To the:

Ministry for the Environment

On:

Transitioning to a low-emissions and climate-resilient future: emissions reduction plan discussion document

24 November 2021

Submission by:

The Manufacturing Alliance

This submission is on behalf of the New Zealand manufacturing industry. The Manufacturing Alliance is a collaboration of industry associations representing a large part of the New Zealand's manufacturing sectors.

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Introduction

The Manufacturers Alliance is a collaboration between The Manufacturers Network, Metals New Zealand, Plastics NZ, the Wood Processors & Manufacturers Association and The Maintenance Engineering Society of New Zealand. While we advocate on behalf of all manufacturing in Aotearoa New Zealand, across areas of collective interest for the sector, individual members may also be submitting separately on the discussion document.

The members share a passion for the future of manufacturing in New Zealand. In the post COVID market recovery / characterised by reversals in globalisation, significant disruption of international supply chains, and rapid escalation in freight costs, we see our major trading partners prioritising local manufacturing and national resilience. Not only does this protect existing employment, create new jobs, and ensure future economic growth, it enables them to 'build back better'.

The transition to a low-emissions circular economy requires a strong local manufacturing sector, not only to make and implement climate mitigation technologies, but also to ensure that circularity can occur with the lowest carbon footprint.

The lack of real action to support New Zealand manufacturers is leaving us well behind our trading partners. It is essential that New Zealand's pathway to Carbon Zero 2050 is formed with local manufacturing in mind to avoid unintended economic damage to a sector that is critical for a successful transition to a low-emissions circular economy.

Meeting the net-zero challenge

Transition pathway

1. Do you agree that the emissions reduction plan should be guided by a set of principles? If so, are the five principles set out above, the correct ones? Please explain why or why not.

The Manufacturing Alliance agrees that the plan should be guided by a set of principles. However, the current principles fail to acknowledge the role that business plays in New Zealand's economy. This appears to be premised on the assumption that 'business' is discretionary, as compared to communities and society. Many regional communities would face significant adverse effects from the loss of local manufacturing. In other areas the loss of 'business' equates to the loss of environmental management capacity, and potentially an increase in Greenhouse Gas Emissions (GHGs), for example where the loss of metal and other recycling leads to increased landfilling and greater finite resource extraction.

The report acknowledges (p13) that *"we all have a role to play"* and specifically noted is the role the private sector has in enabling climate action.

> *Private sector leadership and action is vital for Aotearoa to successfully achieve our low- emissions future. Its many levers – from investment and its power to influence and inform, through to climate change reporting and risk management, and the innovation and agility it can offer – will be required to help achieve this change and influence our shared ambition.*

However, the guiding principles for the transition are silent on how government will work with the private sector.

Recommendation:

Add an additional principle to ensure collaboration with the private sector occurs, thereby leveraging the leadership and action you state as being vital for success:

Principle: *Work collaboratively with the private sector in developing the plan and implementing strategies to achieve targets.*

2. How can we enable further private sector action to reduce emissions and help achieve a productive, sustainable and inclusive economy? In particular, what key barriers could we remove to support decarbonisation?

It starts with Government taking a principled approach, including that the environmental cost of goods and services will be reflected in the prices paid by New Zealand and offshore consumers. Please see our recommendation to question 1 in addition to the following.

In order for the private sector to actively engage in reducing emissions in the transition to a productive, sustainable and inclusive economy, businesses need a clear framework and stable long-term plan. Cross-Government agreement on the plan, both at a party level, and at a Ministry level, is essential to avoid constantly moving goalposts. Having an agreed plan, with cross-government support, would give the private sector the confidence to make the long-term, and often expensive, investment decisions required.

The Advanced Manufacturing Industry Transformation Plan is a good vehicle for developing this plan for manufacturing as it is in partnership with sector stakeholders. Of key importance to the implementation of the ITP is ensuring adequate resourcing within government agencies supporting the transformation.

Early progress on the ITP was slow due to lack of resourcing, and while we acknowledge COVID has challenged us all, Climate Change has the potential to be significantly more destructive if we fail to act quickly and government needs to resource this initiative appropriately, ensuring as broad as possible engagement. We are aware that personnel have been reallocated from their normal job to address COVID issues. This is fine in emergencies, but not 12 – 18 months on.

Working collaboratively provides the opportunity for New Zealand to provide certainty and stability for business to confidently invest in the future to:

- Access low emission technologies
- Incentivise proactive investment enabling rapid uptake of technologies which lift productivity within prescribed emissions reduction limits. Accelerated depreciation and low or no interest loans targeting specific outcomes are obvious examples. Border Adjustment Mechanisms are recommended in order to avoid potentially costly investment in emissions reduction being rendered obsolete by the importation of the same or similar items from jurisdictions without emissions reduction obligations. Ironically, the cost to New Zealand of not incentivising industry is that to meet our NDC commitments New Zealand will buy offshore credits that provide no benefit to New Zealand business or the communities they support.

Recommendations:

Provide a clear framework and stable long-term plan, with cross government support to enable the private sector to confidently invest in the technologies and actions required for a zero-carbon future.

Cabinet must ensure that future budgets ensure key government agencies are well resourced to work with manufacturing (and other sectors), to enable effective transition in partnership with industry.

Incentivise proactive investment through application of measures such as accelerated depreciation, low or no interest loans, and ensure border adjustment mechanisms are in place to create an even playing field.

3. In addition to the actions already committed to and the proposed actions in this document, what further measures could be used to help close the gap?

The future transition is plagued with uncertainty due to both the pandemic and current government policy. In regard to the ERP the private sector needs government to minimise this uncertainty by developing policy frameworks and strategies in partnership with business and workers. This certainty is needed not just in regard to accessing affordable renewable energy, but also in providing supportive investment settings, access to skilled migrants, and supportive trade settings. It is only when we have the full suite of actions in place that the private sector will have the time, confidence and skills required to enable a successful transition to a low-emissions circular manufacturing sector.

New Zealand has a strong manufacturing sector with a large capacity for innovation and inventiveness. This sector is key to a resilient economy, particularly when considering global supply chain issues and future black-swan events. It is also key to achieving a low-emissions circular economy. We can't import our way to a better future and must start both acknowledging, and leveraging, the capabilities of New Zealand manufacturers.

Recommendations:

Ensure that broader policy settings enable manufacturing to become more productive and resilient. This includes:

- Energy policy that ensures equitable access to affordable renewable energy for all types and sizes of business.
- Investment policy, including accelerated depreciation on investments in productivity improvements, Industry 4.0 and transition to low / zero emission materials manufacture.
- Immigration policy ensuring the skilled migrants needed to upgrade technology, and upskill our local workers, can be attracted to NZ and enter our workforce in a short timeframe (i.e. clear path to residency with much improved visa processing timeframes).
- Trade policy that considers both imports and exports, ensuring trade agreements are written so that impacts are equitable for both trade partners – specifically avoidance of any agreement clause which creates a situation where NZ manufacturers are carrying capital and compliance costs for our transition

to a low-emissions circular economy, whereas manufacturers under our trading partners are incentivised, or directly subsidised, in their transition.

4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?

There are many great ideas for nature-based solutions emerging. We see many discussed at Universities, Crown Research Institutes and Callaghan Innovation. We also see many start-ups appear, and then fold. To ensure success of these innovations not only do we need more investment into research and development, but we also need to invest in ways to help bring these ideas to commercial reality.

GHGs and other costs of production need to be internalised in the price of goods and services to ensure that consumer pricing reflects the true cost. This needs to be applied across all sectors, including NZ's agricultural sector, to ensure that there is no indirect cross-subsidy of parts of the economy at the expense of others.

Recommendations:

Invest significantly more in research and development and invest in the commercialisation and accelerated uptake of those technologies and solutions.

Internalise GHGs, and other environmental costs of production, in the price of goods and services to ensure the true cost is reflected.

5. Are there any other views you wish to share in relation to the Transition Pathway?

In advancing the circular economy New Zealand needs to embrace complexity and consider both nature-based and man-made solutions. In our currently linear systems, we treat many resources as waste when they should be considered resources for the future. Policy settings, and Investment by both government and the private sector into the recovery and repurposing of these resources is another aspect of a low-carbon future. This then saves a significant amount of virgin resources, and their embodied emissions, being imported into our system.

It should also be noted that the definition of 'nature-based solutions' is subjective in the absence of an agreed definition. Solar cells require metals and plastics, yet whether they are 'nature-based' is currently a matter of perspective as we're utilising nature for energy. Plastics have a vital role in maintaining the freshness of produce prior to consumption and removal of this material would likely result in additional GHG-intensive production of 'natural' products. In the transition to circular we need to move beyond simplistic assumptions such as 'nature-based' and 'unnatural' solutions.

The transition to circularity needs to recognise the value of materials that can be repurposed, reused and recycled. Metals are a good example of how we can treat a resource as valuable. Very little metal currently ends up in landfill because it has significant commercial value and is both collected and recycled at high rates. Unfortunately most recycled metals are exported and we need to improve our ability to reprocess resources on shore in order to keep emissions low. New Zealand needs to value our existing resources and products, ensuring these can be restrengthened, repaired, reused and/or repurposed rather than consigning them to landfill at the end of their first life.

There are numerous exemplars

- Conservation House in Wellington is an excellent example of a repurposed building.

- The CAB is one of the first structural steel-framed buildings in New Zealand. Built in 1966, the former Auckland Council building is being restored and transformed into high-end central city apartments. Retention of the CAB's 18-storey steel frame was fundamental to its successful refurbishment and vastly reduces its carbon footprint[1].
- Mint Innovation's urban mining of precious metals from e-waste through its biorefinery.
- McKechnie's recycling/remelt of aluminium into low carbon footprint Omega windows[2].
- PET (#1 plastic) food packaging recycled back into food packaging onshore by Flight Plastics.

A sustainable low emissions economy will arise where individuals and businesses make the optimal decision in their circumstance while facing the full environmental cost of that choice. Governments 'market lead' evolution of a zero waste and net zero emissions economy requires that the 'market' be allowed to operate. That 'market must include an equitable price at the border if NZ's manufacturers, communities and society are to see successful change.

