

Application for Funding Development Phase



About this form

This form enables you to make an application for funding over \$100,000 from the Provincial Growth Fund for activities in the Development Phase of a project.

You will need to use the Express Form if your application is for an activity under \$100,000 or the Standard Form if your application is for an actual Project (i.e. delivery of an asset).

These forms are available on the [Provincial Growth Fund website](#)

Purpose of the Provincial Growth Fund

The Provincial Growth Fund aims to lift productivity potential in the provinces. Its priorities are to enhance economic development opportunities, create sustainable jobs, enable Māori to reach their full potential, boost social inclusion and participation, build resilient communities, and help meet New Zealand's climate change targets.

Completing this form

Please complete all sections fully and accurately. Square brackets and italics indicate guides.

Please see the PGF website, or contact your regional relationship manager, for further support.

Submitting your application

All completed forms must be emailed to PGF@mbie.govt.nz with a clear subject heading.

If you are a Trust (or applying on behalf of a Trust), then you must provide a copy of your Trust Deed.

Next Steps

Applications will be assessed for eligibility, as well as how well they will deliver on the aims of the Provincial Growth Fund. One of our team will be in contact regarding your application.

Funding Agreement

The template funding agreements can be found on the [Provincial Growth Fund website](#)

Public disclosure

The Provincial Development Unit is responsible for leading the Provincial Growth Fund's design, administration and monitoring its operation in consultation with other government agencies. In the interests of public transparency, successful applications may be published by the Provincial Development Unit (PDU).

Commercially sensitive and personal information will be redacted by reference to the provisions of the Official Information Act 1982. Please identify by highlighting any information in your application that you regard as commercially sensitive or as personal information for the purposes of the Privacy Act 1993.

Part A: Key Details

Please note that if the funding agreement will not be with the applicant (i.e. applying on behalf of another organisation), then please complete this application from the perspective of that organisation.

1. Proposal Title:

Commercial-scale harvest and cultivation of the native New Zealand seaweed species *Asparagopsis* to trigger the establishment of a new high-value regional aquaculture sector

2. Please provide a very brief description of the project/activity:

The application is to commercially-scale the harvesting, cultivation and processing of the red seaweed, *Asparagopsis*. *Asparagopsis* is the only seaweed known to accumulate the key active ingredient bromoform, which has been shown extensively to significantly reduce methane emissions from cows and sheep. *Asparagopsis* is an ancient species that is native to NZ waters, and thrives in the cooler waters to the south of the country.

The success of *Asparagopsis* in reducing methane production in ruminant animals by more than 90% has been proven in trials by CSIRO in Australia, and repeated by the University of California Davis and Penn State University in the US.

These results have created global interest in the product and increasing demand in countries that are adopting methane-reducing regulatory environments. There is no other proven technology anywhere near as effective as *Asparagopsis* in reducing methane production in ruminant animals.

CSIRO holds a worldwide patent covering the use of an *Asparagopsis*-derived feed supplement for the reduction of methane production in ruminant animals. This patent is of little value if there are no commercial-scale suppliers of the material.

CH4, capitalising on New Zealand's natural advantages and drawing upon an expert team of New Zealand and Australian scientists, has the opportunity to be first supplier and the global leader in the cultivation and supply of *Asparagopsis*.

Initially we will harvest modest levels of wild *Asparagopsis* from Big Glory Bay Rakiura under an existing Otago University permit to enable genetic and chemical characterization, harvesting of seed stock as well as material for initial processing. We will simultaneously start the cultivation and farming of the species in permitted water space.

Commercial Information

3. Please provide the details of the applicant organisation/entity for which funding is being requested:

Legal Name:	CH4 Limited
Entity Type:	Company
Registered Offices / Place of Business:	TUIA INNOVATION, Level 2, 202 Thorndon Quay, Thorndon, Wellington, 6011, NZ
Identifying Number:	NZBN: 9429047162556
Organisation's Website:	None (seeking commercial advantage by not publicising as yet)

4. Please provide the contact details for a person as a key point of contact):

Contact Name and Role:	Nick Gerritsen		
Email Address:	Privacy of natural persons	Telephone:	Privacy of natural persons

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

CH4 Limited will manage all aspects of this project - some of it directly and some of it in partnership with key New Zealand research individuals and institutes.

6. This project will be based in the region of:

7. What type of funding is this application for:

8. What is the activity / funding start and end date?

Start Date:	<small>Commercial Information</small>	Completion Date:	<small>Commercial Information</small>
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9. Has this project / activity been previously discussed with any part of Government? Yes: No:

- If Yes, please describe which part of government, and what the outcome of the discussions were.
Discussions with MPI Privacy of natural persons Positively received, advice on permitting and ongoing engagement.

