Emission Reduction Plan

This submission is from Nelson Tasman Climate Forum, an organisation of several hundred people for the purpose of weaving together communities in this region to undertake urgent strategic action on climate change. The submission has undergone two rounds of contribution and consensus building, with active input from about 15 members.

OVERALL STRATEGY AND PRINCIPLES.

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 principles are excellent but insufficient. The first principle should be:

The plan must be equal to the task of accomplishing our fair share of emissions reductions to keep temperature rise well below 1.5 degrees.

At present, it is acknowledged that it falls short of that. Every area needs strengthening in order to achieve it.

We suggest that the second principle should be:

Action on climate change is to be seen as part of an overall reduction of the global human ecological footprint (or human impact on Nature), alongside action on the biodiversity crisis, meeting our needs within biophysical limits.

(i) A fair, equitable and inclusive transition This is an extremely important principle. The measures listed to realise it are insufficient, as will be elaborated in the section on that topic.

(ii) An evidence-based approach.
The plan should explicitly reference research, evaluation and statistics and acknowledge critical gaps in information.

(iii) Environmental and social benefits beyond emissions reductions

(iv) Upholding Te Tiriti o Waitangi

(v) A clear, ambitious and affordable task. There may be a fish-hook in 'affordable', and we suggest omitting it. The costs of NOT limiting temperature increase to 1.5 degrees is unaffordable; the consequences are unacceptable for our society and people across the world. Reducing our ecological footprint on land, ocean and atmosphere is likely to flatten or reduce GDP. We need to accept that, and cease to use it as a measure of the success of our economy. There will be some who will say that any measure that reduces GDP is 'unaffordable', without measuring the uncountable costs of global heating. Omit the word to avoid getting hooked.

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?

Clear communication from the Prime Minister and other ministers to the public about the required changes in lifestyle are needed, as detailed in our section on 'Behaviour Change.'

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 plan is framed exclusively around sectors of the economy, but emissions also are also relevant in other spheres e.g. the natural environment/conservation estate. This is not part of "forestry" but can play a huge role in net emission reductions if browsing pests are controlled. Similarly for protection of the marine environment.

4. How can the emissions reduction plan promote nature-based solutions that are good for both climate and biodiversity?The direct ways of accomplishing this are well-known – **protecting** what remains of the natural world (eg banning further deforestation, marine protected areas, preventing deep sea mining and sea bottom trawling), **restoring** the natural world (eg reforestation, wetlands, seagrass, mangroves, fresh watercourses and other natural ecosystems.)

Less directly, we need to face the implications of **processing less of the natural world to human purposes and waste.** A circular economy will give us greater efficiency in terms of more human wellbeing per unit of material resource and energy. As we convert to a circular economy we must remain within carbon, nitrate, phosphate and biodiversity boundaries. We must lower our ecological footprint, which means contracting aspects of our economy in a planned way.

Put blue carbon, wetlands, organic soil and peat bogs in the ETS to encourage landowners to sequester carbon. Credit farmers and landowners for planting native shade and shelter trees to augment native fauna habitats, bee trees, agroforestry, shelterbelts and riparian planting.

Support landowners with the cost and labour of establishing the right tree in the right place on erodible land and along and around waterways. Support landowners with good information on carbon farming.

The health of native forests and the uptake of carbon would be greatly improved if landowners had to eradicate browsers to gain extra sequestration merit. (Some hunters regard the native forest as a communal farm for their wild meat, and this expectation has to be phased out.)

5. Are there any other views you wish to share in relation to the Transition Pathway? The necessary transition from fossil fuel energy to only renewable energy will mean we have less total energy in our economic system. (See response to Q58). **Energy conservation and efficiency** will be important elements of our transition pathway, especially demand reduction. This will need leadership and resourcing well beyond what is currently provided by EECA and includes investment, regulation, public information and education.

A much more public use of **wellbeing measures** of the efficacy of our economy, rather than GDP, would be very helpful. It is likely that GDP will decrease, as we eliminate fossil-fuelled elements of the economy, but that wellbeing measures will increase, due to the many co-benefits of emissions reduction measures as discussed in this document. More public use by the government of wellbeing measures will help to cut across the widespread confusion between population wellbeing and GDP.

6. Which actions to reduce emissions can also best improve our ability to adapt to the effects of climate change? Much stronger focus on climate change education, increased use of local food , farming diversification, water storage in ponds and in the soil, and land use planning and consenting will all be vital.

Lowering consumption in general reduces both emissions and our dependency on imported goods.

7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided? Batteries, solar panels and wind turbines are composed of the particularly emissions-intensive materials of steel and other metals, glass and cement. These are currently manufactured with fossil fuels. Excessively rapid global uptake may result in a surge of greenhouse gas emissions that takes us over a 1.5 degree increase. It is therefore suggested that, while we support the transition from ICE cars to EVs, the emphasis be on public and active transport (including reorientation and redirection of NZTA away from large infrastructure into these more rapid investments with explicit net GHG reduction benefits) , with strong measures to discourage private car use, and on energy conservation and efficiency, thus lowering demand. (Note that efficiency without conservation can result in more use and emissions rather than less.)

Some of the excessive emissions from manufacture of new cars could be avoided by extending the EV purchase subsidy to subsidising kitsets for EV conversion from existing fossil-fuelled vehicles.

EQUITABLE TRANSITION The Climate Change 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? We strongly agree with these objectives. Indeed, we doubt that a society as inequitable as ours is currently, can actually succeed in achieving the necessary emissions reductions goals.

We believe that there should be a whole-of-society approach to reducing inequity, before any sectoral approach is used. Capital gains tax, wealth tax, emission and pollution taxes should be among the instruments considered. Guaranteed minimum income, supported transition and re-education for workers displaced from carbon-intensive industries will be important. Maximum income ceiling policy would be supported by the close relationship between income and household carbon emissions. Universal basic services covering health, education, housing, food and green space would support a programme of reducing inequality.

The transition away from fossil fuels will cause the price of oil, in particular, to rise, and have a disproportionate impact on people in lower income sectors. This impact could be equalised by rationing remaining allowances of fossil fuels with a tradable personal allocation.

Similarly, people in lower income sectors will need protection from increases in the price of electricity

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? 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.We are in favour of wide participation in design of measures that **reduce social inequity**. We fear fracture of social cohesion under the stress of transition in the absence of substantial movement towards a more equal society.