Helping sectors adapt

6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change?

We do not think any of the proposed actions to reduce emissions provide us with the ability to adapt to the effects of climate change. A deliberative adaptation plan, formed in collaboration with key sectors, including manufacturing, is needed to ensure that the consequences of climate change are anticipated and mitigated well ahead of time. This would allow the creation of regulations for specific areas of concern to be created, thereby ensuring mitigation measures are implemented.

What gets measured, gets managed. This is true for all steps in the make-use-recover-circulate system we need for the future.

Specifically for construction , MBIE needs to take a lead on developing a standardised and moderated approach to how life cycle analysis data is used in the construction sector. In absence of a transparent robust system then actors will continue to 'sell' the considerations which best present their material or service. Not only does this allow greenwashing but it inadvertently leads to ill-informed short-term decisions which reinforce our take, make waste economy rather than incentivising a circular economy.

Similarly, for packaging, we have seen a focus by the Ministry for the Environment on the end-of-life rather than the whole of life impacts. This led to several brands moving from lightweight and recyclable plastics to glass jars (made overseas), creating a significant increase in the carbon footprint for the packaging.

The use of selective regulation, and the imposition of different GHG costs to select parts of the economy, mean the government is imposing higher than justified costs on other sectors, including manufacturing, and delaying the innovation and adoption of new low emission and circular production methods. The selective and siloed approach to environmental and trade policy also risks locking in a higher than desired emissions profile for the country, or creation of stranded assets and investments, as and when international markets including environment-related border protections come into force.

[1] https://www.scnz.org/category/media-centre/case-studies/

2 https://www.mckechnie.co.nz

7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

We are all in this together and need to work collaboratively to maximise the opportunity for New Zealand Inc and future generations.

A government that does not partner properly with the private sector to develop and implement the plan for our future would be a massive risk. This also includes the scenario of the government only talking to 'the usual suspects' when it comes to talking to the business community. Officials and Ministers must engage not only with the industry and business associations, but also with employers of all sizes. It appears to have become a pattern that government meet with certain business leaders from large corporates, and a handful of key business representatives (also representing large corporates), and then thinks the 'consulting' job is done. This must be avoided in the future to ensure buy-in from the private sector, and the success of our climate actions.

The differential treatment of different sources of emissions based on misplaced perceptions of business-risk and New Zealand's international commitments, including trade agreements, will also continue to distort investment. The favourable treatment of agricultural emissions will distort land use in favour of such emitting activity and away from forestry. New Zealand's unwillingness to address trade distortions in favour of logs rather than processed wood will reduce investment in low-emissions manufacturing of wood products and local supply of wood-based biofuels, reducing our resilience into the future. The focus should be to maximise the opportunity for NZ Inc. and future generations in a GHG-constrained global market.

Working with our Tiriti partners

8. The Climate Change Commission has recommended that the Government and iwi/Māori partner on a series of national plans and strategies to decarbonise our economy. Which, if any, of the strategies listed are a particular priority for your whānau, hapū or iwi and why is this?

9. What actions should a Māori-led transition strategy prioritise? What impact do you think these actions will have for Māori generally or for our emission reduction targets? What impact will these actions have for you?

10. What would help your whanau, community, Māori collective or business to participate in the development of the strategy?

11. What information would your Māori collective, community or business like to capture in an emissions profile? Could this information support emissions reductions at a whanau level?

12. Reflecting on the Commission's recommendation for a mechanism that would build strong Te Tiriti partnerships, what existing models of partnership are you aware of that have resulted in good outcomes for Māori? Why were they effective?

The Manufacturer's Alliance does not presume to speak for iwi / Māori. However, Alliance members expect Government's work with te Tiriti partners to be predicated on the assumption that at the broadest level, both the obligations and benefits of effective climate change policy for iwi /Māori will be the same as for others in society.

On that basis we suggest the current strategy of differential treatment of the emissions from land use could have a differentially negative impact on iwi / Māori. Historic difficulty associated with capital intensive investment in multiple-ownership Māori land has resulted in a significant area of NZ's pre-1990 forest land being in Māori ownership. The imposition of differential regulation and climate-justified constraint on development of that land has impeded its value, both as a lease -rental proposition for growing trees and a constraint on diversified investment. Removing the regulatory

distortion arising from the imposition of an emissions liability on pre-1990 forest land would help redress this imbalance as would the imposition of an equitable proportion of the liability for ruminate methane emissions to those responsible for them.

Māori interest and involvement in forest land ownership and management suggests they could be in a good position to benefit from investment in regional wood processing and manufacturing. The net-zero emissions economy envisaged for 2050 will logically require some if not many of NZ's goods and services to be provided from bio-based feedstocks including wood. The capital intensive and long-lived nature of such investments suggest they are most likely to occur in partnership with or by those invested in forest land. Ownership of the regional value chain by iwi / Māori could assist with whanau and hapū based investment. Equitable regulation of pre-1990 forest land could extend that investment and diversification opportunity as and when it presented, for example the selective replacement of areas of forest land with solar and wind generation capacity.

We also see the advantage of ensuring Māori have a strong voice in developing, implementing, and monitoring this policy. Te ao Māori provides an excellent basis for approaching environmental guardianship and aligns extremely well with our need to transition to a low-emissions, inclusive, circular economy.

We note that the questions above relate to decarbonisation and emission. In not discussing the low-emissions circular economy, if the proposals are only recognising one aspect of Kaitiakitanga and the guardianship needed.

We also point out that the section on page 29 on 'promoting business and job opportunities' takes a very condescending approach in regard to Māori business and workers. It reads very much as a 'we're going to give you' a key role and jobs, rather than 'we're going to enable'. Our workers, community and businesses need agency not nannying.

Making an equitable transition

Equitable Transitions Strategy

The Commission recommends developing an Equitable Transitions Strategy that addresses the following objectives: partnership with iwi/Māori, proactive transition planning, strengthening the responsiveness of the education system, supporting workers in transition, and minimising unequal impacts in all new policies.

13. Do you agree with the objectives for an Equitable Transitions Strategy as set out by the Climate Change Commission? What additional objectives should be included?

The Manufacturing Alliance largely agrees with the objectives set out. However, the language throughout does not imply partnership with the private sector. If anything, it implies a lack of understanding and caring regarding those businesses who face the largest challenges. It is important that our government remembers that the private sector is not populated by robots, but by people with the same rights to respect and care as everyone else.

14. What additional measures are needed to give effect to the objectives noted by the Climate Change Commission and any other objectives that you think should be included in an Equitable Transitions Strategy?

Meeting the challenge and achieving an equitable transition will require significant additional resourcing across key government agencies (Refer to Q2).

This is not business as usual and requires first and foremost and agreed definition of 'equitable transition', ideally developed on a cross-party political basis. Imposing costs on those goods and services whose price is dictated in part or full by the cost of fossil fuels will impact all parts of society. That impact will be socially regressive to the extent that those unable to invest in low emissions technology and lifestyle will have no other choice than to pay. New Zealand's export-dependent economy is equally susceptible to disruption as, and when, other countries act to shield their domestic producers and manufacturers from the effects of imports exempt from the internalised cost of embodied emissions.

New Zealand has to date avoided confronting the true cost of its GHG reduction commitments by inequitable allocation of the liabilities, and/or displacing the liability temporarily by way of 'offset' carbon forestry. That situation cannot continue if and when the EU and other nations impose CBAM's on imports and the true future value of the emissions liability associated with offset forestry is reflected in the price of eligible land. It will require significant additional resourcing as we commence an equitable transition.

Government can no longer rely on volunteerism across iwi, community and business. Genuine consultation on the costs to New Zealand of the emissions price needed to achieve a net zero economy is required. Calculation and funding of the costs incurred to avoid inequitable outcomes on those adversely affected stakeholders is similarly essential.

The Commission suggests that the Equitable Transitions Strategy should be co-designed alongside iwi/Māori, local government, regional economic development agencies, businesses, workers, unions, the disability community and community groups.

15. What models and approaches should be used in developing an Equitable Transitions Strategy to ensure that it incorporates and effectively responds to the perspectives and priorities of different groups?

A clear cross-party commitment to measurable medium- and long-term goals is required to enable those adversely affected to make the necessary change secure in the knowledge that their regulatory obligations won't change for a defined period. The Manufacturing Alliance suggests that this be carried out on a sector-by-sector basis, and on genuine collaborative principles, that determine the measurable and specific minimum actions for that sector, including applicable timeframes. The Industry Transformation Plans (e.g. Manufacturing, Forestry, Construction) provide a good starting point for this work as:

- Parties, including Māori, Government, Industry, and Unions, have already established trusting relationships
- Alignment with government work programmes is built into the ITPs
- The ITPs include focus on sustainability and decarbonisation, for each sector.

Other actions

16. How can Government further support households (particularly low-income households) to reduce their emissions footprint?

Not applicable to our members.

17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

Another important aspect of the transition is enabling businesses to help their long-term employees upskill for the new world. While the Reform of Vocational Education is an important start, this is not the only aspect to ensuring our workers develop the skills, and confidence, required to retain their jobs.

Identification of the threat of displacement well ahead of time is also critical. It is only through true partnership between businesses, unions, government, and Māori, that this will occur. We need to build on the sector-by-sector approach started with the ITPs and ensure this continues into the future. Government must provide adequate support and resourcing within the Ministries for this process to continue. It must also look beyond the 'usual suspects' for input to ensure that the voice of all New Zealander's is properly represented.

18. What additional resources, tools and information are needed to support community transition planning?

Not applicable to our members.

19. How could the uptake of low-emissions business models and production methods be best encouraged?

Government needs to provide certainty for business, iwi and community across key policy areas to ensure parties have confidence to invest time and resources in their entities to transition. Lack of leadership and policy will continue to create uncertainty. Policies need to be developed with agreement across all parties to ensure they are not changed every time there is a change in government.

Businesses also need certainty around energy supply and running costs before they are likely to invest in costly new electric equipment. National infrastructure changes need to be determined and adequately funded by government well in advance of targets, to ensure businesses, especially the small to medium ones, have the confidence to shift to low-emissions technologies.

