PROVINCIAL GROWTH FUND

Application for Funding

About this form

This form enables you to make an application for funding under any of the three investment tiers for the Provincial Growth Fund:

- Regional Projects and Capability: Under $1 million;
- Sector Investments: Between $1 - $20 million; and
- Enabling infrastructure projects: Over $20 million.

The information you provide will help us to assess and evaluate eligible projects and investment opportunities.

Next steps

We will review your application to further test suitability and risk and to make a decision on suitability for funding. We will be in contact where further information is required and we may provide you advice and support (i.e. from regional advisors) where necessary throughout this next stage of the process.

Instructions

Please complete the 'Application Form' section below, which is compulsory. In addition, please complete the parts of this application form that are relevant to your proposal. If the answer box is not big enough, please attach a document that provides the answer/s when you submit the form.

Please provide as much detail as you are able to, as appropriate to the size and complexity of your proposal.

If compulsory or relevant information is missing, this may slow down the application process as we will need to contact you.

You can find the terms and conditions of applying for Provincial Growth Fund investment in **Appendix 1**. You must agree to those terms and conditions as part of submitting this application.

We also attach a copy of the Eligibility and Assessment criteria in **Appendix 2** to provide further context.

Submitting your application

Please email your completed form to PGF@mbie.govt.nz.

A. Application Form *(Compulsory section)*

1. Proposal Name:

Hydrogen supply infrastructure front end engineering design, planning and cost estimation to support H2 Taranaki initiatives

2. Please provide the name of applicant organisation/entity:

Hiringa Energy Limited

3. What is the physical address of the applicant's organisation?

15 Lismore Street, Strandon, New Plymouth, 4312

4. Please provide the contact details for the applicant's organisation *(including a specific person as a point of contact):*

Registered address 10 Young Street, New Plymouth 4312, Andrew Clennett, CEO 9(2)(a)

5. Please describe the principal role or activity of the applicant organisation.

Hiringa Energy Limited will be responsible for overall project management, and engineering oversight for the project.

The company was founded in 2017 by four experienced energy industry professionals. Hiringa Energy's aim is to develop hydrogen infrastructure to enable a zero emission energy future for New Zealand.

The Hiringa Energy team has hydrogen specific expertise, and a strong background in project management including project governance and stage-gating, risk management, establishment of safety systems, project planning, execution and oversight. Team members have been accountable for all aspects of several major energy and infrastructure projects (eg integrated gas/power development projects) in New Zealand and abroad.

Hiringa Energy is also developing partnerships with international energy companies, technology suppliers, major local transport companies, and local Iwi.

6. Please provide a brief summary description of the project, including its location, purpose and history.

The purpose of the larger project is to develop hydrogen supply chain infrastructure in the Taranaki region together with possible refuelling facilities outside the region to demonstrate range benefits and connect the region.

This particular project activity covered by the funding application is to further progress front end engineering design, planning and cost estimation to support investment decisions on the establishment of this hydrogen supply infrastructure.

This scope of work will be conducted in New Plymouth, Taranaki. Hiringa Energy will provide overall project management, engineering, HS&E and financial analysis, with assistance from local engineers, consultants and fabricators, and peer review by international partners.

This funding will be used for: facility engineering & design; site selection and layout designs; project cost estimates; resource consent planning and application preparation; process safety design; regulatory approval activities; pre-award contract preparations and project execution planning.

The scope of infrastructure being developed is expected to consist of:

1. Up to two hydrogen generation facilities (one steam reformation by-product, one electrolyser);
2. 2-4 mobile compressed hydrogen storage & distribution containers/trailers;
3. 2-3 hydrogen refueling stations in New Plymouth, possibly South Taranaki and at least one outside the region to demonstrate range and provide connectivity to the region.

The project will strongly leverage existing energy industry skills in the region, introduce and develop new specialist skills hydrogen systems in the NZ. It will support the public sector business case work being conducted as part of the planning work for "H2 Taranaki", a key initiative resulting from the Tapaue Roa regional economic development strategy.

7. Please describe (or re-affirm) which industry or sector/s the proposal is relevant to.

The broader project spans energy, transport, infrastructure, regional and local government. This application is focused on the project development, front end engineering, consenting and HS&E required to reach a final investment decision for hydrogen supply infrastructure.

8. In what location/region/s is the proposal to be based? What is the name of the relevant District as detailed on the Local Government New Zealand website: http://www.lgnz.co.nz/nzs-local-government/new-zealands-councils/

The project will be based within New Plymouth District with possible scope extension to South Taranaki District.

9. Please provide full names of the project's leadership team, including your chief executive, directors and trustees (as appropriate).

Andrew Clennett, Hiringa Energy CEO
Catherine Clennett Hiringa Energy Executive Director
Dan Kahn, Hiringa Energy Head of Engineering

10. If different from the applicant, who would be the 'contracting party' with the Crown under any successful contract?
Please provide the full name.