Redistribution of ETS revenue to low income families would help them overcome the costs of transition, and also help them accept the necessity of high fossil fuel prices.

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?

There are several models that involve engagement with communities, and importantly require honest information and education first: Dynamic Adaptive Pathway Planning (DAPP), Citizens' and Peoples' Assemblies, and Participatory Budgeting which could be used for carbon budgeting instead of finance. (https://www.participatorybudgeting.org/what-is-pb/) We also support current methods of community consultation.

16. How can Government further support households (particularly low-income households) to reduce their emissions footprint? Insulate homes, provide heat pumps where necessary. Ensure affordable housing, public transport, car sharing hubs. Provide information on a low carbon-footprint diet for Aotearoa.

17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption? Begin now to convey the message to young people in secondary and tertiary education that job horizons are changing toward low carbon vocations.

Support transition vocational education, pay workers a guaranteed minimum income during such transition, and provide effective information about available jobs.

18. What additional resources, tools and information are needed to support community transition planning? **Clear leadership communication**, providing evidence-based information and guidance, such as has been a strength during the pandemic, would be very helpful, starting now. This transition has never been done before, and will be difficult for many. Leadership communication is immensely important. The Prime Minister, the Minister of Finance, and Ministers of other relevant ministries need to speak to people through radio, TV. social media and print media.

How best to use shrinking carbon budgets will entail difficult political decisions. **Citizens' Assemblies and participatory budgeting** may be extremely useful for this purpose, enabling informed citizen participation in these decisions.

A greater focus on wellbeing from a basic needs perspective would give people reassurance.

19. How could the uptake of low-emissions business models and production methods be best encouraged? Use levers such as criteria for funding applications. The Regional Business Partner Programme delivers access to major Research and Development funding, as well as to Capability Training Vouchers and Mentoring. This programme could be expanded to specifically include transition training and support. Provide speakers and collateral/assets to Regional Development Agencies and / or Chambers of Commerce to utilise in targeted sessions for businesses

20. Is there anything else you wish to share in relation to making an equitable transition? Implementing significant changes towards a more equal society in order to ease the transition to a lower ecological footprint would have a widespread beneficial effect on other aspects of society as well. While the target benefits are to ensure basic needs are sufficiently supplied, and to maximise social cohesion under the expected stress of transition, we could expect to see benefits in arenas of child poverty, infant and child health, life expectancy, rates of criminality, general health, teen pregnancy, social trust, among others. Many of these areas are financially costly for an unequal

society such as ours (although reflected in increased GDP, paradoxically). We would expect to see improvements in measurable wellbeing in a more equal society.

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? Radical change is needed to establish accountability. The State Services Commission needs a dedicated unit that will hold public sector CEOs accountable for achieving annual milestones.

Treasury should report at least annually on a measure of wellbeing. We recommend a stronger focus on universal basic needs, material and non-material, than the current framework uses. It would be very helpful to have regional measures of wellbeing too, as some regions are working hard on transition plans and need to measure their progress.

We need measures of emissions from various sectors in a frame much closer to real time that Stats NZ can manage at this time - we have a nearly two-year wait for data. As we'll be attempting to transition rapidly, we need ways of measuring change with minimal lag time. We would also like to have this data on a regional basis. In some cases completely new processes will be needed (e.g. monthly non-commercially-sensitive summaries of regional fossil fuel sales and regional electrical power usage, draft information rather than waiting a long time for figures that are 100% accurate, and giving summaries of electrical power in the regions where it is consumed as well as the regions where it is generated as at present). All of this will need more Stats NZ funding to provide the data we need.

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? We do need to work together for a productive, sustainable and resilient economy. The very tough thing to realise is that it will have to be a smaller economy, using less energy and material throughput if it is to be sustainable. This will need first of all, clear communication of the state of our overshoot and our damaging relationship with the natural world, and then extensive dialogue with people in their many groupings to reorient their aspirations to actual sustainability. Citizens' Assemblies may be very helpful at this point.

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

The military also must reduce their carbon emissions. Career Defence personnel may claim to be an exception and plan to purchase or update equipment that has high levels of embedded energy, and requires fossil fuel to operate. This must be balanced against emissions reductions imperatives.

FUNDING AND FINANCING

24. What are the main barriers or gaps that affect the flow of private capital into low emissions investment in Aotearoa? Many of the barriers are due to government underinvestment in climate change, both GHG reduction and adaptation. Such investments create innovation opportunities - for example, the Endeavour Fund for R&D. On the other hand, demand reduction lessens the need for huge capital flow.

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

26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity? New centres of research excellence are needed that are linked across NZ. A $300m pa investment, the equivalent cost of one large dairy farm is warranted.

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

EMISSIONS PRICING.

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

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

30. Do you agree the treatment of forestry in the NZ ETS should not result in a delay, or reduction of effort, in reducing gross emissions in other sectors of the economy? We strongly agree with this position.

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?

With the new research just released (mid Nov 2021) from NIWA and Pure Advantage on the higher carbon sequestration of permanent native/indigenous forests, there need to be policy adjustments to:
- Incentivise and invest in planting permanent native forests for carbon sequestration, biodiversity values, and the future potential of high value native timbers managed in a 'Nature Forestry' approach as advocated by Dame Anne Salmond and many others.
- Update the carbon look-up tables and ETS settings to account for the higher levels of carbon sequestration from planted and managed diverse native forests including podocarps such as totara etc. The Totara Industry Pilot has decades of data on this, and there is important advocacy happening in this space, widely supported.
- ETS adjustments to recognise, reward and incentivise the significant carbon sequestration, biodiversity, environmental, wellbeing, cultural and long-term/high-value timber economic benefits of native forests. Preferably through the 'permanent forests' category being reserved for permanent indigenous forests.

32. Are there any other views you wish to share in relation to emissions pricing? We suggest that ETS revenue be used as a dividend returned to all households, to help increase acceptability of higher fossil fuel prices.

Phasing out free industrial allocation by the end of the decade, as originally intended, would go a long way to incentivising change in those big companies to reduce their emissions faster. For hard to abate sectors like steel, this should be accompanied by appropriate R&D funding and just transition plans for workers.

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.

Please speed up the resource management reforms, as councils' continued use of the current law retards achievement of long term solutions. We particularly need the Climate Change and Managed

Retreat Act as councils can't do long term planning without that. Red zones and insurance retreat could happen before the Act gets through parliament.