This applies to the existing natural gas/LPG supply chains and ensuring that these remain available until alternatives are available for all parties. The transition will be driven by larger players involved in the Emissions Trading Scheme. It is important to remember the many smaller companies reliant on these fuels. Security of supply must be maintained as the new systems are developed. Significant government investment is required in the development of clean, high-quality biofuels that can be fed through the existing (retrofitted) national systems. This would enable production in agricultural areas where there is an abundance of waste biomass and ensure efficiency and quality of supply to the network. This is also required to accelerate the establishment of the supply chains. Only then will the bulk of industry (small to medium companies) feel safe enough to invest in new equipment or modifications.

Direct assistance will also be needed to assist businesses to implement low-emissions technologies, particularly for small to medium enterprises. The equipment used by many manufacturing plants is utilised for decades. The capital required to replace this equipment is not inconsiderable and the Return on Investment is an important factor. The unfortunate reality for many smaller companies is that changing equipment purely for an emissions reduction does not have a positive ROI. Investment funds, such as the NZGIF and GIDI funds, cannot be accessed in this scenario. Many companies would also be too small to be considered relevant for these funds.

20. Is there anything else you wish to share in relation to making an equitable transition?

Harnessing the passion and innovation of New Zealanders

Climate change is a challenge like no other faced by humanity since at least the start of the Industrial Revolution. Government needs to think and work differently to harness the passion and innovation of New Zealanders to make the long-term changes required to production methods, and in communities expectations around the cost and availability of goods, services and asset values.

Trust the science and evidence based decision making

COVID-19 response has required New Zealander's, including politicians, to trust the science and evidence-led decision-making.

Robust science and working together collaboratively need to be the hallmarks of how government works with stakeholders to address the challenges ahead.

Level playing field for New Zealand business

'It is important that New Zealand meets its commitments on climate change, but this should be balanced against ensuring a level playing field with imports of international products. Pursuing a programme of action that places disproportionate compliance costs on our local manufacturers would be unfair from a trade perspective. Unnecessarily high local manufacturing costs, particularly those out of line with international markets, would reduce our competitiveness in export markets. Local manufacturers would also be disadvantaged through the import of competing products that has been produced in countries without similar emissions reduction requirements.

It is our view that the carbon content of imported products must also be included in any genuine carbon budget moving forward to prevent carbon leakage and distortion of the correct market signals that will drive the requisite true carbon emissions reduction the planet needs.

If businesses are not competitive, they will downsize and reduce operations, or close. Not only will this cost New Zealander's jobs, but it would also increase the amount of imported product into New Zealand. This would lead to the inadvertent outcome of increased global climate impact as the majority of other manufacturing markets have much higher fossil fuel use and shipping of product is less fuel efficient than shipping raw materials. The resilience of critical supply chains would also be reduced as collateral damage'

Aligning systems and tools

Government accountability and coordination

21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?

New Zealanders need plans and roadmaps. We all need to be held accountable – iwi, business, community, households and the political representatives of all of these groups. We need Government to establish clear benchmarks in legislation including the presumed consequence where benchmarks are missed.

Monitoring and reporting needs to extend beyond emissions targets and climate change.

Our transition to a circular economy is just as important as this encompasses approximately 45% of the emissions reduction opportunity. A focus on only one aspect of environmental sustainability will lead to perverse consequences. There will always be trade-offs for businesses to make around different environmental factors, customer preferences and government regulations. An example of this would be the materials chosen for a building. Some materials have an inherently lower carbon footprint than others, however those with a higher embodied carbon provide greater durability and extend the lifespan of the building. Others may be problematic at the end-of-life for the building but provide the best option for reducing energy loss during the building use. The focus must be on the overall impacts through all points of constructing, using and deconstructing the building to ensure perverse outcomes aren't experienced.

We need to stop treating 'climate' as separate to the other planetary systems. They are all intertwined. A low emissions circular transition, alongside actions to improve biodiversity and social sustainability, need to be planned, monitored and reported on as a whole. This is the only way to ensure we reach a fair, inclusive, resilient, productive and sustainable society without incurring unintended environmental harm along the way.

22. How can new ways of working together like mission-oriented innovation help meet our ambitious goals for a fair and inclusive society and a productive, sustainable and climate-resilient economy?

The question implies there is a common understanding of the term 'a fair and inclusive society'. Our contention is that there is no consensus as to the meaning of that phrase, a situation that will become increasingly apparent as the intergenerationally questionable opportunity for low cost offsetting is exhausted. Effective ways of working together in pursuit of common goals will become apparent only once those goals have been agreed. As the heading on page 34 says – "Working in new ways" - business is acknowledged as a partner along with iwi / Māori.

Businesses, in particular are familiar with mission orientated strategic planning and developing the basket of strategies to achieve the mission.

Once again the challenge is to make a start. Start with a coalition of the willing. Resource government interface and business, iwi / Māori to deliver on that mission. Monitor / measure progress and don't be afraid to change when results aren't forthcoming.

23. Is there anything else you wish to share in relation to government accountability and coordination?

Transparency is a key part of accountability. Monitoring and reporting must occur in a regular and timely fashion. Reports must be publicly shared, without OIA requests and unnecessary redaction, to ensure that accountability is real.

Businesses, and most other members of New Zealand society are more accountable to their core constituencies for their actions and inactions than politicians. The political time frame of 3-years is an inadequate and avoidable incentive when it comes to the effective management of as significant an intergenerational issue as climate change. It is essential that Parliament show genuine leadership through cross-party commitment to a meaningful and long-term (15 years +) emissions reduction strategy.

Funding and financing

24. What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?

New Zealand's export dependent economy is conditional on international trade arrangements and agreements that are increasingly out of step with the reality of a climate / environment constrained world. New Zealand's achievement of its own GHG-related goals coupled with continued access to high value and progressive markets internationally requires that we revise our border requirements to avoid economic and emissions leakage.

Government needs to review where its research funding is focused and where other support funding goes and cease funding inaction or initiatives which impact negatively on New Zealand's emissions. It needs to ensure the incentives are in place that result in the uptake of the findings of emissions-reducing research and New Zealand's transition to a circular economy.

See also answers to Q2, Q3, Q4, Q15 and Q19

25. What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?

Not applicable for our members.

26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?

Government should prioritise policy development and incentives to achieve transition across

- Energy policy enabling investment in long lived and capital-intensive low emissions technologies and employment in New Zealand rather than displacing emissions and employment offshore.
- Immigration policy favouring skills required
- Trade policy ensuring local manufacturing competes on an even playing field with imports from countries with a lesser focus on emissions and other environment impacting manufacture.
- Procurement policy which achieves the public interest by supporting New Zealand businesses, communities and consumers on the journey to a low emissions circular economy by 2050.
- Financial and Investment policy to accelerate uptake of lower emission and more productive technologies, and lower intensity land management.

Harnessing the power of the tax system

1. The tax system should be examined for ways to encourage the adoption of low-emissions options. Adjusting taxes, along with state subsidies and investment, will be unavoidable to curb emissions from transport and manufacturing activities.
2. The 2019 Tax Working Group (TWG) undertook a review of environmental taxation and made several significant recommendations in its final report. In its briefing to the then Minister of Revenue, David Parker, Inland Revenue noted that one of its top tax policy priorities was "the role of environmental taxes and what an environmental tax framework should look like." The TWG considered the tax system can play an expanded role in New Zealand's

environmental policy, helping to change behaviours and fund the transition towards a more regenerative, circular economy

27. Is there anything else you wish to share in relation to funding and financing?

To succeed we will need considerable resource devoted to the identification and pilot-testing of low-emissions processes, products and services, including the creation of viable markets for them.

The government cannot rely on goodwill and volunteerism in a trade-exposed market, when the economic and social changes required are as significant as the ones facing us. Past 'voluntary agreements' negotiated between business and the government were possible because of a commitment by government to respect those investments if, and when intervention was required. In the final analysis that commitment was not considered to have been honoured making the likelihood of significant progress on any basis other than clear statute unlikely in the future.

It is infinitely preferable for New Zealand to fund local business, iwi / Māori and local communities to solve this complex challenge for the New Zealand economy than to assume that other countries will accrue our costs. Developing skills and capability in New Zealand provides resilience for the country and avoids the perception of extraterritorial displacement of New Zealand's environmental costs to other, perhaps less fortunate, countries.

Emissions pricing

28. Do you have sufficient information on future emissions price paths to inform your investment decisions?

Certainly not. Indications only, and those are predicated on the assumption that future government's here and internationally will act in a consistent and environmentally responsible manner. There is no clarity on the current and future pricing of imported emissions in products similar to those made in New Zealand. Nor can there be, as evidenced by the outcomes of COP26 continuing a pattern of unsubstantiated aspiration, including from New Zealand. Refer Question 26 and need for trade policy which ensures local manufacturing compete on even playing field.

Emissions pricing needs to address consumption.

Trade policy needs to address imported emissions. Carbon border adjustment instruments of the sort being promulgated by the EU in support of that trading block taking proactive action on climate change are critical to future investment in local manufacturing.

Failure to address 'emissions exposure' at the border with more certainty than is provided by EITE arrangements, will result in local production (which bears the emission cost) being uncompetitive with imports from nations without meaningful and equivalent emissions abatement costs. Effectively, manufactured imports are being subsidised, arguably in a manner similar to that employed by New Zealand in 'protecting' its agricultural products exports. The result of both is distorted investment and slower progress to genuine low emissions economic activity.

Carbon border adjustments are needed to address this subsidisation.

29. What emissions price are you factoring into your investment decisions?

Lack of certainty re pricing of consumption emissions undermines future investment confidence. The 'price' being paid is stagnating investment and reinvestment with the risk of making New Zealand manufacturing non-competitive where they would otherwise be fully capable of competing on the world stage. This would create not just the loss of the business but also the employment associated with it, and the innovation opportunities arising from retained skills. Perhaps less visibly, but of no less concern is the progressive loss of resilience from the New Zealand economy, the cost of which has recently become apparent as a result of Covid and pandemic-related transport disruption.