Hiringa Energy Limited
Registered address 10 Young Street, New Plymouth 4312, NZ
Company number: 6197063, NZBN: 9429045946042

11. Are there any other Partners within this project? (i.e construction, design or other significant partners).
If so, please provide their names.

Transport Investments Limited (TIL), one of New Zelands largest freight and logistics companies, are partners for a number of elements of the project including provision of potential refueling station sites and joint development of the compressed hydrogen tanker solution for NZ application.

H2H Limited, a specialist hydrogen engineering company based in Australia, are project partners providing hydrogen expertise and peer review/technical assurance.

BTW Company Limited, a New Plymouth company specializing in Surveying, Planning and Environmental Engineering will provide services for site selection, civil design, consent planning & consultation.

BECA, a NZ owned engineering and services firm, will provide design engineering and safety support from their New Plymouth office.

Fitzroy Engineering, a New Plymouth based engineering and fabrication firm will provide fabrication and construction engineering feasibility and cost estimation support.

Methanex is a potential offtake supplier for hydrogen.

The project will also involve Venture Taranaki as the agency responsible for the delivery of the "H2 Taranaki" roadmap project and the Taranaki regional and district councils as potential joint venture partners for infrastructure development.

12. Is the applicant or the contracting entity insolvent or subject to any insolvency action, administration or other legal proceedings?

No

13. Is any individual involved in the application, the proposed contracting entity or the project an undischarged bankrupt?

No

14. Is any individual under investigation for, or has any individual been convicted of, any offence that has a bearing on the operation of the project?

No

15. Conflicts of Interest: Please detail any actual, potential or perceived conflict of interest that the applicant(s) or any of the key personnel have in relation to this project.

"In a small country like ours, conflicts of interest in our working lives are natural and unavoidable. The existence of a conflict of interest does not necessarily mean that someone has done something wrong, and it need not cause problems. It just needs to be identified and managed carefully…"

https://www.oag.govt.nz/2007/conflicts-public-entities

Comments
Hiringa Energy has been involved in the development of the Tapua Roa, Make Way for Taranaki regional economic development strategy including the Energy Futures Action Plan. Hiringa Energy's CEO, Andrew Clennett was on the Lead Team for the formation of the strategy from prior to joining Hiringa Energy. Throughout the Tapuae Roa process, Hiringa Energy's interest in the development of a hydrogen industry have been fully declared. The structure proposed for investment and ownership is a series of Joint Venture partnerships. Hiringa Energy is in discussion with potential investors to facilitate private investment in the infrastructure and would itself become a joint venture partner. This scope of work is a key step required to underpin private investment decisions.

B. Strategic Case and Regional Alignment

1. How does the project propose to act as a catalyst to lift the productivity potential of the region where the project is based?

This project will develop critical engineering, design, HSE and consenting capability in the region for the introduction of green hydrogen infrastructure for transport. This project will provide the basis for investment decisions in infrastructure that is the key enabler for the hydrogen fuel cell transport initiatives outlined in "H2 Taranaki".

Hydrogen is emerging as a key solution to reducing green house gas emissions, particularly by providing zero emission energy solutions for heavy transport and industry. Taranaki's economy is heavily dependent on the Oil and Gas industry, and due to its geographic location will be disadvantaged by a transition to battery electric transport. In order to achieve a fair and just transition, new highly skilled jobs will be required to replace those of the Oil and Gas sector, and low emission transport solutions capable of connecting the regions will be critical.

This project is the first step to develop specialist capabilities and skill base in the region in growing international hydrogen industry. It leverages international expertise via Hiringa Energy Limited and H2H, to build engineering capability in the region to support hydrogen projects. It will also build consenting, and safety management capability that is essential for the development of a new clean hydrogen transport industry in New Zealand.

Subsequent investment in infrastructure and H2 Taranaki projects will:

- leverage, enhance and diversify the regions existing energy & industrial capability and infrastructure
- strongly signify to NZ and the world that Taranaki has a plan to move beyond the Oil & Gas industry
- provide high value, high paying jobs, attracting and retaining skills in the region
- leverage the regions renewable energy potential
- provide significant pathways for Maori involvement in the energy sector through direct investment, renewable energy development and spin-off businesses
- provide the seed infrastructure, markets and industry capability for the region to lead the transition from high to low emission sustainable industry.

2. How does the project align with the objectives of the Provincial Growth Fund:
- More permanent jobs;
- Benefits to the community and different groups in the community;
- Increased use and returns for Māori from their asset base (where applicable).

Hydrogen as an energy carrier is emerging as a key solution to address climate change and pollution globally. Hydrogen technologies bridge the gas and electricity grids, providing flexibility and enhanced energy security and resilience.

For New Zealand, hydrogen technologies will enable greater penetration of renewable energy in the electricity grid, and provide zero, or very low, emission energy solutions for transport, heat and power, and industrial feedstock. Ultimately it may reduce NZ reliance on imported fossil fuels and improve the competitiveness of NZ industry. This will benefit the regional community and its environment as well as contributing directly to the PGF fund objective of adapting to climate change effects and transitioning to a low emissions economy.

