



COVERSHEET

Minister	Hon Shane Jones	Portfolio	Regional Development
Title of Cabinet paper	Regional Infrastructure Fund: Proceeding to the next stage of the Supercritical Geothermal Energy Project	Date to be published	1 September 2026

List of documents that have been proactively released

Date	Title	Author
May 2026	Regional Infrastructure Fund: Proceeding to the next stage of the Supercritical Geothermal Energy Project	Office of the Minister for Regional Development
13 May 2026	Regional Infrastructure Fund: Proceeding to the Next Stage of the Supercritical Geothermal Energy Project ECO-26-MIN-0080 Minute	Cabinet Office

Information redacted

YES / NO (please select)

Any information redacted in this document is redacted in accordance with MBIE's policy on Proactive Release and is labelled with the reason for redaction. This may include information that would be redacted if this information was requested under Official Information Act 1982. Where this is the case, the reasons for withholding information are listed below. Where information has been withheld, no public interest has been identified that would outweigh the reasons for withholding it.

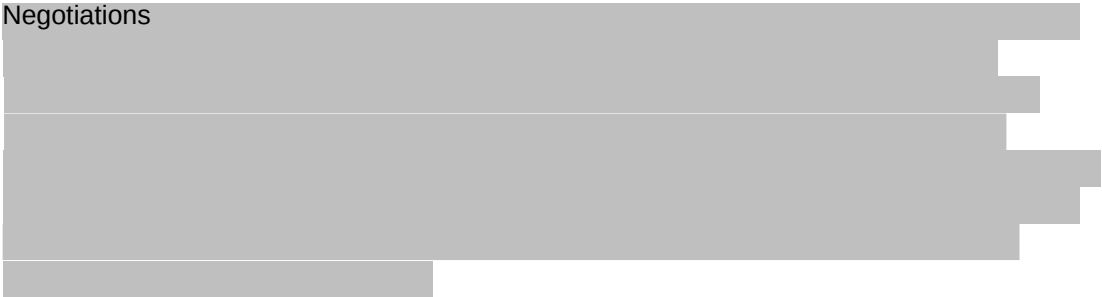
Some information has been withheld for the reasons of confidential advice to government, negotiations and commercial information.

In Confidence

Office of the Minister for Regional Development
Cabinet Economic Policy Committee

Regional Infrastructure Fund: Proceeding to the next stage of the Supercritical Geothermal Energy project

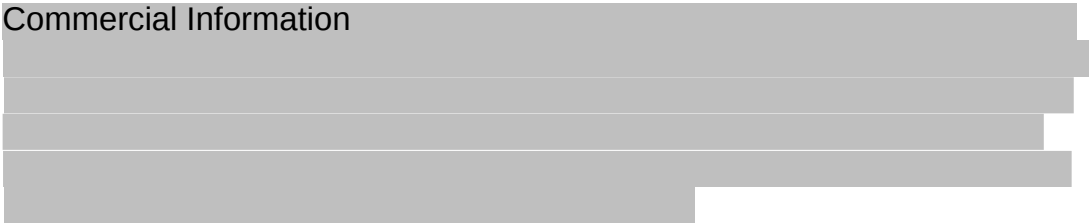
Proposal

1. On 11 November 2024, Cabinet agreed to ringfence up to \$60.00 million of funding from the Regional Infrastructure Fund (RIF) to fund the first of three exploratory wells required to prove the commercial viability of supercritical geothermal energy (SCGT), consisting of two stages:
 - 1.1 The initial drawdown of an up to \$5.00 million grant to the Ministry of Business, Innovation and Employment (MBIE) to undertake the detailed design and costings for the first exploratory well, in order to allow a full investment proposal to be developed for Cabinet consideration (stage one);
 - 1.2 The remaining drawdown of up to \$55.00 million to undertake the drilling of the exploratory well (stage two), subject to Cabinet approval of a full RIF investment proposal [CAB-24-MIN-0439 refers].
2. Negotiations 
3. Negotiations 
4. This paper also seeks Cabinet approval to drawdown the remaining \$55.00 million and authorise the Deputy Secretary Regional Development and Commercial Services, MBIE, to make ongoing operational and implementation decisions.
5. This paper contains the analysis and information normally provided in a standard Kānoa – Regional Economic Development & Investment Unit (Kānoa) investment proposal.