It is also the case that many companies, who are too small to be directly involved in the ETS, are not using emissions pricing for future investment decisions. As with households, small to medium sized businesses are going to be relying on electricity, gas and LPG pricing. While these are all impacted by emissions pricing it is not clearly visible to the end user and therefore only an indirect consideration.

It should also be noted that the smaller businesses often have the owner working 'in the business' rather than 'on the business'. Future investment planning tends to be fairly ad how and is very unlikely to take emissions pricing, and sometimes even power pricing, into full account.

30. Do you agree the treatment of forestry in the New Zealand Emissions Trading Scheme (NZ ETS) should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy?

NZ's reliance on ETS credits in forestry is a means of displacing the cost of today's emissions onto future generations. That cost is the loss of land use flexibility without first incurring the cost of the emissions from the required loss of forest, all at the 'future' price of emissions which in a supply and demand sense can be reasonably predicted to be higher than the price today.

Forestry ETS credits are predicated on there being a long-term solution that permanently displaces the need for fossil fuel from the NZ economy. The slowing of the 'market price' of emissions being incorporated in goods and services as a result of reliance on forestry credits acts to discourage the innovation and investment NZ needs to achieve its goal of net-zero emissions. Substantial afforestation was occurring prior to the ETS in forestry interventions, driven in part by the removal of agricultural subsidies leading to land prices more reflective of the worth of the production capable from them. Subsidies have indirectly been reintroduced to agriculture as a result of the decision to displace the cost of agricultural emissions onto other parts of the economy. That and the sovereign risk associated with ETS forest credit interventions have had the predicted effect of increasing the cost of forest land and therefore afforestation and probably slowed the pace and extent to which afforestation would have otherwise occurred.

There is also no mention of New Zealand's peat wetlands. The protection and regeneration of these wetlands is another potential carbon sink for Aotearoa, and should not be forgotten.

31. What are your views on the options presented above to constrain forestry inside the NZ ETS? What does the Government need to consider when assessing options? What unintended consequences do we need to consider to ensure we do not unnecessarily restrict forest planting?

Answered above

32. Are there any other views you wish to share in relation to emissions pricing?

Industrial allocation of units is important to protect NZ manufacturing. However, it is only applied to those involved directly in the ETS scheme. There are sub-sectors, such as the rotomoulding sector who manufacture water tanks, which utilise natural gas for process heat and whose businesses are too small

to be part of the ETS. The bulky nature of these products mean it would be extremely costly from both a price and emissions point of view to import into New Zealand. There are currently also no electrical alternatives globally for decarbonisation of this process. The sector is therefore reliant on the transition of New Zealand's gas supply system to biogas over the longer term. Ideally smaller businesses such as these would also be able to access credits (although likely in a different form) to avoid emissions leakage.

The dead weight compliance and regulatory cost per unit of emissions reduction of the ETS far exceeds the cost of carbon tax applied to fossil fuel and, logically, on a per head of ruminate stock. That per-unit costs is only likely to increase as and when the EU and other of New Zealand's trading partners require our exporters to translate the domestic costs of emissions reduction into terms compliant with the EU Carbon adjustment border mechanism.

Planning

33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.

We would caution government not to myopically focus on carbon. Climate change and natural events pose unique threats to our built environment. Lower embodied carbon materials is one part of the solution. So too is durability, seismic resistance and resistance to fire.

Performance to Building Code clauses will be critical for our future, resilient built environment. This should be a focus of activity, avoiding (and ideally outlawing) the adoption of different and varied GHG-related building requirements at the local and regional level. The Building Act enables environmental factors including climate change to be reflected in the Building Codes. Those Codes can be varied depending on regional differences, for example with respect to insulation levels. Amend the codes to better reflect climate change but do not add cost and confusion by allowing Councils to second-guess or duplicate duly developed and promulgated codes under the Building Act. We do not recommend the recognition of alternative and highly publicised 'green standards'. Where these offer advantage it makes sense to incorporate these requirements into the building codes to maximise the emissions reduction benefit nationally. This also assures that the other aspects of these standards do not create dead-weight costs and impediment to other Government goals including the provision of affordable housing.

In broader systems, we need a mechanism for viewing net emissions across a full value chain. This ensures that the manufacturing of product is not considered in isolation, particularly when that product may reduce emissions for other sectors (e.g., through light-weight transport, energy efficiency, renewable energy creation etc.). Ensure that the pace of change in New Zealand does not outstrip other developed economies and create disadvantage, and an unfair trade environment, for our local manufacturers. This would have the perverse outcomes of costing local jobs and increasing global emissions through replacement of locally made items by imported products (i.e., carbon leakage).

Continue to allow new connections to the gas network. This is required to ensure businesses that will eventually be run on biofuels/biogas, can be relocated, or that manufacturing capacity/productivity can be increased. If necessary, link these new connections with a consenting process aimed at validating genuine need. This is important not only for the security of local manufacturing into the future, but also for the creation of new jobs in the regions as companies look to move closer to the source of biomass.

34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?

Introduce a tax on emissions from fossil fuels at a level that reflects the significance attributed to that environmental externality. The result will better enable the market to operate, in the form of greater emphasis on low-emissions options in consumers choices of goods and services.

35. Are there any other views you wish to share in relation to planning?

How we measure impacts is critical.

Currently our focus is on lessening impacts to consumers in the take, make, waste society. ostensibly by shifting the cost to producers in the form of 'extended producer responsibility' obligations. EPR is a misnomer in New Zealand's market and open economy, with the costs passed on in full where possible, or New Zealand production, employment and emissions displaced but continuing offshore by way of imported goods.

Transitioning to a low-emissions circular focus will see housing and transport inextricably linked and measured accordingly. The emissions cost of greenfield subdivisions could become apparent through overt emissions pricing and other regulation. That in turn might drive the market to the re–intensification of existing urban environments, valuing the building / infrastructure we already have and reusing / repurposing for future use. Alternatively, it may not, particularly where the disproportionate upfront cost of retrofitting infrastructure into an existing community (including RMA consenting costs) outweighs the longer term price advantage to the homeowner of lower GHG / transport and other costs.

Regional development including retaining regional manufacturing capacity has the 'emissions reduction' advantage of retaining value and occupancy in existing communities. The reduced internal migration in pursuit of employment in other, larger centres should be recognised as of GHG advantage if it removed the need for additional investment in housing and infrastructure and the early depreciation of assets already invested in.

It is also important to include employment locations when planning. Increased intensification of housing and walkable neighbourhoods is great, but if public transport systems do not get individuals to their workplace efficiently, they will still choose higher-emmitting transport options. In Auckland for example, there is a huge focus on improving public transport from North to South and from Central to the West. If you are travelling East to West, it can take literally hours to get to your workplace via public transport – something completely impractical for most people.

Research, science and innovation

36. What are the big challenges, particularly around technology, that a mission-based approach could help solve?

New Zealand needs to focus its fairly meagre research funds into areas of direct benefit to our low-emissions circular transition, and our economic resilience. A watching brief on the outcomes of research internationally and adapting and applying this to New Zealand is also important.

The bulk of Crown research funds are focused on New Zealand's primary Sector. The bulk of Industry R&D is funded by business. Where research is focused on industry areas outside of the primary sector, it tends to be very blue-skies and does not meet the needs of businesses. There is a large disconnect between acadaemia, who are focused on producing publications, and industry, who is focused on commercial profitability and employment.

A missions-based approach, focused on real and practical solutions for the New Zealand system, could also help in our transition to a low-emissions circular economy. Areas of focus could cover the development of (but should not be limited to):

- new process heat technologies for those sectors who cannot currently use electricity or biomass.
- new low-carbon materials and chemicals (e.g. clean bio-fuels, biocomposites, compostables)
- Adapting existing resource recovery systems from around the world to suit New Zealand's relatively small waste volumes (e.g. small scale chemical recycling for plastics and other waste)
- New resource recovery technologies for problematic wastes (e.g. e-waste with banned flame retardants, composite materials, mixed waste. (Example: Mint Innovation and biorefining of e-waste)

37. How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?

Government needs to develop a robust and transparent scorecard re research funding priorities. This needs to prioritise transition to low emission circular economy and cease funding technologies / sectors which reinforce the take make waste linear model.

Given the scale of the challenge and short time available to address that challenge we would propose a broader range of incentives being open to all parties and not just through formal (and restrictive channels) like Callaghan Innovation.

There also needs to be a mechanism for the private sector to feed into the approvals process for the Endeavour Fund, and other such research projects. At present, while industry is often consulted by applicants, the requirements for the funding often push the projects to realms that don't benefit business. We have seen some of the most useful and practical projects, that would provide direct industry benefit in a reasonable timeframe, rejected as they weren't 'stretchy' enough in the science. We don't always need blue-skies and globally novel. We often need fast solutions for the New Zealand context. We also need to recognise that manufacturing in New Zealand's export-focused and open market economy will be greatly influenced by the requirements of the markets we trade with.

See also answer to Q36

38. What opportunities are there in areas where Aotearoa has a unique global advantage in low-emissions abatement?

New Zealand has established manufacturing/processing industries that have been maintained over decades despite unconstrained import competition, which are both competitive and desired in a NZ economic setting.

New Zealand has abundant supplies of iron sand, along with significant future potential capacity for renewable energy generation.

Iron is a naturally occurring mineral making up approximately 5% of the earth's crust.

Steel is an infinitely recyclable material, with an estimated 85% of all steel products being recycled at end of life[3].

New Zealand currently has a steel mill – a skilled workforce who know how to make iron and steel.

Globally the transition to a circular, low emission economy will require significant volumes of steel to deliver future renewable energy generation, infrastructure , housing, health and education facilities.

Low or zero carbon steel will be a sought after solution to the global circular challenge.

Government needs to work with industry to understand the opportunity, and provide the necessary policy settings which provide industry with the confidence to invest.

New Zealand has a comparatively low population density and abundant existing hydro and under-developed wind renewable energy capacity. That, coupled with our geographic isolation, could be seen as a unique opportunity to reduce the GHG cost of internal travel and transport through a focus on electrification of rail and road freight, with the latter providing 'last mile' connectivity.

