



NZ Circular Bio-innovation Network: Strategic Assessment

Executive pack
18th August 2022
Prepared for Scion, Te Uru Rākau and RotoruaNZ

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1. Executive Summary

Strategic Assessment Executive Summary (1 /2)

- Te Uru Rākau, Rotorua NZ, and Scion are joint sponsors of this strategic assessment. The purpose of this body of work was to consider this question, “is there strategic rationale to invest and intervene further in a future state circular bio-innovation network for NZ?”
- The circular bioeconomy, and bio-innovation network is a policy trojan horse. It has the potential to encapsulate economic growth, jobs, skills, decarbonisation of industry, energy, materials, and enhance circular environmental outcomes.
- At present New Zealand is unlikely to meet its climate commitments, however the ERP has been allocated \$3bn & signalled clear policy intent. Funding for New Zealand's 1st ever national bioeconomy strategy has been confirmed.
- The Te Ara Paerangi RSI reform programme is underway, this reform programme will determine a few ‘national RSI priorities’ – we anticipate bioeconomy will rank highly among them. Waiting for this reform and national policy to emerge and doing nothing in the interim is not a desired position for Government, industry, and firms.
- NZ has an innovation output challenge and performance on the global innovation index has been sliding for over 6 years. There are known gaps in the downstream innovation value chain related to effective scale-up and commercialisation capabilities and infrastructures. We have a vibrant bio research system.
- The current bio-innovation ecosystem has evolved organically and lacks clear and coherent strategic direction, orchestrating “mission” with bio-innovation infrastructure and capabilities not strategically located, or optimised for capacity or performance. Internationally countries who have advanced bio economies have had a combination of clear national policy, matched funding, strong horizontal capabilities and clear customer demand. There are challenges and gaps in NZ in all these areas.
- There is a large and growing (high CAGR, high value) global addressable market for bio-innovation use-cases across many segments (fibres and materials, fuels, energy, bioplastics, the list goes on). Within New Zealand, there is a lack of data on feedstock end use product demand, however there is clear consumer intent around the bio/green/sustainable products. New Zealand has traditionally focussed on primary production outputs and there is significant opportunities for ‘new industry secondary processing’ for both domestic (replacing carbon/petro intensive industrial inputs) and export markets.
- The bioeconomy (and the bio-innovation that drives it) are highly place-based phenomena and relevant to our regions. This therefore has is a significant future opportunity for regional development and for Māori. Key regions having significant competitive advantages (e.g. Bay of Plenty in woody biomass). Māori own over 40% of the forests in New Zealand and are positioned to reap the benefits of the circular bioeconomy, with benefits flowing through to whānau, iwi and hapū through investment, and higher wage skilled jobs.
- The overall supply and demand picture for feedstocks generally has some uncertainties and further work is required to ensure that this supply and demand is aligned, this needs to include an assessment of competing land uses.

Strategic Assessment Executive Summary (2 /2)

- There is some identified key customer demand which require 'bio scale up facilities' to drive secondary processing opportunities, further rigorous quantification and formalisation is required (and best practice endorses this) to ensure a solid pipeline of short- and medium-term demand for scale-up infrastructure and services. It does need to be recognised that we are building a market for the circular bioeconomy and therefore this needs to be taken into account for investment decision making.
- There is limited knowledge and understanding of the opportunities a circular bioeconomy and bio-innovation can provide to investors across New Zealand. A very few early-stage investors are active in the bioeconomy, this is leveraging international IP and offshore pilot scale up facilities. Most New Zealand investors target low risk investments. Internationally private investment in early-stage risk ventures has increased rapidly in the circular bioeconomy, within New Zealand there are major gaps.
- Talent and skills in this area are scarce and in high-demand. A key risk for New Zealand is that existing key talent could leave if a lack of funding and strategic approach at a system-level for bio-innovation persists.
- A future-state circular bio-innovation network, as a well-coordinated network of bio-clusters (feedstock-centric), infrastructures, and capabilities could deliver better bio-innovation scale-up and commercialisation and ultimately higher innovation outputs with lower emissions profiles. Directing financial support to the network supports a strong bio-innovation ecosystem game rather than an individual firm game.
- Future possible scenarios for network development range from “do nothing” to incremental scenarios, to transformational scenarios. A detailed Programme Business Case for the network including detailed economic, commercial, financial, and management case work mapped against the success definition is required to determine precise requirements, costs and benefits for future investment.
- We are not starting from scratch, and we can leverage many lessons internationally, and locally from the NZ Food Innovation Network – noting that a programme business case is required to drive the right network programme design and build the right investments and configurations across the regions.
- There are several “quick-wins” which can be undertaken immediately. Some of these can support future network readiness, and many are specific to forestry cluster development that are worth pursuing now – all of which align strongly with the forestry and wood processing ITP and ERP.
- **Conclusion of the strategic assessment: There is strong rationale for investing further into the development of a Circular Bio-Innovation Network for NZ. Doing nothing and waiting for RSI system reform and national bioeconomy strategy to evolve is not desirable. Practical steps can be taken now.**

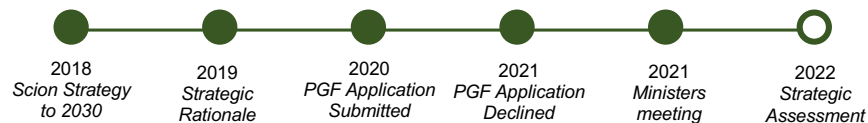
Recommendations:

1. **Endorse the strategic assessment**
2. **Undertake immediately work to scope, price and plan practical “quick-wins” which is strongly aligned to actions identified in the Forest and wood processing ITP**
3. **Progress ‘no-regrets’ initiatives that support future circular bio-innovation network readiness**
4. **Test the strategic assessment with key stakeholders, build a strong coalition around key messages and next steps (possible joint MPI/MBIE bid for funding for a programme business case for circular bio-innovation network in pre-budget request round)**

2. Context & Success Definition

The 'Bio Network / Scale Up Pilot' initiative has been in discussion for many years and is strongly supported by local and regional stakeholders, but has not attracted major funding

The Journey So Far



To date there has been multiple applications for funding submitted which have been unsuccessful

This has led the strategic assessment to focus on:

- Is there an intervention required to support a 'circular bio-innovation network'?
- Is there an intervention required to support a 'bio scale up plant' investment?

In 2022, significant funding was allocated to support the NZ emission reduction plan and a circular bioeconomy strategy is being developed

The RSI reform and Te Ara Paerangi are multi-year programmes of work currently running in parallel, which the circular bio-innovation network will complement

The key funders of the 'Strategic Assessment' are strongly supportive of developing a well-functioning bioeconomy that can deliver benefits for NZ Inc and Rotorua:



- CRI specializing in R&D for the forestry sector
- Strong innovation background
- Thought leaders highlighting the benefits of a strong bioeconomy



- EDA with focus to improve the Rotorua economy and its ability to create employment, wealth and wellbeing for all its people



- Promote and grow sustainable forestry sector, contributing to the economy, and protecting the environment.

