

# Submission



## Hikina te Kohupara – Transport emissions pathways to achieve net zero emissions by 2050

PREPARED BY: Ashburton District Council  
PO Box 94  
ASHBURTON 7774

Strategy & Policy Manager  
[toni.durham@adc.govt.nz](mailto:toni.durham@adc.govt.nz)

SUBMITTED TO:

Transport Emissions  
Ministry of Transport  
PO Box 3175  
Wellington 6140

[transportemissions@transport.govt.nz](mailto:transportemissions@transport.govt.nz)

---

### Introduction

1. Ashburton District Council (Council) welcomes the opportunity to submit on the discussion document released by the Ministry of Transport – *Hikina te Kohupara – Transport Emissions Pathways to Net Zero by 2050*.
2. Council supports the submission from Taituarā as well as the joint submission from Canterbury Regional Transport Committee and Canterbury Mayoral Forum. While Council is also a signatory to the Canterbury Mayoral Forum submission, this submission reflects matters of emphasis for Ashburton district.
3. Located an hour's drive south of Christchurch, more than 35,300<sup>1</sup> residents live in the district, with the main town of Ashburton accounting for over 50% of residents. The rest of our residents live rurally or in smaller towns or villages.
4. Ashburton district has experienced moderate and sustained population increase since the mid-1990's, increasing by 23% between 2006 and 2013 (a 3.3% increase per year). This growth, however, is now slowing, with an average growth of 1.3% per year since 2013. The expansion of irrigation and agricultural diversification on the Canterbury Plains have been major factors in this growth.
5. We acknowledge that 47% of total domestic CO<sub>2</sub> emissions are caused by transport and that without largely decarbonising transport, Aotearoa/New Zealand will not be able to achieve the target set by Climate Change Response Act 2002 of net zero carbon by 2050.
6. Ashburton District Council recognises that climate change is a major issue that requires immediate attention. We understand that decreasing our country's carbon emissions is no easy feat but that the transition will be well worth while and will make Aotearoa/New Zealand a greater place to live.

---

<sup>1</sup> Source: Statistics New Zealand Population Estimates 30 June 2020

7. With that being said, Council agrees that any changes need to be staged in order to allow residents to adapt.

## Themes

8. We support all three main themes outlined in Hikina te Kohupara. Further comment on the themes is included below.

### Theme 1 – Changing the way we travel

9. We acknowledge that physical inactivity costs, and that walking and cycling has many physical and mental health benefits. Council has taken steps to ensure that Ashburton is pedestrian and cyclist friendly. At the beginning of the year we adopted our Walking & Cycling Strategy which provides a framework to make walking and cycling safer and more attractive, with the aim of increasing the number of people using these networks. We are also currently undertaking an upgrade of our CBD which aims to make the town centre more pedestrian-focused. This upgrade is due to be completed in December.
10. While we support this theme, we believe it is important to note that not all people in Aotearoa/New Zealand can change the way they travel easily. Many of our residents live rurally, therefore we do not expect many of these residents to walk or cycle as a form of transport for reasons of practicality. Due to our high rural population, public transport is also not currently a viable option for our district, so increasing public transport use is not a relevant strategy for us.

### Theme 2 – improving our passenger vehicles

11. We support this theme, however Council notes that it is likely that many kiwis cannot afford to transition to a low or zero emission vehicle. We strongly support the implementation of some form of incentive to help people with this transition. We also support the investment in electric vehicle charging stations as electric vehicles are expected to become increasingly common.
12. Council understands that biofuels still emit CO<sub>2</sub>, but at a lower rate than fossil fuels. The Ministry of Transport website states that biofuel use in NZ has declined due to the fact that biofuels cost more than fossil fuels. Therefore we suggest there would need to be incentives for the uptake of this. We acknowledge the importance of ensuring that any biofuels used in Aotearoa/New Zealand be advanced or 'drop-in' biofuels, as these emit less CO<sub>2</sub> and have a low indirect land use change.
13. We note that there is currently a review being undertaken of 2008 Biofuel Sales Obligation, which may result in an obligation for suppliers of petrol or diesel to also supply a minimum proportion of biofuels. The Ministry of Transport website states that our domestic biofuel production capacity is currently very small and that if a biofuel mandate is introduced, for the first few years these fuels will need to be imported from overseas. Council questions whether a cost-benefit analysis has been undertaken for this as the importation of the fuel will likely result in the creation of CO<sub>2</sub> emissions.
14. Council agrees with the suggestion that Government investigate supporting a domestic biofuel industry as this will not only increase our capacity but it will also create jobs and have a positive

impact on our economy. We note that biofuel production in NZ may reduce the cost for biofuel, as well as reduce the CO<sub>2</sub> emissions from importation.

### **Theme 3 – supporting a more efficient freight system**

15. Page 118 of Hīkina te Kohupara states that the pathways are modelled on emissions falling if 10 to 20 percent of road freight shifted to rail and 5 to 15 percent shifted to coastal shipping by 2050. We strongly agree with the point made stating that further work needs to be done to explore whether mode shifts of this scale are practically achievable as this seems like a large shift.

### **Specific consultation questions**

16. Consultation question 1 – Council agrees with the principles in Hīkina te Kohupara.
17. Consultation question 4 – Council supports the following key actions:
  - a. the development of clear guidance and expectations to link urban density and mixed land use with accessibility
  - b. removing barriers and improving funding for tactical urbanism and innovative approaches to street design
  - c. setting higher funding assistance rates for walking & cycling investments and dedicated/priority bus lanes to strongly incentivise road controlling authorities to prioritise and accelerate street changes.

We note the proposed action of ‘setting targets for councils to deliver public transport and active travel networks that require street changes by a specific date’. Council suggests that these targets are not uniform for all Councils as some areas do not have public transport and active travel networks may not be appropriate in particular areas.

18. Consultation question 6 – We believe that pricing will have a large impact on behaviour, in particular the purchase of low emission vehicles or fuel. Council suggests that incentives will be necessary to support the transition in order for Aotearoa/New Zealand to reach net zero by 2050. If there are also going to be penalties for high-emission vehicles, it is important that there is regard for low-income communities and issues of just transition.
19. Consultation question 8 – Council supports the proposed actions to decarbonise the public transport fleet.
20. Consultation question 10 – We believe that further work needs to be done to explore whether the possible actions for freight are feasible.
21. Consultation question 13 – We note that pathway four in Hīkina te Kohupara is the only one which reaches the Climate Change Commission’s 2035 target for transport emissions. Council supports pathways one and four as they are the most impactful and cost-effective.

## Conclusion

22. Council notes that collectively, we all have a role to play in reaching the goal of net zero emissions. We thank the Ministry of Transport for the opportunity to make a submission on the discussion document.

Ngā mihi



Hamish Riach

**Chief Executive**



# Hikina te Kohupara – Kia mauri ora ai te iwi / Transport Emissions: Pathways to Net Zero by 2050

Submission prepared by Dr Paul Callister and Professor Robert McLachlan

*Paul Callister is a senior associate at the Institute of Governance and Policy Studies, Victoria University of Wellington. His research centres on climate change policy with his main focus being on sustainable transport.*

*Robert McLachlan is a professor in the School of Fundamental Sciences, Massey University. He writes on climate science and policy at *The Conversation* and at *PlanetaryEcology.org*.*

*Together we have written on sustainable transport and aviation issues at *Stuff*, *The Guardian* and *Newsroom*.*

We support the submission prepared by Heidi O’Callahan which covers a wide range of transport issues. However, we wish to expand on the issues of aviation and regional travel.

Part I: Consultation questions

Part II: Aviation

Part III: Research questions

---

## Part I: Consultation questions

### *Consultation question 1*

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

We support the 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?*

Other levers:

1. Communication and leadership
2. Setting targets by sector
3. Adopting feedback mechanisms so that the targets are achieved
4. Requiring and enabling local government to do its share

### *Consultation question 3*

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

1. Increase the Low-Emission Vehicle Contestable Fund by a factor of 10-20 to make it comparable in size to similar funds overseas.
2. Fund research in the social aspects of the low-emission transition.

### *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?*

Top priorities:

- Prioritise the need to reallocate street space and to create connected networks for delivering transport mode shifts in the next GPS

and

- Make changes to policy and funding settings to ensure Waka Kotahi and Road Controlling Authorities maximise opportunities to 'build back better' when doing street renewals

### *Consultation question 5*

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

1. Schools should not provide free car parking for students except in exceptional circumstances (e.g. health related). Local authorities need to work with schools to ensure safe active modes of transport connect housing and the schools, such as cycleways.
2. Only one country has achieved a complete, high-quality cycling network: the Netherlands. The piecemeal approaches taken by some other countries are not delivering the results shown in the Netherlands. New Zealand should adopt a target of achieving a Netherlands-style system by, say, 2050. Land use is one of the biggest obstacles.

### *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?*

1. In addition to the suggested levy on all publicly-available parking spaces: Fringe benefit tax on work parking, exemption for PT and e-bike provision.

2. Congestion pricing risks shifting traffic to off-peak, impact on active travel. It also risks unlocking extra demand during the peak that is at present being deterred by congestion. In addition, even relatively uncongested areas and cities have streets that are too busy to support people cycling and walking easily and already have emissions that are too high. In short, approach congestion pricing carefully.
  
3. The report says “CO2-based RUC is under development”. We would like to see the details of this, and consider whether this should replace the fuel excise tax entirely. If adopted it could possibly provide a less controversial route towards meeting transport emissions goals via feedback that adjusts the rates based on observed emissions. Likewise for CO2-based annual registration fees.

On roads:

While climate change considerations demand an immediate end to nearly all new road construction, and a wholesale redirection of transport funding, we recognise that this may not be possible to the degree required.

We therefore recommend that the report look at other ways in which the negative effects of new roads (e.g. increasing emissions, increasing car-dependence, undermining of public transport) can be ameliorated, such as

- mandatory tolling of new roads
- more expensive and steadily increasing tolls
- changing the WK requirements for tolling
- using the existing tolling system for other purposes, e.g. discounts for EVs, PT and higher occupancy
- requiring new roads to include emission reductions plans
- requiring new roads to include road space reallocation elsewhere
- ensuring new roads cater for bus lanes or other mechanisms to give priority to both local and long-distance buses.

The tolling system exists now, whereas comprehensive congestion and distance pricing may take a long time to put in place.

*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?*

On vehicle ownership:

The report is very strong on the need to reduce VKT. But it says nothing about vehicle ownership. The rise in ownership in New Zealand has been epic - to the point that we now have among the highest vehicle ownership rates in the world - and was largely enabled by government policy (e.g. used imports and balance of investment between roads vs active and public transport). Ironically, it also contributes to the overall high cost of our transport system. Many countries price and regulate vehicle ownership. Tools to reduce vehicle ownership should be explored.

*Consultation question 8*

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

*Consultation question 9*

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

See Part II below, 'Aviation'.

*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?*

*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?*

*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?*

As well as the examples of relative disadvantage due to the present transport system, for balance, the report should also examples of relative advantage. Some that come to mind are residents of the western Auckland isthmus (who now have new motorways and will soon have a faster and more frequent train service), residents of Waikanae (where generally well-off retirees can now take a free electric train to town), Aucklanders with baches in Omaha (now getting a new motorway and a link road that had been assessed as a very low priority), and people who fly (international research shows that aviation emissions grow very rapidly with income, and that a large segment of the population never fly at all). To some extent areas of relative advantage are due the overall piecemeal approach to transport, while perhaps the Matthew Effect (Matthew 25:29) is also in play.

*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?*

We believe that the pathways should include and consider even more rapid cuts to transport emissions, because:

1. The 'equity' provisions of the Paris Agreement, now a part of New Zealand law, require faster action.
2. The IEA 'Net Zero 2050' report has emissions from light duty vehicles falling 65% by 2035. The IEA scenarios involve significant growth in transport demand, with developing countries growing more, and developed countries cutting emissions very rapidly.
3. The world average for LDV emissions is now 0.42 tCO<sub>2</sub>/person (9% of total CO<sub>2</sub> emissions), while the EU average is 0.93 tCO<sub>2</sub>/person (20% of their total CO<sub>2</sub>) and New Zealand emissions are 2.6 tCO<sub>2</sub>/person (35% of our domestic CO<sub>2</sub>). We have a very, very CO<sub>2</sub>-intensive light vehicle fleet and usage.
4. Although the main focus is rightly on New Zealand-based emissions, work by Stats NZ shows that vehicles are an even higher proportion of consumption emissions than they are of production emissions. The CCC advise maintaining a focus on consumption as well as production emissions.
5. Our present high emissions and their rapid increase therefore point to a need for more rapid cuts.

*Consultation question 14*

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

Quantify "significantly increase central government funding for public transport, walking and cycling" – at present the RLTP for the Horizons region has 3% of the money spent on walking and cycling, and 3% on public transport. Meanwhile, a lot of the other spending is acting to increase emissions. Moreover the walking and cycling budget is devoted to things like urban placemaking and rural cycling routes for tourists, which are unlikely to reduce emissions. If this is replicated around the country, essentially *Hīkina* means throwing away all existing transport plans.

The ban on new urban diesel buses could be brought earlier than 2025.

---

## **Part II: Aviation**

We begin the analysis with two statements in *Hīkina*:

**"Domestic air travel for some is a form of public transport, but it needs to be low-emissions aviation"**

Domestic air travel is a public transport option, and for some users it may be the only logical method of transportation to meet their needs. Air travel meets the needs of people who might travel for medical reasons, business, are time poor or are unable to travel long distances in alternative modes. Air travel is also important for its role in connecting our regions and provides opportunities for regional development. The popularity of domestic travel is likely to increase post-Covid 19. Consideration must be given to how Aotearoa will improve its domestic air fleets, to make them more sustainable. Options to achieve this include increased production and availability of sustainable aviation fuels, consideration of electric planes as the technology evolves (noting smaller 19-seater electric planes are now commercially available) and continued operational improvements by aviation operators. Cleaner aviation is discussed in more detail in Theme 2.”

and

**“Decarbonising aviation (pg 115)**

Domestic aviation emissions are not included in the model, and international aviation emissions are not specifically within the scope of Hīkina te Kohupara.

Domestic aviation emissions account for just over six percent of our total transport GHG emissions. • Sustainable aviation fuel has the most potential to reduce aviation emissions in the short to medium term. The Government needs to keep working with the aviation industry to investigate its potential in Aotearoa.

Electric planes may be viable for reducing short-haul air travel emissions.”

There are a number of problems with these statements in relation to decarbonising transport.

First, it is only through legal technicalities international aviation is not included in this report, directly in the CCC advice, or in the MBIE biofuel consultation. Even Air New Zealand argues both domestic and international aviation need to be considered in any decarbonisation strategy.<sup>1</sup>

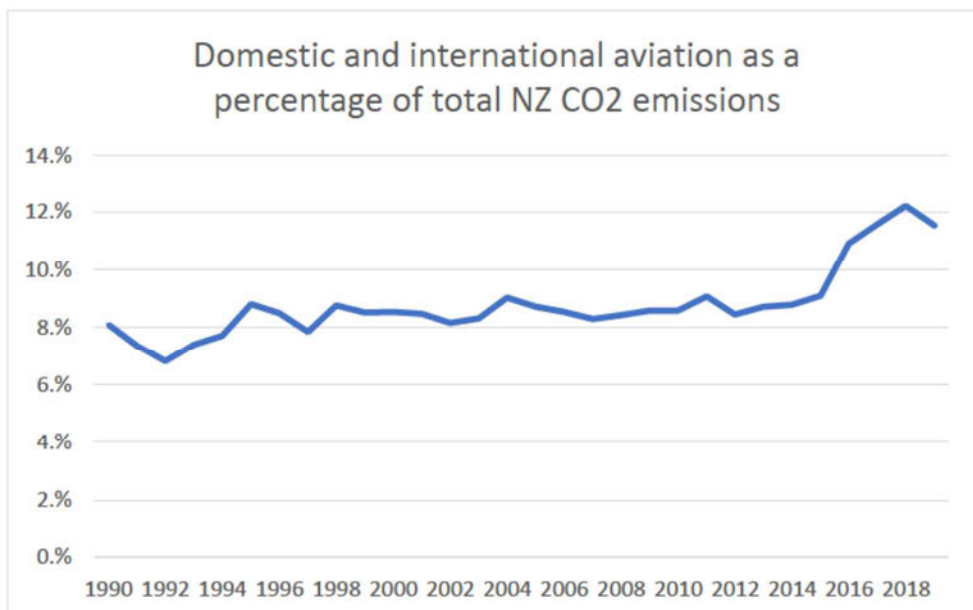
The CCC is very likely to recommend in 2024 that international transport emissions be brought into national emission budgets and targets as the UK is now doing. For example, they could recommend that this be done in the 2031-35 carbon budget. That would mean planning for this would need to start very soon.

Pre Covid, aviation contributed 12% of New Zealand’s total CO2 emissions. The share had not only grown steadily from 1990, but because all emissions had increased the actual expansion was over 50%. Research indicates the full impact could be significantly higher due to the phenomenon of radiative forcing.

Back in 1990, international aviation represented around two thirds of New Zealand’s total aviation emissions. But, primarily due to increased tourism and family related travel, by 2019 this share had risen to just under 80%. Decarbonisation of aviation cannot ignore the international flying.

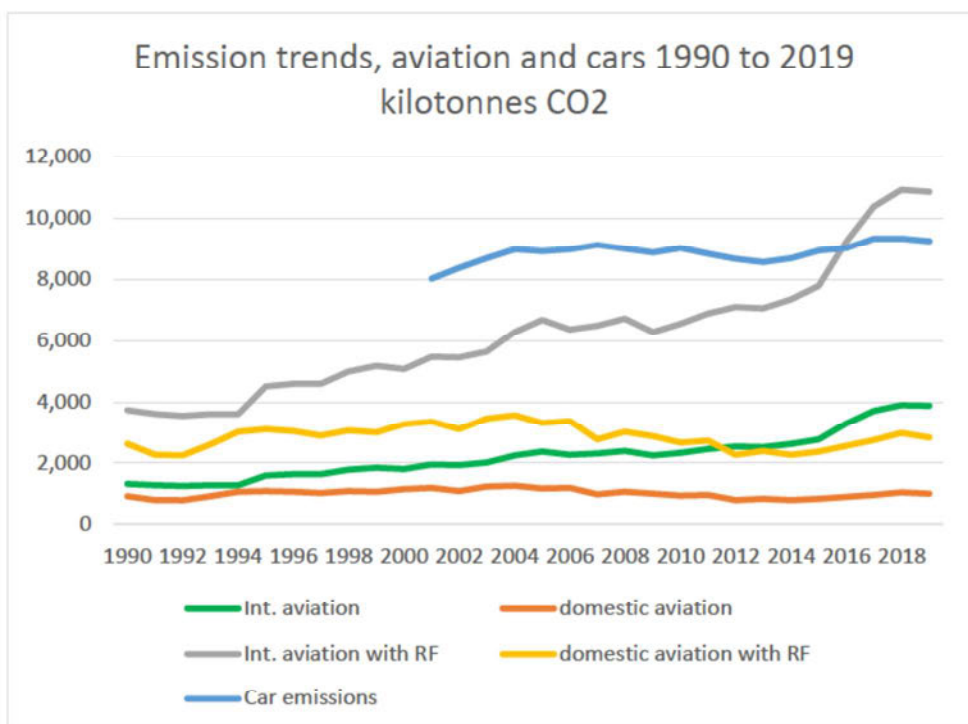
---

<sup>1</sup> <https://p-airnz.com/cms/assets/PDFs/Airnz-sustainable-aviation-fuel-in-new-zealand-may-2021.pdf>



Based on a growing research literature, estimates of emissions from both international and domestic aviation increasingly include a radiative forcing factor.<sup>2</sup> A 2021 study provides a median estimate of a 2.8 times amplification with 90% confidence intervals of 1.5 to 5.7 (log normal distributed).

Figure two shows aviation emissions with and without radiative forcing. A factor of 2.8 is used when estimating the effect of radiative forcing. As a comparison, the graph also shows estimated car emissions.



This graph shows international aviation needs to be part of any decarbonisation strategy.

<sup>2</sup> Lee, D.S. et al (2021) 'The contribution of global aviation to anthropogenic climate forcing for 2000 to 2018', Atmospheric Environment, 244, <https://doi.org/10.1016/j.atmosenv.2020.117834>

It is clear there is no easy way to reduce emissions from long-distance international flights.

Recognising this, Allwood *et al.* in their report “Absolute Zero” argue that most flying has to stop.<sup>3</sup> In a United Kingdom context, they advise the need for airports to start closing and that it will be only 2050 and beyond that we can consider using electricity fuelled planes, but only if there are enough non-emitting electricity supplies available.

"Avoid/Shift/Improve" needs to apply to domestic and international aviation. As a behavioural shift to ‘avoid’, ‘flight shame’ appears to be having some impact in Europe and may well have some influence on this source of New Zealand-bound tourists. In Europe, a concern about emissions has helped the revival of the night train network. New Zealand has its own small ‘fly-less’ movement.

With only domestic aviation being considered, both the CCC report and *Hikina* are overly optimistic about the role of electric planes. In *Hikina* it is stated that that 19 seater electric planes are already commercially available. In fact, one of the best contenders only promises to be certified by 2026.<sup>4</sup> They also note ‘Initially, our planes will offer point-to-point transportation between Scandinavian cities, before expanding operations to the rest of the world.’

On range, the website says ‘[o]ur plane will have an operating range of 400 km (250 miles).’ While this is within the range of Wellington to Christchurch there is little margin for error on this route should a diversion be needed. This plane would not be able to fly between Auckland and Wellington, nor Wellington to Gisborne.

Based on already available technology there are ways that domestic aviation emissions could be reduced, either slightly or dramatically. A small reduction could be achieved by replacing jets on domestic routes with turboprops. But the real gains would be through rail powered by electricity. Long distance coaches, currently powered by diesel, are not far behind.

