



COVERSHEET

Minister	Hon Shane Jones	Portfolio	Regional Development
Title of Cabinet paper	Regional Infrastructure Fund: Investing in the OpenStar Fusion Energy Research Development Facility project	Date to be published	23 March 2026

List of documents that have been proactively released		
Date	Title	Author
December 2025	Regional Infrastructure Fund: Investing in the OpenStar Fusion Energy Research and Development Facility project	Office of the Minister for Regional Development
9 December 2025	Regional Infrastructure Fund: Investing in the OpenStar Fusion Energy Research and Facility Development project EXP-25-MIN-0131 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 commercial information and negotiations.

Security classification – In Confidence

Office of the Minister for Regional Development

Cabinet Economic Policy Committee

Regional Infrastructure Fund: Investing in the OpenStar Fusion Energy Research and Development Facility project

Proposal

1. On behalf of the Regional Development Ministerial Group (RDMG),¹ I am seeking Cabinet’s agreement to commit up to \$35.000 million of the Regional Infrastructure Fund’s (RIF) capital to invest in the construction of the OpenStar Fusion Energy Research and Development Facility Commercial Information (RIF contribution up to \$35.000 million; total project cost \$Commercial Information million), on the condition that OpenStar raises US\$Commercial Informa million (NZ\$Commercial Information million) from investors.
2. The project does not meet the RIF’s eligibility criteria but offers strategic regional and national economic development opportunities.

Relation to government priorities

3. This project supports the Government’s *Going For Growth* agenda, which includes a commitment to infrastructure for growth. A key action under this approach is the \$1.200 billion RIF, a capital fund with the primary purpose of accelerating infrastructure projects that will make a material difference in our regions.
4. This proposal supports the *Going For Growth* agenda by supporting innovation in advanced technology that could unlock a new high-productivity sector, attracting international investment through OpenStar’s capital raise, and creating over 100 skilled jobs. Successful development of commercial grade fusion reactors would have significant export and energy security benefits to New Zealand.

Executive Summary

5. This paper seeks Cabinet agreement to invest up to \$35.000 million from the Regional Infrastructure Fund (RIF) to design and build the OpenStar Fusion Energy Research and Development Facility (RIF contribution up to \$35.000 million; total project cost including the facility \$Commercial Information million) to continue the development of a commercial grade fusion reactor.
6. The proposal falls outside the Cabinet-approved RIF’s eligibility criteria as it will not be located in one of the provincial regions of New Zealand. I recommend Cabinet waive this eligibility requirement on the basis that this proposal offers a high-value RIF opportunity that aligns with the RIF’s overarching objectives to improve productivity and resilience in regional New

¹ RDMG is comprised of the Ministers of/for Finance, Infrastructure, Local Government, Māori Development, and Regional Development [CAB-24-MIN-0168.02 refers].

Zealand, and its contribution to the Government's *Going For Growth* approach.

7. The project is considered enabling infrastructure and is expected to deliver significant economic and strategic benefits, including job creation. Without RIF investment, OpenStar is highly likely to move operations to a different jurisdiction that offers infrastructure or incentives that are unavailable in New Zealand.

Background

8. On 20 May 2024, Cabinet agreed to establish the \$1.200 billion RIF, a capital fund with the primary purpose of accelerating infrastructure projects that will make a material difference in our regions [CAB-24-MIN-0168.02 refers]. Cabinet agreed to the RIF having two distinct funding components:
 - 8.1 Resilience infrastructure that improves a region's ability to absorb, adapt and/or respond to stresses and shocks
 - 8.2 Enabling infrastructure that ensures regions are well-connected, productive and resilient.
9. The OpenStar project I am proposing for RIF investment in this paper aligns with the focus of the enabling infrastructure component.

Cabinet agreed RIF eligibility criteria

10. In June 2024, Cabinet agreed to a set of criteria that projects must meet to be eligible for RIF support [CAB-24-MIN-0214 refers]. The full RIF eligibility criteria is attached as **Annex One**. The following criteria are relevant to OpenStar:
 - 10.1 The applicant must be able to deliver an asset based in one of the provincial regions of New Zealand. Specifically excluded are: Auckland, Wellington, and metropolitan Christchurch.
 - 10.2 Where the investment is for an asset in an individual business:
 - 10.2.1 benefits and outcomes should be non-exclusive to the individual business, meaning that the investment must catalyse benefits or services for other businesses or the community; and
 - 10.2.2 be a business that has a primary focus on one of the following areas: energy security, water security, food security, connectivity (transport solutions or digital connectivity) or growth of a Māori-owned business that is critical to enabling outcomes throughout a community or region.
11. Cabinet is required to make decisions on RIF proposals that do not meet the eligibility criteria, for any level of investment.

12. I am seeking agreement from Cabinet to waive the requirement for the proposed investment to meet the RIF’s eligibility criteria. Since the facility will be located **Commercial Information**, the proposal does not meet the eligibility criteria regarding location. It meets the criteria related to investment in individual businesses, with the main focus being on energy security; other businesses may also benefit.
13. I consider this project meets the bar to warrant an exception to the criteria given the scale of the potential economic impact and broader strategic implications for the Government’s policy agenda (such as the *Going For Growth* approach).