A clear success definition will enable decision makers to have clarity in evaluating options for a future circular bio-innovation network

Success Definition: The circular bio-innovation network will be a success if it meets these five tests:

Test 1: Market validation

- Customer base in NZ that is willing to pay for services being provided by a NZ base 'circular bio-innovation network'

Test 2: Policy alignment

- Supports and aligns with the Emission's Reduction Plan (ERP), Forestry and Wood Processing ITP (Industry Transformation Plan), Waste Strategy, the future national RSI priorities, NZ Bioeconomy Strategy and net-zero

Test 3: Innovation ecosystem

- Supports stronger commercialisation and greater innovation outputs for NZ that is tightly mission-led (one clear mission)

Test 4: Configuration and design of network

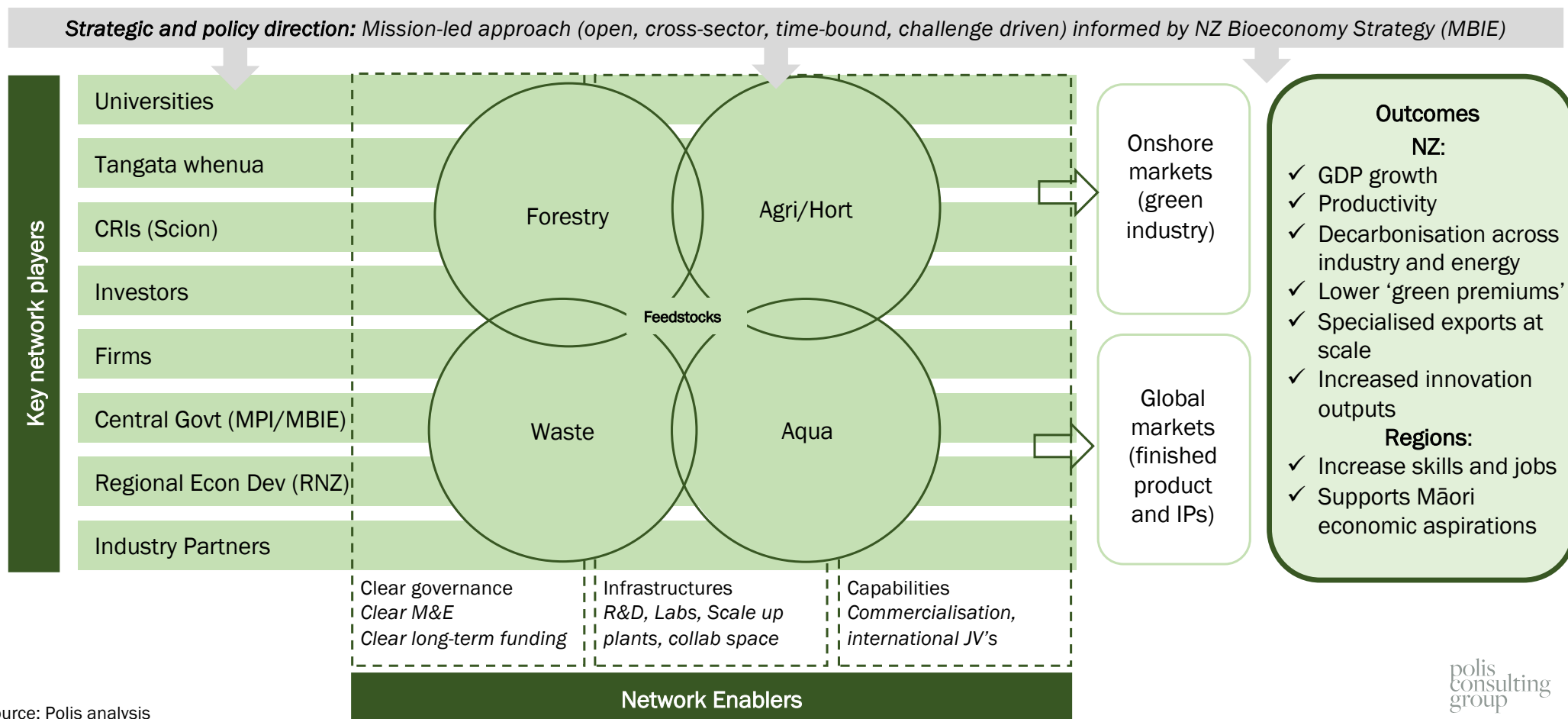
- Is optimally configured to ensure effective and efficient activity of infrastructures, and assets across the bioeconomy innovation value chain

Test 5: Capability of network

- Designed best mix of technical and horizontal / dynamic innovation capabilities to enable mission success. Enables strong regional, national, and international JVs, alliances and partnerships (including R&D consortiums)

A possible future state circular bio-innovation network could connect all key players with coordinated clusters to reduce coordination failures, and increase bio innovation outputs

Conceptual model of a future Circular Bio-innovation Network



3. Summary of Analysis

Policy direction is positive and permissive towards bioeconomy and bio-innovation

The macroeconomic environment is complex, driving global policy actions

Several major drivers are influencing key New Zealand policy areas to advance the circular bioeconomy, but at present there is misalignment

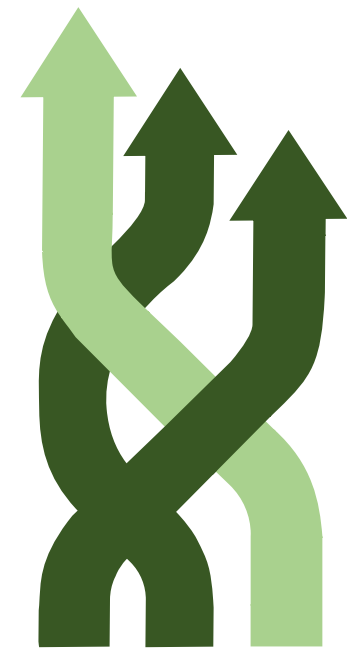
New Zealand must address falling innovation performance and increase innovation effectiveness. NZ's innovation ranking is already slipping relative to leading international benchmark countries, it is imperative this slip is addressed now

New Zealand's current trajectory is unlikely to meet its emissions targets, an aligned bioeconomy will strongly contribute

The circular bioeconomy space has the potential to be a fruitful 'trojan horse' – carrying several social, economic, and climate policy goals forward at one time

There is a potential cumulative fund pool of \$2.9 billion to develop a circular bioeconomy, largely flowing from climate policy

Developing a circular bioeconomy is complementary to the ongoing policy interventions and should progress in parallel



The circular bioeconomy space has the potential to be a fruitful ‘trojan horse’ – carrying several social, economic, and climate policy goals forward at one time



RSI

Embedded in mission-led innovation, coordinates funding and action

Drives innovation effectiveness

Supports cluster structures

Trade and export

Concentrated trade risk with 90% untreated logs sent to China (China planting 20m ha of Pinus radiata)

Forest biomass available now to support circular bioeconomy, up to \$30Bn opportunity identified

Aquaculture \$3B industry by 2035 (up from \$600m)

Double farmgate value of horticulture from \$6B to \$12B by 2030 by high value products

Climate

Avoid carbon emissions by 16% by 2030

Forestry sector supports emissions reductions by sequestering 1/3 of NZ annual emissions

Reduces the carbon / methane intensive nature of our economy and exports

Regional Economic Development

Increased skilled jobs in the RSI and circular bioeconomy space

Supports Māori economic development as the key owners of forestry (22% sector workforce is Māori, and 40% is owned by Māori)

Opens up a new industry for GDP gains within the regions

Culture and wellbeing enhanced in regions

Mitigates low wage economy

New Zealand must marshal resources and galvanise action across all these policy domains effectively.