***Auckland to Wellington travel using a variety of assumptions***

Mode assumption	Type	Emissions kg per person km	Km	KgCO2e/person
UK Short haul flight	Economy	0.15573	496	77
	Business	0.23360	496	116
Atmosfair A320				116
Atmosfair A320neo				93
Atmosfair ATR				50
UK Rail	National rail	0.04115	682	28
	International rail	0.00597	682	4
UK coach		0.02779	643	18

Note: A full description of the methodology can be found in [https://www.wgtn.ac.nz/\\_\\_data/assets/pdf\\_file/0006/1942332/WP-21-11-decarbonising-the-public-sector.pdf](https://www.wgtn.ac.nz/__data/assets/pdf_file/0006/1942332/WP-21-11-decarbonising-the-public-sector.pdf)

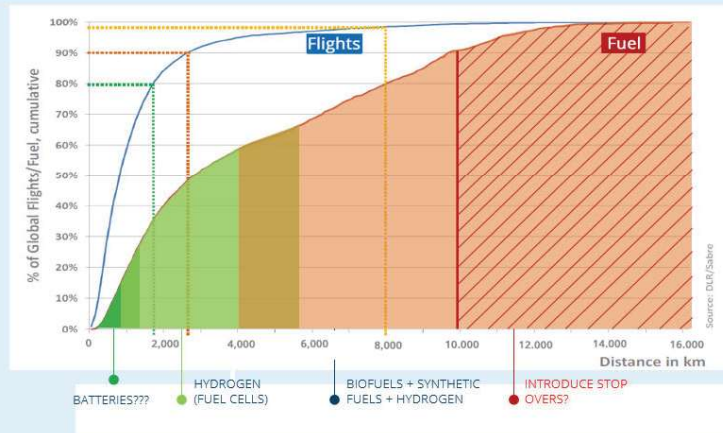
The following graph indicates range, fuel use and possible fuel type. It is likely that battery planes, or even hydrogen fuel cells, will have only a small short to medium term impact on New Zealand’s overall aviation emissions given that most emissions are created by international flights.

<sup>3</sup> Allwood, J., al. (2019). Absolute Zero. <https://doi.org/10.17863/CAM.46075>

<sup>4</sup> <https://heartaerospace.com/>



# Range performance



Source: Joris Melkert, TU Delft, Netherlands

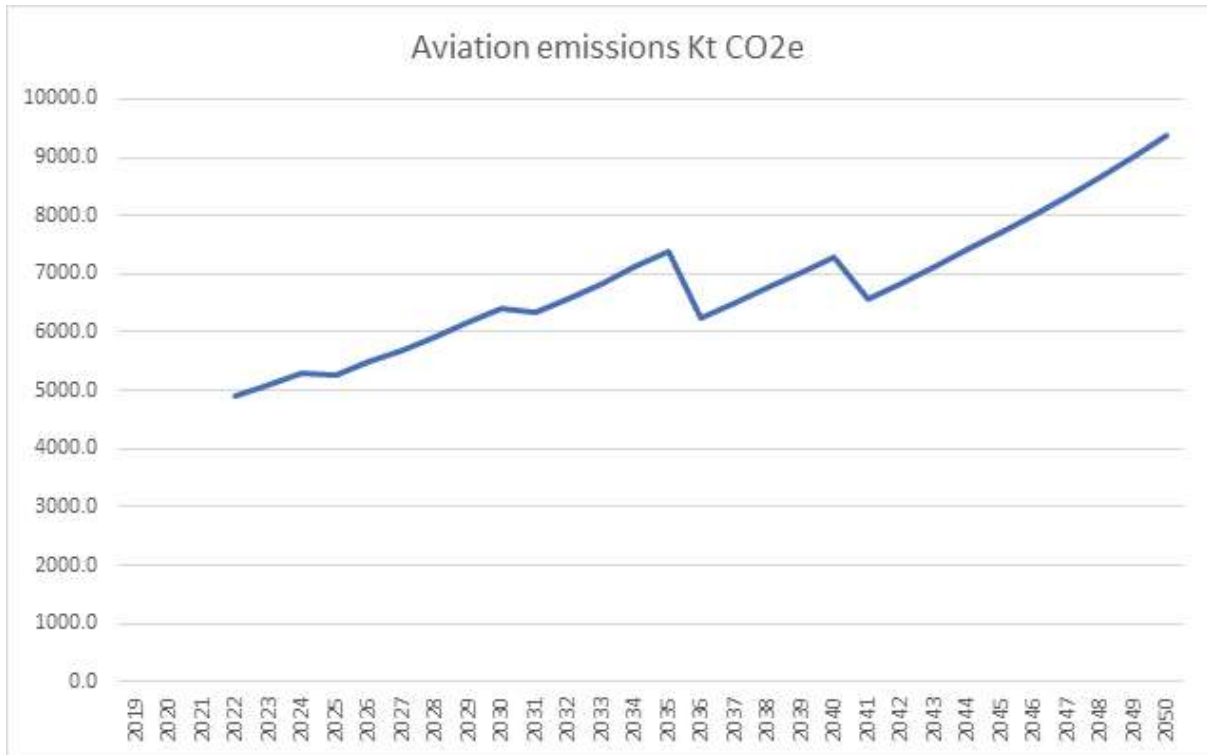
In addition, the Air New Zealand regional ATR fleet is relatively young. They are likely to want to use these existing planes for a significant amount of time. In a decarbonisation strategy, it is more likely SAFs would be used to power these existing planes.

It makes sense to focus on electric planes replacing fossil fuel planes when the route is short and over water. Examples include Wellington to Nelson or Auckland to Great Barrier Island. But the latter example also presents a challenge. While planes could be charged on the mainland, topping up a charge at Claris airport would be challenging based on the dependence on solar power backed up by diesel generators. But for many other short trips, drawing in the idea of 'shift' much lower energy forms of travel need to be considered. An example is Auckland to Tauranga where fast rail could replace most flights and much of driving.

In a report to government, Air New Zealand as part of a consortium puts forward the idea that SAFs – with a drop in mandate – can lead to decarbonisation. Their preferred route seems to be through the use of biofuels with the main feedstock being wood. There is little information provided on land use issues and the renewable energy required to convert the wood to fuel. But many studies already point to a considerable amount of land and energy needed to fully fuel planes with SAFs. SAFs also do not get rid of the problem of radiative forcing.

However, a bigger problem is expectations of continuing growth of aviation. *Hikina* states '[t]he popularity of domestic travel is likely to increase post-Covid 19'. The world aviation industry and most tourism operators also want to see growth in international aviation. This presents a real challenge for decarbonisation.

Using very basic modelling techniques, we have taken total aviation emissions in 2019 from the MoE website. We start at a base of 2022 saying it was back at 2019 emissions. Then we examine Auckland and Wellington airport projections. One is 5% growth in passenger numbers per annum, the other is 4.3%. We picked 4%. Next, we assume a productivity gain of 2% per annum, which is what the aviation industry is aiming at. Air NZ has achieved 1.8% in recent years. Finally, we reduce emissions by the suggested Air New Zealand drop-in fuel mandate: 2.5% to 2030, 7.5% to 2035, 25% to 2040 and 35% to 2050. It is all 'tailpipe', no emissions along the way producing such fuels. This basic modelling shows emissions continuing to climb.



Introduction of hydrogen powered planes would help reduce this upward trajectory. But even the most optimistic projections do not see them having much impact until at least the 2040s.

In relation to domestic travel *Hikina* also states:

**“Coaches and trains also offer an alternative to interregional air travel and car travel (pg 46)**

Rail and bus/coach services offer a lower-emission alternative to interregional air travel and travel by car. There are currently two inter-regional passenger rail services operating in Aotearoa (Palmerston North to Wellington, and a trial service from Hamilton to Auckland). Historically, for passengers who wish to travel longer distances, air travel and road transport (including buses and coaches) have largely replaced rail as the favoured, more economical, and faster means of travel in Aotearoa. Where it is feasible, increasing the number, efficiency and quality of inter-regional passenger rail and bus/coach options has the potential to reduce transport GHG emissions by providing an alternative to regional travel by air and private vehicle. Before decisions are made on if Aotearoa should increase interregional rail, we would need to consider its economic viability and competitiveness against changes in our vehicle and aviation fleet to be low-emissions. Inter-regional passenger rail travel can take longer, and choices made by individuals will be dependent on their purpose for travel and the time they have available to use this alternative mode. “

With EVs there are range limitations with the cheaper and older models. Therefore trains and buses would be a good alternative form of travel between places where flights are not offered. Examples include Taupo to Hamilton, Whanganui to New Plymouth, Palmerston North to Napier. There are also many people who do not drive for a variety of reasons. Low-emission regional PT helps these people who are disadvantaged by the present system. It also helps people reduce car ownership in large urban areas if they know regional PT is available.

The CCC report, the MBIE biofuel report, and to some degree *Hikina* are blind to the potential decarbonising benefits of passenger rail and long-distance coaches. When considering economic viability we need to factor in realistic carbon and environmental damage prices. In New Zealand, aviation and roading have many hidden and not-so-hidden subsidies. An example is the over \$1m provided to Air Chathams to provide just one daily flight out of Kāpiti airport.

The industry is likely to ask for further subsidies to help it decarbonise. The government needs to consider carefully the benefits of mode shift domestically rather than trying to financially support the airlines and airports.

To save repeating detailed information in this current submission, one of us (Paul) has contributed to two reports that canvass the benefits of passenger rail and long-distance buses. These are:

*Paul Callister and Heidi O'Callahan (2021) - How to decarbonise New Zealand's transport sector.*<sup>5</sup>

*Paul Callister (2021) Decarbonising the public sector: Why a night train can be the start of a national public transport network.*<sup>6</sup>

A further report, produced pre-Covid, considers options for continuing to fly:

*Wallace Rae and Paul Callister (2019) Can We Keep Flying? Decarbonising New Zealand's Domestic and International Aviation*<sup>7</sup>

There are no easy options and until low-emission aviation becomes a relatively, if it ever does, non-essential flying should not be promoted.

In summary:

1. Both international and domestic aviation need to be part of transport decarbonisation strategies. In the short to medium term, avoid and shift seems the only feasible decarbonisation options.
2. The time of very cheap flying has to be over. Whether it is through removing subsidies to aviation, an increasing price of carbon, or using more expensive SAFs, the cost of air travel needs to fully reflect the impact on the environment. A higher price is likely to curb some demand.
3. In view of the present distribution of flying, for reasons of equity and a just transition, the costs of reducing aviation emissions should be borne mostly by passengers.
4. In order to 'improve', modelling needs to be carried out to better understand the renewable energy and land use implications of various aviation decarbonisation options.

---

<sup>5</sup> [https://www.wgtn.ac.nz/\\_\\_data/assets/pdf\\_file/0009/1926639/WP-21-09-how-to-decarbonise-New-Zealands-transport-sector.pdf](https://www.wgtn.ac.nz/__data/assets/pdf_file/0009/1926639/WP-21-09-how-to-decarbonise-New-Zealands-transport-sector.pdf)

<sup>6</sup> [https://www.wgtn.ac.nz/\\_\\_data/assets/pdf\\_file/0006/1942332/WP-21-11-decarbonising-the-public-sector.pdf](https://www.wgtn.ac.nz/__data/assets/pdf_file/0006/1942332/WP-21-11-decarbonising-the-public-sector.pdf)

<sup>7</sup> [https://www.wgtn.ac.nz/\\_\\_data/assets/pdf\\_file/0007/1772908/WP-19-02-can-we-keep-flying.pdf](https://www.wgtn.ac.nz/__data/assets/pdf_file/0007/1772908/WP-19-02-can-we-keep-flying.pdf)

5. As part of a 'shift' strategy, regional rail needs more investigation as a very low emissions domestic travel option. It is recognised that to upgrade the passenger rail network would require significant investment but this needs to be compared with the massive investment needed to begin to decarbonise aviation.
  6. A regional coach network already exists but both the buses and infrastructure needs significant upgrading. While very low emission long distance coaches (battery or hydrogen) are still in development, they are much nearer to be adopted than low emission flights. The investment required would be relatively modest.
  7. Unlike low-emissions long-distance planes and buses, low-emission passenger trains exist now.
- 
- 

### **Part III: Questions on which further research is needed and could be conducted as part of *Hikina***

1. What is the complete picture of the electrification of rail and its potential in the transition?
2. What is the role of low-emission regional public transport (bus and rail) in the transport system (passenger numbers and makeup, ownership/pricing, its role in transport equity, regional development, car ownership)?
3. Do rail & maritime freight need a new study? What obstacles to increase mode share and reducing emissions will remain after the present 7-8 year upgrades are completed?
4. In addition to distance- and CO2 pricing, is there any additional benefit to size and weight pricing for LDVs, related to the higher parking, production emissions, and health costs of large SUVs and utes?
5. How can central government ensure that local government delivers its share of the Avoid/Shift framework?
6. What is the distribution of aviation CO2 emissions by income, and what would be the distributional effects of, e.g., taxing jet fuel?

Thank you for the opportunity to submit on *Hikina he Kohupara*.

*Paul Callister and Robert McLachlan*

**From:** [Ben Zmijewski](#)  
**To:** [Transport Emissions](#)  
**Subject:** RE: Hīkina te Kohupara - New Zealand Transportation Group submission  
**Date:** Friday, 25 June 2021 9:50:41 am  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[FINAL 2021 Pathways to Net Zero by 2050 - TG National submission.pdf](#)

---

Sorry

Please find our group's submission with our logo on front page attached.

Thanks

Ben

Sensitivity: General

---

**From:** Ben Zmijewski  
**Sent:** Friday, 25 June 2021 9:42 AM  
**To:** [transportemissions@transport.govt.nz](mailto:transportemissions@transport.govt.nz)  
**Cc:** Jeanette Ward <[jeanette.ward@abley.com](mailto:jeanette.ward@abley.com)>; Grace Ryan <[Grace.Ryan@ghd.com](mailto:Grace.Ryan@ghd.com)>; John Lieswyn <[john@viastrada.nz](mailto:john@viastrada.nz)>  
**Subject:** Hīkina te Kohupara - New Zealand Transportation Group submission

Good morning

Please find the **New Zealand Transportation Group's submission** on Hīkina te Kohupara attached.

This is an incredibly important time for humanity. I hope the Hīkina te Kohupara – Kia mauri ora ai te iwi Green Paper does justice for the future generations to come after us.

If you have any questions or clarification on any of the feedback raised in the document please feel free to get in touch with myself or those cc'ed into this email.

Thank you

**Ben Zmijewski**  
Transportation Engineer  
Beca  
Office: +64 3366 3521  
[www.beca.com](#)  
[igniteyourthinking beca.com](#)



# Transportation Group Submission

## ‘Hīkina te Kohupara – Kia mauri ora ai te iwi- Transport Emissions: Pathways to Net Zero by 2050’

**Submission due: Friday 25 June 2021**

### Contents

#### Table of Contents

Executive summary.....	2
We need action not commitments .....	2
This is a public health emergency .....	3
We need to focus on avoiding emissions.....	3
Systemic change is fundamental to a net zero transport system .....	3
General .....	4
Consultation question 1 - Principles .....	4
Consultation question 2 – Role of government .....	5
Consultation question 3 - Supporting transport innovation for emissions reductions .....	6
Changing the way we travel .....	6
Consultation question 4 - Integrated transport, land use and urban development.....	6
Consultation question 5 – Alternative modes of transport .....	7
Consultation question 6 – The role of pricing .....	9
Improving our passenger vehicles.....	9
Consultation question 7 – Our vehicle fleet.....	9
Consultation question 8 – Decarbonising public transport .....	11
Consultation question 9 – Domestic aviation emissions .....	11
Supporting a more efficient freight system.....	12
Consultation question 10 – Aotearoa’s freight supply chain .....	12
Consultation question 11 – Freight modes and fuels .....	12
A Just Transition .....	13
Consultation question 12 - A Just Transition .....	13
Pathways & Budgets.....	13
Consultation question 13 – Potential pathways .....	13
Consultation question 14 – Policies for the first emissions budget.....	14

## Executive summary

The Transportation Group welcomes the opportunity to provide input on the *Hikina te Kohupara – Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050*.

The Transportation Group is a technical interest group of Engineering New Zealand, with over 1,100 members. The Group was formerly known as the Institute of Professional Engineers of New Zealand (IPENZ) Transportation Group. More information about the Transportation Group is [available online](#).

This submission has been prepared by a special subcommittee established to prepare this submission. The group's wider membership has had the opportunity to provide input. We are confident that the views and recommendations made below are representative of the majority of our 1,100 members.

### We need action not commitments

The Transportation Group **supports some but not all proposals outlined in this paper**. We would like to see stronger language and more concrete commitments that highlight the urgency of our nation's response to reduce our emissions.

The latest Intergovernmental Panel on Climate Change (IPCC) report states that global net anthropogenic CO<sub>2</sub> emissions must decline by **45% on 2010 levels by 2030**, reaching net zero around 2050, **to prevent overshoot of 1.5 degrees Celsius**. Although this paper aims to achieve net zero by 2050 **systemic change must occur now as shown in Figure 1**.

**Environment and equity principles** must guide all transport decisions, from footpath design parameters through to strategic government investment priorities.

The challenge before us is unprecedented in human history.

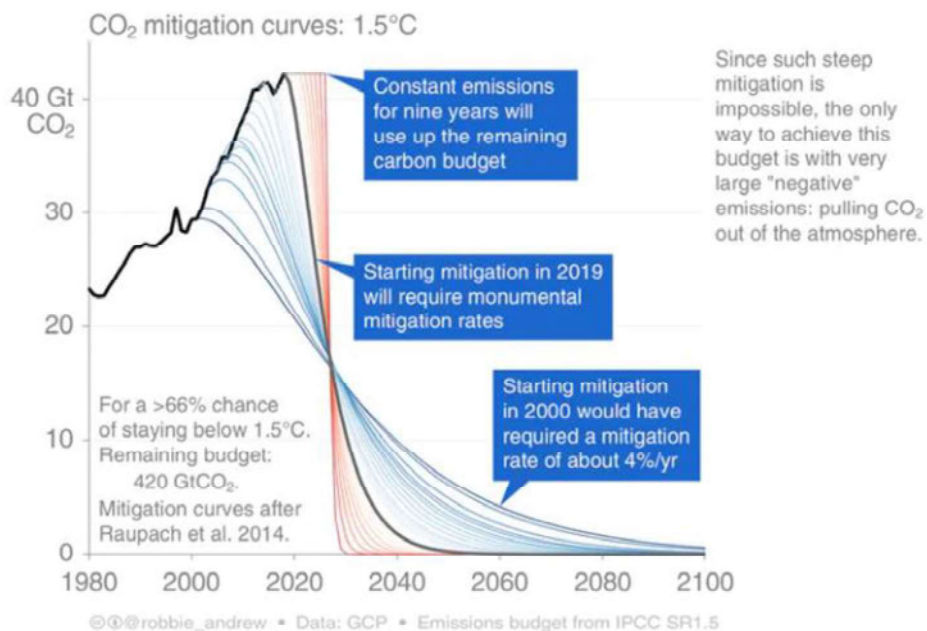


Figure 1: The sooner global emissions decline, the smoother the route to zero emissions by 2050 will be. The lines show potential global pathways. Robbie Andrew/CICERO Center for International Climate Research, CC BY



## This is a public health emergency

There are many parallels between the vision of a Smokefree Aotearoa 2025<sup>1</sup> and achieving a low-carbon transport system. The government implemented a raft of legislative, regulatory, and educational actions to **solve a public health emergency with a scientific mandate** not a *'social mandate'*.

Time and resources currently required for public consultation on transport projects attempt to foster a social mandate and win support of public opinion. This is a major obstacle when attempting to deliver transport system change quickly and efficiently especially if the public doesn't agree with the vision.

We must recognise and treat this problem with the policies, tactics, and leadership that are worthy of a public health and climate emergency.

## We need to focus on avoiding emissions

We would like the Ministry of Transport to emphasise action on the **'Avoid' and 'Shift' principles** within the *'Avoid-Shift-Improve'* framework.

The **Avoid principle** will help us avoid changes to the transport system that further increase the need for travel. This will be important for achieving net zero by 2050. However, given our current system is already operating at unsustainable levels the avoid principle will be less effective in reducing emissions by 2030.

Focussing on the **shift principle** for reducing **emissions by 2030** is imperative if we are to set Aotearoa up on a realistic pathway to net zero by 2050. Over the next five years Aotearoa will need to make substantive progress on shifting mode share of personal travel from car to walking, cycling, and public transport.

Focusing on these principles will give the transport industry the greatest chance to achieve a net zero carbon future and many of the associated co-benefits.

## Systemic change is fundamental to a net zero transport system

We advocate for **system thinking about who and what our transport system is for** – lower carbon modes such as walking, cycling, and public transport must be prioritised.

Strategies and policies that prioritise private motor vehicle use continue to, in general, be favoured by government, the private sector, and the wider public. This has led to inequitable land use developments and the destruction of comprehensive public transport systems in Aotearoa such as the Christchurch Tramway System<sup>2</sup>.

Entrenched thinking within government and the private sector may continue to prioritise historically successful, yet ultimately flawed, decisions that provide for private motor vehicle use. Investment desperately needed in low-carbon forms of transport may be compromised by the system we have now.

Gaining multi-party support for a low-carbon transport system will be imperative to achieving the vision of this document. A low-carbon transport system is also an equitable one and will achieve better outcomes for the most vulnerable in society.

---

<sup>1</sup> <https://www.health.govt.nz/our-work/preventative-health-wellness/tobacco-control/smokefree-aotearoa-2025#achieving2025>

<sup>2</sup> [https://en.wikipedia.org/wiki/Christchurch\\_tramway\\_system](https://en.wikipedia.org/wiki/Christchurch_tramway_system)



## General

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

We **generally support the principles** with the following considerations:

*Principle 3 We need to take a strategic approach to reducing transport emissions*

Funding priority must be given to walking and cycling projects, liveable streets, building capability and capacity in our public transport networks, and developing low-carbon freight systems. We need to make it easier and safer for people to choose healthier and more sustainable transport options than cars.

*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.*

We support the need for a just transition. This means reducing the inequities that are already present in the transport system. It should be noted that the longer we take to transition, more severe, and more drastic measures will need to be implemented. This is because the climate and social consequences will compound for the most deprived (e.g. those trapped in transport poverty, low quality housing, and worsening access to employment, education, resources, choice, and healthcare).

A just transition is also the pathway that addresses other long-standing issues. Many of the low-carbon transport solutions such as creating safer transport networks through mechanisms such as speed management, better public transport services, and continuous, well-functioning walking and cycling networks are well known to reduce inequity in a population. More sustainable transport modes also improve health outcomes for users, benefiting individuals and reducing the burden on the public health sector.

*Principle 6 Actions taken within the next five years will significantly shape this future pathway*

We support this principle with amendments. The immediacy of the situation can no longer be ignored. We have enough evidence to understand the cost of inaction would itself require extraordinarily difficult social adaptation. As Prime Minister Jacinda Ardern has stated, climate change is her generation's "nuclear-free moment".

All decisions from government, the private sector, and community organisations should immediately prioritise GPS strategic outcomes at every level of decision making - from engineers to, planners, asset owners, policy makers and elected members. This is the most important principle contained within the document and this time sensitivity brings urgency to all other principles.

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

**We disagree with the principle as written.** The technology that we have available at our disposal today is enough to largely decarbonise the transport system. Investment in proven technology, such as the rail network, is likely to be a better spend of taxpayer money than trying to have a *powerful role in accelerating the uptake and diffusion of new transport technologies and services*. We cannot risk waiting on technological innovation to decarbonise. Furthermore, this may create a sense of false security or justify dangerous inaction which ultimately means we fail to deliver on the outcomes Aotearoa must achieve.