10. Have you previously received any Government funding for this Project/Activity? Yes: No:

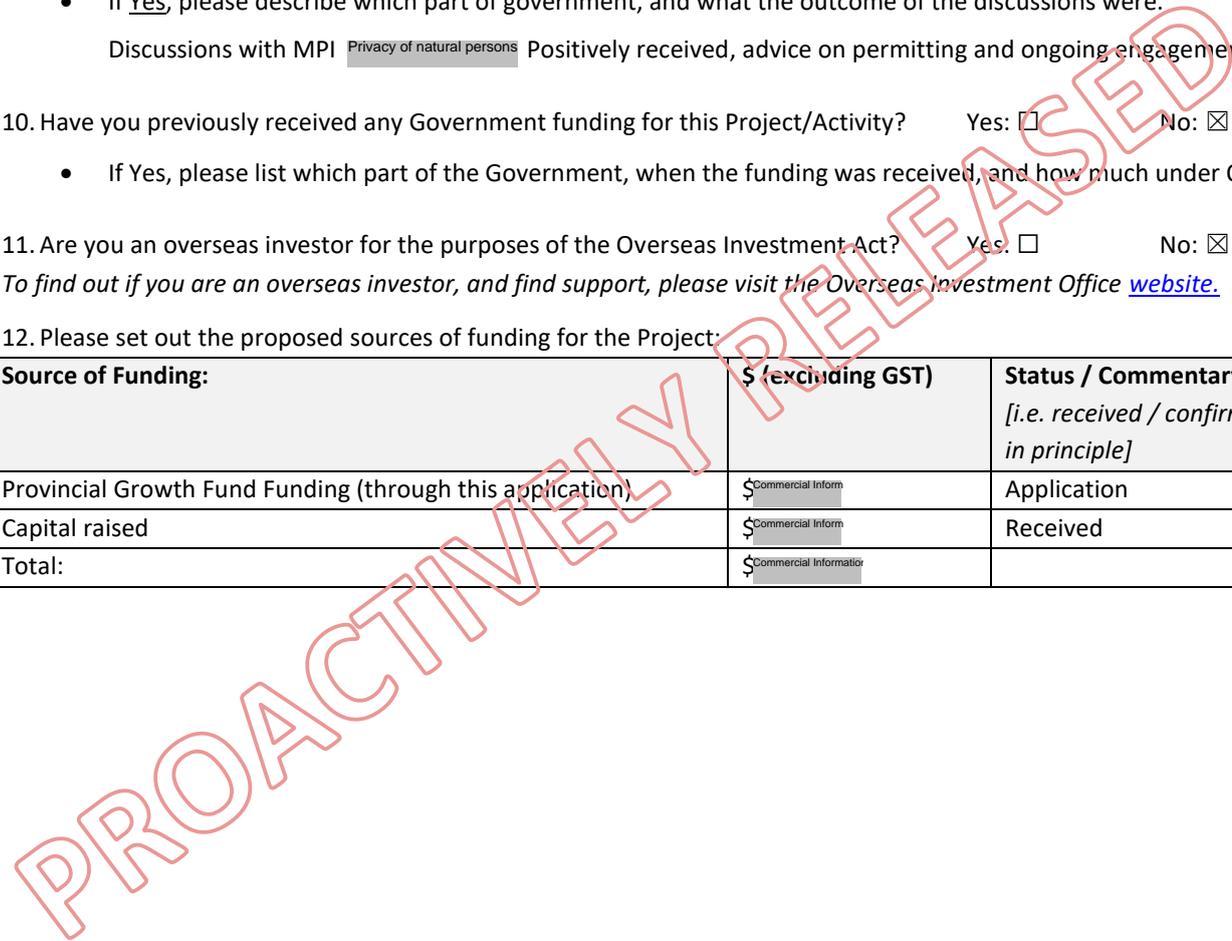
- If Yes, please list which part of the Government, when the funding was received, and how much under Q11.

11. Are you an overseas investor for the purposes of the Overseas Investment Act? Yes: No:

To find out if you are an overseas investor, and find support, please visit the Overseas Investment Office [website](#).

12. Please set out the proposed sources of funding for the Project:

Source of Funding:	\$ (excluding GST)	Status / Commentary <i>[i.e. received / confirmed / in principle]</i>
Provincial Growth Fund Funding (through this application)	<small>\$ Commercial Inform</small>	Application
Capital raised	<small>\$ Commercial Inform</small>	Received
Total:	<small>\$ Commercial Informatio</small>	



Part B: Project Description

13. This application is: *"in support of a wider project/programme"*

14. Will additional funding likely be applied for in the future? YES No:

- If Yes, please describe at a high level, what this may include, and when this is likely to be applied for.

This application will enable CH4 to meet the unique seasonal opportunity over the Spring/ Summer period 2019/ 2020 to commence the harvesting/ cultivation /and processing of Asparagopsis.

Past this point the aim is to rapidly scale the production to other suitable environments in New Zealand, namely; the Marlborough Sounds and Northland.

Further funding to assist in this rapid expansion and scale-up may be the subject of additional funding applications in two specific areas:

- Cultivation infrastructure
- Regional processing infrastructure

15. What type of activity is this application for?

- Feasibility study
- Business case
- Report
- Creation of an action plan
- Research or surveys
- Workshops or consultation
- Capability building (Education / training)
- Other (please specify)

Establishment of scale harvesting/ cultivation/ and processing programmes.

16. Please provide a detailed description of this activity for which funding is being applied:

- The project will provide a variety of jobs and utilise spare processing/freeze drying capacity in the areas from which we will harvest and cultivate i.e. Rakiura/Invercargill, Blenheim/Marlborough, and Bream Bay/Whangarei.

A New Aquaculture Opportunity for New Zealand

Asparagopsis is not harvested or grown at commercial scale anywhere in the world. CH4 plans to be the global leader in scaled production.

If we achieve this objective, Asparagopsis aquaculture could eclipse the current value to all other species that are presently the subject of aquacultural production in this country.

Asparagopsis grows naturally in NZ waters and provides an effective economic space for large scale seaweed farming.

Seaweed is recognised as having the lowest ecological impact of any marine species that can be cultured, and Asparagopsis is known to have a net positive effect in polyculture and Integrated Multi-Trophic Aquaculture systems – particularly when grown alongside finfish such as salmon.