A low-emissions circular economy by 2050 will be configured very differently compared to New Zealand's current settings and likely fairly unique in global terms. The Manufacturers Alliance represents the New-Zealand-focused capacity and expertise that will be required to identify and adapt low-emissions solutions being researched internationally for our conditions and priorities.

More specifically, New Zealand has strong supplies of iron sand, along with significant future potential for renewable energy generation. Steel is an infinitely recyclable material, with an estimated 85% of all steel products being recycled at end of life[4].

In a similar way, New Zealand has an established forest, wood processing and paper recycling sector. It, and New Zealand's agricultural industry, are predicated on the country's comparative advantage of good growing conditions.

New Zealand also has significant opportunity in regard to bio-based chemicals and materials. This would benefit both local product and packaging systems and enable a new export sector. The majority of chemicals around the world are petrochemicals based at present. As we move away from fossil-fuels there is opportunity for New Zealand to create bio-based feedstocks that can be exported for use instead of petrochemicals. The creation of specific biomaterials for use in our horticultural sector would also benefit the local economy and environment. We currrently use many plastics in this sector that are not properly recovered and end up contaminating the soil, or in landfills. Switching these plastics to compostable biomaterials would ensure no micro plastics in the soil. Another aspect to this biomaterial development capability is the ability to solve issues such as finding an alternative to PFAs (harmful chemicals) used to coat fibre, making it resistant to moisture and oils.

The fact that our economy is geared to converting sunlight and water into food for export rather than into bioenergy, bioplastic, or reductive metals processing reflects the past and current priorities and values. There is no reason to assume that New Zealand's low-emissions circular future will be the same, meaning New Zealand's 'unique opportunities' are ultimately dependent on the political and societal pressure placed on emissions reduction. Any reconfiguration of manufacturing in New Zealand to reduce emissions is, in the final analysis, dependent on the Government's willingness to impose the

[3] https://www.worldsteel.org/media-centre/blog/2018/steel-surprising-recycling-champion.html

[4] https://www.worldsteel.org/media-centre/blog/2018/steel-surprising-recycling-champion.html

cost of environmental externalities on those using the goods and services. The 'unique opportunities' are likely dictated by political and societal acceptance of the socially regressive nature of environmental protections.

39. How can Aotearoa grow frontier firms to have an impact on the global green economy? Are there additional requirements needed to ensure the growth of Māori frontier firms? How can we best support and learn from mātauranga Māori in the science and innovation systems, to lower emissions?

Government needs to provide the stable policy settings which enable business to confidently invest, secure in the knowledge that the social and economic costs of those policies will not result in a change in legislation, including tax liability. Stable policy settings need to include:

- Energy policy
- Trade policy
- Investment policy
- Immigration policy, and
- Ensuring government procurement then reinforces the opportunity for local business.

The focus on frontier firms also needs to broaden. While these businesses are important to our economy, and visible on the world-stage, they are supported by many other New Zealand manufacturing businesses. They would not exist without their supply chains. Also, in many cases, these smaller businesses in the supply chain are also producing their own products for export. We need to ensure that the bulk of businesses are moving to a sustainable future, rather than just the handful at the top of the value chain.

40. What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?

NZ's solid waste is reported to consist of approximately 80% organic content. Diverting large volumes of waste from landfill for use as a fuel has the potential to benefit NZ's net GHG emissions by:

i. reducing the transport emissions from its separate collection and sorting,

ii. eliminating organic / putrescible waste form landfill and therefore any associated methane emissions,

iii. generating electricity for the increasing demand on national grid as more of NZ's transport electrifies.

41. Are there any other views you wish to share in relation to research, science and innovation?

Energy from waste is well established in other developed economies. Government funded R&D could examine the applicability of this technology to New Zealand, recognising that the regulatory and perceptual community hurdles to its adoption will likely require government support of intervention if they are to be overcome.

Please also note that while this view is held by the wider manufacturing group, it is not the view of Plastics New Zealand, who does not view waste to energy as being circular. The plastics industry would prefer to see waste-to-feedstock as the focus to ensure organic materials can be turned back into new resources.

Behaviour change

42. What information, tools or forums would encourage you to take greater action on climate change?

NZ's total economy and population are small on a world scale. Multiple fora and exhaustive regulatory processes impede innovation and in some instances impede even frank and informed discussion.
Manufacturers suggest the amalgamation of information and tools into fewer if not a single collaborative forum, whereby Government, industry and other affected stakeholders can assess and resolve policy and direction. Ideally, such national direction will encompass and therefore eliminate the need for further and localised debate as and when specific projects are advanced.
Supporting exemplars is critical to demonstrate what can be achieved and to normalising low emission behaviours. Rewarding early adopters (like support for low emission vehicles) is critical, including providing protection from unreasonable rates of obsolescence as a result of changes in policy direction and regulatory cost.
Governments leadership with its own buildings and transport fleet is critical.

43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?

Third party verified information of a standard commensurate with the requirements of the Fair-Trading Act is critical to inform decision making.
Life Cycle analysis, Environmental product declarations, Environmental labels which are third party verified. The subjective nature of environmental and bio-circular economy claims can limit their usefulness as measures able to be judged impartially by consumers. Quantifications of Government's expectation and understanding in regulation and law, as to good practice would assist in this regard.
These initiatives are expensive and to increase uptake government could consider partnership funding to accelerate data collection / verification.

44. Are there other views you wish to share in relation to behaviour change?

While there are some fantastic initiatives in place, the message is not getting to small to medium businesses effectively. Government is missing opportunities for 'spreading the word' by not working collectively with the many industry associations we have in New Zealand. More effort needs to go into connecting with the wider network and leveraging collective action.

Moving Aotearoa to a circular economy

45. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?

Let's look to the future for a moment. It's 2050 and Aotearoa New Zealand has changed. Our systems are closed loops, our economy is circular, and we have achieved our Zero Carbon goals. We all use and value materials that already exist and limit our use of virgin resources. We generate little to no waste, and any exports from the resource recovery system are either pre-processed ready for remanufacture, or fully sorted, clean and with very low contamination rates for export.

We design products and packaging to be circular from the outset, using materials that can be recycled, composted, or reused. Products are designed for longevity with repair and upgrade enabled from the start. We have systems in place to ensure all resources are recovered for repurposing or recycling at the end of each use cycle (at scale and in practice). Extended Producer Responsibility is the norm, with those putting products on the market taking responsibility for the waste generation of these products and their packaging. New ways of doing business have formed and new ownership

models exist. Consumers value items at the end of their life as a recoverable resource rather than waste. Litter has been eliminated.

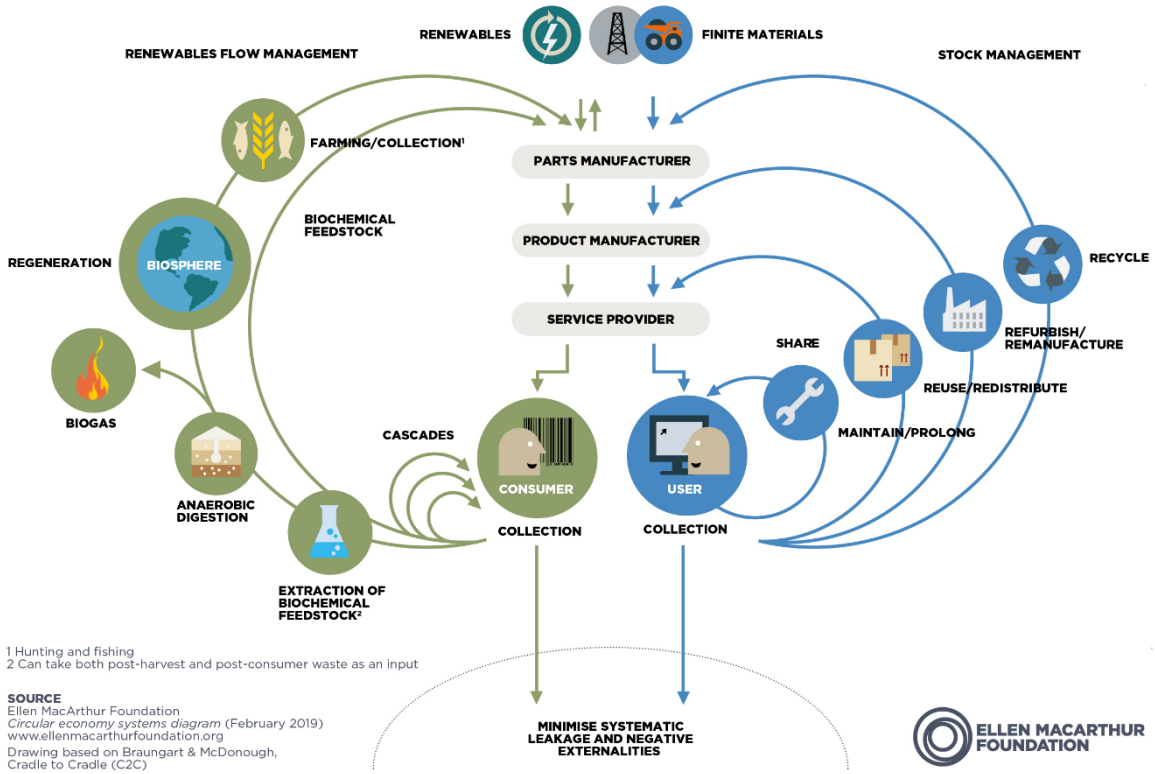
The above is the ideal. With the proper collaboration between government and the various stakeholders across the system, it is possible to go a long way towards achieving this vision. All parties, across all sectors, must be involved, and actively participate in the change for it to be successful, however. This includes full commitment from Government across all parties in power, now and into the future, and all government agencies. The step change to a low emissions circular economy requires progressive investment. However this will not happen, or will happen more slowly, in the absence of clear articulation of 'the end game', ideally supported by clarification of statutory obligation from voluntary expectation.

