

GREEN COMPACT

2026 Update →

Our framework
for a net-zero commercial
road transport industry in
New Zealand by 2050

INTRODUCTION

Three years on from the publication of our Green Compact framework, we are pleased to present this updated version.

Since that last edition, there have been some notable wins worth celebrating.

The low and zero emission truck fleet has grown by close to 160% since the start of 2023 and will soon comprise 1% of all heavy motor vehicles, where just three years ago that figure was only 0.3%.

Investment has also accelerated.

A record amount of funding towards stronger bridges and roads to accommodate high productivity motor vehicles (HPMV) and heavier electric vehicles was allocated through the 2024-2027 National Land Transport Programme. HPMVs can now operate on 79% of New Zealand's state highway network and 14% of local roads.

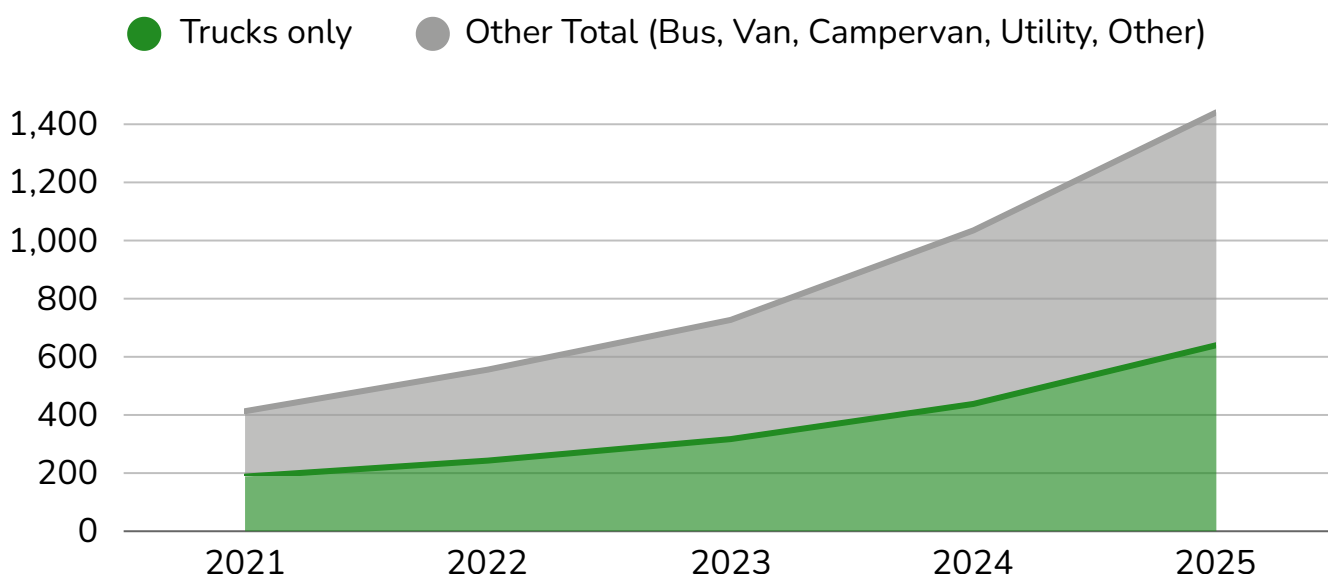


Most recently, regulatory changes have enabled Class 1 licence holders to drive zero-emissions vehicles up to 7,500kg, while Class 2 licence holders can now operate heavier electric buses - important steps in removing barriers to adoption.

We continue to advocate for practical reforms that enable transport operators to decarbonise more quickly.

Key enablers are those that make the transition from fossil fuels affordable, accessible, and commercially sensible.

Heavy low or zero emission fleet in New Zealand



Source: Fleet statistics - Ministry of Transport

This includes full capital expensing for low- and zero-emission vehicles, reforms to vehicle dimension and mass rules, and the rollout of a nationwide fast, public smart-charging network.

Alongside these policy asks, we've encouraged our members to keep combining trips, backloading and following fuel-efficient driving guidelines. These practices, often already embedded in business models, have become even more important in the context of rising fuel costs.

Looking forward, we know the freight task will grow. Our regulatory environment and roading infrastructure must be prepared for this.

Naturally, New Zealand is a technology-taker and will be following the lead of manufacturing countries, where rapid advancements are already shaping the future of heavy transport.

That's why in this second edition of the Green Compact we're spotlighting some standout cases of Kiwi companies leading by example, often by taking a leap into the unknown.