The project deliverables will underpin investment in cornerstone projects in the region that will seed a new industry with the potential to reduce emissions and provide clean, sustainable, secure energy for NZ. It will directly support the H2 Tarnaki initiative.

The project will directly employ 6-10 FTEs. Roles and anticipated staffing are included in the Project Plan. They include project mangement, engineering, finance, cost control, contract administration, health and safety, and planning and consent staff. It will involve construction, commissioning, operations and maintence planning, and the identification of areas for skills development, and the development of maintenance and service capability in the region. It will enable direct employment opportunities for Moari in the region. It will be a foundation project that will provide Hiringa Energy with certainty to grow and provide further employment opportunities. It will build hydrogen industrial design capability over 5-6 NZ/regionally based companies.

The resulting infrastructure projects will also provide an investment opportunity for Iwi groups. Involvement of local Iwi and their ability to participate in the energy sector in the region and for the Maori community to directly benefit from new forms of energy is a key driver for Hiringa Energy. Hiringa Energy's CEO has successfully worked with local Iwi and institutions to provide training, job opportunities and contract opportunities for Maori in the Taranaki region.

Further background as to the H2 Taranaki initiative and the basis of the projects can be found in the Tapuae Roa, Make Way for Taranaki Energy Futures Action Plan.

The H2 Taranaki initiative aims to create economic growth by:

- Attracting investment in hydrogen production, leveraging gas industry capability and access to renewable energy. Accelerating local demand for hydrogen as an economic, low emission, renewable and secure input for transport, energy and industry.
- Positioning Taranaki businesses to participate in a growing international industry.
- Nurturing and enabling the development of a hydrogen export industry.

3. Please provide a detailed description of the project, including the objectives and business need.

A detailed description of the project is provided in the attached project plan, including deliverables, roles, resourcing,decision points and off ramps.

Government support is sought for this work to accelerate supporting activities for the H2 Taranaki initiative. It will enable Hiringa Energy to employ staff in the business and engage subcontractors, creating a critical mass of expertise in the region.

It will also foster relationships with leading international technology suppliers before supply chains are fully established.

4. Please provide a description of how the project aligns to the Government's additionality objective under the Provincial Growth Fund (including infrastructure, Māori assets/development, sustainability, investment tiers and regional development plans).

This project is the only one of its kind in the region and will result in the first consented hydrogen refueling infrastructure in the region and possibly New Zealand. It leverages assess stage work already conducted and relationships developed by Hiringa Energy, but is new in scope.

As a first project will act as a catalyst to unlock the regions productivity potential. The project will heavily leverage existing skills, capability, facilities and infrastructure available in the region. The region has a very strong internationally recognized engineering and fabrication capability, and maintence and gas infrastructure management skills due to the existing oil and gas industry in the region. That industry has attracted talent from around the world, who have made the region their home and create wealth for NZ.

The project supports the H2 Taranaki business case work that has received SRO funding, and will enable investment decisions and pre-order of equipment in a timely manner to support first projects under that initiative.

The remaining costs of the project will be funded in cash and in-kind by Hiringa Energy and the project partners.

5. What benefits will the region get from the Crown's investment?

This project is the first in a series of hydrogen energy projects that provide a pathway to developing or attracting and retaining highly valuable specialist skills in the region for the benefit of NZ. It will help create a vision for the region that it has an ongoing role in the energy in the future.

The region will directly benefit from this project via:

- Direct employment opportunities via Hiringa Energy and local contractors
- Skill and capability development
- Detailed engineering, consenting and financial analysis required to support final investment decision on infrastructure projects

This project is the first step to creating a platform for the region to participate in growing international supply chains and markets for hydrogen based low emission technologies. The project will help attract technology vendors to utlise the technical facilities and skills residing in the region. Discussions have already commenced with vendors regarding regional capability to manufacture parts of the vendor equipment, and provide maintenance and service capabilities. The region has existing capabilities that can be utlised for a number of system components.

The region will also benefit from the resulting infrastructure projects and H2 Taranaki initiative:

- Measurable benefit will be clear through the operation of the infrastructure itself as well as the job creation.
- Initiatives similar to H2 Taranaki have ultimately seen a 4:1 multiplier of private/public sector investment.
- Initial hydrogen export opportunities suggest potential for export revenues > $1bn per annum

6. Please describe the current state of the proposal, and why the project has not been done before.

The use of hydrogen for transport is in the early phases of adoption in international markets, and technology development has been rapid over the past 5 -10 years. The impetus for this international uptake has been the lowering cost of renewable energy supply coupled with the advancement of hydrogen technologies that can address emissions reduction from challenging areas of the economy such as transport and industrial feedstock.

This project represents the initial work required to enable the introduction of new clean energy solutions to NZ, only recently made possible by technology developments overseas.

The adoption of hydrogen technology for transport has a fundamental challenge to overcome in that hydrogen production and refueling infrastructure needs to exist in order to introduce hydrogen fuel cell vehicles.

