



12 September 2025

To: Resource Policy
Ministry of Business, Innovation and Employment
PO Box 1473
Wellington 6140

Via email: resourcesfeedback@mbie.govt.nz

A. & C. Submitter: Mercury NZ Limited (“Mercury”)

Contact person:
Ben Pezaro
Head of Geothermal Development
Email: Ben.Pezaaro@mercury.co.nz
M: Privacy of natural persons

B. MBIE is welcome to contact Mercury with any questions about this submission.

D. Privacy statement: Mercury acknowledges the Privacy Act 2020 applies to submissions. Mercury agrees to MBIE uploading this submission, or a summary of submissions, to the website www.mbie.govt.nz.

E. Confidentiality: This submission (or identifiable parts) is not requested to be kept confidential.

Submission on a draft Geothermal Strategy

1 Introduction

Mercury NZ Limited (“Mercury”) welcomes the Government’s initiative to develop a national geothermal energy strategy. Mercury strongly supports the draft Geothermal Strategy “*From the Ground Up – A draft strategy to unlock New Zealand’s geothermal potential*”, announced at NZ Geothermal week 2025 in Taupō,

This submission focuses on geothermal electricity generation and responds to Ministry of Business, Innovation and Employment (“MBIE”) consultation questions.

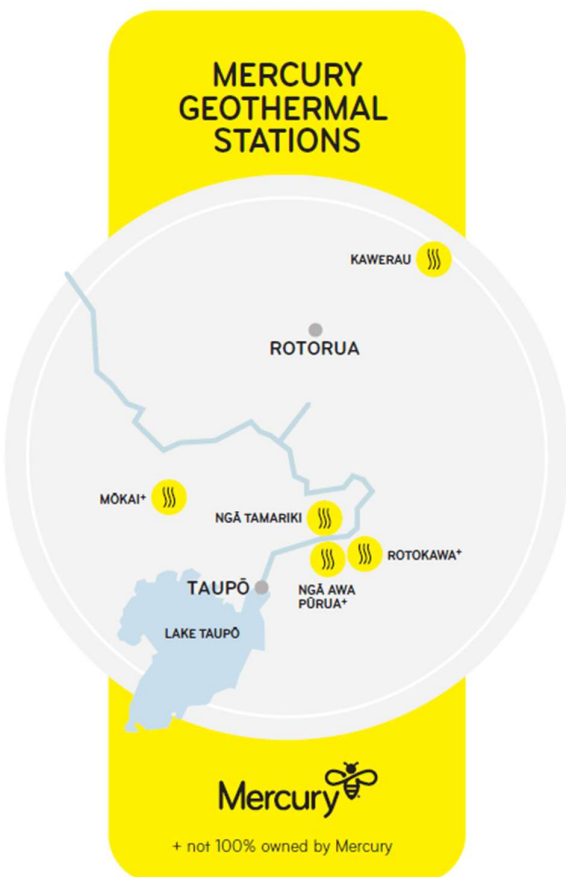
2 About Mercury

Mercury is an electricity generator and retailer of electricity, gas, broadband and mobile services. Mercury’s generation assets produce electricity from 100% renewable sources: hydro, geothermal and wind. Nine hydro stations on the Waikato River play a critical firming role in our electricity supply while geothermal power stations generate electricity 24/7, ensuring a constant supply regardless of the weather.



Mercury acknowledges our geothermal partnerships with Tauhara North No.2 Trust at Nga Tamariki and Tūaropaki Trust at Mōkai. The location of the geothermal stations, including JV partnerships, are shown in **Figure 1** below. These five geothermal power stations in the central North Island Taupō volcanic zone have a combined installed capacity of 479MW and generated 2,559GWh of electricity in FY25¹.

Figure 1: Mercury geothermal stations (including partnerships)



Mercury continues to invest in geothermal generation, with the current program including expansion of Ngā Tamariki Geothermal Station, with another unit (referred to as “**OEC5**”) adding 390GWh of generation capacity in 2026.

Our geothermal drilling campaign has successfully delivered three new production wells and three new reinjection wells. Two additional wells will be drilled in 2026, taking total investment in this drilling campaign to \$175 million². These new wells will be used to increase fuel supply for the expansion of Ngā Tamariki Geothermal Power Station and to maintain supply for Rotokawa and Kawerau stations.

