canterbury offices, and several University of Canterbury lecture theatres are heated by water bore and ground source heat pump technology.

13 Tewa Banks is a 68-home development in Arrowtown for the Queenstown Lakes Community Housing Trust. The homes are connected to a networked ground source heat pump system, providing affordable heating and hot water.



Kirkby et al (2025).

1. *The term 'geoheat' is used to capture the full heat spectrum, including sources of heat and energy that fall outside of the technical definition of 'geothermal' under the Resource Management Act 1991 (i.e. 'geoheat' captures indirect uses and innovative technologies such as ground source heat pumps).*

Geothermal activity in the Taupō Volcanic Zone

4 EECA's Regional Energy Transition Accelerator (RETA)[2] report specifically highlighted the potential of Tauranga's low heat geothermal system for businesses and primary industries looking to decarbonise.

5 Ngāti Tūwharetoa Geothermal supplies geothermal steam and brine to a variety of industrial customers in Kawerau, including Eastland Generation's TOPP1 and TOPP2 (under construction) geothermal power stations and the Essity paper mill, which has installed the world's first 100 % geothermal tissue-drying machine.

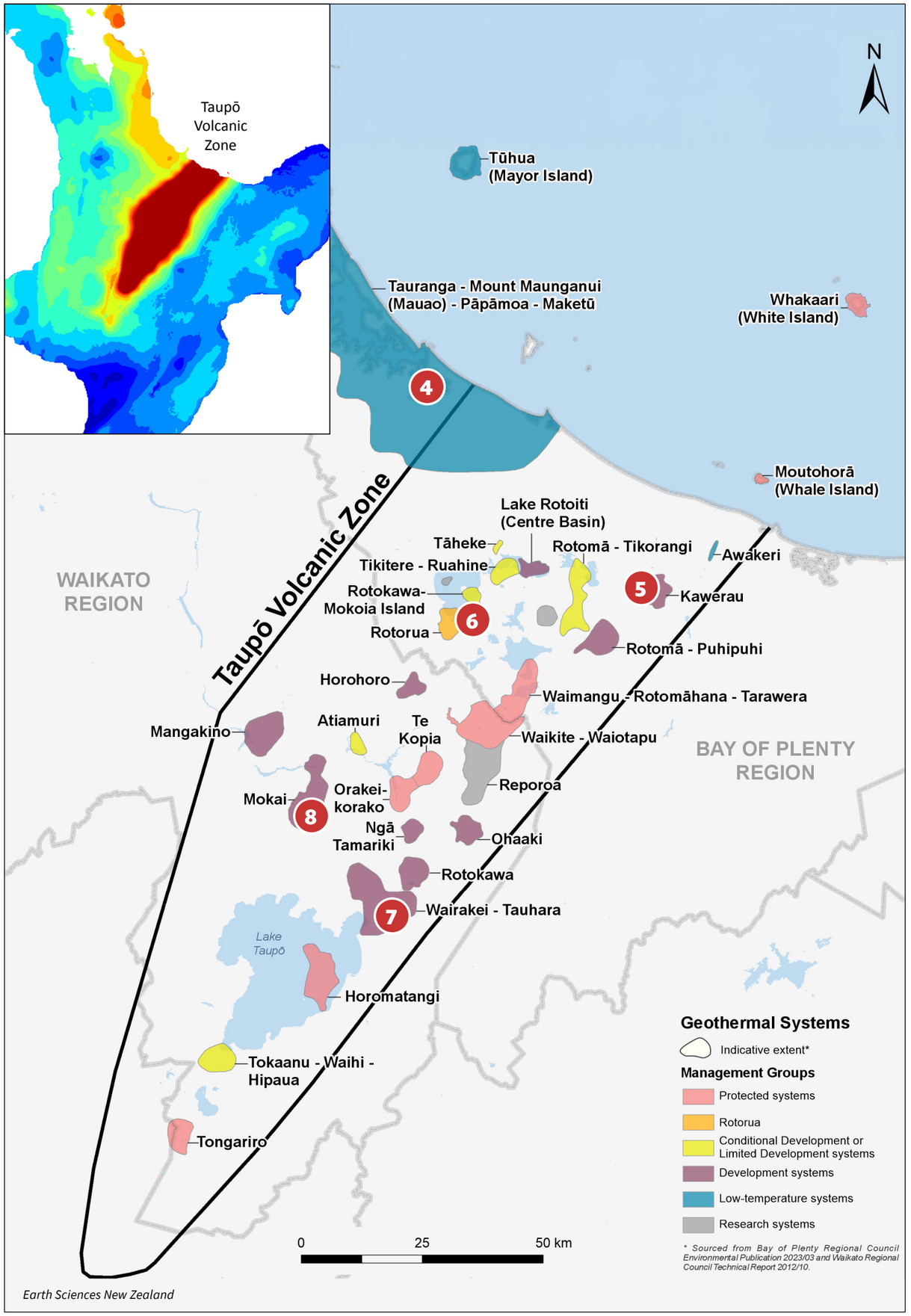
6 Rotorua Hospital and several council buildings utilise geothermal heating systems.