Executive Summary

6. In November 2024, Cabinet agreed to ringfence up to \$60.00 million from the RIF to support an exploratory programme to test the commercial viability of SCGT. Stage one, funded through an initial drawdown of up to \$5.00 million, has now been completed. This paper updates Cabinet on progress to date and seeks agreement to proceed to the next stage of the project.
7. The SCGT project is a first of its kind, high potential, public good science initiative, designed to extend New Zealand's established geothermal capability into higher-temperature conditions. Its purpose is to drill and test New Zealand's first supercritical geothermal exploratory well in the Taupō Volcanic Zone, generating foundational subsurface data and engineering learnings that cannot realistically be delivered by the private sector alone.
8. As an exploratory programme, the project is intended to test whether supercritical geothermal resources can be proven and developed over time. If successful, these resources have the potential to materially increase renewable electricity supply, support long term energy security, and contribute to emissions reduction.
9. Since the November 2024 Cabinet decision, the international energy environment has become more volatile, with renewed exposure to global fuel price shocks and supply disruptions reinforcing the risks associated with reliance on imported fossil fuels. This has sharpened the importance of accelerating domestic, firm, renewable energy options and electrification to support energy security, affordability, and economic resilience. In this context, the rationale for progressing frontier geothermal exploration has strengthened, as part of a longer-term strategy to reduce exposure to global fuel markets.
10. Stage one of the project has confirmed the Rotokawa geothermal field as the preferred pilot site for the first supercritical exploratory well; established robust governance and oversight arrangements including an independent International Peer Review Panel; progressed a conservative and internationally informed well design; and engaged extensively with iwi, landowners, and international partners. A preferred drilling contractor has been selected (Todd Energy), and programme timing and procurement pathways have been clarified.
11. The November 2024 Cabinet paper noted that \$60.00 million was an indicative figure and that detailed costs would be developed through stage one design. Because deep geothermal drilling involves uncertain subsurface conditions, Commercial Information

12. The project is now ready to proceed to the next stage – the pre-drilling phase. Progressing to the next stage requires early financial commitments to preserve the optimal drilling window and manage cost and delivery risk. Delays in decision making would increase the risk of losing contractor availability, missing drilling windows, or materially increasing costs.
13. The delivery timetable for the exploratory well is constrained by procurement of certain specialist drilling tools and well materials. These have manufacturing lead times of up to 12 months and must be ordered in advance of final rig mobilisation to maintain schedule certainty and manage cost escalation risk. While final prices are to be confirmed, some of the materials could be available for a second well if SCGT is found at a shallower depth.
14. The proposed well represents an incremental extension of existing geothermal drilling practice in New Zealand, building on experience with wells drilled to depths of approximately 3.2 kilometres and temperatures exceeding 340 degrees Celsius, and extending deeper and hotter to test supercritical conditions.
15. Negotiations

16. Commercial Information

17. Taken together, progressing to the next stage requires Cabinet to make a deliberate and informed choice to pursue a high potential, public good science programme with inherent risk. The risks are increasingly well understood, actively managed, and transparently allocated, but cannot be eliminated.
18. Where risks are described in this paper, they are characteristic of deep geothermal drilling and similar subsurface industries and are not materially different in nature from risks routinely managed in New Zealand's geothermal and petroleum sectors.
19. This paper therefore seeks Cabinet's confirmation that it is prepared to  Negotiations proceed to the next stage, and to release the ringfenced funding.
20. This paper contains the analysis and information normally provided in a standard Kānoa investment proposal.

Relation to government priorities

21. As Cabinet noted in November 2024, while this project is exploratory in nature, if the commercial viability of SCGT can be proven and the technology developed to harness the energy, SCGT could meet a significant amount of New Zealand's future electricity demand and would contribute to the Government's goal of doubling renewable electricity generation by 2040.
22. New Zealand faces a substantial and sustained increase in electricity demand as the economy progressively electrifies transport, industry, and process heat currently reliant on imported fossil fuels. If successfully proven and developed over time, supercritical geothermal energy has the potential to make a material contribution to meeting this demand within the next 25 years.
23. Recent global energy market disruptions have underscored the economic and fiscal risks associated with continued dependence on imported fossil fuels, including exposure to price volatility that can flow through to households, businesses, and inflation more broadly. Accelerating the development of domestic, low-emissions energy sources that provide reliable baseload supply is therefore increasingly important to underpin electrification and support a resilient energy system.
24. Around 60 per cent of New Zealand's total energy supply is still derived from fossil fuels. The systematic substitution of these fuels with large-scale, geothermal energy would make a meaningful contribution to emissions reduction in line with New Zealand's commitment to net zero emissions by 2050, while supporting continued economic development.
25. The project directly gives effect to the Government's recently released *From the Ground up: A strategy to unlock New Zealand's geothermal potential* (the geothermal strategy), by advancing a first-of-its-kind exploratory programme to improve geothermal knowledge and capability. The strategy identifies supercritical geothermal energy as a nationally significant resource with the potential to support emissions reduction, energy security, and long-term economic development.
26. The geothermal strategy emphasises the importance of improving geothermal knowledge, building advanced geothermal capability, and enabling innovation to unlock higher-value uses of the resource.
27. The proposed exploratory well directly supports these objectives by generating critical subsurface data to assess the existence and characteristics of a supercritical geothermal resource. This information is necessary to inform future investment decisions, de-risk potential commercial development, and strengthen New Zealand's position as a global leader in advanced geothermal technologies, consistent with the geothermal strategy's focus on research and demonstration.