Key opportunities for growing expertise in the cultivation and harvesting of asparagopsis are:

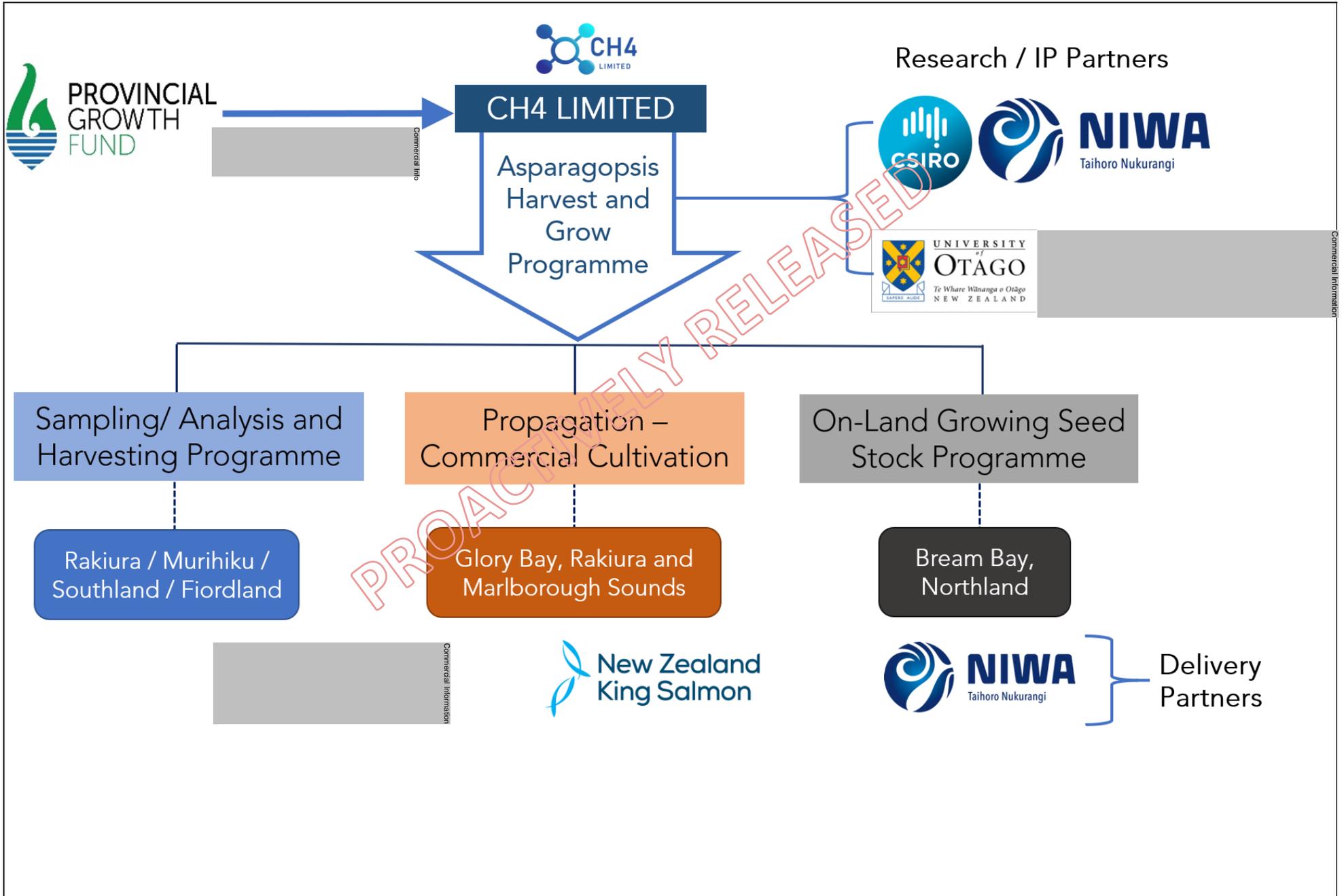
- Existing space for large-scale farming – little to no pressure from competing economic activities
- Can significantly increase the value of marine space returns
- Building processing plants / infrastructure near marine space areas for efficient processing of product
- Significant job growth in propagation, science and research, harvesting, processing and transporting product

NZ Market Opportunity

The speed of adoption for the New Zealand market opportunity will, to a large extent, be defined by the Zero Carbon Bill and the methane targets that are ultimately agreed. By the time that meaningful targets are in place, CH4 should be in a position to supply those farmers who will move early to reduce emissions.

CH4 proposes to build-up a store of the Asparagopsis derived compound so that it is ready to meet New Zealand market demand.

We are actively engaging with large NZ corporate dairy farmers to speed up adoption and market confidence in the product. We anticipate that once a set of domestic trials have been conducted and results published the commercial solution will drive wide-scale adoption.



CH4 will investigate the ability to sustainably harvest in areas where Asparagopsis grows profusely primarily Rakiura Stewart Island, Murihiku Southland and into Fiordland. But this will only be through the initial stages of the company's establishment, and the material will only be used for initial trials in dairy cows.

Business sustainability in the medium to long-term will only be achieved through large-scale aquacultural production, both land and sea-based. Thus, the major focus of this project is developing the pathway to scale-up aquacultural production whilst achieving certain specification and QA standards, including consistent bromoform levels.

A core technical capability CH4 needs to develop as a priority is the ability to propagate seedlings from wild harvested plants that can then be on-grown. This capability already exists in certain research institutes in Australia, and CH4 is setting up a mechanism to allow this technology to be transferred directly and expeditiously into the programme.