Sources: Forestry and wood processing ITP, MPI NZ Wood Fibre Futures, Aquaculture Strategy, Fit for a Better World, Te Ara Paerangi, ERP, Horticulture strategy, TPK

There is a potential cumulative fund pool of \$2.9 billion to develop a circular bioeconomy, largely flowing from climate policy

Source	Funds Committed	Timeline	Area Funded/Criteria
Government Investment in Decarbonising Fund -	\$652 million	2022-2026	EECA Funding is available for fuel-switching projects over \$300,000 that reduce carbon emissions linked to industrial processes which use high emitting fuel sources and "high impact decarbonisation projects of national significance"
Increasing Woody Biomass Supply	\$29 million	2022-2026	Funding available to increase feedstock supply to replace other carbon intensive fuels/materials, including for R&D initiatives on cost effective recovery of harvest residues to supply feedstocks
NZ Green Investment Finance Bank	\$400 million	Ongoing	Green investment bank funding for "commercial-ready, scalable" projects that support decarbonisation from debt-to-equity financing. Does not offer grants, subsidies or concessionary terms
Endeavour Fund (MBIE)	\$114 million	2023-2024	Funding for either "smart ideas" or "research programmes" with high potential benefit to New Zealand. Explicit consideration given to low-emissions research with credible implementation pathways
Wood Fibres Futures Project	N/A	N/A	Identified Timber Investment Management Organisations and NZ Super's "New Opportunities Assessment Hub" focusing on climate-related investment opportunities as potential funders of new bioproducts from wood residues
Waste Minimisation Fund	TBC – Oct 2022	Ongoing	Supports projects that increase the reuse, recovery and recycling of materials. The fund invests in projects from infrastructure investments to hapū/community-centred projects. Leveraging waste minimisation levy
Forestry and Wood Processing ITP	TBC	N/A	Potential future funding in the biomass space following the development of the ITP, which includes identifying opportunities to encourage the production of low-emissions products from wood waste (e.g., wood chips/pellets)
Sustainable Food & Fibres Futures	\$40m per annum	Ongoing	Funds grass root community projects through to large scale industry development, including transformation of by-products into higher valuer products & new product development
Kanoa Regional Economic Development	\$200m	2022-2026	Funding to support regional economic development – focus on Māori development, regional growth and regional jobs
Emissions Reduction Plan	\$1.5b unallocated funding	Future 2022-25 budgets	<ul style="list-style-type: none"> • Actions 9.4 and 9.5 include potential future funding to establish new "Innovation Parks" and "Circular Economy Hubs" which include "Innovation Hub(s)" focusing on resource recovery processes • Action 9.6 includes potential future funding for demonstration projects that increase bioenergy uptake

Source: 2022 Budget, Ministry for the Environment ERP Chapters 9 and 14, NZ Gazette, RNZ "First Emissions Reduction Plan spends \$2.9b from Emergency Response Fund"

Funding
Focus Area

Climate / Decarbonisation
 Other
 RSI

The circular bio-innovation ecosystem has evolved in an organic fashion, with disconnected and uncoordinated feedstocks, infrastructure and capabilities

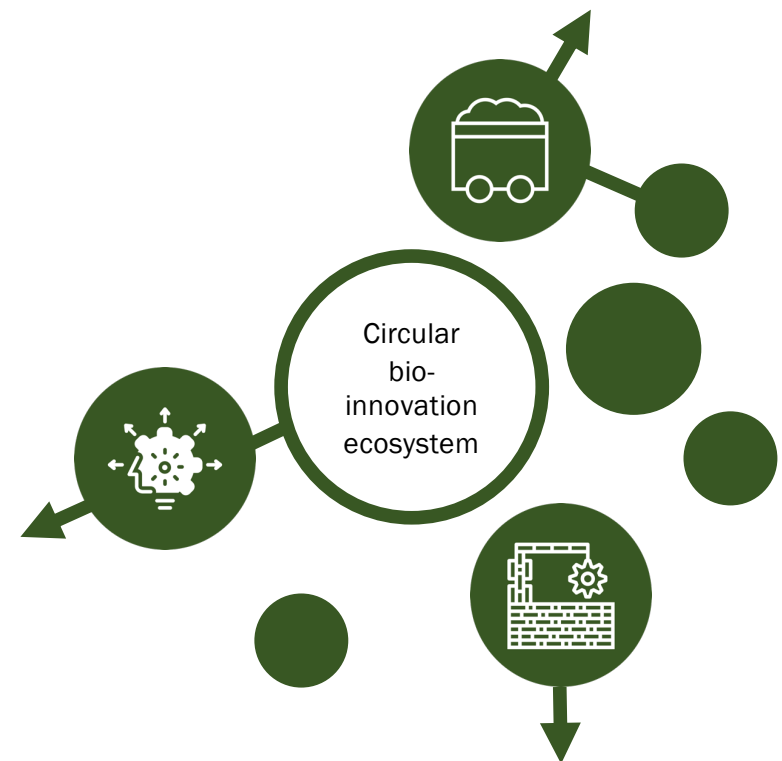
At a national level, the RSI system is highly complex, with many institutions and small funds that lack clear and coherent strategic direction, prioritisation, orchestration, or governance

The organic growth of the circular bio-innovation system drives coordination failures and sub-scale initiatives, we cannot wait for RSI reform completion to progress the circular bioeconomy

The three lenses of the circular bio-innovation ecosystem indicate the system is siloed, not optimally configured or utilised, uncoordinated, but has significant potential