## 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?

In any existential life-threatening emergency there must be clear, strong, coordinated leadership. Central government must step into this role with strong legislative, and regulatory positions that enable and support all sectors to align and enable change. Most importantly there must be a clear focus on the agreed pathway so that our actions achieve sustained, coordinated, and aligned effort over the next 30 years.

- Central government must set a clear mandate for the level of change that local government will be required to implement with appropriate regulatory and legislative controls
- Central government must support local governments and agencies that take proactive measures to decarbonise
- Central government does not need to wait for a clear social mandate to emerge – this is a public health emergency and must be treated as such (see Smokefree Aotearoa 2025)
- Referencing the '*social mandate*' undermines the power that central government has in decarbonising our transport system. We would like to see this term removed from the document entirely
- **The Ministry of Health will be a key partner.** There are many parallels between the Smokefree Aotearoa 2025 vision and the decarbonisation of our transport system. The policy frameworks, and tactics used to achieve a long-term goal of reducing smoking prevalence and tobacco availability to minimal levels can be applied to reducing emissions in our transport system.
- **Policy frameworks across government must be aligned** and woven together with the common goal of decarbonisation. The Resource Management Act reform, Local Government Act review and implementation of the National Policy Statement on Urban Development. These frameworks will provide the mechanisms that allow decarbonisation in the transport sector to achieve greater equity and health outcomes in our communities. There is a risk that wholesale changes could be distracting and disruptive. This alone could slow progress on decarbonising transport.
- We agree that projects must deliver co-benefits across strategic transport outcomes. However, some **projects will require immediate trade-offs between transport modes**. Some users will be adversely affected in the short-term especially in the reallocation of road space. The key aspect is to use language that conveys a sense of legacy, and greatest benefit for the greatest number of people, of current and future generations.
- **Central government must play a stronger governance role** in many decisions being made at the local government level especially where there is conflict between developments that increase emissions and short-term economic gain. Urban development outside designated transport orientated corridors must not be allowed - housing pressures need to be addressed through increasing density. This is consistent with the direction of the National Policy Statement on Urban Development that seeks well-functioning urban environments. The NPS requires consideration of walkable catchments and has removed parking minimums in urban centres, which will help contribute to better transport and liveability outcomes.
- Local government needs more funding to properly fulfil its responsibilities. Central government should explore ways to do this, including allocating some of the goods and services tax (GST) revenue to local government.
- The tax system must also be employed to incentivise people and businesses to a low carbon economy – especially in the first two carbon budgets as part of the ERM. Additional tax on high polluting modes will also help generate additional revenue. This revenue should then be used to accelerate investment in public transport, rail, walking and cycling, and renewable energy sources. Instruments like levies and fees could be more targeted and more just.

- We support the use of increased financial incentives and disincentives to encourage behaviour change for people and industries to transition to a net zero transport system. Priority should be given to schemes that have been successful overseas and provide a range of co-benefits.<sup>3</sup>
- The insurance industry could also be leveraged to help shift people to lower carbon forms of transport. This could include carbon reduction initiatives such as lower motor vehicle insurance premiums to those that have purchased an Electric Vehicle like the ‘pay as you drive’ scheme.<sup>4</sup>

### Consultation question 3 - What more should Government do to encourage and support transport innovation that supports emissions reductions?

We support innovation in the transport sector that **achieves co-benefits, reduces inequity, and a reduction in carbon emissions**. A prime example of this type of innovation is *Waka Kotahi’s Innovating Streets for People Programme*.

- We caution government against innovation that is expensive, has large amounts of uncertainty, and likely to increase inequity within our current transport system such as large investment in sustainable aviation fuels, autonomous metro rail systems and trackless trams.
- There is far too much uncertainty surrounding many of these technologies and they may result in unforeseen outcomes. Waiting for these solutions to become viable will drain resources, time, and money which could be better spent on acting now.
- There are also many innovations currently operating at a local level but need support to be rolled out at-scale. An example of this is the on demand public transport service MyWay in Timaru.<sup>5</sup>
- Government can send clear ‘innovation signals’ through targeted investment. Projects that allocate space for, prioritise, or are designed solely for lower emissions transport options can send clear signals to industry as to where transport innovation should be focused.
- We also note that innovation may come from outside the transport sector that could play a large role in decarbonising such as remote working technology that removes the need for employees to commute for work daily.

### Changing the way we travel

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?

The chapter provides a good starting point for integrating land use, transport, and urban development. However, it is unclear how effective the proposed Strategic Planning Act will be at deferring land use decisions that increase carbon emissions. Urban sprawl without strong, legal, and regulatory frameworks will continue to be driven by economic rules of supply and demand.

- All land use and transport planning going forward must be based on the precautionary principle – if there is a possibility that a new development may induce private motor vehicle use then it cannot be allowed to continue.

---

<sup>3</sup> <https://cyclingindustry.news/lithuania-puts-up-e8-million-cars-for-levs-trade-in-subsidy-citizens-snap-up/>

<sup>4</sup> <https://www.stuff.co.nz/business/money/125239790/door-opens-for-pay-as-you-drive-car-insurance>

<sup>5</sup> <https://www.ecan.govt.nz/get-involved/news-and-events/2021/myway-trial-extended-but-success-dependent-on-support/>

- This point is incredibly important to a range of outcomes in the current GPS (access, inclusiveness, and equitable social, health, and environmental outcomes.)

We have listed what we think are the most effective actions that will reduce emissions between integrated land use and transport. We have included minor amendments reflecting the need for stronger language.

1. *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.*

We believe that this should be rephrased to include that greenfield development is conditional upon having links to quality public transport services and reflect the opportunity cost of converting productive agricultural land into unproductive subdivisions.

2. Implement regulatory changes to empower Road Controlling Authorities to consult on and make street changes to support active travel, public transport, and place-making more easily, including the reduction of speed limits in residential areas.
3. Prioritise the need to reallocate street space and to create connected networks for delivering transport mode shifts in the next GPS on land transport, and/or for any additional funding for active modes and public transport
4. Require transport GHG emission impact assessments for proposed urban developments (including the transport GHG emissions of residents and business owners that would be in the development as well as all supporting infrastructure). A concerted effort must be made to reduce Vehicle Kilometres Travelled (VKT) as the key metric. Developments that would result in high emission generation must be discontinued (e.g. land on the outskirts of our cities that isn't integrated with existing transport corridors).<sup>6</sup>
5. Make changes to policy and funding settings (including in the GPS) to ensure Waka Kotahi and Road Controlling Authorities maximise opportunities to 'build back better' when doing street renewals (to improve streets for people walking, cycling, and using public transport). Current policies strongly signal that maintenance must only replace "like with like" and improvements are difficult to justify.
6. Set targets for councils to deliver public transport and active travel networks that require street changes (e.g. dedicated/priority bus lanes on some routes; connected cycling networks) by a specific date. There could be funding levers e.g. generous funding allocation rates or funding consequences if Road Controlling Authorities do not deliver these changes within set timeframes.
7. An overt effort to reduce VKT across all urban centres in Aotearoa. Traffic reduction has been overt in some European cities' Sustainable Urban Mobility Plans for years.

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

We encourage prioritisation of cycling, walking, and public transport services as the key travel options to reduce GHG emissions and reduce VKT. There is major untapped potential and 'unconscious' support for

---

<sup>6</sup> <https://az659834.vo.msecnd.net/eventsairaeuprod/production-harding-public/a8a4217364334efbac30b81acc348e44>

walking and cycling in our cities and towns across Aotearoa. This is evidenced by active mode transport projects in Sydney, Australia.<sup>7</sup>

### **Reallocation of road space must be used as a primary tool to encourage mode shift and reduce VKT**

- This method is quick, effective, and much cheaper than building completely new infrastructure such as cycleways or dedicated walking and cycling bridges. This infrastructure can be delivered at-scale in very quick time frames as was seen across the world during the Covid-19 pandemic.<sup>8</sup>
- Regulatory and legislative changes are necessary to support local government to install, enforce, and maintain reallocated road space for active modes and public transport
- We continue to subsidise the parking of private assets (vehicles) in public space. This is a waste of a precious and finite resource. It also causes a range of safety issues and network inefficiencies that are sub-optimal to achieving many of the strategic outcomes of the current GPS.
- Enact Zero Emission Areas in city centres to provide healthy, safe, and attractive areas for low-emission forms of transport<sup>9</sup>

**Greater network planning for walking, cycling, and public transport** is essential to support network connectivity

- Prioritising road networks for different modes, rather than providing for all modes on the same network, is essential. This planning technique is used extensively in Europe<sup>10</sup> and provides better transport outcomes for all modes
- Provide better facilities for walking and cycling such as secure, under-cover bike parking, and better end-of-trip facilities including provisions for E-bikes

### **Public transport must receive greater priority than the private motor vehicle**

- Reduce the farebox recovery rate for public transport operators so that they need to recover only 25% of operating costs, rather than the current 50%, to align better with Australian practice. This will significantly reduce public transport fares.
- Increased revenue collected from parking management and pricing must be directed into public transport and walking and cycling infrastructure.
- Public transport green card to boost youth patronage
- Increase private motor vehicle parking levies in CBDs and suburban shopping areas

### **Current economic investment decisions prioritise private motor vehicle use**

- Health disbenefits are not priced into projects that promote car travel in the Waka Kotahi NZTA economic analysis of projects, but health benefits are counted for projects that promote active modes. They are \$2.20 per km cycled and \$4.40 per km walked. This is huge compared to current fuel / distance charges of about 8c per km, and the congestion charging distance option proposal of 12c per km. **Car use is being heavily subsidised at a large cost to public health.**
- Financial incentives and financial penalties must be used to remove higher emitting vehicles from the fleet. Successful overseas programmes include higher registration fees for older cars, cash-for-clunkers trade in programmes, or trading in old cars for new electric bikes.

---

<sup>7</sup> <https://www.theguardian.com/australia-news/2021/jan/09/sydney-cycling-has-the-city-that-hates-bikes-finally-turned-the-corner>

<sup>8</sup> <https://www.forbes.com/sites/carltonreid/2020/04/22/paris-to-create-650-kilometers-of-pop-up-corona-cycleways-for-post-lockdown-travel/?sh=287e3dba54d4>

<sup>9</sup> <https://aucklandccmp.co.nz/access-for-everyone-a4e/zero-emissions-area-zea/>

<sup>10</sup> <https://www.youtube.com/watch?v=c1I75QqRR48>

## Regional and inter-regional travel must be predominantly land based

Regional development should be achieved through prioritising rail and bus services and need not involve large per-capita emitting aviation. Again, we cannot afford to wait for the appearance of clean/green aviation to arrive - this appears decades away from being commercially viable.

Inter-regional rail should be a key focus on competing with domestic aviation especially for travel within the North and South islands in the first instance. Strong government leadership in France has banned short haul flights under 2.5 hours, with complementary support for fast rail services.<sup>11</sup>

- We recommend that government sets a date for the end of short haul fossil-fuelled flights by 2025 (for non-essential services) and to start heavily investing in inter-regional rail services that are commuter-centric rather than just focused on tourism.

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?

Transport demand management is currently used sparingly in Aotearoa. We support much greater use of this tool to affect travel behaviour and reduce transport emissions. These mechanisms also provide an opportunity to maintain revenue as VKT is reduced over time.

Transport pricing must reflect the true cost and indirect costs through parking management, low emission zones, and congestion pricing. There is a compelling case to be made that the use of motor vehicles is subsidised, with road user charges and petrol tax only recovering the direct costs of maintaining operating the transport system. Correct pricing signals lead to more optimal economic outcomes.

However, pricing as a standalone tactic is likely to be met with extensive pushback, cynicism, and could ultimately be ineffective at achieving the outcomes it seeks to achieve. It is essential that revenue collected from these price increases is directed toward initiatives designed to increase mode shift to walking, cycling, and public transport.

A good example of this funding mechanism is the Perth parking levy in Western Australia. Public buy-in to such schemes generally increases when the link between the introduction of pricing mechanisms and investment of that revenue back into the walking, cycling, and public transport networks is clearly visible.<sup>12</sup>

## Improving our passenger vehicles

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?

Electrification of the car fleet on its own is not an economical or practical approach to decarbonisation. The key. The required number of electric vehicles to provide full decarbonisation would be nearly 4.7 million vehicles and is likely to cost over \$230 billion.<sup>13</sup>

---

<sup>11</sup> <https://www.bbc.com/news/world-europe-56716708>

<sup>12</sup> <https://www.transport.wa.gov.au/projects/perth-parking.asp>

<sup>13</sup> [https://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_vehicles\\_per\\_capita](https://en.wikipedia.org/wiki/List_of_countries_by_vehicles_per_capita)

Decarbonisation via fleet electrification, without serious systems change, also leaves future generations with a transport network like the one we have at present - car dependent, expensive to maintain, and accompanied by poor safety, health, access, and local environment outcomes.

Certainty around change is the most important factor to enable individuals, businesses, and markets to transition as successfully as possible.

In terms of priorities the top five are listed below (not including those that are already underway)

- **Reduce the size of the fleet** – this has **many co-benefits** and will reduce the burden on the scale of change and investment needed within the energy sector
- Set clear target dates for when **fossil fuel vehicles are to be removed from the fleet** (perhaps set by vehicle type) should be agreed and announced as part of the first ERM budget.
- Set clear target dates for when **fossil fuel vehicles can no longer be imported into Aotearoa** must be agreed as part of the first ERM budget.
- Enable schemes to remove high-emitting vehicles from the road using financial incentives and disincentives such as a vehicle scrappage scheme to encourage the removal of inefficient, unsafe vehicles and combine with an E-bike replacement scheme.

Although electrification of the fleet is important, **we recommend that travel reduction strategies be given greater priority. These achieve more co-benefits**, reduce inequity, and better support a Just Transition.

Table 1: Comparing Emissions Reductions Strategies<sup>14</sup>

Community Goals	Cleaner Vehicles	Vehicle Travel Reductions
<i>Total Vehicle Travel</i>	<i>Increased</i>	<i>Reduced</i>
Congestion reduction	Worse	<b>Better</b>
Roadway cost savings	Worse	<b>Better</b>
Parking cost savings	Worse	<b>Better</b>
Consumer savings and affordability	Mixed	<b>Better</b>
Traffic safety	Worse	<b>Better</b>
Mobility options for non-drivers	Worse	<b>Better</b>
Energy conservation	<b>Better</b>	<b>Better</b>
Pollution reduction	<b>Better</b>	<b>Better</b>
Physical fitness and health	Worse	<b>Better</b>
More compact development	Worse	<b>Better</b>

*By reducing vehicle operating costs, Cleaner Vehicle strategies increase total vehicle travel, sprawl, and associated costs. Vehicle travel reduction strategies help achieve many multiple goals.*

<sup>14</sup> Extracted from Victoria Transport Policy Institute (VTPI) in [https://www.wgtn.ac.nz/\\_\\_data/assets/pdf\\_file/0009/1926639/WP-21-09-how-to-decarbonise-New-Zealands-transport-sector.pdf](https://www.wgtn.ac.nz/__data/assets/pdf_file/0009/1926639/WP-21-09-how-to-decarbonise-New-Zealands-transport-sector.pdf)



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

Actions to decarbonise the public transport bus fleet should be accelerated through more financial support to uptake i.e. supporting infrastructure and upfront capital cost. Setting clear, legislative target dates for when all PT operators/councils must have a zero emissions fleet would help accelerate the transition. It is well known that electric vehicles in general also have lower operational and maintenance costs. This fact should be used to persuade councils to provide a matching, tapering budget for the PT fleets accordingly.

In terms of priorities the top five are listed below (not including those that are already underway)

1. Provide additional financial support to accelerate the decarbonisation of the bus fleet and its required infrastructure.
2. Extend the RUC exemption for electric buses (which is due to expire in 2025).
3. Consider the further electrification of existing parts of the passenger rail network.
4. Consider future investment needs to ensure existing rail networks are fit for purpose.

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

The 'Avoid-Shift-Improve' framework should be applied to the aviation sector as well. **We do not support continued capacity growth in the aviation industry** (e.g. new airports that do not currently exist) as they will undoubtedly contribute to increasing, rather than reducing, emissions. Any new airport developments should be postponed until a time is reached where our existing facilities are all operating at a net-zero emissions level.

**In a climate emergency the time of very cheap flying should be over.** This sector is also likely to face large hurdles as the wider international market moves away from fossil fuels. The cost of an aircraft ticket is forecast to increase substantially once the market begins to shift.

There are many uncertainties with the developing technologies to make aviation sustainable in the long term. This fact strengthens the need for a **precautionary approach** to any further expansion of the network.

In considering Sustainable Aviation Fuels it needs to be kept in mind that they still contribute to radiative forcing, so even the most sustainably produced fuel still has two thirds of the impact of a fossil fuel. Reducing the impact by one third is considerable, but it is still not a fully sustainable solution.

**We recommend that significant investment in land-based inter-regional travel be prioritised over investment in aviation.**

- The industries that benefit from aviation can pay the full costs of the necessary research and development. If they become uneconomic in the process, they are not important industries.
- Well-functioning, well used, and well-funded rail and bus networks can have major regional revitalisation effects (**co-benefits**) and are better distributed than economic benefits from aviation



## Supporting a more efficient freight system

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?

Although not explicitly mentioned in the report, **reducing congestion caused by single occupancy vehicles on the road network is critical to improving freight efficiency**. Initiatives to shift people to alternative modes in urban environments especially will, in turn, benefit the freight industry significantly. Large trucks are also involved in approximately 20% of all fatal and serious crashes.

We agree that a national freight strategy is required. Geographically NZ faces challenges to pivot from current road freight to coastal shipping or rail. Underinvestment in the past is hard to catch up on - requiring major funding injection.

A well-planned national strategy would help identify appropriate inland ports and possibilities to better connect road, rail, and coastal shipping. Addressing intermodality challenges between rail / coastal shipping is also important.

Incentivising courier companies to deliver last mile through e-cargo bikes or low speed electric vehicles will decrease the volume of heavy vehicles/light trucks within our urban centres. This approach again has many co-benefits including **better road safety outcomes and reduced road congestion**.

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?

Similarly, to vehicle reduction strategies it is important to address this challenge holistically. There is a need to reduce the total amount of freight and for any remaining freight to use low carbon modes of transport.

As climate change impacts threaten and destabilise global supply chains due to extreme weather events, it will become increasingly important for our economy to become self-reliant. Aotearoa's dependence on imports and remote geographic location means that this is more important to Aotearoa than for most economies.

As with Sustainable Aviation Fuels there are many uncertainties surrounding the commercial viability of biofuels within Aotearoa.

- Professor Susan Krumdieck (formerly of the University of Canterbury) has researched these issues for the US Department of Energy and could provide further guidance on the practicalities
- Hydrogen fuel cell technology has the potential to reduce emissions without the battery density issues of EVs (Lee, Elgowainy et al. 2018)
- Hybrid trucks using hydrogen fuel cells are a potential solution that can increase fuel economy by up to 60% but may have adverse emissions impacts unless carefully implemented (Gao, Smith et al. 2015)
- In addition, the lack of cost-effective infrastructure is the main barrier to usage (Lahnaoui, Wulf et al. 2019)
- In essence, the future of hydrogen fuel and biofuels from a thermodynamic perspective is limited

## A Just Transition

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?

New policies implemented must stand the test of time. Wide political support and industry acceptance of new policies would also help to ensure consistency through changes in government over the election cycle.

Pricing signals will be an essential part of the transition. They must be designed so that they are both efficient in promoting economic prosperity and health but are also equitable by reducing existing disparities in access between the transport rich and those in transport poverty.

A car-dependent system is well known to increase inequity in all communities. This is depicted by the proportion of household expenditure going to car transport is much higher for low income households. This is shown to be increasing over time which further disadvantages lower socio-economic groups.<sup>15</sup>

Electrifying the fleet will not entirely address this issue if electric vehicles have a lower operating cost. It isn't the fuel source of the private motor vehicle; it is a system based primarily upon automobility that increases inequity within society. Walking, cycling, and public transport are inherently more just forms of travel as they require less use of resources.

Transportation policy is climate policy, economic policy and equity policy all wrapped up in one.

## Pathways & Budgets

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?

The pathways provide good conversation starters **but are not enough to meet global scientific and equity needs.**

- CO<sub>2</sub> emissions must decline by **45% on 2010 levels by 2030**, reaching net zero around 2050, to avoid no or limited overshoot of 1.5 degrees Celsius<sup>16</sup>
- This is the pathway that should be adopted for Aotearoa not one that is locally and politically palatable

We support strong, bold decisions to ensure future generations are not severely impacted by catastrophic climate change. To be bold is to be safe. There is no disadvantage to any group in Aotearoa if we avoid catastrophic climate change too soon by achieving net zero before 2050. But based on our actions (or inaction) over the last few decades, we are much more likely to miss this target than to achieve it. The time for action is now.

---

<sup>15</sup> <https://www.transport.govt.nz/statistics-and-insights/household-travel/sheet/other>

<sup>16</sup> <https://www.ipcc.ch/sr15/chapter/spm/>

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

The *'avoid-shift-improve framework'* should be used to prioritise actions and mechanisms deployed within the first emissions budget. A greater focus on avoiding the need to mitigate impacts must be a core part of the strategy.

For Budget period 1: 2022-2025 we would like to see further commitments from the government on some of these 'Avoid' principles to send a strong, clear message to all people in Aotearoa that we are serious about pivoting to net zero.

Other initiatives that **accelerate mode shift within urban centres** and **break the cycle of provision for private motor vehicle use** must be prioritised during the first emissions budget:

- Reallocation of road space to prioritise walking cycling and public transport with interim use of cycle lanes and light segregation (more cost effective than facilities being provided under current policies)
- Reduce vehicle kilometres travelled in urban centres through Sustainable Urban Mobility Plans
- Programmes that incentivise people to trade in high emission vehicles for E-bikes or cash
- Aviation – no new terminals or airports until the existing industry reaches net zero
- Land use – no new greenfield development and introduce regulatory frameworks that ensure emission generation is calculated for any proposed development
- Travel demand management – Creation of low emission zones, transport pricing, and parking management
- Legislative and regulatory changes that treat decarbonisation as a public health emergency and remove the need to consult on minor details of transport projects

Submission  
on

‘Hīkina te Kohupara – Kia mauri ora ai te iwi -  
Transport Emissions:  
Pathways to Net Zero by 2050’



22 June 2021

Tēnā koe,

We would like to congratulate the Ministry of Transport on the development of Hīkina te Kohupara. Many of the ideas and messages strongly align with the kaupapa of OraTaiao – the New Zealand Climate and Health Council.

