

About the Transportation Group

The Transportation Group welcomes the opportunity to provide input on the *Emissions Reduction Plan* (ERP). This submission builds upon our previous submission on *Hīkina 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: <https://www.transportationgroup.nz/>

About this submission

The Group welcomes the opportunity to submit views to the Emissions Reduction Plan. 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. This submission has also been endorsed by the chair and vice-chair of the Group.

This document outlines feedback on key transport-related aspects of the emissions reduction plan, [as sought by Ministry for the Environment](#). This submission is structured around the four transport-related questions and one section, Behaviour change. The questions we focused on are:

- 21. In addition to the Climate Change Commission monitoring and reporting on progress, what other measures are needed to ensure government is held accountable?**
- 33. In addition to resource management reform, what changes should we prioritise to ensure our planning system enables emissions reductions across sectors? This could include partnerships, emissions impact quantification for planning decisions, improving data and evidence, expectations for crown entities, enabling local government to make decisions to reduce emissions.**
- 34. What more do we need to do to promote urban intensification, support low-emissions land uses and concentrate intensification around public transport and walkable neighbourhoods?**
- 52. Do you support the target to reduce vehicle kilometres travelled by cars and light vehicles by 20 per cent by 2035 through providing better travel options, particularly in our largest cities, and associated actions?**
- 53. Do you support the target to make 30 per cent of the light vehicle fleet zero-emissions vehicles by 2035, and the associated actions?**
- 54. Do you support the target to reduce emissions from freight transport by 25 percent by 2035, and the associated actions?**

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

Feedback on the target

New Zealand's car-centric development has led to poor quality of street environments [1] associated with significant barriers to walking, PT, or cycling [2–4]. For instance, 86% agree that it is hard to use public transport in certain areas [5]. The current transport system also led to unacceptable levels of noise, road trauma [6, 7], as well as major inequities of access impacting most on those having a low income and/or being disabled [2, 4], and consequences in terms of climate change [8, 9] and public health [6, 7, 10]. While addressing these outcomes is an important policy objective [11], researchers note that newly developed special housing areas failed to achieve desired modal shift and intensification, "a disappointing result given the [...] ambition to cut carbon emissions significantly" [12]. It is now understood that New Zealand is grappling with issues relative to systemic car-centric development, including but not limited to transport and land use. Solutions need to be systemic, and address emissions but also the other dimensions noted, such as health or road trauma. Therefore:

1. **Monitoring, reporting, and accountability also need to cover broader environmental and social aspects**, aligning with the Living Standards Framework. Dimensions such as human and environmental health, safety, ability to participate, and well-being, should be of particular interest because they are also influenced by the transport system. Monitoring and reporting should demonstrate that transport-related emissions measures do not cause harm along these dimensions, and preferably how they help improve them.
2. **A framework or model is needed that attributes actions to targets and therefore to emissions reductions**. It is not clear how the actions add up to the targets, and how the targets interrelate. For example, mode shift action plans should demonstrate the collective impact on emissions at a regional level. The relationship of the mode shift targets to uptake of zero emissions vehicles is also needed because the two may be in tension. This logic is needed so that accountability for progress can be appropriately allocated.
3. **It is necessary to set regional targets**. Achieving the national targets requires action throughout all of New Zealand. The contributions of each region to the national target should be equitable and be tailored to regional variations. It should be demonstrated that they add up to the national target. Progress toward the targets in each region should be monitored and reported.
4. **Planned actions need to be ambitious and scaled to deliver change ahead of time**, factoring in possible external factors delaying the implementation. The monitoring and evaluation of the implementation should ensure that targets are met, if necessary through adjusted actions.
5. **Finally, it is recommended that accountability is ensured through citizen participation**. Making sense of the results and progress should not happen "behind closed doors" and only by experts. Citizen participation encourages transparency, ensures that actors are held accountable in common sense ways, and improves the engagement and trust of the public in the overall process. Citizen participation should happen at all stages of the process, from actions definition through to monitoring and evaluation.

Planning

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

Cross-sector collaboration needs to be required at all levels of intervention. At the Government level, Transport, Land Use, Infrastructure, Health and Schools portfolios should for instance be coordinated (the list is by no means exhaustive), which is not the case now. At the national and local level, decision-making should be required to consider broader impacts – for instance, transport infrastructure needs to account for health-related impacts or benefits, while now both sectors operate in separated ways.

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

Greenfield development should be strongly limited, protecting ecosystems and farm land from further destruction. Planning rules should encourage and enable quality intensification, with densities compatible with human health and well-being, and developments planned in a coordinated way with public transport and walking and cycling infrastructure. Further, decision-making should be based on appropriate metrics - while benefit-cost ratios are prevalent, they are also known to be biased towards traffic-oriented infrastructure [19]. Strategic objectives such as emissions reduction, health, wellbeing, or ease of access, should be measured and funding allocation should consider how given projects are delivering against those.