We urge you to include a regional overlay as well as sectors, for the required emission reductions. We fear that each local authority will argue exceptionality because they have "special" needs. To stop the court cases, delays and quarrelling there need to be strict requirements for each region.

You have discussed how to have growth and development to produce infrastructure, roads and buildings that will reduce long term emissions. How can this be done while halving emissions by 2030? We should be planning for managed retreat and modifying what we have as frugally as possible. It's decades too late to build our way out of this climate crisis.

Central Government will have to do more than "enable" local government to reduce emissions.You will need to legislate, mandate and dictate. Most councils aren't viewing all decisions through a climate lens and don't know what the ZCA actually requires of them. It would be hugely helpful if you could clarify what section 5ZN means for councils, as most staff don't know, and are waiting for something clear and legally binding, or are simply ignoring it (e.g. in the recent public sessions on the Future Development Strategy processes being run by some Councils, the statement was made that "It isn't a requirement of the Future Development Strategy to be consistent with the Zero Carbon Act", despite the fact that they both deal with the whole period between now and 2050). This needs to change.

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?

Change land ownership and planning rules. Many cities have numerous used car yards adjacent to the CBD, and these areas could be rezoned residential and have multistorey housing. The same goes for massive car parks especially next to supermarkets, hardware stores and malls.

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

Urban sprawl over good rural land is a big issue. The adjacent rural landowner will argue they can't farm the land profitably because of the urban neighbours, and they will benefit financially from residential subdivision. Local councils get a lot of pressure to let this happen, so an NPS is needed.

SCIENCE, RESEARCH AND INNOVATION

36. What are the big challenges, particularly around technology, that a mission-based approach could help solve? The mission- based approach suggested by MBIE is based on an OECD paper, is a set of generalities, appears not evidence-based and is likely to lack credibility with many scientists. This is deeply concerning given the importance of R&D.

37. How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries? Help in modelling some of the ideas suggested to see if they make any significant difference. For example, even our rough modelling of data in the Land Transport (Clean Vehicles) Amendment Bill shows the bill locks us into a scenario where emissions are not reduced till 2026/7 - way too late to make a reasonable and just transition to 50% emission reduction by 2030.

38. What opportunities are there in areas where Aotearoa has a unique global advantage in low emissions abatement? Our unique advantage is the large rural area that currently holds livestock but could equally well grow plants including trees. With a higher carbon equivalent emission tax we could help encourage rural land holders to convert high emission GHG farmland to low or zero GHG emission farmland.

Given that the soils in Tasman are currently being mapped this would be a good time to provide landowners with an assessment of higher value, low carbon plant crops that could be grown. New crops would need to link to a processing network. However the cultivation of soil to grow plant crops will result in a large mineralisation of carbon from soils. So soils need to be considered in the whole system assessment of carbon sequestration. Most sheep and beef farms are close to carbon neutral if all trees could be accounted, and carbon in their soils is slowly increasing.

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? It is essential that Māori businesses are supported to realise their full potential in the green economy. Eventually this will be the only economy, and government must ensure that Māori are not left behind. Furthermore, Māori businesses that operate within Te Ao Māori are already engaged with respecting the natural environment in a manner that has to be taught to non-Māori. Māori businesses should therefore be our front-runners, leading the way for others.

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? Work in the area of lowering energy demand. Identifying unnecessary energy consumption, identifying the many points of energy waste and finding innovative ways to avoid waste, identifying inefficiencies and improving efficiency, exploring low-tech solutions and tools, changing behaviour around energy use. We suggest that this might well be the arena of greatest potential reduction in emissions. It needs the application of innovative minds.

We suggest that our electricity consumption might thereby be reduced to what we already produce in renewable sources of hydro-electric and geothermal (73.9% in 2020), thus avoiding the very large carbon costs of the manufacture, transport and installation of renewable energy infrastructure.

We suggest a labelling scheme that identifies emissions (and waste, and expected lifespan) of goods - something similar to the energy efficiency labels that appear on household whiteware items.

41. Are there any other views you wish to share in relation to research, science and innovation? Yes, research and scientific analysis produces “global public good” data that New Zealand scientists can produce for other parts of the world, e.g. data on situations in the largest GHG emitting countries. We should invest in collaborative research and analysis with experts in these countries to contribute estimations of the value of mitigation inside these countries.

In addition, your focus is on science applied to technical solutions to emissions reduction. Behavioural science is also a vital component of success in reducing emissions. Gathering evidence from what has worked in other countries, devising trials in Aotearoa of how to induce necessary changes, for example in transport mode shift or dietary changes, understanding incentives and disincentives, understanding effective messaging from leaders, are all important components of achieving our goals, and require both innovative and evidence-based approaches.

BEHAVIOUR CHANGE – EMPOWERING ACTION

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

Participatory Budgeting by the public should be done for spending a portion of the rates and carbon budget. This involvement will bring understanding and buy-in, as it has overseas.
https://www.citizenlab.co/blog/civic-engagement/participatory-budgeting/one-tool-multiple-possibilities-three-examples-of-participatory-budgets/

Peoples' Assemblies, Climate Forums, Youth Councils, Intergenerational Forums, MfE roadshows, more webinars. Bumper stickers eg "Be a good ancestor" to get climate action more visible. Drop in centres, and information hubs at Council buildings.

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?We are living through an unprecedented long emergency. We have three suggestions:

(i) We need far stronger **engagement of our country's leadership and media** in relating to the rest of us in this emergency. For example, regular updates in the daily news (radio, TV, print) on the status of our progress (or regression) through this ecological overshoot emergency (both climate and biodiversity aspects of it) would be far more relevant to people's lives than daily stock market reports. Having the Prime Minister and other relevant ministers report to the public on how the overshoot crisis affects them and how they can take action would bring the emergency into focus and frame it in terms of actions. It would increase the acceptability of tough measures that need to be implemented by the government, increase social cohesion, and engender hope that if everyone plays their part, we can improve the situation for our children. We have seen what good communication from leaders has done for the COVID response.

Other effective **public education** using targeted public health messaging methodology for different demographics, communities and ethnicities. Multimedia, value based, ongoing messaging.

(ii) We need much more effort from the Ministry of Education to **prepare our children** for the lifelong changes that will be needed to address this existence-threatening problem. Children need to be nurtured in their love for Nature and awe and humility at its complexity and beauty. They need to understand the history, physics and ecological science behind the phenomenon of human overshoot of planetary boundaries. And they need to know the ways of halting the present trajectory and restoring a healthy human relationship with Nature. They need adults to stand beside them and support them in their justifiable anxiety about their future.