Mercury is also in the early stages of evaluating new geothermal development options, which could add up to 5TWh of baseload generation to our pipeline for development beyond 2030.³

Mercury is a member of the NZ Geothermal Association (“**NZGA**”) and supports the advocacy work of the group.

¹ Mercury 2025 Integrated Report, page 4. FY25 – financial year ending 30 June 2025.

² Mercury 2025 Integrated Report, page 19

³ Mercury 2025 Integrated Report, page 27



3 Geothermal Vision Statement

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

New Zealand is a global leader in geothermal energy, and it is vital that we continue to harness this natural advantage. Mercury is encouraged by the geothermal strategy's focus on long-term planning, innovation, and inclusive development.

In terms of renewable electricity generation ("REG"), Mercury has significant interests in the Taupō volcanic zone which we are confident has additional scope for growth of geothermal resource use.

Security of supply is the single biggest priority for the electricity sector and will require a range of solutions – geothermal is an important part of the mix. Geothermal energy has strong potential to further improve the country's security of supply by delivering more low-carbon, baseload generation.

Given the importance of this aspect, we request 'renewable electricity' is given specific reference in the strategy's vision:

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

4 Geothermal Strategic Outcomes

4.1 Geothermal Innovation

Strategic Outcome 1: Extend New Zealand's position as a world-leader in geothermal **innovation**.

The New Zealand geothermal sector has a strong track record of sustainable resource management, with our practises adopted and followed a range of other countries. We should continue to prioritise and promote sustainability as part of this strategy.

New Zealand has a long history of geothermal innovation driven by necessity, good research and passionate people. A recent example is the development of the capture and re-injection of non-condensed gases back into geothermal reservoirs to reduce the carbon profile of geothermal electricity generation.

Earth Science NZ⁴ is leading the investigation into supercritical geothermal resources and this development will require innovative solutions in high temperature materials science, drilling and subsurface analysis.

Sustainability and innovation (support by research) is critical for long term reservoir management, emissions reduction and to enable the much-needed growth that the strategy seeks to achieve. We suggest amending the strategic outcome as follows to reflect this:

Strategic Outcome 1: Extend New Zealand's position as a world-leader in geothermal sustainability and innovation.

⁴ Earth Science NZ formed from a merger of GNS Science and NIWA in July 2025.



4.2 Energy Resilience

Strategic Outcome 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

Electrification is a big opportunity for NZ, with electricity only accounting for approximately 30% of total energy consumption⁵. Geothermal has an important role to play in delivering on the energy trilemma in NZ – balancing energy affordability, security and environmental sustainability.

Geothermal provides approximately 19% of NZ electricity, making it the second largest source after hydro, and provides reliable baseload, irrespective of the weather. This underpins energy security, particularly in dry years when hydro outputs reduce.

Maintaining geothermal generation to support baseload and security of supply requires substantial investment, as demonstrated by Mercury's drilling program (refer above). For this reason, we suggest strategic objective outcome 2 should be about maintaining and increasing electricity generation to support NZ's energy transition.

Mercury supports increasing the uptake geothermal energy for purposes of electricity generation and process heat use. The goal to "*Double geothermal energy use by 2040*" is ambitious and we have some concern with what this means in real terms.

Our calculations are that this equates to approximately an additional 1000MW of electricity generation alone and increasing geothermal process heat by at least 7.5PJ. In 2017 the New Zealand Geothermal Association ("**NZGA**") commissioned a Geoheat Strategy 2017-2030. This strategy outlined a vision for the future of Geoheat in New Zealand, and aimed to double Geoheat use by 2030, an increase of 7.5 PJ, with an associated 500-plus new jobs created. When put in 'real terms' we consider these figures are very aspirational.

A goal that recognises proportionality in 'real terms' would be more targeted and measurable. We suggest refining the goal to differentiate increasing the use of geothermal heat vs geothermal electricity generation.

Strategic Outcome 2: Accelerate Secure energy resilience through the development of maintaining and accelerating increased electricity generation and harnessing geothermal heat to support New Zealand's energy transition.

Goal: By 2040 double geothermal energy use by 2040 heat harnessed and increase geothermal electricity generation by [e.g. 500MW].