This project aims to attract initial investment and overcome a key hurdle for the adoption of hydrogen for transport in NZ. It will be one of the first infrastructure projects in NZ to enable hydrogen use for transport.

7. Please provide a description, and evidence where applicable, of any local support for the project either through existing regional development mechanisms, or another relevant body, such as a council, iwi or other representative group (or reason for any lack of support).

The Tapuae Roa, Make Way for Taranaki Energy Futures Action Plan, endorsed by the four Taranaki Councils (TRC, NPDC, SDC, STDC), outlines the strategic priorities of the region including progressing the Energy Futures initiatives. Engagement on the scope of the Tapuae Roa action plan, including the H2 Taranaki initiative, has been ongoing with both private sector and local government throughout this economic development strategy process. H2 Taranaki is an initiative resulting from that process.

Engagement on the scope of the Tapuae Roa action plan, including the H2 Taranaki initiative, has been ongoing with both private sector and local government. The process involved workshops and consultation with local stakeholders including industry, regional and district government, and Iwi.

8. Please provide a description of any consultation required.

The project includes site selection involving local government, Iwi and private owners. Engagement will continue throughout the design and consenting process.

On-going engagement with central government and government agencies will also be required regarding the legislative framework, safety considerations, and central government support for the next phase of infrastructure investment.

9. Please demonstrate how this project will fit in with wider assets or infrastructure, projects and benefits in the region.

This project directly supports the regional initiative "H2 Taranaki".

The combined business case analysis for the public sector H2 Taranaki projects is being undertaken as part of SRO funding.

The projects for Phase 1 of the H2 initiative can be divided into two parts: establishment of hydrogen supply infrastructure (which this project supports) and establishment of hydrogen use applications (fuel cell electric buses, service vehicles, forklifts, trucks, fleet light vehicles), this latter scope is subject to a parallel public and private sector activities.

This project includes design and consenting for a site or sites outside the region that would provide interconnectivity with other regions using hydrogen fuel cell electric transport, and provide initial infrastructure for the introduction of hydrogen fuel cell electric vehicles to NZ.

10. Has the project been discussed with a regional economic development governance group? If so, what was the outcome of the discussion?

The Tapaue Roa strategy including the H2 Taranaki initiative has been endorsed by the local and district councils. This project has been discussed with Venture Taranaki who is responsible for the H2 Taranaki and roadmapping and has the support of key partners and stakeholders.

11. Please provide evidence of Iwi consultation.

Local Iwi are considering direct investment in Hiringa Energy Limited, and may consider investment in individual projects. Initial project locations being considered are on private and crown land and the consenting process will include further Iwi consultation and engagement. Regional Iwi were also involved in Tapaue Roa workshops and consultations where H2 Taranaki initiative was developed.

12. Please provide evidence of compliance with international obligations (where relevant).

N/A

C. Project costs, economics and benefits

1. Please provide details of the wider benefits, over and above those described in the above Strategic Case and Regional Alignment section.

The delivery of the design scope outlined will bring a number of near term benefits including direct employment, capability build, establishment of vendor supply chains and accelerate H2 Taranaki investment decisions.

Additional benefits of the establishment of hydrogen supply chain infrastructure will include an increase in energy security of supply. Every kg of hydrogen delivered to a vehicle is equivalent to approximately 10 litres of gasoline that does not require importation either as refined product or crude oil.

Another benefit is the opportunity for major vehicle fleet operators and regions to become investors in their fuel supply chain, rather than being subject to an international energy commodity price that is only going to increase in cost over time.

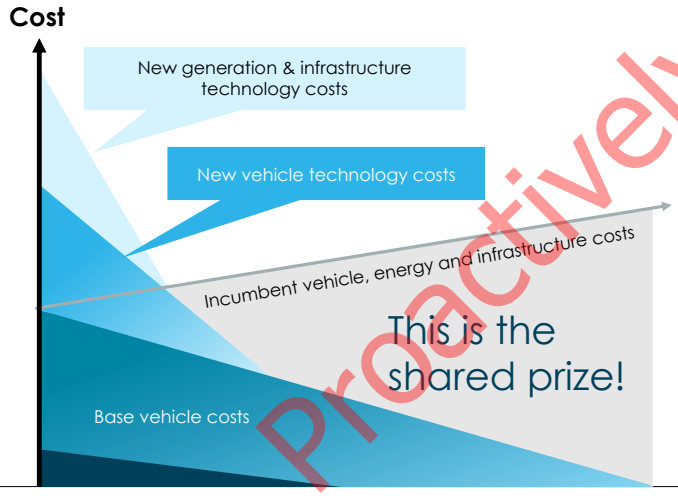
It is anticipated that commercial electric vehicle adoption will significantly reduce fleet operating costs due to reduced maintenance and fuel costs, and extended vehicle assets lifecycles.

The establishment of hydrogen refueling infrastructure in regions such as Taranaki will enable government and private sector fleet operators to achieve their zero emissions vehicle commitments where existing Battery Electric vehicle (BEV) technology is not suitable.