You have mentioned exemplary curricula that deal with these matters, but these tools are not widely in use. Teachers have received little professional training in this area. We have contacted all secondary schools in our region to inquire about the status of education in this arena, and find that it is very patchy. Excellent teaching is done where there is a highly enthusiastic teacher with initiative. In other schools there is very little input. The Ministry of Education, as far as we can see, has been tardy in driving this necessary component of this great endeavour – a population well-educated in understanding human overshoot, practised in applying solutions, and with some hope in cooperative action to counter anxiety.

We would like to see a **Climate Education Action Plan or an Ecological Footprint Education Action Plan**, covering all years of early, primary and secondary education.

(iii) **Transport mode shift** will be one of the most challenging behaviour change areas. Parallel with the provision of good alternatives, like free or affordable electrified public transport, there will need to be a strong push to change deeply habitual behaviour around the use of private cars. This is an area needing innovative thinking. For example, at the time of introduction of new bus routes, there could be local entertainers on the buses to lend a celebratory air to help change behaviour patterns. Celebrities and media messaging could be important too. It is important that motorists don't see nearly empty buses further clogging up roads. Every effort should be made to get people onto buses. One sure way is to have bus travel quicker (priority lanes, cars giving way to buses pulling out of bus stops) and more productive (WiFi, perhaps writing desks if room, bus drivers who don't jerk the bus.)

Admittedly, this falls within the arena of local governments, but as it will be a challenge in every jurisdiction, central government may play a role in encouraging levers for such necessary behaviour change.

Since knowledge of one's neighbour's climate-positive behaviour exerts some influence, it will be useful to seek ways of making this visible.(For example, displaying average area household electricity consumption on power bills has been shown to lower consumption.)

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

There needs to be a balance of urgency and good news stories. A constant barrage of frightening news will switch people off.

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?

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?

47. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy? The proposals for a circular economy and bioeconomy are exciting and well thought out. One is reminded of the indigenous approach in hunting societies: the animal to be hunted as a food resource is honoured, 'permission' sought to kill it, and then every part of the animal is used at its highest value, with no waste.

However, there are a few further concepts that need to be included, the most important of which is **scale.** A circular economy extracts maximum human wellbeing value from inputs of materials and energy, and minimises waste. It will contribute to reducing emissions only if it **lowers** total inputs of materials and energy, and lowers them at a scale compatible with the diminishing carbon budget, and the (as yet uncalculated) availability of alternative energy. A sustainable economy is one based on harvesting renewable resources at a scale that maintains or enhances the regenerative capacity of the ecosystem producing the resources.

A circular economy strategy should include a calculation of projected availability of alternative net energy, taking into account the large energy cost and carbon footprint of the infrastructure required.

It will almost certainly be less in quantity than our current energy usage. This needs to be a major part of our planning.

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? Region by region, experts are needed to identify opportunities for circularity in economic activity, to stimulate local thinking on that topic, and to advise on transition to circularity. Perhaps central government could pay for a cluster of experts to do this task. A framework for this task would be an examination of the 'carrying capacity' (population x per capita consumption) of New Zealand as a whole and of each region. The circular economy needs to fit within that limit._

49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa? Lack of understanding, resistance to change, cost of infrastructure.

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)? A plan to move towards **zero waste to landfill** would push the economy in this direction.

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

TRANSPORT

52. Do you support the target to reduce VKT by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions? Yes, although we believe a higher target is necessary.

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, alongside our conviction that the light vehicle fleet must substantially shrink in size. We need to do better than that now the COP26 commitments have come out. We have committed to a 50% reduction in GHGs by 2030 and since car emissions form a considerable part of our overall emissions we should be aiming for at least the halving of imports of GHG emitting cars (incl hybrids) by 2030. That does not mean necessarily increasing our EV fleet by that much - it means a reduction in GHG emitting vehicle purchases. We have done this before without the help of EVs - during the global financial crisis.

We request that the regulations proposed to begin in 2025 should kick in for the 2022-2023 year to give the industry a couple of years to adjust and to move to electric only vehicles. We also request that advertising of new fossil fuel driven light vehicles be banned from 2023 onwards.

54. Do you support the target to reduce emissions from freight transport by 25 per cent by 2035, and the associated actions? Yes, although we believe a higher target is necessary.

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

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? Yes, but the change should occur much earlier – January 2024 would be a preferred target date for banning importation of fossil fuelled vehicles except for vehicle classes for which there is no EV alternative available. The average life of NZ vehicles is 18 years but even so, in 2045 there would still

be 20% of this fleet around continuing to emit high levels of CO2. (www.transport.govt.nz/assets/Uploads/Report/AnnualFleetStatistics.pdf)

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

(i) Make public transport free for as many groups as possible to encourage modal shift. Start with community card holders and students and continue from there.

(ii) We applaud the attention given to transport inequity, and suggest that **low income urban areas** be given the highest priority in developing routes for public transport.

(iii) We suggest that the government facilitate the manufacture of **electric bikes** in Aotearoa and apply a reasonable subsidy to ebikes to make them as affordable as ordinary bikes.

(iv) The plan outlined in the ERP document is admirable, except for its assumption that **private cars** will continue as a major element in mobility. Because of the high embodied carbon intensity of EVs, and the surge in emissions that will be caused by the rapid manufacture of millions of EVs, we think this is unwise. We suggest replacing this vision with one in which most personal transport is active or public, with some private EV transport for special purposes – eg for longer journeys or for elderly, or disabled people, although even this sector could be provided for by special public vehicles. The emissions savings in this different vision of future transport will not be reflected in production emissions in Aotearoa (because vehicles are manufactured overseas), but will be reflected in consumption emissions.

(v) **Working from home** does not feature in the Transport plans. Are there any ways central government can facilitate this development as a way of cutting vehicle kilometres?

(vi) Change the traffic rules so that **buses have priority** over other traffic when pulling out of bus stops.

(vii) We believe that **congestion pricing** should be a tool for all cities and all areas in a city where there is traffic congestion. For example, on Nelson arterials there should be a peak hour congestion tax (read off number-plates like a speeding fine reading). This would encourage more people into buses and the income could be used to reduce bus fares and increase bus frequency. It would also reduce congestion in the specific area and even allow buses to have their own priority lane without any extra infrastructure costs as there would be less traffic on the roads (https://thisbigcity.net/the-success-of-stockholms-congestion-pricing-solution/).

