

Transport Emissions: Pathways to Net Zero by 2050

May 2021

On 2 December 2020, Government declared a climate emergency for Aotearoa and committed to taking urgent action to reduce emissions.

Hikina te Kohupara – Kia mauri ora ai te iwi: Transport Emissions: Pathways to Net Zero by 2050 (Hikina te Kohupara) identifies what Aotearoa could do to shift the transport system onto a zero emissions pathway. It sets out a system-wide approach for reducing transport emissions. It is not government policy, but has been prepared to support discussions on what Aotearoa should do to reduce its transport emissions.

This discussion paper will contribute to the Government's Emission Reduction Plan, which must be completed by December 2021. It will also be used to develop a 10-15 year time horizon action plan for how Aotearoa will continue to reduce its transport emissions.

Our transport system needs to shift to a low/zero carbon pathway as soon as possible to meet our emissions reductions commitments and targets. Transport is responsible for 47 percent of total domestic CO₂ emissions, and 20 percent of total greenhouse gas emissions. Without largely decarbonising transport, Aotearoa will not be able to achieve its net zero carbon target as mandated by the Climate Change Response Act 2002 (CCRA) by 2050.

Decarbonising our transport system will be challenging. However, this transition could make Aotearoa a healthier, safer, more vibrant, resilient, and prosperous place to live and work. There are many opportunities to reduce emissions while improving well-being and the liveability of our towns and cities. This will require difficult choices to be made by Central and Local Government about how to prioritise investment and other action to move different sectors to low-carbon pathways. This will include considering which policies are progressed, and assessing what regulatory, investment, economic and education tools will help deliver these choices. Alongside this will be the need to negotiate the choices, including understanding what trade offs within transport and across sectors are made to achieve or implement chosen policies.

Local and central government have been taking action to address transport emissions. This has included investment through the Government Policy Statement on land transport for public transport, walking and cycling, and rail. Government has agreed to implement the Clean Car Standard and there are road user charge exemptions for electric vehicles to encourage uptake. However, a lot more is required for our transport system to significantly reduce emissions at the pace required.

Hikina te Kohupara identifies opportunities to reduce emissions across three themes, based on the 'Avoid, Shift, Improve' framework.

- **Theme 1 – Changing the way we travel:** We need to shape our towns and cities to make it easier, safer, and more attractive for people to access work, schools, shops, and other opportunities by public transport, walking, and cycling. This will reduce dependence on private motorised vehicles, and avoid/reduce emissions. Transport needs to be integrated with land-use planning to encourage quality compact mixed-use urban development, while providing better transport options. Transport pricing, and other demand management tools, could also play an important role.
- **Theme 2 – Improving our passenger vehicles:** 67 percent of Aotearoa’s transport emissions currently come from light vehicles (including cars, small vans, and SUVs). Decarbonising the light vehicle fleet is crucial. We need to increase the supply of clean vehicles, increase demand for them, and provide supporting infrastructure. Biofuels could also play an important role in reducing emissions from the current fleet (and other modes). Public transport fleets, particularly buses, also need to shift to being cleaner vehicles. Cleaner aviation technologies are in the early stages of development, but there are opportunities to reduce emissions by using sustainable aviation fuel.
- **Theme 3 – Supporting a more efficient freight system:** 23 percent of Aotearoa’s transport emissions currently come from heavy vehicles (mostly trucks). While light vehicles currently produce the most emissions, trucks will produce the most emissions by 2055 without further interventions. Emissions could be reduced by improving the efficiency of supply chains, shifting freight to low emission modes, and improving the fuel efficiency, and carbon intensity of freight modes and fuel. Trucks will need to be decarbonised through the uptake of alternative fuels such as biofuels, electrification, and/or green hydrogen.

These changes will need to be co-ordinated, and staged, to maximise the opportunities for reducing emissions from now to 2050. Many decisions need to occur within the first emissions budget (2022 to 2025).

While everyone in Aotearoa will experience changes from the transition to zero emissions, and many people will benefit, the impacts of this shift will not be spread evenly. People who already experience social/economic disadvantages could be disproportionately affected if transport costs increase. This means that Government needs to carefully consider the impacts of policies and changes on different communities and regions to ensure a Just Transition.

Future work will need to ensure that policies are fair, equitable, and inclusive. Government must work with Iwi/Māori, communities, regions, and sectors to manage the impacts and maximise the opportunities of the changes ahead.

There are many pathways that Aotearoa could take to achieve a zero carbon transport system by 2050. *Hikina te Kohupara* models four potential pathways. These pathways are not limited by current Government policies or commitments. The pathways aim to provoke thinking and illustrate the scale of the changes required. The modelling shows that it will be challenging to reach net zero by 2050, *but* it can be achieved if complementary policies are implemented across the transport system.

Aotearoa’s pathway to a zero carbon transport system will be shaped by the actions of Government, civil society, business, and consumers over the next three decades.

Substantial and sustained actions will be required to decarbonise our transport system. Actions taken or not taken within the next five years will significantly shape this future pathway, and determine how close we get to, or stray from a zero carbon target.

Hīkina te Kohupara is one step on our path to a zero carbon transport system. We do not underestimate the challenges ahead, but we recognise the imperative to change. We also see the opportunities to create a better transport system through this transition that is cleaner, healthier, safer, inclusive, and resilient, and enables the people and businesses of Aotearoa to flourish.