4.3 Regional Economies

Strategic Outcome 3: Strengthen **regional economies and te Ōhanga Māori** by advancing geothermal development in collaboration with **tangata whenua**, and unlock industrial growth, tourism and trade to support New Zealand's goal of doubling exports.

This strategic outcome covers multiple economic themes. It is worth noting that demand side drivers are just as important as supply side which the strategy is mostly focussed on. For the reasons set out above in respect of the vision statement, we request 'renewable electricity' is given specific mention.

⁵ MBIE, 2024



This strategic outcome includes “to support New Zealand’s goal of doubling exports”. We suggest that the structure should be consistent with strategic outcome 2 above. Similar to strategic outcome 1 goal, the goal would benefit from quantifying the geothermal contribution and specifying a target that is measurable. We suggest amending follows:

Strategic Outcome 3: ~~Strengthen regional economies and te Ōhanga Māori by a~~Advancing geothermal development in collaboration with tangata whenua, and to unlock growth in electricity generation, industry, tourism and trade. to support New Zealand’s goal of doubling exports.

Goal: A strengthened geothermal economy and Te Ōhanga Māori contribute to New Zealand’s goal doubling exports.

5 Geothermal Action Plan Goals

Mercury welcomes the opportunity to provide detailed feedback on the draft Geothermal Action Plan structured around the five action plan goals. We support the long-term ambition to unlock New Zealand’s geothermal potential through coordinated action across exploration, regulation, technology, and community engagement.

We support the inclusion of an action to consider findings and recommendations of the Waitangi Tribunal’s Wai 2358 inquiry when released.

5.1 Improving access to geothermal data and insights

We support a centralised geothermal data repository with standardisation and clear boundaries around commercially sensitive datasets.

Earth Science NZ⁶ is New Zealand’s lead agency and a significant amount of geothermal data is already publicly available. Collating this data into a centralised geothermal repository would be a constructive step.

Regional geological mapping, geochemical sampling and geophysical surveys already exist and are very useful datasets for geothermal development. We would support to expanding these regional datasets as they are generally value accretive, lower cost and can be used by a wide range of interested parties.

Any centralised geothermal data repository must have clear governance and boundaries around commercial sensitivity of certain datasets. Current operators have significant expenditure and risk exposure to collect data from operating fields. We recommend that certain operating field datasets should remain protected unless anonymized or aggregated. This action could be complemented with a working group to establish a framework. We note the sector is grappling with similar issues in the context of digitalisation of the electricity system ⁷.

The strategy must ensure that there is clarity of ownership, management, and data governance of any central repository. The mechanisms for acquiring private exploration data (e.g. geophysical and well surveys) should be standardised as much as possible to avoid data contamination.

Making datasets more accessible and insights reporting

In our experience there are good basic public datasets already available. However, there are access barriers due to a lack of simple, visual tools to interpret geology, structure, surface features and understand subsurface potential. Investment in tools to interrogate the available data could help with accessibility.

Commissioning and delivering a sector-wide data insights report to identify gaps and opportunities would be useful in the short term (Horizon 1).

⁶ Agency formed from merger of GNS Science and NIWA in July 2025.

⁷ Refer Electricity Authority “Our future is digital” discussion paper and Mercury submission, 10 July 2025.



Additional exploration to derisk projects is valuable

Crown exploration has been very successful in contributing to New Zealand geothermal development. Geothermal development has a higher risk and cost development profile during the resource assessment phases and any support that reduces this risk or cost will help to advance geothermal opportunities. For example, geothermal drilling costs can range between \$10-\$20 million for a single well and come with substantial risk that the well isn't productive.

We support the concept of Crown involvement in geothermal exploration at the early stages of a project. We suggest investigation and engagement on the best mechanism for Crown involvement is included in Horizon 1 of the action plan.

Low-temperature geothermal opportunity

Low-temperature geothermal resource assessments and datasets are underdeveloped and represents a missed opportunity for regional decarbonisation. There is greater potential for participation from a wide range of interested groups.