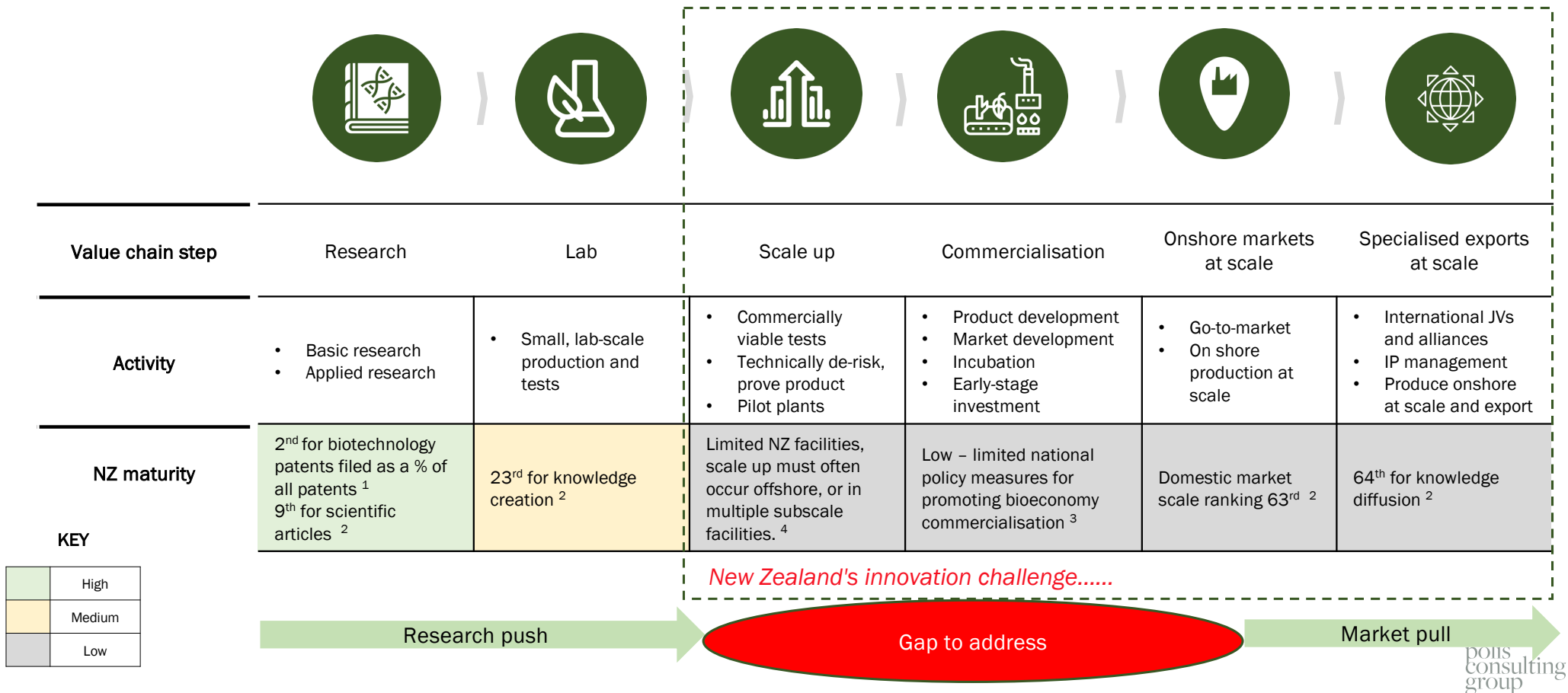
New Zealand has strong R&D capabilities but there is a major gap in scale up facilities and commercialisation, causing a disconnect between research push and market pull

- Circular bio-innovation infrastructure does exist, but is uncoordinated in ad-hoc groupings across New Zealand
- Pilot / demonstration infrastructure is required if we want to commercialise the opportunities of a circular bioeconomy
- A lack of pilot facilities in New Zealand adds timely border and customs constraints to the circular bio-innovation process



New Zealand has strong R&D capabilities but there is a major gap in scale up facilities and commercialisation, causing a disconnect between research push and market pull

Future circular bio-innovation network space to play:



Sources: 1) Scientific American 2016 Biotechnology Annual Worldview Report 2) GII 2021 NZ, 3) BCG Circular Economy 4) Stakeholder interviews

Nations which have advanced well in bio-innovation have had a combination of clear national policy, matched funding, strong horizontal capabilities, and clear customer demand



Clear, mission-led policy approaches and matched funding amplify bio-innovation

- Mission or challenge-led approaches create socially and politically enduring innovation effort
- Political coordination signals direction for commercial and industry to align investment (EU)
- Clear strategies which leverage the countries natural endowments are successful (Finland)
- Securing longer term government funding (10 years +) is important
- Govt investment and corporate investment matching schemes drives the best outcomes (Canada, Finland)



Innovation capabilities matter just as much as hard scientific and technical ones





- Clusters stand out as a key feature of international benchmarks, deliberate intervention and investment is powerful in establishing a collaborative and dense cluster network (Finland, Germany, Canada)
- Scale up facilities and commercialisation support is fundamental to success (EU)



Establishing clear market demand is fundamental

- Establish 3-5 years of customer demand before investment in infrastructure (Germany, Finland)
- Customer attraction and retention should be ongoing (Finland)

Nations which have had clear bioeconomy direction and focused innovation investment over the last decade are realising results

	 <u>Finland</u>	 <u>Germany</u>	 <u>Canada</u>	 <u>New Zealand</u>
Target	<ul style="list-style-type: none"> • Net zero by 2035, net negative by 2040 • Increase added value of bioeconomy to €50 billion in 2035 	<ul style="list-style-type: none"> • Climate-neutral EU by 2050 • Create tech and jobs of tomorrow 	<ul style="list-style-type: none"> • Net zero by 2050 • To cut emissions by at least 30-45% below 2005 levels by 2030 	<p>Net-zero long-lived gases by 2050</p>
Strategies	<ul style="list-style-type: none"> • Many bioeconomy strategies released since 2009 with clear measurable actions and targets • Focused targets on areas of competitive advantage e.g., forestry Investment support and funding for high-risk bioeconomy projects, pilot centres, R&I 	<ul style="list-style-type: none"> • Dedicated national Bioeconomy strategy published in 2010 • Recognises R&D as an important transdisciplinary driver • Bioeconomy a key high-tech recommendation in 2017 • Strategy emphasises clusters, and research that is intensified (via pilot plants and demonstrators) 	<ul style="list-style-type: none"> • Bioindustrial Innovation Canada (BIC) founded in 2008, leading bioeconomy development • Stakeholders from BIC presented the strategy to Govt in 2019 • Makes use of national comparative advantage with strategy focused on ag and forestry • Promotes innovation clusters 	<ul style="list-style-type: none"> • Climate Change Response Amendment Act passed in 2019 • Zero carbon act – net zero emissions by 2050 enshrined in law • New Zealand's first emissions reduction plan released in 2022, action to develop a bioeconomy strategy
Result	<p>Bioeconomy accounts for 12% Finland GDP (€25.2b) and employs more than 300k people</p>	<p>In 2021, the bioeconomy generated €436.6b in gross value added, and employed 2.3 million people</p>	<p>In 2015, \$4.3b revenue in bioproducts and \$1.4b exports</p>	<p><i>Unmeasured</i></p>

New Zealand lags other countries by 10 year with development of circular bioeconomy strategy, however New Zealand has similar net zero targets.