Working closely with Wendy Nelson and other Niwa scientists, CH4 plans to have propagated seedlings on ropes/lines and/or in cages for transfer to permitted water space Commercial Information, and the first harvest from this seed stock in Commercial Information

Our target is to grow a minimum of Commercial Information of Asparagopsis for harvest in the autumn.

17. How does this project demonstrate additionality within the region?

- **Māori Economy:** This project will have major impact in the Murihiku Southland region initially and over time in Nelson-Marlborough and Northland. They happen to offer some of the best growing areas, with a lot of water space available or already allocated and in most instances under the control or influence of local Iwi. Commercial Information
- **Key Additionality will be:**
 - Leveraging distressed aquaculture assets
 - Driving the repurposing of existing processing infrastructure/ development of new regional processing infrastructure
 - Employment in cultivation/ harvesting/ processing
 - Achieving regional circular economic impact

18. How is the project connected to regional (and sector) stakeholders and frameworks?

- Commercial Information
-
- Key other groups we are connecting with are:
- Commercial Information
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19. How will your project lift productivity potential in the regions?

PGF Outcome	<input checked="" type="checkbox"/>	How will the project positively or negatively impact this outcome in the region(s) identified?
1. Increase economic output	<input checked="" type="checkbox"/>	This project will provide direct economic impact regionally, where aquatic farms (aquaculture) are located. We expect significant returns which raise the economic viability of existing marine space.
2. Enhance utilisation of and/or returns for Māori assets	<input checked="" type="checkbox"/>	<p style="text-align: center;">Commercial Information</p> <p>_____ , creating meaningful numbers of skilled jobs in economically disadvantaged regions of the country.</p>
3. Increase productivity and growth	<input checked="" type="checkbox"/>	Initially there will only be a modest increase in local productivity. However, within 2-3 years we expect a substantial increase and will create an entirely new multibillion dollar industry in New Zealand resulting in creation of thousands of net new jobs
4. Increase local employment and wages (in general and for Māori)	<input checked="" type="checkbox"/>	Initially there will be some contract work (divers, growers and some processing) as we establish the market. We expect at full implementation for all of NZ, that we will create between Comm NEW jobs, possibly more.
5. Increase local employment, education and/or training opportunities for youth (in general and for Māori)	<input checked="" type="checkbox"/>	Reemphasizing the increase in Comm net new jobs across the country, but more specifically in underserved regions of the country. In partnership with Iwi groups we plan to provide sustainable career paths and training in conjunction with Te Ara Mahi programmes
6. Improve digital communications, within and/or between regions	<input checked="" type="checkbox"/>	It will be critical, at scale, to have fast, reliable digital infrastructure to communicate between sites. We plan to bring the best available technology not only to the digitalisation of the business but the ability for fast, reliable and consistent digital communications to optimize business outcomes.
7. Improve resilience and sustainability of transport infrastructure, within and/or between regions	<input checked="" type="checkbox"/>	It is clear to grow, harvest and manufacture the final product we will need to utilise not only ocean waterways, but also land-based facilities for cultivation of seed stock. Once the final product is manufactured it will need to be distributed nationally to all farms. This can only be done by utilising transport infrastructure with and between regions. We plan to use sustainable road based transportation whenever we can to continue to reduce the total carbon footprint of the overall operation. Product will also need to be transported to an export port. A combination of road and rail transport is likely required as well as the potential of coastal shipping (e.g. Nelson to Napier/Lyttleton/Tauranga).
8. Contribute to mitigating or adapting to climate change	<input checked="" type="checkbox"/>	When fully implemented in NZ for NZ cows, this would allow NZ total emissions to be reduced in excess of 40% allowing New Zealand to realize its Paris climate goals with this single implementation.
9. Increase the sustainable use of and benefit from natural assets	<input checked="" type="checkbox"/>	The initial implementation will create ocean farms where presently there is no/little economic (or other) activity, and do so in a sustainable, environmentally-friendly way. In fact, the implementation of the approach will increase the cleanliness of the ocean and waterways as the seaweed growth extracts pollutants from the sea.
10. Enhance wellbeing, within and/or between regions	<input checked="" type="checkbox"/>	The full implementation in New Zealand will be across the entire country from locations of off shore farms in many regions of both the North and South Islands and will, additionally, create land-based farm processing stations that will further increase regions well-being and collaboration between regions. Our focus for this proposal is on Southland.
Total number of outcomes project contributes to	10/ 10	

Part C: Project Delivery

20. Please provide an overview of the project management approach / plan for this activity.

CH4's key managers Dr Steve Meller, Nick Gerritsen and Alan Groves have assembled and a team of Subject Matter Experts to deliver the various aspects of the Scale-up programme.

The key SMEs involved are Dr Wendy Nelson and Dr Andrew Forsythe (Niwa), Dr Chris Hepburn (University of Otago), [redacted] Privacy of natural persons, Dr Rob Kinley (CSIRO), and Dr [redacted] Privacy of natural persons. Each will be able to draw upon other skills and capabilities within their institutes as and when required by the project.

Alan Groves will have primary responsibility for managing the relationships with the project team members.

CH4 will also have recourse to a trans-Tasman Technical Advisory Group headed by [redacted] Privacy of natural persons and be supported with contracting and contractual management by the wider Tuia Group.

We recently appointed Andrew Smith as CFO and Rowena Pullan as Head of Marketing.

Involvement of PDU

We are not anticipating significant involvement of PDU in this programme, though we will keep them apprised of developments.