Background

New Zealand's leadership in geothermal energy has been built on early Crown investment and risk-taking.

28. The modern geothermal electricity industry in New Zealand is founded on the pioneering exploration, scientific research, and deep drilling programmes undertaken by the Crown in the 1950s and 1960s. At that time, the Crown assumed the technical and financial risks required to characterise geothermal systems in the Taupō Volcanic Zone, develop drilling capability, and establish the regulatory and operational frameworks that enabled safe and sustainable use of the resource.
29. This early public investment directly enabled the subsequent development of New Zealand's commercial geothermal sector. Today, geothermal generation provides almost 20 per cent of New Zealand's electricity supply and underpins reliable, low-emissions baseload generation. The capability, expertise, and international reputation of New Zealand's geothermal industry, including leadership in reservoir management, reinjection practices, and regulatory settings can be traced back to this foundational Crown-led work.
30. The supercritical geothermal project represents a continuation of this established public-good role. As with earlier phases of geothermal development, the technical uncertainty, capital intensity, and long-time horizons associated with supercritical systems mean that private investment alone is unlikely to proceed without initial Crown leadership. By investing now in frontier exploration, the Crown is again creating the platform for future commercial development, maintaining New Zealand's position as a global leader in geothermal innovation, and enabling the next step change in renewable electricity supply.

The SCGT project is a nationally significant, science-led initiative to unlock next-generation geothermal energy in the Taupō Volcanic Zone

31. The project is led by MBIE through Kānoa, operating in partnership with the Rotokawa Joint Venture made up of Mercury NZ Ltd and Tauhara North No.2 Trust, which holds deep geothermal operating experience and existing consents within the Rotokawa field. This partnership brings together regulatory leadership, Māori landowners, and industry operators, enabling a coordinated, and technically rigorous exploration programme, where health and safety risks are appropriately managed.
32. The project is supported by a multi-disciplinary technical team comprising leading New Zealand geothermal experts drawn from several different geothermal companies and research organisations. This deliberately collaborative model brings together deep operational, scientific, and engineering expertise that would not typically be convened within a single commercial development. By requiring specialists from across the geothermal sector to work collectively on well design, risk management, and testing, the project advances the Government's objectives of building national geothermal

capability and ensuring that learnings from this frontier exploration are shared across the industry, rather than being exclusive to an individual field operator.

33. The project will drill, construct, and test a deep geothermal well at Rotokawa, designed to reach temperatures above 374 degrees Celsius and pressures exceeding 22.1 megapascals, enabling access to ultra-high enthalpy geothermal conditions¹ not previously attempted in New Zealand.
34. Scientific analysis by Earth Sciences New Zealand indicates that the Taupō Volcanic Zone may be among the most promising locations globally to test the viability of supercritical geothermal systems. The TVZ is characterised by an unusually large volume of magma, accessible at comparatively shallow depths by international standards.
35. Existing wells in this area have already demonstrated geothermal fluids at temperatures exceeding 340 degrees Celsius at depths between 1.2 and 3.2 kilometres, reducing the incremental step required to reach supercritical conditions. In addition, geological evidence suggests that historic volcanic activity may have created fractured and permeable conditions capable of supporting fluid flow. A central objective of the research well is to test this modelled hypothesis.
36. The project includes the development of the well design, procurement of specialist long-lead equipment, and the delivery of an integrated drilling and testing programme. The project is expected to:
 - 36.1 Expand New Zealand's renewable energy frontier by enabling exploration of a resource that international experience (eg Iceland) shows could dramatically increase energy output per well and reduce the amount of land needed for baseload electricity generation.
 - 36.2 Enable the development of breakthrough geothermal science, engineering techniques and operational capability specific to ultra-high temperature resources, creating a foundation for future commercial projects, regional supply-chain development and exportable geothermal expertise.
 - 36.3 Improve the resilience of New Zealand's energy system by supporting diversification of renewable baseload options at a time of rising electricity demand and by reducing long-term exposure to global fuel and storage market volatility.

Supercritical geothermal exploration is a foundational public-good activity with inherent exploration risk

37. While New Zealand's geothermal sector has demonstrated strong commercial performance from conventional geothermal development, supercritical exploration involves upfront uncertainty, long time horizons, and Negotiations

¹ Enthalpy is a measure of energy. Ultra-high means that the project is looking for energy two to three times higher than conventional geothermal.

Negotiations

38. As Cabinet noted in November 2024, without Crown investment New Zealand would be unable to test the feasibility of supercritical conditions, nor generate the knowledge required to enable higher yield geothermal electricity development needed to meet future electricity demand and long-term energy security objectives.