Progress of the RIF to-date

14. The \$1.200 billion RIF is made up of \$900.000 million capital expenditure (CAPEX) and \$300.000 million operating expenditure (OPEX). To date, over \$1.000 billion of the RIF has been approved and/or ringfenced for projects across New Zealand. Over 50 projects have been contracted, and ten projects have been completed.
15. The fund is on track to be fully allocated within this parliamentary term, with further RIF investment proposals being developed for consideration by RDMG in 2026.

The project I am proposing for Cabinet agreement does not meet the RIF eligibility criteria

16. A summary of the project is outlined below. Although this proposal does not align with the RIF eligibility criterion relating to location, I consider it offers high-value opportunities that align with the RIF’s overarching objectives to improve productivity and resilience in regional New Zealand.
17. An Investment Proposal, based on full evaluation and financial due diligence, has been prepared by Kānoa – Regional Economic Development & Investment Unit (Kānoa) within the Ministry of Business, Innovation and Employment. The Investment proposal is attached as **Annex Two**.

Enabling infrastructure: OpenStar Fusion Energy Research and Development Facility, **Commercial Information**

18. The key points of the project are outlined in the table below:

Applicant	Open Star Technologies Limited
Total Project Cost	\$ Commercial Information million
RIF Investment Requested	Commercial Information
RIF Investment	Commercial Information

recommendation	Commercial Information
Co-Funding	\$Commercial Information million
Reason for requiring Cabinet consideration	The project is not located in one of the provincial regions of New Zealand.

Project Overview

19. Open Star Technologies Limited (OpenStar) is seeking a \$35.000 million loan to construct a bespoke fusion energy research and development facility ^{Com} Commercial Information to continue the development of a commercial grade fusion reactor.
20. Successful development of a commercial grade fusion reactor by OpenStar would have significant export and energy security benefits to New Zealand.
21. Fusion energy is an emerging technology that seeks to replicate the process powering the sun by fusing light atoms into a larger atom, releasing a vast amount of carbon-free energy. Fission energy, used in current nuclear power plants, involves splitting heavy atomic nuclei (like uranium). Unlike nuclear fission, fusion does not generate a material amount of long-lived radioactive waste or carry meltdown risks.
22. While fusion is self-limiting and inherently safer than fission, the neutron radiation produced requires heavy shielding and if used long-term can create tiny amounts of radioactive waste. For this reason, a bespoke facility with a concrete encasement is required to safely shield the users from the fusion neutrons.

The project is strategically important for New Zealand as it will have significant economic and strategic impacts

23. Energy supply in New Zealand is under pressure despite strong renewable generation. Falling gas reserves and reliance on coal for dry-year backup have pushed wholesale prices sharply higher. The intermittency of renewables heightens vulnerability during peak demand periods. Energy and economic development are inextricably linked. These pressures are driving up costs for businesses, affecting productivity, competitiveness and economic resilience. Increased investment in firming and storage can help stabilise supply and costs.
24. Fusion energy could transform energy supply by providing a virtually limitless source of carbon-free baseload power that complements intermittent renewables and reduces reliance on fossil fuels.
25. There is currently a global capital pursuit for fusion energy solutions, with billions of dollars of private and public investment being deployed. There is an emerging consensus that the technological breakthroughs required to achieve commercial grade reactors will occur in the next few years. Continued

engagement by New Zealand in fusion energy research could position the country to benefit from future clean baseload power.

OpenStar is developing a novel approach to fusion energy, a global opportunity for clean energy, energy diversification and supply resilience

- 26. Most experimental fusion reactors are a “tokamak” design whereby the plasma is contained within a donut of magnets that are wrapped around the outside of the vacuum chamber.
- 27. OpenStar’s fusion technology involves a novel levitated dipole reactor. Levitating dipoles offer potentially higher plasma pressure and therefore greater power output than a tokamak reactor. It also has a more modular, flexible and ‘simpler’ design than a tokamak.
- 28. Globally over 50 private fusion companies are operating, but OpenStar is the only one using the levitated dipole method. This method offers distinct advantages in relation to stability, cost and scalability. Some of the different fusion approaches currently being attempted are shown below:



- 29. OpenStar’s recent breakthroughs with *Junior*, its first research and development (R&D) machine, validated its fusion technology. OpenStar’s technology pathway shown below targets a commercially viable power generation system . Each stage involves a capital raise, starting with Series A for *Tahi*.



30. OpenStar's upcoming fund-raising series and next three years of R&D will centre on developing *Tahi*, its next fusion machine. This device requires significant scaling of OpenStar's operations and imposes multiple facility requirements, namely radiation shielding, high-power electrical feeds, and precision engineering infrastructure.
31. Specialised facilities to house the next stages of OpenStar's reactor R&D programme do not currently exist in New Zealand but do exist in other countries and/or incentives are being offered to build facilities within their jurisdictions.