A wide variety of actions is required across the system. The following outlines some of these but is far from exhaustive:

- Clear leadership and direction is needed in terms of long-term government strategy. The current 'silo' approach to different aspects of a low-emissions circular economy (such as the ERP and Waste Strategy) need to be bought together under an over-arching government strategy.
- Business-focused circular economy education for all sectors (potential expansion of Sustainable Business Network's program with Plastics NZ's circular plastics training and XLabs as exemplars). Stakeholder education is needed to ensure that all parties understand what a circular economy actually (i.e. it is not a recycling economy), the waste hierarchy approach to redesign of products, packaging and systems, and how to enable the transition to circularity. This must be design-focused to ensure waste is designed out.
- The low-emissions circular economy built into curriculum at all levels of education, primary, secondary and tertiary.
- Government support across multiple sectors, to create exemplars which show the pathways forward. This is needed across, but not limited to, delivery and business models, designs, materials, infrastructure and resource-recovery systems.
- Improvements in collection and sorting infrastructure (not just kerbside) to enable efficient and cost-effective recovery.
- Improvements, and creation, of on-shore reprocessing for materials to ensure they can either be utilised back into NZ systems, or exported for high-value utilisation offshore.
- Government support for initiatives which bring stakeholders across a system (and even multiple systems) together to work on the transition to low-emissions circular. In particular utilisation of industry associations, community groups, and other such groups to enable the collective action that they are good at, but do not have the resource to drive wider than their respective memberships.
- Utilisation of the Industry Transformation Plans as a starting point with targeted strategy and funding within government agencies to work with the private sector.
- Consumer education focused on behaviour change around resource recovery (waste), litter, consumption and purchasing.

46. How would you define the bioeconomy and what should be in scope of a bioeconomy agenda? What opportunities do you see in the bioeconomy for Aotearoa?

While developing stronger utilisation of our natural resources, particularly our renewable ones, is an important part of New Zealand's future, the bioeconomy is not the answer to New Zealand's challenges. It is only one tool in the arsenal. By focusing too strongly on the biological resources you are missing the other half of a circular economy, the technical resources. Both need to be worked on together. To succeed in transitioning New Zealand we need to focus on both the biosphere and technosphere in parallel. The butterfly diagram bellow, from the Ellen MacArthur Foundation, clearly shows the two aspects of the circular economy.



The consultation document also confuses some aspects of a bioeconomy with a low-emissions circular economy. Circularity means that the resource stays in continuous use. Biological resources in a circular economy go back into use as compost, biomaterials, or other similar items. The discussion of biofuels and bioenergy in the circular economy section of the consultation document is problematic.

While biofuels and bioenergy are renewable, and important aspect to New Zealand's move towards our Zero-Carbon goals, neither of these are circular. The biomass/waste used to create the biofuels/bioenergy is transformed into a single-use form that cannot be circulated after use. This is clearly shown above in the butterfly diagram here biogas is coming off the biological side in a linear fashion.

See also answer to Q38

47. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?

As above ... it is a component of the circular challenge, along with the technosphere and human behaviour and they need to be worked on together.

48. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?

While there are some good proposals, they will be insufficient to create the transition needed. To be blunt they are lacking in ambition. Dame Ellen MacArthur, founder of the Ellen MacArthur Foundation puts this best:

We need to raise our level of ambition and match it with bold and urgent action.

A successful transition to a low-emissions circular economy for Aotearoa requires strong leadership and a clear aspirational vision. We need to be inspired to action. The current proposals barely move beyond what government agencies are already considering as part of their current workstreams.

There is no discussion around circular economy education for our children and young people. Education must occur at all levels of the system to ensure success. There is no focus on product design for circularity, to ensure that the 45% of embodied emissions are covered in our low-emissions journey. This is a huge opportunity lost. The proposals also don't seem to build off the significant investment that the Ministry for the Environment has made towards New Zealand's circular economy transition. There are learnings from past and current activity that can be built on as efforts expand across multiple sectors.

As mentioned in Q46, there are also significant proposals around biofuels and bioenergy – neither of which are circular. Please do not confuse our transition to circularity by conflating these!

49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?

Its complex and New Zealand needs to understand international best practice, adopt what is appropriate for New Zealand. Where best-practice already exists overseas let's not re-invent the wheel, but adapt our systems with what has been learnt elsewhere.

Policy and investment in New Zealand's low-emissions circular transition needs to provide clear direction and give stakeholders across the system agency to create change in their own organisations, businesses, and communities. There also needs to be some focus in removing any perceived barriers to collaboration by stakeholders across the system. For example, where only a few stakeholders exist (e.g. PVC pipe manufacture, steel manufacture) and the parties cannot meet without risking being accused of collusion. Where the Commerce Act throws up barriers, mechanisms for collaboration need to be created to ensure the collective action required for NZ Inc. can proceed.

It also needs to be acknowledged that each stakeholder type within the system is limited to what it can achieve without the other stakeholders playing their part. Industry, for example, can only do so much before competition in the market, and consumers willingness to pay higher costs, become factors. In our export focused market economy, the influence of the New Zealand Government can, and will be overshadowed by the requirements of other nations.

50. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?

Investment in low emission technologies is critical. However, it needs to be accompanied by stable and supportive policies across trade, energy, immigration / skills reinforced by government procurement. Refer question 39.

51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

Transitioning key sectors

Transport

We are proposing **four new transport targets** in the emissions reduction plan, and are seeking your feedback.

52. Do you support the target to reduce vehicle kilometres travelled by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?

Any aspiration is supported by the significance of the problem and the fact that past measures have resulted in increased emissions from this sector. What is not clear is why past policy and actions have failed to reverse years of increasing emissions and what specific and additional measures Government intends to take to achieve meaningful reductions.

Mode shift plans and incentives need to be creative to support manufacturing workforce.

For example, it is extremely unlikely that shift workers across South Auckland (and in other manufacturing centres) will be able to walk, cycle or access public transport for work. It is also unlikely that in early budget periods that low / middle income shift workers will be able to afford to purchase EV's. Clarification of Government's apparently conflicted aspirations of reduced transport emissions and an equitable and just transition Is recommended.

See also answer to Q35

53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?

Yes, refer answer to question 52 – you also need to be developing solutions that are equitable – particularly for workforces outside CBD's – e.g. manufacturing, logistics and construction.

54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions?

Yes. Our understanding is the technology is currently available. Government's useful role will be to provide stable (15 years +) policy settings to provide investment certainty for business to invest in what can be long-lived infrastructure and to justify the early depreciation of productive assets already invested in. Government must also ensure that national infrastructure (power and charging) can support the change being targeted.

55. Do you support the target to reduce the emissions intensity of transport fuel by 15 per cent by 2035, and the associated actions?

As per 54.

56. The Climate Change Commission has recommended setting a time limit on light vehicles with internal combustion engines entering, being manufactured, or assembled in Aotearoa as early as 2030. Do you support this change, and if so, when and how do you think it should take effect?

As an aspiration and signalled well in advance it is supported in principle. To progress beyond aspiration the Government needs to provide regulatory certainty for the investment required and to ensure alignment with other Government objectives. Does the early depreciation of one asset and investment in another result in lower GHG emissions when calculated over the whole of the life cycle? How can investment in alternative forms of road transport be aligned so they complement rather than conflict with other policy options such as electrification of rail freight and greater access to public transport? Ensure that policies are designed to reduce inequities rather than increase them.

57. Are there any other views you wish to share in relation to transport?

Indications from those organisations using large forklifts, are that the environmental impacts, including carbon footprint, may not be as expected. At present there are no options on the market which provide sufficient battery life for the load and time of use. i.e., the battery does not last a full shift. This means that a business must then purchase multiple battery packs and make allowance for the downtime required to swap them over. Or the business must purchase double the number of forklifts. In both cases the environmental impacts are significant as a large portion of the footprint is down to the battery unit. Forcing use of electric vehicles before the technology is capable of matching use requirements is therefore going to create a net increase in emissions, rather than the planned reduction.

Energy and industry

Energy strategy

58. In your view, what are the key priorities, challenges and opportunities that an energy strategy must address to enable a successful and equitable transition of the energy system?

Government needs to work quickly with stakeholders to develop an energy strategy which will enable successful and fair transition. This needs to be long-term (15 years +) and hold cross-party support. Assumptions by government that the transition will be accelerated by certain high-emitting businesses exiting the NZ market are naïve, demonstrably contradictory of past actions of past government actions including SOEs, and will result in increase in net national emissions (e.g. NZ Aluminium Smelter and Methanex).

Successive governments have failed to develop robust strategy to enable energy transition.

- As a result, New Zealand is currently reliant on burning 1.5 million tonnes of imported coal per annum to meet winter peak demand. Climate change has added to uncertainty of rainfall / hydro capacity and will continue to do so. New Zealand is highly likely to continue to be burning coal as a result, at least until alternative renewable generation comes on stream. The nature of New Zealand's electricity market suggests investment in new generation capacity will only occur after the cost of emissions from coal become prohibitive or politically untenable.
- Scarcity, resulting from lack of new generation has impacted significantly on local manufacturing, creating more future uncertainty for business. A result is reduced likelihood of

investment in emissions-reducing investment such as paper and metals recycling that also provide employment, circular and 'reduced waste' benefits to the economy.

- Current proposals to phase out reliable high value process heat, without first ensuring alternatives are available at a price that is commercially viable in an open and trade-exposed economy, adds to uncertainty for business and undermines profitability.

Energy uncertainty is unnecessary and unacceptable, in light of the risks highlighted above. Government is the largest investor in New Zealand's generation and the majority controlling interest in much of it. Our submission is that it is essential that politicians and government show leadership in developing and implementing a comprehensive energy policy by which we mean one geared to the delivering of multiple outcomes required for a sustainable, circular and equitable society.

59. What areas require clear signalling to set a pathway for transition?

Reliable renewable energy capacity, measured in terms of assured supply at commercially competitive prices, after taking into account the lack of any trade protection available to New Zealand manufacturing, and the predictable diurnal and seasonal demand made of supply capacity as electricity displaces fossil fuels in private and freight transport.