At this stage, the primary value of the project lies in the generation of foundational subsurface data, engineering learnings, and operational experience

39. The outcomes from a first of its kind supercritical exploration well are expected to be largely nonexcludable and systemwide in nature, informing future regulatory settings, safety standards, well design approaches, and resource assessment across the geothermal sector.
40. Any future commercial applications would arise downstream, once feasibility is demonstrated and Negotiations, at which point private investment and project specific intellectual property development would be more likely.
41. While there will be opportunities for international knowledge exchange and shared learning with comparable programmes overseas, the design itself is highly context specific and will not generate standalone proprietary intellectual property of direct commercial value. The primary benefit lies in the application of these learnings to New Zealand's geothermal system, informing future domestic development rather than creating exportable designs.

Progress on stage one of the SCGT project

42. The project initiation (stage one) is now complete. Updates on the key components are outlined below.

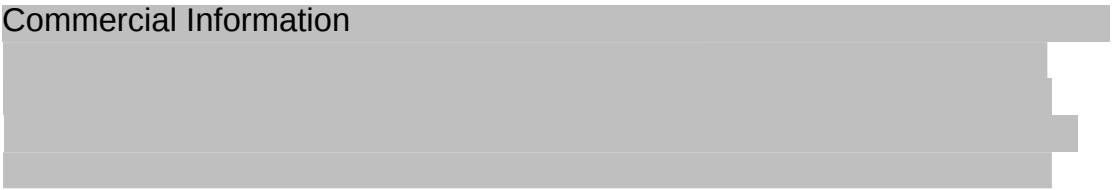
Governance arrangements

43. The project has a multi-discipline governance and project structure that ensures expert input and oversight of this technologically challenging and complex project. The details and members of the project's Governance Group, Technical Design Team and International Peer Review Panel (the PRP) is attached as Appendix One.
44. The PRP, chaired by Professor Roland Horne from Stanford University, who is a globally recognised geothermal reservoir engineer based in the United States, provides independent assurance and expert challenge across the project's most complex technical workstreams. The PRP meets on a regular basis aligned to key project milestones and draws on expertise in well engineering, geology, and geochemistry from jurisdictions with direct experience in superhot geothermal exploration, including Iceland and the United States.

45. While supercritical geothermal drilling remains rare internationally, approximately twenty deep high temperature wells have been drilled globally. The PRP ensures that international lessons from these projects are systematically incorporated into well design, risk assessment, and decision making, providing confidence that New Zealand is learning from prior experience and not progressing in isolation.

Pilot site for the first well confirmed

46. In September 2025, land within Rotokawa Geothermal Reservoir in the TVZ was selected as a preferred field for New Zealand's first supercritical geothermal exploration. The Rotokawa field was selected following extensive geological and geophysical study by Earth Sciences New Zealand, and risk assessments to confirm its suitability. Formal land access is yet to be secured by contract.
47. A Memorandum of Understanding has been signed between MBIE and the Rotokawa Joint Venture to explore the potential of supercritical geothermal energy at the site. The Rotokawa Joint Venture holds deep geothermal experience and existing consents in the Rotokawa field.

48. Commercial Information
- 
- A large rectangular area of the document has been redacted with a solid grey box, obscuring several paragraphs of text.

Comprehensive stakeholder engagement with iwi, hapū and landowners connected to the Rotokawa geothermal field

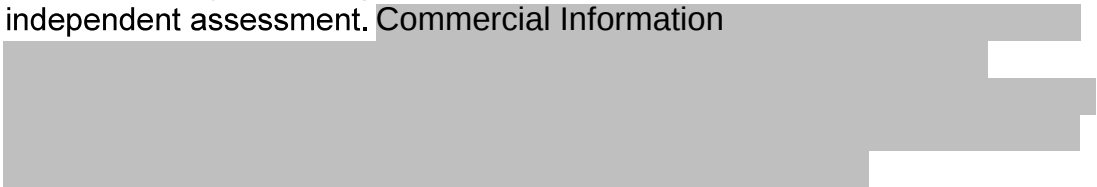
49. The project has a comprehensive iwi engagement strategy designed to ensure meaningful and enduring partnerships with iwi, hapū, and landowners connected to the Rotokawa geothermal field.

International interest and engagement

50. The New Zealand-Iceland Memorandum of Arrangement (MoA) on Geothermal Energy Development Cooperation, signed in Belém, Brazil on 19 November 2025, established a government-level partnership to accelerate geothermal innovation, particularly superhot and supercritical systems through technical collaboration, policy exchange, industry engagement, and academic links.
51. Since its signing, New Zealand (through MBIE) and Iceland have commenced implementation activities, including the first bilateral Steering Group meeting on 17 April 2026. At the meeting, both countries established a draft Joint Work Programme. A central component of the programme is structured technical collaboration, including a series of workshops and exchanges between New Zealand and Icelandic technical teams, aligned with Iceland's planned drilling of its third supercritical geothermal well (currently anticipated between late 2026 and early 2027).