(viii) **School travel.** We could make transport options easier for students. For example, if a school bus is not full, why can it not pick up students closer than 4.8 km especially in inclement weather? Also the idea of larger schools as a cost saving measure needs to be addressed to see if there are indeed any substantial cost savings once the **extra emissions from not being able to use active transport** to get to school are considered from the perspective of GHG release, **the waste time for parents** dropping their children off at school and the road congestion during school start and end times. Also schools should be seen as a community hub and schools some distance from the community become disconnected from that community (Castrechini, Sebastian; London, Rebecca A (2012) Positive Student Outcomes in Community Schools ERIC Number: ED535614 https://eric.ed.gov/?id=ED535614)

(ix) The **vehicle scrappage scheme** could be used with incentives of free bus service for 3 years or an ebike subsidy rather than an EV subsidy, providing the old vehicle is actually scrapped.

(x) The development of a **Freight and Supply Chain Strategy** should include community groups in consultation alongside industry.

(xi) Consider the compulsory raising of an **aviation tax** to include carbon offset for planting trees in local communities. What about tradable aviation emissions per person which can be cranked down each year? **Promote electric airplanes** for domestic air travel.

(xii) Consider converting Marsden Point to a **biofuel converter**.

(xiii) A national **coastal shipping** network to replace some of the road freight, especially that with regard to imports and exports i.e. goods being trucked from Nelson to Tauranga (or vice versa) because the container ships no longer call at Nelson.

(xiv) Adoption of the **sustainable transport hierarchy**, placing pedestrians first.

Conclusion: We are delighted with the direction of the Transport section of the Emissions Reduction Plan and sincerely hope the government is bold enough to endorse and implement this plan as soon as possible and in a shorter time-frame than proposed.

ENERGY

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?

(i) Cautions with renewable energy. The infrastructures for renewable energy cannot be built, installed or decommissioned without using fossil fuels. There are also real resource limitations regarding the raw materials that would need to be mined to produce the infrastructure needed. Furthermore, these "renewable" energy technologies require the replacement of their physical infrastructure every few decades. Even if some of the material involved can be recycled, more energy will be required, and there are limitations to how much material can be recycled.

The RE technologies available all have a lower net energy surplus than fossil fuels. This lower energy surplus means that more of the economy will have to be devoted to simply providing energy, and less will be available for other tasks. Indeed, several independent research groups around the world have been signalling alarm that RE will not be able to provide the same level of energy as we have become accustomed to with fossil fuels. Some studies suggest that a mostly RE system would barely provide enough energy surplus to maintain complex industrial societies we now take for granted.[1],[2]

The notion of increasing our supply of RE is problematic for the following reasons.

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[1] Dynamic Energy Return on Energy Investment (EROI) and material requirements in scenarios of global transition to renewable energies - ScienceDirect

[2] https://www.researchgate.net/publication/353488669_Through_the_Eye_of_a_Needle_An_Eco-Heterodox_Perspective_on_the_Renewable_Energy_Transition

(i) NZ per capita energy consumption is already among the highest in the world, and approximately twice the level required for both subjective (happiness) and objective (access to nutritional food, population health indices) levels of wellbeing.

The more energy we use the more ecological destruction we do, contributing to ecological overshoot, with all its implications, including but not only, climate change. We need to adopt an overshoot perspective to deal with the climate crisis, or we won't solve the climate crisis and we will make overshoot even worse.

Hydrogen and biofuels typically have a very low ratio of energy output to energy input, being far less efficient fuels than the electricity used to make them. They should not be promoted as all-purpose alternative fuels, but as last resort fuels, when there is no other renewable alternative.

(ii) We need **projections of how much net energy will be available to us** as we transition to renewable energy. It is likely we will have less net energy available to us than the levels to which we're accustomed.

(iii) We may need to consider **how to allocate the energy available**, so that people's basic needs are filled. A concept of 'wellbeing per energy unit' may be useful. There are many energy end uses that are unnecessary and can be dispensed with (eg leaf blowers) and in addition, there is much energy wastage (eg unnecessary lighting).

A rationing system (eg Tradable Energy Quotas) has been suggested for allocating fossil fuel energy. Because rationing controls actual physical resource availability it provides a much more certain pathway to emissions reductions, rather than relying on uncertain and indirect market mechanisms.

Because the Tradable Energy Quota approach provides free, but declining, quotas to all adults, it ensures that everyone, regardless of financial status, has energy security and can plan for a transition. Those who are able to make a transition away from fossil fuels most quickly can then sell or give their quotas to other individuals, or organizations who are having a harder time to transition.

Because a Tradable Energy Quota system directly affects everyone, everyone is motivated to make the lifestyle changes needed to reduce emissions, and to work together to do so. The ETS entirely misses this opportunity for including everyone directly, and fostering a cooperative and mutually supportive approach to reducing emissions.

(iv) There seems to be little emphasis on **lowering energy demand** in the existing plan. Developing higher efficiency alone will not necessarily accomplish lower emissions, and can even increase them. We need a concept of 'energy sufficiency' and a plan to lower demand in all sectors, including households. With lower demand and higher efficiency, our present renewable energy supply may more nearly meet our needs, perhaps obviating the perceived need to build dollar- and carbon-expensive projects to increase supply.

Due to the lower energy return on energy invested of most renewable energy resources, together with the high carbon and financial costs of renewable installations, it is highly unlikely that we will be able to replace with renewables the quantity of energy we have derived from fossil fuels. The notion of a lower energy future has profound implications for NZ, and the world. Consequently, every aspect of a plan to deal with the climate crisis must be considered from this perspective.

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

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? We would like to see an ambitious programme of lowering energy demand, alongside a public education programme to promote understanding of the need for this. We are familiar with this concept in the realm of water frugality, (and Australians are even more so). We need to transfer this knowledge to the realm of energy use.

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?

The desired outcome is no use of fossil gas. A lengthy warning period has been given. We must phase it out.

Decarbonising the industry sector

62. How can work underway to decarbonise the industrial sector be brought together, and

how would this make it easier to meet emissions budgets and ensure an equitable

transition?

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?

We expect much more rapid action by Fonterra to stop coal use.Equally coal burning at Huntly must be stopped immediately, if necessary drawing on Manapouri supply and shouldering contractual penalties.