RIF funding for a specialised facility could enable the Government to secure the benefits of a growing Fusion Industry by anchoring it in New Zealand

32. Government investment is required to support the project because ^{Commercial Information}
Commercial Information
other jurisdictions already have the necessary infrastructure
Commercial Information . There is no expectation of RIF funding towards research and development activities to take place in the proposed facility.
33. RIF investment will fund a custom facility for *Tahi* and fusion energy R&D, integrating plasma science, computing, engineering, and advanced technologies. Obtaining a RIF loan for the proposed facility gives OpenStar the opportunity to retain fusion energy development and its associated economic benefits in New Zealand.
34. This project represents an opportunity for New Zealand to maintain innovation in fusion energy R&D, potentially making it a global leader and attracting foreign investment. OpenStar is willing to commit to maintaining a R&D and/or manufacturing presence in New Zealand until the repayment obligation is reached ^{Commercial Information} . Government support would allow OpenStar's intellectual property, talent, and economic value to remain in New Zealand over the medium-to-long term.
35. The project would catalyse at least US\$^{Commercial Information} investment to finance three to four years of intensive R&D. While RIF investment is specifically for a facility for *Tahi*, establishing it in New Zealand would potentially enable OpenStar to remain onshore through future investment rounds, potentially leading to additional foreign investment over time.
36. This initiative would also enable further development and commercialisation of additional new technologies and patented intellectual property, adding more value onshore. Beyond fusion power generation, the OpenStar technology provides commercial opportunities related to high-value transmutation applications, including the production of key medical isotopes (used for diagnostics or cancer therapy, for example) and the processing of rare-earth materials, which have large potential markets.

- 37. OpenStar's advances in magnets, power supplies, cryogenics, and superconducting systems are likely to create opportunities for new spin-out ventures, particularly in defence, aerospace, and space technologies closely aligned with its core capabilities.
- 38. The proposal would stimulate economic development by upskilling the manufacturing sector, creating revenue for New Zealand-based suppliers, and contribute to the creation of technical and scientific jobs. OpenStar has provided opportunities for 55 interns since 2023 and is committed to providing pathways for graduates in partnership with universities. This proposal could result in 100 high-value jobs within three years.
- 39. The project aligns with **Commercial Information** regional development priorities by advancing innovation in clean energy technology, supporting advanced manufacturing and commercialisation of research, and creating skilled jobs.

Funding Structure

- 40. OpenStar seeks a \$35.000 million loan to support the design and construction of a bespoke fusion energy R&D facility. **Commercial Information**
Commercial Information
Commercial Information
Commercial Information
- 41. **Commercial Information**
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- 42. **Commercial Information**
Commercial Information
Commercial Information. To secure the project in New Zealand, OpenStar must show it can access a suitable facility in time to meet R&D milestones.
Commercial Information
Commercial Information
- 43. To deliver infrastructure by **Commercial Information**, design and consenting processes need to commence urgently. **Commercial Information**
Commercial Information
Commercial Information
- 44. **Commercial Information**
Commercial Information
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Commercial Information

- 45. Commercial Information [Redacted]
- 46. Kānoa has assessed seven different funding options with OpenStar, Commercial Information [Redacted]
- 47. Three options for the funding structure for Cabinet consideration are outlined below:
 - 47.1 Commercial Information, Negotiations [Redacted]
 - 47.2 Commercial Information, Negotiations [Redacted]
 - 47.3 Commercial Information, Negotiations [Redacted]
- 48. Commercial Information, Negotiations [Redacted]
- 49. Commercial Information, Negotiations [Redacted]

50. Commercial Information, Negotiations [Redacted]

51. Confirmation that the applicant has secured US\$ [Redacted] million (NZ\$ [Redacted] million) by Commercial Information through a capital raise will be a condition of funding approval. The applicant plans to raise US\$ [Redacted] million in total Commercial Information [Redacted]

Readiness and Risk Management

52. Following a successful \$ [Redacted] million Commercial Information raise with equity investors by OpenStar in 2025, the entity is funded through to at least Commercial Information. Following the scientific breakthrough with *Junior* in November 2024, OpenStar is progressing preparatory work for *Tahi*.

53. The project is at a mid-stage of requirements finalisation and site selection. Detailed design for the project is to start on approval of RIF investment. OpenStar does not anticipate any issues with obtaining consents. The project is expected to be consented and shovel-ready by Commercial Information, followed by construction to Commercial Information.

54. Potential sites for the facility are limited, mainly due to access to an adequate supply of electricity. OpenStar is undertaking due diligence of locations Commercial Information.

55. Commercial Information and New Zealand presence of the applicant:

55.1 Commercial Information [Redacted]

Commercial Information [Redacted]

55.2 OpenStar presents a promising but high-risk pathway to fusion energy. Commercial Information [Redacted]

Commercial Information [Redacted]

Mitigation: To counter this risk, Kānoa would take appropriate security that reflects the investment – including Commercial Information

55.3 There is a risk that OpenStar does not maintain an R&D presence in New Zealand. Maintaining a presence will be met by:

55.3.1 keeping a minimum of Commercial Information based in New Zealand, or

55.3.2 a minimum of \$Commercial Informs million of OpenStar's global annual expenditure per year relating to activity in New Zealand.

Mitigation: Conditions of approval will include Commercial Information

Next steps

56. If Cabinet agrees to invest in the OpenStar proposal, Kānoa will begin the contracting process with the applicant. I am seeking Cabinet's agreement to delegate any ongoing decisions in relation to this project to RDMG Ministers.

Cost-of-living Implications

57. There are no potential indirect cost-of-living implications related to these proposals over the medium-term.

Financial Implications

58. If Cabinet agrees to invest in the OpenStar proposal, capital funding would be committed from the RIF's existing appropriation. As at 4 December 2025, there is \$Confidential advice million CAPEX and \$Confidential advice million OPEX remaining.