52. These engagements are intended to enable the systematic transfer of recent operational learnings, design insights, and risk-management experience from Iceland's supercritical drilling programme into New Zealand's project planning and execution, and vice versa.
53. In addition to the formal government-to-government cooperation, members of the project's technical team have been invited by the Clean Air Task Force, an international clean-energy research and advocacy organisation, to participate in the World Geothermal Congress in June 2026. This engagement provides an opportunity to contribute to, and learn from, leading international practice in advanced and supercritical geothermal exploration. As part of this programme, the New Zealand team is expected to participate in and host a series of technical workshops with international experts, supporting the exchange of operational insights, well design experience and risk-management approaches relevant to first-of-its-kind geothermal drilling.

Progressing the drilling design of the well

54. The preliminary well design has been submitted to the PRP to provide an independent assessment. Commercial Information

55. While the supercritical well will reach greater depths and temperatures than existing production wells, the underlying drilling approach is not novel in the New Zealand context. More than 200 conventional geothermal wells have been drilled across the TVZ over the past five decades, including wells to depths of approximately 3.2 kilometres and temperatures exceeding 340 degrees Celsius.
56. The proposed well extends this established practice deeper, to approximately four to five kilometres, to access higher temperature conditions of around 374 degrees Celsius. The design incorporates well engineering techniques, materials, safety systems, and regulatory practices developed and refined through New Zealand's long experience as a global leader in geothermal development, including frameworks that have informed international standards. Existing geothermal wells in New Zealand are safely managed, and these same principles underpin the design and risk management approach for this project.
57. Many of the health and safety risks associated with drilling to supercritical conditions are extensions of risks that are routinely managed in conventional geothermal drilling, rather than entirely new or untested hazards. New Zealand's geothermal sector has deep practical experience in managing high temperature, high pressure drilling environments, and these established safety practices, regulatory controls, and operational disciplines underpin the project's approach to risk management.

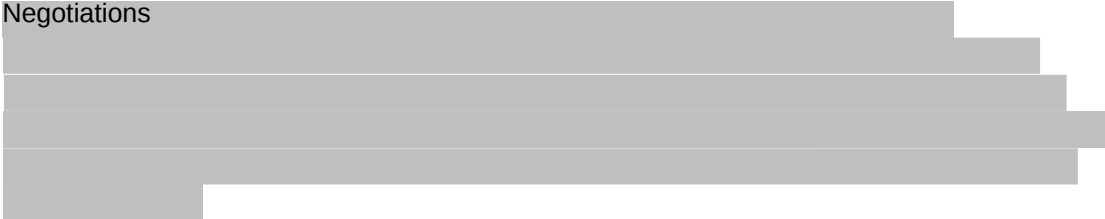
Workforce development

58. The project's workforce development approach is being advanced through a coordinated, Māori centred and industry aligned programme designed to grow long term capability in geothermal science, engineering and operations. Early planning is underway in collaboration with iwi, industry partners, and education providers to develop a structured pathway that supports rangatahi Māori into high value geothermal careers.
59. The project team is also engaging with the Ministry of Social Development regional office on potential workforce opportunities.

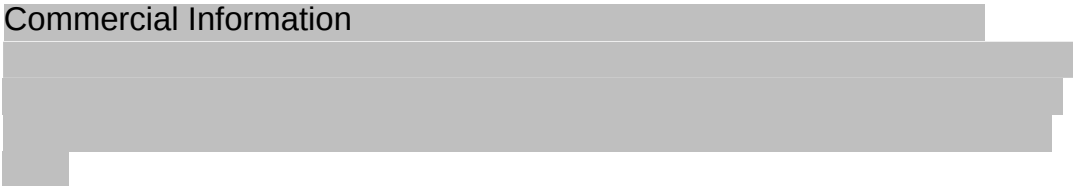
Preferred drilling contractor selected

60. In March 2026, New Zealand firm Todd Energy was selected as the preferred lead contractor to drill the first supercritical well. Todd Energy was chosen from four highly skilled applicants following a competitive procurement and evaluation process.

61. Commercial Information
- 

62. Negotiations
- 

Programme timing, drilling windows and long lead procurement

63. The delivery timetable for the exploratory supercritical well is constrained by procurement of certain specialist drilling tools and well materials. These have manufacturing lead times of up to 12 months and must be ordered in advance of final rig mobilisation to maintain schedule certainty and manage cost escalation risk.
64. Drilling activities must also be aligned with the availability of Todd Energy's drilling rig, which is in high demand across the domestic energy sector.
65. Commercial Information
- 

66. These constraints mean that early commitment to long lead items and critical preparatory activities is necessary to preserve the optimal drilling window and avoid delays that could materially increase cost, disrupt contractor availability, or defer the programme by a full year.

