P O Box 38 896
Wellington Mail Centre
Lower Hutt 5045
New Zealand
www.foodstuffs.co.nz

25 June 2021

Ministry of Transport
Transport Emissions
WELLINGTON

Sent by email: transportemissions@transport.govt.nz

Dear Sir/Madam

Submission on Hīkina te Kohupara – Kia mauri ora ai te iwi Transport Emissions: Pathways to Net Zero by 2050 Green Paper

1. This submission is made by Foodstuffs (NZ) Limited on behalf of Foodstuffs North Island Limited (FSNI) and Foodstuffs South Island Limited (FSSI), which are 100 per cent New Zealand owned retailer co-operatives. The regional co-operatives jointly own Foodstuffs (NZ) Limited (Foodstuffs) which represents the co-operatives interests in national policy and input on public policy matters.

2. The Foodstuffs co-operatives own and develop retail stores which are franchised to co-operative members. Our retail brands include PAK'nSAVE, New World, Four Square, Raeward Fresh, On-the-Spot, Henry's Beer Wine and Spirits, and Liquorland. Foodstuffs also has large transport operations, primarily servicing secondary freight to member stores.

3. Foodstuffs welcomes the opportunity to submit on the Hīkina te Kohupara – Kia mauri ora ai te iwi Transport Emissions: Pathways to Net Zero by 2050 Green Paper (Paper). As a 100% New Zealand owned and operated company, we have our community's interests at heart along with our important role as kaitiaki for the environment.

4. Information on Foodstuffs carbon emission reduction commitments and initiatives can be found in Appendix 1.

Summary

5. The Paper is wide ranging and contains a huge number of options for transportation emission reduction. However, Foodstuff's submission is primarily focused on Theme 3: 'Supporting a more efficient freight system'.

6. While Foodstuffs supports some of the proposals in the Paper, it is our position that the major focus should be on the electrification of light vehicles as these vehicles already exist in the marketplace today. Alongside this, the Government should consider the infrastructure support (such as charging stations for light vehicles) and the levers to encourage this type of investment.

7. Foodstuffs has concerns that some of the proposals in relation to heavy freight are overly ambitious and rely on the development of commercially viable technology, which does not currently exist today nor will do so in the short term. It is anticipated that further consideration of the proposals in the Paper will be considered as part of the public consultation on the

National Freight Strategy and National Supply Chain Strategy. It is not clear if these will be two separate strategies or one combined strategy. Either way, we look forward to participating in that consultation process. Foodstuffs' transport personnel have been engaged with Ministry of Transport's in its initial industry engagement.

8. Addressing climate change requires transformational and fundamental change to the transport system and New Zealand needs to take a strategic approach to reducing transport emissions.

9. While we have provided comments on several the consultation questions, we consider there to be duplication and interdependencies between several of the questions.

Consultation questions

Question 1: Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?

10. Foodstuffs generally supports the principles outlined in the Paper and agrees that the transport sector will play a lead role in meeting New Zealand's 2050 net zero carbon target. However, Principle 2 and Principle 6 focus on zero transport emissions and while we agree with these aspirations, they are ambitious and reply on technologies that are yet to emerge or be proven viable in a commercial setting. Consequently, caution is required as a total elimination strategy may not be possible, but we do support the work towards a net zero emission strategy and acknowledge that there is no one pathway to get there.

11. To achieve New Zealand's goals, it is essential that New Zealand makes changes where these can reasonably happen in the short term. Due to the complexities in decarbonising the heavy vehicle fleet, we support an initial focus on moving light vehicle fleet to electrification and the government supporting this initiative to help to drive transformative change.

Question 2: Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions?

12. The Government has an important role in facilitating the reduction generally in transport emissions. This includes matters such as facilitating the development of electric vehicle (EV) charging networks and taking steps to encourage the uptake of EVs in the light vehicle fleet. What is less clear is what the Government's role will be in the development of a more efficient freight system, particularly as there will be commercial considerations at play. The Paper refers to the potential need for new regulatory tools to help meet the net zero target by 2025. We look forward to receiving further detail in the public consultation on the National Freight Strategy and the ability to provide feedback as part of the development process.

13. Many of the recommendations in the Paper require further investigation. For example, an incentive could be to exempt Road User Charges for low/zero carbon vehicles, but what would the impact of this be in terms of the reduction in funding for roading improvements and maintenance, which also minimises carbon reduction? Many of the upcoming Governmental decisions will have contesting considerations and it is important that the wider implications of each proposal is considered and a balanced approach is taken to any decisions.

14. The Government will have to ensure that a holistic approach is taken to any decisions to have a net zero transport emissions by 2050. It is commendable to see that the Ministry of Transport and Ministry of Business and Innovation have worked together to issue a joint consultation on 'Increasing the use of biofuels in transport: consultation paper on the Sustainable Biofuels Mandate' (Biofuel Mandate). It is important that government departments do not work in silos when it comes to consideration of levers to reduce carbon emissions.

15. The Paper tends to follow approaches that have been trialled or have had some form of adoption in overseas jurisdictions. We encourage following international developments in the decarbonisation of the heavy freight vehicles and believe that new options may develop over time. However, caution must be taken with consideration of proposals because, as the Paper states, the feasibility of applying many of the initiatives within a New Zealand context must be studied in more depth. We welcome further opportunity to provide further feedback when more detailed policy proposals are consulted on.

16. Foodstuffs supports the proposal that Government should make it easier for the private sector to reduce emissions by providing certainty and early notice of upcoming decisions that will impact businesses. This is imperative with any decision for increased regulatory intervention in the private sector.

Question 3: What more should Government do to encourage and support transport innovation that supports emissions reductions?

17. As referenced above, New Zealand will be dependent on innovations from international markets. As a lot of the proposals in the Paper require further analysis, Government should not decide on one particular pathway or technological approach for transport innovation too early in the investigation phase as this could limit options for the future. Technological developments are happening quickly internationally so the Government should be open to alternative technologies, should they emerge.

18. Initial priority should be given to transport innovations that are currently available and the focus should be on areas where changes can be made in the short to immediate term. The Government should regularly review initiatives to see if they are working. For example, after a reasonable period the Government should review the Clean Car Discount scheme to assess if it has it been effective in achieving its objectives and if not, alternative approaches should be considered.

Question 4: Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?

19. The changes to the resource management framework are yet to be formally introduced, but Government has advised there will be three new pieces of legislation: the *Natural and Built Environments Act* to provide for land use and environmental regulation, the *Strategic Planning Act* to integrate with other legislation relevant to development, and require long-term regional spatial strategies and the *Climate Change Adaptation Act* to address complex issues associated with managed retreat and funding and financing adaptation. We support the general direction of these reforms and look forward to further detail. The legislative change should allow for better integration of transport, land use and urban development to reduce transport emissions. It is hoped that this integration will allow for improved decision making that impacts transport emissions. For example, a current issue is that consent may be granted to build a new supermarket, but then the Council limits the times that heavy freight vehicles can make deliveries to that store. Having to operate with shorter delivery schedules adds to congestion on the roads at peak times, requires us to have larger fleets to service stores within the delivery window and leads to higher carbon emissions. If delivery windows were widened this could reduce heavy freight emissions and light vehicle carbon emissions too. This may also reduce the need for as many trucks in the fleet and free up capital for investment in newer lower emission vehicles.

20. Foodstuffs is in support of consideration of a strategy to promote vehicle sharing to minimise single occupancy trips as any improvements to the number of light vehicles in the light vehicle fleet will minimise time in traffic for heavy freight vehicles and reduce the resultant emissions.

Question 6: Pricing is sometimes viewed as being controversial. However, international

literature and experiences demonstrate it can play a role in changing behaviour. Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?

21. We appreciate the Transport and Infrastructure Committee is holding an inquiry into congestion pricing in Auckland, but we were unable to commit resources to reviewing this matter so could not submit on this topic. We envisage that we will participate in in any further consultation on this topic. Foodstuffs has previously supported congestion charging pricing in principle, on the basis it would reduce traffic congestion and improve productivity within the transport sector.

22. Any pricing levers (or indeed any regulatory intervention) may have potential impacts for consumers as increased costs may need to be passed on to consumers. This means that this could potentially create inflationary pressures, and these in turn may impact the more vulnerable sectors of the community. Unless the Government puts in place compensating measures this will likely conflict with the Just Transition principle.

Question 7: Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?

23. Foodstuffs is of the view that several the proposals to reduce freight emissions are extremely ambitious when the technology has not yet been proven and products are not yet commercially viable. It would be best to focus on what can be achieved in the short-term, such as mandating that any new imported heavy freight vehicles must meet the EURO 6 minimum standard. In parallel to these achievable proposals, further investigation and trials can take place on other options such as electrification of the heavy vehicle fleet, and potential use of green hydrogen or sustainable biofuels.

Question 10: The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be prioritised?

24. The freight supply chain is central to running Foodstuff's business efficiently. Foodstuffs already undertakes a number of the actions proposed in the Paper, including implementing logistics optimisation systems to reduce fuel use using a combination of initiatives from consolidating distribution centres to rolling out digital routing technology, increased load efficiency and driver training programmes. If other organisations are not already undertaking these initiatives, they should be encouraged to adopt them.

25. The International Transport Forum suggests potential measures to reduce emissions but the feasibility of applying these initiatives within a New Zealand context has to be studied in more depth. We look forward to the opportunity for more detail and further opportunity for input of the National Freight Strategy and National Supply Chain Strategy. However, it is not clear if there are two distinct strategies or just one and clarification is sought on this point.

26. We support the concept of shifting some freight movements to less carbon intensive modes such as rail and coastal shipping but anticipate the opportunity to do this for secondary freight movements (warehouse to retail store) will be limited. Road transport offers much greater flexibility and efficiency in terms of the available transport routes, delivery scheduling, speed of delivery, and reduced handling of the goods.

27. The Paper recommends consideration of opportunities for the collection and better use of data to improve efficiencies in the freight system and business collaborations to reduce emissions in logistics. Current competition law may be a barrier to commercial operators collaborating to a greater extent and so also requires consideration.

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Question 11: Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

28. The possible key actions are comprehensive, and Foodstuffs supports a number of these, specifically the introduction of CO_2 standards and the introduction of a mandate that all new imported trucks must meet the EURO 6 standard. Support is also given to expanding the Road User Charge (RUC) exemption for heavy electric vehicles to other low emission fuels. However, there would be concern if reduced RUCs revenue means a further deterioration of New Zealand's roads, particularly in the South Island. While we use adapted cruise control technology on our long-haul freight lines to reduce carbon emissions, poor roading with potholes or narrow roads means that we cannot optimise the potential of this technology Improved maintenance on existing roads is essential to help all road users minimise vehicle emissions. We would be keen to see greater investment in maintenance of existing roads. This is distinct from any consideration of new roading infrastructure.

29. We understand that Waka Kotahi NZ Transport Agency's Operator Rating System (ORS) is due to be revised. Could the ORS be expanded to take into consideration Operator emission reduction programmes to encourage minimisation of carbon emissions?

30. Foodstuffs supports further research into the development of decarbonising fuels for heavy freight to better understand the options and impacts. We are currently considering our response to the consultation on the Biofuel Mandate but anticipate the more detailed discussion that is occurring around that consultation process will inform the Ministry of Transport's wider transport strategy.

31. There is insufficient detail about decarbonisation options for heavy freight vehicles and how these would be commercially viable. Consideration should be given to the whole lifecycle of any alternative options. For example, if green hydrogen utilises more energy to produce than it will save with emissions reductions is it a viable option? If there is a decision to move towards hydrogen vehicles, are there any health and safety considerations?

Question 12: A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

32. The Paper notes the challenges in the freight sector. These challenges are valid. Some of the main challenges include:

    a. Any low / zero-emission heavy freight trucks need to be in general production, commercially viable and suitable for business requirements.

    b. Electrification of heavy trucks is not a simple solution to decarbonisation. Electric trucks will weigh significantly more, and take significantly longer to recharge/refuel, compared to current diesel trucks. They will also require charging infrastructure, which will require additional investments and management of this. Foodstuffs is trialling 3 electric trucks with EECA's support. These trucks are not suitable for long haul freight and careful route planning is required to allow for charging. For example, the refrigerated truck takes approximately 7 hours to recharge. As such, heavy charging freight stations for shared use would not currently be a feasible solution due to the length of time to charge and necessity for efficient freight planning.

    c. Use of alternative fuels is not a simple solution to decarbonisation. New Zealand has a limited supply of green hydrogen and the Biofuel Mandate notes Government is currently investigating how advanced biofuels can be produced in New Zealand.

33. All the above generate concerns about cost implications for the freight industry, supply chain and therefore potentially for the end consumer.

34. While the Government has obligations to set future emissions budgets, it should allow flexibility for budget 2 and 3 to allow for learnings from trials, here and overseas, and technological developments that will be sure to unfold in the future. For example, one proposal for consideration for the emission budget recommendation phasing out registration of heavy vehicles by 2035. This appears unworkable because there are no suitable heavy freight alternatives available now. There is support for a clear plan for next 5 years, then beyond that is speculation and it is recommended that the plans are refined closer to the time.

35. The Paper acknowledges that there may be social impacts with transitioning to a net zero carbon transport system and provides the example that some people could face higher transport costs. People may also end up paying more for goods if increases in costs cannot be absorbed by businesses. In the circumstances, the costs and benefits of the different options need greater analysis and consideration.

Question 13: Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway to you think Aotearoa should follow to reduce transport emissions?

36. We are unable to support one particular pathway without further information about the different approaches. Due to the challenges in reducing emissions it is expected that a number of levers, potentially from more than one pathway, will need to be utilised if the Government is going to meet its emission reduction targets.

37. The avoid, shift and improve strategies are all valid and work towards minimising emissions. As stated above, due to technological constraints in the heavy vehicle market, it is recommended the Government focus on reducing transport emissions where viable commercial technologies already exist, such as the electrification of light vehicle fleet, encouraging walking and cycling and expansion of public transport options before reliance on heavy freight initiatives which may not be workable.

Question 14: Do you have any views on the policies that we propose should be considered for the first emissions budget?

38. Our comments are limited to the proposed first emissions budget for theme 3, supporting a more efficient freight system. It is not clear if there will be the development of a National Supply Chain Strategy as well as the development of a National Freight Strategy. Both strategies are referred to separately in Table 6 of the Paper regarding policies that should be considered for inclusion in the emissions. We are keen to participate in the consultation process for both strategies and believe it is prudent that the first emissions budget focuses on identifying opportunities for improvement, rather than making decisions without full consideration of the options and potential impacts.

39. Foodstuffs support the investigation of the best opportunities for decarbonising trucks, including the option to introduce $C0_2$ standards for trucks. However, we do not support targeted investments in public infrastructure for fast charging heavy vehicles. Charging for heavy vehicles is best left as the responsibility of the owner of the vehicle but there is merit in considering a government subsidy for the building of the infrastructure. Public charging hubs will not work on a commercial basis at this current time. It is important that the truck is charged at the appropriate time and the driver is accommodated. The Government should focus on the development of renewable electricity infrastructure should demand for electricity outweigh supply.

40. Moving heavy freight vehicles to low emissions or zero emissions is considerably more difficult than undertaking decarbonisation of the light vehicle fleet, given the limitations with size and

weight and charging time for electric batteries and constraints with the supply of green hydrogen and sustainable biofuels. Foodstuffs is not in a position to recommend any policy direction without further information being made available. Foodstuffs has worked with EECA to do a trial with three electric trucks, none of which is suitable as a long-haul freight vehicle. The trial has revealed that there is a long way to go before Foodstuffs could commit to electrification, even for small to medium freight vehicles, due to cost and other operational issues. Foodstuffs is currently in the formative stages of considering our involvement in a hydrogen truck trial to see what can be learnt from that process.

41. While Foodstuffs supports further research into green hydrogen and sustainable biofuels options, Government needs to remain open to other technological developments that may emerge internationally, and its strategy must allow for some flexibility in the pathways to net zero emissions for the heavy vehicle fleet.

42. The first budget proposes implementation of a biofuels mandate. The Biofuels Mandate consultation has recently commenced and we look forward to contributing to that process.

43. Foodstuffs supports in principle improvements and investment to the rail network to get trucks off the roads but believes there are bigger challenges to address including the relative costs and efficiencies of the alternate modes, and the need for timeliness of product deliveries.

Conclusion

44. Foodstuffs supports the move towards a net zero carbon system and is currently committed to reducing its own carbon emissions. Foodstuffs submission largely focuses on theme 3: 'Supporting a more efficient freight system'. Foodstuffs supports some proposals in the Paper to decarbonise New Zealand's heavy vehicle fleet, however, there are a number of proposals that require further exploration and analysis.

45. While Foodstuffs supports a number the proposals in the Paper regarding a more efficient freight system, it has concerns that some of the proposals in relation to heavy freight are overly ambitious and rely on the development of commercially viable technology, which does not currently exist today nor will do so in the short term. In the circumstances, Foodstuffs supports the focus being on decarbonising the light vehicle fleet as a priority. It is recommended that the Government focus on proposals that are attainable in the short term, such as a move to mandate that any imported heavy vehicle fleet must meets the EURO 6 standard. We do not support targeted investments in public infrastructure for fast charging heavy vehicles. Charging for heavy vehicles is best left at the responsibility of the owner and centralised heavy vehicle charging hubs will not work due to commercial considerations. Furthermore, at this point in time we do not even know which technology is going to be used for freight so how can infrastructure decisions be made ahead of those decisions?

46. Many of the recommendations in the first budget refer to the development of a National Freight Strategy and a National Supply Chain Strategy. We look forward to providing feedback as part of the consultation process as this develops.

47. We agree with the Paper that addressing climate change requires transformational change to the transport system and that New Zealand needs to take a strategic approach to reducing transport emissions.

Yours sincerely

Sarah Tuohy
Public Policy Manager

Appendix 1: Foodstuffs background information

48. Every day, thousands of New Zealanders walk through the doors of our stores or click into our online shopping experiences. Our supply chain is one of the biggest in the country and plays an important role in supporting our objective to be a customer driven organisation. To deliver the scale and efficiency our customers need, each company has a network of distribution centres, although these have consolidated over time, and Foodstuffs utilises its own fleet of trucks driven by employees as well as contracting with owner drivers and third-party freight companies.

49. In 2019 Foodstuffs joined the Climate Leaders Coalition. The coalition is a group of more than 100 New Zealand companies working together to tackle climate change and help New Zealand become a low emissions economy. As part of this coalition, we're committed to measuring and reporting our carbon emissions annually and setting 5-year carbon reduction targets. Measuring and reporting helps us to understand our carbon footprint, and our carbon inventory is audited by an independent third party to verify its accuracy. We've also committed to aligning our carbon emission goals with the Climate Leaders Coalition 2019 Statement. This means, starting with our baseline footprint in 2020 we have an emissions reduction target of 21% by 2025.

50. Foodstuffs major emission sources arise from our use of energy (electricity, diesel and petrol), and refrigerant gasses, and the waste generated from our activities. We are committed to reduce emissions in each of these areas.

51. In the transport space initiatives to reduce light fleet emissions includes the introduction of flexible remote working arrangements for support staff, enabling them to reduce the amount they commute to work, more digital meetings to reduce air travel, and the installation of 24 EV charging stations at our new Auckland campus to facilitate adoption of electric vehicles (EVs). We are also committed to transitioning our car fleets to lower emission vehicles/EVs over the medium-term future. Additionally, Foodstuffs continues to promote the adoption of EVs to our customers through provision of 92 Fast Charging stations to date at stores across the length and breadth of the country.

52. There is also a big focus on reducing emissions through improving the efficiency of our freight operations. The supply chains in both the North and South Island are actively implementing logistics optimisation systems to reduce fuel use using a combination of initiatives from consolidating distribution centres to rolling out digital routing technology, increased load efficiency and driver training.

53. Foodstuffs is also trialling three electric trucks with Energy Efficiency and Conservation Authority's (ECCA) support. One of the trucks was the first electric powered refrigerated truck in New Zealand. It was not possible to purchase a fully electric refrigerated truck, because it did not exist in the marketplace, so we had to custom build it. Our three electric trucks compliment the 28 electric store delivery vans which have now driven over 1million kilometres since their introduction in 2016.

WHANGANUI DISTRICT COUNCIL
Te Kaunihera a Rohe o Whanganui

25 June 2021

Ministry of Transport
Via email: transportemissions@transport.govt.nz

Re: Hikina te Kohupara discussion document

The Whanganui District Council ("the Council") welcomes the Ministry of Transport's discussion document: **'Hīkina te Kohupara – Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050'** which sets out potential pathways to phase out emissions across the transport system.

This year, the Council adopted a new **'Climate Change Strategy – Te Rautaki Huringa Āhuarangi'**. Our strategy shows how the New Zealand European and Māori world views can come together to tackle climate change in a uniquely Whanganui way.[1]

Drawing on our strategy, the Council **supports** the themes and principles outlined in the Ministry's discussion document, in particular:

- **A whole-of-system approach to transport decarbonisation** – an integrated view which improves wellbeing and liveability at its core.
- **Integrating te ao Māori worldview** – acknowledging the interconnectedness of all living and non-living things.
- **Supporting a Just Transition** – making the transition fair, equitable and inclusive for all people.

This transition requires adequate support and funding streams to allow local government to make strategic, thought-out investments over the long-term.

With the transport sector making up 49% of Whanganui District's non-biogenic methane CO_2-e emissions, the Council **recognises** the significant role transport will play in decarbonising our economy.

Whanganui, with pockets of rural and isolated communities, faces particular challenges in the transition to a low carbon transport system. The options are more limited for our rural communities who rely heavily on fossil fuel transport, both on and off-road, every day. In addition, Whanganui has a relatively low average income per family compared to the national average. The **Council would like to see more detail** on how the specific pathways and policies will build community resilience through new economic opportunities for businesses and job creation across sectors (i.e. transport, energy services) and more specifics on how the Government plans to mitigate the impacts to low income households.

The **Council is interested** in the Ministry's plan for ongoing Iwi/ Māori engagement and strongly encourages consultation with the iwi and hapū of Whanganui.

[1] Whanganui District Council, Climate Change Strategy, 2021 https://www.whanganui.govt.nz/Your-Council/Plans-Strategies/Strategies/Te-Rautaki-Huringa-%C4%80huarangi-Climate-Change-Strategy

In response to consultation Question 1: The Council broadly supports the Principles outlined in the paper – noting our particular interest in:

1. **A strategic approach** – prioritising initiatives with impact while delivering value for society.
2. **Coordinated action** – between central and local government, iwi, communities, the private sector, industry groups and citizens.
3. **A Just Transition** – in particular, the costs and benefits, and more detail on the specific opportunities and distributional impacts for low income households and isolated communities.

Research shows that 60% of New Zealanders do not realise that their transport use is their biggest carbon foot print source.[2] As such the final Principle in the report, 'Principle 7 – Innovation and technologies' could be more explicit that a **deep understanding of how and why people act** i.e. behaviour change – is needed to create enduring change – rather than relying too heavily on a single technology fix.

Further support for behaviour change and information campaigns will be needed – for example, EECA's lower energy transport campaign[3] which aims to change the way people think about how they use transport is a good example. There are co-benefits to these measures such as improved health – the Council would like to see complementary measures, and further investigation of the available tools as outlined on p. 25 of the document.

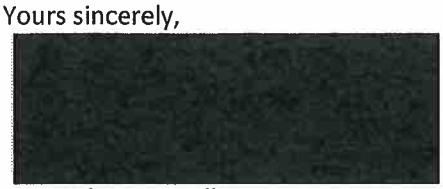
In response to consultation Question 3: what more should Government do to encourage transport innovation that supports emissions reductions. There may be opportunities for the government to support smaller scale trials or pilot in the regions. It can be difficult for smaller business to make a business case and de-risk a project, if it is a new technology. For example, funding or technology demonstrations for new and emerging technologies or feasibility studies in – rather than just 'ready-to-go' projects. In addition, funding, tools and information for businesses and organisations to measure and monitor their transport footprint as the first step on an emissions reduction pathway.

In response to consultation Question 4: many of the listed actions would impact local authorities' operations. We invite further consultation as the work progresses to better understand the costs, benefits and impacts of these actions before further decisions are made.

In response to consultation Question 10: the Council notes its interest in the National Freight Strategy being developed and welcomes consultation with local business, industry and iwi with particular regards to Te Pūwaha - Whanganui's Port Revitalisation and how this connects to the national system.

The Council is pleased to see the breadth of work happening across the transport sector (p 127).We invite ongoing discussions with central and local government to ensure coordination.

Yours sincerely,



Hamish McDouall
Mayor
Whanganui District

Kym Fell
Chief Executive
Whanganui District Council

[2] EECA, Gen Less research https://genless.govt.nz/moving/lower-energy-transport/
[3] EECA, Gen Less Lower Energy Transport campaign: https://genless.govt.nz/moving/lower-energy-transport/

Submission on:

Hikina te Kohupara – Kia mauri ora ai te iwi

Submission from:

[redacted]
New Zealand
Ph[redacted]

How we move about the planet, over the last 100 years, has been driven by the immensely powerful fossil fuel industry and associated automobile industry. An industry that has known for over 40 years the damaging consequences of burning fossil fuel. Funding these same corporations to get us out of this mess, with the development of Biofuels and Hydrogen, will not succeed. Shell for example has said they 'will continue with fossil fuels until getting subsidised to develop alternative fuels.' History repeating itself. This BAU approach will not succeed. The environmental costs, carbon footprint of production etc. are well documented, making this avenue of thought, a success for profit driven corporations only, and will not address the fundamental problem of over consumption associated with climate change.

A massive move away from how and why we move must be undertaken. A government would do well to take this approach as its core objective. There will be no macro solution to climate change formulated on a sector by sector basis. The inter-relationship of these sectors requires micro approaches, best driven from the ground up, by local endeavour, for the benefit of our people and our land.

Avoid, Shift, Improve – while a worthy framework, **Avoid must not be a token gesture.** This framework is very reminiscent of the **Reduce, Reuse, Recycle** framework. It is imperative to look at what happened with this (extremely sound) objective. A lesson must be learnt. The first and most important idea was Reduce, however this idea had a negative impact on rampant profit making by reducing what we consume; Reuse falling under the same umbrella. These two important ideals were carefully side stepped. To keep us all happy we rushed around facilitating recycling, this had a huge 'feel good' benefit to our consuming, however we are now all painfully aware of the futility of recycling as a solution and the environmental disaster of our rubbish. Note that most of the rubbish produced are fossil fuel products. What is needed is a decisive reduction in consumption of the planet's finite resources. **AVOID must be at the forefront of the plan**, in fact **Shift and Improve are counter productive to achieving our goals,** wasting time that we do not have.

'Just transition', in reports such as this and the Climate Commission Report, **are words tacked on to reports that do little to ensure an actual just transition.** Going forward, a focus on social justice will need to be centre. Corporate influence on government decision making is counter to achieving this. Solutions to climate change will need to be micro not macro. Micro solutions, driven from the ground up, have never been more attainable than now with the use of technology. Covid is a great example of this, and has gone a long way in showing up the flaws in our current corporate driven governance. A just transition will have multi-faceted economic benefits along side social gains.

What role can the Government play?

- **Reduce the speed** in which we travel to 80km. This an easy action, not expensive and has flow on effects to our health and wellbeing, while reducing fuel consumption. This would have a flow on effect for cycling in regional areas. We have enough time to move slower, it is resources we are running out of. This can be done now.
- **Reduce spending** millions of dollars on roads under the (corporate lead) guise of safety improvements, cutting great swaths of land and trees to soften a curve in a road. In fact, the traffic goes faster and faster with these improvements. Live within our means and our real needs. Spend money on education, maintenance, signage, monitoring technology.
- **Engage in electric railcars for regional areas** where infrastructure already exists. Have charging stations for railcars been examined? Why can't we catch a train from Dunedin to Christchurch for example? Possibly, if Fonterra was not monopolising the railway line daily moving coal from Southland for its dirty (and unnecessary) dairy activity, this could be quickly affected.
- **Provide free public transport and regain control of this infrastructure.** Privatisation as a cost saving is a myth. Too much public money flows out of this country from this misguided macro approach to governance.
- **Invest in technology**, sourced locally, for micro solutions and promotions. Car sharing apps have been suggested and should be backed up with penalty for single passenger car journeys. GPS in cars to monitor speed, this could be done through car manufacturers to avoid political backlash.
- **Invest in education campaigns and incentives**, driven and inspired by our people for our people, not for corporate agendas, with clear, consistent, and accurate information, to help people step away from their love affair of cars. Government as influencer is immensely powerful. It is about attitude, and we need a team effort. Do not use the excuse 'we mustn't alarm the people', the people are already alarmed, especially about the inaction and the continued influence from corporate lobbying.
- **Always examine the micro solution**. Freight of food around the country is a great example of the failure of the macro solution. By having multinational corporations controlling our food chain, we have ended up with large distribution centres distributing to car centric Supermarkets. A vegetable grown in Nelson for example will travel to Christchurch to be 'processed' then travel back to Nelson for sale in the supermarket. The infra structure around this lunacy is immense and has cost the country a fortune. We need to rearrange our systems of food supply and related transport with the simple solution of sourcing food locally where possible, eating seasonally and consuming to suit these requirements. Imported food should be restricted to foods not able to be grown Aotearoa. Movement of food would be greatly reduced. The government would incentivise this simple solution.
- **The transformation of transport is directly linked to the transformation of agriculture** to achieve the above improvements in our food chain. The industrial dairy industry is an example of the failure of corporate driven macro solutions. It is an environmental disaster impacting directly on the destruction of our environment, directly on the health of our people, creating unnecessary over consumption of fossil fuels in both its transport and production. All to provide a product that is not necessary for our life on earth. A sustainable and regenerative dairy industry must be supported on a local level, we do not need a corporate owned agriculture sector.
- **Reduce dependency on multinational corporate consultancy** that offers up self serving advice not necessarily benefiting Aotearoa. For example, our former Ministry of Works is

now operated by an aggressive multinational corporate, when they took over, the first thing they did was start lobbying for a new harbour bridge for Auckland. Not because we needed one, but because they 'have the expertise'. They suggest that we do not have this expertise within Aotearoa, but this is a misconception. These multinational consultancy firms have the front row seat in procurement of tax funded projects, both nationally and locally, bleeding taxpayers money, at an extraordinary rate, out of the country, while outsourcing lower level jobs to maximise profits; working our professionals to the bone, often resulting in unnecessary career changes. Again, let's look a micro solutions, for example, test the water and provide a lane for cyclists on the Auckland harbour bridge. Use local ingenuity to strengthen the bridge. Create an electric foot/bike barge along side the bridge – there's an opportunity for a local business. Ground up micro solutions.

At present Governments are too influenced by multi-national corporations with their own profit driven agendas. It is this influence that has contributed to a state of climate emergency, and unsustainable pressure on the earth's resources. This corporate influence has attacked all areas of our lives, from health, food production, through to infrastructure, costing our economy dearly. A multi-disciplinary approach is needed where the social and environmental implications are foremost in any decision making. Discussion must be inclusive, honest and come from the tangata whenua, the people of the land.

MTA Submission

To the Ministry of Transport on Hīkina te Kohupara - Transport Emissions: Pathways to Net Zero by 2050 consultation

25 June 2021

Dear Sir / Madam

Submission: Transport Emissions: Pathways to Net Zero by 2050

This submission is from:

Motor Trade Association (Inc)
PO Box 9244
Marion Square
Wellington 6141

The contact person in respect of this submission is:

Name: Greig Epps
Title: Advocacy & Strategy Manager
Ph: (04) 381 8816
Email: greig.epps@mta.org.nz

Thank you for the opportunity for MTA to provide comment on *Hīkina te Kohupara* regarding the views of, and its effect on, the automotive industry.

Yours sincerely,

Greig Epps
Advocacy & Strategy Manager

Introduction

The Motor Trade Association (Inc) (MTA) was founded in 1917 and in 2017 celebrated 100 years of trust with the NZ motoring community. MTA currently represents approximately 3,800 businesses within the New Zealand automotive industry and its allied services. Members of our Association operate businesses including automotive repairers (both heavy and light vehicle), collision repair, service stations, vehicle importers and distributors and vehicle sales. The automotive industry employs 57,000 New Zealanders and contributes around $3.7 billion to the New Zealand economy.

General Comments

MTA is an automotive industry champion that:

- recognises the need for pragmatic action to address climate change challenges
- recognises low carbon emission vehicles and EVs are an important part of that action
- has the expertise to lead in defining:
    - future uptake of low emission vehicles including EVs
    - motor industry emission reduction targets.
- NZ must look at all policy options, adopt all possible technologies, and influence all relevant actors (Government, business, and consumers)
- we need clear timing and implementation of all relevant policies to ensure a just transition
- businesses require stable, predictable policy to invest in delivering NZ's 2050 climate targets.

MTA agrees with the 74% of people who responded "Yes" to the question "Do you support the Government's objective to reduce New Zealand's CO_2 emissions?" in a recently commissioned consumer survey.

MTA recommendations for policy initiatives

1. **Technology:**
    a. MTA does not support committing to an ICE ban. Negative approaches to the problem could hamper behaviour change and it is not clear that Kiwis, while supporting action on climate change, support this specific proposal[1]. We should leverage improving ICE drivetrains technology for as long as possible.
    b. Encourage emissions reductions through a mix of fuels and drivetrains (hybrid, plug-in hybrid electric vehicle (PHEV), biofuel blends in the main fuel supply, hydrogen in heavy transport, etc).
    c. Support the roll-out of accessible and convenient charging infrastructure (based on location and including easy-to-use consumer payment systems).

[1] Research conducted on behalf of MTA asked, "Do you support the approach of removing petrol and diesel driven vehicles?". The results showed a close split – 52% saying yes and 48% saying no.

2. **Behaviour:**
    a. Provide targeted financing packages to support household uptake of low emission vehicles (purchase support incentives, tax breaks, etc).
    b. Introduce a coordinated end-of-life waste programme for vehicle scrappage, which includes interlinking existing or to-be-developed waste management schemes and a financial incentive to vehicle owners to dispose of older vehicles.
    c. Introduce an emissions testing regime for in-service vehicles in the existing fleet to ensure all drivers are better educated about the emissions profile and impact of their vehicle.
    d. Educate and support vehicle owners (who cannot shift to a replacement vehicle) to maintain their current vehicle to minimise the deterioration of emissions over time (eg replace fuel filters, exhaust sensors, and maintain catalytic converters)
    e. Introduce accelerated depreciation allowances for industry fleet vehicles, Government vehicles and rental fleets, to facilitate the supply of the used EV fleet for household purchase.
    f. Introduce differential road user charges to incentivise take up of low CO_2 emission vehicles including hybrid (ICE/Electric) and EVs.
3. **Regulatory:**
    a. Coordinate the timing of import restrictions on vehicles with the expected roll-out of alternative transport options, such as improved public transport and active modes (cycling)
    b. Coordinate product stewardship schemes.
    c. Work with education and immigration authorities.
4. **Mitigating risks:**
    a. Implement permanent support for firm-based training, such as 'Apprenticeship Boost'.
    b. Develop support plan for Just Transition for affected businesses.
    c. Recognise the supply chain risk - New Zealand sources vehicles from offshore supply with time lags in the case of used imports. An ICE ban would restrict the supply options available for businesses and communities. ICE solutions will remain sole viable options for a long time, especially in industry and agriculture.

Consultation Questions

1. *Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?*

MTA supports the principles in Hīkina te Kohupara.

We recognise the need for pragmatic action to address climate change and that our sector has a key role to play to achieve targets. Co-ordinated action is key to achieving New Zealand's zero carbon targets. New Zealand must look at all policy options, adopt all possible technologies, and influence all relevant actors (Government, business, and consumers).

MTA's view is that the Government seek and consider industry knowledge immediately to adopt realistic and achievable goals and strategy. Government must form a strong industry partnership to achieve these goals.

A Just Transition is non-negotiable; people who already experience social/economic disadvantages ***will*** be affected as will businesses in the transport sector. A Just Transition should also look at the potential impacts to New Zealand SMEs. Businesses require a stable, predictable policy environment to enable investment in ways that deliver on the country's 2050 climate targets.

The principles set out in Hīkina te Kohupara align well with the position taken by MTA in its submission on the Climate Change Commission's draft advice in early 2021.

2. *Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions?*

In MTA's view both central and local government have a critical role to play in addressing climate action.

MTA's recommendations for policy initiatives include:

- Introduce an emissions testing regime for in-service vehicles in the existing fleet to ensure all drivers are better educated about the emissions profile and environmental impact of their vehicle. If someone can't afford a replacement, low emissions vehicle, then they should at the very least keep their existing vehicle maintained to mitigate emissions deterioration over time.
- Coordinate the timing of import restrictions on vehicles with the expected roll-out of alternative transport options, such as improved public transport and active modes (cycling).
- Coordinate product stewardship schemes to take a "whole-of-vehicle" approach[2].
- Get old vehicles off the road – introduce a coordinated end-of-life waste programme for vehicle scrappage, which includes interlinking existing or to-be-developed waste management schemes and a financial incentive to vehicle owners to dispose of older vehicles.

[2] This will require establishing new product stewardship mechanisms for some components in vehicles. See Appendix I.

- Use positive incentives to move consumer and driver behaviour towards low/zero carbon transport options.

3. *What more should Government do to encourage and support transport innovation that supports emissions reductions?*

Government should leverage improving ICE drivetrains technology, invest alternative technologies, not just EVs (hybrid, plug-in hybrid electric vehicle (PHEV)), biofuel blends in the main fuel supply, hydrogen in heavy transport, etc). MTA welcomes the Ministry's current consultation on increasing the use of biofuels in transport. We want to ensure the industry can innovate and diversify in a way that New Zealand can leverage all available low emission technologies and work towards a low/no carbon future.

There is currently insufficient charging infrastructure in New Zealand, especially to provide the public with the comfort that they can move to electric vehicles with ease[3]. There needs to be targeted funding in the development of efficient, fast-charging infrastructure.

MTA agrees with the outlined role of Government in supporting transport innovation but echoes the BusinessNZ Energy Council's (BEC) caution against the Ministry being too prescriptive on the decarbonisation options for different transport uses.

Electrification is only part of the solution. MTA's modelling showed that even our most ambitious scenario did not meet the Climate Change Commission's (CCC) chosen path. The CCC's final advice suggests that 36% of light vehicles will be electrified by 2035, in our view this may not be achievable due to EV supply limits. While we support New Zealand's climate change goals, we would like the Ministry to be aware of the risks associated with setting ambitious goals. The decarbonisation of our sector places key focus on the switch from ICE to BEV, however MTA and other industry players are concerned about the reality of this. As mentioned above, we caution the Ministry against being too prescriptive by placing all eggs in the EV basket; it is likely other sectors may have to step in if EV uptake does not meet the Government's target.

4. *Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?*

Public transport must be addressed urgently. The current public transport settings are inadequate to address the public's needs. In May, Wellington saw 3,412 buses cancelled leaving commuters with no alternative options.[4] There must be alternative travel options available before existing methods are removed or reduced. Cycle ways are also not currently adequate to support cyclists commuting to work.

[3] A respectable network is developing in New Zealand, but much of it comprises "slow" charging equipment. Time will be needed to go back through the network and add/upgrade charging equipment to HPC levels.
[4] https://www.stuff.co.nz/dominion-post/wellington/125383014/wellington-sets-new-record-with-more-than-3000-buses-cancelled-in-may

If, as MTA suspects, low-emission vehicles remain unaffordable, and people hold on to their current vehicles longer, they will need suitable and convenient options for alternatives to vehicle use.

52% of respondents to a survey commissioned by MTA felt they did not have access to suitable and convenient public transport.[5]

This was more noticeable for the over-55 age group (63%) and for those living in Northland (71%), Nelson (75%), Taranaki (77%), Southland (83%), and the ***West Coast (100%)****.*

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5. *Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?*

Currently, public transport is inadequate, people are unable to rely on their local buses to get to work or complete essential errands;[6] urgent investment is required in this space. See above our answer to question 4.

6. *Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour. Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?*

MTA supports the Government's climate change goals; however, to achieve the net zero target a huge change in behaviour is required. Financial incentives are necessary to confer to people, in money terms, rewards and penalties for their various choices of vehicles/ modes of transport.

68% of respondents said they could not afford a new EV as their next car.

84% said the Government should offer financial support to help people purchase low emissions cars to comply with the net-zero carbon goals.

MTA agrees with the Ministry that:

> *"Transport pricing can be a strong signal to change people's behaviour but it can have material impacts on household budgets and access to*

[5] Question: "If you cannot afford a low emission car, do you have access to suitable and convenient public transport?".

[6] During the 2020 Covid-19 lockdown, travel for "essential purposes" was recognised as getting to healthcare, supermarkets, or employment in essential services. Outside of a lockdown, these tasks are still essential to many Kiwi families.

essential goods and services. It is important that we clearly understand the distributional impacts of pricing mechanisms, before imposing costs on users that could have unintended social consequences."[7]

Sometimes it is not a case of making some activities more expensive; rather, reducing costs on some activities could stimulate behaviour. As Norway has shown, it is not just about the pricing support for EV purchase; you also need ancillary benefits of EV ownership such as reduced or negated congestion pricing, road use charges, ferry prices, toll road charges, and city parking.[8]

7. *Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?*

In MTA's view the Government must introduce an emissions testing regime for in-service vehicles in the existing fleet to ensure all drivers are better educated about the emissions profile and impact of their vehicle. All vehicles (new and used) begin to operate at a level below their original manufactured specifications. Being aware of their actual level of emissions is likely to impact consumer behaviour and guarantee reduction of carbon leakage.

The first use of emissions testing should be education. As time goes on, the Government might consider establishing an in-service emissions standard that triggers remedial actions when a breach is discovered at testing. Changes to the Vehicle Inspection Requirements Manual (VIRM) – the guidebook for vehicle inspections – could include the need for examination of exhaust systems to ensure catalytic converters or diesel particulate filters (DPFs) are present and operating normally.

In recent MTA-commissioned research, 75% of respondents did not know the level of their current car's CO_2 emissions – 39% did not know where they would look for that information.

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8. *Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?*

MTA and its 3,800+ automotive business members, support the Government's climate change goals. Decarbonisation of the public transport fleet is in line with the concept that everyone in New Zealand needs to contribute to reducing carbon.

The automotive industry is working to accommodate the Clean Car Standard and Clean Car Feebate schemes. Similarly, Government procurement is supported by an EV subsidy almost

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[7] **Hīkina te Kohupara – Kia mauri ora ai te iwi:** Transport Emissions: Pathways to Net Zero by 2050 (https://www.transport.govt.nz//assets/Uploads/Discussion/Transport-EmissionsHikinateKohuparaDiscussionDoc.pdf) p 57

[8] Presentation to the E-World Conference by Christina Bu, Secretary-General of the Norwegian EV Users Association on 6 May 2021.

four times greater than that available to the public[9]. Public transport operators should reduce their footprint, as much individual Kiwis.

9. *Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?*

MTA supports the Government's climate change goals, as such we support the actions to reduce domestic aviation emissions.

10. *The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be prioritised?*

MTA supports optimising freight routes, equipment, and vehicles to reduce emissions.

With a heavy reliance on road transport to move freight around the country, more cross collaboration between freight service users and suppliers is needed. There has been some good work done by the Sustainable Business Council working with the freight sector to develop best practices to achieve sustainable and efficient freight movement with the development of the Sustainable procurement guidelines for freight[10]. Availability of EV truck technology to replace vehicles at the upper end of the weight classes is still developing but suitable, smaller-sized EV trucks are available and would suit the 'last mile' delivery of goods so there should be more incentives for freight service providers to adopt this technology.

There are several inland ports being built to provide centralised hubs for freight that utilises efficient transport options to deliver freight to these centres but there needs to be more work done on introducing more fuel efficient transport options to improve the efficiency of last mile urban delivery.

One of the biggest challenges will be addressing the market-led consumer demand for products which has driven suppliers and users of the freight system to an unsustainable model where goods are supplied just in time at the lowest price. While the just in time delivery process is critical for some food products, there are huge opportunities to improve efficiencies where non-perishables are concerned. These practices restrict opportunities for industry players to collaborate to offer more efficient and sustainable goods delivery models where businesses compete on the shelf rather than on the road.

Aligning an industry led approach to reducing emissions in the freight sector similar to what is coordinated through the Smart Freight Centre[11] (SFC) and their work with the Global Logistics Emissions Council (GLEC) should be explored.

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[9] $30,000 per EV plus up to $5,000 for installing charging equipment. Per https://www.mbie.govt.nz/dmsdocument/15041-carbon-neutral-government-programme-report-back-and-further-implementation-decisions-proactiverelease-pdf, at page 34, accessed 25 June 2021.

[10] https://www.sbc.org.nz/__data/assets/pdf_file/0011/119783/Sustainable-procurement-guidelines-for-freight.pdf

[11] https://www.smartfreightcentre.org/en/

11. Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

Heavy trucks (10 - 50 tonnes) contribute the most emissions of all heavy vehicles, this should be taken into consideration in the Ministry's modelling.

New Zealand is well placed to adopt EV buses across all urban bus fleets and this should be given some priority now as EV technology in this area of transport is already available and proven. When public transport contracts are negotiated, the need to deliver EV buses should be mandatory. EV technology in other heavy vehicle applications where travel distances and schedules are regular and where a stop-start mode of operation is applied should also be encouraged.

In commercial transport operations, where EV technology already exists and is proven, converting from ICE to EV makes good business sense but businesses will need support to cover any additional capital investment required when comparing business cases supporting traditional asset purchases.

MTA supports and sees a role for biofuels and hydrogen fuels for future heavy vehicle fleets. However, the technology for green hydrogen is currently costly and is not widely available. The future of any green hydrogen production may in fact rest with other industrial developments and climate change actions, for example in agriculture, dairy, and energy – this relates back to the Ministry's Principle 4.

MTA supports the move to battery electric heavy trucks. The building of heavy vehicle charging infrastructure would support longer term development of charging infrastructure for light vehicles. More financial support is needed to assist existing refuelling stations install EV charging to take advantage of existing infrastructure and services able to be accessed by EV drivers while they wait for batteries to be charged[12].

To ensure a just transition from ICE vehicles to EVs or other low emission fuelled vehicles, it would be good practice to look at fleet optimisation and efficiency improvements first, embed these improvements and realise any financial benefits and then make a switch to low emission fuel options. This sort of transition would deliver immediate emission reductions as well as ensure business were able to improve bottom line performance that incentivises future plans for any capital investment to integrate low emission fuelled vehicles into their business.

MTA is aware of the *Safe and Fuel Efficient Driving* (SAFED NZ[13]) scheme that teaches heavy vehicle drivers how to drive safely and more fuel efficiently. Providing financial support or other regulatory incentives for more drivers to go through this training will return immediate fuel efficiency (emission reductions) benefits in the order of 10 to 20 percent as well as improve road safety outcomes.

[12] We understand this viewpoint is also raised in the submission from the Business Energy Council of NZ.
[13] https://safednz.govt.nz/

12. A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

We are concerned that through the proposed changes, vulnerable people will likely be disadvantaged further.

The Clean Car Discount at it stands now has effectively left out the lower socioeconomic portion of the population. It also risks exacerbating the divide between urban and rural as low emission alternatives for rural activities will be slow in coming to New Zealand.