World-class geothermal tourism attractions in Rotorua, often showcasing both geothermal wonders and Māori culture, include Whakarewarewa Living Māori Village, Hell's Gate, Wai-O-Tapu and Te Puia (home to Pōhutu, the largest geyser in the southern hemisphere).

7 Opened in late 2024, Contact Energy's Tauhara geothermal power station (174 MW) is New Zealand's newest, capable of powering around 200,000 homes.

The He Ahi eco-business park development supplies geothermal heat from some of Contact Energy's wells that tap into the Tauhara geothermal field. This allows small and medium sized businesses to access geothermal heat without needing to drill their own wells.

8 Tūaropaki, an ahu whenua trust, has developed one of New Zealand's most advanced and integrated geothermal ecosystems, centred around the Mōkai geothermal power station (113 MW) which is operated by Tūaropaki Power Company in partnership with Mercury Energy. The geothermal ecosystem also includes Miraka, the world's first geothermally powered dairy processing company, the geothermally heated Gourmet Mokai glasshouses and, in partnership with Japan's Obayashi Corporation, Halcyon Power, New Zealand's first commercial-scale green hydrogen plant.



2. *https://www.eeca.govt.nz/insights/eeca-insights/reta-bay-of-plenty/*

What is our opportunity?

Today, geothermal stands at the threshold of a new era – one in which it can support our transition to a low-emissions, high-value economy.

A proven resource, ready to scale

If geothermal already generates nearly 20 per cent of New Zealand's electricity and contributes a small proportion[10] of our direct heat use needs, what's next? Our reliable, renewable baseload source – available rain or shine – is deeply embedded in our regions, particularly in the central North Island. We are the fifth largest geothermal power producer globally,[11] often sharing expertise across borders.

Yet, much of our current geothermal infrastructure is built on exploration led by the Crown decades ago. Since then, development has been incremental and fragmented. The opportunity now is to shift from legacy to momentum – doubling geothermal energy production and unlocking a broader set of uses across the full heat spectrum.

Why now?

The world is moving towards cleaner, more resilient energy systems. New Zealand's electricity demand is projected to grow by 68 per cent over the next 25 years,[12] and our industrial sectors need to reduce emissions. Geothermal can meet this challenge, providing low-emissions heat and electricity to food and timber processors, greenhouses, and even powering data centres. Because geothermal is an indigenous resource, rooted in our land, it offers long-term energy security.

At the same time, new technologies like supercritical geothermal could triple energy output from a single well. This frontier innovation, along with mineral recovery from geothermal brine and the adoption at scale of low-temperature heating systems, can open the door to new industries and opportunities.

A platform for inclusive growth

Geothermal development is also a powerful lever for regional and Māori economic development. Many geothermal fields are located on or near whenua Māori, offering opportunities for iwi and hapū to lead and benefit from the resource. Protecting, retaining and growing tourism, wellness and biodiversity initiatives centred on geothermal taonga can further enrich local economies.

What's holding us back?

Despite its vast potential, New Zealand's geothermal sector faces some barriers, but has the opportunity to accelerate. Exploration has stagnated since the Crown's initial drilling efforts, with high upfront costs (estimated at around $10-15 million per well) and fragmented access to geothermal data. Much of the existing field knowledge is unconsolidated, making it difficult for tāngata whenua, smaller players and new market entrants to assess viability or invest confidently. It also means that we may not have the level of data and insights necessary to progress development on geothermal fields or within wider geothermal systems that may be well-suited to energy production (electricity and direct use). Māori landowners, despite being well-positioned geographically, may face additional hurdles in accessing capital and technical expertise. Regulatory settings, designed for conventional geothermal use, have not kept pace with low-temperature applications and are yet to be developed for emerging technologies like supercritical geothermal.