As a frontier science and deep-drilling initiative, the SCGT project involves a range of high-consequence risks

67. Negotiations
[REDACTED]
68. **Programme-level risks** arise from the first-of-its-kind nature of the project and the uncertainty associated with deep geothermal drilling. The nature of these risks is comparable to those routinely managed in New Zealand's geothermal and petroleum sectors, where deep drilling, elevated pressures, and complex subsurface conditions are addressed through established regulatory, engineering and assurance frameworks. Commercial Information
[REDACTED]
Notwithstanding this, the generation of high-quality subsurface data and operational learning remains a core objective.
69. Financial risk is inherent in deep drilling, where costs and timeframes cannot be fixed in advance and operations must continue once drilling begins to manage safety and well integrity issues. Commercial Information
[REDACTED]
[REDACTED] and programme delays that could result in missing the optimal drilling window.
70. These risks are being managed through staged decision points, conservative design, strong governance and independent assurance, but cannot be eliminated.
71. Final drilling costs will be more certain once the next stage is complete. Currently, the expert panel and independent advisors estimate drilling will take between Commercial Information days. At an indicative per day cost of approximately \$ Commercial Information million this implies a base drilling cost range of between \$ Commercial Information million to \$ Commercial Information million. Given the first-of-its kind nature of supercritical geothermal exploration and the significant subsurface uncertainty involved, a higher contingency is required to manage variability in drilling duration, equipment performance, and downhole conditions. The final per day rate and overall cost envelope will be confirmed through ongoing negotiations with the drilling contractor and further refinement during the next stage.
72. Negotiations
[REDACTED]

Negotiations

73. Commercial Information

74. **Health and safety risks** are inherent in drilling at elevated temperatures and pressures and are a central focus of project design and oversight, building on safety systems routinely applied in New Zealand's geothermal sector. Under the Health and Safety at Work Act 2015, health and safety duties apply to all persons conducting a business or undertaking (PCBUs) involved in the programme, which include the Crown, Todd Energy, and Mercury NZ Ltd. The drilling contractor retains day to day operational control and management of health and safety risks, while the Crown retains its duties as the lead entity PCBU, supported by robust assurance, oversight, and coordination arrangements.

75. Some examples of health and safety risks are outlined below, noting that when the actions are complete the residual risk will reduce. Negotiations

Risk	Impact	Risk score	Action/mitigation	Risk allocation (starting position for negotiation)
Negotiations				

Negotiations

76. A draft Project Health and Safety Framework (the Framework) is being developed in consultation with WorkSafe New Zealand to describe at a strategic level how MBIE, as the lead entity on the project, will discharge their health and safety responsibilities as a PCBU.
77. The Framework describes the:
- 77.1 Health and safety principles MBIE will adopt for the project.
 - 77.2 Roles of MBIE, Todd Energy and Mercury NZ Ltd on the project, including ensuring health and safety risks are minimised so far as is reasonably practicable.
 - 77.3 Health and safety assurance activities that MBIE will undertake during the project.
78. MBIE as lead entity on the project has a key assurance function. An assurance matrix is appended to the Framework that describes the assurance steps that MBIE will take to support discharging their health and safety responsibilities.
79. **Sub-surface risks** arise from uncertainty about geological conditions at supercritical depths representing an extension of conditions already encountered in deep conventional geothermal wells rather than a fundamentally new subsurface environment. Confidentiality
80. Confidentiality

Negotiations [REDACTED]

81. **Environmental risks** Negotiations [REDACTED]

82. Negotiations [REDACTED]

Negotiations [REDACTED]

83. Negotiations [REDACTED]

Negotiations [REDACTED]

84. Negotiations [REDACTED]

85. Negotiations [REDACTED]

86. Negotiations [REDACTED]

87. Negotiations [REDACTED]
88. Negotiations [REDACTED]
89. In terms of timeframes, negotiations on the Project Agreement with the Rotokawa Joint Venture (Mercury NZ Ltd and Tauhara North No.2 Trust) began in late March 2026. Negotiations on the drilling contract began in April 2026. Negotiations [REDACTED]
90. Negotiations [REDACTED]
91. Negotiations [REDACTED]

Cost-Benefit Analysis Summary

92. This project is a first-of-its-kind, public good science investment, rather than a conventional commercial or infrastructure proposal. As such, costs are largely incurred in the near term, while benefits are uncertain, long term, and largely non-excludable.

Costs and risks

93. The Crown's direct fiscal exposure is currently capped at the approved funding envelope for the next stage (\$55.00 million), Commercial Information [REDACTED]
94. Commercial Information [REDACTED]

Commercial Information

95.