As more hydrogen supply chain infrastructure is established the costs will reduce thus further stimulating infrastructure investment.

Hydrogen supply chain developments will also stimulate further investment in renewable energy due to the natural coupling of hydrogen generation infrastructure with intermittent renewable energy sources such as wind, solar, run-of-river hydro and wave.

NZ benefits from significant supply of renewable generating capacity. As the country pushes to reduce emissions, transportation will make up a larger and larger share of the country's overall total. H2 infrastructure is a way to utilize NZ's renewable generating assets in the heavy-duty transportation sector, thereby decarbonizing an industry which is notoriously difficult to do so, due to enegy density requirements, and shrinking transportation's share of NZ's emissions pie.



2. Please provide a detailed breakdown of the benefits that will be enabled by the delivery of this project and the timeframes in which those benefits will be achieved/realised.

Near term – 0-6 months – Pre-FID

Direct employment of ~6-10 FTEs

Establishment of vendor supply chains, regulatory approvals & capability

Build of hydrogen industrial design capability over 5-6 NZ/regionally based companies

Mid Term 6-18 months – Execution

Direct employment of ~30-50 FTEs

Construction, Fabrication, Commissioning, Maintenance and Operations capability build

Long term 18+ months - Operate

Directly employ ~5-8 FTEs

Gain plant and supply chain logistics operations knowledge

Demonstrate hydrogen supply chain & fuel cell vehicle technology benefits – stimulating further infrastructure investments

4. Please provide a cost breakdown covering the following:
- Total project cost breakdown (including contingency);
- Total funding sought from the Provincial Growth Fund;
- Type of funding sought (i.e grant, loan or other);
- Description and breakdown of funding sought from elsewhere (approached/approved/declined) and what funding has been committed;
- Details of ongoing costs and financial viability;
- Required timing of costs; and
- Maintenance costs and funding sources

Detail requested above, including a funding plan is provided in the attached Project Plan. A summary below:

Development of the first phase hydrogen supply infrastructure proposed to support the H2 Taranaki initiative is estimated to be approximately NZ$23-$29m based on screening costs developed in the Assess phase undertaken by Hiringa Energy.

The Assess, Select and Define stages for this project which includes feasibility, front end engineering design & planning and consenting, is anticipated to cost of up to $1.5-$2.0m. This is based on industry standard Pre-FID spend of 5-7 % of estimated infrastructure spend. Hiringa Energy has invested $200k during the Assess phase and is requesting a $950k grant from the Provincial Growth Fund to contribute to the Select and Define stages prior to achieving Final Investment Decision. Balance of costs for the Select and Define stages will be covered by Hiringa Energy and specific project partners as agreed.

At the end of the Define stage further funding commitment will be sought from the PGF, Green Infrastructure Investment Fund and Hiringa Energy and project partners as appropriate, prior to Final Investment Decisions and commencing execution. The funding breakdown at this stage will be dependant on the facility elements selected and the associated asset ownership arrangements.

5. Please provide a demonstration of the impact the project will have on the applicant's balance sheet.

Hiringa Energy is currently funded by the founders and is pre-revenue. The company is in the process of sourcing working capital investment. This PGF funding will enable Hiringa Energy to sustain core staff and enter contracts to complete the works. It will also assist the applicant to secure investment funds for the subsequent project infrastructure investments and related hydrogen energy projects, by demonstrated strong government support for clean technology inititatives.

6. Please provide a demonstration of how you will ensure that your project represents good value for money.

The project will leverage work already conducted by Hiringa Energy to assess the feasibility of hydrogen infrastructure projects in the region and NZ.

This funding will enable this key work to be commenced and bring forward FID for the proposed infrastructure, thereby providing greater certainty to the H2 Taranaki projects, and the introduction of fuel cell electric vehicles.

7. If applicable, is there a financial model, financial forecasts, or a Cost Benefit Analysis which can be provided?
(If so, please attach to this application.)

Detailed financial modeling will be provided for any future funding applications for infrastructure funding using the FEED as the basis.

Hiringa Energy has conducted initial feasibility work which is outlined in the Project Plan. Both technical, economic , and high level market feasibility analysis has been completed for the supply equipment. Technical feasibility is well established with facilities operating in overseas markets. Information from vendors form the basis of the cost estimates included in this application.

D. Project Plan

1. Please provide a project management plan covering the following:

- Delivery methodology
- Roles and responsibilities (including who will be managing/delivering the project and key contractors)
- Timeline
- Procurement
- Constraints and dependencies
- Risks associated with project
- Risk management methodology
- Governance arrangements (including using existing credible local and community input, funding, commercial and non-commercial partners)
- Project deliverygates
- Exit gates and stop/go points.

Included in the attached Project Plan.

2. Please provide any feasibility assessment which has been conducted for the project.

Detailed financial modeling will be provided for any future funding applications for infrastructure funding using the FEED as the basis.