The current Feebate scheme provides incentives to those who can already afford luxury cars[14]. Low income households will likely not be able to afford clean cars for several years and used EVs do not match the range of an ICE vehicle. As EV batteries deteriorate, a new battery can be more expensive than the car it will be fitted into.

Again, we note that the Ministry states, "[t]ransport pricing can be a strong signal to change people's behaviour but it can have material impacts on household budgets and access to essential goods and services."[15]

The biggest influence on achieving the low carbon goals will be consumer behaviour. We must ensure those unable to afford EVs or lower emitting vehicles are not stigmatised and targeted by those who can. We must also provide them with options to enable them to contribute to carbon reduction in their own way (eg a lower emission vehicle than their current car, or education and support to have their vehicle serviced to mitigate any emissions deterioration from age and wear and tear).

13. Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway to you think Aotearoa should follow to reduce transport emissions?

A combination of Pathways 1 and 2 is required to reduce transport emissions. Public transport improvements must be made so that New Zealand's travelling community has options.

EVs are only part of the solution; in MTA's view, we need to leverage improving ICE drivetrains technology for as long as possible. The Government should encourage emissions reductions through a mix of fuels and drivetrains (hybrid, plug-in hybrid electric vehicle (PHEV)), biofuel blends in the main fuel supply, hydrogen in heavy transport, etc).

Our research suggests a 90% mix of zero emission vehicle imports entering the fleet, with the many tailwinds supporting transition, might possibly be achieved between 2040 and 2050 without an unnecessarily limiting ICE ban. Any discussion of an ICE Ban whilst charging infrastructure is in its infancy and without a roadmap to mitigate homes without charging facilities is wishful and dangerous.

The CCC's final advice is still very ambitious; in MTA's view, Pathway 4 is not achievable.

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[14] Prior to the introduction of the Clean Car Discount on 1 July 2021, MTA figured the lowest price for a new EV was around $48,000 and the average (of sub-$100,000 EVs) was around $68,000. Even with the Clean Car Discount, a $40,000 new vehicle is beyond the reach of most Kiwi households.

[15] Hīkina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions: Pathways to Net Zero by 2050, p 57

Theme 3 is focussed on the heavy transport sector where a lot of initiatives undertaken to reduce emissions make good business sense by returning immediate financial savings along with emission reductions. Through the transition period there needs to be a strong focus on encouraging the sector to implement fleet optimisation and efficiency initiatives but the culture of lowest cost freight and just in time delivery needs to be addressed too.

14. Do you have any views on the policies that we propose should be considered for the first emissions budget?

We ask the Ministry to consider industry expertise and undertake meaningful consultation with the sector; the Clean Car Standard and Clean Car Feebate policy development has highlighted that policy on the run is policy underdone.

The Ministry of Transport will need to coordinate and engage with the following Ministries, departments, and agencies:

- Ministry of Education (and associated agencies such as TEC, Te Pukenga, and NZQA) regarding skills training to accommodate increased use of technologies (such as biofuels and hydrogen, as well as EVs[16]);
- Department of Immigration with respect to allowing people with the knowledge and experience needed to train the skills above[17];
- Ministry of Social Development and ACC, regarding financial support to people who need to inspect, maintain, and repair/replace older vehicles to ensure environmental and safety objectives are met; and
- Ministry for the Environment with respect to establishing and coordinating product stewardship schemes.

MTA appreciates the opportunity to submit on Hīkina te Kohupara - Transport Emissions: Pathways to Net Zero by 2050.

[16] A Level 5 qualification for EV diagnosis, service, and repair has been developed. However, we will need to transition more EV training into the main automotive technician qualification as EVs become more ubiquitous.
[17] Research by MTA has shown that the best ratio of skilled worker to apprentice is 2:1 – as the workforce ages, we will need to bring in qualified automotive technicians (and other transport skills) to ensure we can train the next generation of New Zealanders in this sector.

Appendix I

VEHICLE COMPONENTS AND WASTE

mta ASSURED

NZ FLEET STATISTICS *

14.1
average age of the light fleet

19.1
Average age of a scrapped light vehicle

300k
Average number of vehicles imported each year (new & used)

190k
Average number of light vehicles scrapped each year is approximately 180,000

SCRAP VALUE

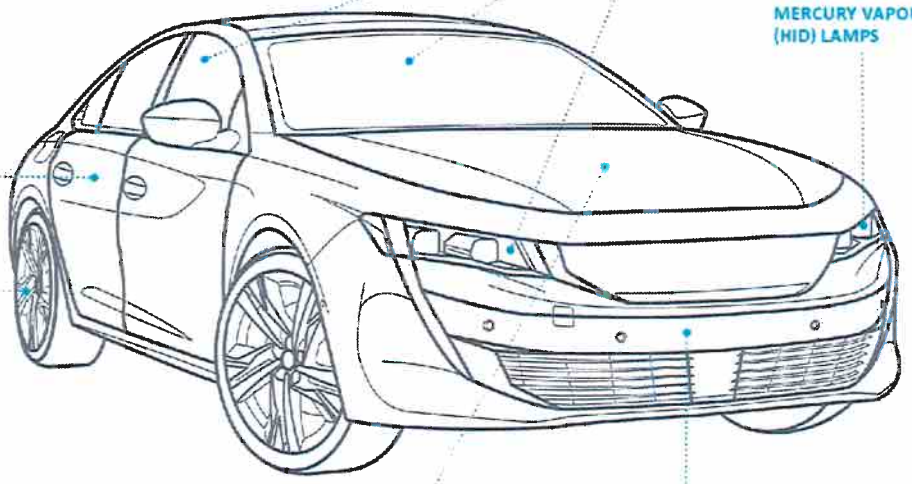
1. Steel $100/tonne
2. Aluminium

* Source: MOT 2019 fleet data.

VEHICLE STRUCTURE
- Steel
- Aluminium
- Exhaust system catalytic convertor

GLASS
- Windscreen/side and rear windows
- Light covers

MERCURY VAPOUR (HID) LAMPS



TYRES

ENGINE COMPARTMENT
- Air conditioning unit-synthetic refrigeration gas
- Engine coolant
- Oil filter
- Engine oil
- Auto-transmission oil
- Brake fluid
- Car battery (Pb/Li iron)
- Electronic components/wiring e-waste

PLASTICS
- Bumpers
- Interior/exterior trim panels

NATIONAL CONTACT DETAILS

Physical address
Level 12,
Nokia House
13-27 Manners
Street Te Aro,
Wellington 6011

Postal address
PO Box 9244
Marion Square
Wellington 6141

Phone
04 385 8859

Members toll free phone
0800 001 144

Mediation Line
0508 682 633

Fax
0800 000 695

Email
mta@mta.org.nz

Website
mta.org.nz

National Energy Research Institute

24 June 2021

Ministry of Transport

Submission on:

Hīkina te Kohupara

Summary

- The 'Avoid, Shift, Improve' framework, and scenario-based Themes derived from it, are inappropriate for the task of developing "a 10-15 year time horizon action plan for how Aotearoa will .... reduce its transport emissions".
- Instead, the Ministry should re-focus on the "*Government Policy Statement on Land Transport 2021/22-2030/31*" and "*Strategic priority 4: Transforming to a low carbon transport system that supports emissions reductions aligned with national commitments, while improving safety and inclusive access*", and use mainstream techniques for managing under uncertainty to develop the required action plan.
- This should:
  - Identify what is well understood and develop evidence-based policies to address these.
  - Where there is uncertainty undertake research to better understand the uncertainty and reduce it (e.g. enhance the adaptability of the system, increase options).
  - Any policy interventions need to be material in impact; facilitate adaption under uncertainty (e.g. fuel neutrality); and welfare enhancing compared with business-as-usual, taking account of the ongoing impact of the ETS.
  - The underpinning Principles should be amended to explicitly reflect these desired characteristics.
- The above implies the development of a clean transport, applied, directed research programme for New Zealand.

Box 16 135, Te Horo 5544, New Zealand - Phone +64 4 248 1753 - www.neri.org.nz

Introduction

This submission addresses the key issues that NERI[1] considers arise for energy research from the Hīkina te Kohupara (HtK). Around 50% of our energy use is driven by transport, effectively 100% fossil fuels and imported. Transport demand and the fuels used shape the future of our energy sector.

We have some general issues that we also raised in respect of the Climate Change Commission's (CCC) draft report and now responded to in its final report. These are usefully discussed in relationship to the Principles (*Consultation question 1*).

Comments on the balance of the *Consultation questions* follow from that.

General issues and *Consultation question 1*

Uncertainty and how to manage with it.

Management under risk and uncertainty with its emphasis on the value of setting up adaptive dynamics and increasing options in transport planning is well understood[2].

HtK addresses this issue better than the draft CCC report did[3], e.g. *Principle 3* raises "*the need to be strategic about which options* [emphasis added] *we pursue to reduce emissions …*", and, in the case when consequences are understood draws the appropriate inference, "*prioritising initiatives that will have the largest impact on avoiding ..*". It further reinforces the importance of options, *Principle 4* "*This helps to manage risk by avoiding relying too heavily on one solution to meet our targets …*", and adaption *Principle 6 "We will need to keep adapting to reduce emissions along our future path".*

But it is silent on using options analysis systematically and actively investing in improving adaptive dynamics in our transport system when the future is uncertain.

Central to this is identifying the "known unknowns" and investing in understanding them better with a view to reducing them, exploiting them, and "designing-in" our ability to adapt to them.

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[1] The National Energy Research Institute (NERI) is a Charitable Trust incorporated in New Zealand. Its primary purpose is to enhance New Zealand's sustainability and to benefit the New Zealand community by stimulating, promoting, co-ordinating and supporting high-quality energy research and education within New Zealand. Its research members are Auckland University of Technology, GNS Science, Scion, University of Canterbury and the University of Otago, and its industry association members are the Bioenergy Association, BusinessNZ Energy Council, the Carbon and Energy Professionals New Zealand, the New Zealand Wind Energy Association, the Road Transport Forum and Tourism Industry Aotearoa.

[2] Ministry of Transport (2016) *Adaptive Investment Management Using a real options approach in transport planning* Wellington, Retrieved from https://www.transport.govt.nz/assets/Uploads/Paper/MOT-Real-Options.pdf

[3] The evidence base for the final CCC Report is primarily found in its draft report hence we will still refer to the latter.

Acting prematurely in the face of uncertainty can be costly. Simply delaying an action until things clarify can be the most welfare enhancing option. In many cases applied directed research into the uncertainties and options will cost-effectively identify both where action should be held off, or, where there are opportunities, to accelerate the beneficial changes.

Thus, applied directed research plays a much more central role for the Government than implied by *Principle 7*'s "*accelerating the uptake and diffusion of new transport technologies and services*".

Applied directed research is an integral part of an adaptive approach to uncertainty. This is point is now reflected in the final CCC report, and HtK needs to be similarly amended.

ETS

In this submission we assume the Government has established a budget for emissions reductions, and there is a reasonably efficient ETS in place covering Transport. Thus, there is a neutral economically efficient and adaptive process in place driving towards the Government's emissions targets.

In this context further action by the Government must be justified by it lowering the incremental costs (economic, social, cultural, environmental[4]) over the process driven by the ETS. Examples might be to remediate adverse social impacts from higher transport costs prices.

The draft CCC report was very weak in this regard when it came to Transport. It has now strengthened this in its final report.

The context and implications of the ETS are of sufficient significance that it should explicitly feature in *Principle 6* reflecting the CCC's amendments.

Materiality

One implication of the ETS process, coupled with the general uncertainty of the outcomes from policy actions, is that targeting small reductions in the costs of emissions over and above the what the ETS should deliver is unlikely to produce gains outside the margin of error.

Thus, as *Principles 1 and 3* note, effort addressing areas of relatively high emissions will have much higher expected returns than, say, areas producing <10% of the current Transport emissions unless there are other considerations[5]. Effort is better focused on the former.

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[4] In what follows when we use the terms "costs" and "benefits" they should be read as being measured on an appropriate balance of all these dimensions.

[5] E.g., in electricity generation where there is the need for significant growth driven by Transport demand will make its potential use of fossil fuel material.

However, there is a risk that small emissions benefits are rationalised by potential co-benefits e.g. *Principle 5 "... opportunities to reduce air and noise pollution, improve physical health and mental wellbeing, and make our towns and cities more liveable."* These need to be justified in terms of their co-benefits, rather than just rely on their association with low emissions[6]. The relationship between land use and emissions is an example – if low emissions fuels are adopted the emissions' impact of land use changes/urban form are likely to become marginal[7]. These observations are confirmed by HtK's modelling that shows "*Land use and Public Transport*" only contributing 0.1-0.6% reduction in 2050 emission.

This general problem of assessing benefits on multiple dimensions (economic, social, cultural, environmental) and with multiple impacts outside transport is an important role for applied directed research in support of policy analysis.

The limitations of scenario modelling

HtK deterministically model four scenarios for future transport emissions, that it terms "pathways". It places many caveats on their use but in the end *Principle 6* says: *"We need to forge a path to zero transport emissions by 2050, ..."* even if recognising *"... that there is not one way to get there."*

Ultimately *Consultation question 13* forces a choice *"... which pathway do you think Aotearoa should follow to reduce transport emissions?"*

This can be justified for the limited task of setting budgets, testing achievability, and building a consensus around goals. However, using modelling based on scenario projections based on "*weight given to 'avoid', 'shift' and 'improve' initiatives*" (p. 106) to help make decisions about today's optimum response is quite inappropriate.

These policy packages have been arbitrarily constructed "*based on the 'Avoid, Shift, Improve' framework*", drawing from a limited set of policies. Approaches that have been ruled out of scope or not considered may well be precisely the ones we wish to explore when thinking about how we could do better.

Further, endorsing any such scenario is a trap when thinking about interventions. A deterministic scenario can quickly be used to justify prescriptive interventions in the name of achieving an arbitrary pathway, when a proper assessment, considering the full range of assumptions and the cumulative uncertainties, could reach quite a different conclusion.

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[6] The OECD report "*Decarbonising urban mobility with land use and transport policies: the case of Auckland, New Zealand*" referenced in HtK suggests that *Widespread Densification* by relaxing regulations is likely to be welfare enhancing without any contribution from environmental impacts (i.e. CO_2-e reductions) and those will be marginal (6.1.1.) in light of the CCC's recommended aggressive EV policies.

[7] See two recent reports by the Productivity Commission have addressed this in the NZ context, *Better urban planning* (2017) and *Low emissions economy* (2018), coming to an alternative view to the draft CCC Report Section 4b.2. Relevant too is Finding 16.3 in the draft CCC report i.e. the diminishing returns from urban form when the vehicle fleet is becoming low emissions, and the high cost and low progress of this particular intervention.

The draft CCC report fell into this trap several times, and this extended to it recommending prescriptive interventions simply based on its desire to have the future fit with its crudely projected preferred pathway.

Consultation question 2

Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?

Recommendations:

That the Principles be amended as follows:

> Principle 3. We need to take a strategic approach to reducing transport emissions
>
> We will be managing under significant uncertainty and ~~S~~some interventions may take a long time to play out, ~~and~~ requiring~~e~~ ongoing dedicated action over decades. We need to take a strategic approach that increases our adaptability, increasing and ~~capitalises~~capitalizing on our short-term opportunities, ~~and~~ putting~~s~~ in motion changes that deliver a large impact in the medium and long term at lowest cost. We also need to be strategic about which options we develop and pursue to reduce emissions - prioritising initiatives that will have the largest impact on avoiding and reducing emissions, while delivering value for society (including co-benefits).
>
> Principle 4. Co-ordinated action is required across the transport system to avoid and reduce emissions
>
> We need to develop and pursue multiple, co-ordinated actions to reduce and avoid emissions – both within the transport sector, and in other sectors (such as ~~land use planning~~energy) that have a strong influence on transport emissions. This helps to manage risk by increasing our options in responding to an uncertain future and avoiding relying too heavily on one solution to meet our targets (for example, a solution that requires technological improvements or significant behaviour change). While Government will play a leading role in making the shift, it needs to work closely with iwi, communities, businesses, and councils to reduce transport emissions.
>
> Principle 5. To ensure a Just Transition we need to manage the impacts and maximise the opportunities brought about by changes to the transport system
>
> Everyone in Aotearoa will experience changes from the transition to a zero emissions transport system. However, some people may be more impacted – for example, people who already experience social/economic disadvantages could be disproportionately affected if transport costs increase. At the same time, policies to reduce emissions can deliver multiple benefits. For example, there are many opportunities to reduce air and noise pollution, improve physical health and mental wellbeing, and make our towns and cities more liveable, although actions still need to be justified on the balance of total costs and benefits.
>
> The Government also needs to carefully consider both the costs and benefits of policies and changes on different communities, iwi/Māori and regions to ensure a Just Transition and deliver maximum value for New Zealanders.

Principle 6. We need to ~~forge a path to~~maintain our target of zero transport emissions by 2050, while recognising ~~that there is not one~~ the best way to get there will evolve through the journey

~~There are many~~We cannot today predict the pathway~~s~~ that Aotearoa ~~could~~ will take to achieve a zero carbon transport system by 2050, within the overall context of the ETS. But s~~S~~ubstantial and sustained actions will be required to decarbonise our transport system. Actions taken within the next five years will significantly shape this future pathway, and determine how close we get to, or stray from a zero carbon target. We base our advice on evidence as much as possible. However, we also need to recognise that we will never have all the evidence we need about the future, and that future modelling is often based on experience. We will need to keep adapting to reduce emissions along our future path and an important priority for our investment today will be to increase the evidence base and our options and adaptability to these uncertainties into the future~~.~~

Principle 7. R&D, ~~i~~innovation and technologies will ~~play an important role~~will be integral in reducing emissions, but people are the key to our future

R&D and innovation will be essential to address uncertainty, quantify costs and benefits, understand stresses, and offer solutions that facilitate change. The areas of uncertainty, stresses and the need for investment in options and public policy responses in New Zealand are predictable and will regularly warrant public investment In addition ~~M~~many existing technologies and techniques are already available to avoid and reduce emissions. Innovative approaches and business models, as well as new technologies, will keep changing the way that people and products travel. While the Government does not usually 'pick winners', it can play a powerful role in accelerating the uptake and diffusion of new transport technologies and services. However, ultimately, responses to policy settings, technological change and uptake depends on people – so we need to put people at the centre of our policy development.

Consultation question 2

Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions

The key lever that is missing is the Government's role as the major funder of RS&I in New Zealand, particularly in this case applied directed R&D to facilitate change.

We have summarised the high-level arguments for this in our comments so far, and further context for enhancing this role across the energy sector is set out in our Post Election Briefing 2020 (Recommendation1)[8].

The CCC has picked this up in its final report's recommendations on Innovation.

Consultation question 3

What more should Government do to encourage and support transport innovation that supports emissions reductions?

[8] Available off https://www.neri.org.nz/submissions-and-papers-by-neri

The key issue is to broaden the scope of innovation away from the current narrow focus on technologies. As discussed above and summarised in the recommended changes to Principle 7, R&D and innovation also covers addressing uncertainty, quantifying costs and benefits, understanding stresses, and offering solutions that facilitate change. Perhaps the most important aspect is investment in building an adaptive sector, i.e. one that facilitates innovation.

Refer again to the final CCC report on this issue.

General comment on Consultation questions 4 - 12

Underpinning these questions is the Avoid-Shift-Improve ("A-S-I") Framework[9]. This is designed with a goal of sustainable urban transport in mind. Its use is questionable for HtK's particular purpose: lower GHG emissions are just one of the externalities it seeks to address; its focus is European urban; some of its implicit assumptions (e.g. mobility is to be avoided) are unlikely to be seen as welfare enhancing for New Zealand, etc. The strong focus on urban form, mode shifting, and mobility reduction become suboptimal when imported into HtK.

This leads HtK to an analytic approach (the "Themes") that are focused on means, rather than the output required – GHGs reductions and the best policy package to address that at a particular pint in time.

In practice this issue is much better dealt within the "*Government Policy Statement on Land Transport 2021/22-2030/31*"[10] where "*Strategic priority 4: Transforming to a low carbon transport system that supports emissions reductions aligned with national commitments, while improving safety and inclusive access".*

This outcome is precisely aligned with that of HfK. The primary proposed indicator is "*Tonnes of greenhouse gases emitted per year from land transport*". Co-benefits are considered but do not dominate.

HfK should therefore be placed in the context of being the MoT's strategy to address *Strategic priority 4* in the Government Policy Statement.

A simpler and more obvious analytic approach would then be appropriate. Direct GHG emissions are caused by vehicles that use fossil fuels (t CO2-e/km) times the amount of travel they do (v-kms p.a.). The primary target is reducing the number of vehicles that use fossil fuels, focusing on those that do the most travel, and are lowest cost to address. A breakdown by vehicle type, function and type of trips will aid analysis.

The Themes than could become things like "reduce the GHGs from low duty cycle road transport".

Note that on this analysis once a vehicle ceases to emit GHGs (or it becomes negligible) it no longer is of interest. This targeting simplifies any strategy. In practice

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[9] "*Sustainable Urban Transport: Avoid-Shift-Improve*" Referenced in HtK.

[10] Accessed from https://www.transport.govt.nz/assets/Uploads/Paper/GPS2021.pdf

much of the balance of HfK does adopt a two-pronged approach of cleaning up fossil fuel vehicles and reducing the trips travelled for the remainder. However, this done without the benefit of considering materiality, net welfare impacts, and uncertainties.

To address this we would expect a mainstream marginal abatement cost analysis[11] where costs are assessed in the broad sense indicated at the beginning of this submission. This should cover evolution over time and estimates of the uncertainties.

Doing this, particularly focusing on options hat help reduce abatement costs and areas of greatest significance, will change the policy mix and priorities for intervention from that contained in HfK.

Recommendations:

That:

- HfK be positioned as the MoT's strategy to address Strategic priority 4 in the "*Government Policy Statement on Land Transport 2021/22-2030/31*", and
- The A-S-I Framework not be used, as being inappropriate to this purpose, and instead,
- Use more mainstream analysis to first identify the options within each subsector to address GHGs[12], and then use marginal abatement cost analysis to identify materiality, cost and welfare effects, and level of uncertainty, and
- Based on that develop priorities for policy intervention and priorities for further analysis to best address uncertainties.

An alternative view of priorities

Until this analysis has been undertaken it is difficult to comment on the detail of the *Consultative questions 4-12*, except at a high level, but we can indicate where we expect priorities for action to lie. Almost as important as the priorities will be the areas that are low priority, particularly remembering that the ETS will be impacting regardless.

As noted earlier we should expect two types of priorities both addressing areas of significant potential impact over and above the ETS: (a) where the issues are clear cut and options are well understood; and (b) where there is sufficient uncertainty that we need better information or take steps to increase the options we face.

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[11] E.g. a dated but relevant detailed European example can be found in Roland Berger (2016) "*Integrated Fuels and Vehicles Roadmap to 2030 and beyond*". Accessed from https://www.rolandberger.com/publications/publication_pdf/roland_berger_integrated_fuels_and_vehicles_roadmap_to_2030_v2_20160428.pdf and a more recent but less detailed contribution from New Zealand: Ministry for the Environment (2020). "*Marginal abatement cost curves analysis for New Zealand: Potential greenhouse gas mitigation options and their costs.*" Wellington: Ministry for the Environment. Accessed from https://environment.govt.nz/assets/Publications/Files/marginal-abatement-cost-curves-analysis_0.pdf

[12] An initial attempt for high duty cycle transport is contained in NERI (2019) "*Working paper: NZ Clean High Duty Cycle Transport: Research Challenges*" Accessed from https://www.neri.org.nz/submissions-and-papers-by-neri

EV uptake - clear cut example

As of today, the evidence strongly points to electrification of the low duty cycle fleet as being welfare enhancing in the New Zealand context and this is starting to occur under current ETS/policy settings. The supply of renewable electricity does not appear to be a constraint, although network infrastructure including charging could emerge as an issue.

However, there are currently clear barriers to EV uptake coming from the available supply of new vehicles; their higher upfront price compared with ICEs; and the significant lack of new-to-New Zealand second-hand vehicles to compete against ICEs.

The Government has recently announced a policy package to address EV uptake and some further elements of a policy package to address this are included in HtK. The weakness of these initiatives is that they are not systematically evaluated as a package that can materially outperform the ETS.

Consequently, the HtK proposes policies of marginal value such as urban form; the Government's policy package risk unintended consequences (EV price inflation, "the Utes" issue); and directly relevant potentially valuable policies do not appear to be considered.

For example, two potentially low-cost more neutral ways to address the barriers to uptake could be to facilitate:

- the annualization of some of the higher upfront cost of EVs;
- reducing barriers to Transport as a Service. This can significantly improve the use of scarce EV capital stock in the short-term at a time when it is in short supply.

Building on the second point, the impact of ICT on the transport sector is underrepresented in HtK (e.g. potential of AR/VR – a New Zealand strength in other domains).

A more systematic evaluation of the policy options is indicated even if the evidence for EVs in this market is strong.

Fuels for high duty cycle transport – example of uncertainty and options

The longer-term least-cost fuel/engine options for high duty-cycle road transport are uncertain. In terms of opportunity for GHG reduction this is a major target, but one where the best approach as of today is unclear.

There are three broad contenders FCEVs, BEVs, and bio-based fuels primarily running in existing or modified ICEs. The performance of BEVs define the boundary

with lower duty cycle vehicles and their reach. This will be steadily increasing with better batteries and charging.

Otherwise, none of these engine/fuel combinations are competitive with fossil fuels as of today, except at the margin (e.g., biofuel blends). Instead, we have multiple options and issues that we need to better understand.

Rather than making significant risky investments right now in any of these, HtK should be developing an investment programme into better understanding key options and issue focusing on a comparative standpoint, how they might develop in the New Zealand context, and looking for low cost options to reduce risk and facilitate early entry markets.

Consultation question 13

Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway to you think Aotearoa should follow to reduce transport emissions?

As should be clear from this submission, the way HtK uses pathways is not particularly relevant to the intent of HtK or Strategic priority 4 in the Government Policy Statement on Land Transport, and it is potentially negative in its impact because it assumes knowledge of the future that is highly uncertain.

Recommendation:

That following on from the earlier recommendations, the pathways approach be put aside and a more mainstream approach of using options analysis and marginal abatement costs as the basis for developing future policies and investments, building on the ETS.

Consultation question 14

Do you have any views on the policies that we propose should be considered for the first emissions budget?

The policies at present are an unsystematic collection of possible initiatives. A high-level assessment of their value would be to apply two tests derived from Principle 3 as amended:

- calculate the percentage contribution to emissions reduction in 2050 over and above the base case of just the ETS, and if less than around 10% (a reasonable estimate of materiality given the uncertainties) put the policy aside;
- calculate the marginal value of the policy by multiplying reductions in 2050 by a notional CO_2-e price in that year. Among other things this will give ceiling on the amount p.a. it is worth spending on this policy to make these gains.

Based on this assessment a programme of work could be developed, including the research required to address the uncertainties.

Conclusion

Thank you for the opportunity to submit on this issue. While we have advocated for an alternative approach it raises important issues the New Zealand's applied research community would be keen to help address.

If you want any further information, please do not hesitate to contact us.

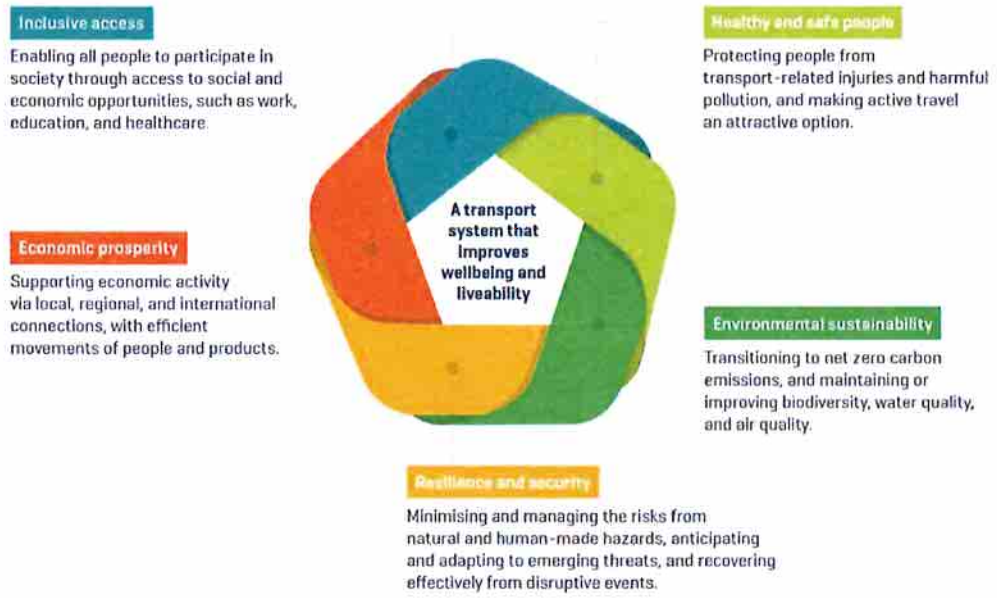
Simon Arnold
Chief Executive

Hīkina submission drafting

The University of Canterbury's transdisciplinary research cluster for Community and Urban Resilience (CURe) generally supports the vision articulated in Hīkina te Kohupara. In fact, we strongly agree with the strategy focused on wellbeing and liveability that is outlined in the Transport Outcomes Framework. The proposed discussion document (Hīkina) however does not align strongly enough with the Framework's guidance toward developing effective policy and intervention for the transport system. While the focus on emissions is critical, a whole-of-system approach is essential to produce a transport system that is truly sustainable in the long-term. Hīkina also proposes a whole-of-system approach, but its current framing is not sufficient to realise this aim.

To that end, we argue for the inclusion of the following three points:

1. A foundational principle that commits to creating a long-term sustainable transport system that is people-centred
2. Elaborating on the Just Transition and keeping equity at the forefront of decision-making
3. Taking a long-term, generational planning view that broadly considers climate adaptation rather than a singular focus on emissions reduction.



1. A Transport System That Caters to People

Addressing the Hīkina te Kohupara principles

A transport system that is people-centred is one that ensures efficient, safe and affordable mobility across Aotearoa. We suggest this should be the primary guiding principle in the Ministry's Emissions Reduction Plan. Shifting to EVs and decarbonising our vehicle fleet will help reduce emissions, but these changes are not addressing the broader structural issues that create dependency on private vehicles to meet our day-to-day travel needs.

Looking broadly toward generational planning that considers long-term sustainability and community resilience requires a shift in focus toward the people the transport system serves, and journeys with integrated modal options that provide viable alternatives to private vehicle use. People-centred transport focuses on user experiences and needs, so in addition to adding a people-centred guiding principle, we suggest that principles (3) *the approach needs to be strategic* and (4) *coordinated* require deliberate and close partnership with related sectors. Emphasising the opportunities we have to transform transport by taking advantage of joint policy development between housing, urban development and freight is crucial to developing systems that support longer term resilience and growth. Integrating across modal options rather than thinking of them as separate systems facilitates modal shift, and easily switching between modes in our day to day journeys, by reducing burdens often associated with alternative modes (Mitchell et al., 2016).

A shift toward people-centred transport will enable developing a system that truly supports and improves wellbeing and liveability in a number of ways that largely align with the avoid and shift avenues outlined in Hīkina te Kohupara while also contributing to New Zealand's decarbonisation goals.

Moving away from private vehicle use with a people-centric transport system promotes healthy and safe people by encouraging active transport not only with supportive infrastructure, but with accessible neighbourhoods that support community cohesion and wellbeing to improve resilience. Less reliance on private vehicle travel will also reduce social and economic costs that result from driving (e.g., negative health impacts of pollution, noise and reduced physical activity; death and serious injury crashes). When alternatives to driving are attractive, reasonable choices with fewer burdens, we build redundancy into our system that further supports resilience when responding and recovering from disruptions. Accessible neighbourhoods that reduce the need for people to travel, with supportive infrastructure and urban development for modal alternatives enable inclusive access. Shifting freight structures and processes to focus on community impacts enables developing accessible neighbourhoods that make shifting to modal alternatives feasible.

In addition to the ways people travel, changes in freight structure and processes have major implications for communities and people that should be considered. The existing focus in the proposal is limited to freight efficiency (better fuel economy/reduced emissions due to fuel/engine improvements or reduced movement) and, while this is important, it misses potential co-benefits, particularly within urban environments. Road freight in particular has an obvious impact on community wellbeing outcomes. Shifting from fossil-fuel engines to electric engines reduces the carbon footprint of last-mile deliveries, for example, but does not necessarily enhance the lived experiences of community residents and businesses who must still deal with issues such as traffic congestion, dangerous roads, and untimely deliveries interrupting business activities. A concomitant assessment of the nature of those last-mile deliveries and their impact on community wellbeing is essential. To this end, research is needed to explore alternative modes of urban deliveries that support consolidation centres, drop-off/pick-up consolidations points, use of micro-freight options, consumer pick-up point networks (PPN). Recent research by Rose, et al. (2020; 2016) explores the complex relationships between urban

freight transport providers (carriers), shippers, retailers, and the urban environment itself. While not focused specifically on environmental outcomes (such as carbon emissions), the research suggests that transport decisions made by policy-makers and business managers alike must employ a systems approach. We advocate that such an approach should also incorporate community members that are impacted by transport activities, such as urban residents and those who visit urban spaces.

Additional research on the sharing economy suggests that alternative approaches to last-mile urban delivery are quickly evolving. As consumer demand for at-home deliveries increases, improved distribution strategies are being developed by business providers (e.g., see Castillo et al, 2018) that enhance service delivery from a consumer service perspective, as well as from a business efficiency perspective. Yet, simply shifting from traditional carriers delivering goods to consumer homes to crowdsourced delivery options may not solve either the carbon emissions problems or other community-related issues such as road congestion. Thus, exploration of alternative transport models within urban environments need to consider environmental impact as well as the social impact on the community. These considerations go well beyond a narrow focus on "transport efficiency" that is currently being advocated by MoT.

Further to this, we note that principle (7) 'Innovation and technologies will play an important role in reducing emissions, but people are the key to our future' should be more direct in supporting transport innovation that lies outside of purely technological advancement and adoption. There are a number of simpler, existing-but-not-implemented solutions to reduce barriers in public transport or active mode uptake that are not being fully utilised in the current transport system (e.g., signalised crossing timings that favour pedestrian movement, pedestrian right of way, bus priority lanes, reduced speed limits). Government plays a key role in enabling and encouraging research that spurs innovation -- beyond technological research and development, this includes research on lower cost, rapidly and easily implemented solutions that reduce barriers to change, monitoring their impacts once in place as well as using Government levers to enable trials for these innovative approaches. This will require developing an appropriate method to monitor the effectiveness of any changes and the collected data should be open to enable and encourage critical assessment by researchers, in the spirit of transparency and continued improvement.

2. A Just Transition

> In response to question 12: A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

In alignment with our suggestion that placing people at the centre of our transport system is vital to achieving goals outlined in the transport outcomes framework, ensuring long term sustainability, and community resilience, we emphasise the role of equity considerations in this shift. Existing inequity is an essential context to the current state of the transport system and how we arrived here; achieving equity in transport should be a primary focus when determining how the "Avoid, Shift, Improve" framework applies to Aotearoa and which actions Government should take.

As noted, major inequities exist within our transport system, but we have opportunities to enable transport justice alongside emissions reductions -- there should be a greater focus on opportunities over mitigation. The concern over potential for increased transport disadvantage and poverty is a function of a transport system that does not meet our needs. The current situation is one in which car-dependent systems have guided development while alternatives to driving have been unjustly underdeveloped and under-delivered; transport equity depends on enabling alternatives rather than perpetuating private vehicle use, low emission or not. A people-centered Just Transition places primary emphasis on improved public and active transport options alongside integrated urban development and commercial strategies that improve accessibility and distributional justice overall.

Further to this, more engagement with and consideration for groups that have borne a greater burden in negative transport impacts should also be emphasised. Improving transport equity will heavily depend on involving them in the process; disabled people, people living in lower income or deprived areas, aging adults, women and other groups who experience transport disadvantage must be engaged to develop effective solutions. Research on day-to-day travel behaviours and patterns is essential to understand how people use the existing transport system, how they could use the system if different options were available/accessible to them, and how system changes might affect these patterns -- especially for those who have been disenfranchised in prior approaches and strategies for transport development.

Consultation, engagement and partnership is vital to begin addressing inequity that has been produced by the current transport system, particularly for Māori. Hei Arataki, the Ministry's Māori strategy, has been developed to improve transport outcomes for Māori and it should feature prominently in the ways that the Ministry intends to deliver a Just transport system. Enabling Kaupapa Māori research to identify needs, barriers and aspirations in the Te Ao Māori and transport context is a major pathway to understanding and improving these issues. Guidance on ways that the Ministry of Transport can support transport solutions and set targets for achieving equity, and just compensation and protection for mātauranga Māori, will help develop a transport system that works for Māori and is improved overall.

3. Focus on Climate Adaptation

Climate change will bring major impacts to our transportation system. A 2019 LGNZ report identified that 2,100km of road (with a replacement cost of $1billion) would be exposed with 1.5m SLR. However, before then there will be significant impacts from groundwater rise (hastening the deterioration of the pavement), and regular flooding that could isolate communities.

A people-centric transport system that is sustainable in the long-term must prepare for the future environmental changes. It is critical that we begin to identify transport links that are or will be exposed to hazards and identify options to strengthen or relocate. Additionally, new transportation links and development should not be placed in areas that will be exposed and uninsurable. The sooner these decisions are made, the cheaper and easier this will be.

This fully aligns with the transport outcomes framework criteria "Resilience and Security" which reads: "Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events."

Failure to consider the long-term hazards associated with climate change will ultimately incur substantial financial cost, resource and carbon investment, and will seriously impact the wellbeing and economies of impacted communities. Strategic, long-term planning that is cognisant of these risks would enable decisions on relocation or strengthening of roads to be done as part of the maintenance cycle that will mitigate impacts on communities and reduce emissions.

Recommendation

We offer the following revised principles to emphasise the priorities and interconnection between ideas that we outline herein:

1. We need to develop a people-centred transport system that provides for our long-term sustainability and resilience while improving equity; this shift will enable us to meet our 2050 net zero carbon target

2. We need to take a strategic and coordinated approach to integrate modal alternatives across the transport system, which requires joint policy development across sectors

3. Innovation that will reduce emissions includes technological advancement and adoption, but is broader so as to capitalise on existing-but-as-yet-utilised opportunities to improve the transport system

4. Recognise, plan for, and continually adapt to the uncertain impacts of climate change.

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SUBMISSION to the NZ Ministry of Transport on the Green Paper - Hikina Te Kohupara

From: The Nelson Tasman Climate Forum (NTCF) Transport Group (excluding members from TDC and NCC) June 25 2021

PUBLIC INFORMATION STATEMENT:

We are happy that our submission is included in reports available to the public.

INFORMATION ABOUT NTCF:

The Nelson Tasman Climate Forum is a community-led initiative open to everyone. We aim to get everyone in our climate change response waka paddling quickly in the same direction.

Our mission is to weave individuals, households, civil society organisations, businesses, councils and iwi together around urgent, strategic action on climate change in the Nelson-Tasman region.

See our Charter and Climate Action booklet here: https://nelsontasmanclimateforum.ning.com/

Introduction:

In general we are very happy with the direction Hikina Te Kohupara are taking in relation to mitigating climate change, however we are concerned that actions proposed may not be sufficient to meet the 2050 targets or indeed the purpose of the Climate Change Act: to keep global warming below 1.5°C . We hope you do not respond to push-backs from the directions you suggest. Indeed we think that what you have suggested is a minimum of what should be done to meet our climate targets, if not our 1.5°C obligations. Especially considering that previous governments have responded to push-back so that our GHG emissions are still on the increase.

Consultation question 1 (Page 11) Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?

We support the direction of your Principles, however we believe that you will need to move much faster to keep our emissions down to a point where we will reach net zero emissions by 2050, let alone our 1.5° obligations. This mindset change will need both penalties (ie changed taxes and charging systems), more education of how we can best manage these changes, as well as incentives.

Most existing travel of people and stuff will have to become too expensive, and expectations of very cheap travel will have to drop. The Ministry should lead the way with modelling active and public transport with low EV use and zero ICE use. There should be zero overseas offsetting, as this is just pushing the problem to countries less fortunate than ours. We should be helping them with zero carbon technology rather than as a place to dump our excess GHGs.

Consultation question 2 (Page 27) Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions

There is a lot of good information in this section, and the government's role is clearly to force down transport emissions, as well as encouraging and supporting correct local Council actions and planning. But the graph on page 13 shows how completely unacceptable the pace of change is under current planning. The whole centre section of the graph needs to be deleted, so that transport emissions start down this year, not next decade. We don't have the luxury of that time, and this will involve a complete rethink of this planning. It is far better to stage the drop more gradually rather than a massive drop near 2050 or worse still "its too hard now so we won't do anything" approach. This graph will look different when it shows a 35% reduction by 2030 - in about the right proportion for the gradual change needed till 2050 rather than delay, gradual change and then a rapid change.

If it is difficult for MOT to attribute GHG emissions in international aviation we suggest a very simple (but effective) method whereby we count planes refueling in our country as their contribution to our emissions from NZ and refueling in other countries as the contribution to that of other countries. We must stop the evasion that has allowed airlines and shipping to avoid this penalty for so long.

Clearly, the government must move sharply on all private vehicles, their use and importing, especially all those with bigger ICE engines. We ask for a ban on ICE vehicles from the beginning of 2022 with the only exceptions being those classes of vehicles for which there is as yet, no zero emission EV version available. And the people who are allowed these ICE import exemptions have to prove that a different type of already existing EV would not suit their business requirements. This must be the centre of all transport emission reduction action. Advertising of large ICE vehicles should be prohibited as these often target males to boost their egos and have nothing to do with effectively moving people and goods around (see Herald article on this study: https://www.nzherald.co.nz/nz/climate-change-masculine-marketing-of-utility-vehicles-linked-to-rising-emissions/MENTKCTNEQ25XD4ZV45IDEYUI4/)

A national smart distance pricing system, changes to importing and registration of ICE vehicles need to be urgently made to drastically reduce the ICE fleet within a few years. If we wait till 2035 there will be a fleet of new ICE vehicles around with a life of 20 years or more. We want better incentives to import electric vehicles now so that by 2035 there will be adequate electric vehicles around as second-hand vehicles that even less-advantaged people can afford.

Consultation question 3 (Page 31) What more should the Government do to encourage and support transport innovation that supports emissions reductions?

There is one major piece missing from this section - there is an assumption that all existing travel of everything needs to be maintained, so we need to electrify and innovate to achieve this. Actually, we need to reduce the travel of people and stuff dramatically. Some examples: working and meetings online from home have already made a small difference. The click and delivery systems need to be electrified and work with a rejuvenated postal system where

deliveries are made by one organization so to and from travel is reduced. Hydrogen is mentioned, but it is just another means of energy storage – it has to be made from methane (with the release of CO2) or by electrolysis and then combusted to water with an overall efficiency of 50%, so why not use batteries which achieve near 90% efficiency?

Consultation question 4 (Page 44) Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?

The effect of more closely packed housing should be prioritised. This makes active transport, corner shop grocery shopping, transport services and infrastructure in general much cheaper than the sprawling suburbs we now have in NZ. Some building would have to be subsidised to offer cheaper rentals in population centres. Bike parks next to all bus-stops, pedestrianised city centre streets in ALL towns in NZ, reduced car-parking, closed roads to traffic, congestion charging, no more motorway building, bike paths away from traffic (or instead of traffic), general car-use discouragement, useful public e-bus and e-van systems, wide use of e-bikes and e-mopeds, less use of cars or EV's. EV's are not the answer for cities as they don't reduce congestion, take up a lot of valuable city space and consume much more resources than a bike or ebike or public transport shared amongst 40 people. Land-use and planning changes will take a long time to have the desired effect. We don't have decades to reduce, so changes to streets and buses and bike-paths and car-parking can all happen quickly. These should all be prioritised.

Consultation question 5 (Page 56) Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?

Many of the suggestions so far involve encouragement to avoid or shift, there is little discussion about discouragement of the current modes of transport. Yes to bus services etc, but to get people out of cars into buses you need something else like a congestion charge in parallel with an increased supply of buses. There is no mention of the 2nd most popular mode of travel in China now - e-mopeds and small e-motorbikes. Commuting by car can be actively discouraged with congestion charging, expensive or nonexistent car-parking, closed streets, and widespread information on the bus and bike systems. School zones can be zero parking for quite a distance with safe walking and biking routes. School buses need to be made more accessible to children nearer the school to prevent parents dropping their children off at school and they should have a number of services in the morning or evening to cater for working parents. It's about nudging people quite hard to change their behaviour, and usually simple incentives are insufficient. Given the urgency, nudging may need to be quite strong.

Consultation question 6 (Page 64) Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour. Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?

In terms of dis-incentives to drive cars – this is a very exciting section of your Paper. To us, smart distance pricing is now the answer, and gives the opportunity to include various other useful charging systems. The innovation capacity is almost ready, and already widely used in a different guise. Simple carbon tax added to excise duty is a blunt instrument and likely to be unpopular. Removal of subsidies, effectively the same thing, in other countries this has resulted in riots, as everyone is affected negatively on the same day, as would happen with a big petrol/diesel price jump. Smart charging can be brought in gradually as vehicles are upgraded, and the charging can be stepped for distance bands, engine emission rating (car type), included carbon taxes, fines and congestion charges, and are all adjustable at source with time. EV's and fuel-cell cars may be exempt for distance charging for a while, but they cannot remain exempt. With one eye on the Just Transition, every vehicle could have a small free mileage per year, say 5km/day or 1500km per year. Average car mileage per year is known already via the WoF system, so squeezing the "average car mileage" down is a matter of Road Distance Charge bands, with high mileage getting charged very highly. This charge is also linked directly to the vehicle emission rating (engine type size and age), which could be very high for large ICE engines, and not small for hybrids with large ICE engines. The smart system would track every vehicle using it's digital ID and GPS, as already happens with traffic jam management in cities using cell phone movements. This system already tells the driver about the vehicle's speed and location, and the speed limit, in most new cars, so no need to identify the actual driver, just the vehicle. Congestion charges near urban centres or school zones would be simple to add and vary. Every private vehicle journey would become directly chargeable, depending on many factors run by an App. We have the technology already. This does not need to cost the Earth to bring in, but could cost the Earth not to. It could also easily become standardised worldwide, so the race is on to develop it. In the circumstances we don't see why government cannot just decide to bring it in without the need to ask the public, but the system needs to be designed well. Existing road user charges included in petrol would be taken out and separated into the App, and diesel for all off-road use would have running hours chargeable to every engine by rating - construction, farming, industrial, mining etc. Off-road enforceability is a different question that needs attention. The system would need a functioning GPS system in every vehicle which includes the vehicle ID, and older vehicles can be brought in gradually, with a looming deadline, and tested at every WoF. Given that transport emissions reduction will become more urgent very soon, involving necessary rapid public behaviour change we think this system of smart distance charging etc, is the golden key to "45% reduction by 2030". This of course will be followed by "Net Zero (or even ZERO) carbon emissions by 2035", taking us down at least another 25% over the next 5 years. It will be quite shocking, given that our April 20 lockdown only managed a 17% reduction, and car/ute/SUV travel is the major problem. EV's are not the answer either, we cannot just replace all our ICE's with EV's. Distance charging would also apply to all types of heavy vehicle and could be brought in for all passenger flying, and linked to emissions per km per seat per aircraft rating and carbon pricing.