Benefits

96. The well is designed as a research-led exploratory intervention, with its primary purpose being to generate substantial public value, including:
- 96.1 foundational subsurface, engineering, and operational data for the TVZ;
 - 96.2 improved understanding of the technical, safety, and environmental limits of supercritical geothermal systems; and
 - 96.3 material risk reduction and improved decision-making for future investment and policy decisions, both public and private.
97. These benefits are system-wide, non-excludable, and enduring and are unlikely to be generated at scale without Crown leadership and investment.
98. If supercritical geothermal resources can be proven and developed over time, the potential benefits are significant and long-lasting, including increased renewable electricity supply, improved energy security, reduced emissions, and lower long run energy costs. While the probability of these outcomes is uncertain, their scale is significant and would materially exceed the initial public investment.

Overall assessment

99. On a short-term fiscal basis, this is a frontier public-good investment with inherent risk that is bounded, proportionate, and comparable to other deep geothermal and oil and gas drilling programmes. However, the fiscal exposure is bounded, while the upside – though uncertain – has the potential to materially strengthen New Zealand's long term energy system, particularly in light of increased global fuel price volatility and the strategic importance of accelerating electrification based on domestic energy sources.
100. Proceeding therefore requires Cabinet to weigh the expected public value, including the enduring knowledge generated even in the event of technical uncertainty, Negotiations

I am seeking Cabinet's agreement to proceed with the project in light of its risk profile

101. The proposal involves accepting bounded, near-term fiscal **Negotiations** in return for foundational knowledge that would not otherwise be available, and a low probability but potentially transformational long term energy benefit.
102. I invite Cabinet to note the risk profile set out above and confirm that it is prepared, on balance, to proceed with the project in light of the expected public value and **Negotiations**

Seeking agreement to release ringfenced funding to progress the project to the next stage

103. I am seeking Cabinet's agreement to drawdown the remaining \$55.00 million and authorise the Deputy Secretary Regional Development and Commercial Services, MBIE, to make ongoing operational and implementation decisions.
104. The pre-drilling costs are estimated at approximately \$**Commercial Info** million in total. The largest component is approximately \$**Commercial Info** million for the lead contractor and long-lead items. Other significant cost areas include project management and other services, governance and leadership, geoscience and well engineering and legal services, each generally in the range of \$**Commercial** million to \$**Commercial** million.

Cost-of-living Implications

105. This proposal will not directly address cost-of-living issues in the short term. However, if the commercial viability of SCGT is proven, in the longer term this proposal may lead to a positive impact on energy prices for businesses and households. The full potential of SCGT will be able to be better understood when/if the first deep well is successfully drilled.

Financial Implications

106. If Cabinet agrees to this proposal's recommendations, the \$55.00 million of RIF capital funding ringfenced by Cabinet in November 2024 will be released from the RIF Multi-Category Appropriation.

Legislative Implications and Regulatory Impact Statement

107. This proposal contains no legislative implications, and a Regulatory Impact Statement is not required.

Climate Implications of Policy Assessment

108. A Climate Implications of Policy Assessment (CIPA) is not required for this proposal. However, if the commercial viability of SCGT is proven and the energy is able to be harnessed, having abundant, affordable geothermal electricity would provide opportunities to reduce emissions and reliance on expensive fuels such as gas and coal.

109. Geothermal energy production has historically emitted low levels of carbon dioxide (compared to oil and gas). However, recent advances in technology now allow for these gases to be reinjected.

Population and Human Rights Implications

110. This proposal will not have any direct population or human rights implications.

Use of external resources

111. External resources have been engaged to provide specialist technical, legal, and commercial expertise required to support the development of the Supercritical Geothermal Project and the preparation of advice to Ministers. Given the project's frontier scientific nature, technical complexity, and risk profile, this expertise is not available at sufficient depth within the public service alone.
112. To date, consultancy and advisory services have been provided by 11 specialist companies, alongside an International Peer Review Panel comprising four international experts, and three international firms engaged to undertake independent peer review of well design and associated technical workstreams.
113. These resources have supported geothermal well engineering and design, geoscience and reservoir analysis, independent international assurance, **Negotiation** and commercial and procurement advice. External advisers have provided technical input and independent challenge but have not been involved in policy decision making.
114. Total expenditure on external resources to date is approximately \$**Commercial** million, from the \$5.00 million allocated for stage one of the project. Commitments of approximately \$**Commercial** million are in place through to the end of June 2026, reflecting the progression of detailed design, assurance, and procurement preparation activities.
115. Further external resources will be required to implement the project should Cabinet agree to proceed to stage two, including drilling contractors, specialist engineering and geoscience services, and ongoing independent technical assurance. These services are integral to project delivery rather than policy development.

Consultation

116. The following departments were consulted: The Treasury, the Department of the Prime Minister and Cabinet, the Ministry of Business, Innovation and Employment (Energy Policy, Resources Policy, Health and Safety Policy), the Ministry of Foreign Affairs and Trade, the Ministry of Social Development.
117. MBIE's Health and Safety Policy team advised that the project has taken the right approach by engaging with WorkSafe New Zealand to help prepare the Health and Safety framework and talking to subject matter experts and PCBUs with overlapping duties.