Additionally, the sector faces challenges in scaling low and medium heat applications, which are underutilised despite their potential to decarbonise industries, transition gas users (including in public facilities like hospitals, prisons and schools) and support regional growth.

Without deliberate and coordinated action – through enhanced data stewardship, future-fit regulatory systems, targeted investment in demonstration projects, and enabling Māori participation – New Zealand risks under-leveraging a globally significant geothermal resource. This in turn will limit its potential to drive energy resilience, regional development, economic growth, and climate leadership.

The geothermal strategy envisions a future where **New Zealand is a global leader in sustainable geothermal development, delivering innovation, resilience, and inclusive growth for future generations**.

By embracing our geothermal potential, we can power a more resilient, inclusive, and prosperous New Zealand, grounded in innovation, collaboration and kaitiakitanga of our natural resource.

Figure 2: Mōkai geothermal field and Gourmet Mokai glasshouses showing the broad potential for low heat geothermal application (image supplied by NZ Gourmet)

[10] In 2023, only 4.2 per cent of geothermal energy was used for direct use purposes – more than 95 per cent was used for electricity generation (figure derived from MBIE's 'Energy balance tables' spreadsheet, referenced in footnote 6).
[11] https://www.thinkgeoenergy.com/thinkgeoenergys-top-10-geothermal-countries-2024-power
[12] Government Policy Statement for Electricity (October 2024): https://www.beehive.govt.nz/sites/default/files/2024-10/Government%20Policy%20Statement%20on%20Electricity%20-%20October%202024.pdf

We are building momentum…

While the geothermal strategy sets a bold ambition for New Zealand's energy future, it's important to recognise the contribution already underway through funds like the Ministry for Primary Industries' Primary Sector Growth Fund, the Ministry of Business, Innovation and Employment's (MBIE) Endeavour Fund, and our international diplomacy efforts to progress the sector.

Powering partnerships: Geothermal innovation across borders

New Zealand is driving international geothermal innovation as a world-leader in geothermal energy. Our geothermal cooperation arrangements with the Philippines and Indonesia support our commercial geothermal sector to access markets and provide a framework for New Zealand to help deliver on their renewable energy ambitions through technical assistance and capacity building programmes. New Zealand also partners with regional institutions such as the Africa Union Commission and Organisation of Eastern Caribbean States via the New Zealand-Africa Union Geothermal Facility (AGF) and the Aotearoa New Zealand Caribbean Facility for Renewable Energy (FRENZ) to help develop these regions' geothermal sectors. Our international partnerships in geothermal support New Zealand's diplomatic ties and trade relationships.

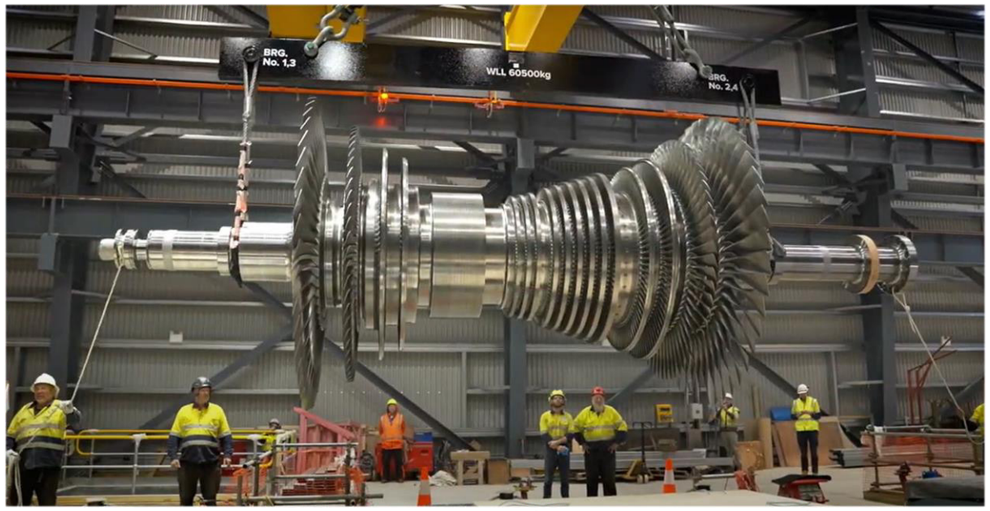


Figure 3: The Tauhara geothermal power station derives its power from the world's largest single shaft geothermal turbine, sourced from Japan – testament to our strong bilateral relationships in geothermal (image supplied by Contact Energy)

Decarbonising the covered crop industry with geoheat

This project is developing a web-based tool to help greenhouse growers in Auckland, Waikato, and Bay of Plenty assess and adopt low-temperature geothermal heating. By translating complex subsurface data into accessible insights, it supports the horticulture sector's shift away from fossil fuels toward 24/7 renewable energy. The initiative aims to strengthen food and energy resilience while embedding tāngata whenua perspectives in sustainable innovation. The Government is investing $158,000 in this project through the Primary Sector Growth Fund.