Consultation question 7 (Page 72) Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?

It would be possible for government to simply ban the advertising of all newly imported ICE vehicles, in favour of EV's. This should be an easy early priority. Hybrids with large ICE engines should also be resisted, or charged high registration fees. Large ICE vehicle imports, utes, SUVs, and status cars should be highly taxed starting now, and banned completely by 2030, just over 8 years away. This is a near term priority.

Again there is a lack of consideration for far less travelling overall. This needs to enter the public mindset of NZ, as unpopular as it may be. The world, and NZ, cannot sustain the level of travel of people and stuff, and expectations must and will drop. We cannot expect to just replace all our ICE's with EV's. Biofuel is not really a viable alternative given that it competes directly with food, at 1200 litres per hectare per year for Canola, it still produces CO2 emissions. Also the CO2e emissions in building new vehicles (including EVs) needs to be factored in. Modelling of this is also a very high priority.

There is no harm in improving the fuel efficiency of our fleet – in particular measuring exhaust gas emissions. The way emissions are currently calculated gives a very large underestimation of actual emissions (https://www.aa.co.nz/assets/about/Research-Foundation/Emissions/AARF-FC-Project-Stage-1-AARF-Final.pdf?m=1569205652%22%20class=%22type:{pdf}%20size:{1.6%20MB}%20file). This is a lower short term priority as ICE are being phased out.

Consultation question 8 (Page 76) Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?

A city like Wellington that has a successful and well-used bus fleet might be ready to start introducing more expensive e-buses. In Nelson our buses are hardly used and it might be better to find ways to get the buses used well, and commuters out of their cars, before working on the change to e-buses. If the buses are of good quality with say WiFi this can be a useful, fast, relaxing and a reliable service that should be well used. We need a strong nudge in Nelson and Tasman to change commuter behaviour. Petrol prices are far too cheap and with the cost of the damage from CO2e pollution completely ignored without a substantial carbon tax.

Consultation question 9 (Page 79) Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?

International aviation, as it stands, is unsustainable, and incompatible with our urgent need to reduce emissions everywhere. Domestic Jets with their higher emissions than turboprops and higher radiative forcing through flying high should be banned. Your Paper is proceeding as if emissions from aviation are not important, like other sacrosanct areas the government wants to avoid doing anything about. These are areas of our economy that will not face up to the simple fact that they are incompatible with rapid carbon emission reduction, and amount to economic and expectation "disconnects" with the overall reduction necessity. The suggestion of sustainable aviation fuel from biofuel, is also a misnomer. There seems to be a popular idea that

because something comes from plants it is OK to burn as much as we like. This idea is now losing traction because too much of everything has already been burnt, and now we need to close off as much combustion of every sort as soon as possible. The bottom line is that jet aircraft aviation needs to be strongly discouraged with quota or expense,. We are certain that this will lead to a complete rethink of the aviation industry to make air travel with zero emissions. Carbon offset schemes have a great "good feel" character but they just don't work (https://www.responsibletravel.com/copy/carbon-offsets)

The Jet aviation industry, useful or necessary or not, is a serious contributing danger to our future. We need to relearn SLOW travel, or NO travel, with an end to FAST travel. All tourism, of course, is in the firing line.

Consultation question 10 (Page 86) The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be avoided?

At no point in your Paper on this topic is reduction of freight mentioned. There is an assumption that demand as it exists now should continue, or even increase. This perspective is also incompatible with any Net-Zero target, especially a shortened one. It might be good to have expensive new e-trucks or fuel-cell trucks, or retrofit existing diesel trucks, but until these options exist we may have to simply allow a lot less freight – that will make people think twice whether they really want that item or can do without. A good thing going forward would be for ALL courier and delivery vans to be compulsorily e-vans - the options exist already. Courier Hiaces often rack up 600K km or more which would be a good test for e-vans and their batteries.

Consultation question 11 (Page 97) Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

You have not included mandatory reduction in freight usage. Most freight is response to wants, not needs, and we need to seriously reduce the mileage and tonnage. We also need to get used to supply chain deliveries taking a lot longer or not happening at all. In the medium term, green hydrogen may become practical for road freight movements, while blue hydrogen (from LPG) needs to be banned before it starts. The production and storage of hydrogen is inefficient and hazardous. Biofuels, on the other hand, have been seen as a potential panacea because they are technically "carbon-neutral". These arguments are all losing ground as we start to face real, urgent and large-scale reduction of everything involving combustion, engines and travel. We are lucky, we already have 85% renewable electricity, unlike most countries struggling with reductions.

Consultation question 12 (Page 104) A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

"A Just Transition" is the politically correct catch-phrase that must be attended to in this process. We realise that Te Tiriti and poverty considerations are important, and must be attended to properly. We also realise that written words that sound right are cheap. For example, when the sea floods new areas for the first, second and third times, nothing about it will be fair or equitable or inclusive. The same goes for droughts, fires, rainstorms and all approaching unprecedented weather events. There will be more wars over land and water, let alone food, medicine, energy and refugees. Nothing about any of this will be fair, equitable or inclusive, just as it never has been in the wide history of humanity.

"Fairer" is worth striving for, and is probably the best we can do. We live in a capitalist and competitive society and there has never been anything "fair" about this. It could also be argued that "capitalism" is killing our world with over-consumption. (Freight and oil).

The urgency and existential nature of our global predicament suggests that we just need to get on and rapidly reduce our emissions before we lose the last chance for carbon mitigation this decade, whatever the outcome. If we don't get our global emissions right down very soon, we will have lost any mitigation opportunity, due to global heating inertia, and will be left with a rapidly changing world and shrinking land and resources. No fairness or equality in this. We just have to get on with this and compensate the best we can to the fact that an effective response to climate will not be just, just like many other things in our current society are unjust.

Consultation question 13 (Page 122) Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway do you think Aotearoa should follow to reduce transport emissions?

Pathway 4 looks the most promising provided it is delivered in half the time. Use Smart Road Pricing to nudge, limit, prohibit, encourage and discourage accordingly. We believe money spent in this area will have the best outcome of all other ways.

Consultation question 14 (Page 134) Do you have any views on the policies that we propose should be considered for the first emissions budget?

We need to move much more quickly than is realised. These changes may involve considerable cultural resistance and pushback. It may be difficult. Failure will be a failure for the future of humanity, not just us. This IS an existential problem running out of time. Disconnects have been mentioned above. Most of these disconnects involve widely-held expectations that desperately hold on to existing ways of doing things, and capitalist and corporate mandates of "growth", that will rapidly become unable to be sustained in the context of 45% or 75% reduction in carbon emissions. That is what needs to be worked on in the first emissions budget.

Examples of these disconnects in relation to transport that need working on are:

Aviation expectations, in particular international travel and tourism.

World Trade Organisation, trade expectations and deals.

Global / National Freight supply chains and delivery expectations.

Masculine status around motor vehicle power and engines.

Food and energy supplies are important, all else is less important

Health and Safety would be one of our most risky, most expensive and most carbon-emitting agencies - we suggest a carbon audit of all consequences in NZ of Health and Safety.

The enforceability of trade rules vs climate rules need to be reversed.

Embodied carbon has been ignored throughout this debate and is HUGE. Every newly imported vehicle, EV or ICE, old or new, has a high embodied carbon rating. Replacing our whole transport "fleet" of ICE's with EV's is unrealistic and would have a very large hidden carbon cost. The answer is SLOW travel or LIMIT travel.

Suggestions for moving forward now: For new government initiatives and legislation:

1. An effective and rising carbon tax as a price signal that fossil fuel use MUST now reduce, with income from this ring fenced to provide a citizens benefit for equity

2. A smart Road Distance Charge App designed to reduce travelling distances in general

3. Ramp down and end the importing of any combustion engines by 2022, we have enough

4. Ramp down the importing of petrol and diesel, and put a ban on all ICE vehicle advertising

5. Restrictions on new road building, funding transferred to all types of public transport

6. A take-off tax per seat for all planes, say $30, plus a flying distance tax, say 10c per km

7. A general tightening in use of combustion-engine trucks and light commercial vehicles

8. Assuming the food system maintains a status quo, all other uses may have to drop faster.

9. Recreational fossil fuel use to be ended soon, eg all combustion engine sports banned

10. Massive subsidies for all EV's, e-buses and e-trucks in the short term to turn the tide

11. Urban development criteria must change to design for very low travel and electric everything

12. Recognition that the RMA has become horribly wasteful of resources, and therefore carbon

13. Zero offshore mitigation - it is simply an unfair excuse to continue emitting

14. Recognition that tourism as we knew it, pre-Covid, may well be history.

15. Recognition that we can't just replace all ICE cars with EV's, travel expectation must drop

17. Clearly, everything possible must also be done to assist those less able to manage

18. We have a Treaty which must be honoured, but we have a global emergency that is affecting all societies

19. We need a comprehensive national education campaign explaining the urgency

And encouragement/enforcement to all Local/Regional Councils:

1. Rapidly increase city centre living densities and heights without any space for cars

2. Reduce or end ex-urban "subdivisions" spreading over the land that encourage car-use

3. Increase pedestrian-friendly car-free zones in all town and city centres across NZ

4. Increase Park-and-Ride and Congestion Charge systems with reduced carparks in centres

5. General commuting-by-car discouragement, with increasing road closure to cars

6. And obviously, a major effort on buses and safe bike paths in all cities

7. Recognition that all travel distance expectation must fall - commuting holidaying etc

8. Councils' Climate policies have been hamstrung by a lack of government leadership

Thank you for the opportunity to submit on this Paper examining this existential question.

Bruno Lemke (Dr)

On behalf of the Nelson Tasman Climate Forum: Transport Group

With thanks to Forum Members who helped produce this submission:

Hilary Blundell, Peter Olorenshaw and Yuki Fukuda

25 June 2021

Te Manatū Waka | Ministry of Transport

Wellington

By email: transportemissions@transport.govt.nz

HĪKINA TE KOHUPARA – KIA MAURI ORA AI TE IWI | TRANSPORT EMISSIONS – PATHWAYS TO NET ZERO BY 2050

KiwiRail Holdings Limited (KiwiRail) welcomes the opportunity to submit feedback on the recent Ministry of Transport Te Manatū Waka report titled *Hīkina Te Kohupara Pathways to Net Zero by 2050*.

We have prepared responses to most questions of relevance to the rail industry but have declined to respond where these matters fall outside of our industry expertise. KiwiRail has a range of direct engagements with the Government, including through the development of the Future of Rail reforms, which underpin our responses to these questions.

1. **Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?**

Yes, we support all principles listed.

2. **Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions?**

Yes the role is clear.

3. **What more should Government do to encourage and support transport innovation that supports emissions reductions?**

There is a need to transition from fuels such as diesel in our freight system and while KiwiRail is taking steps to further reduce its carbon footprint, this transition is dependent on an alternative low carbon fuel becoming widely available. This will help to determine future investment decisions. We will continue to engage with Government around this.

Rail is already operating on an electrified system in metro networks and some sections of the wider freight network. Response covered elsewhere.

4. Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?

The listed actions align well to the broader resource management reforms underway.

The importance of mode shift through the provision of transport options has been made clear, however the role rail should play could be more explicitly described. KiwiRail is charged with delivering reliable metro track networks to ensure services can meet future capacity. We are engaged in Regional Land Transport Programmes through the development of the Rail Network Investment Programme and, where appropriate, as a voice on Regional Transport Committees. Rail public transport is an essential enabler of reduced car use. For example, existing infrastructure commitments including Auckland's City Rail Link, Third Main Line, expanded services to new developments south of Auckland, and the Wellington Metro Upgrade Programme will support an increase in capacity to meet continued demand growth. For example, these investments are enablers of Auckland capacity to lift to 54,000 passengers per peak hour – the level necessary to support a substantial lift in rail public transport. These outcomes are key enablers for housing development.

The planning system could benefit from improvement. For example, designated transport corridors currently have a ten-year lapse period. We recommend this period be extended. Designations are regularly rolled over as the funding to enable land acquisitions is often delayed as business cases (sometimes multiple) and other procurement processes are required to give life to a project. The progression of transport projects are also subject to changing investment priorities between modes, however it is important to retain the investment in the designation to preserve the future potential of a project.

Given the timeframes associated with spatial planning and the long-term and blue-sky thinking expected of transport infrastructure providers, there is a case for the lapse period for transport designations being 30 years (or longer). This would provide certainty to developers and local authorities regarding the high-level arterial network so that planning can occur. Put simply, it is easier to develop housing and other activities (e.g. rail stations to connect people to rail transport) around proposed (and future planned) transport networks than it is to develop it in reverse, and sensible, long-term planning is required to support transport choices and mode shift.

Finally, we note that the National Policy Statement on Urban Development is supporting local authorities to develop strategies to enable intensification around transport corridors (including the rail corridor). It is important that developments surrounding the rail corridor, or any major transport connection, provide for outcomes that support good living situations for people and preserve future growth options on the transport corridor. This can be delivered in two key ways: first, ensure sufficient width along the corridor to allow for future growth and, second, ensure the quality of housing along the corridors will enable safe and healthy lives for the residents (e.g. noise protection, safety barriers). We consider that the Ministry's comments on intensification should preserve a long-term view on transport development and support the establishment of sufficient standards to result in quality living conditions through future housing.

5. Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?

KiwiRail is looking to work with Waka Kotahi and the Ministry of Transport on the development of an inter-regional passenger rail strategy. These services generally depend on advocacy and business cases led by local authorities (as ultimate clients of such services on behalf of their communities). A strategic framework would assist local authorities to focus on the relevant information, understand the appropriate funding model, and engage the process through their regional land transport plans. This could also benefit from recent lessons learned in developing the Te Huia connection between Auckland and Hamilton and the longer-term Capital Connection between Wellington and Palmerston North.

6. Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour. Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?

No response.

7. Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?

KiwiRail supports the Climate Change Commission's recommendation to progress a fleet decarbonisation strategy by May 2022. We welcome the opportunity, should this occur, to be involved and to support the Ministry in considering its options.

The renewal of KiwiRail's rolling stock and ferry assets is an important component in the Government's strategy to increase the mode share of rail and, through this, enable a reduction in overall transport emissions (as freight moved by rail emits 70% less carbon emissions compared to freight moved by road).

New KiwiRail assets are being procured with the net zero carbon emissions objective in mind. For example, the new Interislander ferries will be diesel-electric hybrid with 30% of the operation powered by batteries and the balance by a diesel engine (rising to 100% as battery technology improves). This will reduce emissions by 40% (against a 2012 baseline) rising to 100% as battery technology improves. The new assets, including both ferries and locomotives, will also burn fuel more efficiently than the ageing fleet they are replacing.

The metro services are already powered by electrified metro networks and are therefore low emission transport options; becoming emissions free as New Zealand's national grid aims to transition to 100% renewable energy by 2035.

We encourage the Government to consider advice on an alternative fuel source to be made available to the market at an economic price point as a key focus for the Emissions Reduction Plan. We understand that work is underway to support this important signal to KiwiRail, and other large transport operators, to ready their investment to transition to low carbon fuel sources. KiwiRail's current procurements will ensure we are well placed to respond to this important transition.

8. Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?

Rail provides a huge opportunity to help meet the Government's commitment to transition to a carbon-neutral economy by 2050. Investing in the metropolitan rail networks to support growth and productivity in our largest cities is one of the strategic investment priorities in the Government's Rail Plan and the Rail Network Investment Programme which is currently under consideration. Of course, more could be achieved through a more aggressive carbon reduction strategy.

Through the NZ Upgrade Programme we are extending electrification of the Auckland metropolitan rail network between Papakura and Pukekohe. The already electrified sections of the metropolitan rail networks in Auckland and Wellington provide efficient and low-emission travel for high patronage commuter routes. We support the possible action areas in respect of rail – considering the further electrification of existing parts of the passenger rail network and considering future investment needs to ensure existing rail networks are fit for purpose.

9. Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?

No response.

10. The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be prioritised?

KiwiRail supports the Climate Change Commission's recommendation to progress a national low-emissions freight strategy across 2022 (consulted by June 2022, introduced by December 2022). We welcome the opportunity, should this occur, to be involved and to support the Ministry in considering its options and see it as being closely related to the Ministry's supply chain strategy. We consider that investigation into further electrification and/or alternative locomotive technology would be sensible areas of focus through this work.

In the meantime, KiwiRail is already engaging strategies to reduce our carbon footprint and extend the emissions benefits of rail through increasing our rail freight share. For example, we have introduced a new capacity management system enabling unallocated capacity to be identified and made available to the market on a weekly basis, ensuring existing customer freight needs are met and enabling KiwiRail to expand the rail freight customer base. These initiatives are important to increase the mode share of rail and support our importers and exporters, given rail transports around 25% of New Zealand's exports.

KiwiRail is also using intelligent transport systems to optimise delivery routes and improve delivery times, supporting the overall reliability of the service and aiding freight customers to shift to rail. We also provide useful information for our locomotive engineers to enable more fuel-efficient driving, for example reducing the fuel use required on gradient declines.

Long-term infrastructure investment is also essential to deliver mode shift to rail. This is being supported through the Rail Network Investment Plan. We support the action to "improve the resilience and reliability of the rail network through completing investments over the next decade outlined in the NZ Rail Plan".

Other strategic decisions will be important for optimising the emissions benefits of the railways. For example, we welcome the Government's intention to examine the efficiency of supply chain node efficiency (i.e. location of port and freight hubs).

More broadly, KiwiRail is encouraged by the action to improve the resilience and reliability of less carbon intensive transport modes to improve modal choice.

Growing rail's freight share in New Zealand can make a significant contribution to reducing the country's transport emissions and help New Zealand to meet its carbon reduction targets. At present, freight carried by rail emits approximately 70% less carbon emissions compared to heavy road transport, so each tonne of freight that is moved from road to rail makes a tangible difference to reducing emissions from the transport sector and New Zealand's carbon footprint.

Other benefits of shifting freight from road to rail include lower levels of road congestion and road maintenance costs, enabling fewer dangerous air pollutants and better safety outcomes.

Modal shift can be facilitated by general improvements in the overall reliability and resilience of the network that could then make rail freight more competitive for certain time-sensitive goods. For example, product that is delivered to a consistent service promise like postal or parcel volumes depend on a reliable linehaul transport network.

KiwiRail has the capacity to meet an increased freight task through the current network and continued renewals and modest growth of our rolling stock fleet. Improvements to the network's resilience are being made as a result of substantial Government investment. This will help address the legacy of underfunding in rail infrastructure and rolling stock. It will also help KiwiRail be able to offer a competitive service for all customers, both current and future, further enabling the shift to rail. This is because reliability enables schedule integrity which is essential for securing greater market share.

If the Government seeks to achieve high shifts in mode, then will likely require the consideration of additional policies to facilitate the modal shift such as through carbon pricing, incentives or regulations. KiwiRail is open to working with responsible Ministers and policy agencies to explore what these solutions may be and how we might take this forward. In the meantime, KiwiRail will work to achieve mode shift through increasing its market share.

11. Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

KiwiRail is committed to improving its environmental performance over time. Our targets are to achieve a 30% reduction in greenhouse gas emissions by 2030 (compared with a 2012 baseline) and to be net zero carbon by 2050 in line with Government commitments. KiwiRail established its carbon zero programme in partnership with the Energy Efficiency and Conservation Authority (EECA) in 2016.

Through current Government investment, KiwiRail has the opportunity to reduce emissions through the replacement of assets which are at or beyond their economic lives with more efficient and modern technology. Current investment for KiwiRail includes funding for the replacement of the South Island mainline locomotives fleet and the Interislander ferries. A key consideration of the new locomotive procurement will be improved engine performance, while the diesel-electric hybrid configuration of the new ferries is expected to reduce emissions by approximately 40% compared to the current ferry fleet. New assets will also support a more resilient and reliable service offering.

In addition to current investment, supply chain efficiencies, inter-modal hubs and modal shift, KiwiRail agrees with the proposed key actions of investigating biofuels as well as exploring the feasibility of further network electrification or other low or zero emissions alternatives. Current work under way includes:

Low carbon fuels:

- KiwiRail supports the mandate of biofuels and has a desire to utilise low carbon fuels in our assets where available. This will depend on further Government directives and pricing intentions in order to support the market to transition, as well as investment by KiwiRail and available technology. In the meantime, we are taking steps to ensure we are transition ready.
- New Interislander ferries are being procured. These have been designed to be capable of fuel switching to lower carbon fuels over the asset lifetime and as it is cost-effective to do so. The new fleet will reduce emissions by 40% on arrival and will reduce further over time as we transition to low carbon fuels and increase battery capacity.

Electrification/other low-emission alternatives:

- KiwiRail is progressing a decarbonisation business case. This will consider options including further network electrification through to low or zero carbon propulsion technologies for locomotives. This will support KiwiRail's strategy to reduce its carbon emissions and, in turn, remain a low carbon transport choice for our customers.

12. A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

No response.

13. Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway to you think Aotearoa should follow to reduce transport emissions?

The following response focusses on Theme Three, 'Supporting a more efficient freight system'. We consider that this covers all three approaches of avoid-shift-improve initiatives to reduce emissions.

We note the following reflections:

- Pathway 1 and Pathway 4 place more importance on the avoid and shift initiatives and consequently achieve the greatest amount of emissions reduction from the transport sector.
- Improving efficiencies is appropriately weighted as 'high' across all 4 pathways for Theme 3. KiwiRail maintains an ongoing focus in improving the energy intensity of current assets, and efficiencies in operations as much as possible (referred to in earlier responses).
- We note that both Pathway 1 and 4 assume the highest mode shift from heavy trucks to rail 12.5% by 2035, and a 20% shift by 2050. This will likely require additional investment by KiwiRail to procure additional rolling stock assets to support this uplift in mode shift, which may require shareholder support or other policy levers depending on the pace of mode shift sought.

- KiwiRail agrees that further work is required to model this scale of mode shift and whether it is feasible. This will assist in informing future rolling stock investment decisions.
- In addition, the National Freight/Supply Chain Strategy will be an important step for identifying those opportunities to facilitate such modal shift. We welcome the opportunity to be involved in this process.

Achieving either pathway will also depend on additional funding and long-term investment:

- The ability of KiwiRail to transition to 'cleaner rail' and decarbonise its operations will be dependent on further funding to support investment in network infrastructure and low carbon assets.
- In the longer term, KiwiRail also believes that alternative propulsion technologies may be available to reduce emissions. As such, KiwiRail will continue investigation of alternative propulsion technologies and will adapt its rolling stock strategy accordingly as those technologies evolve.

Finally, the Interislander fleet is an important component of the New Zealand shipping industry and an enabler of mode shift to rail (as KiwiRail aligns these operations to provide Auckland to Christchurch freight services). The new fleet will reduce emissions by 40% on arrival and will reduce further over time as we transition to low carbon fuels and increase battery capacity.

14. Do you have any views on the policies that we propose should be considered for the first emissions budget?

Rail has an important role to play in achieving the net zero carbon objective by 2050. The Government's Rail Plan establishes the foundational steps needed to achieve this outcome. This involves lifting the standard of the track infrastructure to resilient and reliable and renewing the rolling stock and ferry assets to support successful and reliable services by KiwiRail. The outcomes enabled by this include mode shift and reduced transport emissions, employment benefits for New Zealanders, resilience supply chains for our exporters, and greater movement of people by rail.

As indicated, KiwiRail is investigating options for further rail electrification and alternative locomotive technology. We will continue to engage with the Ministry of Transport as this work progresses to support the Government's Emissions Reductions Plan.

From:	[redacted]
To:	Transport Emissions
Subject:	Innovation when transporting containers to and from Ports without rail or truck, less congestion, electric powered, utilize a logistics hub.
Date:	Friday, 28 May 2021 1:13:06 pm
Attachments:	Cost Comparison Tables v Viii.pdf Ports Rail Projects Global Step Change with CFT v Viii 20210301.pdf High level Plus and Minus 20210203 v Vii.pdf

On examination of your website we would like to introduce you to our technology.

CFT Development of standalone container vehicles (on the surface, underground or in the "air") requiring, no locomotives, no wagons or trucks in the last leg to the ports

Our process as described on our website has a very positive impact on- i) port efficiency, ii) a lower requirement for land at the port, iii) road congestion, iv) pollution reduction, and iv) rail shunting yards reduction

https://www.cf-technologies.com.au/

> The transporting of empty or full containers through twin Tunnels each within 6 metres diameter (underground), on the surface or in the air to and from the port and the logistics hub 20 to 50 kilometres away. -

1. Trucks will not have to travel on congested roads in and out of the port, increasing their efficiency, while reducing: - overall road congestion, road maintenance and pollution.
2. The rail freight trains will not have to cross domestic rail.
3. A reduced need for rail sidings at the port in this process and thus will not have to increase as port volume grows (land consumption).
4. The predicted increase in shipping volumes will no longer require consequential land expansion in the port or nearby suburbs for stacking containers, and manoeuvring trucks, cranes, and forklift trucks. These activities can now be at the Logistics Hub some 15k to 50K away.
5. Road usage will decrease over time, thus proportionately reducing road maintenance, congestion, incidents, and new road infrastructure, while positively reducing pollution of both fumes and noise.
6. Trucks will increase the efficiency as they will return to their regional markets from the Logistics Hub and not have to travel to the ports on congested roads

Our studies are showing the results are:-

- Beneficial capital cost.
- Variable cost reduction.
- Positive environmental outcomes.

We are now thinking about our future as a small and perhaps insignificant team.

Five items:-

- Our process is both Transport and Port infrastructure requiring both ministries to acknowledge and accept the outcomes.
- We are not a constructor or developer and therefore we anticipating our specification be used as an biddable item in future State or operator tenders.
- We appreciate the State Authorities may require to complete a 3rd party review of the process to enable a clean tendering process.
    - University of Melbourne have been involved for 2 years using the engineering "masters" students to write on the topic
    - We are now contacting Monash University and CSIRO to help scope and complete a peer review.
    - We expect your department will require an involvement with NZ organisations.

Would it be possible to talk with you or one of your staff on the topic of the next steps from your perspective.

The next step for the project is a 3rd Party review to be completed prior to a State Authority tendering process.

Attached are our most recent documents which are easy to read.

1. Cost Comparison 2 Pages
2. Ports Rail projects 8 pages (with pictures and explanations).
3. High level Plus and Minus 2 pages

"Every idea deserves 5 minutes of positive thinking" our website https://cf-technologies.com.au/

Regards
Michael Tucker

On Behalf of the Board of Directors

Contact - Michael Tucker
Director
[redacted]
https://cf-technologies.com.au/

Innovation for Container Freight Distribution

ACN 638 428636 ABN 38 638 428636

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Should errors or omissions exist or be observed CFT will respond favourably to all suggestions.
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*

AN OPERATING COSTS COMPARISON

Container Freight Technologies (CFT) promotes an inventive approach to transporting containers in congested transport hub networks, including ports, railheads and other container storage and distribution facilities. The detailed design and proposed functionality of the CFT innovation can be found in the CF Technologies Website: https://cf-technologies.com.au

Table 1 suggests a broad comparison of first year costs of operations between the three alternative transport modes (i.e., CFT, Road and Rail). The CFT estimates presented are currently in a state of development and the methodology used is a mixture of top-down 'benchmark' estimates (e.g. estimated labour cost share of revenue) and bottom-up development of cost items as more information is collected from expert engineers regarding expected requirements for professional and task-specific labour resources (e.g. control room operators, maintenance personnel, and contracted consultants for hardware and software provision, control and updates).

Table 1: A Comparison of the costs of three transport modes – The Dynon Railyards to Webb Dock case

Cost Category	CFT $ per TEU[1]		Rail $ per TEU		Road $ per TEU
Operating costs (Actual for CFT and Short Haul for Road and Rail).	Approx. cost: Should decrease with further analysis.	**18.5**	Running cost, a little less than road.	**26.0**[2]	**33.0**[3]

[1] TEU stands for Twenty-Foot Equivalent Unit (Container.)
[2] A short haul Rail operating cost estimate developed for CFT by rail engineer Max Mitchell. Max has provided his estimate of the rail short-haul surcharge to reflect the big effort in raising a 4000 tonne freight train 25m over the Yarra River at the height of the Bolte Bridge and braking it down safely to Webb Dock.
[3] Long Haul estimate for road of $27.50 has been gauged from existing sources (BITRE 2008 and 2017). A Short Haul surcharge of $5.50 is added assuming a 20% value of the operating costs.

A Schematic Comparison of Mode Components

Compared to traditional road and rail modes, the CFT innovation is for generating conditions for efficient capital cost investment, variable cost efficiency, and positive environmental outcomes. A qualitative comparison for the three alternative transport modes is also shown in Table 2.

Table 2: Operator Variable Components

Component	Traditional Road	Traditional Rail	CFT process
Easements license Fees	Same	Same	Same
Maintenance of Operator capital	High	Medium	Low
Logistics Planning & Admin Staff	Same	Same	Same
Operator Staff	High	Medium	Low
Port staff	Same	Same	Fewer
Turn around time	High	Medium	Low
Utilisation (yield) of equipment	Low	Medium	High
Power consumption	No	Could be	Yes
Fuel Consumption	Yes	Yes	No
Direct Operational Staff (drivers)	High	Low	Nil
Safety Training (# of Staff)	Same	Same	Same
Emergency training	Same	Same	Same
Safety and performance admin	Greater	Same	Same
Yard Cranes and Forklifts	Yes	Yes	Fewer
Maintenance of capital Equipment	High	Medium	Low
Short term major incident recovery	No	No	Yes

Disclaimer
CF Technologies is conducting a prefeasibility Study, based on United Kingdom Gateway guidelines, that is developed in good faith. This is a proprietary CFT document and is not intended to be relied upon by any person or organisation other than CFT, its employees and its authorised contractors and representatives. Any potential infrastructure development identified in this document will be subject to a peer review or specific audit conducted by interested parties. CFT accepts no liability for any reliance by any third party on the information contained within this document. CFT makes no expressed or implied guarantees, representations, or warranties as to whether the requirements of this document will be fulfilled, and no reliance may be placed by any person on this document.
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On behalf of the Board of Directors of C F Technologies
Philip Macgregor Norman
Director

CF Technologies PTY LTD
ABN 38 638 428636. ACN 638 428636
28 Uvadale Grove, Kew, Victoria, 3101

Transporting Shipping Containers to and from Port
CFT Process comparisons to Road and Rail

Guide to Compare Road, Rail and CFT process costs and impacts.

Components

1. Sovereign Infrastructure

Component	Traditional Road	Traditional Rail	CF T process
Easements	√	√	√
Emergency access	√	√	√
Roads	√	×	×
Rail Lines	×	√	×
Pipe for CFT process	×	×	√
Tunnels	√	√	√
Bridges	√	√	×
Power distribution	√	√	√
Traffic Management / Congestion	√	√	×
Lighting	√	√	×
Pedestrian Traffic Mgt	√	√	×
Port Land Requirement	√	√	√
Rail Sidings at Port	×	√	×
Space for truck manoeuvring at port	√	×	×
Replacement of the above (years)	√	√	√
Multi-purpose Infrastructure	√	√	×
Domestic Rail interruption	×	√	×
Pollution Air	√	√	×
Pollution Noise	√	√	×
Sovereign Maintenance	√	√	√

Red	Unfavourable
Green	Favourable

2. Operator Capital

Component	Traditional Road	Traditional Rail	CF T process
Locomotives	×	√	×
Prime movers	√	×	×
DDU (Container cradles)	×	×	√
Rail Wagons	×	√	×
Road Trailers	√	×	×
Maintenance Workshop & Equip	√	√	√
Offices and amenities	√	√	√
Storage facilities	√	√	√

CF Technologies PTY LTD
ABN 38 638 428636. ACN 638 428636
28 Uvadale Grove, Kew, Victoria, 3101

Est February 2020

3. Operator Variable

Component	Traditional Road	Traditional Rail	CF T process
Easements licence Fees	Same	Same	Same
Maintenance of Operator capital	High	Medium	Low
Logistics Planning & Admin Staff	Same	Same	Same
Operator Staff	High	Medium	Low
Port staff	Same	Same	Fewer
Turn-around time	High	Medium	Low
Utilisation (yield) of equipment	Low	Medium	High
Electric Power	No	Could be	Yes
Fuel Consumption	Yes	Yes	No
Direct Operational Staff (drivers)	High	Low	Nil
Safety Training (# of Staff)	Same	Same	Same
Emergency training	Same	Same	Same
Safety and performance admin	Greater	Same	Same
Yard Cranes and Forklifts	Yes	Yes	Fewer
Maintenance of capital Equipment	High	Medium	Low
Short term Major incident recovery	No	No	Yes

Generating: -

Efficient capital cost. Variable cost efficiency. Positive environmental outcomes.

Our technology will also provide six positive outcomes: -

1. Trucks will not have to travel on congested roads in and out of the port, increasing their efficiency, while reducing: - overall road congestion, road maintenance and pollution.
2. The rail freight configurations will not have to cross domestic rail, (causing potential schedule failures).
3. Reduced need for rail sidings at the port in this process and thus will not have to increase as port volume grows (land consumption).
4. The predicted increase in shipping volumes will no longer require consequential land expansion in the port or nearby suburbs for stacking containers, and manoeuvring trucks, cranes, and forklift trucks. These activities can now be at the Logistics Hub some 15k to 50K away.
5. A standard installation of the twin tunnels, each less than 6 metre diameters (depending on geography), will have a capacity of millions of container movements per annum. Pipes will cater for port volume growth. In the case of Melbourne Port this process will cater for 15 years of growth.
6. Road usage will decrease over time, thus proportionately reducing road maintenance, congestion, incidents, and new road infrastructure, while also reducing pollution of both fumes and noise.

On behalf of the Board of Directors of CF Technologies.

Port Rail Projects – A New Approach

Innovation creates a world first – to accommodate port growth without excessive increase in port footprint, plus environmental and cost benefits.

The purpose of this document is to encourage those engaged in Port Rail Projects to recognise that CF Technologies (CFT) offers a viable alternative to traditional rail and road solutions for handling container freight at seaports around the world. To validate the technology and the claimed advantages, an essential process is for the relevant authorities, the Department of Transport (DOT – Victoria, Australia) and the Department Ports & Freight (DP&F – Western Australia), to conduct a thorough independent review. Each Ministry needs to specify the most suitable location of the logistics hub for each port, thus allowing State Authorities to accommodate port growth without the need for an associated increase in surrounding land consumption. The Ministry will hopefully be confirmed as visionary, innovative, and open minded, in considering the CFT proposal.

CF Technologies will provide the Ministry with full information on the Intellectual Property and Patents, and can act as a conduit for any validation process that may be forthcoming.

CF Technologies P/L – www.cf-technologies.com.au

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Overview

The best long-term solution to any issue is obtained by matching ongoing and long-term requirements with a solution that is flexible, and able to scale efficiently and cost-effectively into the future as the landscape changes.

The Long-term Port Issue

Capacity at many Ports around the world has grown well beyond the design specifications that were relevant when the ports were first established. This manifests as congestion and reduced throughput, as well as increased land consumption. In many cases, this expansion is creating conflict with surrounding communities, and growth has become unsustainable. Land consumption is due to two factors – space required to store shipping-containers, empty or full, between transport stages, and also the need to provide manoeuvring room to accommodate intermodal transfer activity.

The Long-term Solution

Container Freight Technologies Infrastructure will allow for volume growth at the port without increasing land consumption.

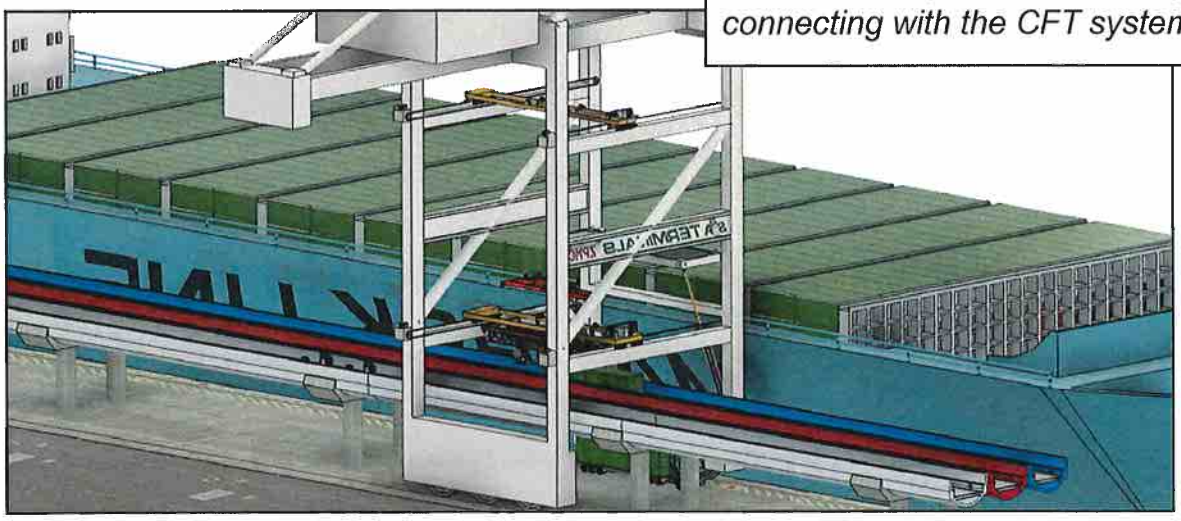
- Container storage will be neither at the port nor its precincts,
- Trucks will not create congestion nor road deterioration around the port or its nearby suburbs, and
- Rail sidings and shunting-yard infrastructure are not required at the Port.

This will allow the logistics hub to transfer containers to and from the port, efficiently, cleanly, and unobtrusively.

By enabling collaboration of the Ministries of Transport for both Rail and Road with Port Infrastructure, our holistic logistics solution will reduce land consumption while increasing:

- Efficiency of the Port,
- Utilisation of Trucks and
- Capacity of Rail.

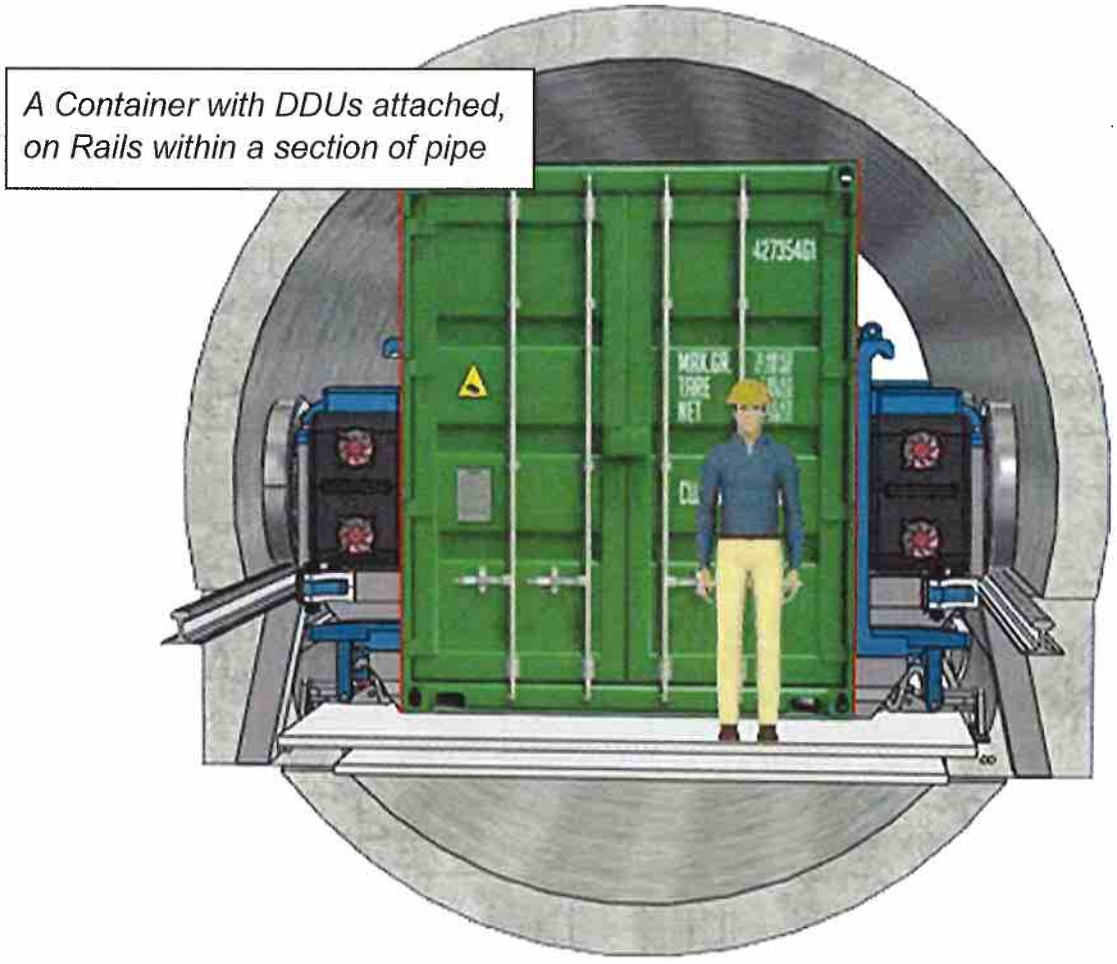
A modified ship-to-shore Gantry connecting with the CFT system



Concept

The basic concept behind the CFT core technology is the attachment of motors and wheels to shipping containers, thereby transforming them into vehicles – Container Vehicles. The motors and wheels are combined into what we refer to as Detachable Drive Units (DDUs), and each Container Vehicle requires two DDUs. This equates to four motors per vehicle.

Container Vehicles can travel through pipes just over 5 metres in diameter, and can be routed above ground, at ground-level, or underground in tunnels less than 6 metres in diameter. In a normal configuration, twin pipes would be required to accommodate transit in both directions between port and logistics hub. Pipes allow for travel in either direction, and can switch directions to handle unusual traffic conditions. In addition, this bidirectional ability provides a degree of redundancy should an incident occur in one of the pipes.



A Container with DDUs attached, on Rails within a section of pipe

Pipes are fitted with power-supply rails, and also communication lines to keep the vehicles in constant communication with a central command station. Ample allowance is made for drainage in the bottom of the pipes, which also includes room for self-driven cleaning robots if these are deemed necessary.

Our website provides many further details – www.cf-technologies.com.au

CFT Advantages

The core advantage of the CFT system is its ability to transport containers in near-continuous flow between a port and a logistics hub. Bottlenecks and double-handling are reduced to a minimum. The hub can be situated many kilometres away from congestion and valuable real-estate. Twin tunnels and pipes can deliver containers in both directions, securely and on time. Our technology will provide seven positive outcomes –

1) Trucks will not have to travel on congested roads in and out of the port, increasing their efficiency, while reducing pollution, road maintenance, and time-delays for motorists.

2) The rail freight train paths will not have to cross domestic rail-lines, a potential cause of schedule failures.

3) A reduced need for rail sidings at the port when using the CFT process leads to reduced land consumption as port volume grows.

4) The predicted increase in shipping volumes will no longer require consequential land expansion in the port or nearby suburbs for stacking containers, and manoeuvring trucks, cranes, and forklift trucks. These activities can now be assigned to the Logistics Hub, possibly many kilometres away.

5) CFT will defer or even avoid having to build a new port. An example of where this might apply is the planned port of Hastings in Victoria.

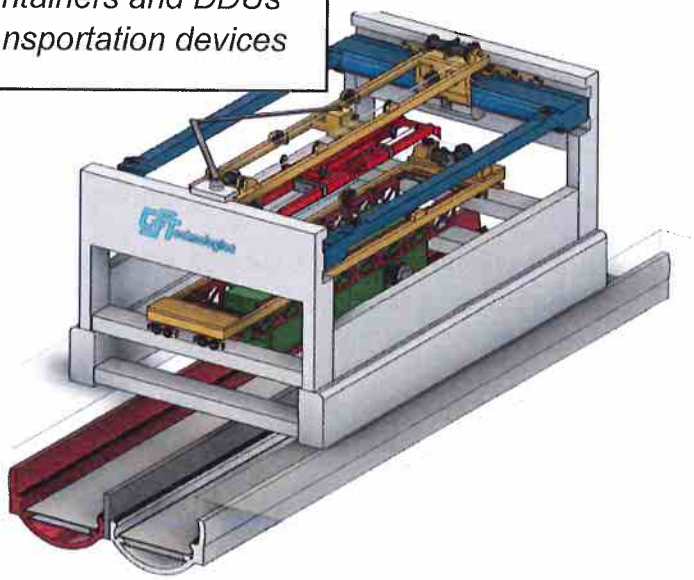
6) A standard installation of the twin pipes, each slightly more than 5 metres in diameter, will have a capacity of millions of container movements per annum. The capacity of these two pipelines should cater for port volume growth for more than a decade. In the case of Melbourne Port, twin pipes should be sufficient to cater for 15 years of growth.

7) Road usage will decrease over time, thus proportionately reducing road maintenance, congestion, incidents, and a need for new road infrastructure, while positively reducing pollution of both fumes and noise. Potential savings on expenditure for new road construction projects, can result in a huge reduction in capital costs.

Should a jurisdiction have joint responsibility, or a separation of authority for Transport Ministry and the Port Infrastructure Ministry, careful cooperation and coordination is required. Working together, these two authorities should be able to create a holistic logistics model solution that will benefit communities, port competitive-positions, and efficiency, for all stakeholders.

Four patents (one more on the way) are registered. Preliminary case-studies have been completed for two ports in Australia where some enthusiasm is being shown. We have identified three other opportunities globally. We also have an international engineering company looking at power-consumption data with us. The University of Melbourne had a small number of engineering "masters" students developing "proposal and costing templates" as their assignment for 2020.