Project development Team Bio's – CH4 Limited



Toko Kapea

Toko has over 20 years of experience as a commercial lawyer and many years as a company director. Toko has held directorship roles with dairy farming operations, forestry and fishing sector in New Zealand. Toko is a commercial lawyer, consultant and director. He has a background in banking and finance, worked in the energy sector and with iwi commercial development. Toko currently focuses on commercial law, business consulting and international development and trade. He was a director of Ngāti Apa Developments Limited and of Parinihihi ki Waitotara Incorporation and its related subsidiaries - PKW Farms and Port Nicholson Fisheries (crayfish). Toko is also serving as a director of TVNZ and Bathurst Resources NZ Limited, an ASX and NZX listed coal mining business in NZ.



Guy Royal

Guy has over 20 years of experience as a commercial corporate lawyer in New Zealand, Hong Kong, Vietnam and the United Kingdom. Guy specialises in joint venture arrangements and mergers and acquisitions, particularly with indigenous groups. Guy has advised a number of Iwi on aquaculture and fisheries matters including advising Moana Fisheries on commercial models converting fish processing waste and low value species to high-value nutraceuticals. In particular he has significant networks into and advised a number of Te Tau Ihu/Top of the South Island Iwi on their marine space consortium interests and aquaculture assets. Guy was previously a director of Kiwirail, Fast Forward Fund Limited, a Trustee of Crown Forests Trust and Chair of a forestry fund.



Alan Groves

Alan has over 18 years of experience in the innovation sphere, and has worked along the entire continuum of new venture creation from idea conceptualisation to start-up. He was an award-winning investment manager in the public sector, where he championed Māori innovation, before leading a number of highly innovative new product development programmes. As a consultant and specialist project manager, he has focused heavily on natural product science and unique growing environments, and has been involved a wide diversity of marine projects including the whole gamut of aquaculture projects – from tuna and paua culture to GSM extracts and other bio-active marine extracts. He is presently engaged with iwi groups with interests in developing new aquaculture areas. He has worked extensively in New Zealand’s innovation system and incubator network and has had a 20-year long association with Niwa. He has good knowledge of their key staff, capabilities and research programmes.



Nick Gerritsen

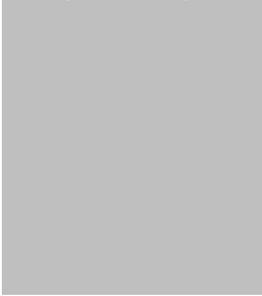
Nick is a New Zealand based thinker, visionary catalyst, and impact entrepreneur. Nick loves BIG ideas that are going to lead to global structural change, is committed to the culture of innovation, and unafraid of operating beyond existing boundaries. He specialises in developing technology propositions from the ground up, and has been one of the leaders promoting New Zealand’s contribution to emerging megatrends such as Clean Technology, the Internet of things, and GovTech. He was an early leader in the development of the commercial radio sector in New Zealand whilst a teenager. Nick graduated from the University of Canterbury, Christchurch with a Bachelor of Laws (LLB). During his legal career, he advised leading corporates on intellectual property and later enjoyed a string of successful business ventures, most notably in radio, life sciences, and software sectors. He has been a consultant to New Zealand On Air, Radio New Zealand, Te Mangai Paho (the Maori Broadcasting Funding Agency), Ministry of Business Innovation and Employment (MBIE), the Department of the Prime Minister and Cabinet, and Government Chief Digital Office. Nick is based in the South Island of New Zealand and has completed post graduate study at the Amsterdam School of Creative Leadership in The Netherlands.



Dr. Steve Meller

Steve is a Silicon Valley entrepreneur, investor, innovator, founder and board advisor after successful careers as a corporate executive and in academia. Over his three plus decade, three-stage career, Steve has been a serial innovator and serial entrepreneur creating new and innovative strategies, businesses, capabilities, platforms and business models and disruptive approaches to innovation. Steve has created and scaled innovative disruptive product and capabilities that have created in excess of \$20B in bottom line profit. He has also created and scaled sustainability solutions globally around waste, water, energy and materials creating savings of > \$1B annually while reducing carbon impact. Steve is a key advisor to several governments on innovation, has founded/co-founded five companies, serves as an advisor to more than a dozen start-up companies, consults with more than 25 Fortune 200 companies across the automotive, apparel, healthcare, B2B, consumer, financial, travel and tech sectors and also works closely with several global innovation advisory companies. Steve earned his B.Sc., B.Sc. (Hons) and PhD in neuroscience from the University of Adelaide, Australia.

