

The Green Freight Project

Lucia Sobiecki, Ministry of Transport



What is the Green Freight Project?

- The Green Freight Project explores the potential of alternative fuels, including **electricity, green hydrogen** and **biofuels**, to reduce greenhouse gas (GHG) emissions from New Zealand's road freight
- We have produced a 'background paper', available here:
<https://www.transport.govt.nz/multi-modal/climatechange/green-freight-project/>



Ministry of Transport

The Green Freight Project

Background paper on reducing greenhouse gas emissions from road freight in New Zealand through the use of alternative fuels

September 2019



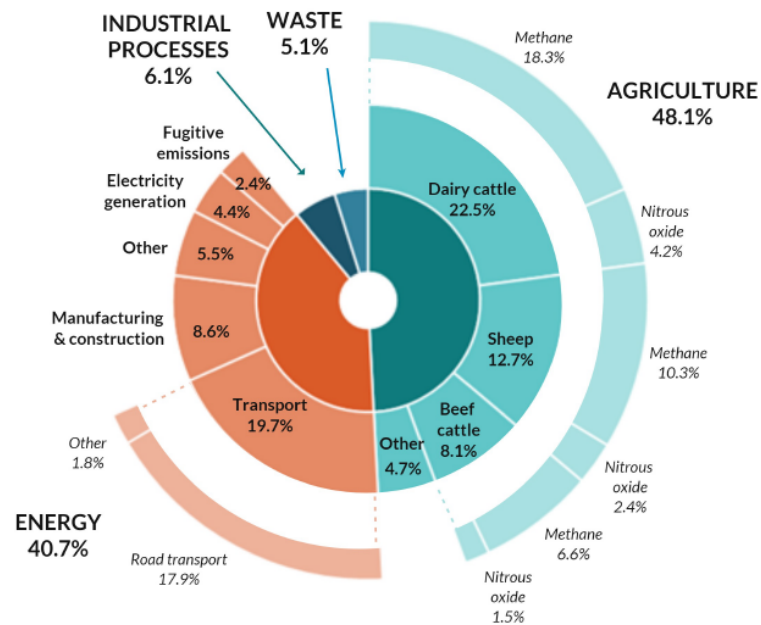
This background paper has been prepared by the Ministry of Transport. The paper includes feedback and input from a number of agencies. Particular thank goes to the National Energy Research Institute (NERI), the Energy Efficiency and Conservation Authority (EECA), the Ministry of Business, Employment and Innovation (MBIE), and the New Zealand Transport Agency (NZTA). This paper does not represent Government policy.

New Zealand's GHG emissions

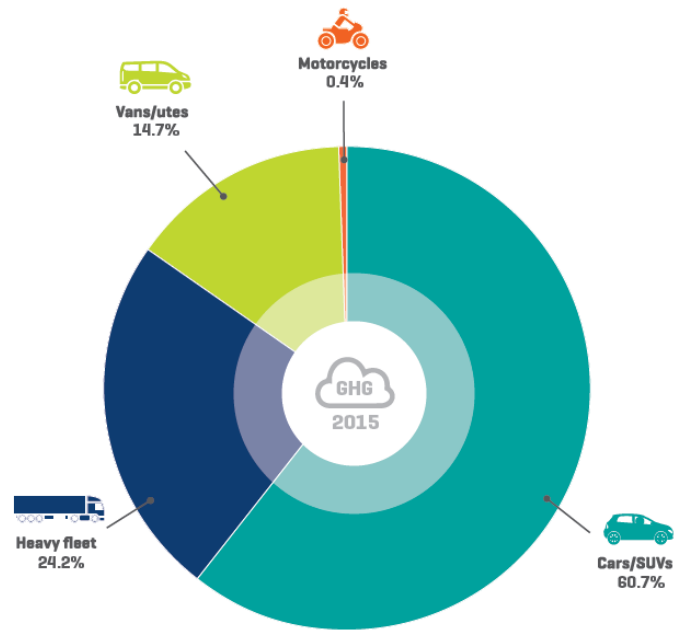
- Transport makes up 19.7% of New Zealand's GHG emissions
- Road transport makes up 17.9% of New Zealand's GHG emissions