59. Commercial Information

Legislative Implications

60. This proposal contains no legislative implications and a regulatory impact statement is not required.

Climate Implications of Policy Assessment

61. There are no or limited direct climate implications from this proposal.

Population and Human Rights Implications

62. This proposal contains no population or human rights implications.

Consultation

63. The following departments were consulted: The Treasury; Department of the Prime Minister and Cabinet; Ministry of Foreign Affairs and Trade; Ministry of Business, Innovation and Employment; Ministry of Social Development; Te Puni Kōiri; Department of Internal Affairs.
64. Commercial advice on the investment proposals was sought from Crown Regional Holdings Limited (CRHL), which is an asset holding company established to hold regional investments made by the Crown. CRHL provides commercial advice to Kānoa on draft investment proposals that are recommended for loan or equity funding through the RIF.
65. Kānoa has incorporated CHRL recommendations in the investment proposal attached as **Annex Two**.

Proactive Release

66. I intend to release this Cabinet paper and associated minutes within 30 days of the investment being announced publicly.

Recommendations

The Minister for Regional Development recommends that the Committee:

1. **note** that on 20 May 2024, Cabinet agreed to establish the \$1.2 billion Regional Infrastructure Fund (RIF) [CAB-24-MIN-0168.02 refers];
2. **note** that Cabinet agreed the RIF will invest in resilience infrastructure that improves a region's ability to absorb, adapt and/or respond to stresses and shocks; and enabling infrastructure that ensures regions are well-connected, productive and resilient;
3. **note** that Cabinet has previously agreed to eligibility criteria for RIF investments, including specific requirements for investments in individual businesses [CAB-24-MIN-0214 refers];
4. **note** that the OpenStar proposal outlined in this paper does not meet the RIF's Cabinet-approved eligibility criterion for location;
5. **note** that without RIF investment, the project is expected to relocate to another country, and the associated benefits would not be realised;
6. **agree** to waive the requirement for the proposed investment to meet the RIF's eligibility criteria for project assets to be based in one of the provincial regions of New Zealand, on the basis that the proposal:
 - 6.1 is expected to deliver significant regional and national economic benefits
 - 6.2 aligns with the Government's *Going For Growth* approach

6.3 represents enabling infrastructure with strategic importance to the regional and the wider economy.

7. **Agree** to one of three investment instruments and the key terms from the RIF for the OpenStar Fusion Energy Research and Development Facility:

EITHER

7.1 **Agree** to Option 1: Commercial Information [REDACTED]
[REDACTED]

Terms	Proposed key terms for this project
Borrower	Open Star Technologies Ltd
Loan	Up to \$35.000 million, Commercial Information [REDACTED] [REDACTED]
Commercial Information	Commercial Information, Negotiations [REDACTED]
Maximum Term	
Interest	
Repayment	
Security	
Security	Appropriate security that reflects the investment – Commercial Information, [REDACTED] [REDACTED] Negotiations
Entity	Open Star Technologies Ltd or Special Purpose Vehicle
Commercial Information	Commercial Information, Negotiations [REDACTED]
Commercial Information	
Governance	

OR

7.2 Commercial Information, Negotiations [REDACTED]

Terms	Proposed key terms for this project
Borrower	Open Star Technologies Ltd
Loan Amount	Commercial Information, Negotiations [REDACTED]
Maximum	

Term	
Interest	Commercial Information, Negotiations
Repayment	
Security	

OR

7.3 Commercial Information, Negotiations

Terms	Proposed key terms for this project
Borrower	Open Star Technologies Ltd or Special Purpose Vehicle
Loan Amount	Commercial Information, Negotiations
Maximum Term	
Interest	
Repayment	
Security	Commercial Information, Negotiations

8. **Agree** this approval is subject to the standard conditions precedent and the following additional conditions being met to the satisfaction of Kānoa within ^{Comme} of Cabinet approving this investment (unless otherwise agreed by Kānoa):

8.1 Open Star Group Companies must secure at least US\$^{Commercial Inform} million by ^{Commercial Information}.

8.2 Commercial Information, Negotiations

8.3 Commercial Information, Negotiations

8.4 Commercial Information, Negotiations

8.5 Commercial Information, Negotiations

8.6 Commercial Information, Negotiations

9. **Agree** to delegate any ongoing decisions in relation to this project to the Regional Development Ministerial Group.

Authorised for lodgement

Hon Shane Jones

Minister for Regional Development

Annexes for OpenStar Fusion Energy Research and Development Facility Project

Annex One: Regional Infrastructure Fund eligibility criteria

To be eligible for consideration for RIF funding, the applicant must:

- Be with a New Zealand-based legal entity (which does not preclude partnering with offshore parties).
- Be able to deliver on an asset based in one of the provincial regions of New Zealand (i.e. Excluding Auckland, Wellington, and metropolitan Christchurch).
- Be focused on delivering a 'hard infrastructure' asset or completing physical works that protect existing Crown/local infrastructure or assets developed through the RIF.
- Contribute to improving regional resilience and/or productivity.
- Fit at least one of the RIF funding component definitions (Resilience or Enabling infrastructure).
- Show an ability to deliver, including an implementation plan appropriate to the size, scale and nature of the project, robust project governance/decision-making systems and risk identification and management.
- Have a co-funding element (from a private investor, iwi or other non-government entity) where relevant (i.e., not be wholly central Government-funded unless concessionary funding is supported), while any investments in individual businesses must have an element of co-funding.
- Require government financial support to progress or to attract private sector investment (either within the region or elsewhere) – in other words, the project would not otherwise happen without RIF support.
- Applicants must pass reasonable character due diligence checks.