CH4 Limited: Technical Advisory Board Bio’s

<p>Privacy of natural persons</p>  <p>Privacy of natural persons</p> 	<p>Privacy of natural persons</p> 
 <p>Alexander Gosling, PhD Retired Chairman and CEO for Invetech Ltd</p>	<p>Alexander was the founding Director of www.invetechgroup.com . For 40 years he has been working in the field of process and product development and related R&D for clients ranging from high tech start-ups to “smoke stack” industry global companies. This has provided an exceptional base of practical experience on what it takes to progress research outcomes and new technologies to commercial success. He was recently awarded an honorary Doctorate of Engineering by Swinburne University, and appointed a member of the order of Australia for services to industry, technology, and the community. Alexander is a fellow of the Academy of Technology and Engineering and a Fellow of the Institute of Engineers Australia. He sits on a number of boards and is a member of the Australian Institute of Company Directors.</p>
 <p>David Hall Managing Director, Hallprint Pty Ltd</p>	<p>David has extensive experience and distinguished high level experience as a fisheries research and management specialist including terms as the senior most fisheries and aquaculture administrator in South Australia and the Northern Territory as well as a recent term as a Commissioner with the Australian Fisheries Management Authority Commission. He has been involved as a member/ chair on many State and National fisheries and aquaculture committees and boards and is currently Independent Chair of the South Australia Commercial Fisheries Reform Advisory Committee and a member of the South Australia Research Advisory Board and the Aquaculture Tenure Advisory Board. David has more than 16 years experience in business as owner/ manager of Hallprint P/L which is the global dominant provider of external fish tags to the fisheries and aquaculture research market.</p>
 <p>David Kneed VP, Business Development, Invetech</p>	<p>David leads the global Cell Therapy business for Invetech. His experience is in biotechnology commercialisation and business strategy focused particularly on the commercial scale manufacture of biologics. For the past 6 years he has delivered commercial cell therapy manufacturing automation programs for clients across the USA, Europe, and Asia. David previously worked as a management consultant for McKinsey and Company, where he advised on a broad range of strategic and operations themes across industries including healthcare, finance and primary industry. He holds an MBA from Melbourne Business School and Hautes Etudes Commerciales in Paris, as well as Bachelor degrees in Mechanical Engineering and Science from the University of Melbourne. David sits on a number of boards and industry advisory bodies.</p>



James A. Renwick, PhD
Professor of Physical
Geography, Victoria
University of Wellington

James has nearly four decades experience in weather and climate research. His main field is large-scale climate variability and climate change. He was lead author for the last two Assessment Reports of the Intergovernmental Panel on Climate Changes (IPCC), and is Convening Lead Author for the new 6th IPCC Assessment. He is co-chair of the World Climate Research Programme (WRCP) CliC (Climate and Cryosphere) project and has served as the Chair of the Royal Society of New Zealand Climate Expert Panel, President of the New Zealand Association of Scientists, and President of the Meteorological Society of New Zealand.



Kim Walker
Former Strategy Advisor,
Dairy Australia

Kim holds an honours degree in mechanical engineering and MBA from the University of Melbourne and has 25 years' experience in manufacturing and process engineering; professional advisory; technology commercialisation; and agriculture. Originally a mechanical engineer, Kim has held executive strategy in multinationals (NCL and EDS), and has extensive strategic management consulting experience (Anderson Consulting, Invetech, Capstone Partners, Prime Financial Group). Kim held the role of Strategy Advisor with Dairy Australia for the period 2016 – 2018. He has been involved in numerous projects and new ventures in the agricultural sector in Australia and California.

PROACTIVELY RELEASED

21. Please provide us with a project plan, where possible please attach a schedule (i.e. Gantt chart):

	Project Activity	Responsible:	Date / Period:
1	Material (Asparagopsis) Collection, including large-scale harvest	CH4/U o Otago Niwa/Commercial Information	Commercial Information
2	Evaluation for Bromoform content of species	CH4/Niwa/Commercial Information	Commercial Information
3	Material evaluation for methane reduction (in vitro)	CH4/SARDI	Commercial Information
4	Design seaweed cultivation/growth methodology trials	CH4/Niwa/CSIRO/Commercial Information	Commercial Information
5	Conduct growth and cultivation pilots	CH4/Niwa	
6	Secure future access to marine aquaculture space for cultivation	CH4/marine space owners/Iwi/ToKM	
7	Business modelling for COG	CH4/advisors	Commercial Information
8	Evaluation of business economics	CH4/advisors	Commercial Information

22. Please provide a complete breakdown of the costs of the project:

[Note that figures in this table must align with other figures provided in Q11. Please use as many lines as it takes to provide us with the appropriate detail. If more suitable, please attach a budget spreadsheet to this application]

Cost Description:	\$ (excluding GST)
Project Management	Commercial Information
CSIRO partnership/access	Commercial Information
Logistics, processing	Commercial Information
Materials and Consumables	Commercial Information
University of Otago – permit and collection	Commercial Information
Niwa partnership – seedling growth programme	Commercial Information
Commercial Information – quality testing	Commercial Information
Total	Commercial Information

23. Please provide a description of why Government funding is required to deliver this project?

Government funding is urgently required to enable CH4 to take advantage of the short seasonal opportunity to commence the project in 2019.

Asparagopsis grows over the Spring/ Summer period, so this project has to start in September 2019. There is a significant stall-out risk if this window is missed.

There is little chance of CH4 securing the necessary capital from other sources within this tight timeframe, as early stage biotechnology and aquaculture investment has an insignificant profile within the New Zealand capital markets let alone at the level required to commence this project.

Other funding mechanisms such as debt/ project financing are not relevant at this early stage.

24. What are the proposed deliverables if funding is approved?

#	Project Activity	Responsible:	Date / Period:
1	New Zealand Sourced Material: wild harvest of Asparagopsis and full analysis/characterisation of plant material from Rakiura, Marlborough Sounds and Bream Bay. Full understanding of the “efficacy” of New Zealand sourced Asparagopsis vs other global sources (including those that have been used in precious cow trials).	<ul style="list-style-type: none"> • CH4 • Niwa • University of Otago • Commercial Information 	Commercial Information
2	Cultivation Pilots: set up pilots on permitted marine space in Big Glory Bay, parts of Marlborough Sounds and Bream Bay (part land-based). Establish best grow out methods. Analyse cultured Asparagopsis for efficacy.	<ul style="list-style-type: none"> • CH4 • Niwa • University of Otago 	Commercial Information
3	Processing value chain: utilise existing/spare processing (freezing and freeze drying) capability and storage in Southland, Blenheim and Whangarei. Establish basis of processing value chain.	<ul style="list-style-type: none"> • CH4 • Specialist consultants 	Commercial Information
4	Initial development of seed-stock for large-scale grow-out: commence breeding programmes to identify superior gene stock and propagation methods to produce seed stock for large-scale grow-out. Commercial Information	<ul style="list-style-type: none"> • CH4 • Niwa • CSIRO/Commercial Information 	Commercial Information

25. Please provide an overview of the applicant’s relevant skills and experience for delivering a projects of this nature:

CH4 Limited as the project applicant is a SPV specially created for this opportunity. It combines:

- Skillsets and networks of the Founder Directors
- Experience and sector knowledge of Tuia Innovation particularly in growth-businesses
- Expertise and delivery capability of Tuia Group including Tuia Legal who have project managed a number of projects nationally and overseas.