Source: Bioeconomy EU report, ERP, Global Bioeconomy Policy Report IV, VTT research

The global market for bio feedstock end use products is growing but customer demand must be understood and secured locally prior to major investments

Bio feedstocks support a range of end use products, there needs to be a clear approach on targeting a mix of value-added products across the value chain

Globally there is significant growth in demand forecasted for bio feedstock end use products

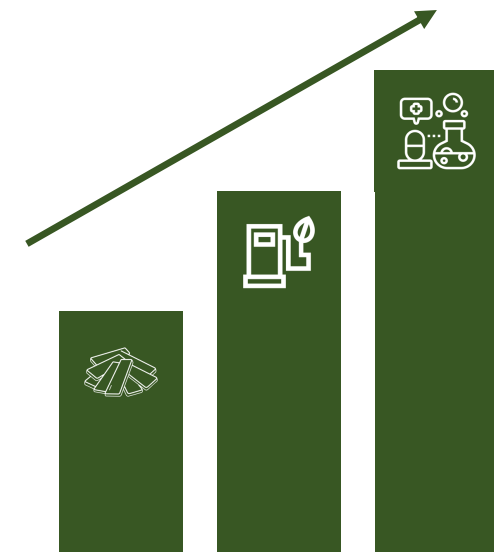
Within New Zealand, there is a lack of data on bio feedstock end use product demand, however there is clear consumer intent around the bio/green/sustainable option

NZ traditionally focusses on primary processing; the forestry cluster identifies significant opportunities for 'new industry secondary processing' for both domestic and export markets

Scion has identified some key customer demand which required 'bio scale up facilities' to drive secondary processing opportunities

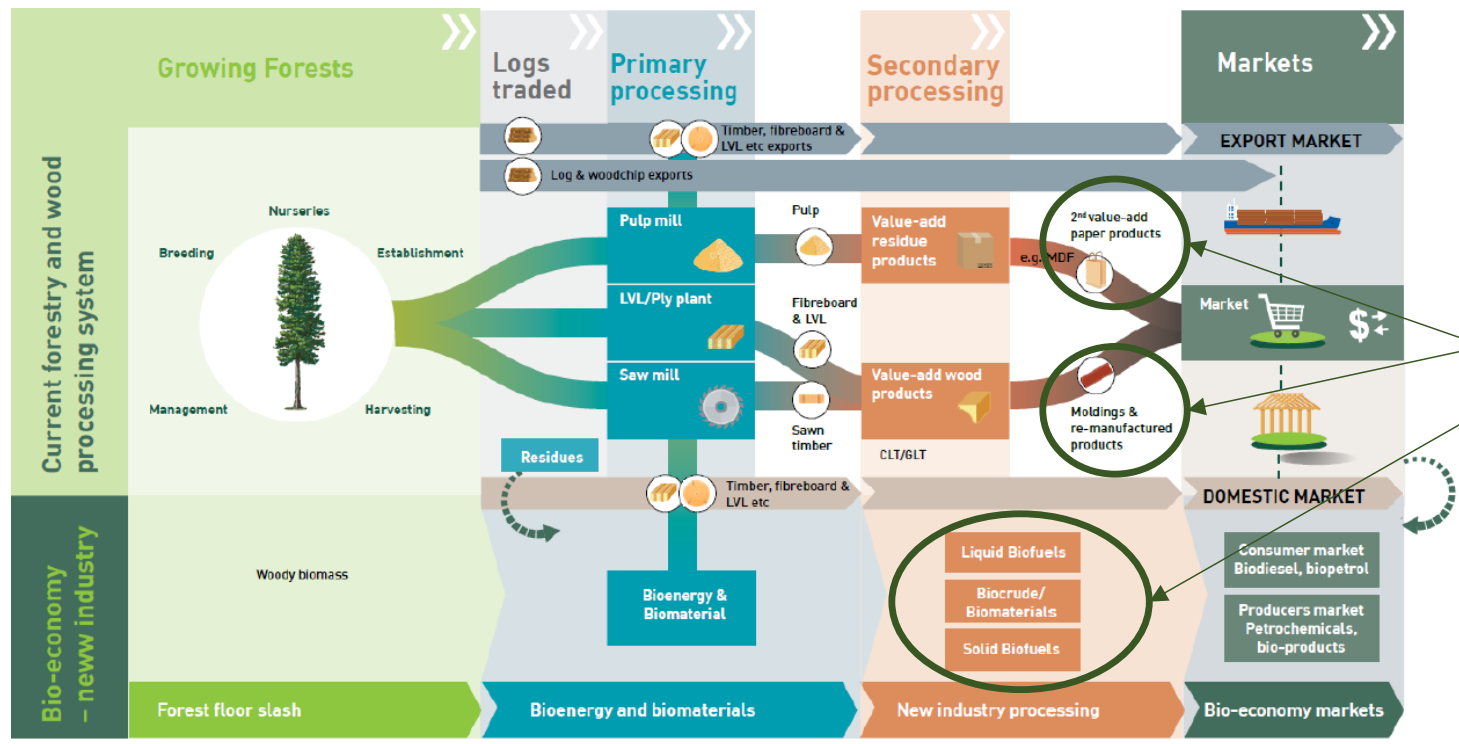
Detailed specifications of proposed infrastructure will be required for any major infrastructure or asset investments

Best practice highlights that customer demand is key for the success of a scale up plant; initial local demand appears promising for some processes



NZ traditionally focusses on primary processing; the forestry cluster identifies significant opportunities for 'new industry secondary processing' for both domestic and export markets

Forestry value chain



Scale up facilities will be key to supporting market growth for secondary processing in New Zealand.

New Zealand investors target low risk ventures, leaving a significant gap in the market for 'early-stage investment'

Internationally, there has been a significant increase in private investment in countries where there is a good understanding of bioeconomy opportunities and a mature risk-based approach to investment

Within New Zealand, there are some early-stage investors how are actively engaged in the bioeconomy leveraging offshore IP (and scale up facilities)

Traditional Māori / iwi investment groups typically take a low-risk approach to investment, need to understand from international experience what is needed to stimulate this market

NZ green banks are focused on investments around proven technology (EV/Solar); currently a gap in the investment market for 'early stage' risk

The lack of appetite for taking on 'higher risk' investment propositions in the NZ investor market poses a significant challenge for advancing circular bio-innovation at scale



Strengthening the technical skills and innovation capabilities of the circular bio-innovation network will be a critical step in transforming R&D inputs into innovation outcomes

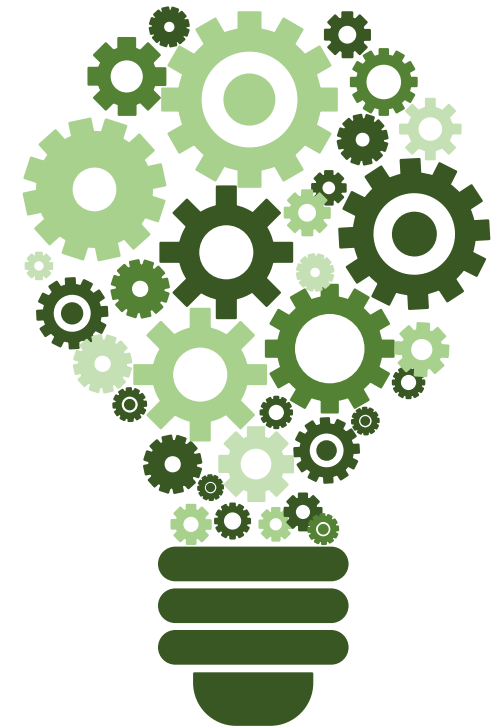
There are gaps in the technical capabilities that will be needed to drive the bioeconomy forward in NZ, without intervention there is a risk these gaps could widen