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? Yes definitely

65. We have identified a proposed threshold of 1 kt CO2e 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?

We propose 0.1 kt tonnes per annum.

66. In your view, what is an appropriate threshold for other large energy users such as transport companies? For a fleet of 5 large long haul trucks in continuous use one can expect a GHG emission

of about 0.1 kt per annum which should be the limit to take as many large trucks as possible off the road and encourage putting the freight onto electrified trains.

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.**

68. What level of support could or should Government provide for development of lower emissions fuels, including bioenergy and hydrogen resources, to support decarbonisation of industrial heat, electricity and transport? Support train transfer of goods rather than road transfer.

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

- As our cities grow denser, district heating may be a viable option.
- Cease all new exploration and mining of coal, oil and gas.
- Phase out by a close end date existing fossil fuel mining.
- Plan to end fossil fuel use in electricity. This should have a timeline - suggest 2023.

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?
Agree. Efficiency standards should be in a framework of **sufficiency** to fulfil necessary functions without excess.

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?
The focus needs to be on designing better buildings and horizontal infrastructure. All new buildings should be to passive solar design when possible. High quality prefabricated construction if designed and built to be carbon negative would also reduce waste, ensure climate friendly materials are used and reduce the lifetime energy use of the buildings.The investment into infrastructure should be planned around promoting alternative transport options that link to public transport, walking and cycling options. Reducing single occupant car use, and increasing the use of trains/ships for transporting goods, would ensure that the roading infrastructure could be reduced. Low/zero carbon construction of horizontal infrastructure should be researched and planned for. Planning for local community-based power generation, reducing urban sprawl would also impact reductions in emissions from multiple sectors.

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?
Yes, full support, but there is no reason to wait until 2050. 2030 should be the latest target date.
Stop mining, and surveying, for coal and gas. Prohibit the import of fossil fuels with target dates to allow industries to prepare. Incentivise local community led power generation

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?
Phase in the regulation to require the alternatives over a tight timescale. For example, all gas hob installations should be replaced with induction hobs as soon as possible. Space and water heating does not require fossil fuels, alternatives already exist, so phase them out quickly. Government, (local and central) should ensure their procurement processes mandate that no fossil fuel-based solutions are allowed within any public sector construction.

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?
It will likely impact those communities that are already struggling to survive on a day to day basis, including Māori and Pasifika. Also those working in the industries that are linked to fossil fuels will need to be retrained in new industries. Investment is needed in retraining, upskilling, and incentivising the development of new industries to replace those based on fossil fuels. The whole programme needs to be planned in a manner to engage with Iwi to honour Te Tiriti, provide jobs within communities and help to make communities more resilient and sustainable.

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?
They need to be in the room developing the programme, not just consulted with. They need to be true partners in the creation of the programme. Te Tiriti needs to be honoured.

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?
Talk to representatives of the groups. The activity needs a strong focus on the design of the infrastructure and the development of the right skills in the workforce - from design through to construction and eventual repurposing. Regulations are key drivers for change and should be strong enough to force change to ensure carbon negative construction and therefore healthy, cheap to run and functional homes are developed in the urban environment. Bringing the public on board is important too.
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?
Contestable funding is a good encouragement of innovation. Care needs to be taken that the cost of, and process for, applying for such funding is not prohibitive.(The Waste Minimisation Fund is unfortunately an example of a bad process.) Talk to the industries and universities about how such a fund could work on the ground.

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?
We emphasise designing the process to minimise waste together with a local service to take reusable materials from building sites for repurposing and reselling to the local community. This would encourage builders to better protect their materials so that they are still usable, particularly if the service is

convenient and cheaper than landfill. Other options are as in Marlborough where skips get sorted and reusables extracted. For example, a delivery of coloursteel cladding may arrive in a sturdy wooden crate and with additional sheets of "spare" or second grade coloursteel on top and below for protection - both very useful to a community but not viable for a builder to reuse.

The design of the initiative building and incentive programmes need to be done in partnership with Iwi and the industries. A government designed programme that consults with Iwi and the industries is not acceptable. Consultation is not partnership. Organisations need to be funded to participate in the partnership to ensure that the cost of participation is not a barrier to the involvement in the design programme. A central body tasked with implementing a circular and zero waste economy would ideally facilitate this to ensure government involvement uses experts in the relevant fields.

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?

Regulation is the best way to ensure these changes but other incentives such as reduced rates for undertaking upskilling, retraining and apprenticeships in all sectors of the design through to construction sector. We are not qualified to comment on the best financial incentives to be used.

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?

Work with the existing industries, local government, Iwi, Māori enterprises, Regional Development Agencies, Chambers of Commerce, Regional Skills Leadership Groups, training delivery organisations, community groups etc., in a true partnership model.

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?

Regulate it for all new builds and renovation, and all rental properties. Support the industries to upskill. Ensure housing is affordable for all.

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

It is a critical sector and the government needs to work in partnership with the sector and communities to develop the plans and implement rapid change throughout the industry.

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?

Train and fund advisory services. Every farm should be required to have an emissions profile. Meat and Lamb are training farmers to develop such profiles but only about 10 percent of farmers have attended

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

Implement pricing promptly.

Train and fund advisory services.

Establish transition hubs and a $1 billion regenerative farming fund. Business leaders have called for local 'Regeneration hubs' or transition hubs for 'sunrise sectors'. These hubs will make sure farmers have all the

information and choices available to them to shift production modes, and get funding for regenerative, organic extension services. They also call for linking these hubs to government funded 'transition banks' with revolving loan schemes, and other appropriate finance to de-risk the transition for farmers. Consider 3-year grant funding for farmers undertaking changed practices, as part of their $1 billion regenerative farming fund proposal, to allow farmers to gain experience in them.

85. What research and development on mitigations should Government and the sector be supporting? Rapid biogenic methane reduction.
A major new diversification fund is essential to incentivise farmers to move away from dairying. The public good benefits justify major investment by the government.

86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers? Through the use of a suitably-promoted internationally recognised labelling scheme - similar to the EECA labelling for domestic whiteware, or the FSC labelling for use of sustainable wood in paper products.