We would like to make six key points:

- The Ministry of Transport as steward of the transport system has well-defined outcome goals. Two of which are closely interrelated – Health and the Environment. The health and wellbeing co-benefits of climate change mitigation strategies that increase active and public transport are well documented. These co-benefits need to be elevated within Hīkina te Kohupara to become a central focus of the transport system transformation. The healthcare sector is highly carbon intensive (the largest public sector emitter of greenhouse gases) and is actively trying to reduce its footprint. One of the most effective tools to reduce healthcare emissions is by reducing healthcare demand. This can be effectively achieved by moving from health harming transport modalities to health improving transport such as active and public transport.
- The document does not do enough to honour te Tiriti. It calls for *consultation* with Māori/Iwi when development of key transport initiatives should involve true *partnership* relationships. Partnership with iwi/Māori should become one of the key principles in Hīkina te Kohupara.
- We support pathway 4. It is most likely to meet the targets for greenhouse gas reductions specified in the Climate Change Commission's advice to government, will help realise the health co-benefits of increased active and public transport, will make our cities more livable, will reduce the expensive requirement to massively expand renewable energy generation, will enhance equity of access to transport and is achievable with currently available technology. However, given the Government's declaration of a climate emergency, and the need for early and aggressive emissions reductions to limit warming to 1.5 degrees Celsius, we think the ambition needs to be ratcheted up significantly. All timeframes for the transition to active and electrified public transport need to be reviewed and brought forward.
- The lack of inclusion of embodied emissions in transport infrastructure and other lifecycle impacts in this work is a limitation. All emissions need to be considered in decision-making for policies and projects. In particular, the cost and embodied carbon in new renewable electricity generation infrastructure to meet the demands of more electric vehicles needs to be included when comparing with alternatives such as public and active transport.
- Many important transport system health-impacts (e.g. injury, air pollution related mortality, community severance, social exclusion) are inequitably distributed. Lack of full consideration of these inequities in a transition may lead to them worsening. We feel the document does not go nearly far enough in incorporating the needs of hitherto sidelined groups like children, elderly people, and disabled people. We recommend that it is clearly expressed that disabled people are properly represented at all levels of transport planning.

- Hīkina te Kohupara has many good ideas but lacks a clear vision for the transport system. A good example of such a vision (although for a subset of the transport network) can be found in the United Kingdom’s recently released document “Gear Change – A bold vision for cycling and walking”. The vision simply states: “England will be a great walking and cycling nation”. We recommend the Ministry of Transport develops a clear vision for the transformation of transportation in Aotearoa.

Other points related to the consultation questions:

### **Consultation question 1**

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

**Pg. 11. Principle 5:** This single principle should be split into three, positively-framed principles. The first should clearly state that transport system transformation should achieve co-benefits to health, wellbeing and livability of cities. The second should address a just transition and enhanced equity of access to transport. The third should articulate a *partnership* relationship with iwi/Māori in the development of transport initiatives.

### **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?**

**Pg. 22. Collaboration within the Transport System:** This section mentions that Government has a responsibility to have a meaningful partnership relationship with Māori. As per consultation question 1, we believe this should be one of the key principles that shapes advice to the Government.

**Pg. 23. Planning system and Housing and Urban Development:** Currently, new greenfield site developments are not required to include 3<sup>rd</sup> speed (separated cycle path) facilities. From the outset this infrastructure should be included alongside roads, footpaths, and a plan for public transport. It is easier to include these at the outset rather than retrofit them into existing urban and suburban spaces.

**Pg. 24. Investment:** The National Land Transport Fund will not be able to meet the funding requirements to decarbonize the transport system as outlined in this section. Subsidies under the ETS for emissions intensive trade exposed (EITE) industries should be scrapped and used to directly fund low-emission transport infrastructure.

**Pg. 25. Economic and educational tools to influence behavior:** Public health expertise has an important role here. We have advocated for this expertise to be included on the Climate Change Commission. Public health experts understand what drives behavior change (see the success of tobacco control). Education will only play a limited role; regulation and pricing will have more important roles to play. At the end of the day, people will change behavior if the alternative (active and public transport) is faster, cheaper, easier, and safer than the status quo (cars). This will require

building infrastructure for public and active transport, making it affordable, and making driving cars slower and more expensive to use (through congestion charges, quiet streets, speed limit changes, fuel taxes etc.)

### Consultation question 3

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

**Pg. 31. Government has a role in supporting transport innovation:** Two key areas of recent innovation that deserve more emphasis and focus as potential major disruptors are electric bikes and working from home. Electric bikes, in particular, have the ability to reduce emissions with the co-benefits of improved health and wellbeing. Electric bikes also have the potential to address equity and cost concerns about electric vehicles. They should both be a focus of Government support for ongoing innovation.

### 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?**

**Pg. 35. Key points:** In the key points section of “changing the way we travel” improving cycling infrastructure is mentioned. Currently much infrastructure is under-utilised due to poor design. The Ministry of Transport needs to develop best practice guidelines for cycle infrastructure with co-funding for development contingent on meeting these standards. No mention of fare prices is made under ‘supporting public transport’. Strong consideration should be given to no, or flat, low-rate fares for public transport. We recommend that it be clearly outlined that the needs of disabled people are incorporated into all levels of planning, design and integration, and that disabled people are represented appropriately at every stage in the process.

**Pg. 42. Reshaping streets to support public transport, active modes, and placemaking could potentially be done swiftly and cost-effectively:** We 100% support the notion that this is the most effective and affordable way to rapidly reduce emissions with significant additional co-benefits.

### Consultation question 5

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

**Pg. 46. Public transport provides co-benefits, including supporting the access of non-drivers:** As well as being described as attractive, safe and reliable it should also be both *affordable and accessible*. Low flat-rate fares, or no fares, will help increase uptake of public transport and also address transport equity.

Public transport becomes a more appealing and popular option when cars are less appealing. This can be achieved through reduced parking for cars, more traffic calming measures, increased price of parking, congestion charges, and road user charges.

The best method to protect cyclists is to create safe cycle infrastructure such as separated cycle lanes, to reduce speed limits, to reduce the number of cars on the road, and to increase traffic calming measures. Once this infrastructure is up and mode shift has occurred, a review of compulsory cycle helmet use should occur.

**Pg. 48. E-bikes are increasing the potential for cycling in Aotearoa:** E-bikes and e-scooters need to be kept separate from walkers and cars. Currently substandard infrastructure (such as shared paths) create safety issues. The Ministry of Transport should develop best practice guidelines for cycle infrastructure and co-funding should be contingent on meeting these best practice standards.

**Pg. 49. Taking a network approach is key to reducing emissions through walking and cycling:** Consideration should be given to changing the legal framework around financial liability for accidents involving cars and bikes/pedestrians (similar to the “strict liability” laws in the Netherlands).

**Pg. 54. Providing better travel options: possible key actions:** Agree with these key actions as outlined. In addition, as previously stated, The Ministry of Transport needs to develop best practice guidelines for cycle infrastructure with co-funding for development contingent on meeting these standards. An example of this is the document [“Gear Change – A bold vision for cycling and walking” by the Department for Transport UK.](#)

#### **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?**

We strongly support pricing mechanisms as a tool to mode shift transport to public and active transport. Careful consideration needs to be given to the equity impacts of any pricing mechanism, especially the impact on the poor, those living in rural New Zealand, and small businesses who rely on transport modes, for which there are currently no viable alternatives.

#### **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?**

In addition to the measures mentioned consideration should be given to the following:

- A ban on marketing of large fuel inefficient SUV/utes



- Remove the fringe benefit tax exemption from utes, increase the sales tax and vehicle registration charges on large fuel inefficient SUV/utes
- Ensuring charging infrastructure serves rural and low-income communities. Widely distributed charging infrastructure will allow the purchase of more affordable, smaller-capacity battery electric 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?**

**Pg. 75. Decarbonising the public transport fleet: possible key actions:** We endorse all the key actions outlined and strongly recommend setting a much earlier date for all public transport buses to be pure electric.

### **Consultation question 9**

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

Increase in demand for aviation is exceeding improvements in efficiency and sustainability. The key driver of reduced emissions in the short to medium term is not flying. Alternatives to flying should be the focus - e.g. videoconferencing for business meetings, conferences etc. Electric interregional rail and bus should be prioritised.

### **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?**

**Pg. 86. Improving the efficiency of our overall freight supply chain: possible key actions:** We agree with all these actions. The best outcome would be to move freight to rail and coastal shipping; this would reduce emissions but also improve the safety of roads and improve health through less particulate and other diesel emissions particularly in urban areas.

### **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?**

Any cost analysis of investing in rail and coastal shipping must take into account the co-benefits of moving freight to these modes, such as improved road safety, reduced particulate emissions and noise as a result of reduced road freight. Currently, the options for decarbonising road freight are limited and so the focus should be on shifting freight to coastal shipping and electrified rail.

## 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?**

Māori have suffered worse health outcomes as a result of lack of access to healthcare. Providing access to active and public transport not only addresses transport equity but also health equity. Co-design with iwi/Māori will be important to ensure they can access transport to meet their health needs.

**Pg. 102. There are opportunities to reduce transport disadvantages during the transition, particularly in urban areas:** We 100% support the points made in this section. Access to public transport should be enhanced for low-income communities on the outskirts of urban areas; this technology is available now, has low emissions, is affordable, reduces inequality and improves health. Public transport should be linked in with cycle and walking infrastructure. Fares should be low and flat-rate, or no fares at all.

**Pg. 102. People living in outer-urban and rural/remote areas are less likely to benefit during the initial phases of the transition:** Electric vehicle car share schemes should be investigated as an option for remote rural communities.

## 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. This is the only pathway that will have significant health co-benefits and address equity. The technology is available now and it also meets the 2035 emissions reduction targets set by the Climate Change Commission. This pathway will also make our urban areas much safer and more livable with significantly less VKT and cars. The need to increase expensive (and environmentally damaging) renewable energy infrastructure is less for this pathway, another co-benefit. However, given the Government's declaration of a climate emergency, and the need for early and aggressive emissions reductions to limit warming to 1.5 degrees Celsius, we think the ambition needs to be ratcheted up significantly. All timeframes for the transition to active and electrified public transport need to be reviewed and brought forward.

## Consultation question 14

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

We did not have time to conduct a thorough analysis of the policy tools outlined. We endorse the policies that support pathway 4 objectives.

Overall OraTaiao are encouraged that this document helps significantly to properly incorporate the principles of a healthy and just climate transition into the crucial area of transport. We feel it does not go far enough however. Strengthening the focus on wellbeing and justice and putting te Tiriti o Waitangi at the core of our transportation transformation will allow Aotearoa to develop a transportation system to be proud of. We at OraTaiao are always open to offer advice and to discuss this in more detail with the Ministry.

Nāku noa, nā



Dr. Dermot Coffey  
Co-convenor  
OraTaiao – New Zealand Climate and Health Council

## About OraTaiao

OraTaiao: The New Zealand Climate and Health Council is an organisation calling for urgent, fair, and Tiriti-based climate action in Aotearoa; we recognise the important co-benefits to health, well-being and fairness from strong and well-designed mitigative policies. We honour Māori aspirations, are committed to the principles of te Tiriti o Waitangi, and strive to reduce inequities between Māori and other New Zealanders. We are guided in our practice by the concepts of kaitiakitanga (guardianship), kotahitanga (unity), manaakitanga (caring), and whakatipuranga (future generations).

OraTaiao has grown over a decade to more than 700 health professionals concerned with:

- The negative impacts of climate change on health, well-being, and fairness;
- The gains to health, well-being, and fairness that are possible through strong, health-centred climate action;
- Highlighting the impacts of climate change on those who already experience disadvantage or ill-health (i.e., equity impacts);
- Reducing the health sector's contribution to climate change.

As well as individual members, we are backed by 19 of New Zealand's leading health professional organisations for our Health Professionals Joint Call to Action on Climate Change and Health (see [https://www.orataiao.org.nz/friends\\_and\\_supporters](https://www.orataiao.org.nz/friends_and_supporters)). This support includes the New Zealand Medical Association, the New Zealand Nurses Organisation and the Public Health Association, plus numerous specialist colleges. Together, these organisations represent tens of thousands of our country's health workforce.

As an organisational member of the Board of the Global Climate & Health Alliance, we work with a worldwide movement of health professionals and health organisations focused on the urgent

health challenges of climate change - and the health opportunities of climate action. OraTaiao signed the Doha Declaration on Climate, Health and Wellbeing of December 2012, which reflects this international perspective.



## Meat Industry Association of New Zealand (Incorporated)

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

25 June 2021

#### II: Introduction

1. The Meat Industry Association ('MIA') is the voluntary trade association representing processors, marketers, and exporters of New Zealand red meat, rendered products, and hides and skins. MIA members represent 99 percent of domestic red meat production and export, making the meat industry New Zealand's second largest goods exporter with exports of \$9.2 billion for the 2020 calendar year. It is New Zealand's largest manufacturing industry employing some 25,000 people in about 60 processing plants, mainly in the regions.
2. A list of Association members is attached as Appendix 1.
3. In developing the submission MIA members and affiliate members were consulted and asked for input. However, individual members may also make their own submissions specific to the view of their operations.
4. MIA comments on Chapter 8: Theme 3 – Supporting a more efficient freight system.

MIA generally supports the key points highlighted at the start of this chapter, particularly the second point:

- Given the market-led nature of the supply chain system, initiatives to reduce emissions would have to be carried out in close consultation with the freight industry and/or be private sector-led, with government providing a vision and direction for change and/or supporting infrastructure.

We therefore support introducing actions that incentivise or facilitate the private sector to reduce emissions rather than putting in place mandatory requirements or limits that might result in unintended consequences and not achieve a reduction in emissions.

For example, one of the possible key actions identified for the maritime sector (p.96) is to consider introducing a mandatory speed limit for ships transiting around Aotearoa.

MIA's view is that this could potentially lead to more cargo being transported by road and rail and increase transport emissions.

If a speed limit is put in place the international shipping lines may reduce the number of port calls that they make so that they can maintain their schedules.

The Ministry of Transport's FIGS data shows that the majority of coastal traffic (including domestic movements and export and import transshipments) is currently carried by international container ships.

Any reduction in port calls by the international lines would likely lead to more cargo being transported by road or rail as it is unlikely that the domestic shipping fleet would have the ability to carry all the cargo that is currently transported around the coast by international ships.

Even if the domestic shipping fleet was able to carry all the cargo that is currently carried by the international lines, exporters of time-sensitive perishable goods may still choose to move more cargo by rail or road and load it on to international ships at the final departure port from New Zealand, rather than having their cargo sitting on a ship for an extended period of time as the ship moves around the coast.

### **III: Summary**

#### **5. MIA feedback on Consultation Question 11**

MIA does not have any additional actions to include in the key actions for freight modes and fuels.

The report notes that "freight supply chains are a complex system of systems", and the above example shows that imposing a restriction on one of these 'systems' can potentially have an adverse impact on the whole freight supply chain.

So, MIA strongly recommend that the Ministry undertakes extensive consultation before implementing any specific actions to ensure that these actions do not result in unintended consequences that lead to an increase in emissions.

### **IV: MIA Contact**

Matt Conway, Meat Industry Association of New Zealand [matthew.conway@mia.co.nz](mailto:matthew.conway@mia.co.nz)  
04 495 8382

Meat Industry Association of New Zealand (Inc)  
25 June 2021



## Appendix 1: MIA members and affiliate members as at June 2021

Members	Affiliate members
Advance Marketing Ltd	Abattoirs Association of New Zealand
AFFCO New Zealand Ltd	AgResearch Ltd
Alliance Group Ltd	Alfa Laval New Zealand Ltd
Ample Group Ltd	AON New Zealand Ltd
ANZCO Foods Ltd	Auspac Ingredients Pty Ltd
Auckland Meat Processors Ltd	Centreport Ltd
Bakels Edible Oils (NZ) Ltd	CMA-CGM Group Agencies (NZ) Ltd
Ballande New Zealand Ltd	Cooltranz 2014 Ltd
Blue Sky Meats (NZ) Ltd	G-Tech New Zealand Ltd
BX Foods Ltd	Haarslev Industries Ltd
Columbia Exports Ltd	Hamburg-Sud New Zealand Ltd
Crusader Meats New Zealand Ltd	Hapag-Lloyd
Davmet (New Zealand) Ltd	Intralox Ltd
Farmlands Mathias International Ltd	Kemin Industries NZ Ltd
Fern Ridge Ltd	Liqueo (HB) Ltd
Firstlight Foods Ltd	Maersk NZ Ltd
GrainCorp Commodity Management NZ Ltd	MJI Universal Pte Ltd
Greenlea Premier Meats Ltd	Oceanic Navigation Ltd
Harrier Exports Ltd	Port of Napier Ltd
Integrated Foods Limited	Port Otago Ltd
Kintyre Meats Ltd	PrimeXConnect
Low Corporation Ltd	Pyramid Trucking Ltd
Ovation New Zealand Ltd	Rendertech Ltd
Peak Commodities Ltd	Rockwell Automation (NZ) Ltd
Prime Range Meats Ltd	SCL Products Ltd
Progressive Meats Ltd	Scott Technology Ltd
PVL Proteins Ltd	Sealed Air (New Zealand)
SBT Group Ltd	SHICO Limited
Silver Fern Farms Ltd	Suncorp New Zealand Ltd
Standard Commodities NZ Ltd	Visy Industries Australia Pty Ltd
Taylor Preston Ltd	Wiley New Zealand Limited
Te Kuiti Meat Processors Ltd	
UBP Ltd	
Value Proteins Ltd	
Wallace Group	
Wilbur Ellis (NZ) Ltd	
Wilmar Gavilon P ty Ltd	

25 June 2021



Dear Sir/Madam

**Bay of Plenty Regional Council's submission to MoT Transport Emissions: Pathways to Net Zero by 2050**

Thank you for the opportunity to comment on the above submission. The Bay of Plenty Regional Council does not wish to be heard on this submission.

For matters relating to this submission, please contact Stephen Lamb at [stephen.lamb@boprc.govt.nz](mailto:stephen.lamb@boprc.govt.nz) or 0800 884 881 ext. 9327.

**Our Organisation**

The Bay of Plenty Regional Council is responsible for the sustainable management of resources within the Bay of Plenty region. Our role is determined by Central Government through statutes such as the Local Government Act and the Resource Management Act, and is different from that of territorial authorities (district and city councils). Some of our key roles are:

- Regional planning for land, water quality and air quality;
- Setting environmental management policies for the region;
- Allocation of natural resources;
- Flood control;
- Natural hazard response;
- Soil conservation;
- Pest control / biosecurity;
- Public transport;
- Strategic transport planning;
- Regional economic development; and
- Strategic integration of land use and infrastructure.

**Summary**

Please find our detailed comments attached. We trust you find them constructive.

Yours sincerely



pp Stephen Lamb  
**Natural Resources Policy Manager**

**On behalf of:**

Namouta Poutasi  
**General Manager Strategy & Science**



## Comments from Bay Of Plenty Regional Council to MoT - Transport Emissions: Pathways to Net Zero by 2050

1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
11	<p>Consultation question 1: Do you support the principles in Hikina te Kohupara? Are there any other considerations that should be reflected in the principles?</p>		<p>We support the principles outlined in Hikina te Kohupara but consider that a stronger emphasis should be placed on shifting people's behaviours within Principle 7 'Innovation and technologies will play an important role in reducing emissions, but people are the key to our future'. A better understanding of what will encourage behavioural changes, particularly in relation to mode shift, is crucial to ensure we are able to achieve the necessary emissions reductions within the transport sector.</p>	
27	<p>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?</p>		<p>We consider that the government has a key role in providing standardised and consistent transport emissions data at a local level, aligned with local government boundaries. These data are an important part of understanding the scale of transport emissions at the local level, enabling targeted measures and policies and facilitating monitoring and reporting on emissions reductions.</p> <p>Funding should be linked to emissions budgets. Waka Kotahi is the key and major co-investor in regional and local initiatives to promote low emissions transport. The national and regional Mode-shift Plans (prepared by Waka Kotahi in 2019/2020) were a missed opportunity to set targets for mode-share. Mode-shift plans are more 'stick' than 'carrot' for local and regional government, and do not set an easier path to unlocking funding for low emissions travel.</p> <p>BoPRC suggests an increased focus, with targeted policies and investment, on reducing travel demand and encouraging more efficient travel as follows:</p>	

1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
			<ul style="list-style-type: none"> <li>• Flexible working times and other arrangements to allow for more off-peak travel and to encourage increased vehicle occupancies.</li> <li>• Legislative changes to enable the consideration of road pricing tools to manage travel demand, influence mode shift and encourage ride sharing.</li> <li>• Significant additional focus on increased land use and transport integration to reduce the need to travel. Higher density (and energy-efficient) housing development in mixed use centres and along key public transport corridors will reduce emissions from both transport and from construction of transport infrastructure. Reducing the need to travel without decreasing accessibility 'ticks more boxes' as it will contribute to objectives for public health and safety, social inclusion and liveability in addition to climate change.</li> <li>• Recognition that for New Zealand's Tier 1 and 2 urban environments, as defined in the NPS on Urban Development, the form and location of growth is critical to maintaining quality of life for residents and communities through the transition to a low-carbon economy. The integration of urban planning and transport needs strengthening. This needs urgent attention, due to the long-term impact of urban planning decisions that continue to be made.</li> </ul>	



1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
31	Consultation question 3: <i>What more should Government do to encourage and support transport innovation that supports emissions reductions?</i>		<i>We consider that a better understanding of what stimulates behaviour change in the transport sector needs to underpin any investment or support towards transport innovation to ensure that any new technologies actually result in significant emission reductions in practice.</i>	
44	Consultation question 4: <i>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?</i>		<i>We strongly support the emphasis on the need to integrate land-use, urban development and transport planning to reduce GHG emissions from the transport system.</i>	
56	Consultation question 5: <i>Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?</i>		<i>We support the investment in public transport and the use of reduced fares as an incentive to encourage use of public transport services. We have run successful fare-free trials for school and tertiary students within Tauranga over the last two years, which have received strong public support. We note that when reducing fares for targeted groups, it is important to ensure that reduced fare-box recovery does not adversely impact on the central government funding available to support public transport investment.  Many councils are already planning and implementing first and last kilometre travel solutions to increase the 'reach' of public transport networks. We would like to see government "partner with councils" to support and facilitate this. We would like to see more research/evidence that park-and-ride facilities decrease overall</i>	