Feasibility work during the "assess" stage has identified that all the proposed project elements are technically feasible with similar facilities operating commercially in a number of locations internationally. Potential sites, joint venture partners, offtake projects were identified. A summary of this work is included in the attached Project Plan.

3. Please provide details of the key risks associated with the project, as well as how they will be managed.

Initial risk assessment is included in the attached Project Plan.

4. Please provide detail of any alternative project delivery options which have been considered and ruled out.

Hydrogen infrastructure development, as a new industry and with little skills and specific engineering capability available in NZ, needs to be paired with the existing energy and gas industry capability to ensure an implementation suitable to the New Zealand operating environment. Alternative delivery options aren't available. Hiringa Energy and H2H bring unique skills that are rare internationally, and new to NZ.

5. Has the project plan been independently tested, or developed with assistance of a project management professional? If so, by whom?

The project plan has been developed by the Hiringa Energy team and reviewed by project partners. The Hiringa Energy team has hydrogen specific expertise, and a strong background in project management including project governance and stage-gating, risk management, establishment of safety systems, project planning, execution and oversight.
H2H is a specialist hydrogen engineering firm, BTW is a multi-displinary surveying, engineering, planning and consenting firm. Beca is a respected engineering provider with financial, project management, and project governance expertise. Both BTW and Beca have considerable expertise in the infrastructure, and industrial sectors.

E. Commercial Viability

1. Please provide an overview of the applicant's track record in delivering projects of this nature.

Hiringa team members have been accountable for all aspects of several major energy and infrastructure projects (eg integrated gas/power development projects) in New Zealand and abroad.

Andrew Clennett is a experienced energy executive with strong organisational development skills and a track record of delivery on business integration, transition and growth. He has over 23 years of broad international experience in a range of senior leadership, management , commercial and technical roles. He has managed interdisciplinary engineering teams and delivered projects including the 1.2 billion dollar Mangahewa Project.

Cathy Clennett has held senior engineering, project management, business development, and construction management roles in the energy, resources and telecommunications infrastructure sectors. She has broad commercial and finance expertise including business case development, investment analysis, technology commercialisation, capital raising, and governance, and is a founding Board member of Launch Taranaki and NZVIF investor director.

Dan Kahn is an experienced mechanical engineer and project manager with a background in hydrogen product development and industrial water treatment. As an expert in controls systems and automation, Dan has designed, installed and commissioned 700 bar H2 filling stations, automated fuel-cell manufacturing equipment.

2. Please provide any demand analysis (customers and growth/utilisation forecasts) which has been conducted.

Hiringa has conducted initial demand estimates for hydrogen offtake. The initial projects to encourage market adoption are included in the H2 Taranaki business case work. They include:

- Light vehicles for public sector fleets
- Buses for urban and regional transport
- Fork lifts for warehouses
- Heavy vehicle demonstrations

Hydrogen technology is being adopted in overseas markets. Aberdeen, London, Birmingham, all have buses on hydrogen and they compare favourably with diesel and electric buses, South Korea has just committed to introduce 26,000 hydrogen buses. Passenger trains in Germany are being replaced with hydrogen fuel cell trains, California has 35 operational stations with 29 more in planning & construction, Europe has in excess of 80 operational retail hydrogen fuelling stations. Audi, Toyota, Ford, Mercedes, Hyundai, Nissan, Honda and many more vehicle manufacturers are all producing hydrogen powered electric cars. Like the battery electric vehicles, the cost is higher than an internal combustion engine vehicle, but costs are decreasing and the hydrogen fuel cell vehciles have advantages in terms of weight, refuelling time and range that make them well suited to commercial and heavy transport applications.

3. Please describe how the market has been, or will be, tested and engaged (if required) to assist in the delivery of this project.

Hiringa Energy has been working with a number of fleet operators assessing end use applications for hydrogen in NZ. The specific regional market to support the proposed regional infrastructure will be also engaged via the H2 Taranki initiative, These activities will progress in parallel and will likely inform separate applications for funding assistance for fuel cell electric vehicle fleets.

4. Please describe what will happen upon delivery of the project, including the maintenance plan and plan for ownership of the asset.

The attached Project Plan outlines the deliverables by stage including the Select and Define activities required to achieve a Final Investment Decision (FID) for the infrastructure assets (the scope of work that this funding application relates to). The Project Plan also outlines the key activities through Execute and Operate stages of the project lifecycle including establishment of Operations and Maintenance plans. The intellectual property will by owned by Hiringa Energy and its partners as appropriate.

The tranche of government funding requested in this application will help stimulate and accelerate the maturation of the first phase of H2 Taranaki initiatives to an investment ready status.

Physical assets are not included in this stage of the overall infrastructure project. It is anticipated further applications for funding will be required once the Select and Define stages are complete and investors are secured to build the infrastructure.

5. Please describe how the project will be sustainable beyond the term of the Provincial Growth Fund investment.

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It is anticipated that additional support will be required to underpin the final investment in the selected assets. This will be subject to a subsequent applications.