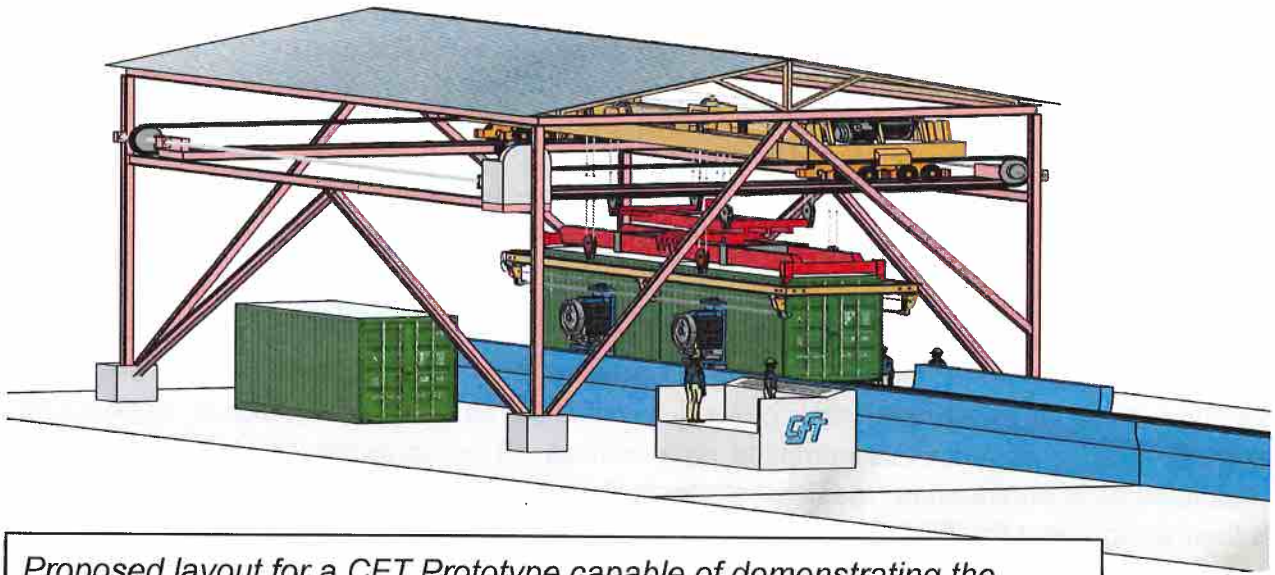
Transfer Unit that robotically moves containers and DDUs between transit channels and other transportation devices



Constructing a Prototype

We have strong encouragement from people and organizations in Geelong, Victoria...

- Austeng Pty Ltd an engineering firm to coordinate the Prototype construction,
- An offer of land in the Avalon area, (with Baywest in mind) and
- The City of Greater Geelong is extremely keen to support us. Baywest is a Victorian port near Point Wilson – Geelong, and is considered a long-term project. This would be an agile facility, Air, Sea, Rail and Road port -- one of the few in the world. We are aware of four earlier projects not being approved at Point Wilson. The promise of our technology is that it would leave the wetlands sanctuary undisturbed. Pipes can be routed underground, and even an above-ground implementation would have minimal impact since everything is encased in pipes.



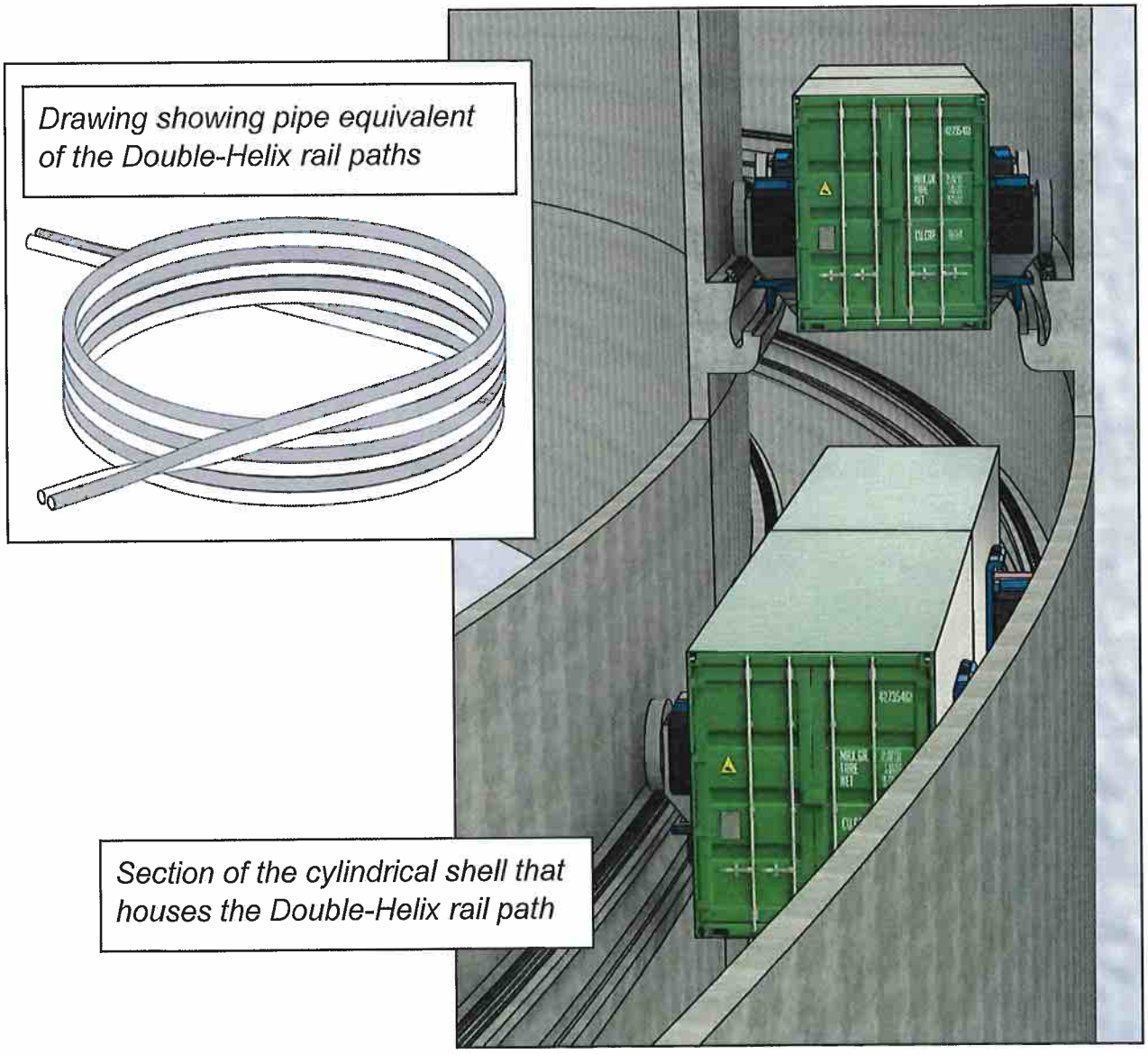
Proposed layout for a CFT Prototype capable of demonstrating the attachment and operation of DDUs, and associated robotic mechanisms

Traversing Rivers

Many ports face a problem with heavily utilized rivers and waterways that cross the most direct path between a Port and its associated Logistic Hub. Traditional rail systems require a lengthy ramp to get rail-lines to height or depth for a river crossing. A CFT design has been developed to tackle this issue – the Double Helix. The technique involves a tight radius rail path that has a relatively small ground-level footprint, both during construction and in operation.

Installation can utilise current assets without a complete rebuild of an existing port facility. Where pipes need to run below ground for significant distances, the tunnel diameter to accommodate them is slightly less than 6 metres, resulting in reduced excavation costs compared with larger rail tunnels for traditional rail systems.

Examples on our website show proposals we made several years ago for implementations at two docks in Australia – Fremantle Dock in Western Australia, and Webb Dock in Victoria.



Drawing showing pipe equivalent of the Double-Helix rail paths

Section of the cylindrical shell that houses the Double-Helix rail path

Logistics Hub Layout Plans

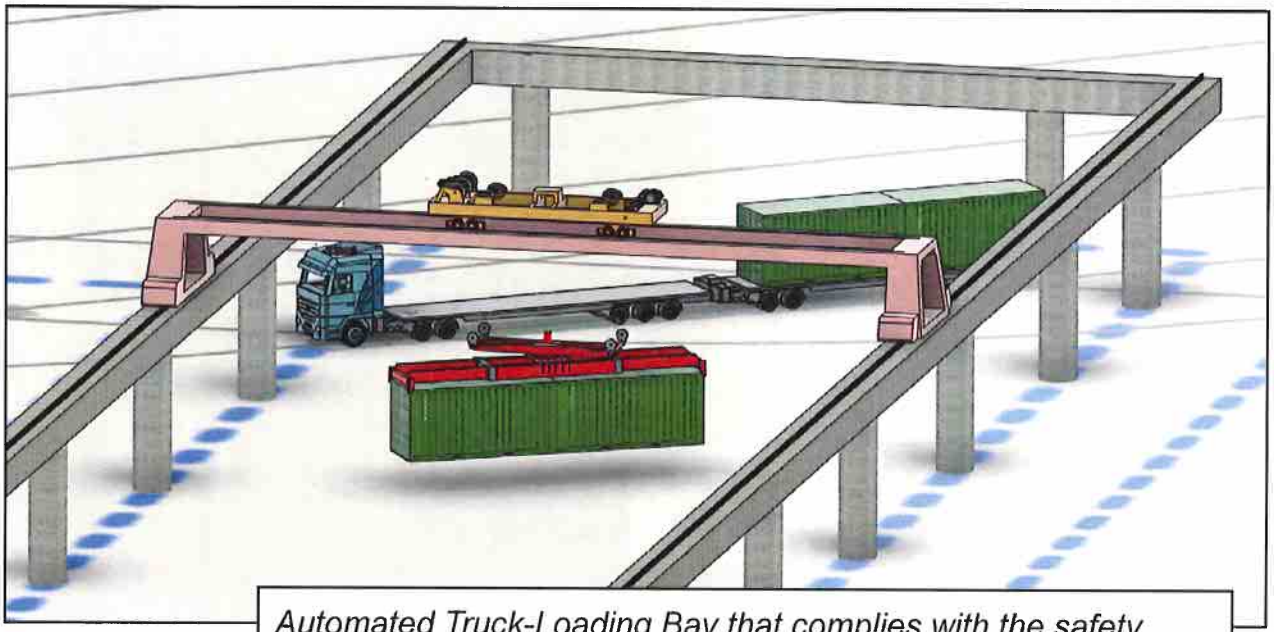
We have now completed our development of the "layout templates" for the Ports and the Logistics Hubs. The port template may be integrated with existing hub facilities, thereby removing the need for a complete rebuild. Provision should be made to include additional pipes in the system to eventually cater for increased port traffic volumes, even though the pipes may not be required or installed until well into the future.

If the opportunity exists, a new hub development (Green-Field site) provides the flexibility of construction to take full advantage of the most beneficial features...

a) Expansive (and expandable) Container storage.
b) Rail and truck traffic lanes and bays to deliver and collect containers.
c) The pipes to and from the port seamlessly integrated.
d) Transfer Units for loading and offloading to and from the pipes.
e) Maintenance yards for the Detachable Drive Units.

The configuration of the pipes at the port will be specific to each port; Notionally there will be:

- Two pipes to each dock within the port area connecting with gantries for loading and offloading.
- Specifically designed or modified cranes to feed the existing gantry cranes to load and unload vessels.
- At both the port and the hub, there is an additional section of pipe-channel used to store the Detachable Drive Units (without containers attached), and feed them to the transit pipes as required. DDUs are capable of moving independently without necessarily being attached to a container.



Automated Truck-Loading Bay that complies with the safety requirements for Drivers and also provides very fast throughput

Costing

As of January 2021, the preliminary costing model V2 has been completed, allowing figures to be now refined through further, detailed studies. A detailed study needs to be specified for each project. The first exercise was to develop the range of costs to demonstrate a lower overall capital and variable cost of the CFT process when compared to Road and Rail costs. The first exercise corresponds to GATE 1 of the UK Gateway process. This is now complete.

Ongoing Discussions

Discussions that commenced in 2017 are continuing with the developers of Kwinana (WA Westport). We are asking them to consider the application of our patented technology to their specific situation, and assess the benefits. Kwinana is similar to Baywest in Victoria in that they are both long-term transitional port projects.

We are in talks with interested parties to develop a detailed study for a CFT link between Toowoomba and Brisbane.

We are now receiving interest from export markets.

Austrade is helping us investigate potential export opportunities with Singapore, South Korea, and India.

Investigation, Development, and Application of the CFT system provides an opportunity to employ people; to create valuable and competitive assets; to have a smooth transition from traditional techniques; to improve a port's export competitive position; to reduce road traffic congestion; and to lower current pollution levels at major ports.

Encouragement within Australia for CF Technologies innovation will help stem the loss of local engineering expertise, and hopefully maximise the potential benefits mentioned above. The most optimistic outcome could be that it forms the basis for Australia's first Electric Vehicle, and a chance to lead the world in freight logistics.

On behalf of the Board of Directors of CF Technologies Pty Ltd.
Philip Macgregor Norman, Director.
March, 2021.

CF Technologies Pty Ltd
ABN 38 638 428636 ACN 638 428636
28 Uvadale Grove, Kew, Victoria, Australia, 3101

An opportunity for the Transport and Port Ministries to embrace, own, and deliver a Global step-change for container movements to be efficient, clean, and unobtrusive.

Feedback to the NZ Ministry of Transport on the Green Paper - Hikina Te Kohupara.

Dear Michael Wood, and honourable members of the NZ Ministry of Transport,

25th June 2021

From: [redacted]

Contents:

Who am I, and why am I qualified to give feedback?

I'm a NZ citizen, 63, and have lived in Ruby Bay, Nelson for 30 odd years. For work, I have been involved with commercial and residential buildings and development in many cities in NZ, but mainly in Auckland Nelson and Tasman. I have a BSc in Electronic Eng from the Uk, have been studying doctorate Climate papers for 30 years in an amateur capacity, and I am the author of The Cliff in The Fog, on Climate and Oil published 2009. Member of Extinction Rebellion Nelson, Zero Carbon Nelson Tasman, Nelson Tasman Climate Forum (Transport Group), and the Green Party, among others.

I have a large long term collection of scholarly scientific climate reports and the 2014 IPCC manual corresponding to their AR5 report, and I have a deep understanding of our climate system. I've had discussions with many climate scientists directly, including those working in the Arctic and researching methane release in the ESAS north of Russia. We are all in big trouble.

Context of NZ's situation

I understand that you are responding to the NZ Climate Commission's Advice, within the context of our recent new law to reduce our carbon emissions to "Net Zero by 2050". Your job is to issue "budgets" to deliver this outcome as best you can, with minimum damage to the economy, or hurt to the voting public. But unfortunately the world is changing very fast and this legislation stands on shifting sands, and is likely to be obsolete quite soon. Here's why.

The Paris Agreement, which recent NZ governments have chosen to more or less ignore so far, is 5 years old and was based on information held in the IPCC's AR5 report from 2014, now 7 years old. The AR5 made some mistakes in prediction, largely due to the functioning of "hindcasting" in models, and the insufficient attention given to various fast-moving global climate feedbacks which could not be modelled. The largest of these is the potentially devastating feedback of methane emission from thawing Northern permafrost and the shallow Arctic ocean, the ESAS, and others are also very serious for humanity. I need to be brief. The result is that the IPCC's AR6 out next year is likely to mandate at least 45% reduction of all carbon emissions by 2030, not 2050. There is a very sound scientific argument to actually just cease all carbon emissions immediately, but of course we can't do that. Our "Net-Zero by 2050" law is too slow for the Paris Agreement, and the Paris Agreement is too slow for the AR5, and the AR5 is also too slow for the raging feedbacks coming. We watch the signs of rapid "Climate Evolving" every day in the media. We no longer have time for "by 2050", and especially for the Transport emission projection described in your graph on page 13 of the Green Paper. In this graph you suggest that transport emissions will not actually start dropping below 2020 levels until after 2030. This will not stand much longer, and you will be forced to move much faster.

We also have an added problem in NZ. Our overall carbon emissions are 25% above 1990 levels, with our transport emissions being 90% above 1990 levels. This is highly embarrassing when Europe has achieved 25% BELOW 1990 levels. It is likely that the European Carbon Border Adjustment Mechanism (new high import taxes due to our very lazy carbon profile - cars and cows) will come into effect soon, heavily punishing us for not "Acting" on limiting vehicle emissions. This could easily become contagious in World Trade circles, locking us out of many exports. The Ford Ranger is the prime target, along with all other popular large utes and SUV's. Shame on us. These vehicles need to be blocked now, not in 2035! We are in big trouble, and you need to act large and fast, not slow and careful.

We have a genuine Climate Emergency, and an emergency requires rapid responses before the house burns to the ground. Unfortunately for the NZ public, you need to bring in several uncomfortable sticks (see Suggestions below), rather than just a few pallatable carrots like the $8K discount for expensive new EV's. The AR6 will likely enforce this, making this Green Paper and all the work gone into it, obsolete within months. The alternative is climate chaos getting worse for everyone everywhere from now on for centuries, and there is no guarantee this will not happen anyway due to global climate inertia and so many governments already buying time for 30 years. Below 1.5C is the mantra, but currently we are heading for 3.5C this century, and anyway there is no temperature stability indicated in the paleo record at 1.5C, or 2C, or 3.5C. Just feedback-led heating over short millenia to Earth's other stable state - the HotHouse, +10C. This potential Earth system planetary change is explained in this scientific article from 2018:

https://www.pnas.org/content/pnas/early/2018/08/07/1810141115.full.pdf

The "Global Warming" currently happening, primarily due to all our engines, is happening at a rate unprecedented in the paleo record, and could lead to Earth having a dramatically lower carrying capacity for life, as has happened before. The global leaders making the decisions during the 2010's and 2020's may be those to blame for a "ghastly future" more or less forever. It is worth getting a proper understanding of how the Earth works, and the way carbon is pivotal. Coal, gas, petrol, diesel, jet-fuel, concrete and steel must all reduce. Fast. Everywhere. Sorry.

We are witnessing a dramatic rise in extinctions worldwide, also amounting to a Biodiversity Emergency. This report, just months old, shows the sort of trouble we are in, and needs to contribute to your work on a way-faster NDC, of which transport represents almost half. It demonstrates urgency not evident in your Green Paper:

https://www.frontiersin.org/articles/10.3389/fcosc.2020.615419/full#B118

I quote two highly troubling statements from this report:

"Humanity is running an ecological Ponzi scheme in which society robs Nature and future generations to pay for boosting incomes in the short term", and

"The predominant paradigm is still one of pegging "environment" against "economy"; yet in reality, the choice is between exiting overshoot by design or disaster".

Currently, by ignoring already inadequate NDC's for too long, we are heading for disaster, maybe not for us mature people, but for all our descendants. It will be our generation's fault, but specifically those in power these few decades that vote against rapid reductions and effective "Climate Action" mitigation.

Your Green Paper questions answered.

Consultation question 1 (Page 11)
Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?

Yes I support the direction of your Principles. You will need to move much faster, and this will need to involve "sticks", ie changed taxes and charging systems with lots of public education, as well as incentives and "carrots". The Just-ness of the Transition can be managed with free passes for those in need and lower rates for the first or short travel distances per year. Most existing travel of people and stuff will have to become too expensive, and expectations across the board will have to drop. The Ministry should lead the way with modelling active and public transport with low EV use and zero ICE use. There should be zero overseas offsetting, this would be cheating by a relatively under-populated wealthy country already rich in forest offsets. If anything we should offer offsets for others after achieving our own necessary radical emissions cuts.

Consultation question 2 (Page 27)
Is the government's role in reducing transport emissions clear?
Are there other levers the government could use to reduce transport emissions

There is a lot of good information in this section, and the government's role is clearly to force down transport emissions, as well as encouraging and supporting correct local Council actions and planning. But the graph on page 13 shows how completely unacceptable the pace of change is under current planning. The whole centre section of the graph needs to be deleted, so that transport emissions start down this year, not next decade. We don't have the luxury of that time, and this will involve a complete rethink of this planning. I expect this mandate to arrive in New Zealand next year to a drop-jaw reception and plenty of resistance from everyone. This graph will look different when it shows a 45% reduction by 2030 - 8.5 years away. Steep change starting soon, rather than gradual change delayed again.

It is a lie to say that international aviation is difficult to attribute. Planes refuel in our country - on average that fuel is their contribution to our emissions from NZ, and refuelling in other countries is their contribution. Simple. There should also be a steep take-off tax and distance tax per seat for every plane departure, local, national or international. It is a global rort that airlines and shipping lines have avoided this for so long. All plane travel will need to be reassessed, and likely become an elite activity only. Tourism in nearly all its forms is likely to become history, after all tourism is mostly just large scale fossil fuel travel for the purpose of a few selfies.

Clearly, the government must move sharply on all private vehicles, their use and importing, especially all those with bigger ICE engines. This must be the centre of all transport emission reduction action. The best way forward is a national smart distance pricing system - more on this later.

Changes need to be made urgently to private vehicle importing and registration regulations. The Ford Ranger and its brothers may be hugely popular, but they represent the worst of vehicle greed, apart from a few Porsches etc, and all large ICE vehicle imports need to be pressed down to zero within a few years, not by 2035! We just don't need any more, they need to become history.

Consultation question 3 (Page 31)
What more should Government do to encourage and support transport innovation that supports emissions reductions?

There is one major piece missing from this section - there is an assumption that all existing travel of everything needs to be maintained, so we need to electrify and innovate to achieve this. Actually we need to reduce travel of people and stuff dramatically, and all expectation, as well as innovate. Working and meetings online from home have already made a small difference, but

overseas this has lead to a "click and get delivered" culture, increasing all delivery systems - look at Amazon. Innovation in the taxing of distance, for people, cars and deliveries, will lead to a sharp reduction of emissions alongside a sharp reduction in consumption and expectation. We cannot just keep consuming more, and this includes the buying and importing of EV's.

One useful innovation not mentioned anywhere is the electric retrofitting of existing ICE vehicles with standardised modules created here or overseas. Would save scrapping so many late-model cars.

Hydrogen is mentioned, and preferred by some. I believe the direction here will be more about what systems become widely used internationally, what heavy vehicles are available, rather than what government chooses. Clearly there will be a chronic shortage of EV's of every sort once the switch gets going, and hydrogen vehicles are being prioritised now in Japan, our biggest vehicle source. The hydrogen supply obviously needs to be Green and not Blue.

Consultation question 4 (Page 44)
Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?

Although I have been involved in many subdivisions, I can see their highly detrimental effect, now we come to needing to reduce the car culture. I think the worm has turned, and all green-field subdivision should be ended, and be replaced by building up higher, or much higher, in all city centres. This would solve many problems, transport, retail, city population densities, construction of cheaper places to live without cars, etc. Some building would have to be subsidised to offer cheaper rentals in centres.

Bike parks next to all bus-stops, pedestrianised city centre streets in ALL towns in NZ, reduced carparking, closed roads to traffic, congestion charging, no more motorway building, bike paths away from traffic (or instead of traffic), general car-use discouragement, useful public e-bus and e-van systems, wide use of e-bikes and e-mopeds, less use of cars or EV's. EV's are not the answer for cities.

Land-use and planning changes will take a long time to have the desired effect. We don't have decades to reduce, so changes to streets and buses and bike-paths and carparking can all happen quickly.

Consultation question 5 (Page 56)
Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?

Many of the suggestions so far involve encouragement to avoid or shift, there is little discussion about discouragement to not avoid or shift. Yes to bus services etc, but you need congestion charging parallel. "Avoid" also involves active discouragement of travelling at all. There is no mention of the 2nd most popular mode of travel in China now - e-mopeds and small e-motorbikes. The regulations about safety should be eased to allow far more flexible carrying of stuff and passengers on all forms of e-bike. In Vietnam they can carry fridge-freezers on their motorbikes if they want, and they do. Not easing these rules just encourages more car-use.

Commuting by car can be actively discouraged with congestion charging, expensive or non-existent carparking, closed streets, and widespread info on the bus and bike systems. Retail hours can be staggered. School zones can be zero parking for quite a distance, so children walking/ biking/busing becomes mandatory and driving to school forbidden. City fringe subdivisions can be

serviced by bus stops with bike parks and park-and-ride systems. It's just about nudging people quite hard to change their behaviour, and usually simple incentives are insufficient. Given the urgency, nudging may need to be quite strong.

The big discouragement to all driving of course is stepped smart Road User/Distance charging… next…

Consultation question 6 (Page 64)
Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour.
Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?

This is the section of your Paper that excites me the most. I have been considering ways to reduce traffic for decades, and have come to the conclusion that smart distance pricing is now the answer, and gives the opportunity to include various other useful charging systems. The innovation capacity is almost ready, and already widely used in a different guise.

Simple carbon tax added to excise duty is a blunt instrument and likely to be unpopular. Removal of subsidies, effectively the same thing, in other countries has often resulted in riots, as everyone is affected negatively on the same day, as would happen with a big petrol/diesel price jump.

Smart charging can be brought in gradually as vehicles are upgraded, and the charging can be stepped for distance bands, engine emission rating (car type), included carbon taxes, fines and congestion charges, and are all adjustable at source with time. Charging itself can be monthly to the registered owner of every vehicle, and itemised like a power bill now. EV's and fuel-cell cars may be exempt for distance charging for a while, but they cannot remain exempt. With one eye on the Just Transition, every vehicle could have a small free mileage per year, say 5km/day or 1500km per year, with staggered start dates per make perhaps. Average car mileage per year is known already via the WoF system, so squeezing the "average car mileage" down is a matter of Road Distance Charge bands, with high mileage getting charged very highly. This charge is also linked directly to the vehicle emission rating (engine type size and age), which could be very high for large ICE engines, and not small for hybrids with large ICE engines.

The smart system would track every vehicle using it's digital ID (no need for number plates any more) and GPS, as already happens with traffic jam management in cities using cell phone movements. No need for number plate cameras beyond the short term. This system already tells the driver about the vehicle's speed and location, and the speed limit, in most new cars, so no need to identify the actual driver, just the vehicle. Congestion charges near urban centres or school zones would be simple to add and vary. New roads (like Transmission Gully) would be very expensive to use (and build), discouraging the government from building any more new roads. Every private vehicle journey would become directly chargeable, depending on many factors run by a simple algorithm, or App. The App could link with certain other vehicles by choice, in a number of ways. We have the technology already. This does not need to cost the Earth to bring in, but could cost the Earth not to. It could also easily become standardised worldwide, so the race is on to develop it. In the circumstances I don't see why government cannot just decide to bring it in without need to ask the public, but the system needs to be designed well. Existing RUC included in petrol would be taken out and separated into the App, and diesel for all off-road use would have running hours chargeable to every engine by rating - construction, farming, industrial, mining etc. Off-road enforceablity is a different question that needs attention.

The system would need a functioning GPS system in every vehicle which includes the vehicle ID, and older vehicles can be brought in gradually, with a looming deadline like Healthy Homes, and tested at every Wof. All the chargeable information would be held in a central system, accessible or held slave by each vehicle's App. Vehicles would need a zero or low balance to achieve a Wof. Old vehicles will also need exhaust testing at Wof time, with failures automatically written off. Any

vehicles on the road strongly out of Wof for certain reasons would be impounded and scrapped, as scrapping older ICE vehicles will become a priority for this country.

Given that transport emissions reduction will become more urgent very soon, involving necessary rapid public behaviour change way beyond your current budget planning, I think this system of smart distance charging etc, is the golden key to "45% reduction by 2030". This of course will be followed by "Net Zero (or even ZERO) carbon emissions by 2035", taking us down at least another 25% over the next 5 years. It will be quite shocking, given that our April 20 lockdown only managed a 17% reduction, and car/ute/SUV travel is the major problem. EV's are not the answer either, we cannot just replace all our ICE's with EV's.

I used to write software in the 80's, and would like to be further involved...happy to be consulted at further depth on this issue. Have been discussing with a software engineer.

Distance charging also needs to be adjusted up for all types of heavy vehicle and brought in for all passenger flying linked to emissions per km per seat per aircraft rating and carbon pricing.

Consultation question 7 (Page 72)
Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?

There is no harm in improving the fuel efficiency of our fleet, and encouraging the uptake of EV's, while resisting the imports of larger ICE's asap, and looking for reasons to scrap older ICE vehicles. It would be possible for government to simply ban the advertising of all newly imported ICE vehicles, in favour of EV's or fuel cell vehicles. Hybrids with large ICE engines should also be resisted, or charged high registration fees. Singapore charge a 100% import tax on many cars. Large ICE vehicle imports, utes, SUVs, and status cars should be ramped down starting now, and banned completely by 2025, just over 3 years away.

Again there is a lack of consideration for far less travelling overall. This needs to enter the public mindset of NZ, as unpopular is it may be. The world, and NZ, cannot sustain the level of travel of people and stuff, and expectations must and will drop. I know humans between 15 and 70 years old are bad at reducing anything, hence the shocks coming to society. If it's not the climate catastrophes, it'll be the carbon reduction measures and climate mitigations. But we cannot expect to just replace all our ICE's with EV's. It would be 100 times worse than when they invented flat screen TV's, and a billion CRT TV's got biffed into the ground. Waste is the wrong word.

Biofuel is not really a viable alternative given that it competes directly with food, at 1200 litres per hectare per year for Canola, is still combustion instead of electric, and is really in dreamland as an aviation fuel given the quantities. Reduction of travel is the only option, especially plane travel, not finding ways to maintain or increase travel, as all of these systems have large quantities of embedded carbon in their manufacture that everyone seems to want to ignore.

Back to the Road Distance Charging App.

Consultation question 8 (Page 76)
Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?

A city like Wellington that has a successful and well-used bus fleet might be ready to start introducing more expensive e-buses. In Nelson our buses are hardly used because everyone who has a car would rather sit in a traffic jam by themselves than sit in a bus. I think it's better to find ways to get the buses used well, and commuters out of their cars, before working on the change to e-buses. Diesel buses with a low occupancy are quite a bit worse on emissions than cars, driving round all day with just a few passengers, if any.

However I use the AKL CBD to Albany bus quite a lot, and find it useful, fast, relaxing and an excellent reliable service that is well used. So well used that the Albany Park and Ride is completely insufficient for the demand. We need a strong nudge in Nelson to change commuter behaviour.

With a hybrid myself that runs at 4.5 litres / 100km, and a 800km range, I have never used any inter-city buses in NZ, although I do use the planes. I will note here that if RUCs were included at the average 7c/km for the EV Nissan Leaf, my hybrid would still be cheaper to run at 9c/km, when the Leaf would be 10c/km. This itself indicates that petrol is far too cheap, and has been for decades. The externalties of petrol and diesel use are horrendous and completely ignored without a substantial carbon tax.

Consultation question 9 (Page 79)
Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?

Not at all. Aviation of all types, as it stands, is unsustainable (unable to be sustained), and incompatible with our urgent need to reduce emissions everywhere. Your Paper is proceeding as if aviation is so important, like concrete and steel use and dairy, that it just has to continue somehow. These are areas of our economy that will not face up to the simple fact that they are incompatible with rapid carbon emission reduction, and amount to economic and expectation "disconnects" with the overall reduction necessity. Yes, it's a shame, I have loved flying.

The suggestion of SAF, sustainable aviation fuel from biofuel, is also a misnomer. There seems to be a popular idea that because something comes from plants it is ok to burn as much as we like. This idea is now losing traction because too much of everything has already been burnt, and now we need to close off as much combustion of every sort as soon as possible. The bottom line is that aviation needs to be strongly discouraged with quota or expense, until it can prove zero emissions. In the short term there should be a new takeoff tax, say $30, and distance tax, say 10c per km flown, per seat in every aircraft from now on, rising steeply with time to signal the extended interruption to flying post-Covid.

I have done extensive work on the offsets offered when booking flights, trying to align with the projects offering these offsets, and with carbon sequestered using NZ's best sequestering system, pinus radiata. The international flights offset organisations actually cover a tiny proportion of flights, almost neglible, but their existence allows flyers to believe their flights are guiltless. This is a massive popular rort, like Catholic Hail Mary's, and totally unsupportable. AirNZ's offset cost per flight runs at about 5% of the real cost, and a 737 travelling to London and back regularly would require 100km2 of new radiata forest to itself - per plane - to be "sustainable". No, aviation needs to be quickly curbed by these reductions approaching, and kept down until they can prove zero emission flying with renewably charged plane batteries. It is also not acceptable to try to offset our own planes with overseas offsets. The aviation industry, useful or necessary or not, is a serious contributing danger to our future. We need to relearn SLOW travel, or NO travel, with an end to FAST travel. All tourism, of course, is in the firing line.

Consultation question 10 (Page 86)
The freight supply chain is important to our domestic and international trade. Do you have any views on feasibility of the possible actions in Aotearoa and which should be avoided?

At no point in your Paper on this topic is reduction of freight mentioned. There is an assumption that demand as it exists now should continue, or even increase. This perspective is also incompatible with any Net-Zero target, especially a shortened one. It might be good to have expensive new e-trucks or fuel-cell trucks, or retrofit existing diesel trucks, but until these options exist we may have to simply allow a lot less frieight - ie the existing supply chain system will become temporarily broken so we can't just order whatever we want. From people I know in the

industry, the supply chain system in NZ is actually very efficient, so your suggestions are nothing but nibbling at the edges, when a major bite or more into freight carbon emissions is demanded.

A good thing going forward would be for ALL courier and delivery vans to be compulsorily e-vans in the near future - the options exist already. Courier Hiaces often rack up 600K km or more which would be a good test for e-vans and their batteries.

Consultation question 11 (Page 97)

Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

You have not included mandatory reduction in freight usage. Most freight is response to wants, not needs, and we need to seriously reduce the mileage and tonnage. We also need to get used to supply chain deliveries taking a lot longer or not happening at all. In the medium term, green hydrogen may become practical for road freight movements, while blue hydrogen (from LPG) needs to be banned before it starts. The production and storage of hydrogen is inefficient and hazardous. Biofuels, on the other hand, have been seen as a potential panacea because they are technically "carbon-neutral". These arguments are all losing ground as we start to face real, urgent and large scale reduction of everything involving combustion, engines and travel. We are lucky, we already have 85% renewable electricity, unlike most countries struggling with reductions.

Consultation question 12 (Page 104)
A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

I realise that "A Just Transition" is the politically correct catch-phrase that must be attended to in this process. I realise that Te Tiriti and poverty considerations are important, and must be attended to properly. I also realise that written words that sound right are cheap.

For example, when the sea floods new areas for the first second and third times, nothing about it will be fair or equitable or inclusive. The same goes for droughts fires rainstorms and all approaching unprecedented weather events. There will be more wars over land and water, let alone food medicine energy and refugees. Nothing about any of this will be fair equitable or inclusive, just as it never has been in the wide history of humanity. The Paris Agreement uses the words "Just Transition", as it should, but clearly outcomes so far are quite the opposite.

The words "Just Transition" are correct, shouted at protests, hung on by the 3rd of our society close to poverty, and SO difficult to deliver on that they never have been anywhere, except in a few devastating experiments in the world involving communist revolution and very high death rates. I also realise that "fairer" is worth striving for, and is probably the best we can do. We live in a capitalist and competitive society, as a social mandate for freedom, and there has never been anything "fair" about this. It could also be argued that "capitalism" is killing our world with over-population x over-consumption. (Freight and oil). I published a book on this in 2009.

I have also heard this catch-cry ("A Just Transition") often being used as a reason for delaying changes of many sorts, including transport emission reduction efforts. "What about the poor people?" I'm sorry, I don't have a good answer for this, there will always be "poor people everywhere", except that the urgency and existential nature of our global predicament suggests that we just need to get on and rapidly reduce our emissions before we lose the last chance for carbon mitigation this decade, whatever the outcome. The approaching global climate changes will not be interested in any human fairness or equality. Nature will be brutal to some and not others, already is. This is how evolution works. If we don't get our global emissions right down very soon, just years, we will have lost any mitigation opportunity, due to global heating inertia, and will be left with a rapidly changing world and shrinking land and resources. No fairness or equality

in this. My uncomfortable conclusion here is that Rapid Emissions Reduction trumps Just Transition.

Consultation question 13 (Page 122)
Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway do you think Aotearoa should follow to reduce transport emissions?
I could write screeds on this topic, but won't. Pathway 4, and halve the times to deliver it. Use Smart Road Pricing to nudge, limit, prohibit, encourage and discourage accordingly. I believe money spent in this area will have the best outcome of all other ways. I'd like to help.

Consultation question 14 (Page 134)
Do you have any views on the policies that we propose should be considered for the first emissions budget?

I have written answers to this question under Context above. We are in much more of a hurry than is realised. These changes may involve considerable cultural resistance and pushback. It may be difficult. Failure will be a failure for the future of humanity not just us. This IS an existential problem running out of time.

Disconnects now in contention.

Most of these disconnects involve widely-held expectations that desparately hold on to existing ways of doing things, and capitalist and corporate mandates of "growth", that will rapidly become unable to be sustained in the context of 45% or 75% reduction in carbon emissions.

Aviation expectations and international travel and tourism.

World Trade Organisation, trade expectations and deals.

Global / National Freight supply chains and delivery expectations.

Masculine status around power and engines, especially in NZ and Aus.

Construction using concrete and steel

Chipping away 5%'s as in your existing reduction plans here

Food and energy supply is important, all else is less important

Health and Safety would be on of our most risky, most expensive and most carbon-emitting agencies - I suggest a carbon audit of all consequences in NZ of Health and Safety.

Immigration expectation in a time of mandatory reduction

The enforceability of trade rules vs climate rules need to be reversed

The system we have is mostly run by white men. A conclusion in my book was that white men (as proved by Covid) have globally lost the mana to be leaders of our home (the Earth) in a time of pandemic or global climate emergency. We need them to be less than 25% in power, with at least half women and half non-white in leadership going forward, and zero white men as presidents. This is a disconnect of democracy.

Embedded carbon has been ignored throughout this debate, and is HUGE. Every newly imported vehicle, EV or ICE, old or new, has a high embedded carbon rating. Replacing our whole transport "fleet" of ICE's with EV's is dreaming, and would have a horrible hidden carbon cost. The answer is SLOW travel or NO travel.

AND: Our "by-2050" legislation conflicts directly with the IPCC's "by-2030" coming.

We are all in big trouble.

Suggestions for moving forward now:

For new government initiatives and legislation:

1. An effective and rising carbon tax as a price signal that fossil fuel use MUST now reduce
2. A smart Road Distance Charge App designed to reduce travelling distances in general
3. Ramp down and end the importing of any combustion engines by 2025, we have enough
4. Ramp down the importing of petrol and diesel, and put a ban on all ICE vehicle advertising
5. Restrictions on new road building, funding transferred to all types of public transport
6. A take-off tax per seat for all planes, say $30, plus a flying distance tax, say 10c per km
7. A general tightening in use of combustion-engine trucks and light commercial vehicles
8. Assuming the food system maintains a status quo, all other uses may have to drop faster.
9. Recreational fossil fuel use to be ended soon, eg all combustion engine sports banned
10. Massive subsidies for all EV's, e-buses and e-trucks in the short term to turn the tide
11. Strongly tighten immigration - the biggest source of our growth but also of emissions rise
12. Limitations (quota?) on the use of new concrete and steel, often local timber is better
13. Urban development criteria must change to design for very low travel and electric eveything
14. Recognition that the RMA has become horribly wasteful of resources, and therefore carbon
15. Rapidly tighten dairy quota, heading towards 50% reduction of cow emissions by 2030.
16. The end of fertiliser for dairy farms - the land can be horticultural with city recycled fertiliser
17. The end of coal, and coal boilers drying milk, and a significant drop in milk powder exports
18 The end of palm imports for stock feed, and tropical hardwood too
19. Zero offshore mitigation permitted - it is simply an unfair excuse to continue emitting
20. Recogniton that tourism as we knew it, pre-Covid, may well be history.
21. Recognition that we can't just replace all ICE cars with EV's, travel expectation must drop
22. Clearly, everything possible must also be done to assist those less able to manage
23. Yes we have a Treaty, but we have a global emergency that is affecting all societies
24. Lastly, we need a comprehensive national education campaign explaining the urgency

And encouragement/enforcement to all Local/Regional Councils:

1. Rapidly increase city centre living densities and heights without any space for cars
2. Reduce or end "subdivisions" spreading over the land that encourage car-use
3. Increase pedestrian-friendly car-free zones in all town and city centres across NZ
4. Increase Park-and-Ride and Congestion Charge systems with reduced carparks in centres
5. General commuting-by-car discouragement, with increasing road closure to cars
6. And obviously, a major effort on buses and safe bike paths in all cities
7. Recognition that all travel distance expectation must fall - commuting holidaying etc
8. Councils' Climate policies have been hamstrung by a lack of government leadership

Thank you for the oppotunity to submit on this Paper examining this existential question.

Nga Mihi,
Mr Hilary Blundell.

From: [redacted]
To: Transport Emissions
Cc: [redacted]
Subject: 'Transport Emissions: Pathways to Net Zero by 2050' - Wellington Electricity's submissions
Date: Friday, 25 June 2021 4:56:36 pm
Attachments: Wellington Electricity submission on "Transport Emissions - pathway to net zero by 2050".pdf

Dear Minister Wood

Please find attached Wellington Electricity's submissions on the green paper 'Transport Emissions: Pathways to Net Zero by 2050'.

Thank you for the opportunity to contribute towards developing the programme that will deliver our climate change responsibilities. Meeting the increase in electricity demand is a complex challenge and we think there would be benefits in discussing this further in person. If you would like to meet or have any questions, please don't hesitate to contact Scott Scrimgeour, Commercial and Regulatory Manager, at scott.scrimgeour@welectricity.co.nz.

Could you please provide a receipt on receiving this submission.

Regards - Scott

Scott Scrimgeour– IISC
Commercial and Regulatory Manager
M +64 21 107 1416 **W** www.welectricity.co.nz
85 The Esplanade, Petone, PO Box 31049, Lower Hutt 5040, New Zealand

25 June 2021

Wellington Electricity Lines Limited

85 The Esplanade

Petone, PO Box 31049

Lower Hutt 5040

New Zealand

Hon Michael Wood

Minister of Transport

Ministry of Transport

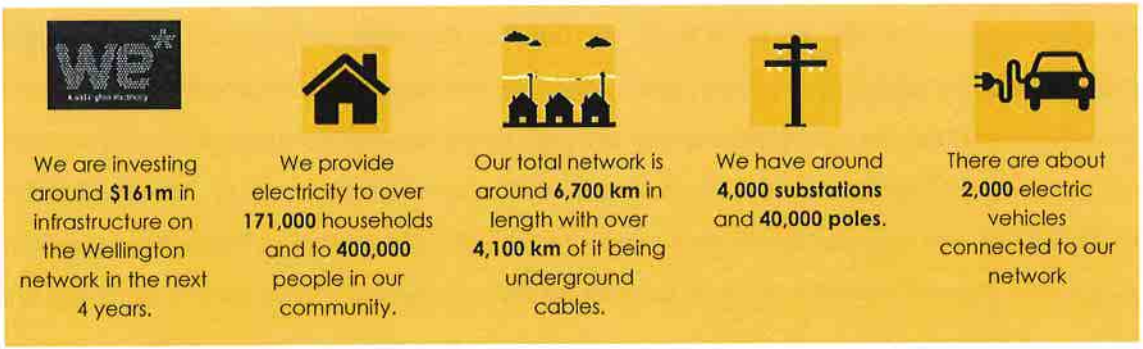
transportemissions@transport.govt.nz

Dear Minister Wood

Transport Emissions: Pathways to Net Zero by 2050

Wellington Electricity Lines Limited (**WELL**) thanks the Ministry of Transport (**MoT**) for the opportunity to provide feedback on the Green Paper titled 'Transport Emissions: Pathways to Net Zero by 2050' (**Green Paper**). WELL provided feedback to the actions proposed in the Climate Change Commission '2021 Draft Advice for Consultation' (**Draft Advice**) and welcomes the opportunity to also provide input into the transportation component of New Zealand climate change programme.

WELL is an Electricity Distribution Business (**EDB**) who is responsible for providing electricity distribution services in the Wellington region. We manage the poles, wires and equipment that provide electricity to approximately 400,000 customers in the Wellington, Porirua, Lower Hutt, and Upper Hutt areas. Through our network infrastructure we take electricity from Transpower's national grid, to residential homes, commercial and industrial businesses and Wellington's essential infrastructure assets like hospitals, water plants and air and sea ports.



While the climate change actions haven't been confirmed, The New Zealand Government has committed to being carbon neutral and the most viable and likely solutions involve replacing fossil

fuels with renewable electricity. The Green Paper expands on the theme of electrifying the transportation fleet, expanding the scope to freight and public transport. This submission will draw on WELL's experience in providing distribution services to public transport. WELL also provides infrastructure which supplies electricity to Kiwirail's Wellington commuter trains and previously to Wellington trolley bus system which is now being modernised for newer EV technology.

We have been fortunate to be concluding a project as part of the Low Emission Electric Vehicle Contestable Fund in conjunction with EECA that looks at the Policy, Standards, Regulation and collaboration required to accommodate EVs onto distribution networks. More on this project and adoption roadmap can be found at EV Connect - Stakeholder Consultation | Wellington Electricity (welectricity.co.nz).

This response will focus on the distribution infrastructure needed to support electrification, focusing on the following questions and aspects:

1. Question 3 - Supporting innovation with a focus on developing new tools needed to manage demand on distribution networks
2. Question 7 – Developing the electricity infrastructure to electrify light transport
3. Question 8 - Developing the electricity infrastructure to electrify public transport

1. Overview of the impact of the draft Advice actions of electricity distribution networks (EDB)

Before responding to the specific questions, this response provides an overview of the impact the climate change actions will have on EDB's and WELL's approach to delivering the climate change actions. This will provide important context to the specific question topics. This overview pulls from WELL's response to the Draft Report.

Like roads, the amount of energy an electricity network can deliver will depend on the network's capacity – the more capacity a network has, the more energy can be delivered. In the case of a road, the more lanes a road has, the more traffic can travel on the road. Unlike roads, once electricity volumes reach the electricity networks capacity limit, the service will stop for all users on the part of the network that has run out of capacity and any parts of the network downstream from that point. This is required to avoid damage to customers appliances or other peril to property. On a road, traffic will slow down, and may even briefly stop, before the flow of traffic continues. The high consequence of customer demand exceeding network capacity means that an expected increase in electricity use like that indicated in the Draft Report must be carefully managed to ensure services to existing customers can be maintained while higher volumes are delivered.

An additional dimension to this analogy is the speed at which customers may want to charge their vehicles. Customers wanting faster car charging can install devices which exceed the existing house demand by two or three times. While transport infrastructure is looking at a like-for-like replacement, electricity infrastructure could be facing a three-fold increase in demand. If steps are not taken ahead of the uptake of EVs so that demand is manage away from congestion periods, network operations are unlikely to be able to provide current levels of service reliability.

Where new demand is higher than the current network capacity, the increase in demand is traditionally met by building a larger network – bigger cables, larger transformers, and higher capacity equipment to deliver more energy. New factors mean that traditional delivery methods (and the current regulatory investment framework) alone may not meet expectations of an affordable and secure delivery system:

- **The size of the increase in demand**: An initial calculation of the change in electricity demand needed to meet the Draft Advice actions shows an 80% increase. This represents an unprecedented increase in demand outside of what the industry is currently structured to deliver. This is in addition to demand increases from the new housing developments in response to the Wellington housing shortage.
- **Rapid uptake of electric vehicles:** The uptake of electric vehicles (EVs) is expected to be a cornerstone of carbon emission reduction. Construction of a larger network within an established urban environment takes a long time and it may be difficult to increase capacity of the network without managing this additional demand carefully.
- **New technology:** New technology allows consumers to generate, store and export energy from their home systems, effectively turning the supply system on its head. This will establish different value streams which will be reconciled across the distribution network as new and innovative services are developed. This will be supported by digitisation of many of the new devices allowing them to be aggregated and managed by a variety of vendors. This will require new rules and standards to ensure the distribution network remains stable, operates within expected limits, and not deteriorate in either security or reliability for all consumers.
- **Changing consumer demand:** The types of services that consumers want will change rapidly – how and when consumers choose to charge their cars, whether they install solar and how they discharge household batteries are likely to change a networks demand characteristic. Once built, the capacity of a traditional network cannot be changed quickly, and incremental additions are expensive as it requires investment across the whole electricity supply chain (from generation to distribution). New techniques and methods are needed to smooth and

manage variable demand – techniques and methods which utilise the new demand management opportunities that new technology provides.