Where the investment is for an asset in an individual business:

- benefits and outcomes should be non-exclusive to the individual business, meaning that the investment must catalyse benefits or services for other businesses or the community, and
- be a business that has a primary focus on one of the following areas: energy security, water security, food security, connectivity (transport solutions or digital connectivity) or growth of a māori-owned business that is critical to enabling outcomes throughout a community or region.

Exclusions for funding

The following type of projects will not be eligible for RIF support:

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- Projects already funded through the following central government programmes: social infrastructure (housing and accommodation, schools, hospitals), large-scale national digital connectivity (broadband) initiatives and Roads of National Significance.
- Ancillary commercial activity such as marketing or business development.
- Funding for apprenticeships or Vocational Education and Training.
- A project in potable water, wastewater, or storm water assets, except for investment in the following that will remain eligible:
 - Rural, community-owned water assets (that are not on the local authority's water network).
 - Water assets that are not 'business as usual' assets and are directly critically-enabling for eligible RIF projects, for example storm water assets that are typically vital to ensure the success of a floodbank project.
- Projects that are already underway, unless the applicant can demonstrate why the project would not proceed without RIF support and fits RIF criteria.
- 'Business as usual' infrastructure maintenance works.
- Purchases of land, except in instances where this is essential to the success of an investment-ready RIF eligible infrastructure project.

Annex Two: Investment Proposal – OpenStar Fusion Energy Research and Development Facility

Applicant(s)	Open Star Technologies Limited		
Recipient	Open Star Technologies Ltd or Special purpose vehicle (SPV) subsidiary		
Project Description:	To construct a purpose-built fusion energy research and development facility <small>Commercial Information</small> .		
Rationale for Government investment	Government investment will retain nationally significant innovation and capability in fusion energy onshore , leverage foreign investment, and support high-value job creation. The project aligns with the national economic agenda and strengthens New Zealand’s position in global fusion energy research and innovation.		
Total Project Value	\$ <small>Commercial Information</small> million	RIF Alignment	Enabling infrastructure
RIF Funding Requested	\$35.000 million loan or <small>Commercial Information</small>	RIF Funding Recommendation	<small>Commercial Information</small>

Proposal Summary

1. The OpenStar project is a \$ Commercial Information million project to design and build a bespoke fusion energy research and development (R&D) facility to house its next fusion machine, *Tahi*, and continue development of a commercial grade fusion reactor.
2. Regional Infrastructure Fund (RIF) investment will go toward construction of the facility. Successful development of commercial grade fusion reactors would have significant export and energy security benefits to New Zealand.
3. OpenStar reached a breakthrough that validates its fusion technology with its prototype reactor *Junior* in November 2024. *Tahi* is the first of three devices planned for development between 2026 and Commercial Information. The development pathway ends with *Tama Nui*, a commercial grade power plant device that supplies energy to the grid.
4. Commercial Information
5. OpenStar is seeking up to \$35.000 million investment from the RIF. Commercial Information

a. Commercial Information

b. Commercial Information

OpenStar is developing a novel approach to fusion energy, a global opportunity for clean energy, energy diversification and supply resilience

6. Open Star Technologies Limited (OpenStar) is a Wellington-based startup that is developing fusion energy technology to provide clean and carbon-free electricity.
7. OpenStar was founded in late 2021 by Dr Ratu Mataira, who was a PhD student at Victoria University's Robinson Research Institute working on an Advance Energy programme. The company has grown to over 70 employees.
8. OpenStar currently houses its first experimental chamber, *Junior*, in a small-scale fusion energy facility in a warehouse in the Ngauranga Gorge industrial area.
9. Fusion combines two hydrogen atoms (like deuterium and tritium) into a larger atom, releasing a vast amount of energy. Fusion offers nearly unlimited clean power, produces no greenhouse gases, and does not generate long-term radioactive waste like fission.
10. In New Zealand, fusion energy facilities are regulated in the same manner as a hospital is for its MRI machines and CAT Scans. While fusion is inherently safer and self-limiting compared with fission, the neutron radiation generated during experiments still requires substantial shielding. Regulations require that reactors be enclosed in a shell. The purpose of the concrete-encased, purpose-built facility is to protect personnel from this neutron radiation while the experiment is running.
11. Continued engagement by New Zealand in fusion energy research could position the country to benefit from future clean baseload power. Although significant engineering challenges remain, investor and government confidence in commercial deployment of fusion energy by the early 2030s is growing. Several private companies and government programmes are building pilot plants, with first grid connections expected in the early 2030s. Global investment in fusion research is surging, with governments and private firms committing over US\$10.000 billion to accelerate breakthroughs in plasma physics, superconducting magnets, and reactor design, and regulatory frameworks are emerging to support deployment. Full-scale commercial fusion power is expected to be available by the mid- to late-2030s.
12. OpenStar is developing a novel approach to fusion energy, the levitated dipole reactor, that can deliver power plants across the globe for energy generation.
13. Fusion uses superheated plasma at tens of millions of degrees, which can only be confined by an intense magnetic field. OpenStar's Levitated Dipole Reactor differentiates it from the more common prototypes being developed around the world (which use large external magnets to surround the plasma). This configuration creates a magnetic field that is theoretically better at confining high-temperature, high-pressure plasma, and therefore generating greater power output than a tokomak reactor. It also has a more modular, flexible and 'simpler' design than a tokomak.