In addition to technical capabilities - innovation capabilities and alignment of public and private sector priorities are hallmarks of successful innovative cases globally

Understanding and strengthening innovation capabilities is critical for the future of success of the circular bio-innovation network

Core innovation capabilities are necessary but not sufficient for a world-class circular bio- innovation network to succeed, *dynamic* capabilities must be built over time

To ensure successful innovation outputs we will need to invest significantly into innovation capabilities that drive commercialisation out of the future network



The future network has the potential to be a powerful engine of innovation and commercialisation if clusters, actors, infrastructures and assets are strategically aligned

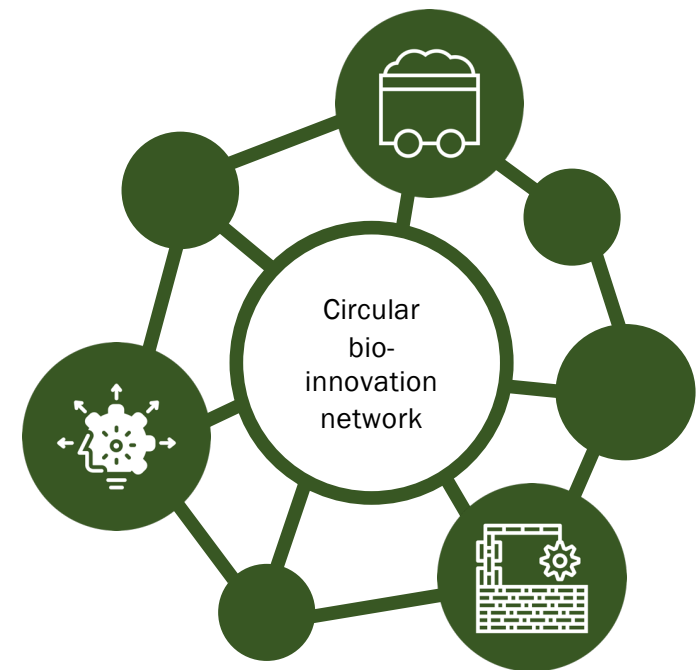
A possible future state circular bio-innovation network would connect all key players across coordinated clusters

Networked bio-clusters are at the heart of the future bio-innovation network for dense/deep innovation activity that also enhances regional, Māori and national development

For example, considering the future forestry cluster, Bay of Plenty has significant strategic advantages across the whole value chain

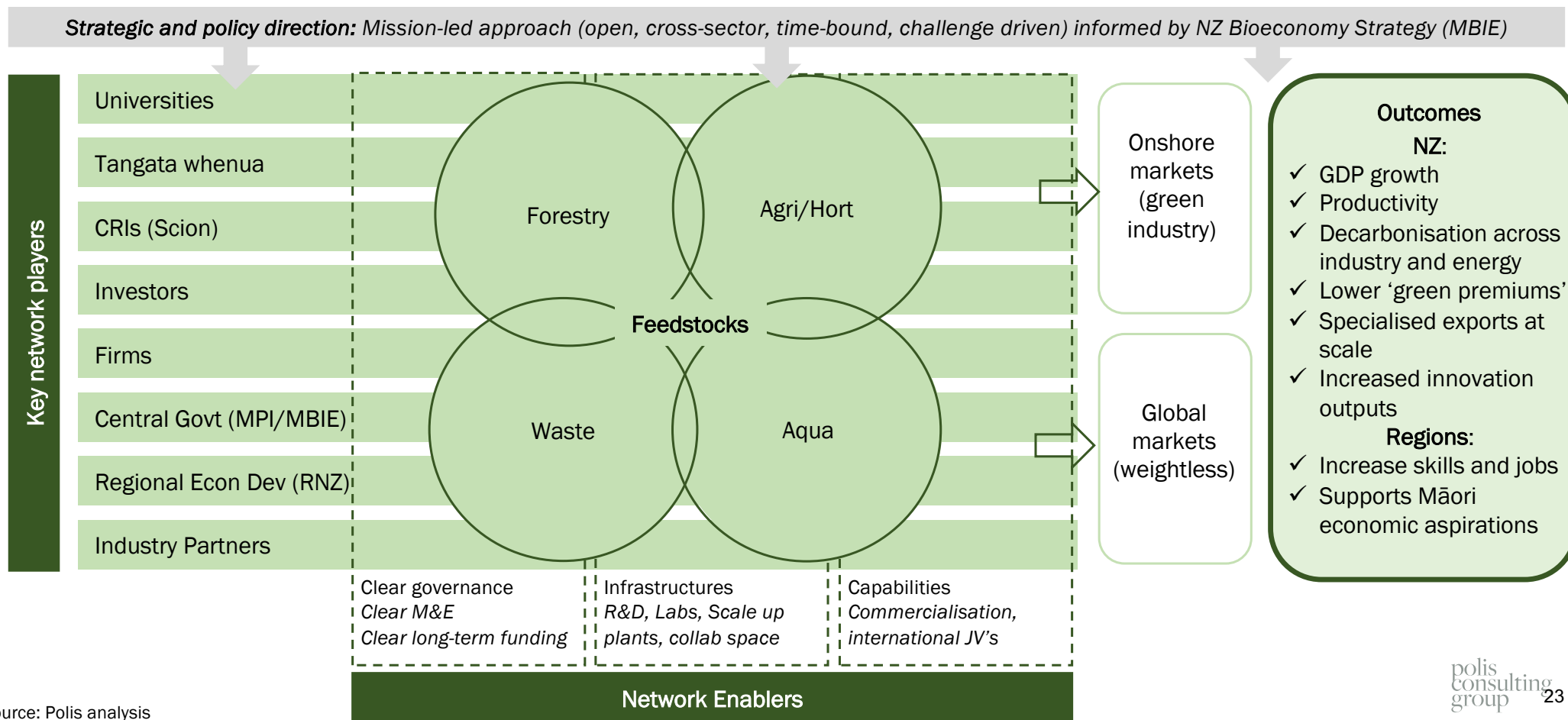
The future network will likely be very place-based as most of the feedstocks, skills, workforce and processing are in our regions giving them significant opportunities

Lessons from the Food Innovation Network stress the importance of a robust process for securing government funding for the future circular bio-innovation network