- **Cost impact:** Building a larger network is expensive. Our early calculations show that if energy from EV's charging is not managed, it could increase peak demand by 80% which will cost hundreds of millions of dollars and could increase prices by 80% (nominal) over 30 years. A price increase of this magnitude could be unaffordable for a large number of consumers.
- **Time and resources needed to double the capacity of the network**: The significant increase in network investment will come at a time when other distribution networks, the transmission grid and other industries like water and transportation will also replacing, developing and growing their infrastructure in response to the climate change targets. A finite pool of skilled resource in New Zealand (and potentially globally as other countries reduce carbon emissions) could make this level of growth unrealistic.

In our submission to the Draft Advice, we outlined why new solutions are needed to better utilise the existing network to meet the climate change energy demands while delivering distribution services that are affordable and secure. Figures 1 show that if the new demand is not well managed then higher investment will be required to increase demand capacity. Conversely, if the new demand can be managed and capacity headroom utilised during the less congested day and night periods, then further network investment would become optimal and provide a longer-term benefit to customers.

Figure 1: Our approach to delivering the Climate Change emissions targets

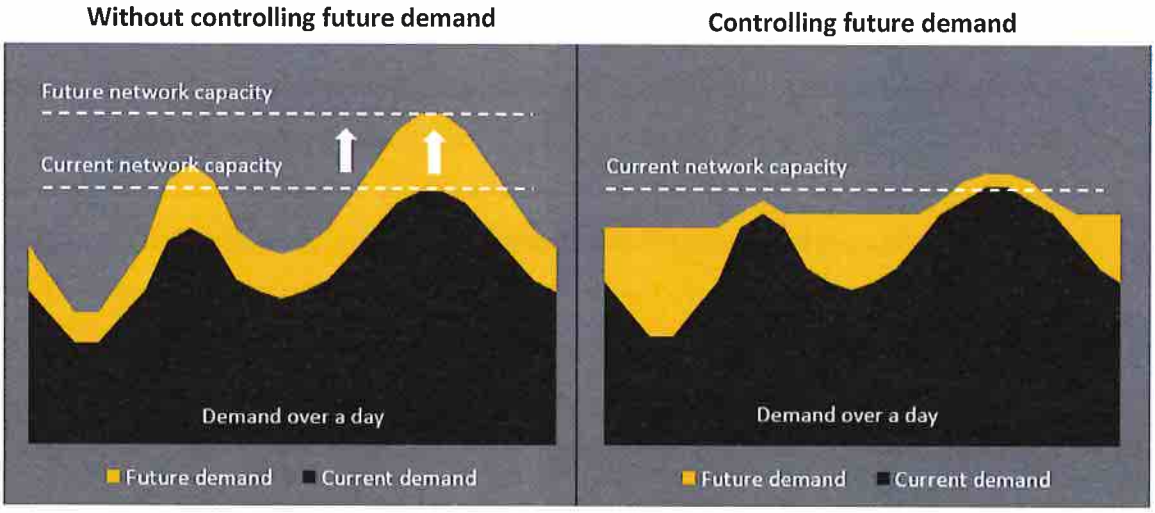


Figure 1 represents a theoretical view of optimising network utilisation to meet the proposed climate change actions. In reality we would expect that additional network investment is required to:

- Provide capacity for consumers who want to use electricity during peak demand periods and are willing to pay the cost reflective price to do so.
- Assist in maintaining a high level of network security. The Wellington network has a high customer density, so this allows a degree of interconnectivity to provide a secure system, particularly in underground areas. However, flattening the demand curve may require additional asset investment or services investment to maintain security levels.
- Re-enforce sections of the network that do not have enough capacity headroom to meet the expected increase in demand. Figure 1 does not represent every section of the Wellington network and some sections will need re-enforcing for existing demand growth ahead of climate change initiatives of EV adoption and reticulated gas curtailment.
- Provide extra headroom for sections of the network where we expect rapid growth and where demographic forecasts show existing capacity will be used up by new or emissions reduction growth.

We are in the process of modelling investment scenarios reflecting different levels of demand management. Our Initial calculations indicate an investment of between $0.5b and $1b is needed to meet the proposed climate change actions, depending on the how much of the new demand we can move to less congested periods.

Our approach to meeting the climate change targets is to increase our community engagement and educate consumers on the sustainability benefits of demand side management particularly for energy storage. This has been summarised in the short animation video:
https://www.welectricity.co.nz/insights/show/climate-change-response/

2. Question 3 – Supporting innovation

New technology and techniques will need to be developed to shift demand to less congested periods on electricity networks – this will require research and development to unlock the new capability. Electricity distribution services in New Zealand are regulated by the Commerce Commission – the Commerce Commission set the allowances that networks have to build and operate their networks and the quality standards they must deliver. Currently, these allowances only provide a small allowance for innovation - for up to 50% of the total cost of approved innovative projects in the assessment period, but not exceeding 0.1% of the total allowance in the regulatory period. The fund is too small to support the level of investment needed to trial and introduce new demand management technology and services needed to improve the utilisation of existing electricity networks and to keep electricity prices affordable. As outlined earlier, new technology and changing expectations around how consumers will use their devices like electric vehicles will mean that

traditional network solutions may not be appropriate. EDBs will need to develop new solutions quicker than they have done in the past. Under investing in innovation will lead to a distribution network that cannot meet consumer EV charging expectations, will not deliver the climate change actions, or cannot maintain a secure supply.

As part of the recent reset of the price/quality path for distribution networks, the Commerce Commission presented evidence that the innovation allowance is small[1]:

- Only 7% of energy sector businesses are conducting research and development, which is much less than other sectors;
- Energy sector expenditure on research and development decreased between 2007 and 2016;
- For the 2018 regulatory year, distributors reported a total of less than $10m expenditure on research and development (compared to total lines charges of around $2.5b);
- New Zealand businesses focused solely on domestic markets are less likely to innovate and any innovation results in lower levels of productivity improvement.

The United Kingdom previously followed a similar approach of providing no research and development (R&D) allowances for regulated lines companies when it operated a low-cost regulatory regime for electricity distribution services, like New Zealand does now. The United Kingdom has since moved away from this approach due to the lack of investment in industry R&D. The regulatory regime has now incentivised investment into R&D, offering large contestable funds requiring the results on successful projects to be shared across the industry.

Regulatory changes are needed to allow a forward looking rather than "business as usual" approach to encompass the level of R&D needed to support climate change initiatives. Other international regulatory regimes provide workable models and approaches that have already been shown to be successful for our sister utility companies in both Australia and the UK. WELL supports the scheme developed by the United Kingdom's electricity which is managing an increase in innovation expenditure through a contestable innovation fund where EDBs bid and share successful ideas.

3. Question 7 - Developing the electricity infrastructure to electrify light transport

WELL supports the Draft Advice and Green Paper theme to promote the adoption of EV's because:

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[1] Section 4.54 of the Default price-quality paths for electricity distribution businesses from 1 April 2020 – Draft decision Reasons paper, 29 May 2019

- The technology has developed to the point it will soon provide a realistic option for meeting the majority of New Zealand's light transport needs and meeting the emissions targets. Other options, like biofuels and hydrogen, still need developing to the point they could be considered a viable alternative energy source for light transport;
- EVs offer lower running costs than traditional internal combustion engines due to the higher cost of fossil fuels and the higher efficiency of energy conversion from battery storage;
- New Zealand's high level of renewable energy generation (over 80%) being an ideal match for EVs which are seen as an appealing option for environmentally and cost-conscious consumers;
- Constantly evolving energy storage systems, electric drives and charging technologies that will improve the efficiency and range of EVs; and
- The opportunities that EV batteries provide for managing network demand, improving the utilisation of the distribution network, and avoiding expensive network development.

Distribution networks are cautiously aware of the likely rapid uptake of EVs and have been considering which steps are required to prepare the network for EV adoption. To support the swift adoption of EV's, WELL has a number of EV specific work streams. The work streams include:

1. A trial to understand the impact that EVs and EV charging will have on electricity consumption on the Wellington network. The study has allowed WELL to study what the additional demand will mean for network capacity.
2. Methods to encourage consumers to charge their EV's during less congested periods, including price signals that reflect the benefits of using energy during less congested periods. This work stream has led to the introduction of ToU pricing to for all residential consumers in Wellington – prices which reward consumers with cheaper prices for using electricity during less congested periods.
3. Developing the tools and processes to manage electricity demand away from congested periods on the network. This workstream has included technology trials that have tested the technology needed (including digital platforms and smart EV chargers) to manage EV charging on behalf of EV owners or for owners to receive this as a market service.
4. Developing a roadmap of the industry changes needed to support the introduction of EV's. Changes include ensuring regulation and policy supports the action needed to connect EVs, networks operators are appropriately funded and the Electricity Code provides rules to ensure consumers can safely connect EVs in their homes. Changes are also needed to ensure all stakeholders have the data and information needed to develop the tools and products needed to manage EV demand away from congested periods on the network.

5. While shifting network demand to less congested periods provides the most efficient and affordable outcome for accommodating EV, there will still be an increase in energy use which will require network re-enforcement at some locations. WELL is developing a long term investment programme, beyond the 10 year regulatory planning period. The investment programme tests different network designs for a variety of loadings and service delivery solutions.

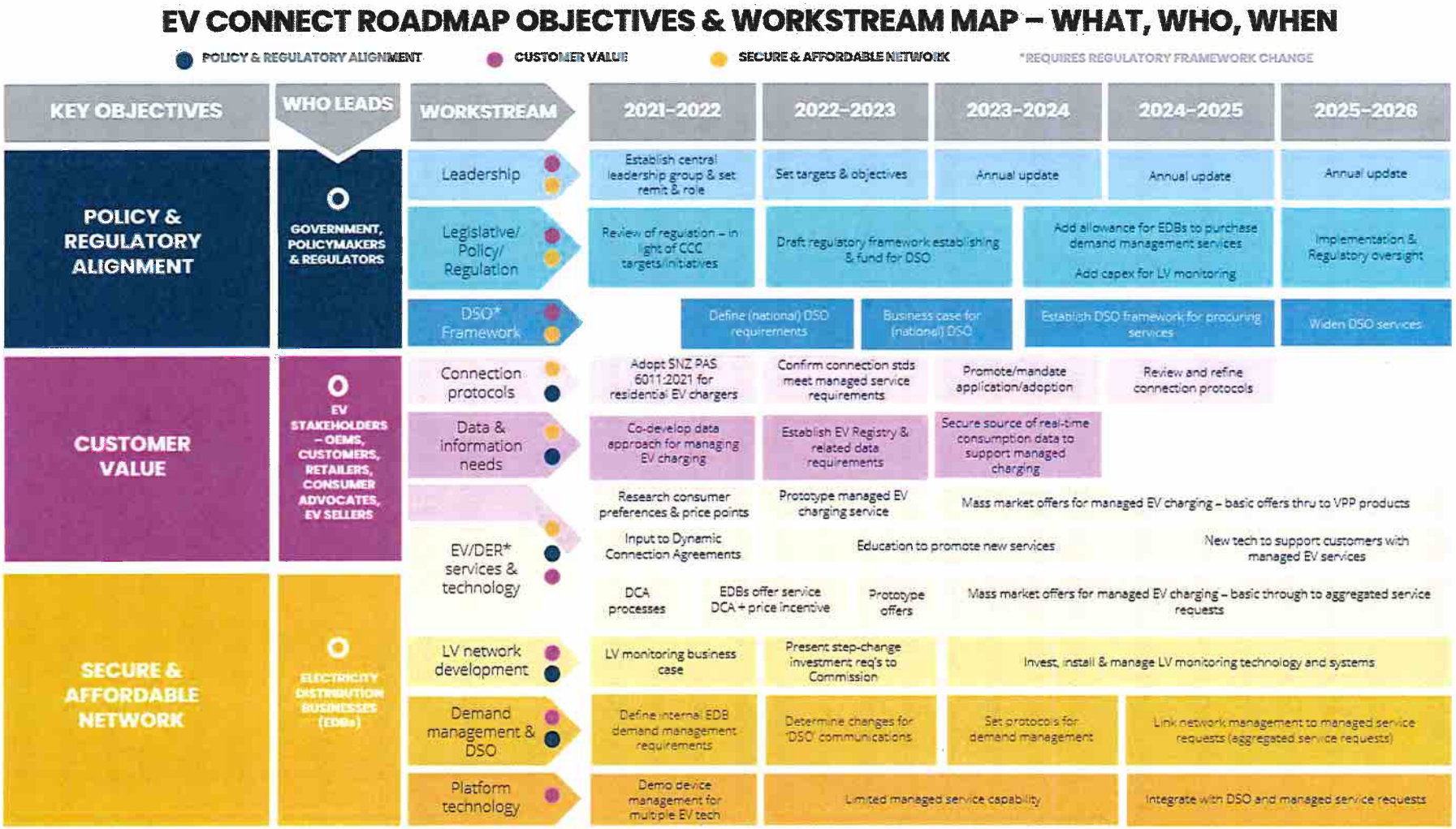
EV Connect roadmap

EV Connect is a co-funded EECA LEVCF industry wide project that focuses on how more energy can be delivered through the existing network. The purpose of doing this is to support EV adoption while maintaining network safety, security and affordability. We have been working collaboratively with stakeholders and the technology developers at GreenSync to articulate the steps required to support EV adoption. A key deliverable of the EV Connect project is a roadmap of actions needed to accommodate EVs.

The EV Connect Draft Roadmap used stakeholder feedback to draft the actions and steps needed to accommodate EVs onto the electricity network. 50 stakeholders provided input via workshops and consultations – stakeholders ranged from Policy makers at MBIE, other distribution networks, Transpower the national grid operator, regulators including the Commerce Commission and the Electricity Authority, electricity retailers, consumer advocates and EV user groups.

We are now seeking further stakeholder feedback to refine and finalise the roadmap. The final roadmap will provide a robust set of actions that the industry can then use to accommodate the EVs onto the electricity system. The draft Roadmap which we are currently consuming on is provided in Figure 2. The EV Connect Draft Roadmap consultation document can be found at: https://www.welectricity.co.nz/about-us/major-projects/ev-connect/.

Figure 2: The Draft EV Connect Roadmap



Question 8 - Developing the electricity infrastructure to electrify public transport

WELL is experienced in providing distribution services for electric public transport. Our experience includes supporting Wellington's expanding electric rail service, the previous electric trolley bus service and the current transition to EBuses. WELL is currently working closely with local councils and the business community as they develop electric bus infrastructure, expand electric commuter rail services, introduce electric passenger ferry's and consider electrification for the aviation industry.

The electrification of public transport has unique characteristics and challenges:

- Vehicle chargers are large and electricity demand can be very high relative to other consumer demands. For example, a public bus charging facility requires a 300 - 500 kW connection which is 100x larger than a standard household connection.
- Demand can be intermittent with large peaks and then long periods of underutilised capacity. For example, initial electric ferry charging systems will charge their batteries while berthed leaving the charging capacity unused while they are away from port. However, a more modern approach could be to have shore batteries at the berth which are slowly rechanged while the ferry is away. The ferry could then rapid charge from the shore batteries, evening out the network demand requirements and reducing peak demand. Electric trains only use electricity on the section of the network they are traversing. During the day buses may need to charge quickly, using larger amounts of energy for a short period of time, making them candidates to charge from storage rather than directly from the network, before continuing on their bus routes. This the ferry example, a better approach could eb to charge the busses from storage devises.

To manage the electrification of public transport so that electricity distribution prices remain affordable and the supply of electricity to other users remains secure, the supporting distribution network must be carefully designed, and electricity use must be carefully managed. Specifically:

- Develop an early plan of where and what the different public transport electricity requirements are. Consider combining the charging infrastructure for different forms of public transport so that the expensive charging capacity can be utilised, and unnecessary infrastructure duplication can be avoided.
- Utilise new technology to help monitor, manage and optimise electricity use for public transport. This includes considering the price/quality trade-off between re-enforcing networks to their full capacity to directly operate electric vehicles or to use storage to lower upstream network investment.

- Assist public transport operators to understand how to integrate their services into distribution networks and how to optimise their energy use alongside their traditional operating models.

4. Closing

WELL supports the Draft Advice and the Green Paper theme of electrifying transportation. Thank you for the opportunity to contribute towards developing the programme that will deliver our climate change responsibilities. Meeting the increase in electricity demand is a complex challenge and we think there would be benefits in discussing this further in person. If you would like to meet or have any questions, please don't hesitate to contact Scott Scrimgeour, Commercial and Regulatory Manager, at scott.scrimgeour@welectricity.co.nz.

Yours sincerely

Greg Skelton

Chief Executive Officer
Wellington Electricity Lines Limited

25 June 2021

Transport Emissions,
Ministry of Transport,
PO Box 3175,
Wellington, 6140

transportemissions@transport.govt.nz

Submission: Hīkina te Kohupara

Introduction

The Bioenergy Association represents a significant portion of owners of biomass fueled heat plant, solid, liquid and gaseous biofuel producers and suppliers, waste-to-biogas consultants and facility owners, researchers and equipment/appliance suppliers across New Zealand. It has members who have an interest in policies and programmes relating to the transport sector and the wise use of our renewable natural biomass resources for the production of biofuels and the betterment of communities

The role of biofuels in our transport futures

New Zealand is in the fortunate situation of having significant renewable energy resources and an adaptive transport sector. The early focus on readily available electric light vehicles within the range and load limits of battery and charging technologies. This transition of light vehicles from fossil to low emission fuels is underway and now a growing part of New Zealand everyday life.

This however leaves a potentially significant gap in fuelling the rest of New Zealand's transport system which is exclusively serviced by fossil fuels.

The Green Paper puts aside consideration of international transport, but fuel suppliers cannot enjoy that luxury. Fuel is fungible across similar applications, and thus supply need to be considered as whole.

There are three distinct markets requiring different fuels: aviation, marine and high duty cycle land. In each biofuels have the advantage of being potentially drop-in with the prospects of blending with existing fuels. Thus, infrastructure and transitional costs are minimised with only feedstock supply chains and conversion technologies required to be addressed. Imported biofuels are also available and currently being used.

Aviation

While there are some prospects for other fuels (e.g., battery, hydrogen) for very short haul heavy duty transport trips, and hybrid electric could be emerging in the 2030s for regional aircraft, the base demand will need to be met by biofuels (green hydrogen suffers from emitting water vapor).

Currently aviation fuels accounts for 12PJ domestic and 56PJ international with the dominant fuel being kerosene based. Hence biojet need to be highly refined to tight specifications, and currently have limits on the extent they can be blended (up to 50% HEFA in jet fuels).

Marine

Again, there are prospects for bio and synthetic gases (including ammonia and hydrogen), particularly for specialist vessels (e.g., fuel carriers). However, the larger mainstream vessels that represent the bulk of emissions get replaced on long time scales. The current preoccupation is meeting low sulphur standards about to be introduced, and this is pushing operators to higher priced low sulphur distillates. However large conventional marine engines can still use fuels based on mild bio-oil upgrading that is getting increasingly competitive.

Currently marine fuel oils account for 5MJ domestic and 12MJ international, but with smaller amounts of distillates (i.e., mainly short run ferries and portions of the fishing fleet).

Land

Diesel is currently the main fuel used in heavy transport, buses and trains. Total domestic diesel use is 104PJ but in time EVs will displace some of this. Bio alcohols can also be blended with petrol to assist the early reductions of emissions from the lower duty cycle land fleet.

The limits of range and loads where EVs cease to be competitive in New Zealand is unclear both because the limits of battery and charging technologies are changing and limited formal analysis of demand in a country like New Zealand with potentially only a small number of relatively long segments for trips.

The options to better batteries and charging in the high duty cycle fleet are: bio or electrolytic hydrogen in fuel cell vehicles (now entering market) or even in ICEs; biogases in modified ICEs; and biodiesel in existing vehicles, with blending to meet various fuels specifications.

None of these options are immediately cost-competitive today, and will depend upon technology developments, the price of CO_2-e/t, and any further policy interventions. Biofuel blends are being offered by some companies, but this is likely to be at a loss.

Biofuels Supply

A major barrier to the uptake of biofuels is the perception that biofuel supply is constrained or non-existent. Biofuels are available for import and this may be a way of kick starting use of biofuels while allowing domestic biofuel production to develop. Transport policies should be developed on the basis of the potential availability of biofuels and supported by research which focuses on having biofuels produced domestically as early as possible. If policies are developed on what is available today then we will always be constrained in the future by these decisions. Good policies such as the proposed biofuels mandate will produce the incentives to overcome current barriers.

Bioethanol is available to be imported from Brazil and Renewable Paraffinic Diesel is available from Singapore (Neste) but both are being priced in terms of a Californian subsidised price. Neste is sourcing renewable feedstocks internationally, including in New Zealand, reducing the availability of feedstocks for local use.

The main opportunity for New Zealand lies in domestic ligneous feedstocks where there have been a number of reports on its availability and the opportunities to process it [Scion roadmap, Wood Fibre Futures]. Further opportunities lie in energy crops e.g. coppiced crops.

Significant proportions of New Zealand's transport fuels can be met from these sources so feedstock supplies are unlikely to be a constraint for the next 20 years or more.

Hīkina te Kohupara

The "Government Policy Statement on Land Transport 2021/22-2030/31"[1] "*Strategic priority 4: Transforming to a low carbon transport system that supports emissions reductions aligned with national commitments, while improving safety and inclusive access"* gives the overall direction to this work.

In heavy duty-cycle transport this needs to be progressed against the above background and that of the ETS. There are multiple biofuel options, the optimum mix is still uncertain, but the ETS will deliver an approximate optimum over time. Intervention might be required to avoid potential pathways being closed off prematurely and to ensure progress is being achieved in what is a very significant subsector and the uncertainty is high.

The Themes proposed in the Green Paper are not helpful because they assume prior knowledge of what will be the best (most welfare enhancing) approach from now to 2050. Whatever is selected will inevitably be wrong.

In which case a specific ETS-like intervention focussed on high duty cycle transport would be the optimum approach because it is both fuel neutral, and demand/supply neutral. The Avoid-Shift-Improve ("A-S-I") Framework does not achieve this.

[1] Accessed from https://www.transport.govt.nz/assets/Uploads/Paper/GPS2021.pdf

The policy objectives

The Bioenergy Association supports the proposed policy objectives but is disappointed that the intent of the discussion paper focuses only on a public transport and use of transport subset of the full range of opportunities potentially available to achieve a zero-carbon transport system by 2050. The four pathways focus on changing the way we travel, and improving passenger vehicles which is supported but doesn't set out pathways where we can different options can be pursued with appropriate risk management systems so that the transport market can pursue the objectives over time according to market conditions at the time.

The discussion is Theme 3 fails to achieve what it sets out to do as it focuses on use or transport rather than an evaluation of barriers to reduce emissions.

Sustainable Biofuels' Mandate

The association appreciates that MBIE is currently consulting on the Sustainable Biofuels Mandate that has all the characteristics required in conjunction with the ETS to achieve the required outcomes. By setting the parameters in the ETS and any future Mandate, Strategic Priority 4 can be achieved. The only additional measure that would be required are investment in helping to develop options and facilitate adjustment.

We will address these issues in the consultation on the Mandate.

Summary

The Bioenergy Association is pleased to see the work being done by the Ministry of Transport but would encourage a more extensive and coordinated approach to developing a Transport Strategy which brings together all the different threads that are currently being pursued in the development of transport policy.

The Association would be pleased to participate in development of an integrated transport policy.

Brian Cox
Executive Officer
Bioenergy Association

Greater Auckland's Submission on Hīkina te Kohupara

Thank you for the opportunity to submit on the Ministry of Transport's Green Paper, Hīkina te Kohupara.

Greater Auckland Inc was established in 2015, and originated from the Greater Auckland website which began in 2008 as the "Auckland Transport Blog", later simply "TransportBlog". We provide commentary and encourage informed and intelligent debate about transport and urban form issues, with a particular focus on Auckland. We want to make our city a better place for everyone. We advocate for solutions: better transport options, housing choice, urban design.

We support the submission by All Aboard Aotearoa.

We would like to highlight the following points:

- This green paper is an enormous step forward in the right direction for the Ministry. The focus on 'avoid' and 'shift' levers is warmly welcomed.
- Decarbonising the transport system almost completely by 2030 is not only possible, it is a pathway out of the highly expensive, dangerous, unhealthy, polluting and low-access transport system that has plagued us for half a century or more. The benefits will be massive.
- When the Ministry consults with the public, the pathways presented should all be aligned with our international commitment to our fair share of keeping the global temperature rise to below 1.5 degrees. Any pathways that do not will create division in the public, spoiling the national conversation that needs to be held.
- Decarbonising transport needs to be a core task for Cabinet, Ministry, Agency and Local Government.
- Leadership by Government is essential, and it will involve an enormous public relations and democratic engagement exercise.
- The Ministry's shift away from total reliance on electric vehicles and as-yet unavailable technology is noted, and welcome. It would be good if the Ministry could remove some of the more fanciful solutions from the green paper, such as drones and electric aviation, as well as those that require citizens to be digitally plugged in, such as MaaS. We need to focus on solutions using proven systems design that encourages modeshift and reduced travel demand.
- Government will need to take a far more interventionist approach to streetscape changes and urgently needs to shift the conversation about where consultation sits within democratic society. The way Councils are beholden to anti-change vocal minorities is stripping our children of a future and is entirely undemocratic.
- We have a car dependent transport system due to many factors, not least of which is the legacy technocratic transport planning system we suffer under. This perseveres with regressive traffic models, traffic control devices, regulations, investment analysis methodology, data collection and organisational cultures. While there have been

attempts to improve all of these in recent years, decarbonising transport will be impossible without much more progress. The Green Paper should probably include ways that Government will lead this urgent and wholescale modernisation of the sector.

We copy here the submission by All Aboard Aotearoa Inc.

All Aboard Aotearoa Inc

Submission on *Hīkina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050*

25 June 2021

All Aboard Aotearoa Submission for: Hīkina te Kohupara

This is a submission by All Aboard Aotearoa Inc - a coalition of climate and transport advocacy groups, including Generation Zero, Bike Auckland, Greenpeace Aotearoa, Lawyers for Climate Action NZ Inc, Movement, Women in Urbanism, among others. All Aboard Aotearoa is calling for decarbonisation of transport by 2030 because we see this as the best way for Aotearoa to contribute to the global effort to limit warming to 1.5 degrees Celsius above pre-industrial levels. Decarbonisation should be achieved by reducing reliance on private vehicles and investing in public transport, active transport, and a compact city.

Introduction

New Zealand has the fifth highest per capita rates of CO_2 emissions from road transport in the OECD.[1] After decades of focus and billions spent on car-centric infrastructure, a massive and urgent investment is needed to provide New Zealanders with options to travel without carbon emissions.

Transport is a major source of New Zealand's emissions and these continue to rise. Transport emissions have risen more than any other emissions source with an increase of approximately 90 percent between 1990 and 2018. This compares with 24 percent for gross emissions across the total economy.[2]

[1] OECD (2017) *Environmental pressures rising in New Zealand.* Retrieved from: Environmental pressures rising in New Zealand - OECD

[2] Ministry of Transport. (2021) Hīkina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050.

The New Zealand Government has declared a climate emergency and the Government has the primary obligation and opportunity to lead this transformation of our transport sector.

Government transport leadership in the past has positively shaped our cities and gifted infrastructure modern generations have benefited from, such as the first Labour Government's investment in city rail in Wellington.

We agree with the report that:

> *The Government can also make it easier for people and businesses to access places by low-carbon modes, and to make sustainable transport choices that support a transition to a low carbon transport system. This will require leadership by Government, close collaboration with a wide range of stakeholders, and consideration of a wide range of policy levers within and beyond transport.*[3]

It is important that the large number of current and potential policies considered do not suffer from decision making inertia or phasing issues waiting for other policy decisions. Many of these policies can be implemented urgently and deliver multiple co-benefits.

We acknowledge the positive contribution *Hīkina te Kohupara – Kia mauri ora ai te iwi* makes to New Zealand's transport planning. What Aotearoa needs now is greater ambition, stronger targets, increased policy detail, and massive investments in public, active and electric transport to match the scale of the climate emergency. Plus leadership to get the changes past initial rocky resistance.

Report: Positives and Negatives

Sets up a reorientation of transport thinking. The report's scope and scale is a notable and positive step up from the climate work delivered by the Ministry of Transport last term. Delivery of large road transport infrastructure projects is described as a legacy practise where emphasis should shift towards a new practice that enables "the delivery of integrated multi-modal transport system programmes and activities."[4] We hope this reorientation of thinking resonates quickly throughout the transport sector.

Policies for all settings. The report contains a multitude of potential policies including everything from additional fuel taxes, congestion charges, to parking management reform, tactical urbanism, electrifying the rail network to phasing out imports of internal combustion cars between 2030-35, and low-traffic neighbourhoods. We acknowledge the wide variety of policy levers canvassed in the report; high ambition, a focus on equity and a willingness to depart from car dependence should help choose which ones are implemented. Meeting our emission targets will require many of the levers at the Government's disposal.

Avoid, Shift, Improve framework (ASI). Hīkina te Kohupara uses an Avoid, Shift, Improve framework which is a useful framework. The report says "avoiding activities that produce emissions is, on balance, a more effective strategy than minimising the emissions from those

[3] Hīkina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050., P. 20
[4] Ibid, P. 123

activities."[5] We agree that ASI encourages mode shift and reducing vehicle use as a lower cost pathway and that this is the most effective strategy. US President Joe Biden who has recently announced an investment shift from new roads to maintaining and improving safety on existing roads and rapid rail, public transport and active transport.[6] We also note the Climate Change Commission (CCC) in their final advice continue to place too high an emphasis on electric vehicles (EVs). While an improvement over Internal Combustion Engine (ICE) vehicles, electric vehicles still create issues with sprawl; congestion and urban amenity; resource-use; safety and equity issues. The focus for reducing emissions needs to shift substantially away from vehicle emissions improvements only to the full spectrum of ASI. This report is a good first step.

Offsetting is off the table. The report states "it is still unclear to what extent carbon offsetting will help to achieve this target...given this uncertainty, these pathways explore what could be required to take us as close to zero transport GHG emissions as possible."[7] All Aboard Aotearoa agrees carbon offsetting should not be factored into meeting transport targets.

Action is needed urgently. The Ministry's base case forecasts road transport emissions to keep rising until around 2024, plateauing, then slowly declining because of EVs. The paper has an underlying theme that actions taken or not taken within the next five years will significantly shape this future pathway - we should make sure systemic and long-lived decisions are made urgently under this term of Government and not mired in timing or phasing challenges, working groups or review.

Scale of aspiration doesn't look like it's aligned with the law. More detail in the "A note on the Climate Change Response Act" section below.

Playing a lead role. Decarbonising transport is a communications and engagement challenge much more than a technical challenge. The Government's main task is to lead this national conversation. More detail in the "Engagement - Playing a lead role in meeting our climate targets" section below.

Facing the tough challenges. Unfortunately the Avoid, Shift, Improve framework wasn't applied to the aviation or freight sections, where avoiding demand could have large, immediate emission reductions, for example reducing trips by plane or localising production and consumption.

Are the pathways on the right path? In the published report only one of the four pathways (Pathway 4) meets the CCC target, and only just. It is disappointing MOT didn't include a more ambitious pathway to allow for changing climate urgency or future policy uncertainty. As a minimum, all pathways should be consistent with the legal 1.5 degree target. This is likely to require the Ministry to chart an Emissions Reduction Pathway that is more ambitious than the Climate Change Commission's recommended emissions budgets.

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[5] Ibid, P. 107

[6] Forbes 31 March 2021
https://www.forbes.com/sites/carltonreid/2021/03/31/bidens-infrastructure-plan-most-radical-change-for-transport-since-creation-of-interstate-highways-say-city-transport-officials/?sh=19837c5877e8

[7] Hīkina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050., P. 10

Where's the money? The paper makes the point that the National Land Transport Fund (NLTF) and Government Policy Statement (GPS) - the two crucial funding processes "may not play a role" and "may not have a significant impact on transport emissions in the short to medium term."[8] The report states three quarters of the NLTF is allocated over the next ten years and alternative sources of funding are critical to achieve policies to reduce emissions. With the Government's tightening fiscal approach there is a risk that many of the good policies outlined here won't receive the funding needed to achieve them. Additionally the NLTF funding model is largely based on fuel taxes, ie. emissions. Given the required significant reduction in transport emissions over the next ten years, this means the current RLTP and NLTF 2021 budget are already out of date. Other parts of this discussion are around the ETS and ring fencing[9] future fuel emission tax in a similar way as regional fuel taxes to direct transport emissions reduction programs. The Government should plan to release significant additional funding outside of traditional long-term funding processes to achieve the policies outlined. Investment in large-scale projects like the City Rail Link, Light Rail and Regional Rail cannot be delayed due to budget uncertainty. Work on this needs to begin immediately and to run in parallel with the ERP work program.

Local government? Achieving emission reduction targets will succeed or fail due to the ability of local governments to deliver and fund infrastructure and services. The Government needs to both allocate greater resources to local governments to achieve their important transport and planning functions; and give strong direction to local government to lead change - like the NPS-UD minus its ambiguities - and reform planning and delivery processes. This will give local government greater capacity to meet the climate goals.

Road safety? Road safety is acknowledged as important for cycling, and mentioned as a co-benefit of improving urban environments. There's insufficient focus on the scale of the road safety problem - and therefore on the opportunities for modeshift available. Safety has major implications for freight planning, but this has been missed, critically, from the freight section.

Build a legacy? In the short term, the Land Transport Management Act (LMTA) will need to be amended in order to reduce the burden of consultation. For the long term - in parallel with the work stream for "*Where's the money?*" above regarding the NLTF - the LMTA must have climate, public health[10], equity, safety, and resilience at its core.

A note on the Climate Change Response Act

The purpose of the Climate Change Response (Zero Carbon) Act 2002 is to facilitate the development of policies that contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels.

New Zealand has committed to the principle of common but differentiated responsibilities, so to "contribute" to this global effort, New Zealand must achieve emissions reductions higher than the global average, and lead with both mitigation and adaptation. Future international

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[8] Ibid., P. 125

[9] https://mobile.twitter.com/jamespeshaw/status/1395258009400586245

[10] https://www.nzma.org.nz/journal-articles/the-climate-change-act-will-now-shape-the-nations-health-an-assessment-of-the-first-policy-recommendations-to-reach-our-zero-carbon-target

commitments are likely to be more ambitious so prudent planning would ensure our plans are resilient to this likely change.

Reaching net zero by 2050 is necessary but not sufficient for us to contribute to the global effort to limit the average global temperature increase to 1.5 degrees. We must move quickly - the IPCC has reported that keeping warming to 1.5°C requires global CO_2 emissions to decline by around 45% from 2010 levels by 2030. Lawyers for Climate Action NZ Inc have calculated that, applying the IPCC's recommendations to NZ's emissions, our total emissions from 2021 to 2030 should be no higher than 485 Mt CO_2e,[11] before adjusting for our fair share, having regard to global equity.

The Climate Change Commission's final advice to the Government fails to achieve this. This is because the total for emissions for 2021-2030 allowed by the Commission's proposed budgets is 648 Mt CO_2e. The Climate Change Commission's advice thus fails to achieve the purpose of the Zero Carbon Act and is arguably unlawful.

We submit that Hīkina te Kohupara should shift its focus from net zero by 2050 to the 1.5 degree limit. It should not limit its ambitions to the Climate Change Commission's advice, which fails to contribute to limiting warming to 1.5 degrees.

Further, we note that some of the pathways in Hīkina te Kohupara do not even provide the emissions reductions required to meet the Climate Change Commission's advice. These pathways must be removed before going to public consultation, as they will hinder the Government's management of the national conversation, setting the public's expectations for emissions reductions at an unrealistic and counterproductive level.

In summary, all pathways proposed in Hīkina te Kohupara should meet the purpose of the Zero Carbon Act including our contribution to the global efforts, that is to say, our fair share of limiting global warming to 1.5 degrees. In addition, all pathways should have clear mechanisms for being adapted to easily meet targets for larger emissions reductions, as it is highly likely future international agreements will become more ambitious than the Paris Agreement, not less. The Ministry should be planning for this now.

Engagement - "Playing a **lead role** in meeting our climate targets"

Informing, educating, and aligning the team of five+ million - public, officials, politicians, everyone.

> *"high-carbon systems should be understood not just as technologies and physical infrastructure, but also as social and cultural systems, influencing our expectations, practices and ways of thinking" - Too Hot to Handle? The democratic challenge of climate change, Rebecca Willis*

To stay under 1.5°C, transport will be the **lead sector** and thus the Ministry of Transport is the lead agency for direct policy work and governance of infrastructure delivery for this goal.

[11] https://www.lawyersforclimateaction.nz/news-events/ccc-final-advice

To meet the overarching objective of Just Transition to support the transition away from high-carbon production and consumption, transport must be understood as **both physical and social infrastructure**. Understanding how to change transport in social terms requires a different set of interventions and investments - new civic spaces and processes to support transition. These also provide a foundation for other sectors to transition. This social infrastructure project must start now and run in parallel with the physical infrastructure investment.

For this social project the Government has the central role, our agencies and the public service need to prepare for the transformation. Officials have enduring influence on Government policy and direction. Three types of investment are recommended:

1. upskilling government officials at national and local levels, as well as employees of key agencies - so that they fully understand their role;[12]
2. engagement at community level. Every local project must come with an engagement plan that will identify all the groups that need to be reached, starting with mana whenua, and different ways they must be accessed - including social media. This is not easy and cheap but it can have a long term benefit in the sense that, once established, these are people and groups that can work on other aspects of carbon transition **in their communities;** and
3. supporting advocacy. Advocates often work for little or no payment, yet they are the lead change agents for society.

Recent experiences with tactical urbanism interventions have shown how quickly public discussions about change can be captured and influenced by business-as-usual agents.[13] [14] They will occur for commercial self-interest, due to differences in understanding, or for social-political reasons. These conflicts should not be a surprise and as the agent with the lead role in this transformation, the Government needs to plan and prepare to better serve justice, equity, and democracy.

> *"I used to be sure that with science on our side, policy change would naturally follow. If only. Instead, we haven't even begun to reduce global emissions. Why? In a nutshell, because opponents of climate action have too often had the better stories, and stories always beat data. (Evans, 2019)"* - *Too Hot to Handle? The democratic challenge of climate change*, *Rebecca Willis*

The final point is on leadership. Much of the literature shows that change is difficult without strong leadership. Change is often a lightning rod for grievance. Leaders and advocates will be targets for abuse. It is important that we get ahead of this and establish no tolerance for threats, abuse and violence.

Recommendations for the First Emissions Reduction Plan

We agree that broader and deeper changes are needed to quickly shift our transport system to a zero emissions pathway. The impact of COVID on transport emissions[15] is similar to the

[12] https://www.newsroom.co.nz/pro/jess-berentson-shaw-in-the-public-service-mindsets-matter
[13] https://www.stuff.co.nz/environment/climate-news/125296439/why-does-it-take-so-long-to-build-a-cycle-lane
[14] https://www.nzherald.co.nz/nz/simon-wilson-suburban-streets-are-climate-action-streets/FOOILOQQSUGY27EM2PZ7DKFXPY/
[15] Hīkina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050., P. 18

required drop by 2030. We have longer to respond to this bigger challenge, but can not wait until 2030. We believe any pathways that do not at least meet the emissions budgets recommended by the Climate Change Commission should be removed before wider consultation with the public. The first Emissions Reduction Plan (ERP) for transport must also go further and faster to make up for the delay of emissions reduction by other sectors, such as agriculture.

The first Emissions Reduction Plan, which is due in December this year, should contain:

1. A commitment to allocate transport funding only to projects that reduce emissions. An end to investments in urban state highways and roads that encourage urban sprawl and increase car use.
2. An immediate halt to all road expansion projects, as Wales has done[16]. For example, road expansion projects in the NZ Upgrade programme, like the Otaki to North of Levin highway at $1.5 billion, and the state highway and tunnel aspects of Get Wellington Moving at $1 billion. These projects will simply induce further vehicle movements, increase emissions, and reduce funds for public transport, walking and cycling infrastructure. We note that commencing a project is not a valid reason to continue it - if it will increase emissions, the costs of continuing the project (including costs to future generations) should be weighed up against any costs involved with renegotiating the contract. The "under construction" status should not be treated so gingerly.
3. A call for an unprecedented amount of investment in public transport, walking and cycling infrastructure. A low carbon transport plan will be cheaper than our current plans. New Zealand's low Crown debt position and the current low costs of borrowing should be harnessed to ensure we leave a sustainable transport legacy.
4. Significant increases in the targets for walking, cycling and public transport use. New Zealand should be following in the footsteps of cities like Vancouver, which has set a target of two-thirds of trips made by sustainable modes (walking, cycling, public transport) by 2030.[17] Ireland has recently announced 20 percent of their transport budget is to be spent on active modes which is an order of magnitude greater than New Zealand's percentage.[18]
5. A plan to deliver more direction and support, using all levers at the government's disposal, to ensure our towns, cities, and local governments:
    a. Deliver a quality compact urban form through mixed use urban intensification development that reshapes our existing city and town streets to support active and public transport modes. Stop all expansion into greenfields.
    b. Substantially increase investment in public transport. Increased capex is required - for significant new infrastructure, new depots and all-electric buses and trains. Increased opex is also required initially, enabling many more services and the development of comprehensive networks to enable reduced car ownership and to provide non-drivers with independence from being driven.

[16] https://www.bbc.com/news/uk-wales-politics-57552390
[17] https://vancouver.ca/green-vancouver/how-we-move
[18] Irish Times (June 2020)
https://www.irishtimes.com/news/politics/cycling-and-pedestrian-projects-to-get-360m-parties-agree-1.4279850

c. Reduce public transport fares to encourage modeshift, starting with off-peak, under 25 and community service card concessions, by expanding the existing discounts and making them universal across New Zealand
d. Reform parking charges, parking fines, and parking standards, reduce public car parking provision, and introduce parking levies.
e. Use congestion charging, road pricing based on vehicle tailpipe emissions.
f. Improve social outcomes by designing all transport options to be accessible for people with a diverse range of needs.
g. Incorporate the need to improve and protect walking and microbility at all times and prioritise it over other modes.
h. Implement the Road to Zero strategy, into all systems.
i. Set walking, cycling and micromobility mode share targets and DSI reduction targets. Government should make all funding contingent on achieving them.

6. More attention to the Road to Zero strategy, including a recommendation that it is better incorporated into systems like temporary traffic parking management, speed limit policy, travel demand management (currently the sector has no systems for effectively calculating the increase in walking and cycling from safety improvements), Crash Analysis System descriptions, monitoring of walking and micromobility volumes.
7. Direction to update traffic modelling, ensuring the four step traffic model is no longer used in comparisons of transport project options, as misapplying this model in this way in New Zealand's transport planning is misinforming investment decisions.
8. The removal of barriers to public ownership of public transport through PTOM review.
9. Direction to all ministries and public organisations to reduce transport emissions and to redesign their properties and systems to prioritise and enable walking and cycling, including the removal of car parks and driveways through campuses, locating main entrances on main bus routes and designing them to be focused on arrival by sustainable modes, and the provision of cycling and walking facilities including drying rooms for wet weather gear and secure bike storage.
10. Recommendations for reform of the Police's programme of work. Government should require a priority in enforcement to minimise injury risk and use of vehicles as weapons, and to increase children's health, and potential for modeshift and decarbonisation - rather than to ease traffic flow or to "flag changes well to drivers". This means clamping down on illegally parked vehicles, dangerous and aggressive driving, and requiring strictest compliance by those with the potential to harm (drivers) rather than those whose freedoms are currently curtailed by the system (children and people walking, cycling and using public transport). The Police should also have zero tolerance to the use, or threat, of using vehicles as weapons.
11. Substantial expansion of inter-city rail services, including a night train between Auckland and Wellington, and more investment in the rail network, including electrifying remaining track to move more freight off trucks and onto rail and coastal shipping.
12. Investment in the port infrastructure and systems required for these domestic ships (which does not mean infrastructure for megaships).
13. Tax reform to remove incentives that encourage transport emissions and use tax and pricing tools to encourage public and active transport modes. For example, provision of a car park by an employer to staff is not currently subjected to Fringe Benefit Tax. This undercuts the Government Policy Statement transport targets of increasing use

of low carbon modes such as walking, cycling and using public transport. These perverse incentives should be removed.

14. Implementation of the EV feebate scheme. We encourage a revenue-neutral approach to encouraging EV uptake; we would like to see the scheme expanded to include rebates for e-bikes.
15. Encouragement of eBikes uptake. E-bikes should be considered separate from non-electric bicycles as a policy tool. eBikes are the most popular electric vehicle with 65,000 purchased nationally in 2020. eBikes can also contribute to vehicle kilometre and trip reduction goals: *"A recent review and meta-analysis of 24 studies showed that e-bikes replaced around 24% of trips previously taken by car. ... A UK study that did examine this showed that there was a 20% reduction in car miles travelled by participants of a trial of e-bikes."* - E-bikes are the new cars.[19]
16. Urgent measures to address the low wage economy, invest heavily in public and active transport improvements in lower socioeconomic areas, provide schemes that provide bikes, e-bikes and e-cargo bikes to low-income households, and for mobility service providers (who are often low wage or volunteers) design tiered progressive incentives or low cost load schemes for electric vehicle purchase schemes. All this is critical to ensuring low-income New Zealanders are not disadvantaged and stuck with higher operating cost ICE vehicles.
17. Reform of the NLTF to reduce the significant impact of shifting to a zero emissions transport system on funding on the National Land Transport Fund. We are now within the horizon for this to impact on 10-year transport planning processes. Decisions and legislation about this need to be resolved within the next two years to inform the 2024 RLTPs.
18. Measures to address the problem of a road building focus within Waka Kotahi, with a solution that allows it to maintain its focus on project and programme delivery, regulation and compliance, whilst growing its skills in behaviour change, mode-shift, urban design, land-use planning, tactical urbanism, etc. This will involve a restructure to separate strategic planning, design, assessment, delivery and maintenance of projects. It will involve the removal of the conflict of interest caused by the current reliance on funding from the burning of fossil fuels. It will also require board and management resolve to ensure staff are focused effectively on implementing the decarbonisation strategy. It may be that Waka Kotahi would best be relieved of the responsibility for assessing and approving projects altogether, creating a more appropriately focused agency, as is required to ensure better implementation of Aotearoa's national strategies.

Response to specific questions

1. Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?

We support these principles, with changes.

[19] https://blogs.otago.ac.nz/pubhealthexpert/e-bikes-are-the-new-cars-why-dont-transport-policy-makers-treat-them-seriously/

Principle 1. The transport sector will play a lead role in meeting our 2050 net zero carbon target

As discussed above in "A note on the Climate Change Response Act" - The purpose of the Climate Change Response (Zero Carbon) Act 2002 is to facilitate the development of policies that contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels.