- 14. The Levitated Dipole Reactor is OpenStar’s point of difference in terms of competing for market demand. In November 2024, OpenStar confined plasma in its prototype reactor called *Junior*, demonstrating that its design approach was effective for this stage. OpenStar created plasma at 300,000°C for 20 seconds, a key step toward fusion. Venture capital firms and media have acknowledged OpenStar’s success in confining plasma, demonstrating the potential for its approach to create larger reactors that can generate energy.
- 15. Globally over 50 private fusion companies are operating, but OpenStar is the only one using the levitated dipole method. However, while OpenStar is currently operating at Technology Readiness Level Commercial Information

[Redacted]

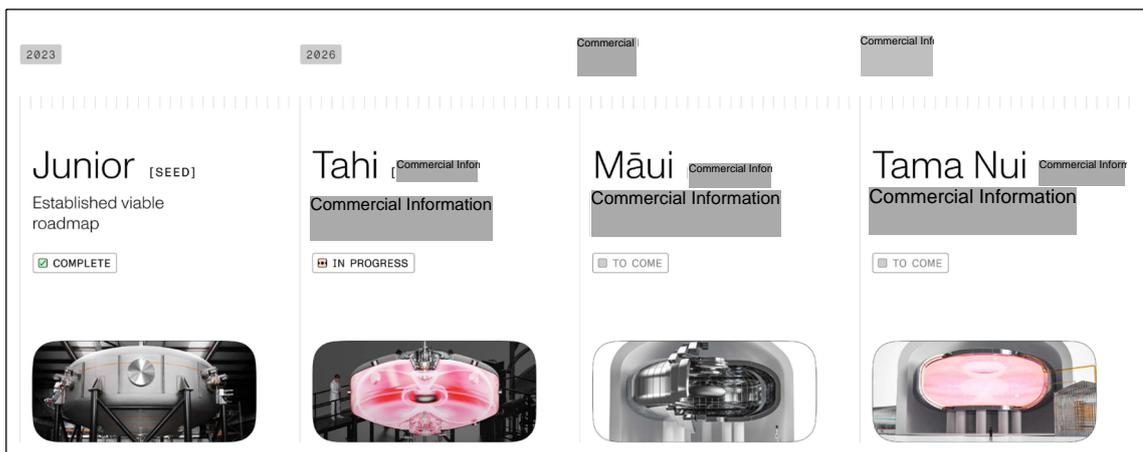
The Levitated Dipole technology used at OpenStar offers distinct advantages in relation to stability, cost and scalability. Some of the different fusion approaches currently being attempted are shown below. **Annex Three** outlines nine Technology Readiness Levels from TRL 1 (basic principles observed and reported) through TLR 9 (actual system proven).

Commercial Information

[Redacted]

*Technology Readiness Level

- 16. OpenStar will use the facility to perform R&D to further develop alternative energy technology for use in New Zealand and potential global export. The development pathway to a power plant device delivering energy to the grid is shown below. Each stage involves a capital raise.



- 17. R&D to be conducted at the facility is needed to lower or remove technology risk and increase readiness of core technological components, gather scientific data to inform future device design and technology choices, and build talent.

Building a specialised facility could enable New Zealand to retain innovation in fusion energy research and development and foreign investment and export opportunities

IN CONFIDENCE

18. In November 2024, OpenStar reached a breakthrough that validates its fusion technology. It is now fundraising to build the first fusion device, *Tahi*. This device requires significant scaling of OpenStar's operations and imposes multiple facility requirements, namely power feed and radiation shielding, which requires a specialised facility.
19. Commercial Information [REDACTED]
20. A specialised facility with radiation shielding, significant high-power electrical feeds, and precision engineering infrastructure does not currently exist in New Zealand. Such facilities do exist in other countries and/or incentives are being offered to build facilities within their jurisdictions. Commercial Information [REDACTED]
21. Obtaining a RIF loan for the proposed facility gives OpenStar the opportunity to retain fusion energy development and its associated economic (foreign investment and future exports) and energy resilience opportunities in New Zealand.
22. Beyond fusion power generation, the OpenStar technology provides commercial opportunities related to high-value transmutation applications, including the production of key medical isotopes (used for diagnostics or cancer therapy, for example) and the processing of rare-earth materials, which have large potential markets.
23. OpenStar's advances in magnets, power supplies, cryogenics, and superconducting systems are likely to create opportunities for new spin-out ventures, particularly in defence, aerospace, and space technologies closely aligned with its core capabilities.
24. OpenStar is willing to commit to maintain an R&D presence in New Zealand until the repayment obligation for the loan is met. Kānoa and OpenStar have agreed maintaining a presence will be met if:
 - a. a minimum Commercial Information [REDACTED] are based in New Zealand, or
 - b. a minimum of \$ Commercial Inform [REDACTED] million of OpenStar's global annual expenditure per year relates to activity in New Zealand.
25. The total project cost is \$ Commercial Informatio [REDACTED] million with the remaining funding, raised through a Commercial Information [REDACTED] capital raise, used to undertake further development and experiments needed to create a working prototype.
26. Commercial Information [REDACTED]
In line with this, there is no expectation of RIF funding towards research and development activities.
27. Developing a purpose-built fusion energy research and development facility could provide the following benefits:
 - a. Help to deliver the operational requirements for the next stage in OpenStar's development pathway, *Māui*, Commercial Information [REDACTED]
 - b. Support technological innovation in fusion energy that, if successful, could position New Zealand as a global leader in the sector and attract foreign direct investment.