Commercially competitive high heat source for manufacturing, whether as a result of increased supply of renewable energy or countervailing measures redressing the imbalance in cost competition with nations exporting items produced with the benefit of environmental subsidies, including the absence of an emissions cost.

Fair and affordable energy for householders, industry and transport including through the removal or rebate of the indirect cost of emissions transferred through selective regulatory obligation from NZ's ruminate agriculture to the rest of the economy.

Setting targets for the energy system

60. What level of ambition would you like to see Government adopt, as we consider the Commission's proposal for a renewable energy target?

New Zealand has the technology and capability to achieve almost any proscribed renewable energy target. What is lacking is the current capacity and scale, and the future investment certainty to justify significant and lower-returning investment. In short, New Zealand lacks the policy settings and political leadership to be certain that any level of ambition beyond the modest would be achievable if recommended.

Phasing out fossil gas while maintaining consumer wellbeing and security of supply

61. What are your views on the outcomes, scope, measures to manage distributional impacts, timeframes and approach that should be considered to develop a plan for managing the phase out of fossil gas?

Don't phase out natural gas until there is sufficient supply of electricity, hydrogen or biogas available at commercially competitive pricing. Pre-emptive phaseout of natural gas may or may not assist New Zealand to meet its short and medium term GHG reduction targets, depending on the political and fiscal pressure to maintain security of supply with imported and local coal. There are also some sectors, such as the roto-moulders manufacturing water tanks who have no alternative heating

method without biogas. As discussed earlier, electric heating is not available for all processes (globally). The phaseout of fossil gas therefore needs to be balanced with the phase-in of biogas.

Renewable energy is one of New Zealand's potential sources of competitive advantage, which could deliver high quality of life for all New Zealanders and low cost energy for industry. One only needs to look at the significant gap between generations costs from hydro plants and cost to consumer to recognise that margins are exorbitant and the old "gentailer" model has failed to deliver both supply and affordability. The fact that Government itself has identified the need to respond to the dry year risk by actively intervening in the market (Lake Onslow) supports the contention that the current 'market' model is delivering less than 'sustainable' outcomes. Manufacturers Association suggest that an electricity supply based on constrained transmission between distant generation and demand does not lead to adequate commercial competitive tender. In the same way that local control and interests has led to issues in the management of water, Government needs to view electrical energy at least as an essential public service as much or more than a discretionary choice prone to nodal monopoly pricing which, if left as is will impede in electricity-dependent investments in emissions reduction.

Decarbonising the industry sector

62. How can work under way to decarbonise the industrial sector be brought together, and how would this make it easier to meet emissions budgets and ensure an equitable transition?

The absence of sound policy, underpinned by robust strategy, will perpetuate the delayed investment in the low emissions circular economy transition New Zealand has committed to internationally, and which is expected of us by those buying our exports. We have the technology to decarbonise much of our businesses. What is needed is leadership and certainty for business and homeowners.

63. Are there any issues, challenges and opportunities for decarbonising the industrial sector that the Government should consider, that are not covered by existing work or the Commission's recommendations?

NZ needs to update its understanding and application of the "public interest', as that concept is understood and applied by MFAT and MBIE in negotiating and interpreting NZ's international trade obligations. As a minimum, NZ needs to ensure that NZ and any counterparties to trade agreements to which we are signatory have and apply the same interpretation to requirements and protections related to NZ's public interest.

Addressing current data gaps on New Zealand's energy use and associated emissions through an Energy and Emissions Reporting scheme

64. In your view, should the definition of a large energy user for the purposes of the proposed Energy and Emissions Reporting scheme include commercial and transport companies that meet a specified threshold?

Logic and economics dictate that there is no reason to distinguish "large" emitters from small in any industry. To do so is to introduce the very real potential for regulatory distortion that discourages investment and perpetuates higher-than-needed emissions. Manufacturers Alliance sees no reason for any distortion of "large" transport users given the externality in question relates to fuel use. A carbon / emissions price applied without fear or favour is low or no additional cost to administer and avoids the need for arbitrary intervention based on 'size'.

65. We have identified a proposed threshold of 1 kt CO_2e for large stationary energy users including commercial entities. In your view, is this proposed threshold reasonable and aligned with the Government's intention to meet emissions budgets and ensure an equitable transition?

See answer to Q64

66. In your view, what is an appropriate threshold for other large energy users such as transport companies?

See answer to Q64

67. Are there other issues, challenges or opportunities arising from including commercial and transport companies in the definition of large energy users for the purposes of the proposed Energy and Emissions Reporting scheme that the Government should consider? Supporting evidence on fleet size and characteristics is welcomed.

See answer to Q64

Supporting development and use of low-emissions fuels

68. What level of support could or should Government provide for development of low-emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport?

Partner with key stakeholders to understand demand and supply options, as well as the eventual cost and therefore demand for the product in an open and unsubsidised trading economy. For example, bioenergy from plantation pine. While the concept is superficially attractive, the wood give feedstock needed for its production is unlikely to be available given the gaps in trade policy (which enable 50% of harvested logs to be exported) and cyclical nature of historic plantings / current stock.

A reality that needs to be confronted is that in a future global economy dependent on biobased or low emissions feedstocks, much of New Zealand's production whether plant or animal, will accrue a value based on its ability to supply to an energy-dependent world. New Zealand's production of biofuel from tallow was displaced by higher value for the feedstock in foreign markets.

Government selection and subsidisation of bioenergy production will have consequences for other and indirect market participants. The diversion of wood processing to fuel production will lead to shortage of wood and higher cost for construction. It could have the unintended consequence of fostering increased construction using emissions intensive alternative building materials, or increased imports of products currently manufactured in New Zealand.

69. Are there any other views you wish to share in relation to energy?

Building and construction

70. The Commission recommended the Government improve the energy efficiency of buildings by introducing mandatory participation in energy performance programmes for existing commercial and public buildings. What are your views on this?

Comments made above apply. To the extent that energy performance and GHG intensity on construction is of more importance than affordability and availability those characteristics should be recognised in building codes. It is important that dead weight cost and regulatory delay is avoided by researching and specifying such requirements once nationally and prescribing requirements in

nationally applicable regulation. It should not be left to local councils to determine and apply such measures where that resulted in duplication of effort and potential confusion as to what regulation applies.

71. What could the Government do to help the building and construction sector reduce emissions from other sectors, such as energy, industry, transport and waste?

Government is a significant consumer of New Zealand's construction capacity. It can, and should, as a purchaser of such goods and services serve to stimulate demand and provide cost efficiencies through the scale and consistency of its purchasing decisions.

Design expectation of resource use need to be verified with real operational data. Its not just about energy – look at current chaos with water supply, wastewater and stormwater (all of which also have energy embodied in them)

72. The Building for Climate Change programme proposes capping the total emissions from buildings. The caps are anticipated to reduce demand for fossil fuels over time, while allowing flexibility and time for the possibility of low-emissions alternatives. Subsequently, the Commission recommended the Government set a date to end the expansion of fossil gas pipeline infrastructure (recommendation 20.8a). What are your views on setting a date to end new fossil gas connections in all buildings (for example, by 2025) and for eliminating fossil gas in all buildings (for example, by 2050)? How could Government best support people, communities and businesses to reduce demand for fossil fuels in buildings?

See answers above in relation to construction.

What is the rationale for limiting the Build for Climate Change Programme to energy? Climate Change is significantly impacting water availability and quality as much as it impacts energy. We recommend setting out to address both at the same time.

73. The Government is developing options for reducing fossil fuel use in industry, as outlined in the Energy and industry section. What are your views on the best way to address the use of fossil fuels (for example, coal, fossil gas and LPG) in boilers used for space and water heating in commercial buildings?

Government intervention in energy use and fuel choice on a haphazard and arbitrary basis may offer political advantage but risks undermining the climate-related justifications for it. A carbon / emissions tax will fairly price the environmental externality at minimal dead-weight compliance cost and enable energy users to make the appropriate choices and investments for their particular situation.

74. Do you believe that the Government's policies and proposed actions to reduce building-related emissions will adversely affect any particular people or groups? If so, what actions or policies could help reduce any adverse impacts?

Continued high energy prices will impact upon health and well-being of low income families and older residents. The differential treatment of ruminant methane and other agricultural externalities could be seen as unsustainable and unreasonable subsidies and make NZ's exports liable for non-tariff restriction when exported. Such differential treatment acts to distort investment domestically and risks unintended consequences including loss of regional employment, loss of resilience and a reduced knowledge and expertise needed for NZ's economy to diversify and innovate.

75. How could the Government ensure the needs and aspirations of Māori and iwi are effectively recognised, understood and considered within the Building for Climate Change programme?

Engagement at all levels of the proposal will be vital to ensure it is workable and considerate to the view of Maori. A focus on the environmental impact on Aotearoa for any infrastructure projects, using the land or waterways is important for iwi.

Building consultation around Maori owned property being considerate not to infringe on rights across Maori owned assets and Maori culture and heritage sites.

Work with Maori providers and keep developing a minimum housing standard that helps Maori societies gain equity across Aotearoa.

76. Do you support the proposed behaviour change activity focusing on two key groups: consumers and industry (including building product producers and building sector tradespeople)? What should the Government take into account when seeking to raise awareness of low-emissions buildings in these groups?

No, for reasons referenced above in relation to the need for climate-related policy to clearly and consistently target emissions to ensure unintended consequences and unnecessary compliance costs.

77. Are there any key areas in the building and construction sector where you think that a contestable fund could help drive low-emissions innovation and encourage, or amplify, emissions reduction opportunities? Examples could include building design, product innovation, building methodologies or other?

Low emissions innovation cannot be addressed in isolation – it is part of the transition to a circular economy.

A contestable fund for transitioning Building and Construction to a low-emissions circular economy could, by the very nature of circular principles result in lower overall emission outcomes. It could equally impede or distort investment from the least-cost means of achieving a given level of national emissions reduction. The fact that ruminate methane is subject to a lesser set of obligations over a longer timeframe is a case in point to the extent that the cross-subsidy represents an inequitable imposition of cost on some other part of the New Zealand economy and on individuals less able to afford that cost.