Past experience with size, scope and complexity of some of the Directors have included:

- creation of global innovation programs generating in excess of \$20 B in bottom line profit over a 5 year period and on an ongoing basis of \$3B/year
- creation of sustainability strategies that saved Corporations in excess of \$1B/year while lowering use of energy, water, waste and materials
- creation of lines of products for human and animal use (hence complexities of regulatory agencies) that have generated well in excess of \$1 B in revenue
- a diverse array of aquaculture projects, from paua to finfish farming and ocean-based GreenShell Mussel production. We have worked with the pioneers of the GSM and paua farming sectors, and leading research providers including Niwa.
- joint initiative of Commercial Information focussing on converting fish processing waste and low

value species to high-value nutraceuticals.

- development of large-scale high-value horticulture driven by geothermal power at Mokai, and the early stages of the Miraka development on that site; both now significant export earners.
- establishing and project managing a national-scale integrated forestry enterprise focussing on improving productivity of Māori-owned land and creating pathways for Māori landowners to operate across the forestry value-chain.
- advising and project managing a large farming trust in the central North Island on its sheep milk strategy and the acquisition of a commercial cheese manufacturing business.

Tuia Group will be contributing a team of ^{com} lawyers and business advisors who will drive appropriate project management and reporting disciplines in accordance with the funding agreement requirements with PDU.

26. Please explain the Governance arrangements for this project:

There are three sets of governance over the Project:

1. Overall governance is via the board of CH4 Limited. These are bios are listed above.
2. There is technical advisory oversight provided by the Technical Advisory Board. These bios are listed above.
3. There will be a market-facing advisory board in due course.

Key governance meetings will be monthly and management meetings will be on a weekly basis.

There will be bi-weekly interaction with the project team and monthly meetings preferably on site with Nick Gerritsen, Steve Meller and/or Alan Groves involved in the appropriate manner.

Regular interactions with Rob Kinley, as CSIRO's primary seaweed culturing expert will also be structured weekly or bi-weekly as the need arises. There will be several face-to-face interactions with Rob and some of the CSIRO team for relevant portions of their expertise and knowledge. Some of those will be in Australia and some in New Zealand.

27. What procurement process has been undertaken (i.e. selection of a provider), or will be undertaken, and how will that be managed? In addition, please provide a description of how greater public value will be achieved through the procurement process, for example by considering one or more of the following:

- How regional businesses (inc. Māori / Pacifica enterprises) will be provided with opportunities
- How skills will be developed in the market (i.e. via construction apprenticeships)
- How worker conditions in the supply chain will be improved / managed
- How waste / emissions are being reduced in this procurement.

For more information, please visit: <https://www.procurement.govt.nz/broader-outcomes/>

We have hand-selected and pre-qualified all of our providers, based on our knowledge of their capabilities and previous experience in working with them.

The main providers will be:

- Niwa (Wellington and Bream Bay Aquaculture Park)
- University of Otago’s Marine Biology School
- [REDACTED] Commercial Information

We will access further chemistry and biology expertise via our advisory board and particularly our relationship with [REDACTED] Privacy of natural persons .

[REDACTED] Commercial Information

[REDACTED]

[REDACTED]

28. What risks are associated with the delivery of this activity?

#	Risk	Mitigation approach	Rating
1	Unable to secure permit / consent to harvest	<ul style="list-style-type: none"> - Maintain constant dialogue with [REDACTED] Commercial Information Environmental team - Maintain constant dialogue with [REDACTED] Commercial Information / MPI - Actively be in region for face to face engagement with mana whenua [REDACTED] Commercial Information 	L
2	Inability to culture seed stock for aquafarms	<ul style="list-style-type: none"> - Explore partnerships with other who are evaluating this approach (such as [REDACTED] Commercial Information) 	L
3	Inability to increase yields beyond simple rope growing	<ul style="list-style-type: none"> - Rely upon expertise at NIWA (and others) we will be pursuing for advanced farming techniques 	L
4	Licenses required in New Zealand for full scale aquafarms	<ul style="list-style-type: none"> - Move the operations to another country where this is not an issue (e.g., various SE Asia countries, various Pacific Islands with ocean and a need for jobs and economic benefits) - Begin discussions with Iwi and various parts of the Government infrastructure where we can understand and manage the issues 	M
5	Project economics simply do not create the market	<ul style="list-style-type: none"> - Change the growing from Asparagopsis to kelp (or other species) where this is a substantial existing export market 	M

29. What is the future intent (at this stage) relating to the project? Has there been any assessment of future viability of the project undertaken?

CH4 intends to be a world-wide leader in the cultivation and processing of Asparagopsis and a major supplier to the dairy sector.

The initial focus is on the aquaculture scaling and development of viable seedstock in New Zealand market and then scaling to meet geographic demand.