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?
(i) This is the only section of the ERP which has seriously disappointed us. We had been hoping that at last we would hear what He Waka Eke Noa has been planning. It seems as if the answer is 'very little'. This is not good enough. We know there are farmers who are working and succeeding at emissions reductions. Why isn't there a clear plan for the generalisation of practices that work, including **reduction of herd size and reduction of imported inputs and fertilisers?**

(ii) Dairy and other forms of intensive agriculture should be phased out as soon as possible from stony soils that require irrigation - mainly Canterbury, including the MacKenzie basin, and Southland.

(iii) Phase out and ban urea fertilisers.

(iv) Include agriculture in the ETS.

(v) **Price agricultural emissions in the Emissions Trading Scheme at the processor level from 2022.** This finally brings the sector into the ETS like the rest of the economy, and puts the burden on big companies like Fonterra, AFFCO, and the fertiliser companies to stimulate industry-wide change, rather than individual farmers. This could happen now.

(vi) Regional land use and emissions reduction opportunities Analysis of potential future variety of land use in terms of agriculture and forestry in particular can provide important new estimates of GHG reduction value of new approaches. For example, methane emissions from livestock agriculture can be significantly reduced by instead producing plant- based food, creating the same or greater income for land-owners and farm workers. This could lead to sustainable local communities and good economic outputs.

Similarly, analysis of potential for new native forest planting designed for long term future harvesting and use as building material can identify valuable opportunities. New financial

approaches to compensate current land owners for the value of the growing timber could include reverse mortgage style annual compensation of current investors.

Innovative analysis should involve local councils, land owners and communities, and could be tested in regions with different geographic and climate conditions to develop new methods to be applied in other regions. Nationally and internationally important methods for local analysis and action for reducing emissions can create a positive image of climate change mitigation work in New Zealand.

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?

Yes, as a minimum, but as well as diverting the organic waste from landfill, this needs to include work to reduce the organic waste being created by improving the design of buildings so less material is wasted, reduce the food wasted from households and the commercial and retail sector, and from food production. The reduction in the creation of food waste will then reduce emissions further up the chain of custody as well as biogenic methane. Education is needed on household waste and the impact on the environment.

Capturing the biogenic methane through landfill capture schemes is a sledge hammer approach. The investment in that infrastructure may be better spent in developing and implementing solutions to accept diverted organic matter, and move towards a ban on organics to landfill, and so may provide an opportunity to bring the ban on organic matter to landfill forward from 2030.

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)?

Yes, subject to the process for developing the initiatives being led by an independent entity with the involvement of key stakeholders which include: Community sector (i.e. Zero Waste Network), Māori (Para Kore and other rōpū), Territorial Authorities, WasteMINZ, relevant business sectors, consumer representatives, central government agencies etc.)

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

Systems and infrastructure need to be in place to provide options so that waste is not generated and therefore disposal is not required ie.:

1. National standard reusable packaging systems including quick/easy refill services - this needs investment into research, testing and implementation.
2. Ban (i.e. through product stewardship or levies etc.) the use and import of products/packaging that do not meet the new NZ standards which should include non-recoverable/single use packaging/products, .
3. Also have standards (for goods made in NZ and imported) that require products to be durable and repairable (right to repair initiatives) - also display information about durability/reparability on products (as for energy efficiency).
4. Encourage a share economy so that not everyone needs to own their own stuff, and ensure it is an equitable system that is run for no profit. This would need investment into research and development.
5. Support for producers in Aotearoa to give them access to high quality advice on packaging and resource use to support them to minimise the carbon emissions from

their products and chain of custody, and hence to remove the problem from the consumers.

6. There needs to be alternatives to landfill options that are free or very cheap to use and that are convenient to everyone, to drop off items for reuse, repair or recycling. A national community resource recovery network, such as the one being developed by Auckland Council would provide such a model.
7. Extremely rural areas also need to be taken into consideration where low density of population affects disposal options due to perceived cost, otherwise poor waste practices will continue.

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?
Yes. Could this be brought in regionally as solutions are developed?

93. Would you support a proposal to ban all organic materials going to landfills that are unsuitable for capturing methane gas?
Potentially. It depends on how much of the generated methane gas is collected at the suitable landfills, the cost of installing and/or improving the methane capture systems and how that money could be better spent on developing the infrastructure to provide alternative solutions.

94. Do you support a potential requirement to install landfill gas (LFG) capture systems at landfill sites that are suitable?
No. The money is better spent on developing the infrastructure to allow diversion to take place and systems for reducing the organic waste.

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?
Yes, but a national community resource recovery network is needed to provide convenient access to options to divert goods for reuse and repair.

96. Do you think transfer stations should be required to separate and recycle materials, rather than sending them to landfill?
Yes. They should also be required to separate and recover goods for reuse and repair, and not just for recycling. This will generate goods for, and encourage, the reuse/repair culture.

97. Do you think the proposals outlined in this document should also extend to farm dumps?
No. Farm dumps need to be made illegal. The chemicals they dump in offal pits and their rubbish pits contaminate the land and groundwater and this should be illegal.This should be clearly signalled with a target date, we suggest 2030 at the latest. The agricultural chemicals and farm plastics product stewardship schemes need to be implemented by the end of 2022, and the industry engaged in identifying the solutions that they need access to. Rural community-led resource recovery sites should be developed and funded, as part of a national community resource recovery network, to work alongside their communities to develop solutions.

98. Do you have any alternative ideas on how we can manage emissions from farm dumps, and waste production on farms?
Yes. See the answer to q. 97. Farmers should be liable, through the ETS for any emissions they produce, whether it be from farm dumps, burnoffs or otherwise, in the same way as all other

industries. Support needs to be provided to the farming industry to help them to measure, develop and implement a carbon reduction plan.

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

1. Allow resource recovery businesses and territorial authorities to claim the carbon credits for recovering products, packaging etc., and hence measure the true carbon footprint of their business.
2. National procurement requirements developed and implemented to ensure social and climate impact minimisation procurement for all central and local government services/goods, and guidance for businesses to use the same requirements. If good decisions/criteria are used at the procurement level this will drive behaviour/system change in service providers, producers and retailers.
3. Product stewardship schemes implemented for the existing 6 priority products and the development of a system/process to identify the other products that need schemes. The designs of each of these schemes are currently being developed by their industries in isolation. All scheme designs should be funded from the Waste Levy and run by an independent entity with resourced support from stakeholder representatives mandated to input into the co-design. There needs to be central government guidance and input, and not just oversight, on key aspects of the designs (i.e. data gathering systems, governance models, design process, legal research, fee options, collection/processing infrastructure etc.), collection of the products in convenient locations and multiple products accepted at the same locations.
4. Monofills could be used for waste streams that don't produce methane, leaving the landfills for mixed municipal waste. There are waste products like CCA timber, tyres, glass that could be placed separately in monofils. These would have to be double lined, secure and monitored.