The focus for Principle 1 should shift from net zero by 2050 to the 1.5 degree limit.

The transport system underlays many individual and collective decisions. As discussed above in "Engagement - Playing a lead role in meeting our climate targets", the Ministry of Transport has a lead role in establishing a new system over the next ten years to provide a foundation for other sectors to transition and for New Zealand to meet our climate goals by 2030 then 2050.

Principle 6. We need to forge a path to zero transport emissions by 2050, while recognising that there is not one way to get there

There is a significant relationship between Principle 1 and Principle 6.

Actions taken within the next five years will significantly shape this future pathway, and determine how close we get to, or stray from a zero carbon target. We base our advice on evidence as much as possible.

All Aboard Aotearoa's position and the evidence that we have presented to the Minister of Transport is that the transport system in New Zealand needs to completely decarbonise by 2030. The next five year period is key to meaningful change.

Principle 7. Innovation and technologies will play an important role in reducing emissions, but people are the key to our future.

We do not support Principle 7.

This is too focused on new technologies, and introduces both economic and emissions risks. We suggest the following modification:

Principle 7. People and small-scale technologies are the key to our future.

Innovation has a role to play, mainly in how we make decisions together and roll out existing technologies and techniques. The Government's role is not to 'pick winners' amongst potential new technologies but to establish proven, sustainable systems. It can play a powerful role in accelerating the uptake and diffusion of transport technologies and services but many of these are not new. Ultimately, systems change depends on people not on technology – so we need to put people at the centre of our policy development.

We would like to see the inclusion of **two new principles**:

Te Tiriti o Waitangi. The Government must uphold Te Tiriti o Waitangi and ensure Māori are enabled by the changing transport system. This means ensuring Māori have decision-making power and that policies to decarbonise transport benefit Tangata Whenua.

Community empowerment. The principal section acknowledges coordination but empowered communities with the right resources can deliver the solutions needed in a way that is best for them, often in a manner that unites rather than divides, speeding up transformation. The Government should see its role as one of leadership and encouraging coordination but also providing resources and devolving decision making to local communities where appropriate.

2. Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions?

Yes, it is clear the government has the central role in reducing transport emissions.

We believe Hīkina te Kohupara should outline more clearly the Government's responsibility to lead a productive and equitable national conversation about decarbonising transport. This should appeal to the public's hearts, minds and sense of equity and also illustrate the benefits of decarbonising transport. More holistic and up-to-date methods of democracy should be harnessed. New Zealand should develop its own citizens' assembly-style of engagement that is consistent with Te Tiriti o Waitangi, which seeks broad consensus in high level goal-setting rather than attempting to seek community consensus on changes such as the removal of a parking lane on an arterial road.

We also note the importance of government as a major segment of the economy and driver through its procurement policies. It can act as a leader and as an exemplar. We acknowledge and support the Carbon Neutral Government Programme (CNGP) to measure and reduce the state sector's emissions.

We suggest that both commuting and business travel emissions of Public Sector employees (including aviation emissions) be measured and reduced as part of the CNGP.

Further, we believe all ministries and public organisations have a role to influence transport emissions beyond their own staff. There are many ways to do so and the following ideas are simply a starting point: All public organisations should be instructed to:

- redesign properties and systems to prioritise and enable walking and cycling.
- remove car parks and driveways through campuses.
- redesign premises to relocate and redesign the main entrances to be focused on safe and accessible arrival by bus or active travel (rather than to be focused on arrival by car).
- ensure any new premises are located on main bus routes.
- provide cycling and walking facilities including safe paths, drying rooms for wet weather gear and secure bike storage for staff, customers and visitors.

We would encourage increasing the State Sector Decarbonisation Fund and establishing targets to reduce transport emissions through remote work policies, encouraging inter-city rail and coach use and urban buses to stations and airport (rather than taxis) within cities, policies limiting air travel and incentives for active transport modes.

This section highlights collaboration with local government. We agree collaboration is important but submit that the Government should be more ambitious in its thinking and support of local government. In many respects achieving emission reduction targets will succeed or fail due to the ability of councils to deliver and fund infrastructure and services. New Zealand's local government is smaller, with lower revenue compared to most developed countries.[20] All Aboard Aotearoa urges the Government to provide greater immediate financial support to councils for low carbon transport projects while on-going reviews into local government and funding occur.

We agree with Hīkina te Kohupara describing governments' need to collaborate between central and local government, Iwi and hapū, and advocacy groups. We note there should be more emphasis placed on clear communications, leadership, regulation and enforcement of the private sector and industry associations rather than collaboration. These are groups that benefit from the current system, making it difficult to have healthy discussions around outcomes that challenge their business models and potentially diminish their profits and status.

3. What more should Government do to encourage and support transport innovation that supports emissions reductions?

All Aboard Aotearoa believes Government can do more to encourage and support sustainable transport, which may or may not necessarily involve innovation, and notes the risk of being distracted and focused only on technological solutions. In Chapter 4, Hīkina te Kohupara briefly mentions the Innovating Streets programme's funding of

> *temporary cycle lanes, traffic calming devices, street art and other relatively new/modern street design and placemaking initiatives.*

and says

> *Exploring different approaches for reducing emissions in the transport system should include the role of urban design and placemaking.*

Yet these seem to then be discarded as unimportant. The key examples box puts far more weight on electric and low emissions vehicles ("likely to have a major impact") than on "new street design principles and approaches" (only "likely to have a positive impact").

This shows a bias towards the "Improve" approach over "Avoid" and "Shift". Decades of climate inaction has been the direct result of persisting with an undeserved belief in the potential for future, as yet unproven, technological innovation to deliver solutions. In transport, new technology can be a bonus but shouldn't be a focus. Instead, we need to

[20] https://www.lgnz.co.nz/assets/Publications/3e6f178e2e/A-global-perspective-on-localism.pdf

focus on better network planning, street layout, traffic circulation, urban planning and regeneration principles to enable healthier lifestyles.

Chapter 4 continues:

> *We are seeing three major innovation trends in transport relevant to decarbonisation - electrification, shared mobility and automation*

Saying these trends "are likely to have a significant impact on how people and goods travel." We think too much emphasis is given to these trends. Instead, **modeshift, regeneration of urban areas, and improving proximity to amenities** will have a more significant impact.

We also fundamentally disagree listing drones amongst the innovations that could have a "major role" in decarbonising transport, while putting bikes and e-scooters into the "may also make a contribution" classification.

We note the technology, practices, infrastructure, and potential incentives exist today to significantly reduce emissions and what is needed is leadership, funding, and support.

Government could for example accelerate adoption of integrated ticketing and contactless payments on Public Transport by funding the cost of upgrading card readers on all Public Transport services. Government also has a role in specifying national standards for open data and mobility feeds to allow carsharing and micromobility operators to become part of Mobility as a Service offerings. This can be as simple as backing an existing international standard (like the General Transit Feed Specification has been used for Public Transport) for all Road Controlling Authorities and Transport Authorities to adopt.

4. Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?

The solutions in this section are mostly beneficial and one key to implementation success (in addition to the national conversation as discussed above) will be phasing. Outcomes will be magnified by getting as many implemented as fast as possible. Phasing will be key so that quick wins can feed into longer-term processes and establish a positive feedback loop.

As well as setting higher Funding Assistance Rates for walking and cycling investments and dedicated/priority bus lanes to strongly incentivise Road Controlling Authorities to prioritise and accelerate street changes, greater direct funding could be provided. Conversely, it makes sense to lower funding assistance rates for local transport projects (including renewals) that have no dedicated active travel or public transport provision.

While parking reform is mentioned elsewhere in the report, it is crucial that smarter, more modern approaches can assist quality, compact urban design, placemaking and inclusive street design.

The Ministry of Transport and Waka Kotahi can define regulatory pathways and technical blueprints to allow Road Controlling Authorities to roll out innovative road layouts at scale, including Bus Rapid Transit lanes on Motorways and State Highways, Low-Traffic Neighbourhoods, and to use less conventional techniques like tactical urbanism via programs like Innovating Streets. Such blueprints can include approved treatment types, fast-track consultation processes, and designs.

Hīkina te Kohupara discusses "integrating" land use and transport but falls short of responsibly interpreting this concept for the Aotearoa context. Our cities have high transport emissions because of car-dependent planning patterns that have created too much sprawl and leading to unproductive car ownership; even our towns are suffering the donut problem of outer sprawl and empty cores. All our projected population growth for the next 50 or more years can be accommodated within existing urban footprints, and should be. Any level of sprawl undermines work towards emissions reductions.

For New Zealand, achieving a quality, compact urban form cannot include - as may be required in Asian and European cities with higher existing densities - continued expansion onto farmland and greenfields areas. Policy must require harnessing the opportunity of regeneration and reduction in travel demand that intensification provides and prevent the increase in emissions that further sprawl creates. Therefore instead of:

> *Make transport investments conditional on having clear links to land use and urban development plans that support quality compact, mixed use urban development. This will affect the types of projects that are included in Regional Land Transport Plans.* [21]

We recommend making this clear:

> *Make transport investments in cities and towns conditional on creating the conditions for regenerative, quality compact, mixed use urban intensification of existing urban areas, rather than improving transport links to greenfields areas. This includes reallocation of existing street space and new rapid transit lines through existing urban areas. It does not include new or widened highways or even new train stations in sprawl developments. This will affect the types of projects that are included in Regional Land Transport Plans.*

5. Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?

We agree with these options however would urge greater ambition. To achieve emission reduction goals a massive, sustained investment is needed in all areas: infrastructure, safety, operations, services and amenities, legislation and regulations, incentives to encourage greater public transport and walking and cycling. With Emissions Trading Scheme revenue ringfenced to assist funding the ERP as well as other sources, an unprecedented amount is required to redress decades of under-investment. In particular,

[21] Hīkina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050., P. 43

investment must be prioritised to deliver transport infrastructure to urban areas that have been historically under-served.

We would like to see a single national transport card.

Lower public transport fares are another useful lever for encouraging modeshift, although not at the expense of improving the service quality. Concession rates vary across territorial authority and a strong case can be made for universalising this across Aotearoa as an issue of equity as well as effectiveness.

We would like to see a standardised discount (or free) travel for under-25's, Community Service cardholders and for off-peak travel. Consideration of a concession card for public servants would also further avoid vehicular emissions.

Consistent with MOT's ASI framework, removing road space prioritised for vehicular traffic and re-orienting towards bus priority, light rail, lanes for micromobility, wider footpaths and public living space would speed up delivery and magnify impact. This should be encouraged and barriers removed. For example, we support allocating at least one lane of the Auckland Harbour Bridge for walking and cycling paths as an urgent interim step while consideration is given for longer-term provision.

A good transport system should be usable by anyone regardless of their access needs. Councils must work with groups that represent disabled people to ensure efforts to decarbonise transport accommodate them.

We recommend establishing a principle that parking cannot be retained on arterials unless a quality, protected cycling infrastructure has been provided, and that removing parking for the provision of cycling and micromobility is an action that requires no consultation. Consultation has delayed the roll out of cycling investment and kept the system highly inequitable and unsafe.

6. Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour. Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?

It can be viewed as controversial, however through good design and communication, pricing can apportion costs more accurately and fairly and deliver direct benefits (for example better public and active transport services). Additional fuel or carbon charges on transport emissions should be levied and the revenue recycled into ASI initiatives. The UK example of Nottingham's Workplace Parking Levy shows that the public can accept pricing when use of the funds is clearly linked to providing alternatives. On the other hand, the absence of pricing locks in the status quo.

We submit that other cities as well as Auckland should be allowed the ability to issue congestion charges. However, traditional congestion pricing is not sufficient in its objectives,

equity, and scope to maximise emissions reduction. Territorial Authorities should be allowed to introduce differentiated pricing by vehicle weight, size, and tailpipe emissions. SUVs and utes which now represent the majority of new car sales should incur significantly higher charges to reflect their disproportionate impact and signal to the automotive industry that vehicles have to become smaller and more efficient.

Pricing should also work to encourage modeshift where congestion is not present, as vehicle emissions are a problem at all times of day and in all places. Thus "congestion pricing" should be expanded to include capturing the externalities of driving. By definition, this means an increase in road user charges that is not revenue neutral.

Additionally, land value capture taxes could be a useful contribution to assist in bridging the funding challenges identified by MOT whilst building low-carbon infrastructure.

We urge the Government to work with Territorial Authorities in all urban areas to introduce parking levies, i.e. a tax on each privately owned parking space. This has been in place in Sydney since 1992. The availability of free or cheap parking is known to be a strong incentive to drive[22], so parking levies will reduce traffic, and thus emissions, giving a positive effect on intergenerational equity. Vulnerable road users in all locations will also benefit from parking levies as their effect on traffic volumes throughout the network leads to improved safety and better air quality.

Parking levies are needed[23]. They should be applied as quickly as possible in city centres, which generally have the most viable active transport options (due to proximity) and public transport options. With these options, there are less likely to be perverse effects felt by lower income people, indeed the lower traffic volumes throughout the network should lead to improved bus travel times which will improve equity also.

Low-emission zones are probably not a useful concept in 2021 as all regions of our towns and cities should rapidly become low-emission zones. However, if low-emissions zones are introduced, this should be paired with incentives for e-bikes, public transport passes and other options, as has been done in Edinburgh.[24]

7. Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?

We agree with some of the key actions and submit on the need for being cognisant of equity issues. We encourage using the ASI approach so that the "avoid" and "shift" levers receive the funding they need. Vehicle improvements should be encouraged through regulation rather than subsidy. We disagree in general terms with parking and priority use on roads for low emission vehicles, except in low emissions zones where air pollution is a concern.

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[22] https://www.sciencedirect.com/science/article/abs/pii/S0967070X11001028
[23] https://www.greaterauckland.org.nz/2021/03/20/the-long-term-plan-2021/
[24] https://energysavingtrust.org.uk/grants-and-loans/low-emission-zone-support-fund-for-households/?ref=LEZ

To improve the emissions profile of the vehicle fleet it is important that incentives are available to remove the most polluting vehicles through two avenues:

- A scheme to replace 'clunkers' with e-bikes;
- a direct emissions cap.

It is also urgent to reduce the average tailpipe emissions of new vehicles entering the fleet by discouraging the purchase of oversized vehicles. We recommend sharply and continuously increasing tax on the purchase of vehicles above a certain threshold of tailpipe emissions and increasing licensing cost for the same vehicles. This would typically impact utes and SUVs.

As Hīkina te Kohupara recognises, socio-cultural identities are tied with large vehicles[25]. The Government could run repeated media campaigns explaining that bigger vehicles (Utes, SUVs) are more dangerous (for pedestrians, especially children), more polluting, and inadequate for daily needs. A good example is the UK "When you have a hammer, every problem looks like a nail" video[26]. Such campaigns could also start tackling the masculine identity tied to large vehicles by instead presenting healthy male figures whose identity is not tied to their vehicle. In parallel, the Government should consider regulating advertising that promotes aggressive and polluting driver mindsets.

In terms of electric vehicles, the high capital cost has been identified as the largest barrier. As well as RUC, tax and other incentives considered, a low-cost loan scheme where cost savings are used to service the loan could be the most effective way to drive adoption at minimal cost to the Crown.

We submit that electric bikes should also be eligible and to ensure low-income New Zealanders are not disadvantaged and stuck with higher operating cost ICE vehicles, incentives should be designed in a tiered, progressive fashion.

New Zealand should aim for an earlier importation ban on ICE vehicles to recognise the fact we hold on to vehicles longer than most developed countries and to avoid the risk of becoming a dumping ground as identified by the MOT.

8. Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?

We agree with these possible key actions.

[25] Hīkina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050., P. 67
[26] https://twitter.com/SarahJ_Berry/status/1398191433270579203

9. Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?

No. Avoiding air travel will reduce emissions faster and at less cost than any other measure to decarbonise aviation. Funding needs to be reallocated from aviation to establishing the low-carbon, land based public transport network we need to be able to avoid flying.

Education, promotion, and leadership should be used to encourage New Zealanders to avoid flying, use remote alternatives, or use inter-city public transport. Consistent with this, a clear sign of leadership from elected Members of Parliament would be to remove their perk of unlimited free air travel for personal reasons.

Additionally, airport expansion and new airport construction should be stopped.

Domestic aviation emissions, once radiative forcing factors are included, contribute more to climate change than our heavy trucks do, and are rising faster[27]. Any efficiency gains have been swallowed by increases in passenger numbers. In the Kyoto Protocol, the aviation industry agreed to work through the International Civil Aviation Authority to reduce aviation emissions. They've had plenty of time and money to research this, but instead of using profits (during this period of not paying for their climate damage), they instead offered cheap flights to grow passenger numbers.

"Sustainable" aviation fuels do not exist, because the radiative forcing effects at altitude mean ***any*** aviation fuel damages the climate more than if a fossil fuel was burnt at ground level. Electric aeroplanes therefore are the only potential way to achieve net zero emissions in aviation, and there is zero chance that technology will be available to move more than a tiny fraction of the current domestic passenger volumes by the end of the third emissions budget.

Pinning hopes on sustainable aviation is therefore neither responsible from an economic nor a climate perspective. The only solution is to reduce flying substantially. The Avoid-Shift-Improve framework is as important for aviation, both domestic and international, as for land transport, yet the Ministry has not taken this approach. The government is ignoring the need to substantially reduce aviation, with obvious equity implications[28].

Aviation is subsidised; it does not pay for its carbon emissions and Air New Zealand, other smaller airlines, and airports have continued to be bailed out and/or subsidised by taxpayers and ratepayers. The Government has used taxpayer money to promote tourism.

Research into low emissions flying should be a private endeavour, funded entirely from within the industry. This is because flying is an energy-intensive, highly inequitable transport mode that does not benefit most ordinary New Zealanders, and especially not those with the lowest incomes. Current and future generations have no responsibility to prop up or subsidise aviation-critical industries, nor their research needs. Sustainable industries using sustainable transport can serve us better if we provide the transport infrastructure they need.

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[27] https://www.greaterauckland.org.nz/2019/12/04/planning-for-air-travel/

[28] https://www.nationalgeographic.com/environment/urban-expeditions/transportation/air-travel-fuel-emissions-environment/

To serve future generations well we should be investing in the low carbon transport modes they will need: regional rail and coach.

The government should establish workstreams and funding streams for establishing a national public transport network, and start to build it at pace. The benefits go well beyond emissions reductions[29].

10. The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be prioritised?

Aotearoa needs new freight strategies and systems that cause no deaths or serious injuries; are compatible with quality, compact cities; and that don't endanger healthy regional active travel. Hīkina te Kohupara's Chapter 8 on freight takes a conventional approach and the recommendations will limit outcomes - for freight efficiency, system decarbonisation and safety. The chapter would benefit from looking beyond the current system and from integrating freight planning with other transport priorities.

Freight is an area where innovation and new technologies will be helpful, such as this suggestion on page 82:

> *consolidating deliveries in urban consolidation centres (UCCs) or drop-off/pick-up points for self pick-up.*

More information is given on page 50, including about e-cargo bikes for deliveries, but in Chapter 8 itself, doubt is placed on their applicability to Aotearoa:

> *How much more scope there is for Aotearoa to open further consolidation centres and complement these with last-mile low emission modes such as electric vans or cargo-bikes remains to be studied.*

New Zealand is not somehow 'different' so there's no need to "study" these. Instead, we need the infrastructure rollout to allow it to happen. The infrastructure needed to make e-cargo bikes safe and attractive for businesses is the same infrastructure that will allow significant modeshare for passenger trips, freeing up the road network for trucks and vans.

The section in Chapter 8 on "consumer and business owner demands" describes the shift to a focus on speed and efficiency for deliveries, noting that:

> *If supply chain managers and consumers accepted slightly longer delivery times, it could enable slower modes, which are often lower emission, to play a larger role. This may require efforts to shift and shape consumer preferences, which will be challenging.*

[29] https://www.greaterauckland.org.nz/2019/08/07/regional-access/

Relying on hopes that customers' behaviour will change has been a delaying force in the climate action story for decades; what's required is systems change to enable this behaviour change.

Systems change that would encourage a shift to slower modes of freight delivery is to enforce good driving behaviour. A central Vision Zero concept is that responsibility for the behaviour of fleets of vehicles like courier delivery vans needs to be moved upwards to the regulators and enforcement authorities. Internal company cultures will shift if the threat of action for poor driver behaviour is something the company management feels the heat on. The threat of massive fines can mean courier drivers start to have to park legally, drive considerately and slowly. Together with higher registration costs for vehicles, congestion charges and higher fuel taxes, the option of switching to slower, safer modes that don't have these fines and charges would be more attractive. Levies on delivery vans could even be used to provide subsidies to e-cargo bikes.

Freight is now a key strategic priority in the GPS 2021, indicating the importance the government has given to improving outcomes for freight.

The Auckland Freight Plan[30] is an example of how the sector has responded to the new priority for freight in the GPS. Neither aligned with Vision Zero, nor cognisant of freight's relationship with our climate and equity goals, the plan has the potential to worsen outcomes for all three[31]. Yet a more efficient freight system can be achieved in Auckland if there is considerable modeshift of passenger trips to sustainable modes. Freight's enormous contribution to this task should be central to the freight plan. The reference group for the Auckland Freight Plan was made up of people from these organisations:

> *Auckland Transport, NZ Transport Agency, Auckland Council, Ministry of Transport, KiwiRail, Automobile Association, Road Transport Association NZ, National Road Carriers Association, Auckland Airport and Ports of Auckland.*

The Ministry should improve its freight section with input from experts on disability, cycling, walking, safety, decarbonisation, placemaking and equity.

Freight efficiency is improved with lower traffic volumes. This was demonstrated during the Level 3 and 4 lockdowns, when the recorded "level of service" for freight showed significant improvement. Hīkina te Kohupara should stress that all the levers for reducing traffic volumes[32] are not just decarbonisation tools but are also tools for improving freight efficiency. The actions listed in the freight section should therefore include reducing traffic volumes, with an upfront list of how to do so: reducing road capacity, removing ratruns, reducing intersection sizes, improving public and active transport, reducing parking supply, reallocating road space to sustainable modes and stopping sprawl.

Freight efficiency is improved with lower levels of congestion, but transport planners are still attempting to improve congestion with incremental intersection widening and optimising for the flow of general traffic. This is a failed approach that increases traffic and therefore increases congestion, slowing freight down. The freight section should include an action that

[30] https://at.govt.nz/media/1983982/auckland-freight-plan.pdf
[31] https://www.greaterauckland.org.nz/2020/10/20/the-auckland-freight-plan/
[32] https://i1.wp.com/www.greaterauckland.org.nz/wp-content/uploads/2020/02/Levers-for-Reducing-Traffic.png

addresses this, calling for congestion to be reduced by traffic reduction approaches, rather than the conventional road network optimisation approach of widening pinch points and reassigning signal priority.

Our freight network impacts our ability to decarbonise the whole transport system, but this point hasn't been addressed in the paper. Trucks are disproportionately involved in death and injury crashes. The size and mass of our trucks is inappropriate for a road network shared by other road users, and this will continue to prevent modeshift if we don't tackle the problem. This suggestion (p 84) is entirely lacking in Road to Zero understanding:

> *Some routes have even been approved for use by specifically designed 62 tonne HPMVs. It may be possible to explore whether more sections of the road network could support higher capacity trucks and whether any additional costs of maintenance and infrastructure upgrades could be justified. However, allowing heavier and greater cubic capacity loads on trucks might conversely lead to competition with lower carbon modes on some routes.*

The suggestion should be removed from the document. Trucks of these sizes need to be completely separated from all other modes for their entire routes, including full grade separation, but freight companies would never agree to pay for such an endeavour. Even just strengthening or replacing bridges each time the truck weight limits are increased imposes a massive cost. The funding provided for maintenance of the transport network is never sufficient, we are facing a big bill for climate resilience work to raise and strengthen roads, railways and cuttings, and we need to transform the network so it's safe for all modes.

We simply don't have the money to adapt more of the network for massive trucks.

Instead, the Government should be working to shift far more freight to rail. Rail is far safer than trucks. It is far easier to decarbonise - electric rail is proven technology. Investment in rail should aim to remove as many large trucks from the regional road network as possible. We agree with this need:

> *We need to fully understand the optimal spatial layout of transport and logistics nodes (e.g. ports, rail, freight hubs, etc.) in Aotearoa.*

And stress that it needs to be rail-based, with any truck movements being in smaller trucks, with those great big 50 and 62 tonne trucks retired from the public network.

11. Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

We do not agree with the possible key actions. Using the ASI approach, freight emissions should be avoided through reduced activity or improved logistics and through modeshift to rail, shipping and e-cargo bikes or other sustainable modes. Greater proximity with increased local production and consumption would significantly decrease emissions while providing regional economic development and promoting resiliency.

Shifting freight off trucks and onto rail and coastal shipping decreases emissions and delivers other co-benefits such as road safety outcomes. Significant investment is needed in rail and coastal shipping infrastructure.

We support higher emission standards and believe an early import ban and the phasing out of registration of diesel vehicles is needed. The Road User Charges scheme isn't accounting for the true costs to society from road freight and should be modernised to price externalities and provide revenue for zero-carbon alternatives.

We urge the Government to set sustainable standards for biofuels to ensure emission reductions are achieved without contributing to food insecurity, poor land use, reduced biodiversity, wasteful practices in agriculture, or environmental disasters (such as using feedstocks like palm oil).

12. A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

We acknowledge the impacts identified and consider that positive social outcomes must be maximised as we decarbonise the transport sector. The transformation of our transport system to meet climate goals offers a huge opportunity to undo the existing injustices currently baked into the system, particularly for persons with disabilities, low-income people and people of colour. This opportunity must not be squandered.

13. Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway do you think Aotearoa should follow to reduce transport emissions?

This is discussed above in **Report: Positives and Negatives -** *Are the pathways on the right path?* And **A note on the Climate Change Response Act.**

In summary:

The pathways should be more ambitious. The primary goal of the Emissions Reduction Plan must be to reduce emissions in line with the target. It is clear that some of the pathways do not achieve this. Pathway 4 gets closest but we urge MOT to recommend and advise emission reductions further and faster than outlined in any of the four pathways, in order to make up for the lack of reductions in other sectors such as agriculture.

In the final report, all pathways should be consistent with achieving the goal of staying below 1.5 degrees, as outlined in the Zero Carbon Act. There is no excuse to include pathways that miss this life-saving goal. Indeed, including pathways that do not achieve the law only serves to confuse the public and decision-makers alike.

14. Do you have any views on the policies that we propose should be considered for the first emissions budget?

See **Recommendations for the First Emissions Reduction Plan** above.

Thank you for the opportunity to provide feedback and we look forward to further engaging with you.

ENDS

From:	Protect Our Winters NZ
To:	Transport Emissions
Subject:	Hīkina te Kohupara Feedback
Date:	Friday, 25 June 2021 5:00:37 pm

Hello,

This submission is on behalf of Protect Our Winters New Zealand Incorporated, a registered charity. We represent approximately 1500 members of New Zealand's outdoor community. The majority of our members live in the Wanaka and Queenstown areas.

Consultation question 1 Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?
Yes we support the general principles

Consultation question 2 Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions?
No the government's role is not clear. It is not clear which agency, local or regional government will play which role and it is concerning that there are so many different government agencies to pass the buck between. We advocate for a stronger central government role to ensure rapid uptake of policies by regional and local governments which are currently moving too slowly. The central government needs to ensure it has power to dictate where and how regional governments spend their money on reducing transport emissions. As an organisation earlier this year we were trying to advocate for public transport connecting Wanaka and Queenstown and it was extremely unclear where to even begin with this and the various government agencies we contacted simply passed it on to others.

Consultation question 3 What more should Government do to encourage and support transport innovation that supports emissions reductions?
More funding for micromobility. Both the units themselves (bikes, scooters etc) but also the infrastructure (bike lanes, docking stations etc). One of the hesitancies between people taking public transport is them not being able to get exactly where they want. If there are bike share stations located at transit hubs it allows people to complete their journey. More funding for electric bikes for individuals. More funding for electric buses. More investment in rail.

Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?
What needs to be prioritised is:
Remove barriers and improve funding for tactical urbanism and innovative approaches to street design (e.g. expand on Waka Kotahi's Innovating Streets for People Programme). • Develop design guidance and expectations for quality high-density environments. Develop clear guidance and expectations to link urban density and mixed land use with accessibility (particularly by way of public transport, walking, and cycling).

Consultation question 5 Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?
More Rail connecting regional and urban centres. Other than that just more active and public transport and policies that ensure there is no more urban sprawl which makes these challenging to implement.

Consultation question 6 Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour. Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?
There needs to be a price on carbon. All things that come with a high carbon cost need to be priced higher and those with low carbon costs lower. This needs to extend far beyond just elective vehicle subsidies which have very little impact on most people. There needs to be bike and electric bike subsidies, public transport subsidies. Parking needs to cost way more. The bus should be very cheap or free. Right now people don't take the bus between Queenstown and Wanaka because it's cheaper to drive. It needs to be very clearly more expensive to drive.

Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?
Electric buses prioritised as well as incentives for scrapping of older vehicles.

Consultation question 8 Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?
Yes, needs to be faster.

Consultation question 9 Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?
Make carbon offsetting a compulsory part of the ticket prices. More trains connecting Christchurch and Dunedin and Wellington and Auckland. Then more buses connecting Queenstown and Christchurch. Currently a bus between Christchurch and Queenstown is more expensive than a flight. It also takes 8 hours. This would mean less need for domestic flights on these routes.

Consultation question 10 The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be prioritised?
No, other than supply chains need to be addressed as well as individual transport.

Consultation question 11 Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?
No, as above, more trains and more electric transport options.

Consultation question 12 A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?
By subsidising bikes and electric bikes you increase affordability of electric transport to everyone, not just those with means to buy an expensive car. EV's should be subsidised and inefficient fossil fuel burning cars should not be allowed into the country but these policies only affect a small portion of the population. Most of the rural population could use electric bikes or regular bikes to get around town very easily.

Consultation question 13 Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway to you think Aotearoa should follow to reduce transport emissions?
Pathway 4

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needs winter to generate positive climate action. We focus on educational initiatives and community-based empowerment to preserve New Zealand's' alpine playground.

www.protectourwinters.nz
Follow us on social media: Instagram - @ProtectOurWintersNZ Facebook - ProtectourwintersNZ

Auckland Council
Te Kaunihera o Tāmaki Makaurau

Auckland Transport
An Auckland Council Organisation

Auckland Council and Auckland Transport Submission

Hīkina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions: Pathways to Net Zero by 2050

Ministry of Transport Discussion Document

25 June 2021

25 June 2021

Transport Emissions

Ministry of Transport

PO Box 3175

Wellington 6140

transportemissions@transport.govt.nz

To whom it may concern,

Re: Auckland Council and Auckland Transport submission on Hīkina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions: Pathways to Net Zero by 2050

Please find attached the Auckland Council and Auckland Transport joint submission on Hīkina te Kohupara. Please find feedback from ten local boards appended in Appendix A.

The designated signatories of this submission are:

- Mayor Phil Goff
- Environment and Climate Change Committee Chairperson Councillor Richard Hills
- Environment and Climate Change Committee Deputy Chairperson Councillor Pippa Coom
- Planning Committee Chairperson Councillor Chris Darby
- Planning Committee Deputy Chairperson Josephine Bartley
- Member Glenn Wilcox from the Independent Māori Statutory Board.

We welcome the Ministry of Transport's discussion document on potential pathways and policies to phase out emissions across the transport system and move towards a net zero carbon transport system by 2050. We wish to work with the Ministry of Transport and other government agencies in the development of the government's first Emissions Reduction Plan.

Yours sincerely

Mayor Phil Goff

Cr Richard Hills

Cr Pippa Coom

Cr Chris Darby

Cr Josephine Bartley

Member Glenn Wilcox

Overview

1. Auckland Council and its council-controlled organisations (CCOs) thank the Ministry of Transport for the opportunity to provide feedback on *Hīkina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions: Pathways to Net Zero by 2050* (Hīkina te Kohupara). Hīkina te Kohupara is well aligned with Auckland's strategic priorities:

    - The Auckland Plan 2050 notes that making a substantial progress on reducing Auckland's greenhouse gas (GHG) emissions from transport will require a major reduction in the use of fossil fuels
    - Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan was adopted as the region's blueprint for reducing regional emissions and preparing for the impacts of climate change
    - The Auckland Transport Alignment Project has an objective to significantly reduce the greenhouse gas emissions generated by Auckland's transport system.

2. This submission has been jointly developed by Auckland Council and Auckland Transport, with input from across the wider Auckland Council group.

3. In addition to the Auckland Council submission, ten local boards have provided input and their feedback is attached in Appendix A. All local boards who have provided feedback support strong action to decarbonise the transport system.

Transport emissions reduction in Auckland

4. Auckland Council endorsed Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan in July 2020. The plan sets targets of reducing the region's GHG emissions by 50 per cent by 2030 (against a 2016 baseline) and transitioning to net zero emissions by 2050, whilst ensuring the region is resilient to the impacts of climate change. The 2030 target has been endorsed by C40 as being consistent with what is necessary to limit planetary warming to 1.5 degrees Celsius by 2100.

5. Te Tāruke-ā-Tāwhiri sets a steeper target of 64 per cent reduction in transport sector emissions by 2030. This reflects the relative difficulties in reducing emissions at-scale in other sectors (e.g. from industrial processes). On-road transport is the largest source of emissions in the Auckland region, generating about 38.5 per cent of all emissions in 2018.

6. The amount of vehicle kilometres travelled (VKT) in fossil fuel powered vehicles is at the heart of the transport emissions challenge. There are issues associated with electrifying the private vehicle fleet in the short to medium term, and as such the reduction of VKT will be key to Auckland's contribution to emissions reduction.

7. Although government and Auckland Council have a shared goal of net zero carbon by 2050, Auckland has a more ambitious interim target. It is therefore critical that those policy and investment levers that have the potential to yield more immediate results are fully utilised to ensure progress toward Te Tāruke-ā-Tāwhiri's ambitious interim 2030 goal. Achieving Auckland's 2030 goal will contribute significantly to Aotearoa achieving its national emissions reduction targets.

8. Auckland, as Aotearoa's largest city and with strong regional population growth anticipated, must make a greater contribution to transport emissions reduction than other parts of the country; especially in terms of facilitating mode shift away from private vehicles. However, Auckland is reliant on significant government effort to support actions that can be implemented locally.

Support for Hīkina te Kohupara

9. We support the use of the avoid-shift-improve approach taken to identify opportunities to reduce transport emissions and the comprehensive series of interventions identified in the

discussion document. While not government policy, adoption of the interventions identified in Hīkina te Kohupara would require a transformation of the existing transport planning and investment system.

10. A systems approach is needed to rapidly and significantly reduce transport emissions, focusing not just on changes within the transport system but the broader systems that impact on transport, for example land use planning and funding and financing mechanisms.

11. Low carbon transport policies can help to address current inequities in the transport system, where marginalised groups are often underserved by the transport system while being overburdened by transport externalities such as road harm and transport pollution. A decarbonised transport system could lead to significant improvements in public health through the reduction in transport-related air and noise pollution and increased safe opportunities for active travel. It could also improve travel choice and accessibility for the transport disadvantaged through the provision of more frequent and accessible public transport, safe and connected walking and micromobility networks, and more affordable shared and pooled mobility options.

12. We support Pathway Four as the decarbonising pathway for Aotearoa as it is the only pathway that meets the Climate Change Commission's recommended 2035 target. However, we note that Auckland has a much steeper regional pathway and relies on more ambitious national targets, with the policies calibrated accordingly, than those proposed by the Climate Change Commission. Pathway Four focuses on aggressive and early implementation of interventions that reduce private VKT while increasing accessibility and travel choice for all, as well as strong electric vehicle uptake. This makes it the most similar to Te Tāruke-ā-Tāwhiri's transport decarbonisation pathway.

13. While Auckland Council and Auckland Transport are prioritising transport investments supporting mode shift, we require stronger policy, legislative and budgetary settings from central government to make deep and rapid cuts to the region's transport emissions. This includes changes to regulatory and financial settings to accelerate mode shift, policies to fast-track the transition to low emissions vehicles, and land transport pricing and funding reform. These changes will allow local government to maximise the 'avoid' and 'shift' levers available to it to reduce transport emissions.

14. Constrained budgets, the allocation of funding to projects that will likely increase emissions, slow (and often opaque) decision-making processes and the time lag between policy interventions and their emissions reduction impacts, create additional challenges for Auckland to achieve what are already highly ambitious targets.

15. Similarly, some of the policy signals from central government, such as support for projects that add roading capacity and requirements for local government to accept out-of-sequence greenfield growth, do not align with the urgent need to reduce transport emissions. We commend the Ministry of Transport for recognising this and putting forward means of addressing some of this misalignment.

16. At the same time, Auckland Council and Auckland Transport also need to fully utilise the policy levers that are within local government's control – land use planning, urban form, road space reallocation, mode shift investments, and parking policy, for example.

17. Auckland's businesses are innovating to reduce carbon emissions, for example electric ferries and buses are being designed and manufactured here. Innovation needs to be encouraged by removing unintended barriers within regulations.

18. Just as Auckland requires transformative action from central government to deliver on its regional commitments, so too will the successful realisation of Aotearoa's emissions reduction commitments require strong climate action from Auckland, particularly for transport.

Consultation questions

Our responses to each of the consultation questions are outlined below.

Consultation Question 1:
Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?

19. We support the principles in Hīkina te Kohupara. We urge that the principles are accompanied by specific, measurable targets to ensure greater accountability.

20. In addition, we suggest the inclusion of a new principle to enable the wisdom and values inherent in mātauranga Māori and tikanga Māori to support the transition to a decarbonised Aotearoa.

21. Our recommended wording for the new principle is as follows:

    Principle 1: Mātauranga Māori and Te Ao Māori values form the foundation of our pathway to a zero carbon transport system.

22. We recommend that the Ministry of Transport refer to Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan as an example of a climate action framework that aims to centre Te Ao Māori in its recommendations and delivery approach.

Consultation question 2:
Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions?

23. Strong policies and strategies are required to enable New Zealanders to change their travel behaviour. Many of these are under the control of local government. However, central government plays a vital role in creating a strong legal, regulatory and funding environment to support the transition towards a lower carbon transport system. Government also controls most of the policy levers to decarbonise the vehicle fleet.

24. Auckland Council and Auckland Transport have control of, or at least some influence over, several interventions that can support transport emissions reduction including those related to accelerating mode shift, reallocating road space, reprioritising investment away from additional roading capacity, and shaping urban form.

25. However, our ability to effectively implement these interventions with the urgency that our emissions reduction targets demand, is often constrained by:

    - availability of funding
    - slow decision-making processes, e.g. business case and consultation processes
    - committed investments that do not support emissions reduction
    - the need to balance emissions reduction against other outcomes
    - insufficient legislative and regulatory support for mode shift
    - lack of community mandate for certain solutions.

26. Government support is required to help unlock these barriers so that the policy and investment levers that have the potential to yield more immediate results are fully utilised to ensure progress toward Te Tāruke-ā-Tāwhiri's interim 2030 target of a 64 per cent reduction in transport emissions.

27. The Ministry of Transport's Reshaping Streets programme has the potential to address some of the barriers that local government faces in accelerating widespread street changes to support public transport, active travel and placemaking. We support this programme and welcome the opportunity to work with the Ministry to progress it and to address the other barriers identified below.

Availability of funding

28. If we are to achieve mode shift to the scale required to meet our shared emissions reduction targets, more funding is needed from central and local government for public transport infrastructure and services, and safe active modes infrastructure.

29. Some of this funding could be reallocated from other parts of the transport budget, through the reprioritisation of Government Policy Statement on Land Transport (GPS) activity classes and reconsideration of planned roading and urban highway projects (as identified in Hīkina te Kohupara).

30. However, even if existing funding sources were optimally allocated from an emissions perspective, they would still be insufficient to facilitate the mode shift required to achieve emissions reduction targets. Growth in the National Land Transport Fund (NLTF), for example, has not kept pace with escalations in the cost of providing transport infrastructure and services.

31. We recommend that future updates to the GPS include a large increase in the proportion of funding dedicated to public transport and active modes, as well as the provision of a new activity class that enables local government to deliver interim and tactical solutions that support mode shift, e.g. pop up cycleway protection and temporary street closures.

Decision-making processes

32. We support the narrative in Hīkina te Kohupara on the need for more streamlined but still robust decision-making processes. Current Waka Kotahi business case processes are not conducive to the need to urgently deliver mode shift enabling infrastructure and services.

33. Streamlining the process to approve co-funding for projects that are aligned with the GPS and have the potential to reduce transport emissions would mean that:

    - Auckland Transport could plan a smoother and more constant pipeline of climate positive projects, and
    - projects could go to market more quickly, be delivered faster and start providing benefits earlier.

34. The government can also ensure climate positive projects are selected over others by making changes to Waka Kotahi's business case processes. Current business case assessments do not require projects to prioritise emissions reduction, which means emissions reduction is often balanced against other outcomes, or not considered at all. The social cost of carbon[1] is also

[1] The social cost of carbon (SCC) is an estimate, in dollar terms, of the economic damage that would result from emitting one additional tonne of carbon dioxide. Under New Zealand's Emissions Trading Scheme, carbon emissions are currently priced at $40 per tonne. According to recent Treasury estimates, a significantly higher price of $232 per tonne would be needed by 2050 to hold global warming to less than 2 degrees Celsius.

not considered in business case processes, leading to decision-making that locks in climate-incompatible infrastructure investments.

The need to balance mode shift against other outcomes

35. An over-reliance on traffic models by road controlling authorities and Waka Kotahi in the implementation of street changes means that priority is often placed on general traffic Level of Service (LoS) over safety and access for non-motorised users. As such, despite mode shift being a priority for central and local government, solutions that increase capacity for cars (or at least not reduce it) tend to be favoured, leading to more driving and reduced access to alternative transport choices.

36. Government should provide stronger direction for local government to prioritise public transport and active modes such as walking and cycling over private vehicle travel. It should also provide stronger direction on the need for street changes and the scale of change expected.

Insufficient legislative and regulatory support for mode shift

37. Mode shift requires the use of legally enforceable tools to prioritise active and shared modes over private vehicles. However, there is currently no national legislation that supports the use of tools, such as:

    - congestion charging (currently being investigated through the Select Committee inquiry into congestion pricing in Auckland)
    - workplace car parking cash-out
    - workplace car parking levies
    - other car parking levies (e.g. public car parks, shopping centres, public facilities)
    - e-bike grants, subsidies or tax-deductible repayment schemes
    - low or zero emissions zones
    - exclusion of fossil fuelled vehicles from certain streets
    - parking enforcement on berms and in pedestrian malls
    - car parking fines higher than $40[2]
    - taxation of passenger vehicles based on weight
    - accessibility and universal design.

38. We recommend that central government investigates the potential for these tools. By providing an enabling legislative framework, central government can enhance the toolkit available to local government to provide low carbon, accessible and affordable options for people to shift from private vehicle use.

Other comments

39. There is an opportunity to integrate and align approaches to reduce emissions through upcoming resource management reform. Regulation, legislation and policy alignment across

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Some international research indicates that the true cost of carbon emissions could be nearer to $400 per tonne. See New Zealand Infrastructure Commission (2021) He Tūāpapa ki te Ora | Infrastructure for a Better Future: Aotearoa New Zealand Infrastructure Strategy Consultation Document (page 49) for more information.

[2] In contrast, the fine for fare evasion in Auckland is $150.

broader land use, transport, spatial planning and resource management will be vitally important.

40. We support government making changes to the tax system to remove perverse incentives in existing financial and accounting practices. The fringe benefit taxation regime, for example, should be re-examined to consider whether it appropriately incentivises low carbon travel patterns. Government has a uniquely important role in setting clear, fair tax policies that achieve stated policy aims.

41. However, we do recommend that the government go further and consider not only how the tax system can be used to complement and support the pathway to net zero by 2050 but how redistribution of transport revenue can be used to support a just transition. The transformation to net zero will impact all of us but there is a risk that its cost will fall disproportionally on those least able to afford to change. Some of the impacts of measures that increase the cost of private vehicle use can be mitigated through improved alternatives, yet it is likely some form of financial support will be required for other interventions such as congestion pricing. Subsidies or discounts could help mitigate these impacts further, but risks undermining the emissions outcomes sought. Redistribution of revenue through social welfare payments or similar could provide a similar level of support/mitigation, while retaining a strong incentive for behavioural change.

42. The systems approach to reduce transport emissions needs to explicitly include local government alongside the listed government ministries and Te Waihanga (New Zealand Infrastructure Commission) (page 21). Local government's role is vital:

- Local authorities enable new development through well-considered, long-term land use planning and providing network infrastructure.
- Long-term land use planning informs infrastructure providers and the development sector of local government's investment intentions. This allows all parties to make informed and effective investment decisions.
- Land use planning is also a key tool used to ensure the many factors that make a city highly liveable for its residents are well considered and planned for over the long term.
- Local government also funds and/or provides the bulk and network infrastructure that underpin new development.
- Local authorities have a critical role as stewards of public investment in bulk infrastructure and must ensure such investments achieve the greatest overall benefit for their cities.

Consultation Question 3:
What more should Government do to encourage and support transport innovation that supports emissions reductions?

43. We support the actions identified in the Chapter 3 (supportive regulation, collaboration, and funding) but stress the need for their application to be consistent with the strategic objectives of the Government Policy Statement on Land Transport and the Auckland Plan 2050. Additionally, we have the following suggestions.

44. Government should proactively address ambiguity or gaps in regulations, for example, the ambiguity in the regulations relating to the production of hydrogen fuel.

45. Collaboration between the government and non-government sectors should include sharing public data that will support the development of new products and services.

46. Funding should consider the full lifecycle impact of any successful application to ensure no unexpected costs. For example, funding to support electric heavy vehicles should factor in their higher impact on road wear.

47. The possibilities of innovation must be tempered with the realities of deliverability. For congestion charging, for example, Automated Numberplate Recognition (ANPR) is a technology that works and already in use in Aotearoa.

48. Innovation around light freight distribution in urban areas is an area which warrants further research. Electric vans, cargo bikes, last-mile delivery, logistics consolidation – these will be important for meeting demand for goods and deliveries in an emissions-free environment; long term reliance on diesel-powered vans is not a sustainable long-term option.

Consultation Question 4:
Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?

49. We support the government actions listed in Hīkina te Kohupara to better integrate transport, land use and urban development to reduce transport emissions. We applaud the Ministry of Transport for acknowledging the impacts of land use and urban form on travel patterns and consequently, transport emissions. We are encouraged by the Ministry's identification of the barriers faced by local government to fully utilise the levers available to it to support climate goals.

50. In addition, we recommend the consideration of the matters listed below.

Addressing misalignment between government direction on growth and emissions reduction objectives

51. We agree with the premise that quality compact urban form supports transport emissions reduction by enabling households and businesses to travel shorter distances to access employment, education and other opportunities. An assessment of the potential impacts of different growth scenarios on Auckland's natural environment found estimated vehicle kilometres travelled (VKT) and emissions to be lower under the more intensive built form scenario than the balanced or expansive scenario.[3]

52. Generally speaking a compact urban form is easier to serve with good public transport and active mode options. As such, people who live in built up areas will often have greater potential to change the way in which they travel, and therefore reduce their transport emissions, compared to those in outlying rural areas with less transport choice.