Geothermal food systems

The Geothermal Food Systems project integrates geothermal heat, electricity, and carbon dioxide capture to create a low-carbon, self-sufficient growing environment for glasshouses. By replacing fossil fuels with renewable geothermal inputs, it addresses key barriers to decarbonisation in horticulture while enhancing energy and food security. Led by Upflow in collaboration with Tauhara North No.2 Trust, the initiative is progressing toward a demonstration-scale deployment to validate and optimise this innovative technology package for wider use across New Zealand. The Government is contributing $250,000 to this project through the Primary Sector Growth Fund.

Novel biofeedstocks using geothermal resources

The Biofeedstocks project pioneers the use of geothermal waste gases and microorganisms to produce high-protein biomass for feed and nutrition. By transforming carbon dioxide and methane into a valuable product, it offers a novel pathway to reduce scope 3 emissions and reliance on global protein supply chains. Co-funded by Tauhara North No.2 Trust with project delivery from Upflow, the initiative is advancing toward pilot-scale optimisation and market alignment, with potential applications in animal feed, human nutrition, and high-value bioproducts. The Government will co-invest $2.5 million over four years in this project through the Primary Sector Growth Fund.

Enhancing geothermal energy efficiency and resource recovery through silica capture technology

Silica scaling is a world-wide problem in geothermal resource utilisation and decreases power station energy efficiency. This research programme, funded by MBIE's Endeavour fund has led to the development of a new technology that rapidly captures the silica before it can form the scale, as a nanostructured calcium silicate (CaSil) material. The technology has been successfully demonstrated at pilot plant scale operations in four New Zealand geothermal power stations. CaSil material is now being used to develop a fertiliser aimed at reducing phosphate run-off that pollutes surface waters.

Figure 4: The Te Huka power station steaming ahead, currently piloting the reinjection of non-condensable gases (primarily CO_2) back into the geothermal reservoir (image supplied by Contact Energy)

Draft strategy for consultation

From the Ground Up sets a long-term direction for the sustainable growth of New Zealand's geothermal sector.

This strategy envisions a future where New Zealand continues to lead globally in geothermal science, research, and innovation; attracts investment into reliable, renewable baseload energy; and harnesses a wide range of opportunities – from protecting and valuing the significant contribution of geothermal tourism to emerging industries such as mineral and gas recovery from geothermal brine and geothermal microorganisms.

Through targeted action and collaboration, this strategy aims to ensure the continued development of geothermal energy to support a resilient, low-emissions economy and thriving regional communities.

VISION: New Zealand is a global leader in sustainable geothermal development, delivering innovation, resilience and inclusive growth for future generations.

To achieve the vision, three interconnected outcomes have been identified to guide action and investment. These outcomes reflect the breadth and depth of opportunity offered by New Zealand's geothermal resources, while aligning with wider government priorities. They provide a framework for unlocking our geothermal potential in a way that is innovative, sustainable and collaborative.

STRATEGIC OUTCOMES

1. Extend New Zealand's position as a world-leader in geothermal **innovation.**
2. Accelerate **energy resilience** through the development of increased electricity generation and harnessing geothermal heat to support New Zealand's energy transition.

   GOAL: Double geothermal energy use by 2040
3. Strengthen **regional economies and te Ōhanga Māori** by advancing geothermal development in collaboration with tāngata whenua, and unlock industrial growth, tourism and trade to support New Zealand's goal of doubling exports.

While the intent of this strategy is to be broad reaching, there is a specific opportunity for geothermal energy to contribute more significantly to New Zealand's energy mix. We have therefore included an energy-specific goal under the second outcome to further focus activity towards a tangible target: to double geothermal energy use by 2040.