6. Please outline why Crown funding is required?

At the highest level, the need for public/private investment is driven by the long term shared benefit of a hydrogen ecosystem where the spend is spread across multiple participants and no one participant receives, or can monetise, all the benefit. There is a significant public benefit element to the adoption of zero energy technologies.

The high upfront capital costs due to early stage commercial technologies provides a clear role for public sector intervention to bridge the finance gap. This might be likened to tax incentives for the encouragement of oil & gas exploration.

In other countries, government assistance has enabled infrastructure development. NZ has some unique advantages and application areas for hydrogen that can be leveraged to provide a more capital efficient infrastructure roll-out and attract private sector investment.

This funding, and subsequent capital contributions, will demonstrate early material commitment from central government to the regional economic development process, and specifically supporting the region most effected by central government decisions regarding oil & gas exploration.

A possible example of a similar Crown investment role might be the Ultra-fast broadband infrastructure capital contribution made to de-risk the initial investments and to stimulate private sector investment.

F. Declaration by lead applicant

By completing the details below, the applicant makes the following declaration about its application for PGF funding for the

Hydrogen supply infrastructure front end engineering design, planning and cost estimation to support H2 Taranaki initiatives

project ("application"):

A. I have read, understand and agree to the Terms and Conditions of applying for PGF funding which are attached as Appendix 1;

B. The statements in the application are true and the information provided is complete and correct and there have been no misleading statements or omissions of any relevant facts nor any misrepresentations made;

C. I have secured all appropriate authorisations to submit the application, to make the statements and to provide the information in the application;

D. The applicant warrants that it has no actual, potential or perceived conflict of interest (except any already declared in the application) in submitting the application, or entering into a contract to carry out the project. Where a conflict of interest arises during the application or assessment process, the applicant will report it immediately to the PGF by emailing PGF@mbie.govt.nz; and

E. I understand that the falsification of information, supplying misleading information or the suppression of material information in this application may result in the application being eliminated from the assessment process and may be grounds for termination of any contract awarded as a result of this application process.

Signature:

Full name:

Andrew Clennett

Date: 06/06/2018

Title / position:

Chief Executive Officer

Name of applicant organisation:

Hiringa Energy Limited

Appendix 1 - Terms and Conditions of applying for the Provincial Growth Fund

General

The terms and conditions are non-negotiable and do not require a response. Each applicant that submits a request for Provincial Growth Fund ("PGF") funding (each an "application") will be deemed to have agreed to these terms and conditions without reservation or variation.

The Provincial Growth Fund is a government initiative which is administered by the Provincial Development Unit, a unit within the Ministry of Business, Innovation and Employment. Any reference to the Provincial Development Unit in these terms and conditions, is a reference to MBIE on behalf of the Crown.

Reliance by Provincial Development Unit

The Provincial Development Unit may rely upon all statements made by any applicant in an application and in correspondence or negotiations with the Provincial Development Unit or its representatives. If an application is approved for funding, any such statements may be included in the contract.

Each applicant must ensure all information provided to the Provincial Development Unit is complete and accurate. The Provincial Development Unit is under no obligation to check any application for errors, omissions, or inaccuracies. Each applicant will notify the Provincial Development Unit promptly upon becoming aware of any errors, omissions, or inaccuracies in its application or in any additional information provided by the applicant.

Ownership and intellectual property

Ownership of the intellectual property rights in an application does not pass to the Provincial Development Unit. However, in submitting an application, each applicant grants the Provincial Development Unit a non-exclusive, transferable, perpetual licence to use, disclose, and copy its application for any purpose related to the PGF application process. Any application or documentation supplied by you to the Provincial Development Unit will become the property of the Provincial Development Unit and may not be returned to you.

By submitting an application, each applicant warrants that the provision of that information to the Provincial Development Unit, and the use of it by the Provincial Development Unit for the evaluation of the application and for any resulting negotiation, will not breach any third-party intellectual property rights.

Confidentiality

The Provincial Development Unit is bound by the *Official Information Act* 1982 ("OIA"), the Privacy Act 1993, parliamentary and constitutional convention and any other obligations imposed by law. While the Provincial Development Unit intends to treat your information as confidential, the information can be requested by third parties and the Provincial Development Unit must provide that information if required by law. If the Provincial Development Unit receives an OIA request that relates to your confidential information, where possible, the Provincial Development Unit will consult with you and may ask you to advise whether the information is considered by you to be confidential or commercially sensitive, and if so, to explain why.

The Provincial Development Unit may disclose any application and any related documents or information provided by the applicant, to any person who is directly involved in the PGF application and assessment process on its behalf including the Independent Advisory Panel ("IAP"), officers, employees, consultants, contractors and professional advisors of the Provincial Development Unit or of any government agency. The disclosed information will only be used for the purpose of participating in the PGF application and assessment process, which will include carrying out due diligence.

Limitation of Advice

Any advice given by the Provincial Development Unit, any other government agency, their officers, employees, advisers, other representatives, or the IAP about the content of your application does not commit the decision maker (it may be Senior Regional Officials, Ministers or Cabinet depending on the level of funding requested and the nature of the project) to make a decision about your application.