118. Confidential advice to Government [REDACTED]
119. Advice on the proposal was sought from Crown Regional Holdings Limited (CRHL), which is an asset holding company established to hold regional investments made by the Crown. CRHL directors advised they unanimously support the SCGT project, recognising its national significance and potential to enable next-generation geothermal energy.
120. CRHL Directors noted that, as a frontier science and deep-drilling initiative, the project entails inherent risks [REDACTED] Negotiations [REDACTED]. The Directors further noted that the project is, however, appropriately staged and supported by strong governance, including a Governance Group, a world-class independent International Peer Review Panel, and a Technical Design Team.

Communications and Proactive Release

121. I intend to make a public announcement about the proposal contained in this paper following Cabinet's decision. I intend to release this Cabinet paper and associated minutes within 30 days of an announcement being made.

Recommendations

The Minister for Regional Development recommends that the Committee:

1. **Note** that on 11 November 2024 Cabinet agreed to ringfence up to \$60.00 million from the Regional Infrastructure Fund (RIF) to support a two-stage supercritical geothermal energy (SCGT) exploratory project [CAB-24-MIN-0439 refers].
2. **Note** that stage one of the project, funded through an initial drawdown of up to \$5.00 million, has been completed, including confirmation of the pilot site at Rotokawa, establishment of governance and international expert oversight, and development of a concept well design.
3. **Note** that the SCGT project is a first of its kind, high potential, public good science programme with inherent risk, [REDACTED] Negotiations [REDACTED]
[REDACTED]
[REDACTED]
4. **Note** the risk profile, proposed risk allocation, and draft indemnity and liability settings for the project, including that:
 - 4.1 Commercial Information [REDACTED]
[REDACTED]
 - 4.2 Commercial Information [REDACTED]
[REDACTED]
[REDACTED]

4.3. Commercial Information

5. **Confirm** that Cabinet is prepared to make an informed judgement that the expected public value justifies Negotiations proceeding to stage two of the SCGT project;
6. **Agree** to release the remaining \$55.00 million of ringfenced RIF funding to progress to the next stage of the SCGT project:
7. **Authorise** the Deputy Secretary, Regional Development and Commercial Services, Ministry of Business, Innovation and Employment, to make ongoing operational and implementation decisions within the approved funding envelope.

Authorised for lodgement

Hon Shane Jones

Minister for Regional Development

Appendix One: Governance arrangements

Robert Pigou, Deputy Secretary Regional Development and Commercial Services, Ministry of Business, Innovation and Employment (MBIE), has decision-making authority for the project as per his delegations.

The **Governance Group** comprises governance experts with strong backgrounds in the energy sector, financing and Māori land development. The Governance Group provides strategic oversight, ensures risk is well managed, and supports decision making.

- Hon Tim Groser – Former Minister for Trade and Climate, Chair.
- Dr Keith Turner – Former Chair of Transpower and Chief Executive of Meridian Energy, Member.
- Jason Hollingworth – Chief Financial Officer of Vector Limited, Member.
- Dr Charlotte Severne – Chief Executive of Te Tumu Paeroa – Māori Trustee, Member.

A **Technical Design team** consists of members with the experience and expertise to design the well, the equipment needs, and the steps to get to the depths required for this project. The multi-disciplinary team leads work on regulatory approvals, design, risk assessments, geoscientific modelling, engineering, procurement, drilling and asset management. The team includes:

- Robert J. Rankin – Mercury NZ Ltd, Project Director.
- Portia McKenzie – MBIE/Kānoa – Regional Economic Development & Investment Unit (Kānoa), Project Lead.
- Mana Newton – Tauhara North No.2 Trust, Landowner Lead.
- Isabelle Chambefort – Earth Sciences New Zealand, Science Lead.
- Ralph Winmill – GeoDE Well Engineering Ltd, Well Engineering Lead.
- Dr. Paul Siratovich – Upflow NZ, Geoscience Lead.
- Andrew Marsh – Upflow NZ, Geoscience Support.
- Christina Diamond – MBIE/Kānoa, Iwi Engagement Lead.
- Colin Finnegan – Superior Performance Design Ltd, Procurement and Drilling Contracting Lead.

An **International Peer Review Panel** has been appointed to review the well design and project details, and provide advice on latest international products and technologies.

- Professor Roland N. Horne, Stanford University, Chair.

I N C O N F I D E N C E

- G.Ó. (Omar) Friðleifsson – Iceland Deep Drilling Project geologist.
- Kristinn Ingason – Iceland Deep Drilling Project well engineer.
- Dr Darrell Gallup – USA consultancy ThermoChem Inc. geochemist.