We will be in a position to provide a solution to the methane issue relating to livestock-heavy production systems, in particular the dairy sector in New Zealand.

In achieving our business objectives, we will spearhead regenerative economic development in recognised surge regions of NZ providing a diverse array of new, high-skilled jobs and professional development opportunities as we establish a new, high-value industry capable of impacting GDP.

PROACTIVELY RELEASED

Part D: Declarations

Commercial Information

- 30. The contracting entity is compliant and will continue to comply with all applicable laws, regulations, rules and professional codes of conduct or practice including but not limited to health and safety and employment practices

- 31. Has this activity ever been declined Crown Funding in the past?

- 32. Has the applicant or the contracting entity ever been insolvent or subject to an insolvency action, administration or other legal proceedings?

- 33. Has any individual in the Project Team (including the Applicant’s Leadership Team, directors, partners, or trustees, or any key members of the project) ever been insolvent or subject to an insolvency action, administration or other legal proceedings, or actively involved in any organisation which has?

- 34. Has any individual in the Project Team (including the Applicant’s Leadership Team, directors, partners, or trustees, or any key members of the project) ever been adjudged bankrupt or is an undischarged bankrupt?

- 35. Has any individual in the Project Team (including the Applicant’s Leadership Team, directors, partners, or trustees, or any key members of the project) ever been under investigation for, or been convicted of, any criminal offence?

- 36. Are there any actual, potential or perceived conflicts of interest that the applicant 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>

If you answered “Yes” to any question from 31 to 36, please provide a description below:

By completing the details below, the applicant makes the following declarations about its application for Provincial Growth Fund funding for the project ("application"):

- I have read, understand and agree to the Terms and Conditions of applying for Provincial Growth Fund funding which are attached as Appendix 1;
- 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;
- I have secured all appropriate authorisations to submit the application, to make the statements and to provide the information in the application;
- I have obtained the permission of each member of the Project Team to provide the information contained in this application and those individuals are aware of, and agree to, the Terms and Conditions of applying for Provincial Growth Fund funding which are attached as Appendix 1;
- I consent to this application being publically released if funding is approved. I have identified the commercially sensitive and personal information.
- 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 Provincial Development Unit by emailing PGF@mbe.govt.nz and
- 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.
- The applicant consents to the Provincial Growth Fund undertaking due diligence including any third party checks as may be required to fully assess the application.

Full name:

Nick Gerritsen

Title / position:

Director, CH4 Limited

Signature / eSignature:

Commercial Information



pp

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Date:

28 August 2019

Appendix 1 – Terms and Conditions of this Application

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”) has confirmed by their signature (or e-signature) on the application that these terms and conditions are accepted 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 and disclose its application for the purpose of assessing and decision making related to the PGF application process. Any hard copy application or documentation supplied by you to the Provincial Development Unit 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 information in applications as confidential to ensure fairness for applicants during the assessment and decision making process, 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 information in this application, where possible, the Provincial Development Unit will consult with you and may ask you to confirm whether the information is considered by you to be confidential or still commercially sensitive, and if so, to explain why.

Use and disclosure of information

The Provincial Development Unit will require you to provide certain information, including personal information, on application forms if you wish to apply for funding. If you do not provide all of the information that is required on an application form, the Provincial Development Unit may be unable to process or otherwise progress your application.

MBIE will generally only use personal information provided in the application process for the purpose of administering the PGF which includes assessing an application you have submitted, contracting, monitoring compliance and reporting.

We may use personal information provided to us through the application for other reasons permitted under the Privacy Act (e.g. with your consent, for a directly related purpose, or where the law permits or requires it).

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, including assessment and ongoing monitoring, which will include carrying out due diligence. Due diligence may involve MBIE disclosing information to another MBIE business unit or relevant agency in order to assess the application and verify the information contained in the application and accompanying documents.

MBIE will generally not otherwise disclose personal information provided or collected through this application unless required or

otherwise permitted by law. For example, we may seek your consent to undertake additional due diligence checks and request information from other relevant third parties. If an application is approved for funding, information provided in the application and any related documents may be used for the purpose of contracting.

In the interests of public transparency, if an application is approved for funding, the application (and any related documents) may be published by the Provincial Development Unit. Commercially sensitive and personal information will be redacted by reference to the provisions of the Official Information Act 1982.

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
- f) 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 and any other government agency, or any relevant Minister, may make public in whole or in part this application form including 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.

Electronic signature

You can only file documents and information with us using an electronic signature if you're the signatory, or have authority to act on behalf of the signatory, and are using software that complies with our standards, in particular keeping records of transactions where an electronic signature has been used. Once a document with your electronic signature has been filed with us, we consider the information:

- has been provided with your full knowledge and agreement
- is authentic and accurate
- wasn't amended after your electronic signature was added to the document, unless a change has been clearly marked on the document.

You're responsible for:

- safeguarding how and when your electronic signature and credentials are used on documents and information
- managing who has authority to use your electronic signature on your behalf, for example, a chartered accountant.

If your electronic signature on a document or information is filed with us, you won't be able to dispute having signed and approved the document or information. If we question the authenticity of an electronic signature or online transaction, you must be able to demonstrate on request the validity of the software used to apply your electronic signature to the document.

You must use electronic signature software that captures authentication, time and source details for any online transaction where a document with your electronic signature has been filed. These details must be held within the software itself, in the form of a file that:

- is maintained in its original form with no amendments, and
- can be provided to us, if requested, within a specified time.

The file must be treated as a record, as defined by the Companies Act 1993, and a business record as defined by the Evidence Act 2006.

Appendix 2 - 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)