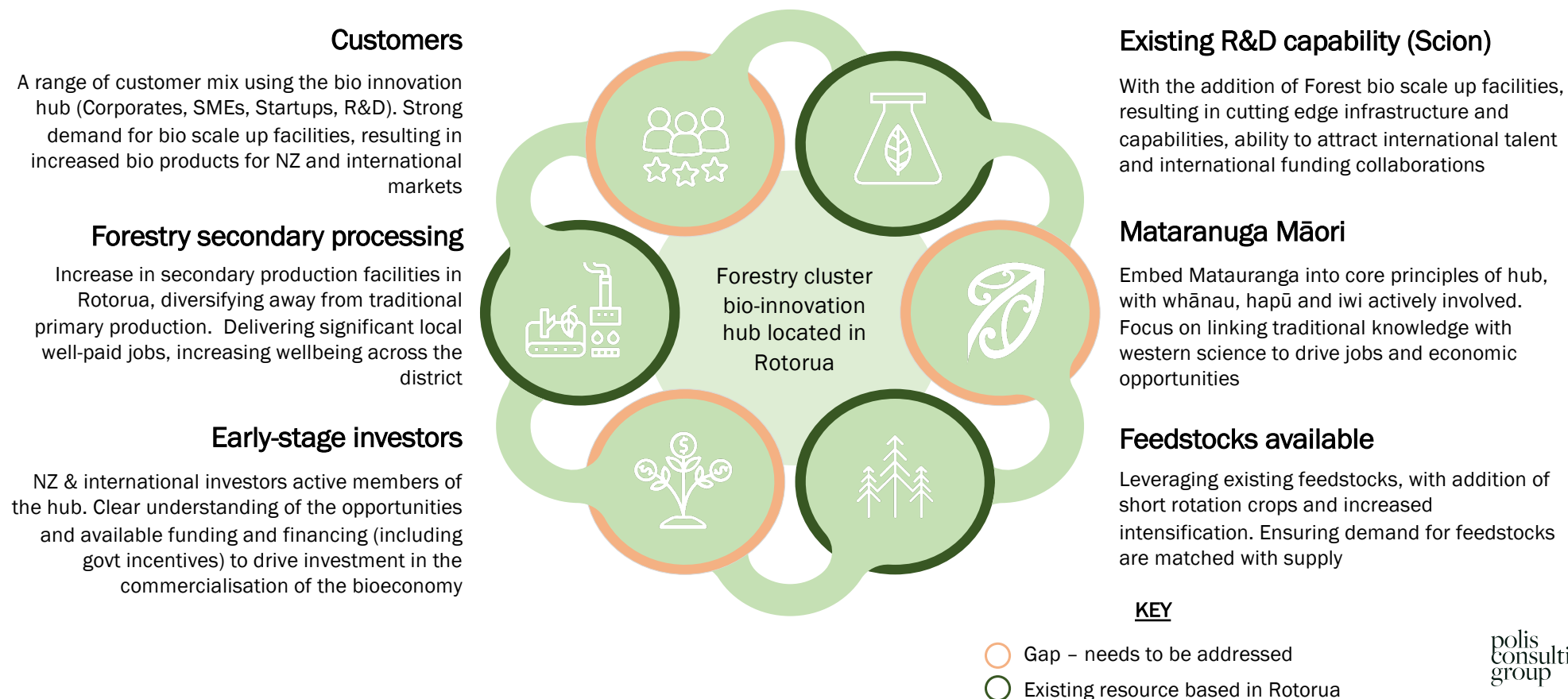
A future state circular bio-innovation network would connect all key players across coordinated clusters

Conceptual model of a future Circular Bio-innovation Network



Source: Polis analysis

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The future network will likely be very place-based as most of the feedstocks, skills, workforce and processing are in our regions giving them significant opportunities

Leveraging international best practice, successful circular bio-innovation networks are made up of clusters formed around a feedstock

- Large supply of feedstocks are frequently found in rural locations

Clusters should form in places with regional natural endowments, for example only (based on the graph right):

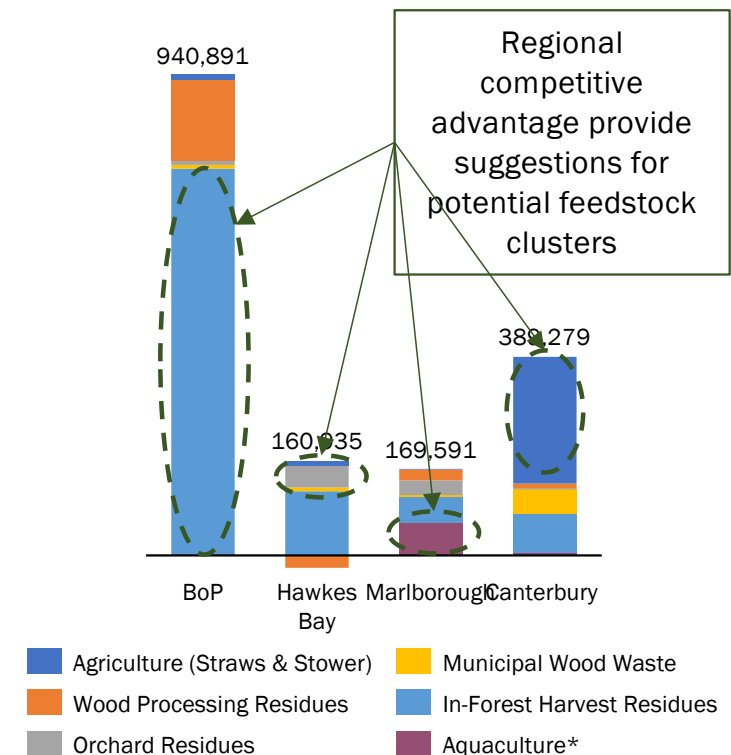
- Bay of Plenty - Forestry
- Hawkes Bay - Orchard
- Marlborough - Aquaculture
- Canterbury - Agriculture

Clusters increase the number of high-paying jobs in “under-performing” rural regions (lower GDP per capita than national average), enhancing regional economic development

- Increase regional employment
- Lift regional median wage with high paying jobs
- Large multipliers and spill over benefits into the regions

* Note that the Aquaculture has been added on based off the NZ Aquaculture Strategy, it is not an exact measure of feedstocks but an indication of the locations where the Aquaculture feedstocks are found
Sources: Scion - Residual biomass fuel projection for NZ, NZ Aquaculture Strategy, Cluster TUR

Regional Feedstock Residues
2037 Green Tonnes Per Annum



A dark, dense forest with a path leading through ferns and trees. The scene is dimly lit, with sunlight filtering through the canopy, creating a sense of mystery and depth. The path is a narrow, dirt trail that winds through the undergrowth of large ferns and other foliage. The overall mood is serene and natural.