1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
			<p><i>trips by private vehicle, i.e. they do not simply extend the commuter catchment and, perversely, support forms of low-density and/or dormitory development that does not support the use of public transport. This issue links to the need to consider how wider behaviour change is achieved.</i></p>	
64	<p>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?</p>		<p>BoPRC generally supports the proposals and strategy set out in the consultation document.</p> <p>In particular, we strongly support introducing a new form of road use pricing that would:</p> <ul style="list-style-type: none"> <li>discourage behaviours we need to discontinue (e.g., use of internal combustion engine or ICE vehicles);</li> <li>encourage behaviours we need to increase (e.g., use of public and active transport, uptake of EVs); and</li> <li>generate revenue to help in that transition, including by assisting lower income households (consistent with a just transition).</li> </ul> <p>We believe this could be the most powerful policy, addressing a number of different objectives at the same time.</p> <p>Road use pricing must be targeted to times and places where desirable transport alternatives are available, and therefore when and where people choose to use ICE vehicles. Based on this, we would favour a more general application of congestion or road use pricing (e.g. tolls) in urban areas, where desirable alternatives (e.g., public transport, cycle ways, etc.) are often available, and where the bulk of transport emissions are coming from. Pricing through additional fuel taxes, distance pricing or additional road</p>	



1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions  (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason  (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
			<p>user charges would unfairly penalise rural households, who often do not have access to desirable transport alternatives, and non-transport use of fuel. Ideally, targeted road use pricing should recognise the fuel efficiency of vehicles (e.g., EVs could be exempt or pay a cheaper rate, while inefficient ICE vehicles would pay a higher rate).</p> <p>Revenue generated from targeted congestion/road use pricing could then be re-invested in improving desirable transport alternatives (e.g., better/cheaper/more frequent public transport, more and safer cycle ways, etc.). Revenue could also be used to help lower income households to shift to EVs, e.g., through an interest-free loan facility or other type of incentive scheme. By re-investing revenue from road use pricing, the policy could probably be cost-neutral in the end, if prices are set correctly.</p> <p>It is counterproductive that, at present, the cost of local authority plans to improve/increase public transport generally falls (at least in part) on ratepayers. Ideally, other road users, particularly those driving inefficient ICE vehicles, should be covering these costs. Ratepayers will often be facing increased rates over the next few years as local authorities try to fill current infrastructure gaps. Therefore, there may be an increasing reluctance from ratepayers and elected representatives for significant increases in funding for public transport or transport infrastructure. A targeted form of road use pricing, as described above, would be a better way.</p> <p>It would also be important to consider the most efficient institutional framework within which such a scheme is implemented. Local government, at least in its current form, may not necessarily be best placed to lead implementation of road use pricing, although</p>	

1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions  (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason  (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
			<p>obviously it will need to be a key stakeholder. The limitations of local government (such as those described in <a href="#">InfrastructureNZ's Building Regions report</a>) may prevent it from efficiently implementing such a scheme, including by its limited ability to deal with local opposition, as described in the consultation document.</p> <p>While low emission zones would certainly have amenity benefits, and may be worth pursuing on that basis alone, we question their actual emission reduction benefit. Presumably, such zones would be located in CBDs or town/village centres. Yet, the bulk of emissions are likely to come from travel to such CBDs and town/village centres in the first place, as opposed to from driving within them.</p> <p>In particular, we also support:</p> <ul style="list-style-type: none"> <li>- phasing out ICE vehicles from 2030;</li> <li>- more stringent fuel efficiency standards;</li> <li>- a review of the public transport operating model;</li> <li>- exploring means of car sharing, shared fleets, etc.</li> </ul> <p>extending incentives for uptake of EVs, including a permanent exemption of RUC (the revenue of which could be replaced by targeted road use pricing) and removing incentives for inefficient ICE vehicles (e.g., tax benefits for ICE utes).</p>	

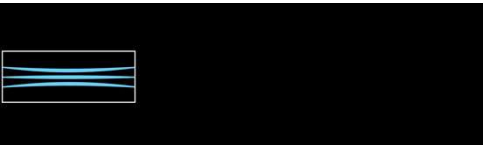


1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
72	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?		We support a shift to the use of sustainable alternative fuels, noting that provision of biomass should not be at the expense of more appropriate land-uses e.g. on highly productive soils which will be required for food production.  We would like to see policy packages that encourage uptake of EVs to include incentives for electric bikes and scooters, not just vehicles. Such incentives would require complementary legislative and funding policy changes for appropriate infrastructure and use, e.g., high occupancy vehicle and bus lanes usage, cycle-lanes, end-of-trip storage and facilities.	
76	Consultation question 8: Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?			
79	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 support the possible actions to reduce domestic aviation emissions.	
86	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?			

1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
97	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?			
104	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?		We strongly support the focus on a Just Transition. Affordability and equity will continue to be important challenges for policy implementation and these need to be given careful and continuous consideration.	
122	Consultation question 13: Given the four potential pathways identified in Hikina 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?		We strongly favour Pathway 4 due to its stronger emphasis on 'avoid' and 'shift' initiatives and less emphasis on technological solutions. This pathway is less reliant on private vehicles, which will ultimately deliver more sustained and effective emissions reductions. It will also mean lower investment is required in energy infrastructure, thus avoiding some of the challenges and emissions implications associated with extensive electrification. In addition, the indicative costs demonstrate this is also a lower cost option overall.	
134	Consultation question 14: Do you have any views on the policies that we propose should be considered for the first emissions budget?		We would like to see clear direction within the Emissions Reduction Plan to enable central and local government to make bold and effective decisions that incentivise mode shift to active modes and public transport, and strongly discourage low density car-dependent urban sprawl. As part of this direction, regional partners	



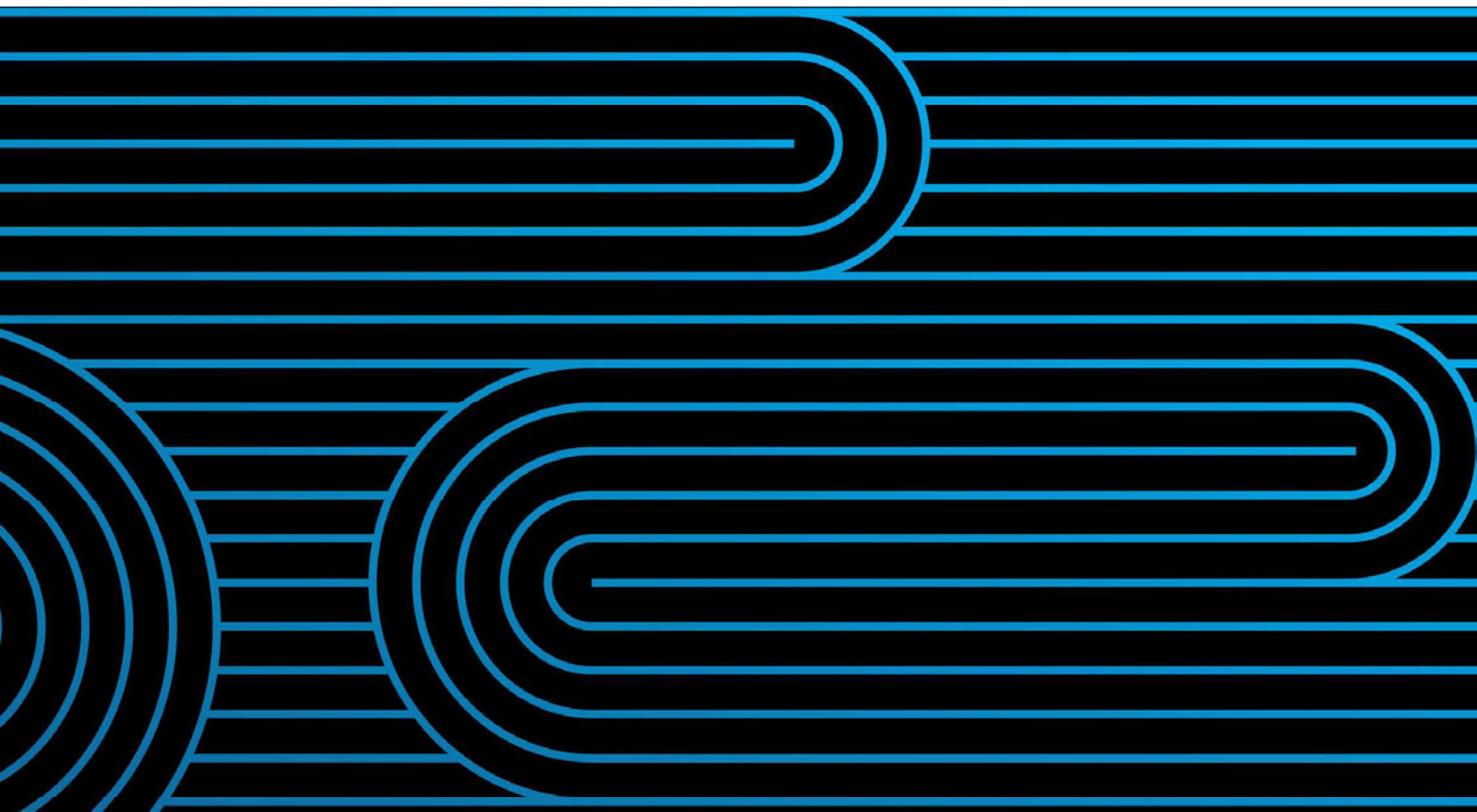
1 Specific provisions that submission relates to:		2 Nature of submission		3 Bay of Plenty Regional Council seeks the following decisions  (Try to be precise and what wording change you are seeking?)
Page No.	Section Heading and Reference	Clarify the issues you are concerned about  E.g., is it inconsistent with BoPRC policy?	Support/Oppose or Seek Amendments and Provide Reason  (The reason should include a reference to policy/objective/method or rule in a regional plan if possible)	
			<p><i>should have devolved budgets as they are best placed to plan, prioritised and deliver effective interventions to address climate change. Central and local government working in partnership will be key in this space, for example, through the joint committees proposed under the new Strategic Planning Act to prepare the Regional Spatial Strategies.</i></p> <p>Within the Bay of Plenty, Tauranga and the Western Bay of Plenty are areas of high growth where there needs to be clear economic and policy signals that the current transport and spatial planning patterns are unsustainable. A 30-year Western Bay of Plenty Transport System Plan (TSP) has been developed to support the Urban Form and Transport Initiative and its Connected Centres Programme. The TSP includes a target to reduce transport carbon dioxide emissions from 7.1kg per person per day (baseline) to 5.5kg by 2030, supported by mode share targets to shift away from private car use. In order to bring the TSP into line with the emissions budgets proposed by the CCC, this carbon target would need to be reduced further to 3.91kg per person per day by 2030. However, it is unclear whether there is sufficient investment in public transport and active modes to deliver the current mode share targets and whether the mode share targets themselves will actually deliver the existing carbon target. BOPRC therefore sees an urgent need for central government to require, and support with appropriate resourcing, a comprehensive and robust assessment of the contribution that both transport and non-transport interventions can make at the regional level to meet the proposed emissions reduction targets.</p>	



# Submission to the Ministry of Transport

On the Ministry's consultation paper Hīkina te Kohupara – Kia mauri ora ai te iwi -  
Transport Emissions: Pathways to Net Zero by 2050

25 June 2021



---

# Contents

<b>Introduction .....</b>	<b>3</b>
The electricity sector’s role in the future of transport .....	9
Navigating challenges and unlocking benefits through a cross sector approach.....	10
<b>Response to consultation questions.....</b>	<b>12</b>
Question 1: Principles in Hīkina te Kohupara .....	12
Question 2: Government’s role in reducing transport emissions.....	12
Question 3: Government encouragement and support for transport innovation .....	14
Question 4: Transport, land use and urban development integration.....	14
Question 5: Other travel options to encourage alternative modes of transport .....	15
Question 5: Pricing and demand management .....	15
Question 7: Accelerating fleet transition.....	15
Question 8: Public transport fleet.....	27
Question 9: Domestic aviation emissions .....	27
Question 10-11: Freight supply chain, modes and fuels.....	27
Question 12: A Just Transition .....	28
Question 13: Four potential pathways .....	29
Question 14: First emissions budget policies.....	31



# Introduction

Transpower welcomes the opportunity to respond to the Ministry of Transport's Hīkina te Kohupara – Kia mauri ora ai te iwi. We appreciate the work done to develop this consultation paper and look forward to seeing the outcome in the Government's Emissions Reductions Plan later this year.

Our key responses to the work of the Ministry are:

- We need to pursue a pathway that delivers the transport emissions reductions required to meet net zero carbon by 2050 and the Climate Change Commission's emissions budgets leading up to 2035. Currently, only one of the four pathways satisfy this condition, and in that pathway the potential of transport electrification is significantly underestimated
- Electrification of transport is the lever that is likely to realise the largest emissions reduction for New Zealand's transport system and needs to be pushed hard alongside behaviour change and mode shift
- Electrification is a 'least regrets' option that offers significant benefits to New Zealanders and the wider economy in addition to significant emissions reductions
- The electricity sector will enable widespread electrification of transport through cross-sector collaboration and coordination

**We need to pursue a pathway that is consistent with the Climate Change Commission's budgets and realises the significant potential of transport electrification**

In its final advice to the Government, the Climate Change Commission (the Commission) states that New Zealand's transport emissions need to almost halve by 2035, which is a significant challenge given that transport emissions have almost doubled since 1990. As a country, our transport emissions trajectory needs to be moving at twice the speed in the opposite direction if we are to meet the budgets set by the Commission.

As set out in Hīkina te Kohupara and the Commission's advice, rapidly reducing our transport emissions will require a multi-faceted approach. The Ministry has appropriately grouped several levers available to us under:

- Changing the way we travel
- Improving our passenger vehicles
- Supporting a more efficient freight system

Four pathways have been presented by the Ministry to illustrate how varying the focus on each lever might collectively decrease emissions from New Zealand's transport system. We have two key concerns with the pathway outcomes:

1. Pathway 4 is the only pathway that demonstrates an emissions trajectory that meets the emission reduction required by the Commission's emissions budgets. The remaining three pathways fall short of the emissions reductions required. We think it is only acceptable to pursue a pathway that can bring New Zealand's transport emissions down in line with the

expert advice provided by the Commission. Ignoring this expert advice would be requiring other sectors (e.g. agriculture) to make deeper emissions cuts than recommended by the Commission.

2. Within Pathway 4, we believe that the balance of reductions weighs too heavily on behaviour change and mode shift and significantly underestimates the impact that electrification of the light and heavy fleet can have on emissions.

In its final advice, the Commission's Demonstration Path still sees electric vehicles making up 36% of the light vehicle fleet by 2035 (a reduction from 41% in its draft advice). This is significantly higher than the 20-27% proposed in the Ministry's pathways. Our own Whakamana i Te Mauri Hiko modelling is consistent with the Commission's modelling.

Furthermore, the Commission's modelling shows that even in the scenarios with the most ambitious behaviour change, total light vehicle travel is still higher in 2035 compared to 2018-2019 levels (as shown in Figure 1). In 2035, there is a ~20% reduction in light vehicle travel relative to the current policy reference case due to behaviour change which is half of what is modelled in Pathway 4. We think this is more realistic because of the time it takes to deliver the infrastructure required to materially shift travel behaviours.

By underplaying the potential of electrification, we risk not putting in strong enough policy settings to encourage EV uptake and therefore risk our ability to achieve a net zero carbon transport system by 2050. Ambitious electrification of transport also mitigates the risk of vehicle kilometre travelled reductions not materialising as much as envisaged.

Figure 1: Commission's modelled vehicle-kilometres travelled by light vehicles

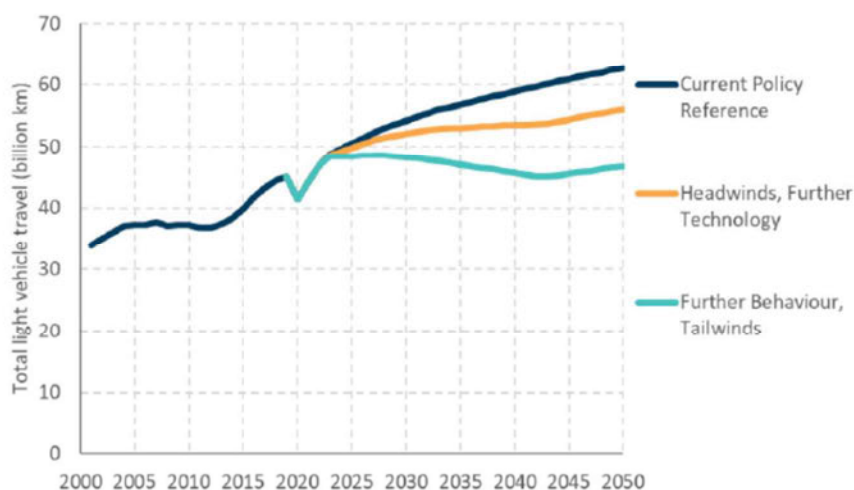


Figure 12.13: Vehicle-kilometres travelled by light vehicles

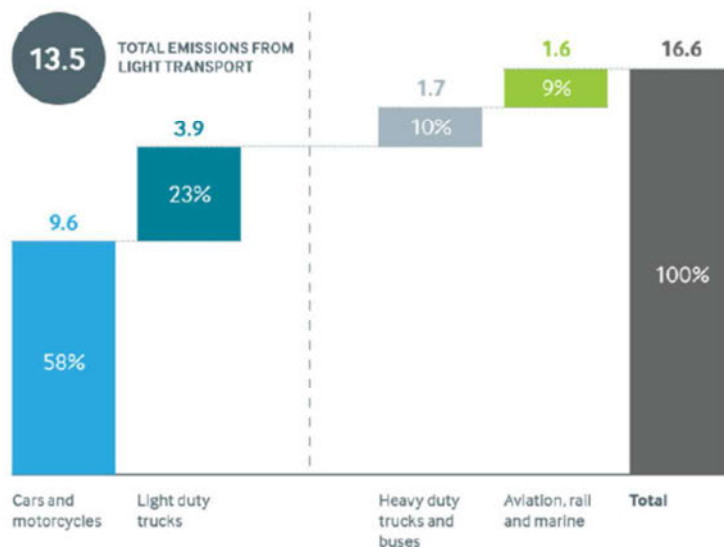
Source: Commission analysis



## Electrification is our largest emissions reduction opportunity and needs to be pushed hard with mode shift

Around 80% of emissions from transport are from light vehicles, vans and light duty trucks, as shown in Figure 2 below. These emissions can be addressed jointly through two levers: mode shift through widescale behaviour change and vehicle electrification. It is critical that these are seen as complementary measures that will jointly deliver the reductions we need, rather than a one or the other approach.

Figure 2: Breakdown of New Zealand's transport emissions 2018 (Million tonnes CO<sub>2</sub>-e)



Source: Ministry for the Environment

Mode shift is a significant opportunity for emissions reductions but changing our urban form and transport options to influence low emissions human behaviours is a long-term approach. By way of example, [Auckland's City Rail Link](#) is due to be completed in 2024, 14 years after its initial business case in 2010. Because of this long lead time, action needs to start now, but emissions reductions may not be evident for another decade or more. This dampens the potential impact of mode shift in the context of meeting our 2030 Paris Agreement climate change target.

The Commission's budgets outline that we do not have many years to wait to fundamentally overhaul our national urban form and transport system. Therefore, we also need to be thinking about how we realise emissions reductions today, and in the near-term, using our existing transport infrastructure, human behaviours and travel needs.

This is where accelerated EV uptake can and will play a significant role in a zero-carbon transport system. Cars, vans, light duty trucks and buses are well suited to electrification, costs are falling and the number of new models available continue to grow.

Even with material behaviour change, decarbonising our fleet will make significant progress towards reducing our emissions. Our analysis of the Commission's 'Demonstration Path' in Figure 3, finds that EVs can provide the most emissions reductions in light vehicles, equivalent to 3.8 Mt CO<sub>2</sub>-e by 2035, or 46% of the abated emissions. This is slightly more than behaviour change, like switching to public transport or travelling less, which can achieve 3.6 Mt CO<sub>2</sub>-e or 44% reduction by 2035.

Figure 3: Composition of light passenger transport emissions reductions based on the Commission’s ‘Demonstration Path’ scenario (Mt CO<sub>2</sub>-e)<sup>1</sup>

	2020	2035	% of abatement
<b>Gross emissions</b>	7.3	12	-
<b>Abatement from behaviour change</b>	-	-3.6	<b>44%</b>
<b>Abatement from improved ICE efficiency</b>	-	-0.8	<b>10%</b>
<b>Abatement from electrification</b>	-	-3.8	<b>46%</b>
<b>Net emissions</b>	7.3	3.8	-

Again, we iterate the importance of pushing hard on both mode shift and light passenger vehicle electrification. As there are some risks posed to these two key levers, going hard on both can act as a hedge where if vehicle kilometres travelled reductions from mode shift do not reach the levels modelled, additional emissions reductions can be gained from more EVs, or vice versa.

### Electrified transport will enable decarbonisation and wider benefits

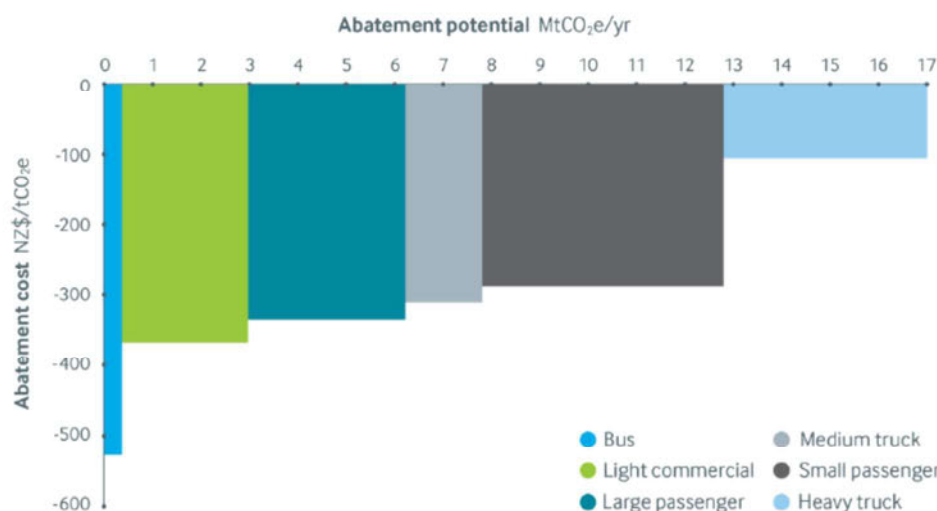
Accelerating EV adoption is a ‘least regrets’ move. Electric vehicles are already more economic to run than current internal combustion vehicles (ICE) and their falling up front capital cost will mean that they will soon, if not already, outcompete existing ICE vehicles on a total cost of ownership basis.

The following chart from the Ministry for the Environment shows how large the economic and environmental opportunity can be for New Zealand in 2030. Here, light transport (including small and large passenger, and light commercial vehicles) makes up the majority of New Zealand’s carbon reduction opportunity. Based on this cost curve, our [Electrification Roadmap](#) analysis indicates that if we accelerate the electrification of transport, by 2030, we can reduce annual emissions by 2.1MtCO<sub>2</sub>-e, and generate net benefits to the economy of \$0.6 billion. By 2035, annual emissions reductions increase to 6.1MtCO<sub>2</sub>-e and net benefits to \$1.6 billion.