5.2 Ensuring regulatory and system settings are fit for purpose

Clarify ETS settings to avoid penalising geothermal

We have been working with NZGA via the Geothermal Operators Emission Reduction group in streamlining the Emissions Trading Scheme ("ETS") reporting regulations to ensure geothermal operators are supported as they expand their renewable generation and avoid being penalized through increased ETS costs. The group have met with Ministry for the Environment ("MfE") to provide feedback as part of the consultation process on the 2025 NZ ETS Annual Regulatory Updates. MfE are aiming for these to come into effect in 2026. It would be useful to reflect this commitment to finalising the regulations in Horizon 1.

Action is needed to reduce regulatory overlaps and burden

Action is needed to resolve overlap between the Health and Safety at Work Act 2015 and geothermal regulations 1961, particularly around well integrity and site operations. Revisions to the *2018 WorkSafe Quick Guide - Consents and reports required by the Geothermal Energy Regulations 1961* - would improve clarity of definitions, roles and responsibilities. Other examples of antiquated requirements where improvement could be easily made include the role of the 'Bore Manager' and whether this is still relevant considering the role of Person Conducting a Business or Undertaking ("PCBU"). Details of Works Notice ("DOWNS") applications could shift to notification only and requirement for regulator sign-off removed.

The review of regulations also provides an opportunity to ensure that they are fit for purpose for supercritical geothermal which was not anticipated when they were introduced. We see no reason why provision for supercritical geothermal could not be integrated into a revised, fit for purpose set of regulations.

We support the research into geothermal regulations being included as a short-term action (Horizon 1) but suggest this should include reference to supercritical geothermal. In the medium term (Horizon 2) the key action should be to deliver revised regulations.

Developing our specialist geothermal talent pipeline

Maintaining and growing the specialist geothermal talent pipeline is critical to the sector being able to deliver on this strategy. The talent pipeline will become even more important to the sector as the current workforce of subject matter experts look to retire. This will become acute in specialised or technical areas such as plant operators, geothermal drilling engineers and reservoir engineering.



We encourage more sector and government collaboration on workforce development initiatives. For example: better connection to regional training centres, on demand training programmes, better integration of the Geothermal Institute into NZ specific workforce needs via collaborative planning, design and forecasting of workforce demand and immigration pathways for skilled professionals.

Role for a sector strategy implementation group to direct improvements

We support the formation of a sector strategy implementation group to enable direct and constructive input into regulatory improvements and more broadly in areas such as training, employment and workforce development.

Status quo classifying minerals in geothermal fluid

The Crown Minerals Act 1991 is limited and specific in the minerals covered. We support the status quo approach to understanding and classifying minerals in geothermal fluid. Use cases for minerals in geothermal brine are not well understood and the focus should be on research first as opposed to classification.

Resource management reform to consider the uniqueness of geothermal environments and continue to provide for adaptive management

The government's programme of resource management reform⁸, includes replacing the RMA with two new Acts. This provides an opportunity to improve the regulatory system for geothermal development.

With the creation of two separate Acts – the Natural Environment Act and the Planning Act - we are concerned that the proposal is overly reliant on spatial planning (primarily a land-use tool) and is light on detail around how complex systems, such as geothermal reservoirs, will be managed (resource allocation tools).

Under the RMA, we have relied on adaptive management. This approach when used in complex and uncertain environmental contexts – like geothermal resource development - allows activities to proceed while managing potential adverse effects through ongoing monitoring and adjustment.

The sustainable management of a geothermal resource involves the implementation of an integrated management approach coupled with adaptive management processes. For example, at Ngā Tamariki, field management based on identification of key risks and management of those risks via monitoring of key reservoir parameters against baseline information. If those risks change in scope or magnitude, then adaptive management can be used. Adaptive management techniques at Ngā Tamariki include optimising injection volumes between the north and south areas to manage reservoir pressure and temperature responses. The trigger for any adaptive management responses is generally based on deviation of the monitored key reservoir parameter trends against the historic and predicted trends including simulations from the numerical reservoir model.

We strongly advocate for provision of adaptive management in the new replacement legislation.