- c. Enable further development and commercialisation of additional new advanced technology with export potential, including high value superconducting magnet technologies, technologies and patented intellectual property, even if fusion power is not achieved.
- d. Support development of and attracting world-class talent to New Zealand and spawning new industry.
- e. Provide supply chain opportunities for local engineering firms.
- f. Increase the OpenStar workforce from 70 to 180 staff within three years following project completion. These roles will primarily be high-skilled and high-value.

Previous Government investment in the applicant

- 28. OpenStar has received \$37,410 of government support through New Zealand Growth Capital Partner's (NZGCP) Aspire Seed Fund which invests into high-growth tech startups at the proof of concept, seed and early expansion investment stage. It has also received \$620,400 across 10 grants from Callaghan Innovation since 2023, and \$675,000 funding through Ara Ake (funded out of the Energy portfolio).

Alignment with Government priorities

- 29. The proposal falls outside the RIF's eligibility criteria as it will not be located in one of the provincial regions of New Zealand. However, it offers a high-value opportunity that aligns with the RIF's overarching objectives to improve productivity and resilience in regional New Zealand, and contributes to the Government's *Going For Growth* agenda, which includes a commitment to infrastructure for growth.
- 30. The proposed fusion energy R&D facility aligns with the Government's priorities of creating enabling infrastructure to stimulate growth. This proposal advances the *Going For Growth* agenda by attracting international investment through OpenStar's capital raise, creating over 180 skilled jobs, and fostering innovation that could unlock a new high-productivity sector in New Zealand.

Regional strategic context

- 31. OpenStar is undertaking due diligence of locations Commercial Information. The strategic context Commercial Information is presented here.

Commercia

- 32. Commercial Information

- 33. Commercial Information

Commercial Information [Redacted]

34. Commercial Information [Redacted]

35. Commercial Information [Redacted]

36. Commercial Information [Redacted]

Commercial Information [Redacted]

37. Commercial Information [Redacted]

38. Commercial Information [Redacted]

39. Commercial Information [Redacted]

40. Commercial Information [Redacted]

41. Commercial Information [Redacted]

42. Commercial Information [Redacted]

Commercial and financial case summary

43. OpenStar requested a \$35.000 million loan to support the construction of the fusion energy R&D facility. Commercial Information
[Redacted]
44. Initial discussions between Kānoa and OpenStar focused on a \$35.000 million loan structure Commercial Information
[Redacted]. This structure was presented to the Ministers of Finance and Regional Development for their meeting on 8 October 2025 (REQ-0021839 refers). Commercial Information
[Redacted]
45. Commercial Information
[Redacted]
46. Commercial Information
[Redacted]
47. To deliver infrastructure by Commercial Information, design and consenting processes need to commence urgently. Commercial Information
[Redacted]
48. The Financial Instrument Assessment Framework (FIAF – briefing 2425-0132 refers) suggests a commercial / mildly concessionary and highly conditioned loan structure.
49. Kānoa considers this assessment to be appropriate and the Crown's financial contribution is warranted when considering the project's strong strategic alignment, high commercial potential, and the generally high level of complexity involved in its implementation.
50. Kānoa has assessed seven different funding options with OpenStar, each involving Commercial Information, along with different loan terms and conditions. It has Commercial Information
[Redacted]

51. There are three options for the investment instrument for this project:

- a. Commercial Information, Negotiations [Redacted]
- b. Commercial Information, Negotiations [Redacted]
- c. Commercial Information, Negotiations [Redacted]

52. Commercial Information, Negotiations [Redacted]

53. Commercial Information, Negotiations [Redacted]

54. Commercial Information, Negotiations [Redacted]

There is sufficient co-funding available for this project

55. The applicant is progressing the project on the basis it can secure US\$ [Redacted] million (NZ\$ [Redacted] million) of [Redacted] investment through a [Redacted] capital raise. OpenStar plans to raise US\$ [Redacted] million [Redacted] [Redacted] \$ [Redacted] million. [Redacted] [Redacted] million which will be used to fund the R&D program operating within the facility, [Redacted].

56. Co-funding meets the RIF co-funding guidelines [CAB-24-MIN-0168.02].

Commercial Information

- 57. OpenStar is a start-up currently focused on its ^{Commercial Information} capital raise. Existing capital is allocated to ^{Commercial Information}
- 58. ^{Commercial Information} Government funding is needed for the project's infrastructure, ^{Commercial Information} Crown investment will de-risk this project so that it takes place and leverages private co-investment.