<sup>1</sup> Note that total light passenger vehicle emissions will differ from the chart published in the Electrification Roadmap due the data in the CCC chart starting from 2020 (when emissions were lower due to COVID-19) rather than 2018, and slight differences in how the CCC and MfE categorise emissions for light vehicles. From a whole of transport sector perspective, emissions reported by CCC and MfE (which were used in the Electrification Roadmap) are consistent.



Figure 4: EV transition marginal abatement cost curve, 2030



Source: Ministry for the Environment

Furthermore, accelerated EV adoption is a prime opportunity to deliver emissions reductions while using the existing roading networks and infrastructure. This means that we do not need to wait to design and build new communities, new cycle networks or new public transport corridors to see emissions reductions – drivers swapping their internal combustion engine car with an electric vehicle today will reduce emissions today.

However electric vehicles currently make up less than 1% of New Zealand’s fleet and there are challenges to accelerating electric vehicle uptake that will require policy and regulation to overcome. Up front capital cost remains to be the largest barrier, even in instances where the total cost of ownership for an EV equivalent is lower. Other challenges include New Zealand’s access to the global market and New Zealanders’ access to vehicles and charging.

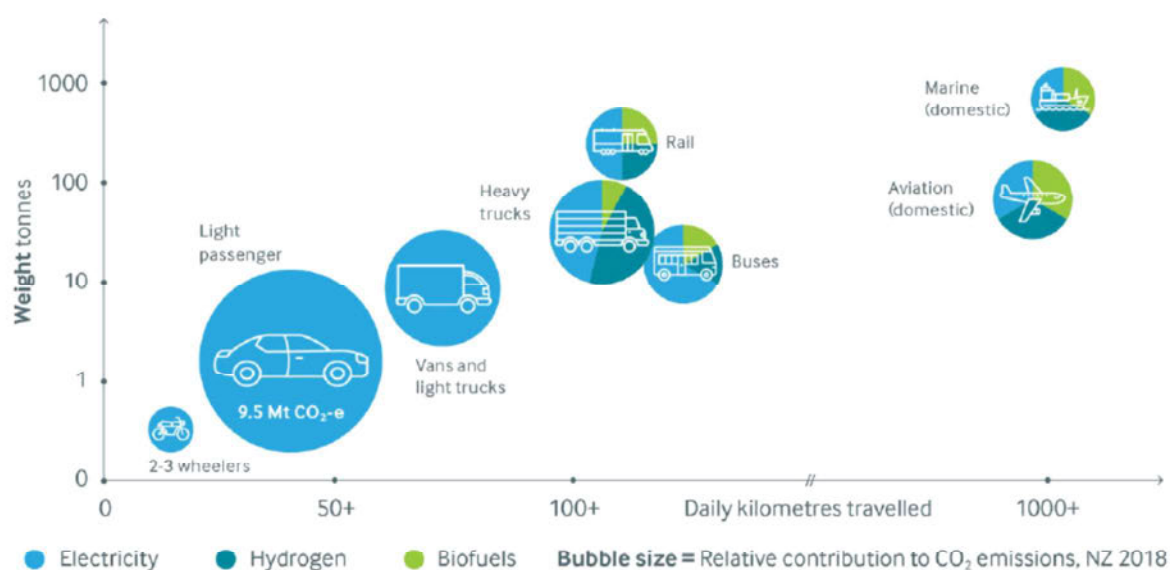
Part of the suite of solutions to overcome these challenges are already underway and more have been announced by the Government since the release of Hīkina te Kohupara. The Clean Car Standard, Clean Car Discount, proposed Sustainable Biofuels Mandate, expansion of the Low Emission Transport Fund, funding for state sector EVs and signal to set up an electric vehicle sector leadership group are all steps that need to be taken to take the country to net zero carbon transport.

Light commercial vehicles, such as vans and small trucks, as well as buses, trains and ferries are already proving to be able to be decarbonised through electrification. In public transport, near-term electrification has the potential to increase its attractiveness to the public, which then aids in accelerating mode shift for where the public transport network and options exist today.

Electrification, hydrogen and biofuels will be needed to decarbonise the remaining heavy transport fleet, as shown in Figure 5 below. However, technology in heavy, long-distance trucking, marine and aviation is still emerging so policy implemented today cannot “pick winners”. Instead, we need to ensure that policy encourages innovation, proof of deployment and creates an environment such that when a technology is ready for widespread adoption, it is enabled to do so at pace.



Figure 5: Decarbonisation opportunities by transport segment



### The electricity sector will enable electrified transport

Part of the opportunity to decarbonise transport lies with the electricity sector. We are entering a period where, for the first time at a large, widespread scale, the transport sector and the electricity sector will converge to jointly deliver transport outcomes for New Zealanders, as a growing number of EV owners plug their car into the electricity system to charge. For both sectors, there is a need to develop an understanding of how the other operates, where the two interface and where value can be maximised from a co-ordinated approach.

For the electricity sector, transport makes up one part of a net zero carbon future. In Whakamana i Te Mauri Hiko, we forecast that electricity demand across the economy could increase by 55-70% by 2050, with 50-70% of that coming from transport electrification. The electricity sector is preparing for this future where we will be able to support EV adoption, wider electrification of the economy and increasing renewable generation capacity, while also ensuring electricity is reliable, secure in supply and affordable to all electricity consumers.

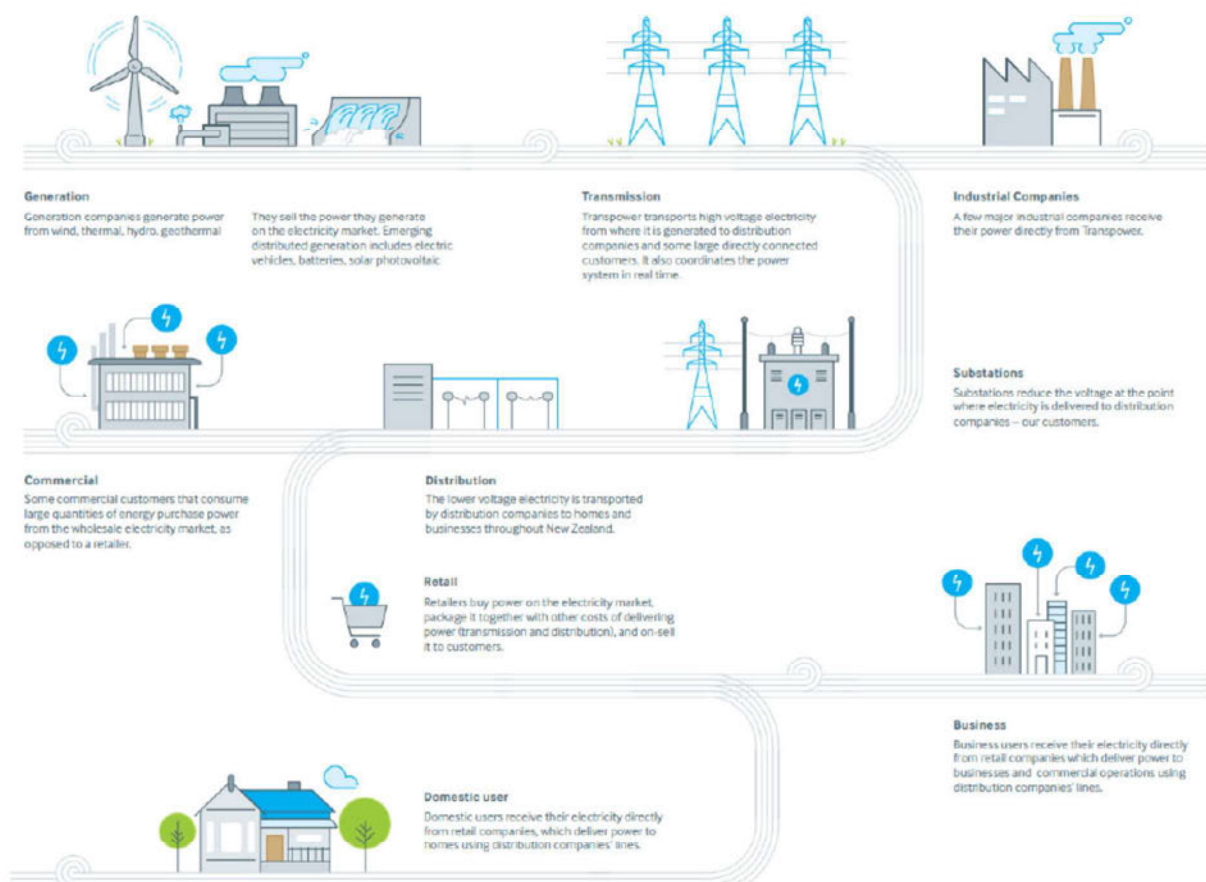
Transpower and others in the industry are committed to ensuring that a highly electrified future is possible and realised. The task is significant, but achievable with sufficient planning, coordination, collaboration and adaptability.

## The electricity sector's role in the future of transport

Electricity already plays a role in transport by charging the small number of electric bikes, cars, trucks, and buses on the roads, and powering the parts of the rail system that are electrified. To date, electrifying the small volume of vehicles has been manageable for the electricity system, however with the imminent mass electrification of the fleet, the electricity industry needs to adapt to enable a just transition.

In Figure 6 below, we lay out the high-level electricity system to help with understanding the role the electricity sector will play in electrified transport.

Figure 6: New Zealand electricity supply chain



Transpower New Zealand Limited (*Transpower*) is the State-Owned Enterprise that owns, operates, maintains, and upgrades New Zealand's high voltage electricity transmission network, the National Grid. Its roles are to reliably and efficiently transport electricity from generators to distributors and large users, and to operate a competitive electricity market and deliver a secure power system.

Transpower's role in the transition to a low emissions economy will involve making new connections to the National Grid from renewable energy generation and to major electricity users and distributors, and by maintaining and enhancing the resilience and security of the Grid overall.

It is unlikely that Transpower will directly interact with EV owners – that will be the role of electricity distribution businesses, retailers and aggregators. Transpower however will still be impacted by the



increase in EVs because the cumulative effect of EV charging on distribution networks will ultimately feed back to the Grid and the increased demand for electricity will require more generation to be connected. This will have implications on how we manage, maintain and operate our infrastructure.

We have released a number of papers in recent years which provide further information on the matters covered in this submission:

- [Te Mauri Hiko – Energy Futures](#) (2018);
- [Whakamana i Te Mauri Hiko – Empowering our Energy Future](#) (2020);
- Transpower’s submissions on MBIE’s [Accelerating Renewable Energy and Energy Efficiency](#) discussion document;
- [A Roadmap for Electrification: Decarbonising transport and process heat](#) (2021); and
- Transpower’s submission on the Climate Change Commission’s [Draft emissions budgets and advice to the Government](#) (2021).
- We will also be providing a response to the Infrastructure Commission’s He Tūāpapa ki te Ora - Infrastructure for a Better Future consultation paper

## Navigating challenges and unlocking benefits through a cross sector approach

The Climate Change Commission in their advice stated that the electrification of energy use, as needs to happen in the transport sector, will require a major expansion of the electricity system.

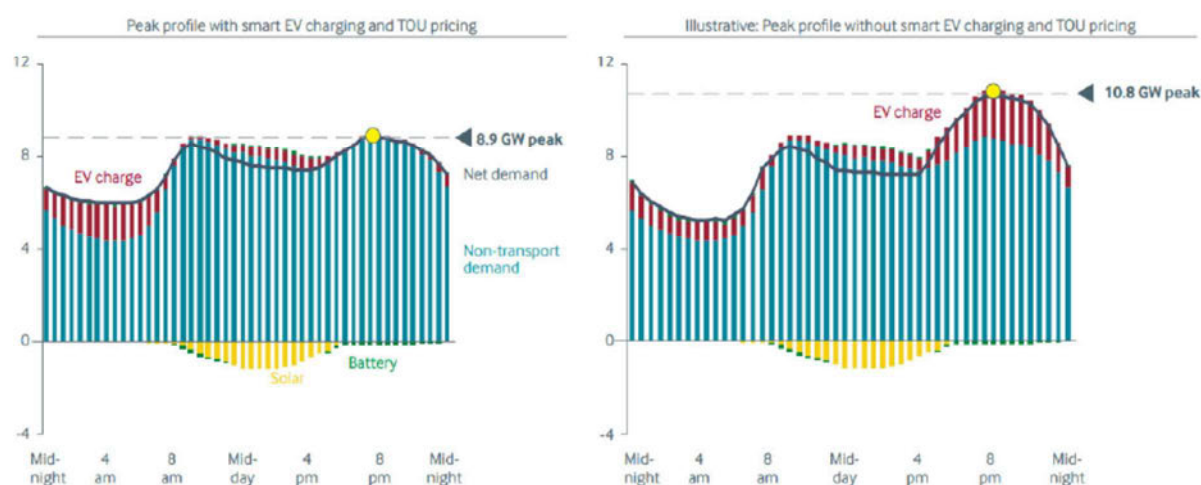
The transport sector is an area where this expansion in the electricity system can be more nuanced than building a lot more infrastructure at increasing cost. The uptake of EVs will drive demand for significant increases in the volume of electricity to be delivered around New Zealand. However, it also has the potential to help flatten the peak demand on the network, by empowering consumers to shift demand to off peak periods and access significant off-peak electricity price savings.

There is also a significant opportunity to reduce electricity costs for all electricity consumers across New Zealand. An important concept to understand is that both transmission and distribution networks are built to meet peak demand capacity. Network costs are driven by the capacity (MW) of the infrastructure, but consumers are often charged by their retailer on a usage (\$/MWh) basis. Therefore, if peak demand is maintained but energy consumption grows (i.e. more electricity is used to charge EVs during the off-peak period), then charges to all electricity consumers, not just EV users, can be reduced on a per unit basis.

This major opportunity to reduce electricity costs for all New Zealanders can be realised by encouraging widespread adoption of solutions such as time of use pricing and smart charging. Smart chargers enable consumers to physically plug in their car when they get home in the evening but control actual charging such that it occurs through the night outside of peak periods. Smart chargers’ ‘peak smoothing’ effect, which is shown in the first chart in Figure 7, increases the utilisation of the electricity network and has the potential to save consumers approximately \$1.5 billion for every gigawatt of avoided peak electricity demand growth.

Figure 7: Peak profile loads with and without smart EV charging<sup>2</sup>

(2035, GW)



In 2019, the [UK EV charging project 'Electric Nation'](#), which at the time was claimed to be the “largest smart charging project in the world”, concluded that with there is sufficient flexibility in charging requirements such that with the right incentives and tools (such as time of use pricing and smart charging) the impact of charging on peak demand can be managed. The next phase of the project is focussing on [‘vehicle to grid’ \(V2G\) capabilities](#), which has the potential to be more beneficial than smart charging due to the ability to put significant levels back into the network at peaks times, reducing the need for additional peaking generation. This not only benefits the electricity network but can also benefit the customers who generally will be paid to inject electricity into the network.

These are the types of benefits that we need to ensure New Zealanders can access through the accelerated uptake of EVs. Unlocking this potential requires coordinating the availability of EVs, smart charging infrastructure, peak/off peak pricing tariffs and innovative electricity retail offerings. We are already seeing this thinking come through as some electricity retailers are offering off-peak tariffs of around 15c/kWh (down from the standard residential price of 28-30c/kWh), equivalent to refuelling a petrol vehicle at approximately \$0.40/litre or 80% less than the cost of petrol today.

This is an important first step that needs to be built on through strong cross sector-collaboration between the energy and transport sectors.

<sup>2</sup> Section 5 of Whakamana i Te Mauri Hiko – “Demand side management of peaks” pp 61 - 70



# Response to consultation questions

## Question 1: Principles in Hīkina te Kohupara

We support the seven principles used to shape the advice in Hīkina te Kohupara.

Principle Four mentions the need for “multiple, co-ordinated actions to reduce and avoid emissions – both within the transport sector, and in other sectors (such as land use planning) that have a strong influence on transport emissions.” Here, we think it is appropriate to also emphasise the co-ordination required with the energy sector as the proposed transition of the transport sector towards electricity, biofuels and/or hydrogen is highly dependent on the ability of the energy sector to adapt and deliver. Because multiple sectors are required to deliver the transport transition, we need to highlight the importance of a systems-level approach to the transition across government and across sectors.

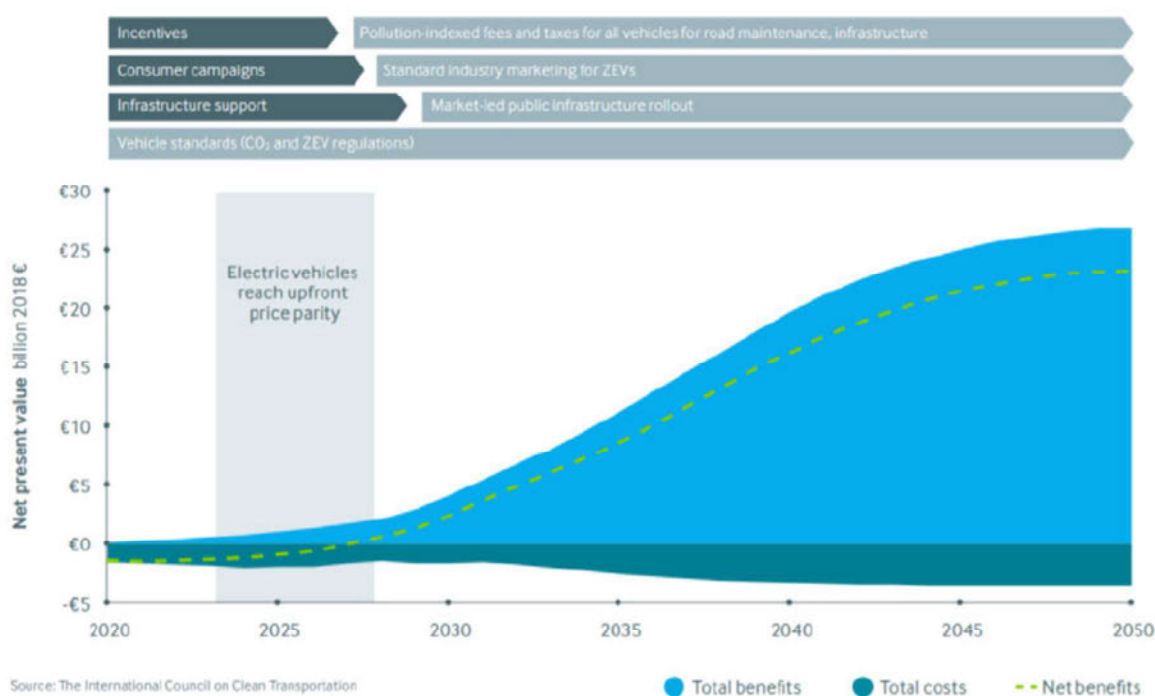
## Question 2: Government’s role in reducing transport emissions

We agree with the Ministry that Government’s role in the transport transition is clear in that it needs to set the national direction through policy and funding, drive cross-sector collaboration to deliver a just transition and lead by example.

Government’s main role is in setting the long-term national direction policy and regulation that will encourage the private sector and other market players to make decisions that delivers an efficient transport system that is in line with a net zero carbon future. Setting a long-term direction helps to create certainty and can de-risk decisions made by individual players. An example of this would be implementing the Clean Car Standard in conjunction with an ICE ban. These policies would signal to the market that New Zealand, over a period of time, would only import increasingly cleaner vehicles and eventually zero emissions vehicles only. This certainty can drive businesses and consumers towards only buying low emissions vehicles, knowing that their vehicle would still hold value in a future where high emitting vehicles were banned.

While some organisations may be concerned about the role of Government and the need for policy support, it is reasonable to set and deliver clearly signalled long-term transition programmes. In many instances, this support can be short-term and transitional in nature. For example, analysis of German transport policy has illustrated that in the 2020s the balance of investment in the electrification of transport can shift from public investment to private sector and market led initiatives, as shown in Figure 8.

Figure 8: Costs, benefits and policy over the transition to Zero Emissions Vehicles in Germany



Government is also in a unique position where it sits across the whole New Zealand economy and the sectors that make up the economy. This position allows the Government to drive a just transition, ensuring desirable outcomes in one sector do not result in significantly undesirable outcomes in another. For example, focusing on electrifying transport independently of the electricity sector could result in increased electricity prices for all consumers, regardless of whether they owned an EV or not, if time of use pricing and smart charging is not rolled out and peak electricity demand increased materially. An increase in electricity prices could exacerbate some of the energy hardship issues that New Zealanders face. Note that the increase in price described here relates to the additional cost of networks building to meet increased peak demand.

The government needs to ensure that cross-industry collaboration across sectors begins at the top and each of the agencies responsible are working together to deliver emissions reductions - e.g. Electric vehicles under Ministry of Transport, Energy under MBIE, RMA and water allocation and climate change under Ministry for the Environment. There are interdependencies between each that means no agency or department can work in isolation.

Leadership to coordinate across agencies, supported by policy, strategy and assigned accountability will provide both policy makers and industry with clarity and consistency. Over the next decade we expect there to be an increasing convergence of energy uses and sources and the integration of transport with urban infrastructure. Similarly, a cross-government approach will ensure a balance is struck between good economic, social, cultural and environmental outcomes and genuine partnership with iwi.

Government also needs to work closely with private sector to deliver transport outcomes. The private sector is very capable of innovating and adapting to deliver commercially sound solutions that fall within the bounds of policy and direction set by Government. It will be important for



Government to engage closely with the private sector so that businesses can make the most of opportunities for transitioning to a zero emissions economy.

Funding is a large part of government's role and is already being demonstrated through EECA's Low Emissions Transport Fund. Funding enables innovation (e.g. proof of deployment for heavy electric trucking), as well as supporting infrastructure or market growth in areas where it isn't economic yet (e.g. providing funding for light EVs, charging infrastructure build out). This type of government support is critical for accelerating New Zealand's low emissions transport transition.

And finally, part of government's role is to lead by example. Its recently announced 'electric vehicle first' policy and \$41.8 million for the leasing of low emissions vehicles across the public sector is a good step in this direction. This not only creates public trust in the technology, but it also brings more EVs into New Zealand which drive the need for supporting workforce and infrastructure, and also later feed into a second-hand market.

### Question 3: Government encouragement and support for transport innovation

In respect to transport innovation, we agree with the Ministry that Government's role should include:

- Making sure regulation supports, encourages or mandates the uptake of positive innovations (and does not hinder it)
- Encouraging collaboration and stronger connections between the government and non-government sectors
- Providing targeted funding and other support for developing, trialling and supporting new technology approached. EECA's Low Emissions Transport Fund is a good example of how funding has been applied to support EV, hydrogen and biofuel proof of concepts for hard to electrify areas. The recent decision to expand remit of fund to enable a wider range of applicants (such as marine) is another good step forward. The fund has also been instrumental in building out EV charging infrastructure and helping EV adoption.