REFRIGERANT 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?
We can't comment on feasibility, but we believe it is strongly desirable.

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? None.

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?
We advocate a total ban on such products, effective as soon as possible.

103. What are your views on utilising lower global warming potential refrigerants in servicing existing equipment?
It seems obvious that this should be done.

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?
(i) Encourage the use of smaller refrigerators for domestic use. The need for energy frugality will drive the acceptance of smaller refrigerators. There is no need for huge devices with complex functions like delivering ice.

(ii) Design houses that do not need air conditioners. The COVID pandemic is teaching us the importance of good ventilation.
(iii) Design well-insulated passive solar houses that need little or no extra heating input.

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?

We should increase our ambition, especially in the hope of stimulating other countries to do the same. We are in a civilisation-threatening situation. We need to use every possible lever to maximum effectiveness to recover climate safety.

We should not rely on any buffer that forestry may provide - but we should be using all policy and funding mechanisms available, to incentivise permanent native forest regeneration. Refer to our response earlier under Emissions Trading section:

"With the new research just released (mid Nov 2021) from NIWA and Pure Advantage on the higher carbon sequestration of permanent native/indigenous forests, there needs to be policy adjustments to:
- Incentivise and invest in planting permanent native forests for carbon sequestration, biodiversity values, and the future potential of high value native timbers managed in a 'Nature Forestry' approach as advocated by Dame Anne Salmond and many others."

We should also include "forests" that are not part of the "forestry industry". i.e. the natural environment/conservation estate etc etc. Similarly for other ecosystems that can potentially store more carbon (wetlands, estuarine zones etc). An exclusive focus on carbon, while not valuing biodiversity and other ecosystem services, produces an unwarranted bias towards exotic tree species.

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?

Train well-qualified farm workers as farm advisers to support agricultural transitions.

Train people as eco-foresters to care for developing native forests, and for pest control.

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

Billion Trees type funding for planting and pest control, but needs to cover the cost of planting diverse high value podocarp forests eg totara. Max $4k per ha Billion Trees funding was not sufficient to support transition to permanent native reforestation and instead had the unintended consequence of funding mass planting of pinus radiata.
Better ETS incentives.
Permanent forests category for native forests only.

Carbon look-up tables and measurement that better reflects the true carbon sequestration of diverse planted and maintained native forests, including the biodiversity and soil carbon benefits.

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

We need to transition away from clear-fell forestry with some urgency, toward coupe and continuous canopy harvesting of exotic plantations (pinus radiata etc).

We need to move the country towards Nature-based Forestry, exotic to native transition, continuous canopy harvest of exotic plantations (pinus radiata etc), selective logging of high value native timbers - retaining the biodiversity values and outcomes.

We advocate to maximise permanent native forests, because of the pressing need to restore habitat for many other native species. The ETS needs to value biodiversity as well as carbon.

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?

We support maximum afforestation anyway. We favour use of wood products in construction, and to a limited extent, in biofuel.

We support a nature-based forestry approach to harvesting - away from clear-fell, towards coupe and continuous canopy.

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?

Large-scale training and funding of nature-foresters that maintain the forests and undertake pest control.

Consider youth holiday camps to do pest-control under supervision. The high purposes of emissions reduction and native species protection might appeal to young people, and wilderness experiences are often very appealing. Some young people may remain committed for life to this ongoing voluntary work.

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?

We would like to see a strong emphasis on native reforestation. The forest is intrinsic to the identity of many of us, an almost sacred place. And on enhancing the biodiversity, resilience and carbon sequestration capacity of existing indigenous forests that fall outside the “forestry Industry”.

OTHER AREAS OF NEEDED ACTION.

- Ban all new exploration and mining of coal, oil and gas.
- Phase out and close existing fossil fuel mines and wells.
- Stop subsidising the fossil fuel industry, in the myriad ways the Government does; it is cooking the planet as well as wasting taxpayers money.
- **Research and analysis in Aotearoa that can stimulate emission reductions in other countries**

The effects of climate change in Aotearoa are of course much more dependent on the emissions from other countries (particularly the mega-countries China, India, USA, Russia, Japan, etc) than the local emissions in our country. We should of course reduce our emissions to net zero as prescribed by existing legislation, but it is worth noting that research and analysis of climate change impacts in the mega-countries can lead to stronger policies in those countries leading to significant reductions of the climate impact here. Science based analysis has driven policies around the world to the very emission reduction-oriented discourse at COP26. Even individual published papers can have an important effect on Ministers in governments. New Zealand can contribute to analysis of situations in any country as global databases with climate, population, economic and other data are accessible from any computer around the world.

It is proposed that a collaborative research network is established with appropriate government funding to start carrying out climate change impact and mitigation value analysis for large emission countries in collaboration with scientists and economists in those countries. The emerging published reports can influence the thinking about climate change mitigation in key Ministries in these countries and lead to faster mitigation actions in those countries. A government agency here, for instance ESR, could serve as the coordinator of the developing work. Active researchers in this field in the Nelson-Tasman area offer their input into the next steps.

- **Action on income and wealth inequity.** It may seem odd at first to recommend urgent action on inequity as part of a national emissions reduction plan. The rationale for this recommendation is:
  - We are entering a time of rapid transition and this will mean social stress. NZ has fairly severe levels of social inequity, worsening rather rapidly. Inequity corrodes social cohesion. This is a period when social cohesion will be vital. Lack of it will impede needed change and may result in failure of change which will be disastrous.
  - Some of the transitions will fall more heavily on people with low incomes. Compensatory schemes have been suggested. Far better to make wealth and incomes more equal.
  - Some mitigation and adaptation actions require outlay of money eg efficient light bulbs and appliances, e-bikes, home insulation. People on low income will be doubly disadvantaged in this way.

- **Development of consultative and democratic processes.**
  - **(i)** Dynamic Adaptive Pathway Planning has been developed for adaptation to climate change. It may also be applicable to some aspects of mitigation planning.
  - **(ii)** When politically difficult decisions must be made, eg allocation of carbon budget, consider Citizens' Assemblies and Participatory Budgeting.

Thank you for the opportunity to give our feedback on such a vital piece of government action.