53. Auckland Council has a key role in helping shape Auckland's future urban form through documents such as the Auckland Plan 2050, the Auckland Unitary Plan and the Future Urban Supply Strategy. Between them these documents take a quality compact approach to growth and development. This means future development will be focused in the existing urban area and in identified future urban areas within Auckland's urban footprint, with only limited expansion into rural areas. This approach aligns well with the narrative in Hīkana te Kohupara.

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[3] Rohani, M (2017) An Assessment of Potential Impacts of Different Growth Scenarios on Auckland's *Natural Environment*, Auckland Council technical report 2017/022

https://knowledgeauckland.org.nz/media/1159/tr2017-022-assessment-of-potential-impacts-ofdifferent-growth-scenarios-auckland.pdf

54. However, Auckland's current urban form grew out of more expansionary planning approaches of previous decades. While the adoption of the Auckland Unitary Plan in 2016 has catalysed relatively rapid intensification in some areas, changes to urban form take time and it may be many years before the planning approaches of today have a substantial impact on the shape of the city as a whole.

55. Given this long lead in time it is therefore crucial that land use planning decisions, such as those relating to the implementation of the National Policy Statement on Urban Development (NPS UD), reflect the council's stated goal of a zero emissions transport system by 2050.

56. The NPS UD includes climate change as both an objective and a policy, yet it also requires councils to enable growth in greenfield areas and be responsive to out of sequence plan changes. As such it could enable a more fragmented development pattern that does not promote transport emissions reduction.

57. We suggest that the resource management reform process be used as an opportunity to revisit the inconsistencies in government policy direction and its misalignment with government and council's stated emissions reduction objectives. We also support requiring transport emissions impact assessments in consenting/activity approval processes for high trip-generating activities.

Incentivising brownfields development

58. Delivering a quality, compact urban form requires upfront investment in infrastructure (e.g. transport, water, wastewater, stormwater and public community facilities) and addressing infrastructure funding and financing.

59. Local government is constrained by its ability to appropriately levy beneficiaries (primarily landowners) for the full cost of infrastructure improvements. Furthermore, local government's debt ceilings impact on its ability to carry the increased costs of greater investment in infrastructure.

60. One of the easiest ways to incentivise brownfield development is to stop subsidising greenfield development by properly pricing development contributions. While this is mostly a local government issue, it would help to have guidance from central government that states, unequivocally, that this issue needs to be resolved to stop sending the wrong signals to the development market.

Reconsideration of roading projects and ensuring a pipeline of climate positive projects

61. Investment in large-scale transport infrastructure can lock in travel patterns, and help shape urban form, for decades.

62. Auckland Council and Auckland Transport will engage with Auckland Transport Alignment Project (ATAP) partners to determine how ATAP could more effectively deliver on climate change targets, while noting the need to also deliver on other transport outcomes, including safety.

63. Analysis undertaken in the development of the ATAP 2021-31 transport investment package found that many of the large-scale central government funded roading projects will increase Auckland's transport emissions. These projects are therefore candidates for reconsideration in light of stated emissions reduction objectives. In contrast, climate assessment of ATAP 2021-31

found that only a small portion of Auckland Transport's programme consisted of projects that will increase emissions.[4]

64. There may be some scope within Auckland Transport's ten year programme to reallocate funding in a way that enhances emissions reduction potential by bringing forward mode shift accelerating projects. However, this would be subject to having a pipeline of construction ready projects and availability of sufficient funding flexibility within the early years of Auckland Transport's ten year programme. We acknowledge that we need to do more over the next decade to ensure that our investment programme supports our climate goals and the level of transformation required and will work with the government accordingly.

65. The renewals budget represents a significant component of the overall Auckland Transport investment programme and could be optimised to deliver improved public and active transport facilities, instead of like-for-like replacement. However, this would require further change to Waka Kotahi co-funding rules for renewals to build upon recent changes that enable low cost, low risk projects to be delivered as part of the renewals process.

66. Careful coordination is also required to sync capital project delivery with renewals, meaning there needs to be a pipeline of climate positive projects in place before streets are renewed. It is vital that business case processes are streamlined to maximise opportunities for 'street betterment' through the renewals process.

Reallocation of road space

67. We support the view in Hīkina te Kohupara that street level changes to prioritise public transport and active travel could be undertaken swiftly and cost effectively, given the potential to reallocate space on existing roads without necessarily building extensive new infrastructure. In some locations where there is a high movement function and low place function, other modes such as freight may need to be prioritised.

68. Rapid implementation of street level changes requires intentional and iterative engagement with communities to develop local solutions that fit within local contexts. We recommend additional support from central government to enable the development of an intentional programme of interventions through social marketing, marketing campaigns, events, and community engagement, to bring communities along on the low carbon transport journey.

69. However, even when communities desire safer streets, road controlling authorities and Waka Kotahi may require extensive studies that only examine the consequences on vehicular traffic flow. Any reduction in level of service for car travel may be a roadblock to making streets safer for all users. Shifting the focus from vehicular level of service to safety for all users is important.

70. We also support legislative changes to improve existing consultation processes, make it easier to make changes to streets and roads, and enable temporarily street closure to through traffic (see the United Kingdom's Experimental Traffic Order[5]).

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[4] This needs to be caveated by the fact that slightly more than half of Auckland Transport's programme was rated as either emissions neutral or insufficiently detailed to enable an assessment of its emissions impact. The way in which funding for large programmes such as renewals and safety is allocated to specific projects will ultimately determine the emissions profile of Auckland Transport's overall investment programme.

[5] Sections 9 and 10 of the Road Traffic Regulation Act 1984, available at: https://www.legislation.gov.uk/ukpga/1984/27/part/I/crossheading/experimental-traffic-schemes#reference-c13545551

Mandating placemaking and inclusive street design

71. Placemaking is critical for supporting quality high density urban environments. Poor quality high-density environments can have negative effects such as poor air quality and poor integration of activities.

72. Government has a critically important role in ensuring that changes to support quality compact urban form are enshrined in clear, robust legislation. Building heights and setbacks, plot widths, street widths, grid density, car parking requirements and enforcement and street tree requirements, all have a significant impact on urban form.

73. Government also needs to play a stronger role in setting legislation to mandate the use of high-quality street design guidance that favours non-motorised users. Without legislative support, there is a risk that best practice street design guides, such as Auckland Transport's Urban Street and Road Design Guide and the Aotearoa Urban Street and Road Design Guide, will not be able to achieve their intended outcomes.

74. We strongly agree that street design needs to be inclusive of all people and needs to be inclusive and recognised as places, not just spaces for transport activities. In particular, there needs to be much more targeted engagement with people with disabilities to deliver inclusive streets and spaces for all. Disabled people make fewer journeys than non-disabled people and their journeys are often more difficult.

Other comments

75. Hīkina te Kohupara discusses the potential for further regulatory change to encourage the conditions necessary to promote a reduction in private vehicle travel. Initiatives such as creating walking and cycling targets for councils and requiring transport projects to be linked to the development of a compact urban form, would require further investigation but appear to have potential to contribute toward a reduction in transport emissions.

76. We strongly support an increased Funding Assistance Rate for walking and cycling improvements, road re-prioritisation and public transport improvements, however, note that this would require additional funding to the National Land Transport Plan and/or new funding sources.

Consultation question 5:
Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?

77. We support the public transport, active modes and shared mobility interventions identified in this chapter. The emphasis on mode shift and improved travel choices is consistent with Auckland Council's position as articulated in the Auckland Plan 2050 and Te Tāruke-ā-Tāwhiri. Mode choice means people are not dependent on their personal vehicles, enabling and encouraging them to own fewer cars. The result is greater use of low-carbon modes, less cost, more healthy living, less VKT and less GHG emissions.

78. Auckland has experienced rapid increases in public transport patronage in recent years (more than 100 million boardings in 2019 compared to 59 million in 2009). However, the scale of mode shift required to support our shared climate goals dwarfs the successes of the past decade, particularly given that travel by private and commercial vehicles also increased substantially over the same period (primarily due to population growth and longer average trip lengths).

79. Mode shift investments are likely to be more successful when coupled with incentives to reduce private vehicle use. Apart from that, the main requirements are to address the availability of funding and the onerous process required to unlock the funding. The justification for mode shift and reduced vehicle use is enhanced by their significant economic, health, land use and social equity co-benefits.

80. We support the narrative of Hīkana te Kohupara on the criticality of public transport improvements, while also noting the significant challenges around funding and the need for rapid progress on complementary measures to drive the scale of mode shift required to make progress on emissions reduction goals.

81. We have identified the following gaps in the discussion document.

Increasing funding for public transport operating expenditure and reviewing farebox recovery requirements

82. Hīkana te Kohupara is silent on funding availability for service improvements as a key constraint that currently impedes progress on mode shift.

83. While rail-based rapid transit will play a key role in driving patronage growth in Auckland once the City Rail Link is operational and light rail has been built, buses will continue to carry the bulk of passengers for the foreseeable future. As such accelerating patronage growth on the bus network will be critical if mode shift to public transport is to make a significant contribution to the interim 2030 emissions reduction target.

84. This requires sustained improvements in interpeak, evening and weekend services (across all public transport modes), to provide better access to jobs, education and amenities at all times, especially for communities in the south and west of the city.

85. However, the ability to expand bus services over the next few years is severely constrained by the availability of funding. Although the Regional Land Transport Plan (RLTP) is still to be finalised, Auckland Transport has signalled that available funding will support only limited improvements to bus frequency and coverage across the network. This will not be sufficient to support the step change required if climate goals are to be met.

86. Additionally, the business case process and other requirements to access what funding is available from Waka Kotahi are slow and do not support the urgency of action required.

87. Current policy to require 50 per cent of farebox recovery acts as a disincentive to improving the coverage of the public transport network, and instead encourages the allocation of funding towards improvement of already well-served areas. This has equity implications. It also mitigates against taking a long-term approach to network development in that it can often take some time for patronage to build up on new routes. A lower fare recovery ratio could be used to:

    - lower fares
    - increase service levels (frequency and hours of operation)
    - improve coverage by introducing new routes in the existing urban area and/or in greenfield areas.

Prioritising improved access and travel choice for the transport disadvantaged

88. Low-income households spend a disproportionate amount of their household budgets on transport. Many of these households also tend to be located in areas with poorer transport choice.

89. Through the types of interventions raised in Hīkina te Kohupara, low income and other transport disadvantaged communities (including rural communities) could see significant

improvements to accessibility and travel choice through the provision of more frequent and accessible public transport, safe and connected walking and micromobility networks, and more affordable shared and pooled mobility options.

90. We recommend that low carbon transport policies explicitly prioritise improved access and travel choice for the transport disadvantaged to ensure a just transition. Actions could include:

- targeting investment, and ring-fencing revenue generated from congestion pricing, to low-income areas with poor public transport and active travel options
- creating new foot, cycle and public transport connections such as bridges, greenways and other dedicated rights of way to connect homes with jobs, public transport and public amenities
- incentivising substantial housing growth in central areas with good access to public transport and active travel options
- addressing current safety and personal security concerns that prevent people from shifting to public transport, walking and cycling
- increasing access to e-bikes; addressing existing barriers of purchase price, secure parking and maintenance
- collecting a wider set of transport data to better understand the travel needs and patterns of groups such as Māori, low-income people, women, people with disabilities, ethnic minority groups, LGBTQI+ people, seniors, and more
- working with communities to support affordable choices such as shared community vans, low-cost car share, and low-interest loans for people to choose low carbon transport options that work best for them and their whānau[6].

Consultation Question 6:
Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour.
Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?

91. Pricing can play an important role in managing travel demand, reducing private vehicle travel and helping reduce transport related emissions. In May 2021 Auckland Council resolved to support, in principle, congestion pricing in Auckland subject to the following conditions:

- the mitigation of its equity impacts
- the provision of good public transport alternatives in any given corridor prior to the introduction of congestion pricing in that corridor
- the offsetting of the Regional Fuel Tax with revenue generated by the scheme once equity mitigation and public transport alternatives have been paid for.

92. Charging road users at a level that varies by corridor and time of day more directly links the burden those users place on the network with the price they pay to use it. In so doing it can encourage road users to consider the value of their trip and whether it is better taken via

[6] Burdett, B and Thomas, F (2021). Equity in Auckland's transport system. Commissioned by the Ministry of Transport. Available at: https://www.transport.govt.nz/area-of-interest/auckland/equity-in-aucklands-transport-system/

other modes or not at all. In this way pricing can be a tool that encourages people to change their travel patterns and drive less.

93. However, for road pricing to be an effective means of encouraging people to drive less it is crucial that high quality alternatives to driving are available. These would include reliable, frequent and time-competitive public transport and safe active mode infrastructure. Without non-car alternatives in place road pricing simply becomes an unavoidable charge that some users are better able to absorb than others.

94. Public transport fares need to be assessed in conjunction with road pricing to ensure that fares are set in a way that incentivises mode shift. Much greater government funding support is needed to enable regional councils and Auckland Transport to set accessible public transport fares.

95. Pricing may generate only marginal behaviour change in the short term. However, the explicit use of revenue generated by the scheme to improve infrastructure and services for other modes in priced corridors should, in the medium to longer term, create a self-perpetuating cycle that enables sustained behaviour change and therefore, a more significant contribution to transport emissions reduction.

96. The equity impacts of pricing must be addressed to enable a just transition to a lower carbon transport system. It is critical that revenue generated by road pricing is directed disproportionately to improving non-car modes for those communities currently disadvantaged by a lack of travel choice and poor accessibility to employment and education. Invariably, however, some trips will still need to be taken by private vehicle and it is therefore important that lower-income households' relative transport disadvantage is not further exacerbated by the introduction of road pricing.

97. Similarly, in designing and implementing a pricing system the government and councils must work with Māori and be guided by that engagement, to ensure that any pricing option produces equitable outcomes that account for the disparate social, economic and cultural realities of Māori throughout Aotearoa.

98. Auckland Council and Auckland Transport have been involved in the multi-agency project to consider congestion pricing in Auckland (The Congestion Question). While the work to date has been focussed primarily on addressing congestion, we would expect its focus to increasingly move towards emissions reduction over time, which should enable a better understanding of the contribution that pricing can make to New Zealand's net zero goal.

99. Car parking is an important determinant of trip choice. At present, the low price of car parking in Auckland and the relatively lenient approach to enforcement effectively lowers the price of car parking. Greater autonomy is needed for local government to charge higher prices for car parking and enforce illegal parking to support mode shift.

100. Workplace car parking levies and/or cash-out options may be desirable to reduce the supply of car parking, reduce the demand for car commuting and generate revenue to invest in zero-carbon transport. Precedents exist in California, Sydney and Nottingham. Auckland Council has previously investigated the introduction of parking space levies and their potential to reduce vehicle travel; however potential implementation issues, including the probable need for legislative change, prevented progress. The council would welcome a change to legislation enabling parking levies, thereby allowing them to be considered in the suite of measures to address emissions.

101. While pricing will be a key element of encouraging behaviour change, it must be augmented by a range of other tools to enable people to drive less. An intentional programme of interventions through social marketing, marketing campaigns, events, and community

engagement may also help shift social norms around driving and help overcome any scepticism about the relocation of distribution of road space away from private vehicle use. For example, strategically working with communities as and when new infrastructure is available to them is a cheap and effective way to ensure the successful uptake of new infrastructure and technology.

102. Similarly, there is scope to develop programmes to help people better understand the true social cost of private vehicle use and the infrastructure needed to support it. Programmes that help remove misconceptions that private vehicle use pays for itself while public transport is heavily subsidised, may also be an important aspect of winning people's hearts and minds.

103. Auckland Council asks that government work with local government to develop and fund a coherent and comprehensive approach to helping New Zealanders better understand the types of changes needed to underpin the transition to a zero-carbon transport system.

Consultation question 7:
Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition.
Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?

104. Auckland relies on government action to accelerate the transition to a low emissions vehicle fleet as most of the relevant interventions are within government's control.

105. Given the slow turnover of the vehicle fleet in Aotearoa, action to accelerate the transition to light electric vehicles needs to happen immediately. Hīkina te Kohupara rightly focuses on addressing the primary barriers to electric vehicle uptake: purchase price and then supply. Pairing these with complementary interventions that increase the awareness of electric vehicles and their convenience (i.e. public fast chargers) can potentially support a swifter uptake.

106. We strongly support the introduction of a fuel efficiency standard to drive the supply of low emissions vehicle imports.

Pairing fleet decarbonisation with private vehicle demand reduction

107. While we agree that addressing the composition of the vehicle fleet is critical to reducing transport emissions, we strongly recommend that these interventions be combined with efforts to reduce the demand for travel in private vehicles and increase the use of alternative modes such as public transport and active modes.

108. The greater the projected vehicle demand, the more significant the fleet decarbonisation task needs to be. With uncertainties around the global supply of zero emissions vehicles, people's ability to transition to cleaner vehicles, and pace of technological changes, there are significant risks with placing heavy reliance on fleet decarbonisation alone to reduce transport emissions.

109. Decarbonising the fleet on its own is insufficient to support Auckland's climate goals. Even if most vehicles were powered by electricity and low carbon fuels, significant GHG emissions would still be emitted in vehicle manufacturing and building and maintaining roads.

110. Similarly, focusing solely on fleet decarbonisation does not achieve broader transport and societal outcomes. Reducing private vehicle use, while improving travel choice and accessibility through other modes, brings with it significant safety, economic, health, land use and social equity co-benefits.

Prioritising access for low-income groups

111. We support the government's recent announcement of a feebate scheme to make it more affordable to buy low emissions vehicles and more expensive to buy internal combustion engine vehicles.

112. Due to the relatively high cost of electric vehicle purchase, it is essential to prioritise access to low emissions vehicles (through purchasing or sharing) for low-income earners.

113. We recommend that subsidies for low-emissions vehicles are expanded to include electric micromobility modes such as electric bikes and cargo bikes, particularly for the transport disadvantaged. Targeted support for low-income groups to access electric bikes can support an equitable transition, and in some cases, reduce the need for motor vehicles (e.g. second household car).

Supporting end-of-life stewardship

114. We also support initiatives to increase stewardship of used vehicles and batteries. Aotearoa needs to ensure that in making the transition to electric our used internal combustion engine vehicles are not simply exported overseas for use in less developed countries with poorer regulation and enforcement.

Consultation question 8:
Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?

115. We support the actions to decarbonise the public transport fleet. Auckland Transport has already stopped the procurement of diesel buses and has a target of a 100% low emission bus fleet by 2030.

Use of other low carbon fuels

116. In addition, we support the use of other low carbon fuels. The discussion document focuses on electricity as the main energy source for the public transport fleet. However, the following fuels should also be considered in specific situations:

- Green hydrogen, where there are operational constraints in route distances (i.e. long routes with no charging opportunities) or where the weight of an electric bus will cause disproportionate wear to the road surface
- Synthetic and biodiesels, as a transition fuel for diesel buses before they are replaced with electric (or hydrogen) buses.

Other recommendations

117. We support the extension of the Road User Charges (RUC) exemption for electric buses and recommend that the exemption be extended to include hydrogen vehicles (powered by green hydrogen).

118. Public ferries generate considerable emissions (as marine technology is inherently energy intensive) and are technically challenging to transition to electric. Government support is needed for this transition.

119. Electric buses are heavy, causing disproportionately high road wear on some surfaces. Transitioning to electric buses will increase road wear, putting greater demand on funding for asset maintenance.

Consultation question 9:
Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?

We have not given consideration to aviation emissions. Auckland Council is a shareholder in Auckland Airport, and as such as has an interest in supporting it to reduce its emissions.

Consultation question 10:
The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be prioritised?

120. Our short-term focus is making better use of existing road infrastructure to support freight priority. Longer term, our focus is on complementary land-use planning for freight.

121. Below are our views on the feasibility of some of the actions:

- Spatial organisation: We believe better use can be made of existing road infrastructure for freight priority, lowering congestion and therefore emissions (e.g. freight lanes on strategic freight routes). Additionally, complementary land-use planning and resource management activities could support supply chain efficiencies by minimising freight trips, assisting freight consolidation, and minimising the friction between freight and other network users and activities (e.g., in creating dedicated lanes for freight).
- First and last mile: An inner-city consolidation centre has been successfully trialled in Auckland. More funding is required to scale up the pilot.
- High productivity motor vehicles (HPMV) expansion: Any expansion would need to consider the impact on road wear and road safety for other users.

Consultation question 11:
Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

122. Hīkina te Kohupara emphasises the switch from road freight to rail and coastal shipping as a means of reducing overall emissions from the freight sector. It also focuses on improving the efficiency of fossil fuel heavy vehicles, with limited consideration of electric vehicles due to the lack of suitable technology.

123. Most of the freight tasks in Auckland are short-haul and undertaken by light commercial vehicles and small-to-medium sized trucks. Electrification is already available for many of these freight tasks. Hīkina te Kohupara needs to consider policy to support the rapid uptake of electric vehicles for these tasks. This includes electric couriers, cargo bikes, and vans.

124. Other actions to consider include:

- Cleaner trucks
    - Implement subsequent EURO standards (beyond EURO VI)
    - Consider incentives to retire high emitting vehicles
- Cleaner ships
    - Facilitate coordination between the electricity and marine sectors to ensure regulations do not hinder innovation

- Decarbonising fuels
    - Use the full lifecycle impact of renewable fuels to guide the level of incentives provided
    - Investigate how to use existing fuel infrastructure and networks for alternative fuels.

Consultation question 12:
A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

125. We agree with the Ministry of Transport that the current transport system is inequitable. Māori, Pasifika, lower income households and rural communities are often underserved by the transport system, as well as overburdened by transport externalities such as road harm and transport pollution.

126. Everyone has some personal responsibility in considering how they travel; however, income and resources determine the choices available to them. As such it is important that we provide people with options so that they can exercise low carbon choices.

127. Through the types of interventions raised in Hīkina te Kohupara, low income and other transport-disadvantaged communities could see significant improvements to accessibility and travel choice through the provision of more frequent and accessible public transport, safe and connected walking and micromobility networks, and more affordable shared and pooled mobility options.

128. Low carbon mobility opportunities for rural communities will also be an important part of an equitable transport decarbonisation pathway. This can range from rural microtransit services or shared mobility practices, to an increased variety of zero emissions vehicle options.

129. Not all of the interventions discussed in Hīkina te Kohupara will bring about improvements to transport equity. Some, such as road pricing for example, will require specific mitigations to ensure a just transition to a zero carbon transport system. Our position as highlighted in our recent submission to the select committee inquiry on congestion pricing is that road pricing should not be implemented until mitigations are put in place to ensure that it does not further reduce transport access and choice for disadvantaged communities.

130. Climate inaction will most certainly exacerbate current inequities. The consequences of climate change on health, housing and livelihood will be disproportionately borne by the most disadvantaged populations.

Enacting policy recommendations to address transport inequity

131. The Ministry of Transport's Auckland Policy Office recently commissioned a report on transport equity in Auckland.[7] The report found that low income is the most consistent factor affecting people's ability to afford transport to meet their needs, but income and community demographics are rarely considered when transport investment is prioritised. When coupled with other factors such as being disabled, LGBTQI+, an ethnic minority or female, the report found that many people avoid trips that would otherwise benefit them.

[7] Burdett, B and Thomas, F (2021). Equity in Auckland's transport system. Commissioned by the Ministry of Transport. Available at: https://www.transport.govt.nz/area-of-interest/auckland/equity-in-aucklands-transport-system/

132. The report makes four overarching recommendations and 15 specific recommendations to improve equity in the transport system. They include:

- collaboration between the Ministry of Transport and other ministries such as Ministries of Health and Social Development to create shared policy and accountability for transport equity and its links with wellbeing
- making equity an explicit component of transport strategy documents delivered by the Ministry of Transport and other sector partners
- collection of disaggregated travel data to better understand the travel needs of marginalised groups and the barriers they face
- Ministry of Transport-led development of policy to improve transport sector engagement with groups suffering from transport poverty and disadvantage
- additional funding and mechanisms to improve transport affordability and choice for low income people and in low income areas.

133. We recommend that the Ministry of Transport takes onboard these policy recommendations and embed them into the government's emissions reduction plan.

Partnering with iwi Māori

134. In addition, we strongly recommend that the Ministry of Transport partners with iwi Māori in the development of a transport decarbonisation pathway for Aotearoa. A tikanga Māori approach to transport decarbonisation will help to address the needs of communities underserved by the transport system, as well as those overburdened by transport pollution.

135. Partnership with Māori is key to ensuring Māori voices and mātauranga Māori are embedded in the development of emissions reduction pathways. As on-road transport is Auckland's largest source of emissions, increased co-governance opportunities for mana whenua on transport decision-making will enable iwi and hapū to build on their climate action work.

136. One example is the ongoing process to formalise the inclusion of the Tāmaki Makaurau Mana Whenua Forum into the governance structure of the Auckland Transport Alignment Project, where key strategic transport investment decisions are made.

137. We recommend that the Ministry of Transport refer to Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan as an example of a climate action framework that aims to centre Te Ao Māori in its recommendations and delivery approach.

138. We suggest the Ministry engages with Te Arawhiti (Māori-Crown relations) to support the Ministry's iwi engagement approach.

139. We also suggest that the government support the creation of a Māori advisory group, which comprises Māori with the relevant technical and tikanga expertise, to steer the development of the government's emissions reduction plan and ensure that the recommendations of Hīkina te Kohupara reflect the aspirations of mana whenua and mataawaka groups.

Other comments

140. Many of the impacts highlighted for the freight sector relate to public transport operators as well, particularly stranded assets and new costs with charging infrastructure. Where these costs are passed onto local government – and with no change in funding – either public transport fares need to increase, or services reduced. Both outcomes will exacerbate existing transport inequities.

141. Improving public transport to reduce transport disadvantage will require much more frequent, reliable, faster, and higher-quality public transport services. Additional funding, particularly for public transport operating expenditure, is needed to support this (as highlighted in our response to question five above).

Consultation question 13:
Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway do you think Aotearoa should follow to reduce transport emissions?

142. We support Pathway Four as the decarbonisation pathway for Aotearoa, as it is the only pathway that meets the interim target set in the Climate Change Commission's advice.

143. We note that Auckland has a much steeper regional pathway and relies on ambitious national targets and policies calibrated to achieving them, to cut emissions to the scale required in accordance with the Paris Agreement.

144. We support the Ministry's findings that focusing on 'avoid' and 'shift' interventions is more effective at reducing emissions, as they focus on avoiding activities that produce emissions in the first place, rather than mitigating the emissions from those activities through technological improvements.

145. Pathway Four focuses on early and very aggressive implementation of 'avoid' and 'shift' interventions, as well as strong electric vehicle uptake. This makes Pathway Four the most similar to Te Tāruke-ā-Tāwhiri's transport decarbonisation pathway, which envisages a 50 per cent reduction in VKT and 80 per cent of light passenger and commercial vehicles to be electric or zero emissions by 2050.

146. We note the very high pricing assumptions included in Pathway Four to reduce VKT. While we understand pricing was used as a proxy for behaviour change, financially driven behaviour change is only one aspect of shifting social norms. We support the use of incentives and targeted community engagement to support behaviour change.

147. In comparison, Pathways Two and Three place more emphasis on 'improve' interventions and therefore would result in a significantly greater vehicle fleet and VKT.

148. Electrification of the fleet on its own is insufficient to meet Auckland's climate targets and must be combined with interventions to reduce demand for travel by private vehicles. Similarly, over-reliance on electric vehicles as the primary means of reducing transport emissions ignores broader transport outcomes, such as Vision Zero, improved travel choice and more efficient use of the transport network.

Consultation question 14:
Do you have any views on the policies that we propose should be considered for the first emissions budget?

149. Our priority for the first emissions budget is for central government to put in place policy changes that will help unlock current barriers for local government to fully utilise the emissions reduction levers available to us. Some of these policies have been proposed for inclusion in the first emissions budget. They include:

    - supporting councils to accelerate widespread street changes to support walking, cycling, public transport and placemaking, including investigating ways to optimise consultation processes

- making changes to policy and funding settings to ensure road controlling authorities can 'build back better' when undertaking street renewals
- setting higher funding assistance rates for walking and cycling investments and dedicated bus lanes
- linking funding more closely with emissions reduction requirements, including setting targets for councils to deliver on public transport and active travel networks.

150. Other necessary policy changes that have not yet been identified, or need to be more explicitly referenced, are:

- resolving the misalignment between government direction that requires local government to be responsive to out-of-sequence greenfields growth and the government and council's stated emissions reduction objectives
- securing long-term funding for transport projects that reduce emissions, and streamlining the business case process to make it easier to access that funding
- shifting the focus from vehicular level of service to safety for all users when assessing the need for street changes
- mandating the use of high-quality street design guidance that favours non-motorised users (instead of just providing guidance).

151. For the first emissions budget, we would like to see more emphasis on the need to reduce private vehicle travel, while increasing accessibility and travel choice, especially for the transport disadvantaged. Early and comprehensive implementation of 'avoid' and 'shift' interventions will be especially important for a large, urbanised region such as Auckland to meet its interim emissions reduction goal.

152. 'Avoid' and 'shift' interventions will require a strong focus on behaviour change. The government has a critical role in enabling individuals and communities to change, so that the low-emissions choice will be the easiest choice to make. We ask that the government take a leadership role in supporting the 'team of five million' to transition to a decarbonised Aotearoa by coordinating and establishing a fund dedicated to behaviour change initiatives.

Conclusion

153. Thank you for the opportunity to provide this submission. For any clarification on points within this submission please contact Szening Ooi, Principal Transport Advisor (Szening.ooi@aucklandcouncil.govt.nz).

Appendix A: Local Board Feedback

The following local boards have provided feedback on Hīkina te Kohupara. Feedback from each local board is attached. Please consider each of them in their own right and independently of the main Auckland Council submission.

- Aotea / Great Barrier Local Board
- Albert-Eden Local Board
- Franklin Local Board
- Manurewa Local Board
- Ōrakei Local Board
- Rodney Local Board
- Waiheke Local Board
- Waitākere Ranges Local Board
- Waitematā Local Board
- Whau Local Board

Aotea / Great Barrier Local Board
Auckland Council

Aotea / Great Barrier Local Board Feedback

Background

- Aotea / Great Barrier Island lies 90km northeast of Auckland City and is sentinel at the entrance to the Hauraki Gulf and within the Hauraki Gulf Marine Park.
- The island is Auckland Council's most remote and isolated area.
- Aotea / Great Barrier Island is large in size being 28,500 hectares and encompasses 52 rocky out crops including Rakitu (Arid) Island, a 253-hectare Scenic Reserve.
- Over 60 per cent of the island is Department of Conservation (DoC) estate; 43 per cent of which is the Aotea Conservation Park.
- The island has a permanent population of 936 residents (2018 Census) and one of the lowest median household incomes across the Auckland region.
- The island has no reticulated power, wastewater/septic, nor water. Households are off-the-grid powered by generators, solar and wind, and collect water by bore, stream-take or rainwater.
- Transport and freight to and from the island is either by plane, a 35-minute flight one way, or by ferry a four-and-a-half-hour trip one way. There is no on-island public transport.

Aotea / Great Barrier Local Board feedback

1. We support swift and decisive action to reduce carbon emissions since Auckland Council declared a climate emergency.
2. We support the principles in Hīkina te Kohupara and pathway 4 as the decarbonisation pathway for Aotearoa, as it is the only pathway that meets the interim target set in the Climate Change Commission's draft advice, which recommends a 47% reduction in transport emissions by 2035 (against 2018 levels).
3. We support partnership with Māori and agree that the principles of whanaungatanga (relationships) and kaitiakitanga (environmental guardianship) are central to understanding the total system and should underpin ongoing engagement to reduce emissions from the transport system.

Public Transport

4. We request central government investment for the electrification and low-carbon fuel alternatives for ferries and aircraft to ensure a swift and smooth transition and enable passenger and freight costs are kept affordable.
5. We support use of other low carbon fuels for the public transport fleet such as green hydrogen and synthetic and biodiesels.

Improving our passenger vehicles

6. We support the prioritisation of access for low-income groups for low-emission vehicles to ensure a just transition.
7. We request time and research goes into off-the-grid fast charging electric vehicle infrastructure and rural electric vehicles to support rural communities.
8. As we decarbonise the existing fleet its essential that we reuse and recycle fossil-fuelled vehicles appropriately. We support end-of-life stewardship of used vehicles and batteries.

Freight

9. Freight is a high cost for our isolated communities, and we support decarbonisation of our freight supply networks alongside affordable prices.

10. We note support for buy local projects which is another method to help reduce the quantity and travel of freight to lower carbon emissions.

Signed:

Izzy Fordham
Chair, Aotea/ Great Barrier Local Board
Date: 23 June 2021

Signed:

Luke Coles
Deputy Chair, Aotea/ Great Barrier Local Board
Date: 23 June 2021

Albert-Eden Local Board Feedback

1. Support action on climate change in order to meet the emissions reduction targets set out in the Climate Change Response (Zero Carbon) Amendment Act 2019.
2. Support the overall direction of the transport emissions discussion document.
3. Support the three key themes of the transport emissions discussion document which are: changing the way we travel; improving our passenger vehicles; and supporting a more efficient freight system.
4. Support changing the way we travel as a key theme, noting we:
    i. support quality compact mixed-development urban form
    ii. support shaping our cities and towns for the future as the shape of our cities and towns is key to improving the overall efficiency of the transportsystem, and that land-use, urban development and transport planning need to be integrated to reduce emissions, especially over the medium tolong term
    iii. note the need for both central and local government to more strongly integrate land use and transport planning and investments
    iv. support the delivery of mode shift for emissions reductions, noting that comprehensive cycling/scootering networks are needed in urban areas, along with more dedicated/priority bus lanes and better urban environments for walking
    v. support delivering mode shift through efficient use of existing street networks
    vi. acknowledge many people currently rely on driving for work and personal use and an overall reduction in car usage will improve carbon emissions and improve the travel experience for those who do need to drive.
5. Support the emphasis in pathways 1 and 4 on 'avoid' and 'shift' measures.
6. Request that the development and implementation of emissions reduction pathways take into account Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan.
7. Support partnership with Māori in the development and implementation of emissions reduction pathways.
8. Support the focus on equity and a just transition and request ongoing collaboration with affected communities and groups, particularly young people, people on low incomes, disabled people and workers in affected industries to understand their transport needs and collaborate in designing solutions.
9. Request central government work with local government on funding and implementation of emissions reduction measures, including the infrastructural and service improvements required to achieve the necessary land use changes and mode shift.
10. Request that e-bikes and other small electric transport devices (such as scooters) be included in schemes to assist electric vehicle access and uptake.

Franklin Local Board Feedback

Theme 1 – Changing the way we travel

Land use planning:

1. Support the Ministry of Transport direction for a more compact urban form for urban areas, however, there must be the ability to accommodate such differentiation within a city like Auckland with both large scale urban development and rural urban settlements to allow for metropolitan and intense urban form with appropriate climate change mitigation as well as features more suited to rural towns and settlements i.e. Waiuku should be able to be differentiated from what is required or planned in Flat Bush.
2. Green-field development areas and rural communities are not serviced by public transport. Roads designed within developments and do not provide sufficient on-street or off-street parking and footpath design guidelines make rural footpaths un-obtainable.
3. Support developing transport options as they are not developing in parallel to urban development, which is sustaining car-dependency. Communities are not supported to make environmentally sustainable transport choices as most of our residents must travel large distances to access jobs and schools and their transport choices are limited.
4. Suggest a more flexible and pragmatic approach required to bring communities, in particular rural areas, along on the journey as opposed to forcing them which could create outcomes that are not practical or able to be reasonably achieved.

Transport investment and Prioritisation

5. Support transport investments and prioritisation in developing transport options to address our roads that are too dangerous to walk or cycle and public transport options are either too infrequent to encourage use or not available at all. That means our communities are dependant on cars and that is at odds with Auckland's Climate Action Plan and is not supported by Auckland's urban intensification design guidelines and the transport emissions: pathways to net zero.
6. Support improved transport services and connections to and from South East Auckland.
7. Major infrastructure projects e.g. SH22 project should be delivered so that local interests and improvements can be leveraged for and deliver enhanced well-being for local communities e.g. positive environmental and community outcomes Public transport nodes and dedicated park and ride facilities at Drury, Runciman and Paerata must be designed to service both the urban and surrounding rural communities they will service.

Travel demand management

8. Support congestion charging as a full replacement to the Regional fuel tax as the preferred option noting point (9) below. If not adopted, as a minimum, the congestion charge should offset the regional fuel tax to enable faster delivery of much needed safety and improvements in areas outside the city centre.
9. Suggest that a clear purpose for implementing congestion charging is critical. The primary driver for congestion charging should inform how revenue is used. For example, if the primary driver is to accelerate delivery of climate change mitigations, then funding would be allocated in investment in EV incentives and infrastructure may be a priority alongside public transport development
10. Note that a congestion charge will create equity issues both in terms of those who cannot afford the implications of congestion charging (financial deprivation), but also those who don't have

existing PT services/alternative solutions available to them (the transport choice deprived and physically isolated communities of Auckland).

11. Note that Auckland's linear transport system is a unique issue that needs to be considered in the design of the congestion charging system. There is a risk of creating 'rat-runs' through established neighbourhoods as users avoid charging 'gateways'. This would create a need for additional roading investment (to make these routes fit for purpose) and generate unintended quality of life implications for residents. Work that considers how similar challenges were addressed in overseas examples should be undertaken.
12. Agree that congestion charges/tolls should be considered to fund new roading projects/projects in early development e.g., Mill Road and Pukekohe expressway.
13. Express concern at possible operating cost of technology using the existing tolling systems. (gantry mounted plate recognition cameras) and suggest that more recent and cost-efficient methods be investigated as alternatives to maximize return on the scheme e.g., GPS in cars and phones as used in Singapore.
14. Support charging occurring between times of the day where congestion and current demand is greatest e.g., charging between 6.30am and 7.00pm or similar.
15. Note that, like the Regional Fuel Tax, clear and publicly accessible communication that outlines which projects benefit from revenue generated from congestion charges is critical.

Theme 2 – Improving our passenger vehicles

16. Support policies and the investigation into greater incentives for electric/hydrogen vehicles to increase the supply of and demand for clean cars.
17. Support the change to electric buses and recognise emissions from buses are extremely small compared to cars and commercial vehicles combined.

Theme 3 – Supporting a more efficient freight system

18. The local board area features elite soils and a strong horticulture industry, large quarries with a wide range of primary production enterprises that provide essential services and products that feed into greater Auckland. The local board understands that heavy vehicles are essential to keep these industries providing services and local jobs for local people.
19. Believe that organisations representing heavy vehicle interests are best placed to comment on an equitable approach to heavy vehicle charging.

Manurewa Local Board feedback

The Manurewa Local Board supports in principle the approach to emissions reduction outlined in Hīkina te Kohupara. Our board has previously supported Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan and its goals to reduce emissions by 50 per cent by 2030 and transition to net zero emissions by 2050. Our 2020 local board plan we have given pri ority to building resilience in our community to the effects of climate change and other natural disasters. We have also committed to do our part in restoring the urban forest canopy and to ensure our community has access to transport options other than private motor vehicle use.

Climate change will significantly impact the communities that our board represents. Auckland Council's 2019 climate change risk assessment rated most coastal areas of Manurewa very high on the climate change impact index, representing exposure and sensitivity to climate change, while most of Manurewa was rated as having a very low capacity to adapt to climate change8. Having both high impact risk and low capacity to adapt concentrated in same area means that addressing climate change is important for our board.

We support the use of the Avoid, Shift, Improve Framework to identify opportunities to reduce transport emissions across the transport system. Below is our feedback on emission reduction opportunities across the three themes identified in Hīkina te Kohupara.

Theme 1 – Changing the way we travel

The board supports using urban design and planning tools to reduce trip distances and car dependence in urban areas, and encourage the uptake of walking, cycling and public transport.

According to data from the 2018 Census, 87 per cent of Manurewa residents travel to work in a car, truck or van. Only six per cent use public transport for their commute, and around one per cent use active modes of transport. These low figures reflect that many of our residents do not work in the city centre, but rather in industrial estates around the region, and many of those are shift workers. A significant improvement to public transport infrastructure in Manurewa will be needed to change this pattern.

While we have three train stations in our local board area (Te Mahia, Manurewa and Homai), but bus linkages to allow residents to access these stations are often poor. Improvements to the frequency and convenience of these services, and improved infrastructure such as bus shelters are needed. Infrastructure for active modes such as separated cycle paths and shared paths is also needed to link residents with transport hubs. The new State Highway 1 Southern Path is an excellent example of separated infrastructure for pedestrians and cyclists. However, once users exit onto the Great South Road at Takanini, there is no separated infrastructure to link them to Manurewa town centre. They are left to ride on a very busy and potentially dangerous stretch of road using a cycle path painted onto the road. This is typical of the lack of such infrastructure in our area, which does not encourage mode shift away from motor vehicles.

[8] Fernandez, M. A. and N. E. Golubiewski (2019). An assessment of vulnerability to climate change in Auckland. Auckland Council technical report, TR2019/011

The board supports trialling options such as ride share services or on-demand shuttles to address gaps in public transport in lower-density areas.

The board believes that there is clearly a need for policy interventions to reduce congestion and encourage greater use of public transport and active transport modes. We have given cautious support to further exploration of tools such as congestion charging to achieve this.

Our support for any congestion charging scheme that is proposed would depend on how well it safeguards the needs and interests of the most vulnerable members of the community and those who would be disproportionately impacted by the proposal. There would need to be comprehensive engagement with a range of stakeholders, mana whenua and Māori in the community.

Additionally, the primary purpose of any congestion charging scheme that is introduced needs to be encouraging mode shift and reducing congestion, not revenue gathering. Imposing a charge on road users in areas where there are insufficient alternatives to driving private vehicles will not achieve a mode shift and may be perceived as a purely revenue- gathering exercise.

Theme 2 – Improving our passenger vehicles

The board supports measures to increase the supply of clean cars to make them a viable alternative to fossil fuel vehicles. However, we note that transition from internal combustion engine (ICE) vehicles to electric vehicles is likely to be problematic for our community.

Many of our residents are in low-income households, and there are high levels of deprivation in many parts of our local board area. Residents who own private vehicles are likely to be dependent on second-hand vehicle sales. While we accept that the running costs of electric vehicles are expected to be lower than those for ICE vehicles in the long term, we believe that the entry costs in switching from an ICE vehicle to an electric vehicle will be prohibitively high for many of our residents. Significant government support and incentives will be needed if they are required to transition to electric vehicles.

We support exploring other means of lowering emissions from vehicles such as establishing a fuel efficiency standard and transitioning to use of biofuels.

We support increased Government support for the uptake of cleaner buses.

Theme 3 – Supporting a more efficient freight system

The board supports including objectives for emissions reduction in a National Freight Strategy.

We support exploring the following options to reduce emissions from the freight system, as outlined in Hīkina te Kohupara:

- optimising freight routes
- improving the efficiency of first/last-mile urban deliveries
- improving the efficiency of freight payloads
- promoting eco-driving

We support Government investment to support shifting freight movements from road to more efficient and less carbon intensive transport modes, such as rail and coastal shipping. In addition to the

reduction in emission that will be achieved, we support measures that will reduce heavy goods traffic on urban roads. High levels of freight traffic in our area increases wear and tear on our roads, and makes our roads more dangerous for pedestrians and other active mode users. Creating more direct routes for freight traffic to take, such as the now- deferred Mill Road Corridor Project, will help to reduce emissions and make urban roads safer.

This feedback is authorised in accordance with Manurewa Local Board resolution MR/2020/44 – 16 April 2020.

Joseph Allan,
Chairperson23 June
2021
On behalf of the Manurewa Local Board

Ōrakei Local Board Feedback

The opportunities to reduce emissions across the transport system, to achieve pathways to net zero by 2050, centre on three themes of 'Avoid, Shift and Improve'.

The document has enormous ramifications to the way we live, with the emphasis on shaping our towns and cities to reduce the need for travel by private motor vehicle, reducing distances travelled and encouraging sustainable modes and mode shift to public transport, walking and cycling. The strategy needs to be accompanied by wide reaching communication, education and consultation.

All four pathways prioritise electrification of the vehicle fleet, with different emphasis. Though the Covid-19 pandemic, helped develop a neighbourhood focus and proved we can avoid travel with work from home options; we would like to see a gradual change, so infrastructure projects, particularly around walking and cycling have time to be built. We need to see a marked improvement in public transport options, with confidence around reliability and choice. The first step should be to improve fuel efficiency of vehicles and the transition to electric/zero emission vehicles and supporting a more efficient freight system. Congestion taxes and distance pricing could help change driving habits.

We agree with the statement that planning for integrated land use is essential, there will need to be investment from central government in transport planning and investment in policy and capability, for example as part of the resource management reforms and the Strategic Planning Act. Design should be at the forefront to ensure good design principles are met and high quality outcomes achieved. Investment in placemaking and urban design is essential. The Auckland Council Design Office should be recognised as an important and influential unit if we wish to achieve excellent results in terms of process and outcomes as our cities change to meet the needs of the future.

17 June 2021

Rodney Local Board feedback

1. The Rodney Local Board provides the following feedback towards Auckland Council's submission on Hīkina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions: Pathways to Net Zero by 2050.
2. The Rodney Local Board:
    a) suggests that to reduce carbon emissions, greenfield developments in Auckland need to include funding for public transport and safe cycling connections to transport hubs
    b) highlights that within the Rodney Local Board area it is difficult to reduce carbon emissions when greenfield developments are being consented without any funding for public transport or for safe walking and cycling
    c) emphasises that the Milldale development in Wainui is funded via Crown Infrastructure Partners and other entities to support the bulk housing infrastructure for 4000 dwellings in Milldale, and an additional 5000 dwellings in the surrounding area, however, there is no funding available in the draft Regional Land Transport Plan for public transport in Milldale within the next 10 years and there are no cycling connections planned to the nearby Silverdale park and ride, therefore as more houses are built in Milldale, carbon emissions will continue to increase as residents' only option is to commute by car
    d) expresses concern that the Huapai Triangle has the capacity for 1200 dwellings but no provision for public transport, and each new dwelling is contributing to the already congested State Highway 16 traffic and increasing carbon emissions as cars remain idle for an hour a time stuck in traffic between Kumeu and Brigham Creek Road, Whenuapai
    e) suggests that councils should be able to decline private plan changes for greenfield developments where public transport is not being funded or provided for
    f) suggests that large infrastructure projects that are planned for delivery within the next decade that provide for safe walking and cycling within the development need to also include funding for safe walking and cycling connections to town centres and transport hubs
    g) expresses concern that the Matakana Link Road, Warkworth, currently being constructed, includes off-road cycleways and walkways but no funded safe-cycling connectivity to the nearby Warkworth town centre - it is a cycleway to nowhere
    h) expresses concern that new roads or roading upgrades are still needed where fast, regular, integrated public transport is decades off being adequate to support growth because congested roads contribute to emissions with thousands of cars running idle for hours at a time around areas like the Hill Street intersection in Warkworth and between Kumeu and Brigham Creek Road in Whenuapai
    i) suggests that to increase public transport patronage, free public transport within Auckland could be offered to residents in the weekend when passenger numbers are low
    j) requests more detailed analysis of the amount of carbon emissions generated from areas in the Rodney Local Board area where residents do not have access to regular public transport so that this data can be used to analyse how best to reduce carbon emissions across Auckland as resources may be better spent providing additional public transport services as opposed to replacing the bus fleet with electric buses
    k) proposes that residents need to have the ability to work from home without commuting, however this is not always possible as the internet connections in many areas of the Rodney Local Board area are slow and unreliable, which needs to be addressed by Government.