We also suggest that Government should encourage cross sector innovation, particularly between the energy and transport sectors to enable the potential for additional consumer benefits. For example, in New Zealand, innovative business models and power systems have enabled solarZero customer Timo to power his home, business and two electric vehicles through a solar and battery installation. As a result, his previously \$500/month petrol bill has been reduced and are included in his total electricity costs which are around \$20/week in summer and \$80/week in winter ([Newsroom](#)).

### Question 4: Transport, land use and urban development integration

We think the described actions broadly captures most of what the Government needs to do to better integrate transport, land use and urban development to reduce transport emissions.

An element that could be strengthened is the co-ordination required with the energy sector. While the focus on better integrating transport and urban form is on reducing the need to travel or increasing active and public modes of transport, transport and urban form planning still need to incorporate the shift to electric vehicles and ensuring local distribution businesses are enabled to deliver the right infrastructure to support charging – this is for individual EV owners and for large EV bus fleets, electrified rail and other large electricity uses such as trucking for local businesses. A shift to more active and public transport is also likely to drive more denser housing which could also have implications on the local electricity network as that means more appliances (including EVs) are plugged into the same area.

## Question 5: Other travel options to encourage alternative modes of transport

We support the suite of alternative modes of transport presented and have no other travel options to add.

While we support the ambition in achieving significant mode shift or travel reduction, we emphasise the importance in ensuring New Zealand's efforts are in both mode shift and transport electrification or decarbonisation via other fuels, rather than putting more effort into one or the other.

## Question 5: Pricing and demand management

We agree that demand management and pricing will play a role in decarbonising transport. Later in Question 7 we discuss pricing as one of the levers to accelerate fleet transition and encourage the shift from ICE vehicles to low emissions vehicles.

## Question 7: Accelerating fleet transition

In our response to the Climate Change Commission and in our Electrification Roadmap, we supported the prioritisation of the light vehicle electrification as there are large gains to be made and the technology is already available. The policies reflected here support those presented by the Ministry.

In our view, the key observations in this area are:

- We need to prioritise the electrification of light vehicles in the immediate term. There are large gains to be made and the technology is available;
- This is a project to bring forward a social change – the mass adoption of electric vehicles – that is already set to happen in New Zealand, but will happen too late without policy intervention;
- Bringing this social change forward can be done. The policy and technology tools are available, and other countries have already begun to stimulate mass adoption; and

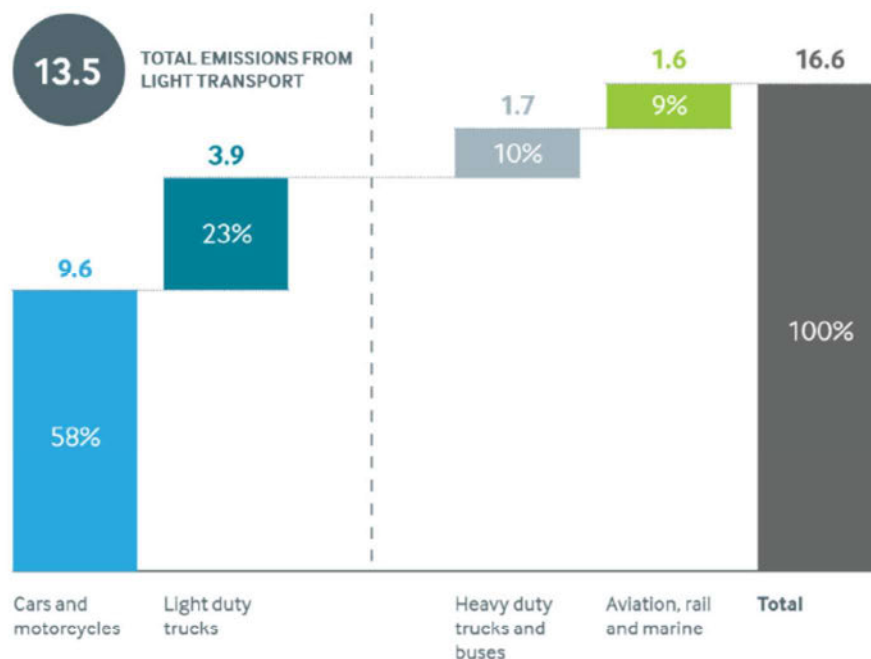


- Once the adoption of electric vehicles has critical mass, with the supporting systems and feedback loops that come with mass adoption, the policy measures can be wound back.
- Key policy interventions need to address the “access” issues: New Zealand’s access to the global supply market and New Zealander’s access to EVs and charging

## We need to prioritise the electrification of light vehicles in the immediate term

Light vehicles, including cars, vans and light duty trucks, make up close to 80% of our transport emissions. Electric alternatives for these types of vehicles are becoming more widespread and economic to run, making light vehicles the largest emissions reductions opportunity for New Zealand, especially leading up to 2025 and 2030.

Figure 9: Breakdown of New Zealand transport emissions, 2018



Source: Ministry for the Environment

Our remaining transport emissions from heavy duty trucks, buses, rail, aviation and marine will also need to be decarbonised in time, likely through alternative fuels such as biofuels and/or hydrogen. But because the technology is still emerging, focus within these areas should be on ensuring the settings are in place for rapid uptake once the technology is more readily available.

As a bonus, electrifying our fleet can bring economic benefits to New Zealand. Based on the Ministry for the Environment’s marginal abatement cost curves and our [Whakamana i Te Mauri Hiko](#) analysis, we estimate that by accelerating the uptake of light EVs and continuing to progress the decarbonisation of heavy transport, we can reduce annual emissions by 2.1 Mt CO<sub>2</sub>-e and generate net benefits to the economy of \$0.6 billion in 2030. By 2035, annual emissions reductions increase to 6.1 Mt CO<sub>2</sub>-e and net benefits to \$1.6 billion.

We acknowledge that reducing the need to travel and shifting to alternative modes of transport will also play a role in a decarbonised transport sector. However even with material behaviour change, decarbonising our fleet will make significant progress to reducing our emissions. Our analysis of the Commission’s ‘Demonstration Path’ scenario, as shown in Figure 10, finds that EVs can provide significant emissions reductions in light vehicles, equivalent to 3.8 Mt CO<sub>2</sub>-e by 2035, or 46% of the abated emissions. This is slightly more than behaviour change, like switching to public transport or travelling less, which can achieve 3.6 Mt CO<sub>2</sub>-e or 44% reduction by 2035.

**Figure 10: Composition of light passenger transport emissions reductions based on the Commission’s ‘Demonstration Path’ scenario**



Source: Transpower analysis of Commission data.

## This is a project to bring forward a social change

Left to current market and policy settings, purchase price economics will likely favour EVs towards the end of this decade and mass EV adoption will follow. But this will be too late to meet our 2030 Paris Agreement commitments.

Light passenger EVs are now readily available, with nearly 50 battery EV and plug in hybrid EV models already on our roads, with more expected as vehicle manufacturers are already shifting their businesses to meet the higher EV demand.

In the [Electrification Roadmap](#), we found that under a business-as-usual scenario, EV uptake is likely to begin to accelerate around 2023 as TCO parity is reached for most EVs, driving state sector and large business fleets to begin to electrify. Uptake will then further accelerate markedly around 2028

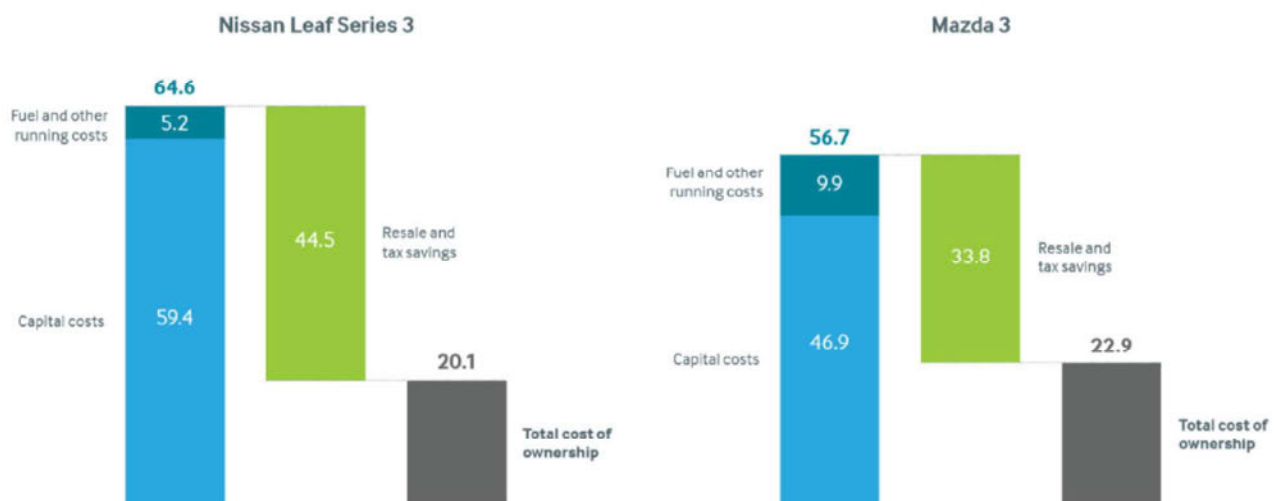


when sticker price parity is reached for most EVs, driving the small businesses and households who prefer new cars to electrify.

However, as most private car sales in New Zealand are second-hand, under a business-as-usual scenario, EV uptake will only become significant when the average second-hand car sticker price is affordable to the average household, which could take up to ten years. Cars bought new by fleets today will only become affordable for the average household between 2025 and 2030.

The key for light electric vehicles is that on a total cost of ownership (TCO) basis, the economics are such that EVs will become cheaper to own within the next five years, driven by cheaper running costs which offset the high EV sticker price – the cost to charge an EV is equivalent to an average of \$0.40 per litre, compared to an average of \$2.00 per litre of petrol. For fleet owners that have the ability to buy in bulk and have access to low cost capital, EVs can already have lower TCOs than similar petrol vehicles.

Figure 11: Example of total cost of ownership comparison (\$ 000s)



Source: Optifleet

Note: Corporate buyer, three-year ownership term, no fringe benefit taxes

But even when TCO parity is reached, consumers will not immediately move to buying EVs due to their high up-front capital costs, which today can range anywhere between 30-50% higher than their petrol/diesel equivalents. For some, the rationale will be not having access to the capital required to cover the sticker price. For others, 'hyperbolic discounting' will be an issue, which is the tendency for people to put disproportionate weighting on nearer term costs/benefits even if the lifetime benefits significantly outweigh the costs.

Until purchase price parity is reached, the higher up-front capital cost of EVs will be the greatest barrier for adoption, even when the total cost to own an EV will be significantly lower for most of the 2020s. This is the single most important policy question for accelerating EV adoption in the transport sector in the 2020s: where EVs offer total savings for consumers, businesses, the economy and our climate, but the up-front purchasing cost is a barrier, how can policy overcome this? Other barriers to EV adoption include 'range anxiety' which is quickly being overcome by improvements in battery technology and increasing availability of public chargers.

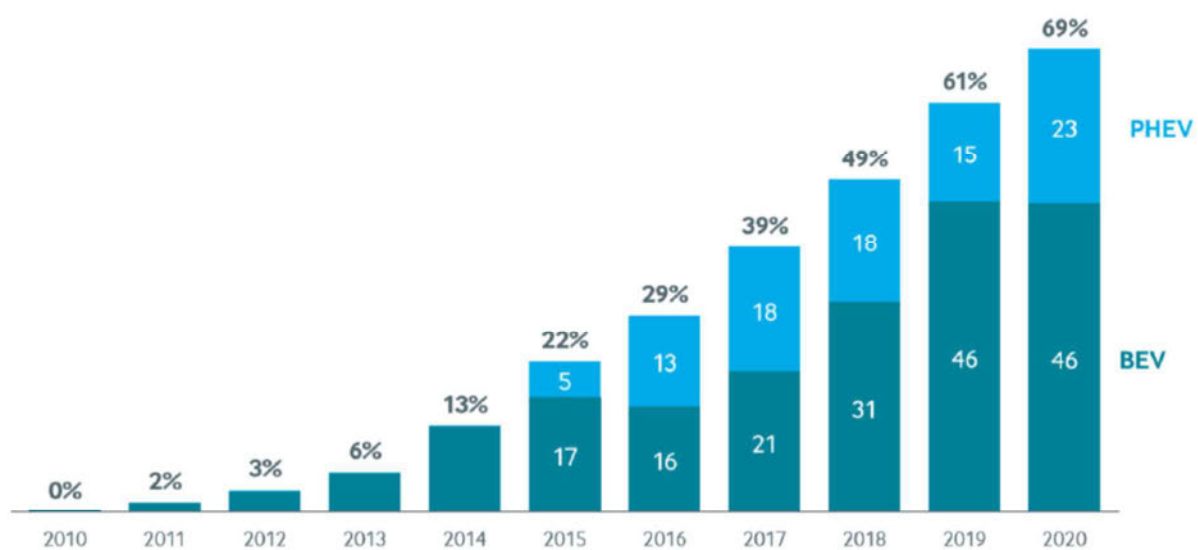
These barriers are likely to be overcome in time through technological developments and natural economics, however not at a pace we need if New Zealand is to meet its carbon targets.

## Bringing this social change forward can be done

The good thing is that jurisdictions overseas have proven that a rapid uptake of EVs is possible with the support of a framework of policy, regulation and incentives.

Norway leads the world in the scale and speed of EV uptake. In 2020, EVs made up almost 70% of new car sales, up from less than one per cent in 2010. This rapid growth has been enabled by a suite of interventions.

Figure 12: Percentage of new Norwegian cars that are EVs



Source: Inside EVs, World Economic Forum, European Alternative Fuels Observatory

For a country fuelled mostly by hydroelectricity (much like New Zealand) it has made environmental sense for Norway's transport fleet to rapidly electrify, and the Government has had incentives in place since the 1990s. Back then, the Norwegian Government introduced a temporary, and later permanent, exemption from Norway's vehicle purchase tax, making the price of EVs fall below that of petrol- and diesel-powered vehicles. Since then, EVs have been given the right to park for free in some municipal car parks, drive in bus lanes, take ferries without a ticket and drive toll-free. Norwegian EV users are not required to pay VAT on their cars, or road tax, and company EVs are taxed at a lower rate than petrol or diesel-powered vehicles.

It is worth noting that if New Zealand were to adopt similar EV policies to Norway, we could improve on these policies by having a stronger focus on distributional equity impacts. Because Norway has an exemption for EVs for its vehicle purchase tax this provides increasing cost relief as the car becomes more expensive. This is economically regressive and disproportionately impacts less well-off consumers. The feebate proposed by the Productivity Commission is a good example of a policy that would achieve the same outcomes as Norway's policy but with a much fairer outcome in terms of



distributional impacts. As the rebate for EVs would be flat, it would ensure that the lower the cost of the car, the greater the percentage of upfront cost relief for the EV.

Other countries are also ramping up their efforts with the formation of the [Zero Emissions Vehicles Transition Council](#) by the UK COP26 in November 2020, which aims to strengthen cooperation between governments and large automotive markets. The council is made up of Ministers and representatives from California, Canada, Denmark, European Commission, France, India, Italy, Japan, Mexico, Netherlands, Norway, Spain, South Korea and Sweden, the United Kingdom.

Similarly, in February 2021, the World Economic Forum launched the Zero Emissions Urban Fleets network, a forum for public and private actors to sync and synergize related global initiatives. The group's [focus](#) for 2021 is to place European city actors on a path to achieve 50% and 100% electrification by 2025 and 2030 respectively.

What is encouraging is that investment in EV enabling interventions, which comes at an initial cost to the economy, does not need to be sustained out to 2035. Norway has already begun winding back their support as natural economics has taken over, and we can expect other countries who are well on their way to electrifying their fleet to do the same.

Left to its own devices, rapidly improving economics will eventually deliver the switch from fossil fuels to clean energy in transport. Under current conditions, mass adoption of EVs in New Zealand is likely to occur around the end of this decade. That will be too late, however, for New Zealand to realise the economic benefits of decarbonisation and meet our Paris commitments.

Each year of delay in electrifying transport will increase New Zealand's cumulative emissions and transport costs by 1% and \$1 billion respectively to 2050.

What is needed now is a kick start to accelerate electrification of transport. With clear, transitional policy and market settings in place in 2021 that specifically target the high upfront capital cost of EVs and getting supply of EVs into New Zealand, we can bring forward mass adoption of EVs by five years to around 2025 and begin wholesale transformation of our transport sector around the end of the decade.

This is an opportunity we cannot afford to miss. But we need to act now. In our [Electrification Roadmap](#), we set out seven areas that need to be addressed together to enable the transport electrification we need to meet our emissions reductions targets. The first two areas are of particular importance:

- Improve immediate access and availability of EVs;
- Reduce up-front capital cost barriers and improve access to capital;
- Reduce operating cost barriers;
- Create behavioural incentives;
- Enable access to EV charging;
- Ensure uptake is supported by electricity infrastructure; and
- Support alternative fuels for heavy vehicle decarbonisation.

These recommendations align with those made by Commission and we will speak to these in more detail in the following sections. Specific policy measures are summarised in the table below:



**Figure 13: Options for transport decarbonisation**

Focus area	Options to accelerate transport electrification
 <p><b>Improve immediate access and availability of EVs</b></p>	<ul style="list-style-type: none"> <li>• Implement the Government’s proposed Clean Car Standard with long-term signals and regular reviews for progressively tightening standards</li> <li>• Automotive industry and Government work together with vehicle manufacturers and suppliers to increase EV supply into New Zealand Government and local government fleets as soon as possible</li> <li>• Strengthen economic incentives for commercial fleets to electrify</li> <li>• Set an import ban deadline on petrol and diesel-powered light vehicles to enable vehicle manufacturers, importers and dealers time to transition</li> </ul>
 <p><b>Reduce up-front capital cost barriers, improve access to capital</b></p>	<p>Implement solutions to overcome upfront capital cost barriers, for example:</p> <ul style="list-style-type: none"> <li>• The Ministry of Transport’s Clean Car Discount (feebate scheme)</li> <li>• Low cost finance to spread out upfront capital cost of EVs. For example, through scaling up New Zealand Green Investment Finance funding</li> <li>• Business model innovation for alternative ownership models that address upfront capital costs. For example, fleet-as-a-service for corporates, car subscription services, car share pools, and transport-as-a-service for consumers</li> <li>• Developing corporate purchasing pools or car buyer clubs to drive purchasing scale to access discounts and to cut out intermediaries</li> <li>• Banks and traditional lenders to incentivise EV uptake through sustainability-linked lending, particularly to assist commercial fleets to electrify</li> <li>• EECA grants for heavy vehicle (hydrogen, biofuel and electric) proof of deployment</li> </ul>
 <p><b>Reduce operating cost barriers</b></p>	<p>Implement solutions to reduce operating costs, for example:</p> <ul style="list-style-type: none"> <li>• Extension of Road User Charge exemption</li> <li>• Fringe Benefit Tax exemption or reduction for corporate purchasers of EVs</li> <li>• Electricity market regulation to promote increased offering of peak/off-peak electricity pricing and targeted EV electricity offerings</li> </ul>
 <p><b>Create behavioural incentives</b></p>	<p>Implement behavioural incentives:</p> <ul style="list-style-type: none"> <li>• Use of transit lanes</li> <li>• Free or discounted parking</li> <li>• Preferential car parks in public and private carpark buildings</li> <li>• Free or discounted access to ferries</li> </ul>
 <p><b>Enable access to electric vehicle charging</b></p>	<p>Improve the availability and speed of public charging infrastructure:</p> <ul style="list-style-type: none"> <li>• Implement and incentivise widespread fast charging network expansion with government co-investment where required</li> <li>• Support rollout of on-street charging infrastructure for locations without off-street parking</li> </ul>
 <p><b>Ensure uptake is supported by electricity infrastructure</b></p>	<p>Ensure the electricity sector can enable electrified transport:</p> <ul style="list-style-type: none"> <li>• Implement standards for EV chargers to ensure that they are ‘smart’ and can provide services back to the electricity grid</li> <li>• Increase uptake by electricity networks of demand response in order to use EV batteries to effectively defer network investment</li> <li>• Drive collaboration between network owners and charging infrastructure owners</li> <li>• Upgrades to distribution and transmission networks to increase capacity when required</li> <li>• RMA reform to ensure that new renewable power plants and their transmission lines can built in step with increasing electricity demand</li> </ul>
 <p><b>Support alternative fuels for heavy vehicle decarbonisation</b></p>	<p>Ensure the heavy vehicle sector can decarbonise through:</p> <ul style="list-style-type: none"> <li>• Ensuring the development of fast charging heavy EV infrastructure</li> <li>• Clarify settings around Road User Charges for heavy vehicles</li> <li>• Support the development of green hydrogen supply chains, including refuelling infrastructure</li> </ul>

## Key policy interventions need to address the ‘access’ issue

In the [Electrification Roadmap](#), we identified ‘access’ as one of the key barriers to EV uptake:

- New Zealand’s access to global EV supply
- New Zealanders’ access to EVs
- New Zealanders’ access to EV charging

Below, we detail how different measures can address these barriers.

### Ensuring New Zealand can access global EV supply

New Zealand is a small player in the global vehicle market. We currently have around 3.5 million passenger cars on our road, less than 1% of the 1.4 billion cars worldwide. For this reason, there is real potential for constrained supply of EVs into New Zealand, both new and second-hand, as other countries also move to electrify their transport systems. New Zealand must ensure that it is well positioned now to import enough EVs to meet what needs to be rapidly growing demand.

Globally, New Zealand needs to be a destination of choice for electric vehicle suppliers by providing the right incentives and market signals to only attract increasingly clean vehicles into the country. There are three key interventions that could help New Zealand achieve this:

- Implement the announced Clean Car Standard, which would require vehicle importers to bring in progressively more fuel efficient and electric vehicles. Without a form of regulation or policy intervention, by 2025 New Zealand’s cars will produce [twice the emissions levels of EU vehicles](#) and the incentives on vehicle importers will remain inconsistent with our climate goals. The Clean Car Standard could outline a long-term pathway with targets becoming more stringent over time.
- Place a time limit on light vehicles with internal combustion engines (ICE) entering, being manufactured, or assembled in New Zealand.

On the supply side, setting a ban date would signal to global car suppliers (both new and second hand) that New Zealand’s demand for imported ICE vehicles will decline significantly while the demand for EVs is growing. In response, suppliers are then likely to begin shifting their business models and processes to ensure sufficient EV supply into the country by the ICE ban date, otherwise they risk losing a part of their business.