Achieving this will require coordinated action across government, industry, tāngata whenua, and research communities. It reflects our commitment to a low-emissions future, energy security, and economic development – while upholding the principles of kaitiakitanga and ensuring benefits are shared across generations.

Figure 5: Showcasing the wide-ranging uses of geothermal waters (cooking mussels at Te Puia, Rotorua). Source: Tourism NZ Visual Library. Credit: Graeme Murray.

This strategy connects with wider government priorities and strategies

The draft strategy supports the Government's goals of economic growth, energy security, infrastructure delivery, regulatory efficiency and emissions reduction. It builds on objectives prioritised under the Energy portfolio by expanding low-emissions electricity generation and process heat solutions to help double renewable energy and strengthen security of supply.

Acknowledgement of the ongoing Waitangi Tribunal inquiry (Wai 2358)

We acknowledge that the National Freshwater and Geothermal Resources kaupapa inquiry is currently under way in the Waitangi Tribunal (Wai 2358). In the development of the draft geothermal strategy, officials have been cognisant of this ongoing inquiry, have proactively engaged with iwi and hapū in its development, and welcome further and ongoing engagement. This draft strategy includes an action to consider the Waitangi Tribunal's findings and recommendations when they are released.

How we'll get there

To deliver on the strategy's vision, outcomes and energy goal, a set of focused action areas have been identified. These *action plan goals* represent the practical levers through which progress will be driven – ensuring the right foundations, capabilities and collaborations are in place.

Five action plan goals have been developed to focus activity (and potentially investment) to drive the outcomes sought through this strategy.

ACTION PLAN GOALS

Improving access to geothermal data and insights	**Ensuring regulatory and system settings are fit for purpose**	**Advancing knowledge and uptake of geothermal technologies**	**Enabling place-based geothermal clusters**	**Driving science, research and innovation, including supercritical geothermal technology**

Improving access to geothermal data and insights

Unlocking geothermal potential begins with better access to data. High drilling costs and risks can be compounded by limited availability of historical and real-time geothermal data. Further, high costs and limited access to modern mapping technologies can restrict our understanding of lower temperature resource. Establishing a baseline of publicly available data (including identifying key gaps) will be the starting point to catalyse interest, reduce uncertainty, foster competition, and unlock new development opportunities across New Zealand.

Ensuring regulatory and system settings are fit for purpose

Existing regulatory frameworks have supported conventional geothermal development, but emerging technologies and applications – such as supercritical geothermal – require a future-ready approach. There is an opportunity to recalibrate resource management and planning systems to ensure they are enabling, adaptive, and sustainable, while supporting innovation and long-term environmental stewardship. The current resource management reforms present an opportunity to support the ambition of this strategy. Beyond resource management, the strategy also provides an opportunity to revise existing geothermal regulatory frameworks (with some regulations dating back to 1961).

It is also prudent to ensure that protected geothermal fields and our globally significant surface features remain protected and a taonga to the nation. Recognising their unique value, and their contribution to wellbeing, tourism and regional economies, is central to our strategy.

Ensuring our wider system settings deliver for the future is also important. Our geothermal sector relies upon a durable talent pipeline, strong international partnerships and collaborative relationships across the sector, government and tāngata whenua.

Advancing knowledge and uptake of geothermal technologies

Despite New Zealand's globally significant geothermal resource, our uptake of direct and indirect use geothermal technologies – such as industrial heat, district heating, and agricultural applications – lags behind international leaders. Targeted education, feasibility assessments, and demonstration projects (including government-user and public-private partnerships) can accelerate adoption and showcase the economic and environmental benefits of geothermal heat.

Enabling place-based geothermal clusters

Regional geothermal clusters can drive innovation, investment and localised benefits. Government can play a role by enabling coordination and collaboration among landowners, tāngata whenua, local authorities, industry, investors and developers. Tools may include place-based planning, co-investment models, and tailored incentives to support collaborative development and maximise regional value.

Driving science, research and innovation, including supercritical geothermal technology

The Government has made a significant commitment to the ambitious supercritical geothermal exploration project.[13] This will lay the foundation for future breakthroughs in next-generation geothermal technologies. It will be important to understand the role of the reformed science system in supporting ongoing geothermal science, research and innovation.