4. Conclusions and Next Steps

Research has revealed key learnings for a future circular bio-innovation network that seeks to maximise innovation

Evidence layers







- International and local research
- Food Innovation Network findings
- GIQ key learnings
- Fraunhofer and VTT best practice
- Customer and market data analysis
- Investment interviews





Key learnings from evidence base

- Clear, mission-led policy approaches amplify bio-innovation
- Innovation capabilities matter just as much as technical capabilities and key infrastructure
- Regional clustering where natural endowments are leveraged can foster collaboration, increase skills and jobs, and drive regional economic development
- Mapping and understanding clear customer demand prior to investment and ensuring ongoing customer attraction plans creates conditions for healthy utilization
- Hybrid models with a mix of regional, government, and industry buy in, and funding provide conditions with greater efficacy
- There must be robust business case processes to secure funding for key infrastructure, supported with strong evidence base and clearly linked to a wider network approach
- Dense quality global and local networks and alliances have significant impact

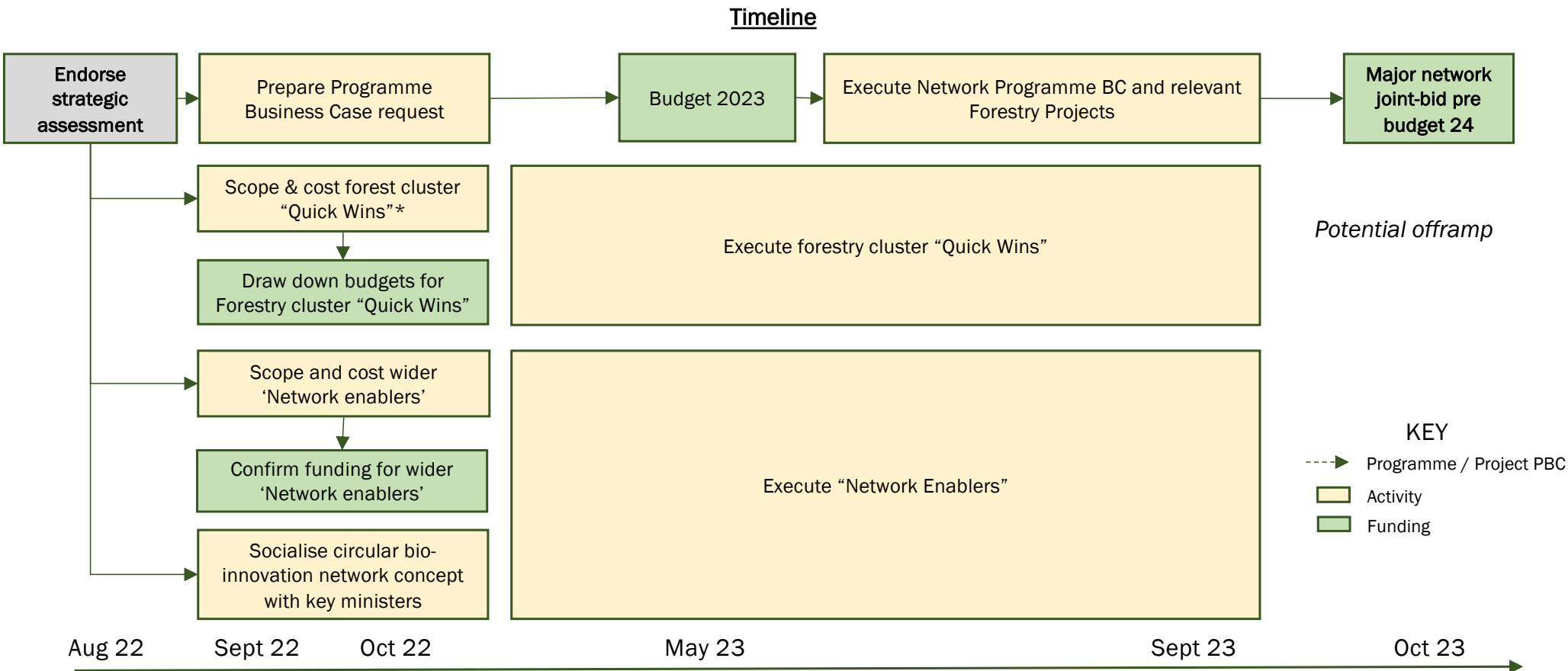
There are several ‘quick-wins’ for the forestry cluster that can be progressed now and key network enablers for the wider ‘network development’ which make sense to start now

		<u>Quick-wins</u>	<u>Action Description</u>	<u>Impact / Benefit</u>
Forestry Cluster quick-wins		1. Mapping feedstock	<ul style="list-style-type: none"> Gather detailed data nationally on all supply & demand of feedstocks* 	<ul style="list-style-type: none"> Additional data to support cluster design and future funding bids
		2. New investment	<ul style="list-style-type: none"> Attracting and facilitating new investment in the bioeconomy and advanced processing * 	<ul style="list-style-type: none"> A large customer and investor base makes for a stronger infrastructure investment case
		3. National cluster facilitation team	<ul style="list-style-type: none"> Establish a national cluster facilitation team to work with industry, education and research institutions, and Economic Development Agencies (local government) to support the establishment of advanced wood processing and bioeconomy clusters across New Zealand * 	<ul style="list-style-type: none"> Pull together key stakeholders Increase awareness – opportunities for the bio economy Support and drive cluster establishment – provide key learnings for other clusters
		4. Support innovation and commercialisation	<ul style="list-style-type: none"> Explore opportunities to support commercialisation of bioeconomy technologies and successful uptake of low carbon products such as bio-pilot facilities and networks * 	<ul style="list-style-type: none"> Progress at pace key infrastructure development to support commercialisation needs for forestry cluster
Network enablers		5. Robust national bioeconomy and circular bio-innovation stocktake	<ul style="list-style-type: none"> Gather detailed data nationally on all supply & demand of feedstocks, infrastructures, skills & capabilities, workforce, funding pools, performance, interoperability, capacity and efficacy 	<ul style="list-style-type: none"> Set baseline data set for monitoring and measuring & tracking of key indicators for the circular bio economy
		6. Build future network foundations	<ul style="list-style-type: none"> Socialise circular bio-innovation network concept & build stakeholder buy in Establish founding network membership & TOR Build out existing and high potential alliances 	<ul style="list-style-type: none"> Socialise bioeconomy outcomes / opportunities Set up network to support development of circular bioeconomy Leverage international partnerships and funding

* Forestry and wood processing ITP action proposed, drawdown process can be progressed once ITP cabinet approved

Key
 Forestry quick-win
 Network enabler

There is a significant amount of work to be progressed to support Budget Bid 23, quick wins for the forest cluster, and network enablers for the wider circular bioeconomy



* Forest and wood processing ITP action proposed, drawdown process can be progressed once Forestry and wood processing ITP cabinet approved

The strategic assessment has concluded there is strong rationale for further investment into a Circular Bio-Innovation Network; several quick-wins for the network and forestry cluster specifically can and should start now

Recommendations

1. Endorse the strategic assessment
2. Undertake immediately work to scope, price and plan practical “quick-wins” which is strongly aligned to actions identified in the Forest and wood processing ITP
3. Progress ‘no-regrets’ initiatives that support future circular bio-innovation network readiness
4. Test the strategic assessment with key stakeholders, build a strong coalition around key messages and next steps (possible joint MPI/MBIE bid for funding for a programme business case for circular bio-innovation network in pre-budget request round)



Thank you