Authorised for Release

Lesley Jenkins
Local Area Manager, Local Board Services

Date: 22 June 2021

APPROVED

Authorisation
This decision is authorised by Chairperson P Pirrie and Deputy Chairperson B Houlbrooke, who have delegated authority to make, on behalf of the local board, urgentdecisions on matters that cannot wait until the next scheduled ordinary meeting of the local board. Resolution number BD/2019/147
 Chairperson Date: 22 June 2021
 Deputy Chairperson Date: 22 June 2021

Waiheke Local Board Feedback

Climate change is central to all local board plans and initiatives, both in terms of climate change mitigation and addressing climate change effects. The 2020 Waiheke Local Board Plan[9] includes several initiatives that seek to reduce transport emissions, enhance our natural environment and act on global warming including:

- To continue to endorse Electric Island Waiheke in its goal to support Waiheke to become fossil-fuel free by 2030
- To develop and implement a Low Carbon Action Plan which aligns with the Coastal Compartment Plan and Auckland Council's Climate Action Plan (to include elements such as sea level rise, coastal inundation, energy sources, increasing stormwater, food resiliency and water security)
- A fit-for-purpose and sustainable transport system. Waiheke Island got Auckland's first electric bus fleet in 2020. We will continue to work with Auckland Transport for a reliable and accessible public transport network to reduce private vehicle emissions
- To work with Auckland Transport to add park-and-ride facilities
- To advocate to Auckland Transport for the delivery of prioritised cycleways and footpaths within the mandated Waiheke Pathways Plan, especially the delivery of a continuous cycleway between the two key main road destinations of Mātiatia and Onetangi.

One of the aspirations of the people of Waiheke described in Essentially Waiheke 2016, A Village and Rural Community Strategic Framework[10] states:

- To create and promote a greener, better-integrated transport system (considering public transport, limitation of vehicle size and weight, car sharing, carpooling, electric vehicles, safe bike lanes, etc.). This should take into consideration the increase in users during tourism peak seasons.

Community advocacy group Project Forever Waiheke's "Waiheke Island Sustainable Community and Tourism Strategy 2019-2024"[11] has as a short-term action:

- To develop a local programme to support tourism businesses, large and small, to change to lower impact tourism, in alignment with the national Tourism 2025 and Beyond revised framework, Auckland Unlimited's Destination Auckland 2025 and the UN Sustainable Development goals – for example, eco-tourism, use of solar power, electric vehicles, achieving carbon zero status, clean-up and environmental protection activities, zero waste, tree planting & track maintenance, weeding and land and marine conservation activities.
- To work with Auckland Transport and ATEED to ensure eco-tourism/low impact tourism activities and operators are given priority and support at island gateways (Mtiatia and Kennedy Point) and throughout the island.

[9] Waiheke Local Board Plan 2020. Available at: https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/local-boards/all-local-boards/waiheke-local-board/Documents/waiheke-local-board-plan-2020-english.pdf

[10] Essentially Waiheke Refresh 2016. Available at: https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/local-boards/all-local-boards/waiheke-local-board/Documents/essentially-waiheke-refresh.pdf

[11] Waiheke Island Sustainable Community and Tourism Strategy 2019-2024. Available at: https://static1.squarespace.com/static/5b1dd83a372b9624b25936a3/t/5cfd64121864ef0001232122/1560110105142/Waiheke+Island+Sustainable+Community+and+Tourism+Strategy+2019+FINAL+260219.pdf

1. A major impediment to reducing our reliance on the use of petrol-vehicles is the lack of infrastructure for public transport, cycling and walking. In many communities, especially semi-rural ones like Waiheke, footpaths and cycleways must be installed or upgraded before drivers will consider a mode shift due to safety concerns. We request government do more to invest in this essential infrastructure which has been strongly advocated for many years.
2. The board applauds Fullers360's move to electrify the public transport Waiheke Bus Company fleet and Auckland Transport's network reviews aimed at increasing patronage. However, Waiheke's narrow roads and dispersed roading network means that many residents do not live close to a bus stop.
3. In the future it is envisaged that small, electric, accessible on demand public services would enable more to use public transport and reduce car use.
4. The local board plan has long advocated for more park and ride provision to reduce private car usage and reduce congestion at Waiheke's two major ferry terminals. Waka Kotahi's support would be appreciated to enable these important facilities.
5. The publicly endorsed vision for Waiheke is that of a sanctuary within the Hauraki Gulf, where longer-stay visitors recharge, exploring and enjoying the diversity of local experiences. "This is a place where we work together to restore the environment of both the island and the Hauraki Gulf. It's a place that embraces a slower more reflective pace, where respect for the island's ecology... is paramount"1. To enable tourism activities to embrace fossil fuel free transport options and for visitors to enjoy the island taking advantage of our many active transport opportunities need to be targeted and incentivised. Tourism New Zealand could play a vital role in achieving government's goals.
6. The board supports the incentives to encourage the purchase of e-vehicles and there needs to be a fully distributed national EV charging infrastructure to support them including in more remote communities such as Waiheke Island.
7. The local board-endorsed community advocacy group Electric Island Waiheke (EIW) has promoted the uptake of electric vehicles on Waiheke, to the point that Waiheke Island has the highest percentage of EVs per capita in New Zealand. EIW has led the installation of several charging stations around the island.
8. The Clean Car Discount which takes effect from 31 July 2021 will make it cheaper for New Zealanders to switch to an electric vehicle or plug-in electric hybrid vehicle and is a positive step forward. The board requests government support for ferry and aviation operators, heavy and rural transport to transition to fossil fuel free energy sources.
9. The Waiheke Local Board supports measures to reduce unnecessary travel through technology-enabled work from home and business meetings using videoconferencing.
10. Where possible, support local food production to reduce the need for freight transport.
11. The Waiheke community has expressed concern about the large number of helipads consented for Waiheke and the associated rapid rise of private helicopter use. As this method of transport is high in its level of emissions, the Waiheke Local board requests greater regulatory control is imposed by central government in limiting the number of flights permitted.
12. In terms of the four pathways presenting in "Transport Emissions: Path to Zero Emissions by 2050", the pathways with more emphasis on 'avoid' and 'shift', such as Pathway 1 and 4 are more effective at reducing emissions. Avoiding activities that produce emissions is, on balance, a more effective strategy than minimising the emissions from those activities. Given the urgent need for action on climate, the board supports Pathway 4 as it will produce better results by 2035 than the other options.

13. When passing the Climate Change Response Act 2002, Government committed to taking a Just Transition approach to becoming carbon free which is fair, equitable and inclusive and makes sure that Government carefully plans with iwi, communities, regions and sectors. We agree and state that all elements of government including central government, local government, local boards and CCOs must engage with communities to find and own effective solutions.
14. As communities we need to accelerate behaviour and culture change toward becoming fossil fuel free and carbon zero with urgency.
15. We need local and national campaigns about the climate emergency encouraging carbon neutral behaviour change for large corporations and individuals alike, with the support of a scientific evidence-base such as nationally accredited carbon calculators.
16. The Waiheke Local Board requests government extensively promote the economic argument for moving from the purchase of a second-hand fossil fueled vehicle to an EV using direct costs and lifetime modelling.
17. Budgets are conservative, and pace of change appears too slow for New Zealand to meet its commitments under the Paris Climate Agreement.
18. Waka Kotahi must better promote ridesharing to reduce the number of vehicles being used.

Waitākere Ranges Local Board Feedback

1. The Waitākere Ranges Local Board welcomes the opportunity to give feedback on Hīkina te Kohupara – Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050' discussion document
2. The Waitākere Ranges Local Board generally supports the recommendations of Hīkina te Kohupara – Kia mauri ora ai te iwi.
3. The Waitākere Ranges Local Board is committed to delivering on New Zealand's commitment to the Paris Agreement to limit global temperature rise to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
4. Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan sets a goal of 64 per cent reduction in emissions from the transport sector by 2030 against a base year of 2016. The Waitākere Ranges Local Board supports this target.
5. For the Waitākere Ranges Local Board and the people it represents, how the transport system is integrated into a broader framework of urban design and resource use is the issue of most interest and concern. The local board has grouped its feedback under the three key themes below.

Theme 1 – Changing the way we travel

6. Tāmaki Makaurau, is going through a significant urban density growth in housing. The Waitākere Ranges Local Board supports reducing the amount of travel in fossil fuel vehicles by encouraging shifting people to lower-emission transport modes and reducing overall travel demand. However, it is essential that these discussions happen in parallel with urban development and this is not currently happening in Auckland as it should. Improvements to the transport network need to complement a more compact urban form which reduces the need for long trips.
7. Uptake of active modes needs to be much more aggressively pursued. Under Auckland Transport's current ten-year cycling programme, some promising progress has been made. However, this progress has been slow and under-resourced relative to the evident need. It is disappointing that walkways (other than footpaths) do not qualify for funding through the National Land Transport Fund. Funding more key and expensive missing greenway links as a matter of urgency should be prioritised and pursued.
8. The local board argues for the inclusion of enhancement and restoration of urban Ngahere (canopy cover) to reduce carbon emissions. In the context of transport planning this is highly relevant as the inclusion of street trees in any urban transport infrastructure planning can have a significant impact on the overall carbon emissions of our transport system.
9. Small improvements to amenity in key locales such as planting more trees within the road reserve and installing new garden beds supports active modes of transport by making places more pleasant to be in. Trees also play an important role in the mitigation of urban heat islands, support genetic diversity of ecosystems as they form part of wildlife corridors and play a role in cleaning the air.
10. Safety and perceptions of safety can either encourage or discourage uptake of alternative modes. Additional to the safer walking and cycling infrastructure, and the consideration for emerging micro-mobility as in the next point, programmes encouraging the uptake of alternative modes of transport should have budgeted programmes attached that monitors and maintain/improves safety which specifically considers CPTED considerations, as well as personal safety on public transport. Current transport policy, as well as under-investing in walking and cycling, is insufficiently innovative and doesn't consider new and emerging forms of micro-mobility and other interventions. This needs to be a focus for Waka Kotahi and local councils, and is another area where greater strategic alignment is required between central and local government

(through, for example, the Government Policy Statement on Land Transport and the Land Transport Management Act and regional land transport plans).

11. There needs to be significant support in behaviour change and education on what types of mobility are available and how to access them. Petrol cars may have reached their peak, but in order to transition to a low emissions future there also needs to be targeted information on the alternatives.

12. The local board strongly supports an increase focus on technical innovation, including the development of new and innovative approaches to demand management, to reduce carbon emissions. Aotearoa / New Zealand needs more investment in high-speed broadband and telecommunications tools to reduce the need for travel. The private sector should also be key partners in this discussion as businesses have huge potential to develop and pilot new approaches that are efficient and will foster economic growth while reducing the need for unnecessary vehicular transport.

13. The local board asks for special consideration of parking provision for areas that do not have a functioning public transport system serving them. WRLB supports more park and ride options in our area to acknowledge our location at the foothills of a forested area with no or limited public transport options for our bush and coastal communities. The train stations which service this area – Glen Eden, Sunnyvale, Swanson, and Henderson and New Lynn outside the immediate local board area – provide access to the rapid transit network for people throughout the western fringe and the Waitākere Ranges (which is arguably geographically and topographically unsuitable for high frequency bus services and even less for active modes, and which in any case does not have a public transport system to speak of), provision of parking to support those who need to drive from their homes to their transport hub is essential.

14. WRLB advocates for urgent double tracking and electrification of the rail from Swanson to Kumeu and beyond. It doesn't make sense that the public train service terminates at Swanson when there is a perfectly good train station in Waitākere Town Centre and Kumeu is experiencing so much growth. People do not just want to go to the CBD. They want to visit family and friends, shop, work and recreate in other places too.

15. WRLB supports more investment in buses to increase frequency and usability to bring the PT network to the level of convenience and reliability needed for mass uptake of PT use.

Theme 2 – Improving our passenger vehicles

16. The Waitākere Ranges local board strongly supports decarbonisation of Aotearoa / New Zealand's vehicular fleet. Clearly there is an opportunity for the public transport fleet (and a joined-up approach to converting government fleet vehicles) to electric, but this will only account for a small proportion of vehicle emissions and will not solve the problem on its own.

17. The Waitākere Ranges Local Board strongly supports incentivising uptake of not only EVs but also micro-mobility devices such as e-bikes and e-scooters provided that they are safe and that regulation keeps pace with innovation (which is currently not happening).

18. Encouraging mode shift and reducing emissions on the public transport network will be a big part of the solution, but incentivising transition to EVs and more importantly making this transition affordable for many car owners is a critical component of the discussion. Central government will need to take a leading role here as this is not something local government can address and the private sector will not take the lead without very clear signals from central government, which is not yet happening.

19. The local board also notes the reliance of future transport funding on the National Land Transport Fund, and urges the Ministry and Waka Kotahi to consider the financial impact on major capital projects if uptake of EVs was to exceed currently anticipated demand and how this potential funding gap could be filled.

Theme 3 – Supporting a more efficient freight system

20. The Waitākere Ranges Local Board wants to see a growing local economy, more jobs for its people and increased local employment opportunities. To meet the challenge of reducing transport emissions (and the boarder issues around the challenges of climate change generally) it is critical that the private sector is part of the solution and that Aotearoa / New Zealand has a freight system that is efficient, future proof, and able to accommodate economic and population growth without having a detrimental environmental impact.

21. The Waitākere Ranges Local Board supports consideration of mode shift away from trucks in favour of rail and sea freight where it will result in lower emissions. However, it acknowledges that for many industries this transition is not feasible and a transition to lower emissions vehicles is essential.

22. The local board is also interested in exploring inefficiencies, waste and unnecessary carbon emissions throughout supply chain. The local board would urge central government to work with our ports, business advocacy groups, the freight industry and with Kiwirail, to identify opportunities to reduce unnecessary road-based freight without negatively impacting on growth and productivity.

23. The local board would also see a role for public education around the carbon emissions associated with freight supporting the moving of discretionary consumer goods and encouraging people to consider the environmental impact of their purchases and to find greener ways of fulfilling consumer demand.

Waitematā Local Board
Auckland Council

Waitematā Local Board Feedback

Urban Form

1. We agree that better land use planning is necessary to reduce car dependency and make it more attractive for people to use PT and active modes.
2. We urge that boundaries are set around all our major cities, that prohibit new building /sprawl beyond those limits. New Zealand cities are not dense and have plenty of potential to increase population without extending current city boundaries.
3. We believe affordable housing, and changes in the housing market, have a key part to play in reducing transport emissions. The current system forces many people out of central areas and into suburbs with long commutes where housing is more affordable. Empty houses in popular areas need to be taxed/fined accordingly.
4. Walkable mixed-use neighbourhoods are usually more vibrant, desirable, safe and interesting and reduce the need for people to travel by emitting modes.
5. To ensure that intensification does not mean a rise in vehicle congestion, and loss of walkability of an area, we would recommend focusing the provision of primary homes in places that are very close to regular rapid public transport with any carparking provided outside of the pedestrian-focused zone so as to disincentivise car use without reducing access to the city's opportunities.

Shifting Investment Focus

6. We agree that central and local governments need to shift their planned investments away from vehicle inducing road expansions and towards PT services and enabling active modes, including bus and cycle lanes. This needs to happen quickly and needs to represent a significant investment and shift in the status quo.
7. We advocate boldness in setting policy, and in implementing the resulting policy, to ensure we meet our carbon reduction targets on time. It is worth noting that despite decades of climate awareness and action, our transport emissions are still increasing. Tinkering around the edges will continue to lead to increasing emissions, when what is urgently required are massive reductions. We note that although the action required now may seem drastic, even more drastic changes will be required in the future if we delay action any further.
8. We support the principles in Hīkina te Kohupara, and believe that action and investment now will have a better chance of meeting our emissions targets than action and investment that occurs only in the future. We note that there will inevitably be resistance to changing the status quo, and this resistance needs to be factored into timelines, planning, and implementation mechanisms.
9. We fear developers will always want to maximise profits which may not lead to the diversity of homes at different price points desired and so would recommend that changes are made to planning rules to make it easier for councils to use inclusionary zoning so as to ensure a diversity of housing, including more affordable housing be built in well-connected locations.
10. We recommend considering how to ensure finance for housing is more equitable for all parts of the market, including small housing, co-housing and papakainga housing.

Public Transport

11. We need to address New Zealand's reliance on air travel for domestic travel. We need to move people onto rail for intercity journeys. This needs to be a fast, convenient, comfortable and affordable alternative to domestic flights.
12. Public transport needs to be easier, cheaper and more convenient than using private cars/ride shares for the same journey.

13. We recommend mandating the return of cash fares to ensure public transport is always easily accessible for residents and visitors.
14. We would note there is a desire from Auckland's local boards to increase the service of electric ferries which would also remove cars from the roads.

Active Modes

15. Active modes should have dedicated space on all our city streets, and NOT at the expense of pedestrians. Cycling and other active modes need to be made safer, including by building extensive separated cycle lanes through all cities, and to allow separated cycling options for inter-city travel.
16. We need to prioritise mode shift in our investment and KPIs. We need a large, immediate investment in protected, interconnected and extensive cycleways and in streetscaping and in better maintained footpaths and walkways, to get more people walking and cycling. Cycling needs to feel safe if we want large uptake.
17. New developments should be designed to be pedestrian-focused with safe active mode links to the cycle network and/or public transport network as appropriate.

Co-Benefits

18. We agree with the assessment on page 8 of the document that this is an opportunity to make positive changes not only in our transport emissions, but also to our health and wellbeing, particularly for children and youth, our ability to access opportunities, and in the cohesiveness and connectiveness of our communities.
19. We believe the health benefits of reducing personal vehicle use should be included in any cost benefit analysis of planned infrastructure project.

Reducing the Emissions of our Personal Vehicle Fleet

20. We believe there need to be strong efficiency and emissions regulations for all vehicles entering New Zealand, beginning as soon as is practicable.
21. We are concerned about the health and wellbeing impacts of EV production on the people involved in the extraction of resources used in EV batteries up the supply chain. As such, we believe the focus should be on reducing the need to personal vehicle use, and switching to EVs only when mode shift is not possible. The human cost of EVs need to be factored into any policy or investment decision.

Just Transition

22. We agree that the Government needs to consider the impact of policies and changes on different communities to ensure a just transition.

A Mental Shift

23. As well as offering alternative options to personal vehicle use, such as widespread public transport accessibility and safe and convenient active mode corridors, we also need to change New Zealand's public psyche concerning private vehicle ownership as a status symbol.

Innovation

24. We warn against relying on private sector innovation as a means of reducing transport emissions. For example, Uber and rideshare has likely shifted some public transport journeys onto personal vehicle journeys. Private sector innovation does not automatically (or even generally) lean on the side of lower emissions.

Freight

25. Chapter 8 of the discussion paper talks about shifting some freight to rail and coastal shipping. We believe the vast majority of our domestic freight needs to shift to these transport methods, with truck freight only occurring in the minority of cases. This requires a large investment in a fast, extensive and reliable rail network. We need to focus on shifting our freight to rail and shipping. The use of rail would also greatly reduce our road maintenance costs, without a corresponding increase in rail maintenance.

Te Tiriti o Waitangi

26. We support partnership with Māori and agree that the principles of whanaungatanga (relationships) and kaitiakitanga (environmental guardianship) are central to understanding the total system and should underpin ongoing engagement to reduce emissions from the transport system.

Other Feedback

27. Although outside the scope of this document, we note that the highlighted statement on page 5, "Globally, reducing carbon dioxide emissions to net zero is the highest priority in the fight against climate change, because unlike other gases it stays in the atmosphere for hundreds of years." This seems to be deliberately aimed at giving New Zealand a way out of dealing with agriculture emissions. This is almost deliberately anti-science, as, over a 100 year period, a kilogram of methane emissions causes 34 times the warming of a kilogram of carbon dioxide.

Whau Local Board Feedback

1. The Whau Local Board welcomes the opportunity to give feedback on Hīkina te Kohupara – Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050' discussion document. The Whau Local Board generally supports the recommendations of Hīkina te Kohupara – Kia mauri ora ai te iwi.
2. The Whau Local Board is also generally supportive of the points raised in the Auckland Council submission. In particular, the local board would like to emphasise its support for the following points which are particularly aligned with local board priorities:
   - suggesting the inclusion of a new principle to enable the wisdom and values inherent in mātauranga Māori and tikanga Māori to support the transition to a decarbonised Aotearoa and recommending that when considering any financial levers (in particular pricing mechanisms) government and councils must work with Māori and be guided by that engagement. It is critical to ensure that any pricing option produces equitable outcomes that account for the disparate social, economic and cultural realities of Māori throughout Aotearoa.
   - recommending that the Ministry of Transport refer to Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan as an example of a climate action framework that aims to centre Te Ao Māori in its recommendations and delivery approach.
   - supporting the incentivisation of brownfields development, noting that one of the easiest ways to incentivise brownfield development is to stop subsidising greenfield development by properly pricing development contributions.
   - recommending greater consideration of the impact of transition to EVs and other emissions- reduction mechanisms on the life cycle of assets and also greater consideration of end-of-life stewardship for components such as batteries.
3. The Whau Local Board is committed to delivering on New Zealand's commitment to the Paris Agreement to limit global temperature rise to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan sets a goal of 64 per cent reduction in emissions from the transport sector by 2030 against a base year of 2016. The Whau Local Board supports this target.
4. For the Whau Local Board and the people it represents, how the transport system is integrated into a broader framework of urban design and resource use is the issue of most interest and concern. The local board has grouped its feedback under the three key themes below.

Theme 1 – Changing the way we travel

5. Tāmaki Makaurau, and the Whau Local Board area in particular, are going through a significant urban density growth in housing. The Whau Local Board supports reducing the amount of travel in fossil fuel vehicles by encouraging shifting people to lower-emission transport modes and reducing overall travel demand. However, it is essential that these discussions happen in parallel with urban development and this is not currently happening in Auckland as it should. The local board understands, anecdotally, that there is a great deal of intensive housing development in the Whau area on sites with limited parking availability along with insufficient access to public transport and no access to rapid transit. Improvements to the transport network need to complement a more compact urban form which reduces the need for long trips.
6. Placemaking is critical for supporting quality high density urban environments. Poor quality high-density environments can have negative effects such as poor air quality and poor integration of activities. Likewise incentivising of brownfields rather than greenfields development would have huge potential to create more cohesive communities, more liveable cities, and to reduce carbon emissions.

7. The local board strongly supports prioritisation of active transport modes together with a greater emphasis on safety. The local board supports Council's advocacy for an increased Funding Assistance Rate for walking and cycling improvements, road re-prioritisation and public transport improvements, however, note that this would require additional funding to the National Land Transport Plan and/or new funding sources.
8. Uptake of active modes needs to be much more aggressively pursued. Under Auckland Transport's current ten-year cycling programme, some promising progress has been made. However, this progress has been slow and under-resourced relative to the evident need. It is disappointing that walkways (other than footpaths) do not qualify for funding through the National Land Transport Fund.
9. Current transport policy, as well as under-investing in walking and cycling, is insufficiently innovative and doesn't consider new and emerging forms of micro-mobility and disruptive technology. This needs to be a focus for Waka Kotahi and local councils, and is another area where greater strategic alignment is required between central and local government (through, for example, the Government Policy Statement on Land Transport and the Land Transport Management Act and regional land transport plans).
10. There needs to be significant support in behaviour change and education on what types of mobility are available and how to access them. Petrol cars may have reached their peak, but in order to transition to a low emissions future there also needs to be targeted information on the alternatives.
11. The local board would emphasise the point made in the Auckland Council submission that Council's ability to effectively implement these interventions with the urgency that its emissions reduction targets demand is often constrained by factors such as slow consultation processes and lack of funding. There are numerous actions that are supported by communities and which would reduce emissions which local government cannot implement without the support of central government policy and funding.
12. The local board would argue for the inclusion of enhancement and restoration of urban Ngahere (canopy cover) to reduce carbon emissions. In the context of transport planning this is highly relevant as the inclusion of street trees in any urban transport infrastructure planning can have a significant impact on the overall carbon emissions of our transport system. This should also be considered in the context of resource management reform.
13. Small improvements to key corridors like planting more trees within the road reserve (thereby creating green corridors) would create incentives to uptake of active modes but this would also in itself assist in mitigating carbon emissions.
14. The local board strongly supports an increase focus on technical innovation, including the development of new and innovative approaches to demand management, to reduce carbon emissions. Aotearoa / New Zealand needs more investment in high-speed broadband and telecommunications tools to reduce the need for travel. The private sector should also be key partners in this discussion as businesses have huge potential to develop and pilot new approaches that are efficient and will foster economic growth while reducing the need for unnecessary vehicular transport.
15. The local board would request consideration of other possible levers like parking. Limiting and charging for parking in city and town centres can provide a strong disincentive to the use of private motor vehicles. However, in an area like New Lynn, which is a transport hub there are other considerations. The New Lynn Transport centre provides access to the rapid transit network for people throughout the western fringe and the Waitakere Ranges (which is geographically and topographically unsuitable for high frequency bus services and even less for

active modes), provision of parking to support those who need to drive from their homes to their transport hub is essential.

16. The local board continues to advocate for the development of a multi-storey park and ride in New Lynn to support this, but council does not have the funds to deliver this in the current (or proposed 2021- 2031) Long-term Plan. Funding from central government would appear to be the only way to deliver transformative change to reduce carbon emissions in light of council's heavily constrained funding.
17. Equity and the impact of interventions on low-income communities is a concern. The Whau Local Board are has relatively high deprivation, and the local board is concerned that low-income households spend a disproportionate amount of their household budgets on transport. Many of these households also tend to be located in areas with poorer transport choice. For these people, it is essential that interventions are designed to ensure improved access via frequent and accessible public transport, safe and connected walking and micromobility networks, and more affordable shared and pooled mobility options.

Theme 2 – Improving our passenger vehicles

18. The Whau local board strongly supports decarbonisation of Aotearoa / New Zealand's entire vehicular fleet. Clearly there is an opportunity for the public transport fleet (and a joined-up approach to converting government fleet vehicles) to electric, but this will only account for a small proportion of vehicle emissions and will not solve the problem on its own.
19. The local board strongly supports incentivising uptake of not only EVs but also micro-mobility devices such as e-bikes and e-scooters provided that they are safe and that regulation keeps pace with innovation (which is currently not happening).
20. Access to private EVs is out of the question for many (probably most) people in the Whau Local Board area. Encouraging mode shift and reducing emissions on the public transport network will be a big part of the solution, but incentivising transition to EVs and more importantly making this transition affordable for many car owners is a critical component of the discussion. Central government will need to take a leading role here as this is not something local government can address and the private sector will not take the lead without very clear signals from central government, which is not yet happening.
21. The local board also notes the reliance of future transport funding on the National Land Transport Fund, and urges the Ministry and Waka Kotahi to consider the financial impact on major capital projects if uptake of EVs was to exceed currently anticipated demand and how this potential funding gap could be filled.

Theme 3 – Supporting a more efficient freight system

22. The Whau Local Board wants to see a growing local economy, more jobs for its people and increased local employment opportunities. To meet the challenge of reducing transport emissions (and the boarder issues around the challenges of climate change generally) it is critical that the private sector is part of the solution and that Aotearoa / New Zealand has a freight system that is efficient, future proof, and able to accommodate economic and population growth without having a detrimental environmental impact.
23. The local board supports consideration of mode shift away from trucks in favour of rail and sea freight. However, it acknowledges that for many industries this transition is not feasible and a transition to lower emissions vehicles is essential.
24. The local board is also interested in exploring inefficiencies, waste and unnecessary carbon emissions throughout supply chain. The local board would urge central government to work with our ports, business advocacy groups, the freight industry and with Kiwirail, to identify

opportunities to reduce in unnecessary road-based freight without negatively impacting on growth and productivity.

25. The local board strongly supports policies to encourage individuals and businesses to move away from private vehicle usage towards public and active transport, and views the development of Auckland's Rapid Transit Network (RTN) as essential to this. To this end, the local board notes current discussions between Auckland Council and central government around the development of a light rail link from the city centre to Mangere
26. The local board would urge central government to consider the question of light rail in parallel with further development of the heavy rail network, which should be seen as increasingly important for freight. Re-consideration of the Southdown Loop (linking Avondale and Onehunga stations via an existing rail designation) should be a critical part of any discussions about light rail, as both these proposed lines would connect with Onehunga and be a game-changer for freight.
27. The local board would also see a role for public education around the carbon emissions associated with freight supporting the moving of discretionary consumer goods and encouraging people to consider the environmental impact of their purchases and to find greener ways of fulfilling consumer demand.

From: [redacted]
To: Transport Emissions
Subject: Civilian submission: Hīkina te Kohupara
Date: Thursday, 24 June 2021 8:58:50 pm

Kia ora, and thanks for the opportunity to submit regarding the recent Hīkina te Kohupara report.

I have read the summary report and will be sharing my thoughts on this version of the report. I live and work in Auckland, so my perspectives

Key statistics:
The first three statistics you share paint an incomplete picture of the emissions from the NZ transport system. I think it is important to highlight that travel by light vehicles is NOT the most efficient form of travel. If it was (for the sake of argument) then having 67% emissions come from light vehicles would indicate we are doing relatively well in our journey towards an emission efficient system.
The final key statistics alludes to the fact that public transport is much more emissions efficient than light vehicles, but does not say it outright.

Although I recognise the difficulty of presenting clear, concise statistics to the general public, I think that a better job can be done to show that light vehicle use is problematic BECAUSE it is not emissions efficient.

Opportunities to reduce transport emissions:
I support the use of the avoid, shift, improve model for NZ to transition to a better transport system.
"Acknowledging that transport emissions are also driven by ... land use planning and economic polity"
Theme 1 : Changing the way we travel
I believe that theme 1 is the most important theme and should receive the greatest amount of funding, while allowing a more moderate amount of progress on the other themes.
I agree with the integration of land-use, urban development and transport planning to reduce emissions. For example, Auckland cannot keep sprawling out with land being thought of as 'cheap' beyond the city limits. This land is very expensive in an emissions point of view if heavily developed.
I agree with the mode shift of cycling and scootering being sorely needed, as well as priority lanes for buses.

Placemaking is an important part in community culture and should be included in transport considerations.

I support investing in the capacities of transport agencies.Auckland Transport (AT) has some limiting rules it must follow regarding the amount of revenue it must generate through ticket prices I believe. If this was targeted and removed it could allow the agency to reduce ticket prices which would increase participation.

I strongly support the improvement to public transport infrastructure. I believe that the majority of light-vehicle trips that are "shifted" will go into public transport - not active modes (especially outside of summer!).

I support the use of congestion pricing, parking management & further carbon charges such as a fuel tax. More polluting fuels should be charged more than cleaner fuels.

This section is incomplete in its discussion on changing the way we travel between cities and regions. This form of travel also needs to be examined and changed. Specifically, fast rail is vastly superior to aviation in terms of emission use, and the rail network must therefore be improved between regions to facilitate passenger and freight movement.

Theme 2 : Improving our passenger vehicles
As my previous point, I think that theme 1 is should receive more funding, time and attention than theme 2. Even as an owner of an electric car, I believe that a greater emphasis on public transport is more important than the electrification of the light vehicle fleet.

I support an ICE vehicle phase out.

I support a maximum CO2 limit, and believe that imports and fuels of higher CO2 vehicles should be taxed by a higher amount than for higher efficiency vehicles.

I support the demand side measures mentioned: incentive schemes for price parity, EV supporting infrastructure (charging stations and the like), and government procurement.

I do not support the use of biofuels - they still emit greenhouse gasses when they are burnt...so what's the point? I have not yet seen a convincing argument for their use and I do not support their use unless the science is very clear on their benefit.

I do support the removal of fossil-fuelled vehicles from the light vehicle fleet over time based on age, emissions or safety criteria. As written, a 'whole-of-system' approach is important here so that these vehicles and their parts can be reused where possible and recycled into a circular economy where not.

I strongly support central government assistance designed to support uptake of lower emissions busses.

I strongly support rail electrification and vast expansion in Auckland, and as a intercity mode of transport.

In the discussion of passenger aviation, I do not think that SAF should be pursued with great haste (similar to my point on biofuels). I do not support a 'build it and they will come' approach to SAF. Aside from some R&D grants from Callaghan innovations I also do not support great efforts to electrify planes.
I do support improving airports and their operation, and STRONGLY support low emissions alternatives to aviation based inter-regional travel.
- I believe there should be policy that guides and strongly limits the use of passenger aviation based on distance, time and emissions.

Theme 3: Supporting a more efficient freight system
I strongly support a national supply chain strategy.
I strongly support payload optimisation policies. I do not believe that non-emergency freight should be able to be delivered 'same day'.

I strongly support shifting freight to low emission modes where possible.
I support the reduction of air freight through taxation or other economic nudges.

Four potential pathways to zero carbon transport system by 2050
Of the four pathways suggested, I support pathway 4 the most.
I think that theme 3 is more important than theme 2.

Supporting a Just Transition
I support a 'Just Transition' approach to becoming carbon free.

Final notes:
Thank you for the work undertaken to create this report.
In general I think it is surprisingly progressive (in a good way).
I was only made aware of the opportunity to submit on these report by a Greenpeace email that came to my attention today. So I believe that a greater submission window/awareness should have been implemented to allow more people to submit.

Ngā mihi,

[redacted]

Marketing

Order Online!

P: [redacted]

E: [redacted]

Facebook

Website

From: Info
To: Transport Emissions
Subject: FW: submission about e vehicles
Date: Wednesday, 16 June 2021 9:02:40 am

From: [redacted]
Sent: Tuesday, 15 June 2021 4:22 PM
To: Info <info@transport.govt.nz>
Subject: submission about e vehicles

Kia ora,

I don't know how to make an official submission re e-vehicles. So my request is please will you forward this email to the proper place.

I think that the government proposals are very good. I totally support them.
our
It will help remove the large number of 4-door utes from urban roads. They are not necessary for city and urban travel and they obscure vision for other vehicles at junctions. They are a danger to others in traffic accidents because of their size. They are also large contributors to our green house gas emissions.

It will also help remove other "gas guzzlers" from our city and urban roads.

Your in thanks,

[redacted]

[redacted]

From: [redacted]
To: Transport Emissions
Subject: FW: Submission on Reducing greenhouse gas emissions from transport. EMAI: DOES NOT WORK
Date: Thursday, 3 June 2021 10:19:08 am

For inclusion.

Ngā mihi

Jo

[redacted])
Principal Adviser
Environment, Emissions & Adaptation Team

T: [redacted] www.transport.govt.nz

From: Info <info@transport.govt.nz>
Sent: Thursday, 3 June 2021 10:15 AM
To: [redacted] Info <info@transport.govt.nz>
Cc: [redacted]
Subject: RE: Submission on Reducing greenhouse gas emissions from transport. EMAI: DOES NOT WORK

Hi Ewan and Jo,

Do we have an auto response ready for these emails yet?

Ngā mihi nui,

[redacted] (she/her)
Business Support Coordinator
Corporate Services | Te Kāhui Tangata
Ministry of Transport | Te Manatū Waka

M: +[redacted] | [redacted] | www.transport.govt.nz

Enabling New Zealanders to flourish | He whakamana i a Aotearoa kia momoho

From: [redacted]
Sent: Monday, 17 May 2021 9:55 AM
To: Info <info@transport.govt.nz>
Cc: [redacted]
Subject: RE: Submission on Reducing greenhouse gas emissions from transport. EMAI: DOES NOT WORK

The person has misspelled the email address (missing 'p' in transport) or copied it from a media report that got it wrong.

As we are running a consultation we will just send acknowledgements to all the emails we get on this topic.

My team will set up an auto response on the transportemissions inbox and let you know what it is so you can send the same message

From: Info <info@transport.govt.nz>
Sent: Monday, 17 May 2021 9:02 AM
To: [redacted]>
Subject: FW: Submission on Reducing greenhouse gas emissions from transport. EMAI: DOES NOT WORK

Hi Ewan,

Is your team able to respond to this one?

Ngā mihi nui,

[redacted]
Business Support Coordinator
Corporate Services | Te Kāhui Tangata
Ministry of Transport | Te Manatū Waka

[redacted] | www.transport.govt.nz

Enabling New Zealanders to flourish | He whakamana i a Aotearoa kia momoho

From: [redacted]
Sent: Friday, 14 May 2021 4:45 PM
To: Info <info@transport.govt.nz>; m.wood@ministers.govt.nz
Subject: Submission on Reducing greenhouse gas emissions from transport. EMAI: DOES NOT WORK

The email address given: transportemissions@transort.govt.nz does not work.

There are major issues with reducing emissions by road transport which are not being rationally reviewed and until they are the correct outcome cannot be proposed. .

1) What is the whole of life emission comparison between ICE versus EV.

2) Is there a report on the comparative pollution caused by mining of the rare earth chemicals versus oil drilling.

3) Where is the data on the recycling comparisons of an ICE engine versus an EV engine including the Lithium batteries and their rare earth metals which already causing issues.

4) Cost of EV's versus their ICE counterparts. There is still a huge price differential

between an EV version of the ICE counterpart, in the $10's of thousands.

5) For someone already doing low mileage, say 5,000km per year, the cost of changing to an EV does not work fiscally.

6) With power outages already threatened due to hydro lake levels and the captains call not to allow natural gas exploration and the currently very high level of coal imports, where is the extra electricity going to come from to power EV's. Coal as we know is not as clean to burn as natural gas, so unless we stop burning coal what is the point of EV's and if we stop burning coal where is the electricity coming from?

7) Stop/start traffic such as peak travel times of motorways and the use of traffic lights cause excess emissions being emitted by the vehicle getting moving, moving the stationary mass from rest. Many traffic light in a sequences are out of phase.

There are still too many questions that have not been answered in this report.

[redacted]

Tel: [redacted]
MB: [redacted]
Email: [redacted]

From: [redacted]
To: Transport Emissions
Subject: Hīkina te Kohupara discussion document feedback
Date: Saturday, 15 May 2021 9:50:17 am

[redacted]

Feedback per Hīkina te Kohupara discussion document

1. Having read the discussion document information to-date at Climate change — emissions work programme | Ministry of Transport , I submit that the proposals are unjustifiable, untenable, unwelcome, unsustainable and, for the greater part, un-costed (remarkably so as regards the latent 'cost' to the social fabric of our Nation).
2. The dearth of comprehension as to why many Kiwi families operate diesel vehicles is at best naïve and at worst pitiless.
3. New Zealanders love the outdoors and, at present, there are few if any practical and affordable alternatives which can achieve the on-road/off-road capability, comparable range, tow-rating, seating/luggage capacity of a diesel 4wd vehicle across the spectrum of our topography and microclimate.
4. Perhaps the Ministry of Transport also purport to surreptitiously reduce GHG by significantly degrading the ability of Kiwi's to travel off-road/off-grid, safely tow a boat, safely launch a boat, and/or safely tow a caravan!
5. By way of tangible impact example, I have a young family and maintain a caravan off-grid at Haldon Arm, alongside the head of Lake Benmore, in the MacKenzie Country of the South Island for 6-months of the year; access necessitates travel along an unsealed road for approximately 60km (Dog Kennel Corner to Haldon Road to Haldon Arm Camp); maintaining a caravan there enables that my wife and I can share our love of camping, boating, fishing, and hunting with our children as time and opportunity permits; if diesel vehicles were to become uneconomic to operate, or disallowed, then we would have to forgo this quality family recreation. I would suggest that be it the MacKenzie Country or Auckland's Maritime East Coast many Kiwi families, and Kiwi life-styles, would be similarly negatively impacted.

I have no doubt that my personal submission will have little to no affect upon the juggernaut of incentivised beaurocracy, however in respect of my family, other Kiwi families, and the social fabric of our Nation, I take the instance and opportunity to register my apprehension and wide-ranging opposition.

Yours faithfully,

[redacted]

From: [redacted]
To: Transport Emissions
Subject: Reduction of transport emissions in New Zealand.
Date: Friday, 25 June 2021 1:08:11 pm

Submission to the Hīkina te Kohupara discussion, Ministry of Transport.

From: [redacted], Chemical and Process Engineering, University of Canterbury

1. Move as much freight as possible by Rail. This should be less complicated than it was because we now have containers of various sizes.

2. Establish rail freight hubs from which the freight can be distributed locally by truck.

3. Extend the current rail network to serve more cities and towns.

4. Investigate hydrogen powered electric trains. This may be more economical than electrifying the rail network.

   See: https://www.theguardian.com/environment/2018/sep/17/germany-launches-worlds-first-hydrogen-powered-train?fbclid=IwAR061yWB6YFxEt2DYoMFXqScqoJRZMkPL67u-HZ1hRZNFQxRG0tbbuM3BfU

   Electrolysis of water is about 80% efficient and the hydrogen fuel cell is around 60% efficient. Would these losses be less than the losses associated with transmitting electricity over long distances? Also, the cost of electrifying the lines and the freighting of hydrogen would need to be factored in.

From:	[redacted]
To:	Transport Emissions
Subject:	Submission on Hīkina te Kohupara – Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050
Date:	Friday, 25 June 2021 7:31:48 am

Drop the urban speed limit to 30 km/hr,put a 1m wide cycling lane going each way on every road .
DOSOMETHING!!!!

Thank you.
[redacted]

[redacted]

From: [redacted]
To: Transport Emissions
Subject: Submission response to Pathways to Net Zero Transport Emissions by 2015
Date: Friday, 25 June 2021 5:03:14 pm

Attn: The Ministry of Transport

Re: Submission in response to the discussion paper Transport Emissions: Pathways to Net Zero by 2050

My name is Virginia and I have lived in Auckland since the early 1970s and have seen many changes in the city over the years.

I recall when there were green trolley buses in Auckland – it was a shame that they were ever removed and replaced with diesel buses . They could have been upgraded to provide an efficient form of energy efficient
transport as is available in Melbourne.

I also remember when the visionary, forward thinking Mayor of Auckland, Sir Dove Myer Robinson had a rapid transit proposal in 1972 for Auckland, called Robbie's Rapid Rail, at a time when it would have been manageable to built it when the population of Auckland was much smaller. His scheme wasn't taken seriously at the time which was a lost opportunity.

https://www.greaterauckland.org.nz/2011/12/02/an-auckland-that-could-have-been-the-1972-auckland-rapid-rail-transit-plan/

I support the ideas presented in the discussions themes particularly the improved public transport system along with better urban design and liveable streets however I have some concerns about the haste in which this is being pushed and promoted without all issues about the sustainability, production and effectiveness of electric cars being explored.

The insistence on people purchasing electric cars, even with a subsidy provided to do so, will put considerable financial strain on people already struggling financially. I have just finished paying off my new car and am now trying to survive on a pension and some part time work. Therefore, I am now feeling considerably stressed about having to consider getting an electric one to replace my petrol fuelled one.

I don't think there is enough yet known about the potential long term problems with electric cars to insist that people must purchase one such as the expense of replacing batteries; insufficient charging stations available particularly remote areas of the country; what will happen if there is a power outage dues to storms, natural disasters etc and the overall drain on the national grid. There is a downside to the production of batteries for electric cars. Resourcing and making batteries is costly and is energy-intensive. And what happens when this tech is trashed - will we end up with piles of dead batteries being dumped and where? Research has anticipated that more than 11 million tonnes of environmentally harmful battery waste worldwide a year within the next 20 years if we simply ignore the issue.

Furthermore, what does the government propose to do with all the petrol cars

that people will have to replace?

Then there is the issue of lithium mining with world production set to soar over the next decade because of increased demand globally for electric cars. This mining is linked to all sorts of environmental repercussions. In the so-called lithium triangle of South America, mainly Chile, Argentina and Bolivia, vast quantities of water has to be pumped from underground sources to help extract lithium from ores which has been linked to the lowering of ground water levels and the spread of deserts. Similarly in Tibet, a toxic chemical leak from the Ganzizhou Rongda lithium mine poisoned the local Lichu river in 2016 and triggered widespread protests in the region.
The production of cobalt and lithium used in electric car batteries is not environmentally friendly. A stark picture emerges of an industry exposed to issues such as child labour, modern slavery, and the serious undermining of land and water rights. Furthermore conflict between mine operators and local populations over water rights have led to indigenous communities filing legal challenges against lithium operators.

In the push to create more environmentally friendly cities and reduce carbon emissions in them, why is the government not insisting on stringent urban tree protection policies by city councils particularly here in Auckland which were removed back in the 1990s? Lack of regulation now means that developers have free rein to build intensive housing developments that are sterile with no gardens or green space around them. We need to protect our green spaces and keep our urban trees.

Therefore, although I support in principle, the need to improve our transport system to reduce carbon emissions and to offset climate change, I have concerns as outlined.

Your sincerely

[redacted]
Auckland

From: [redacted]
To: Transport Emissions
Subject: Submission to MOT on Hīkina te Kohupara
Date: Friday, 25 June 2021 8:55:57 am

Submission to MOT on Hīkina te Kohupara from the New Zealand Port Company CEO Group

- We are grateful for the opportunity to comment on this report and for an invitation to join others from the sector in a virtual meeting to discuss it on 22 June.
- We were surprised that this report was issued prior to the Climate Change Commission finalizing its report to Government. We understand that the early release of this report was due to Ministerial instruction. The release would have benefitted from a delay to allow revisions consistent made in the Climate Change recommendations.
- We are concerned that there are several reports impacting the transport sector being processed at the same time – Climate Change Commission, Infrastructure Commission, and Hīkina te Kohupara. And at the same time significant policy announcements are being made that impact the sector – eg the recent announcement of incentives to buy electric vehicles. It is essential that all these processes are coordinated.
- We are also mindful that we have an Emissions Trading Scheme which is working to reduce emissions across the economy. We need to be careful that a focus on one sector through new policy choices does not disrupt this process and lead to an increase in emissions in other areas of the economy.
- We support a focus on improving the efficiency of the supply chain.
- We also support a shift to modes such as rail and coastal shipping that might be more carbon efficient.
- In principle the idea of using more electrification in the transport sector. However, there are currently very significant constraints on the use of electricity for heavy haulage or shipping. Lower-carbon fuels and hydrogen offer more potential but technology is still being developed in this space.
- We need to be mindful that some jurisdictions might try and use climate change as an opportunity for new ways to protect their economies. We need to be very careful about policies such as slow steaming that could have a disproportionately negative impact on economies that are distant from their markets to those that are located close to their major customers.
- We would like to work closely with the MOT to develop the response and to ensure that the best possible policies are adopted for New Zealand circumstances. This response needs to be a whole of Government one.
- We support the submission that has been made by the BusinessNZ Energy Council.

Many thanks

[redacted]
Independent Chair

[redacted]

[redacted]