Figure 6: Ngā Awa Pūrua Geothermal Station; Mercury NZ Ltd / Tauhara North No.2 Trust; Photographer Stephen Wells

Draft action plan for stakeholder feedback

Indicative actions, under each of the action plan goals, have been included overleaf to illustrate what government (and industry) activities and initiatives could look like to deliver the strategy.[14]

[13] https://www.beehive.govt.nz/release/government-gaining-ground-pursuit-supercritical-geothermal-energy
[14] Note: Once the strategy is finalised, any action requiring government funding will be subject to normal budget processes.

From the Ground Up: Draft Action Plan

PROPOSED ACTIONS

ACTION PLAN GOALS	Improving access to geothermal data and insights	Ensuring regulatory and system settings are fit for purpose	Advancing knowledge and uptake of geothermal technologies	Enabling place-based geothermal clusters	Driving science, research and innovation, including supercritical geothermal technology
HORIZON 1 2025-2026	› Establish a baseline of **publicly available data** (including identifying key gaps) › Commission **data insights report** for the geothermal sector	› Clarify the application of the Crown Minerals Act 1991 to **minerals** in **geothermal fluid** › Ensure that the new **planning and environment legislation** enables the sustainable use of geothermal resources, including carbon capture utilisation and storage › Consider and respond to the Waitangi Tribunal's findings regarding **Wai 2358** (when released) › Establish **sector strategy implementation group** › Explore whether **ETS industrial allocation settings** are acting to limit uptake of geothermal heat › Clarify the functions and responsibilities for wider geothermal regulations including **geothermal well construction, maintenance and abandonment**	› **Promote the role of geothermal** in the energy transition (across the heat spectrum) from 2026 › Support the development of a **geoheat information package for businesses** looking to use direct geothermal heat for industrial/ process heat	› Work with geothermal customers, developers, investors, iwi, hapū and Māori landowners to **grow geothermal opportunities** in New Zealand › Explore how **zoning provisions and new spatial planning provisions** can facilitate increased investment and coordination across geothermal economic activity › Explore options to develop a **Geothermal Centre of Excellence** (industry, iwi and hapū, landowners, academia and government) to encourage collaboration, information sharing and accelerate R&D › Identify **geothermal tourism opportunities** in Taupō and Tarawera regions, in partnership with iwi to support Māori economic development	› **Undertake drilling programme for supercritical geothermal** on first test well site
HORIZON 2 2027-2028	› Investigate appropriate mechanism(s) for **ongoing provision of geothermal data** to a central repository › Consider the need for Crown involvement in **further exploration or modelling** › Investigate the need for further **low heat geothermal mapping**	› Ensure **geothermal regulatory frameworks** are fit for purpose (including the Geothermal Energy Regulations 1961 and those required for supercritical geothermal) › Explore the **role of policy direction** for managing geothermal resource (e.g. national direction) › Work with the education sector to strengthen geothermal career pathways to support an **ongoing talent pipeline** › Utilise New Zealand's geothermal expertise and advantage to strengthen **bilateral relations**	› Explore **mechanisms to pilot technology** for commercial and residential developments	› Explore opportunities and potential incentives for manufacturers and other sectors (including tourism) to **cluster** or relocate	› Explore the **role of the reformed science system** in supporting geothermal science › Explore options and **secure funding/ investment for second supercritical geothermal exploration well**
HORIZON 3 2029 onwards	› Potential **Crown-led exploration**	› Investigate the appropriateness of **field classifications** (following data collation undertaken in horizons 1-2) › Consider **system-wide funding mechanisms**	› Explore **transitioning government users** to geothermal technologies		› **Develop geothermal technologies** to support and install supercritical geothermal power station and connect to successful well sites

Note: The actions listed in this plan are for consultation only. Government resourcing and funding decisions will be sought through usual processes.

Having your say

We are seeking feedback on the draft Geothermal Strategy for New Zealand. We welcome all submissions but are particularly interested in the questions below:

1. Are the three strategic outcomes of the strategy, centred around **world-leading geothermal innovation**, **accelerating energy resilience** and **strengthening regional economies and te Ōhanga Māori**, suitable, or is there more we need to consider?

2. Do the five overarching **action plan goals capture the areas that are most important for achieving** the vision, strategic outcomes and energy goal?

3. Does the proposed action plan correctly capture the necessary **government interventions and priorities**?

4. Is the **role for the sector** clear? How can the wider geothermal sector play a role (e.g. are there specific actions that the sector could own)?

5. Does the strategy and proposed action plan create the right settings to **enable tāngata whenua to realise their aspirations** for geothermal resources in their rohe?