78. The Ministry of Business, Innovation and Employment (MBIE) is considering a range of initiatives and incentives to reduce construction waste and increase reuse, repurposing and recycling of materials. Are there any options not specified in this document that you believe should be considered?

To truly achieve change in this space a circular economy approach is needed with waste and pollution designed out from the start. Buildings need to be designed for reuse, repurposing, deconstruction and recycling. It is critical that MBIE carries out any work in this area alongside the Ministry for the Environment and other stakeholders across the system. It is also important to work with stakeholders from other sectors to ensure learnings are transferred, and opportunities for waste diversion from one sector to another are identified and developed.

In regard to the C&D space, MBIE also needs to commit to working in partnership with the sector to achieve this transformation. They already have a vehicle to do this - the Construction Accord. An

environmental road map is already being developed. It needs to be resourced to deliver. Refer question 14 re need to transition away from volunteerism.

The Government's proposed waste strategy identifies 81% of New Zealand's solid waste as being organic in origin. This waste could be repurposed at minimal cost for use in thermal heat and electricity production, reducing the volume disposed of to landfill to its ash content and avoiding the potential for landfill methane emissions. (See also Q41).

79. What should the Government take into account in exploring how to encourage low-emissions buildings and retrofits (including reducing embodied emissions), such as through financial and other incentives?

Government, in partner with stakeholders in the Building & Construction sector needs to consider:

- Incentives for upgrading / rather than demolishing existing buildings
- Relationship between transport and buildings – we cannot continue to develop greenfield suburbia reliant upon private transport.
- Improving the quality, affordability and public amenity of the medium density-built environment thereby making medium density living more attractive than infrastructure hungry suburbia.
- Update of building codes to reflect any outcomes sought.

80. What should the Government take into account in seeking to coordinate and support workforce transformation, to ensure the sector has the right workforce at the right time?

Collaborative partnership with industry to understand current and future needs and the fostering of those needs using the purchasing power and scale of Government in ensuring their availability.

81. Our future vision for Aotearoa includes a place where all New Zealanders have a warm, dry, safe and durable home to live in. How can we ensure that all New Zealanders benefit from improved thermal performance standards for our buildings?

It's fine to have the Vision, but where are the strategy and pathways to achieve that vision?

The Building for Climate Change discussion documents were published late 2020. Had MBIE adopted a partnership approach – *how are we going to achieve this together?* Then the sector would be significantly further advanced than it currently is.

New Zealand needs new collaborative, co-designed approaches to the development of policies and the strategies to deliver on those policies.

There is genuine urgency, and we need new agile collaborative models to achieve a low emission circular economy. The Manufacturing Alliance is confident that industry is up for it... the question is, is government?

82. Are there any other views you wish to share on the role of the building and construction sector in the first emissions reduction plan?

Agriculture

83. How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions?

    a. How could the Government support the specific needs of Māori-collective land owners?

84. What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

85. What research and development on mitigations should Government and the sector be supporting?

86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

87. How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

88. Are there any other views you wish to share in relation to agriculture?

Differential treatment of agricultural emissions, and the indirect imposition of that cost onto the rest of the economy, is likely an unsustainable subsidy to the extent that it could attract countervailing non-tariff barriers from NZ's trading partners. The fact of such a subsidy will serve to disincentivise the adoption of emissions reducing technology and management from the agriculture sector unless it confers other substantial cost advantage or direct subsidy from Government.

Waste

89. The Commission's recommended emissions reduction target for the waste sector significantly increased in its final advice. Do you support the target to reduce waste biogenic methane emissions by 40 per cent by 2035?

There is agreement in principle to the reduction of biogenic methane from waste. However, there is some variance in how this should be achieved. This ranges from utilising the long-standing management of such emissions as a condition of resource consent and landfill design, to ensuring natural materials are reverted to nature (e.g. composted), through to waste to energy/fuel. See Q41 for more discussion.

Overall, this section is less applicable to wider manufacturing sector so we will not comment on the following questions.

90. Do you support more funding for education and behaviour change initiatives to help households, communities and businesses reduce their organic waste (for example, food, cardboard, timber)?

91. What other policies would support households, communities and businesses to manage the impacts of higher waste disposal costs?

92. Would you support a proposal to ban the disposal of food, green and paper waste at landfills for all households and businesses by 1 January 2030, if there were alternative ways to recycle this waste instead?

93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?

94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?

95. Would you support a more standardised approach to collection systems for households and businesses, which prioritises separating recyclables such as fibre (paper and cardboard) and food and garden waste?

96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?

97. Do you think that the proposals outlined in this document should also extend to farm dumps?

98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?

99. What other options could significantly reduce landfill waste emissions across Aotearoa?

F-gases

100. Do you think it would be possible to phase down the bulk import of hydrofluorocarbons (HFCs) more quickly than under the existing Kigali Amendment timetable, or not?

101. One proposal is to extend the import phase down to finished products containing high-global warming potential HFCs. What impact would this have on you or your business?

102. What are your views on restricting the import or sale of finished products that contain high-global warming potential HFCs, where alternatives are available?

103. What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?

104. Do you have any thoughts on alternatives to HFC refrigerants Aotearoa should utilise (eg, hydrofluoroolefins or natural refrigerants)?

105. Can you suggest ways to reduce refrigerant emissions, in combination with other aspects of heating and cooling design, such as energy efficiency and building design?

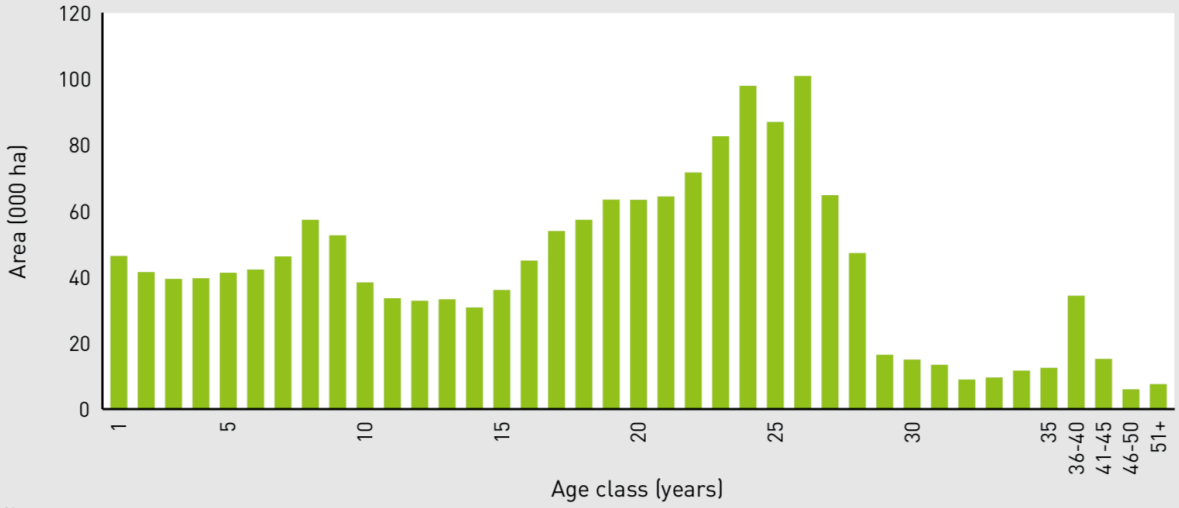
Forestry

106. Do you think we should look to forestry to provide a buffer in case other sectors of the economy under-deliver reductions, or to increase the ambition of our future international commitments?

Government intervention in forestry by way of an arbitrary distinction between pre and post 1990 forests has served to impede afforestation and perpetuate artificial land pricing. Forestry offers a long-term solution to NZ as a low emissions economy but not through reliance on carbon forestry. We would draw Ministry for Environment's attention to current exotic pine plantation stocks illustrated in Figure 1 below[5].

[5] https://www.canopy.govt.nz/assets/content-blocks/downloads/43540-NEFD-2020-12-18-14-10.pdf

Figure 1: Forest area by annual age class[1]



Note
1. The area is shown for each age in single years up to 35 years. After this, age classes are aggregated.

- New Zealand's Building & Construction sector is currently experiencing a severe shortage of timber.
- It is estimated that New Zealand current exotic harvest is 40,000 hectares annually.[6]
- It is estimated that 50% of what is harvested is exported in log form to China.[7]

In the absence of robust trade, investment, energy policy we have concerns about the viability of New Zealand's timber processing sector in the future.

Faced with the challenges of climate change it appears counter-productive to focus on plantation forestry of exotic species which reduce New Zealand's bio diversity and increase risk of forest fire in climate challenged New Zealand.

Why not incentivise planting of native timbers such as totara?

The remaining questions are not directly applicable to our members.

107. What do you think the Government could do to support new employment and enable employment transitions in rural communities affected by land-use change into forestry?

108. What's needed to make it more economically viable to establish and maintain native forest through planting or regeneration on private land?

109. What kinds of forests and forestry systems, for example long-rotation alternative exotic species, continuous canopy harvest, exotic to native transition, should the Government encourage and why?

    a. Do you think limits are needed, for example, on different permanent exotic forest systems, and their location or management? Why or why not?

[6] https://www.stuff.co.nz/national/politics/126038965/millions-of-cubic-metres-of-logs-leave-our-shores-every-year--all-while-we-remain-desperately-short-of-timber

[7] https://interactives.stuff.co.nz/2021/08/trade-off-china-nz-exports/

b. What policies are needed to seize the opportunities associated with forestry while managing any negative impacts?

110. If we used more wood and wood residues from our forests to replace high emitting products and energy sources, would you support more afforestation? Why or why not?

111. What role do you think should be played by:

a. central and local governments in influencing the location and scale of afforestation through policies such as the resource management system, ETS and investment?

b. the private sector in influencing the location and scale of afforestation?

Please provide reasons for your answer.

112. Pests are a risk to carbon sequestration and storage in new, regenerating and existing forest. How could the Government support pest control/management?

113. From an iwi/Māori perspective, which issues and potential policies are a priority and why, and is anything critical missing?

114. Are there any other views you wish to share in relation to forestry?