NEW ZEALAND'S Greenhouse Gas Emissions

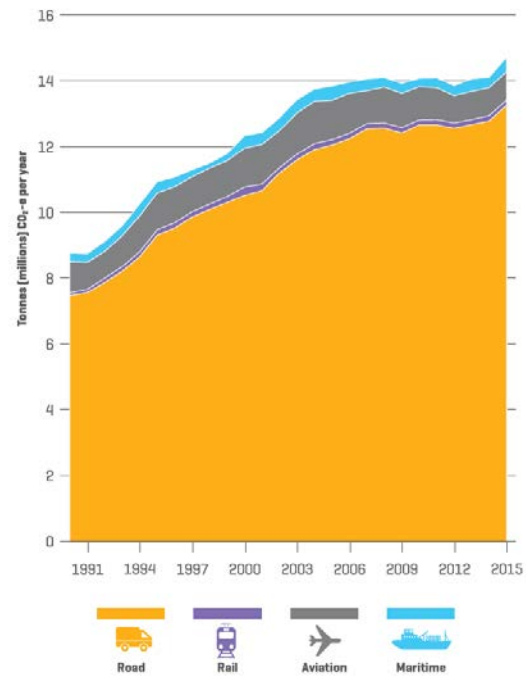
Source: New Zealand's Greenhouse Gas Inventory 1990-2017, published April 2019



Note: Percentages in the graph may not add up to 100 due to rounding.



Road transport GHG emissions by mode



Growth in transport GHG emissions

Reducing GHG emissions from road freight

- Mode-shift to rail and coastal shipping
- Efficiency improvements
- Alternative fuels
 - Electricity
 - Green hydrogen
 - Biofuels
- Other fuel and technology breakthroughs



Driver development course for truck, bus and coach drivers



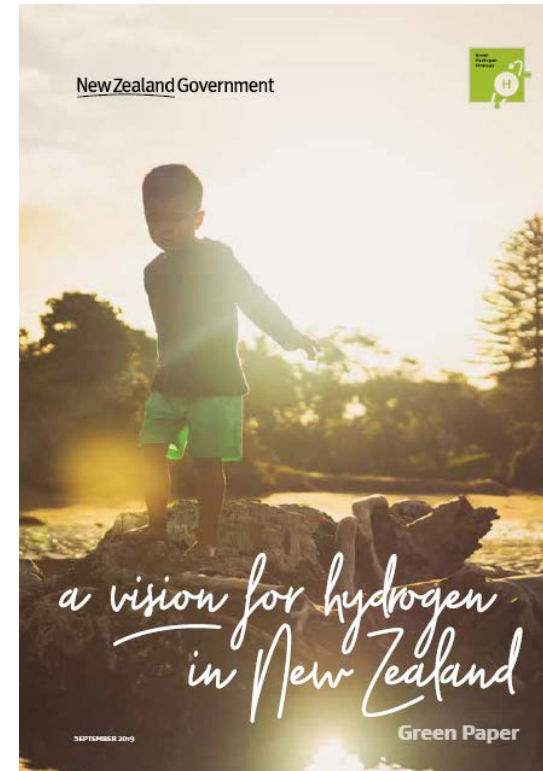
Electricity – battery electric vehicles

- Benefits
 - Zero tailpipe emissions
 - Efficiency of electric engines
- Challenges
 - Battery weight, range, recharge times, production and disposal
 - Cost and availability of electric trucks
 - Cost of supporting infrastructure
 - Impact on New Zealand's electricity network



Green hydrogen – fuel cell electric vehicles

- Benefits
 - Zero tailpipe emissions
 - Greater range and faster refuelling than current electric battery technology
- Challenges
 - Cost and availability of hydrogen fuel cell trucks
 - Cost of supporting infrastructure
 - Cost of producing green hydrogen and scaling up production
 - Constraints with transporting and storing hydrogen, and public perception of safety



Biofuels – conventional and advanced biofuels

- Benefits
 - Depend on whether the biofuel is conventional, advanced, blended or 100% drop-in
 - Compatibility with existing vehicles and infrastructure
- Challenges
 - Sustainability of biofuels
 - Cost of producing biofuels and scaling up production



Large-scale biofuel production and its use within New Zealand can happen

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NZBiofuelsRoadmap

Co-benefits of transitioning to alternative fuels

- Supporting the decarbonisation of other parts of the transport system (e.g. aviation and maritime)
- Reducing air pollution and achieving better health outcomes
- Job creation and innovation – supporting a ‘Just Transition’ – a fair, equitable and inclusive transition to a low emissions economy



Themes from the background paper

- There is no clear winner – electricity, green hydrogen and biofuels are all likely to play an important role
- The cost of infrastructure poses a significant barrier
- Life-cycle analysis is essential for good policy and investment decisions
- This is not just a GHG emissions issue

Insights from stakeholder engagement

- Complexity around the New Zealand freight task and freight industry
- Supply chain for alternative fuel vehicles does not exist
- Need for certainty around future policy and investment decisions
- Biofuels are not on the radar...

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Thank you