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

Feedback on the target

- 1. The target is not ambitious enough.** The proposed reduction, extrapolated to 2050, represents only a -40% reduction in VKT. It is reasonable to estimate that this would equate to roughly the equivalent reduction of GHG emissions, due to the significant contribution of internal combustion engines (ICE) to emissions from transport. This would mean that transport sector would fail to contribute to achieve the Nationally Determined Contributions (NDC; -50% by 2030 [13]) or carbon neutrality by 2050 [14]. IPCC warns that carbon neutrality reached by 2050 is associated with global temperature increase of up to 1.8 °C, which represents considerable risks for humans and increased odds of passing tipping points, with unknown consequences [14]. All evidence points towards the need for extreme urgency to change and decarbonise current day-to-day patterns such as mobility [15, 16]. We therefore believe that the VKT-related target needs to be ambitious and at least aligned with the NDC and decarbonisation by 2050 (i.e. at least -50% below gross 2005 levels by 2030).
- 2. It is not necessary to include the actions in the target** (“through providing...”). Action plans or programmes should specify what is needed to achieve the target. Including a limited or summarised list risks biasing the development of action plans.
- 3. Where it is necessary to specify or prioritise actions (in action plans) in relation to this target, we support the focus on modal shift and travel reduction.** Cars and light vehicles are predominant contributors to transport-related GHG emissions, and the fleet is primarily made of ICE vehicles. Shifting kilometres driven to EV would perpetuate negative human and environmental health, safety, ability to participate, and well-being outcomes, including emissions of thin particles [17]. Further, the 33,800 EVs currently active in NZ [18] represent only 0.8% of the fleet, without guarantee that a drastically higher share is realistic, in the short term. In addition, the lifecycle carbon emissions should not be neglected in calculations of emissions from cars and light vehicles. Therefore, as VKT is, and will probably continue to be, associated with GHG emissions, actions should primarily aim at avoiding travel and shifting it to more efficient modes.

Feedback on the actions

- 1. We strongly support a systemic approach including integration between land use and transport planning and improved competitive advantage of public transport, walking, and cycling, including road space reallocation and improvement of service.** These actions are included in the draft document. We would like to stress the importance of:
 - a. Delivering a coherent ensemble of measures**
 - b. Doing so through an efficient collaboration across sectors and organisations** - this should include but is by no means limited to: land use, health, or the education sector.
 - c. Ensuring that decision-making is based on the appropriate metrics** - while benefit-cost ratios are prevalent, they are also known to be biased towards traffic-oriented infrastructure [19]. Strategic objectives such as emissions reduction, health, wellbeing, or ease of access, should be measured and funding allocation should consider how given projects are delivering against those.

- d. **Ensuring that policy measures enable and encourage the delivery of positive change, while preventing the continuation of harmful business-as-usual.** For instance, regulation of greenfield development is needed.
2. **Action plans should primarily focus on urban areas and inter-urban connections.** Each metropolitan area and region should be held accountable to their contribution to national target.

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

As noted above (question 21), New Zealand's land use and transport systems are causing broad negative impacts to human and environmental health and well-being. Most of these are driven by the cars' consumption of space, influences on land use, affordability, and exclusivity (i.e., excluding whole sectors of the population from using them independently). Therefore:

1. **Given the above, while we support a target towards more electric vehicles, we think that this should not be a priority or key measure,** as it:
 - a. Perpetuates a car-centric system with its wide-ranging negative outcomes;
 - b. Is linked to considerable emissions of non-exhaust thin particles [17]; and
 - c. Poses further issues such as tensions over lithium and other components, or batteries recycling.
2. **The role of light vehicles (including electric vehicles) will in large part be determined by broader decisions such as land use,** and that their promotion should not be done to the detriment of measures seeking to achieve modal shift and travel reduction.
3. **The support for zero-emission vehicles should include and encourage efficient alternatives to cars,** such as e-bikes and e-scooters.
4. **Supporting an uptake to electric vehicles should be targeted at people lacking other choices but private motor vehicles.** In urban areas, focus should be on systems change towards more people-centric places and movement of people and goods compatible with human and environmental health and wellbeing. The support to electric cars should be a last resort measure and encourage shared rather than personal vehicles.
5. **New Zealand should investigate emissions testing of the existing fleet.** This would have a far more immediate effect than the clean car standard and improve awareness amongst the public of the environmental cost of driving. We could learn from large jurisdictions such as California where it has been successfully implemented and it could be integrated with our WoF system.

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

The ERP emphasizes technological solutions, namely electric heavy vehicles and measures relative to fuel efficiency. Currently, 93% of tonnage travels by road [20], causing considerable GHG emissions but also harming human and environmental health, causing risk, contributing justify new road infrastructure investment, and requiring heavy road maintenance. Therefore:

1. The target relative to freight emissions reductions needs to be more ambitious, and at least in line with the required carbon neutrality by 2050 [14]
2. Emphasis should be put on modal shift towards rail, coastal shipping, and urban deliveries that are efficient in terms of use of space, energy, emissions of GHG and other pollutants, and drastically reduce crash risks and severity.

Behaviour Change

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

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

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

Our feedback on this topic is that:

- The section is re-titled and re-framed to focus on social license and attitude change. These are both important enablers to behaviour change, however behaviour does not change because of them.
- The topic of behaviour change is embedded into the rest of the document and is framed as an outcome of system change, rather than a separate set of activities or targets.
- The residual social license or attitude change work covered by this section is re-framed as strategic marketing and communications, where multiple channels are targeted at various levels of the system from policy makers to local government and the public.

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