On the demand side, a ban date signals to consumers that policy and infrastructure are transitioning to support EVs and are reducing support for ICE vehicles. This gives consumers the confidence to buy EVs ahead of the ban date, and also makes buying new ICE vehicles closer to the ban date more unattractive. A ban date will also deliver clear signals to developers of long-term infrastructure, like EV charger providers and network companies to invest in infrastructure that will enable EV uptake. [Concept Consulting and Retyna’s Shifting Gear](#) study concludes that New Zealand could ban new entry of light ICE vehicles as early as 2032.



- Explore the potential to ‘pool’ or bulk purchase EVs, especially for government and commercial fleets, to enable purchasing savings. A bulk purchase would strengthen New Zealand’s negotiating position and signal that there is a strong demand for electric vehicles.

Such interventions are not a world first and what’s reassuring is that vehicle manufacturers are already shifting their businesses to meet the higher EV demand:

- [Tesla](#) intends to ramp up output from 499,550 in 2020 to 20 million annually by 2030
- [General Motors](#) plans to exclusively offer electric vehicles by 2035
- [Ford](#) intends to sell only electric vehicles in the European market by 2030
- [Volvo](#) will only make electric vehicles by 2030
- [BYD](#), a Chinese EV manufacturer looking to enter the Australian and New Zealand markets, is targeting sales of 400,000 BEV/PHEVs in 2021

### Ensuring New Zealanders can access EVs

Supply focused interventions will not be enough. New Zealanders also need to be encouraged to transition to EVs (where public or active modes are unattractive) to build local demand. Currently, even as the total cost of ownership of EVs are falling and are on track to save New Zealanders’ money, the largest barrier to adoption is the high up-front cost of electric vehicles. Consumers either do not have access to the capital or exhibit ‘hyperbolic discounting’ which is the tendency to disproportionately weight decisions towards near term costs/benefits even if the lifetime benefits significantly outweigh the costs.

Therefore, to build local demand for EVs and help New Zealanders overcome the capital cost barrier, we recommend the following capital cost mechanisms:

- Implement the announced Clean Car Discount (feebate) scheme to bring down the upfront cost of an EV. [US studies](#) have shown that for every US\$1,000 provided as an EV rebate there is a correlated 7.7% increase in EV sales. Point of sale schemes like the feebate scheme were shown to have the most effective impact on lifting sales. The feebate also has the additional benefit of disincentivising the purchase of ICE vehicles;
- Continue to explore potential new or extension of co-funding and grants such as EECA’s Low Emissions Transport Fund, and low-cost loans such as via New Zealand Green Investment Finance that enable buyers to more easily spread out the payment of up-front capital costs;
- Also, as New Zealand’s banks increasingly commit to sustainable finance and shifting away from fossil fuel exposure there are opportunities to develop new lending options for EV purchasers, thus improving access to capital and the upfront economics.

EV uptake rates would benefit from these interventions being in place immediately to encourage uptake while EVs still cost more than ICE equivalents. Once sticker price parity is met, then interventions can start to be wound back. We expect sticker price parity for most light vehicles to occur between 2025 and 2030. Consistent support through to the time of sticker price parity appears to be critical for fleet transformation. For example, [the Chinese government cut EV incentives in July 2019](#), because it believed the costs of EVs had decreased sufficiently. However, [this caused sales of hybrid and EVs to decline](#) by 34% in September 2019 and 46% in October 2019.



An important consideration for creating access to EVs is the fact that most private passenger vehicle purchases in New Zealand are second hand. Therefore, much of the focus of the interventions described is to enable those who usually purchase newly imported vehicles (e.g. commercial fleet operators) to buy electric so that they feed into the second-hand market. This is how the second-hand ICE market already operates, so it is a matter of ensuring the new vehicles cycling through are EVs.

The government should target the electrification of government and commercial fleets to build demand for EVs in New Zealand. These fleet owners also tend to have lower up-front cost barriers due to the access to lower cost capital, the ability to access mechanisms that spread out upfront capital costs like competitive leasing arrangements and the ability to procure in bulk. [Business and government fleets](#) can also help raise public awareness and trust in EV technology by giving their drivers the experience of driving EVs. Brand association also boosts public perception of reliability.

[Experience in Denmark](#) has shown that if corporates are excluded from an initial incentive regime, fleet transition stagnates. Fringe Benefit Tax (FBT) reductions or exemptions could be particularly valuable in incentivising the uptake of electric vehicles by commercial fleets. As commercial fleets typically turn over their fleets every three to four years, this would be effective at seeding the second-hand EV market, improving EV access to consumers. While the FBT is technically an operating cost, a reduction in FBT can have similar economic effects to a reduction in the upfront capital costs for corporates who access vehicle leasing.

It will also be important to focus on how to stimulate the availability of affordable second-hand EVs for different uses (e.g. SUVs, wagons, utes, vans) and at different price points (e.g. three-year, five year, ten-year-old EVs) to ensure that different customers' needs and preferences can be met.

### **Ensuring New Zealanders can access charging**

Accessible charging infrastructure will be a critical enabler for rapid uptake of EVs. We supported the Climate Change Commission's recommendation to develop a charging infrastructure plan for the rapid uptake of EVs and commend the Government for announcing the plan to have fast EV chargers every 75km along most state highways.

Two of the top three concerns for EV adoption, charging and range anxiety are addressed by an effective network of public and private charging options, with [direct correlation shown internationally](#) between EV adoption uptake increases and the number of chargers available per 100,000 people. We must invest in a sustained way in the charging infrastructure to be ready to enable what needs to be a wave of new EVs in New Zealand.

The plan should consider the differing roles of government, the private sector and individual EV owners. The government may not necessarily need to be responsible for the whole delivery of a nationwide charging infrastructure network, but rather could play an enabling role, or leverage partnerships with the private sector.

For a successful nationwide charging network, it is important that the different charging demand profiles and behaviours are understood, as these will have implications on the location of chargers, the different capacities required and the impact on the electricity system.



For example, everyday EV drivers are likely to plug in their vehicles when they get home in the evening and let them slow charge overnight, which may not require any new technology to the user but may have implications for the local distribution network. Other EV drivers may not have access to charging at home and will therefore require charging infrastructure close to home. Every now and then, an EV driver may go on a long trip such as from Auckland to Wellington and will require fast charging during a driving break.

Buses and heavy trucks have different charging behaviours. These vehicles usually have high utilisation and require fast charging at high capacities, which will have significant infrastructure needs and may require local electricity network upgrades. Smaller commercial vehicles may have lower utilisation and are able to charge at the workplace. Small numbers of vehicles at the workplace may not require a site upgrade for electrical capacity, but larger fleet operators may need to upgrade their electrical capacity.

Charging infrastructure for different charging needs is already emerging in New Zealand. For example, ChargeNet's charging network, hyper chargers, Tranzit's 450 kW, Wellington City Council's charging for those with no off-street parking. These are the types of infrastructure that will need to be ramped up to meet growing EV uptake.

Because a lot of EV charging happens at home or on site at a workplace, there also needs to be a component of the charging infrastructure plan that focuses on better enabling EV owners (both residential and commercial) to install and manage their own charging, especially as many have limited experience of interfacing with the electricity system.

Our interviews with commercial fleet owners revealed that there are still a number of information gaps across the installation process that result in sub-optimal solutions, unexpected additional costs and prolonged timelines. For example, during its heavy EV freighter trial, ALSCO discovered that a second charger needed to be installed to speed up truck charging. As this required a second charging station at each of the four locations, the sites unexpectedly needed to be upgraded to accommodate charging infrastructure. New Zealand Post underwent a similar exercise and shared their experience in the form of an [EV charging installation guide](#). The recently released [EV charging standards for commercial applications](#) begins to address this information need.

Key to a fast and smooth installation of charging will be the building and sharing of planning knowledge and technical capability. Industry and government coordination across charger installers, suppliers, network operators, local government and landowners will be required.

The development of a national charging network will need to be in close co-ordination with the electricity sector. As discussed in the introduction of this report, a critical element of the charging network will be the electricity network's capability to support vehicle charging. Smart charging of EVs provides an opportunity for energy consumption to be shifted away from peaks and, in doing so, offers an opportunity to decarbonise our economy most affordably. If not managed carefully, non-smart EV charging has the potential to materially increase demand peaks in distribution networks and the grid, resulting in avoidable expense in the network infrastructure, the cost of which then falls on the end user.



## Other policy incentives to drive uptake

There are other policies available that can further make the switch to EVs attractive for consumers. These are interventions that could lower the operating costs for EV owners, and in turn make the total cost of ownership more attractive (e.g. the existing road user charge exemption), or act as a behavioural incentive (e.g. free public parking). As discussed earlier, because of the nature of consumer decision making, up front capital costs will still be the largest barrier, therefore mechanisms to target capital cost barriers should be prioritised over operating cost barriers.

Norway is a good example of how such mechanisms have resulted in an increased uptake of electric vehicles. Since the 1990s, the Norwegian Government first introduced an exemption from Norway's vehicle purchase tax, making the price of EVs fall below that of petrol- and diesel-powered vehicles. They later introduced the right for EV owners to park for free in some municipal carparks, drive in bus lanes, take ferries without a ticket and drive toll-free. Norwegians are not required to pay VAT on their cars, or road tax, and company EVs are taxed at a lower rate than ICE equivalents. The suite of interventions has enabled an increase in share that EVs make of new vehicle purchases – from 2% in 2011 to 70% in 2020.

What is also evident in the Norway example, is that pricing mechanisms do not necessarily need to be permanent but can be rolled back over time once the costs of EVs come down. [Norway has been incrementally phasing](#) out interventions such as reduced company tax, free public parking and road toll exemptions without reversing any of the EV growth.

In New Zealand, one of the transformative operating cost opportunities is in the Fringe Benefit Tax on businesses. For businesses, reaching TCO parity is heavily dependent on the fringe benefit tax (FBT) regime. The FBT is currently a disincentive for commercial fleet conversions to EVs as the value of the FBT is proportionate to the capital cost of the vehicle. As the up-front capital cost of EVs is currently substantially more than for a petrol equivalent, the FBT perversely penalises an organisation for buying a cleaner vehicle. For many organisations, this FBT voids the economic case for EVs.

Similar issues exist overseas and have been addressed – for example, the United Kingdom introduced company tax incentives for EVs in 2020 that have improved the economic case for conversion to electric fleets. As the up-front capital cost of EVs continues to fall the UK intends to wind back the level of tax incentive.

Certainty around policy settings for FBT is now important in supporting the electrification of the light vehicle fleet as businesses account for a material proportion of New Zealand's annual new car registrations. Increased uptake of new EVs by businesses now will feed into the second-hand car market in time to provide greater variety and opportunities for household consumers to purchase used EVs.

## Question 8: Public transport fleet

We support the key actions outlined in the report. Further electrification of the bus fleet and passenger rail will play a key role in transport decarbonisation, especially when New Zealand achieves significant mode shift.

We commend the mandate for local government to procure only electric buses by 2025, which will help accelerate clean public transport, however this needs to be supported with funding and technical capabilities. In our Electrification Roadmap, interviews with Tranzit suggest that it would be difficult to justify buying an electric bus without a road user charge exemption and/or co-funding from EECA's Low Emission Transport Fund.

## Question 9: Domestic aviation emissions

We broadly support the need to investigate the use of sustainable aviation fuels, or electricity where possible, as well as improving aviation energy efficiency. Because of the large costs associated with building new infrastructure for upscaling alternative fuel solutions, the marginal cost of CO<sub>2</sub>e abatement will be an important indicator of whether a solution should be pursued at a wide scale.

We note that there some short distance, smaller passenger planes that are already electrifying, and any policy to encourage aviation decarbonisation should support continued innovation in this space:

- [ElectricAir](#) is a Christchurch start-up that operates the Pipistrel Alpha Electro, a two seat aircraft manufactured in Europe which has a 90 minute flight time.
- [Sounds Air](#) is aiming to become the first regional airline in New Zealand to offer zero-emission flights, having signed a letter of intent to purchase electric planes from Sweden. These 19-seat planes are expected to be available for commercial flights in 2026.

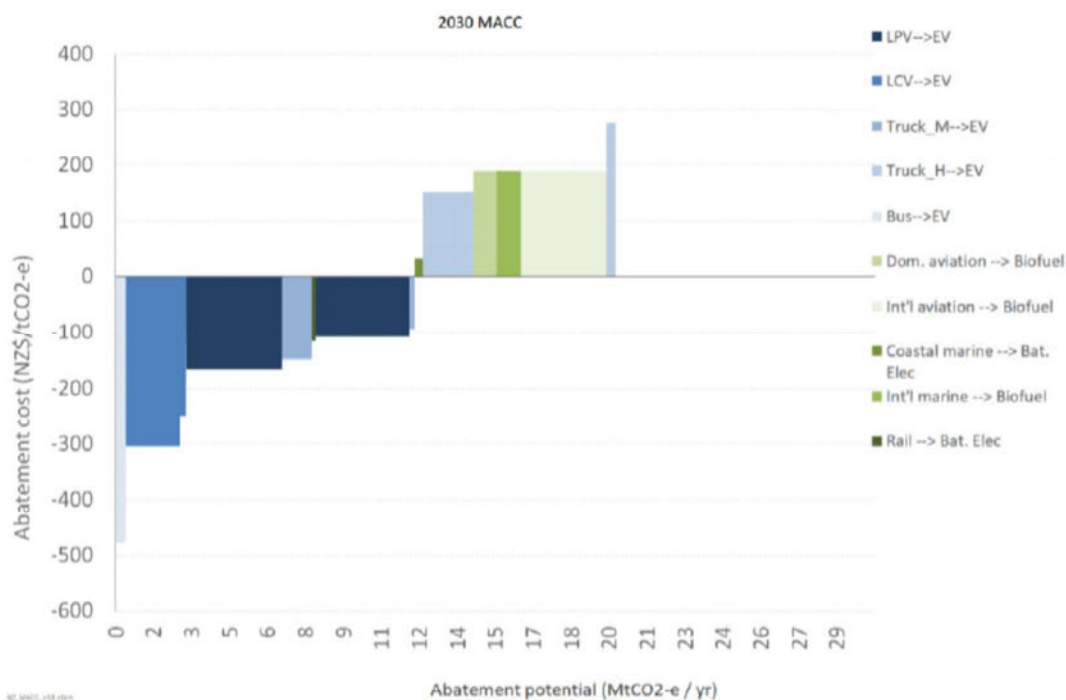
## Question 10-11: Freight supply chain, modes and fuels

We broadly support the need to increase the use of low carbon fuels to decarbonise trains, ships, heavy trucks and planes.

As stated earlier, because zero carbon 'heavier' transport (i.e. non-light transport) is still developing in technology, more costly to abate and accounts for only 20% of New Zealand's transport emissions, light vehicles should remain the top priority for electrification in the immediate future leading up to 2025.



Figure 14: Transport Marginal Abatement Cost Curve for 2030 - public benefit basis, [Ministry for the Environment](#)



That being said, ‘heavier’ transport decarbonisation efforts in the near-term should focus on ensuring the policy settings are configured such that the sector is able to transition in an efficient and timely manner once the technology is more readily available. We expect that some additional rail and some short distance trucking can and will be electrified.

## Question 12: A Just Transition

We strongly support the need for a well-planned transition. Clear direction and a stable policy environment are vital for businesses to be confident in making long lived decisions about their assets and associated investments. The transition will also need to ensure New Zealanders can access good transport outcomes without being adversely affected in other areas of their lives.

In the [Electrification Roadmap](#), we drew particular attention to the fact that while many New Zealand households will be able to afford an EV over the next ten years, lower income households are at risk of being left behind. This will have the perverse effect of increasing social and economic inequity because those who are last to electrify are also last to benefit from the savings gained from EVs. Achieving a just transition to a lower emissions future in which everyone in New Zealand can benefit will be a critically important measure of our decarbonisation success.

We must make sure that lower income households and other communities that may not have easy access to vehicles are supported to electrify as well. There is international precedent here that is worth our attention: work is being done around the world to co-design electrification and transport solutions with communities to provide transport security while addressing climate change. EV ride-



sharing programmes, electrified school transport options and multifamily domestic charging solutions are being developed in order for EVs to support a just transition to a low carbon future.

Part of the solution will be ensuring the second-hand market has sufficient volumes of low-cost electric vehicles. Second hand electric vehicles are expected to become affordable to the average household after ten years of ownership. Because of this lag time it is important that New Zealand begins seeding a diverse and liquid second hand EV market immediately by accelerating the uptake of new EVs now. Fleet owners such as the government and businesses are best placed to begin this transition due to their tendency to purchase vehicles based on the total cost of ownership rather than upfront costs. As TCO parity between EVs and ICE vehicles is already being met in some instances, and is imminent in others, the transition can begin now.

With energy bills making up a material proportion of living costs, it is lower income households that are positioned to benefit the most from lower energy costs associated with electrification of transport. By 2035, we estimate that a two-car household with two EVs will halve their annual total energy bill.

There is also a significant opportunity to reduce electricity costs for all electricity consumers across New Zealand. An important concept to understand is that both transmission and distribution networks are built to meet peak demand capacity. Network costs are driven by the capacity (MW) of the infrastructure, but consumers are often charged by their retailer on a usage (\$/MWh) basis. Therefore, if peak demand is maintained but energy consumption grows (i.e. more electricity is used to charge EVs during the off-peak period), then network charges to all electricity consumers, not just EV users, can be reduced on a per unit basis.

## Question 13: Four potential pathways

Four pathways have been presented by the Ministry to illustrate how varying the level focus between the levers might collectively decrease emissions from New Zealand's transport system. We have two key concerns with the pathway outcomes.

Firstly, Pathway 4 is the only pathway that demonstrates an emissions trajectory that meets the emission reduction required by the Commission's emissions budgets. The remaining three pathways fall short of the emissions reductions required. We think it is only acceptable to pursue a pathway that can bring New Zealand's transport emissions down in line with the expert advice provided by the Commission. Ignoring this expert advice would be requiring other sectors (e.g. agriculture) to make deeper emissions cuts than recommended by the Commission.

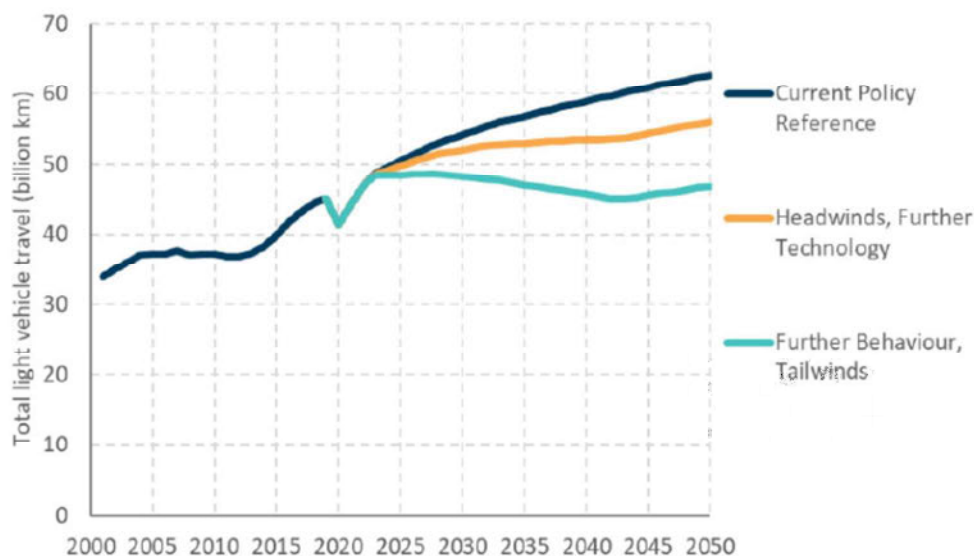
Secondly, we believe that the balance of reductions weighs too heavily on behaviour change and mode shift and significantly underestimates the impact that electrification of the light and heavy fleet can have on emissions.

In its final advice, the Commission's Demonstration Path still sees electric vehicles making up 36% of the light vehicle fleet by 2035 (a reduction from 41% in its draft advice). This is significantly higher than the 20-27% proposed in the Ministry's pathways. Our own Whakamana i Te Mauri Hiko modelling is consistent with the Commission's modelling.

Furthermore, the Commission’s modelling shows that even in the scenarios with the most ambitious behaviour change, total light vehicle travel is still higher in 2035 compared to 2018-2019 levels. In 2035, there is a ~20% reduction in light vehicle travel relative to the current policy reference case due to behaviour change which is half of what is modelled in Pathway 4. We think this is more realistic because of the time it takes to deliver the infrastructure required to materially shift travel behaviours.

By underplaying the potential of electrification, we risk not putting in strong enough policy settings to encourage EV uptake and therefore risk our ability to achieve a net zero carbon transport system by 2050. Ambitious electrification of transport also mitigates the risk of vehicle kilometre travelled reductions not materialising as much as envisaged.

**Figure 15: Vehicle-kilometres travelled by light vehicles**



*Figure 12.13: Vehicle-kilometres travelled by light vehicles*

Source: Commission analysis

New Zealand needs to pursue a pathway that weights all of ‘avoid’, ‘shift’ and ‘improve’ as high or very high. This is the ambition required to kickstart transport decarbonisation across the system.

By tackling the issue from all fronts, we reduce the risk of failing to meet our emissions targets if one fails – for example, if we are not able to reach the required vehicle kilometres travelled reduction from mode shift, then strong EV policy can ensure that emissions reductions are achieved. Conversely, if New Zealand is unsuccessful in securing all of the modelled EV supply then strong urban form and transport policy can ensure reductions are achieved through travel reduction or mode shift.

Because of the challenges around achieving a fundamental shift in how people and goods travel around the country and uncertainty surrounding the EV supply market – we need to be making



efforts on all fronts today. Policy measures can be wound back should we find ourselves in a fortunate position in the future where we are ahead of the track towards a net zero transport system.

## Question 14: First emissions budget policies

We support the policies proposed in the first emissions budget.

One area that is currently not addressed by the proposed policies is the end of life of EV batteries. EV batteries typically need replacing every 5-8 years, which means that if we begin to accelerate EV uptake now, then in 5-8 years, we will start seeing a wave of batteries requiring replacement. The absence of strong policy or market incentives for battery reuse or recycling may lead to these batteries being sent to landfill.

In our submission to the Climate Change Commission, we supported the need to develop EV battery refurbishments, collection and recycling systems to support sustainable electrification of the light (and later heavy) vehicle fleet. The Ministry should consider what kinds of policy could be implemented in the first emissions budget such that by the second emissions budget, New Zealand's EV battery reuse and recycling system is equipped to handle the first large wave of EV batteries coming up to replacement.