This proposal is investment-ready

- 59. The project is at a mid stage of requirements finalisation and site selection. Potential sites for the facility are limited, mainly due to access to an adequate supply of electricity. OpenStar is undertaking due diligence of locations ^{Commercial Information}
- 60. The project is a design and construction project, which can be delivered by an experienced main contractor. Bespoke elements of the build can be met through standard design and engineering pathways. The project carries a similar risk profile to a traditional industrial warehouse build, for the buildings, with a medium risk for the bespoke components.
- 61. Detailed design for the project is to start on confirmation of the site. ^{Commercial Information} will not be seeking further RIF funding if there are cost overruns.
- 62. ^{Commercial Information}. OpenStar ^{Commercial Information} and does not envisage any issues with obtaining ^{Commercial Information}
- 63. ^{Commercial Information}

Conditions of funding approval

- 64. In addition to the standard conditions of approval, the project specific conditions recommended are:

- a. OpenStar Group Companies having secured US\$^{Comm} million in equity, evidenced by Commercial Information [REDACTED]
- b. Commercial Information, Negotiations [REDACTED]
- c. Commercial Information, Negotiations [REDACTED]
- d. Commercial Information, Negotiations [REDACTED]
- e. Commercial Information, Negotiations [REDACTED]
- f. Commercial Information, Negotiations [REDACTED]

Management case summary

- 65. Kānoa is confident the applicant has the ability to successfully deliver the project. Key members of the management structure include:
 - a. Ratu Mataira, Chief Executive Officer and the co-inventor of the key enabling technologies, founded OpenStar recognising the potential of the dipole for the future of fusion. He has a PhD in Physics and a Major in Economics.
 - b. Al Simpson, Chief Operating Officer, is one of New Zealand’s most accomplished theoretical physicists, publishing 25 papers with over 1500 citations during his PhD. Al is also considered as one of Australasia’s highest regarded start-up executives. Developing OpenStar from a team of 5 people, he has helped secure \$18.000 million in funding.
 - c. Nicole Ferguson, Vice President – Finance is a chartered accountant (BCA, LLB) with expertise in business model development and execution, financing, strategic capital allocation, risk management, regulatory compliance and strategic stakeholder management. She has experience across technology, manufacturing, and engineering sectors.
- 66. OpenStar has not yet secured any services but will use experienced contractors. A condition of approval will require evidence that OpenStar has an appropriately skilled team in place to manage the delivery of this project.

If the Government does not invest via the RIF

- 67. Without RIF investment, the project is expected to relocate to another jurisdiction that already has the necessary infrastructure or offers incentives to support its development, and the associated benefits would not be realised.
- 68. The proposed structures provide the opportunity for the Crown to retain OpenStar in New Zealand for the next stage of its development and for as long as possible thereafter. Commercial Information [REDACTED]

Project risk summary

69. The project carries medium to high risk. Key drivers of this risk include:
- a. Commercial Information [REDACTED]
 - b. Commercial Information [REDACTED]
 - c. Medium construction and engineering risks associated with the facility's specialised features.
 - d. Medium risk from budget overruns for the build, noting OpenStar has committed to meeting any overruns.
 - e. Commercial Information [REDACTED] New Zealand presence or Commercial Information [REDACTED].
70. Risk mitigations include:
- a. Commercial Information [REDACTED]
 - b. Commercial Information [REDACTED], appropriate security that reflects the investment – including Commercial Information [REDACTED]
 - c. A condition of approval that requires evidence that OpenStar has an appropriately skilled team in place to manage the delivery of this project.
 - d. Confirmation from the OpenStar that it will fund any shortfall on construction costs Commercial Information [REDACTED] and will not be seeking further RIF funding if there are cost overruns.
 - e. Immediate repayment triggers in the loan terms.

Feedback from CRHL and agency consultation

71. Officials have incorporated feedback from Crown Regional Holdings Limited (CRHL) and other agencies on the proposal. Agencies consulted include The Treasury, Te Puni Kōkiri (TPK) and the Ministry of Social Development (MSD). Key feedback received is summarised below.

Crown Regional Holdings Limited (CRHL)

72. Confidential advice to Government [REDACTED]
73. Commercial Information, Confidential advice to Government [REDACTED]

Commercial Information, Confidential advice to Government
[Redacted]

74. Commercial Information, Confidential advice to Government
[Redacted]

Treasury

75. The Treasury sought more information regarding the potential risks of the Crown Commercial Information [Redacted]. Kānoa has addressed these risks in the investment proposal.

Ministry of Social Development (MSD)

76. MSD conditionally supports the RIF proposal for investment in the OpenStar Fusion Energy Research and Development Facility project, highlighting the potential energy, productive, and economic benefits of commercialised fusion energy for New Zealand and the wider world, and the productivity and skilled employment opportunities of the facility for the regional economy.

77. MSD support is conditional on OpenStar engaging with MSD Regional Commissioners as within their obligations of receiving RIF support. MSD expressed interest in engaging with the procured contractor who will be responsible for the build of the new facility. Kānoa will address these matters with the applicant once a site is selected.

Approved and proposed RIF funding in region

78. Commercial Information [Redacted]

79. Commercial Information [Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]

80. Commercial Information [Redacted]
[Redacted]

Annex Three: Technology Readiness Levels

TRL LEVEL	DESCRIPTION
TRL 1	Basic principles observed and reported
TRL 2	Technology concept and/or application formulated
TRL 3	Analytical and experimental critical function and/or characteristic proof of concept
TRL 4	Component and/or system validation in laboratory environment
TRL 5	Component and/or system validation in relevant environment
TRL 6	System/subsystem model or prototype demonstration in a relevant environment
TRL 7	System prototype demonstration in an operational environment
TRL 8	Actual system completed and qualified through test and demonstration
TRL 9	Actual system proven through successful mission operations