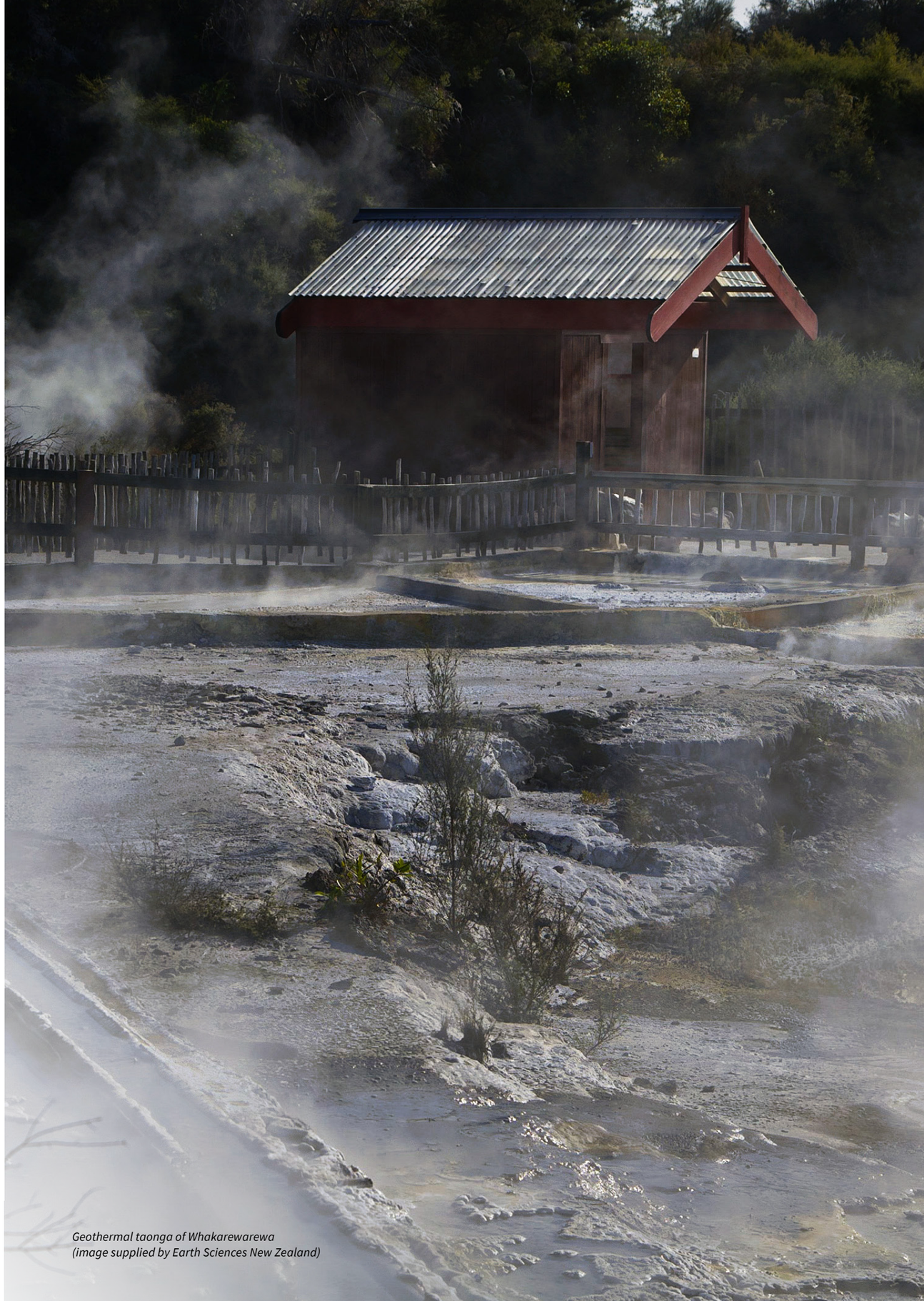
6. Are there **opportunities** for our geothermal sector that we haven't considered?

7. Are there **challenges** for our geothermal sector that we haven't considered?

8. Are there **any other things** that the strategy should include or exclude?

How to submit

Send your submission to resourcesfeedback@mbie.govt.nz by 5pm on 12 September 2025.
For any questions or help with submission, please contact resourcesfeedback@mbie.govt.nz.



Geothermal taonga of Whakarewarewa
(image supplied by Earth Sciences New Zealand)

Te Kāwanatanga o Aotearoa
New Zealand Government