Adaptive management is referenced in the National Policy Statement for Renewable Electricity Generation 2011 (NPS-REG)⁹. The MfE has sought feedback on resource management national direction packages which includes a replacement the NPS-REG 2011 (Package 1). Mercury's submission emphasises that REG, and in particular geothermal development, has unique environmental issues compared to other types of infrastructure. Our submission also specifically seeks that adaptive management is retained in the policies¹⁰. This is an opportunity for Government to provide enabling policies and consenting pathways for geothermal activities

We support a streamlined consenting process across regional councils for both high and low-temperature resources and recommend that consideration be given to ensure consent compliance reporting regimes are fit for purpose for long term (35 year) resource consents. Currently these consents are administered by regional councils and are

⁸ [Changes to resource management | Ministry for the Environment](#)

⁹ NPS-REG 2011, policy C1 e).

¹⁰ Refer pages 4-5 of Mercury submission on Resource Management National Direction packages 1, 2 and 3 including NPS-REG, 27 July 2025.



reported on annually at significant time and cost to the consent holder, we recommend that this be optimised to shift to data led reporting annually complimented with a full analytical and interpretative report and peer review process every two years.

Geothermal field classifications promote sustainable management of the system

The framework for geothermal field classification is based on natural values and resource development potential. We must ensure the right level of protection is applied to the framework as it is important for the reputation of the industry and the sectors social license. The current classifications place the onus on the potential user of the resource to prove sustainability of the system prior to development. We support this approach to assessing development and protection to promote sustainable management of the system.

5.3 Advancing knowledge and update of geothermal technologies

Promoting the important role Geothermal has to play in the energy transition

The wider geothermal ecosystem has an important role to play in the energy transition and this should be promoted. Mercury supports direct use clusters, especially in Taupō and Kawerau.

While access to geothermal heat, fluid or steam is one part of the puzzle, we often see business models that fail to materialise due to other key inputs such as access to suitable labour, transport connections for raw and finished products, access to capital and regulatory complexity meaning that critical funding milestones are not met.

We support the development of a geoheat information package to promote industrial uptake. To convert this to real industrial uptake more work will be needed in concept engineering support, technology and potentially additional funding. Any funding mechanisms should prioritise pilots that are scalable and replicable business models.

Future proofing for new technologies

For the strategy to be successful out to 2040 we think it should acknowledge and create space for new novel geothermal power generation technologies. There are significant technology advances occurring in other countries with enhanced geothermal systems (“EGS”) and advanced geothermal systems (“AGS”)¹¹. This strategy should acknowledge that new technologies may become commercially viable during that timeframe.

5.4 Enabling place-based geothermal clusters

We generally support the establishment of a Geothermal Centre of Excellence to facilitate collaboration and accelerate meaningful research that benefits iwi, industry, and academia. Our observation is that geothermal tourism and wellness uses are currently under-leveraged. With better design and integration into cluster strategies these could provide more employment opportunities in the regions.

5.5 Driving science, research and innovation, including supercritical geothermal technology

More research required to better understand supercritical geothermal

We support the research and investigation into exploring for supercritical geothermal resources in the Taupō volcanic zone. Supercritical geothermal power development has the potential to be a future fuel and resource that could be harnessed to provide additional electricity generation over the next 20 plus years.

¹¹ <https://geothermal.org/resources/geothermal-power-production>



More work is required to understand the resource potential, design appropriate construction materials and better understand the commercial model for electricity generation in the New Zealand context.

We note that there are significant conventional and low temperature geothermal opportunities that could be developed over a shorter period than supercritical geothermal by using proven technologies provided they meet sustainable reservoir limits and commercial criteria.

Geothermal requires ongoing research and innovation and we encourage better coordination on research that balances operational improvements, scientific knowledge and novel technologies. Some examples of operational research include silica scaling solutions, non-condensable gases and carbon emissions use cases.

Geothermal is a research-heavy industry. Research is the primary driver of operational improvements, including technology, efficiency and environmental mitigation methods. The strategy should reflect this by prioritising and funding research, in particular geoscience, materials science, computer science and engineering led programs endorsed and supported by the sector.

6 Concluding Comments

Mercury supports the strategic direction outlined in the draft and welcomes further engagement to refine the implementation pathways. We believe that with the right mix of regulatory reform, data transparency, workforce development, and innovation support, New Zealand can lead the world in sustainable geothermal development.

Please let us know how we can assist further in shaping the final strategy.

Yours sincerely



Ben Pezaro
Head of Geothermal Development