This limitation includes individual members of the IAP. The IAP's recommendations and advice are made by the IAP in its formal sessions and any views expressed by individual members of the IAP outside of these do not commit the IAP to make any recommendation.

No contractual obligations created

No contract or other legal obligations arise between the Provincial Development Unit and any applicant out of, or in relation to, the application and assessment process, until a formal written contract (if any) is signed by both the Provincial Development Unit and a successful applicant.

No process contract

The PGF application and assessment process does not legally oblige or otherwise commit the Provincial Development Unit to proceed with that process or to assess any particular applicant's application or enter into any negotiations or contractual arrangements with any applicant. For the avoidance of doubt, this application and assessment process does not give rise to a process contract.

Costs and expenses

The Provincial Development Unit is not responsible for any costs or expenses incurred by you in the preparation of an application.

Exclusion of liability

Neither the Provincial Development Unit or any other government agency, nor their officers, employees, advisers or other representatives, nor the IAP or its members will be liable (in contract or tort, including negligence, or otherwise) for any direct or indirect damage, expense, loss or cost (including legal costs) incurred or suffered by any applicant, its affiliates or other person in connection with this application and assessment process, including without limitation:

a) the assessment process
b) the preparation of any application
c) any investigations of or by any applicant
d) concluding any contract
e) the acceptance or rejection of any application, or
g) any information given or not given to any applicant(s).

By participating in this application and assessment process, each applicant waives any rights that it may have to make any claim against the Provincial Development Unit. To the extent that legal relations between the Provincial Development Unit and any applicant cannot be excluded as a matter of law, the liability of the Provincial Development Unit is limited to $1.

Nothing contained or implied in or arising out of the PGF documentation or any other communications to any applicant shall be construed as legal, financial, or other advice of any kind.

Inducements

You must not directly or indirectly provide any form of inducement or reward to any IAP member, officer, employee, advisor, or other representative of the Provincial Development Unit or any other government agency in connection with this application and assessment process.

Governing law and jurisdiction

The PGF application and assessment process will be construed according to, and governed by, New Zealand law and you agree to submit to the exclusive jurisdiction of New Zealand courts in any dispute concerning your application.

Public statements

The Provincial Development Unit or any other government agency, or any relevant Minister, may make public the following information:

- the name of the applicant(s)
- the application title
- a high-level description of the proposed project/activity
- the total amount of funding and the period of time for which funding has been approved
- the region and/or sector to which the project relates

The Provincial Development Unit asks applicants not to release any media statement or other information relating to the submission or approval of any application to any public medium without prior agreement of the Provincial Development Unit.

Appendix 2 -Proposed operational criteria for all tiers of the Fund

Link to Fund and government outcomes

- Demonstrate the ways in which the project will contribute to lifting the productivity potential of the region
- Demonstrate how the project contributes to the Fund's objectives of:
  - more permanent jobs
  - benefits to the community and different groups in the community
  - increased utilisation and returns for Māori from their asset base (where applicable)
  - sustainability of natural assets (e.g. water, soil integrity, the health and ecological functioning of natural habitats)
  - mitigating or adapting to climate change effects, including transitioning to a low emissions economy
- Clear evidence of public benefits (i.e. benefits other than increased profitability for the applicant)
- Are in a Government priority region or sector

Additionality

- Project is not already underway, does not involve maintenance of core infrastructure or assets (except for rail and transport resilience initiatives), and does not cover activities the applicant is already funded for (funding could be considered to increase the scale of existing projects or re-start stalled projects)
- Demonstrated benefit of central Government investment or support
- Detail of any supporting third party funding (and any funding sought unsuccessfully)
- Acts as a catalyst to unlock a region's productivity potential
- Demonstrated links to other tiers of the Fund and related projects, to maximise value of Government investment

Connected to regional stakeholders and frameworks

- Evidence of relevant regional and local support, either through existing regional development mechanisms, or through another relevant body such as a council, iwi or other representative group (or reasons for any lack of local support)
- Has been raised and discussed with the region's economic development governance group
- Alignment with, or support for the outcomes of, any relevant regional development plan, Māori development strategy or similar document (whether regional or national)
- Demonstrated improvement in regional connectedness (within and between regions)
- Leverage credible local and community input, funding, commercial and non-commercial partners
- Utilise existing local, regional or iwi/Māori governance mechanisms

Governance, risk management and project execution

- Evidence of robust project governance, risk identification/management and decision-making systems and an implementation plan appropriate to the size, scale and nature of the project
- Future ownership options for capital projects, including responsibility for maintenance, further development, and other relevant matters
- Benefits and risks clearly identified and quantified, depending on the scale of the initiative
- Evidence of potential exit gates and stop/go points, and a clear exit strategy
- Clearly identifies whole of life costs (capital and operating)
- Dependencies with other related projects are identified
- Evidence of sustainability after conclusion of PGF funding
- Adequacy of asset management capability (for capital projects)
- Compliance with international obligations (where relevant)