Early adopters have been putting new technologies to the test and sharing their experiences to give other businesses the reassurance they need to make such investments.

Our perspective is also informed by the successes and challenges in comparable overseas markets.

Together, these insights and actions position the sector to accelerate its transition, ensuring a more resilient, efficient, and low-emissions freight system for New Zealand's future.

Transporting New Zealand acknowledges the International Road Transport Union for its pioneering research and contribution to this work.

Dom Kalasich

Chief Executive
Transporting New Zealand



IRU FOREWORD

Decarbonising commercial road transport requires pragmatic and coordinated action across government, industry, energy providers and customers to reduce emissions while ensuring that supply chains remain efficient, reliable and affordable.

In recent years, the global effort to decarbonise has shifted decisively from ambition to implementation. Across all regions, governments and industry are working to translate commitments into practical measures, with the road transport sector itself playing a crucial role.

IRU and its members – including la Ara Aotearoa Transporting New Zealand – continue to drive the sector's actions through the Green Compact, our collective global framework to achieve carbon neutrality while preserving the vital role of road transport in supporting economies and communities.

As this updated New Zealand Green Compact shows, progress is underway.



Innovation is accelerating, investment is increasing and regulatory adjustments are helping to increase road freight efficiency, remove barriers to the deployment of low- and zero-emission vans and trucks, and drive improvements in infrastructure to support greener vehicles.

These are all important steps forward, even as the scale and complexity of the transition remain considerable.

la Ara Aotearoa Transporting New Zealand continues to demonstrate strong leadership in advancing this agenda. And by combining practical measures, operational efficiencies and constructive policy engagement, New Zealand is also contributing its valuable experiences to the global road transport community.

IRU will continue to share these insights around the world, helping to scale solutions and accelerate progress towards a carbon-neutral road transport sector that keeps people and their goods moving, in New Zealand, and elsewhere.

Umberto de Pretto

Secretary General
International Road Transport Union



WHAT IS THE GREEN COMPACT?

The Green Compact is an international commitment to achieving net-zero greenhouse gas (GHG) emissions from commercial road transport by 2050. This is aligned with the Paris Agreement, a legally-binding international treaty which aims to limit the rise in average global temperature to well below 2°C above pre-industrial levels – ideally 1.5°C.

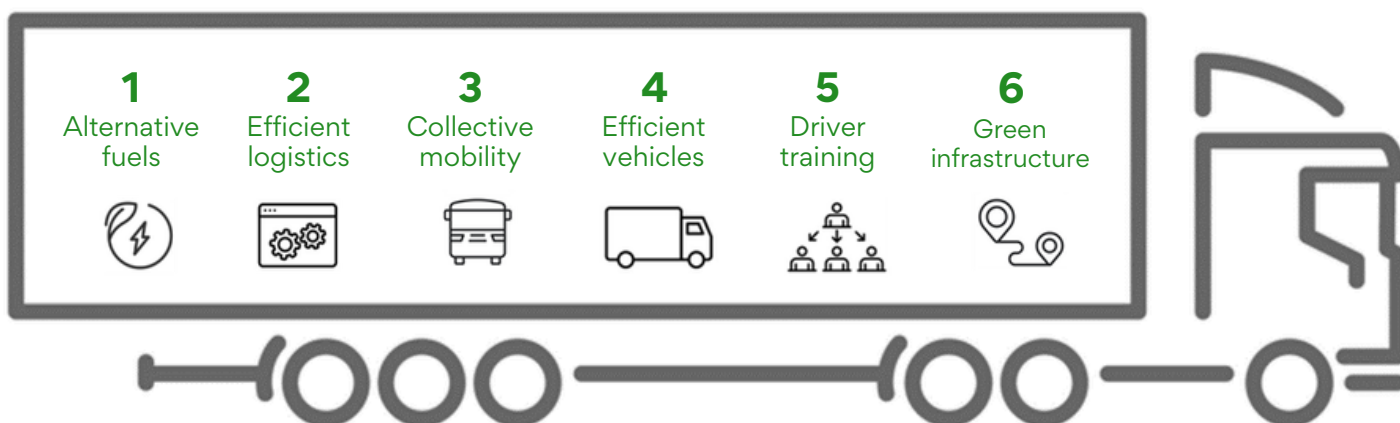
Launched by the International Road Transport Union (IRU) in 2021, the Green Compact provides a roadmap to explore pragmatic solutions that steer heavy transport towards carbon neutrality. This is a hugely important, yet challenging endeavour. The IRU's framework establishes five strategic pillars as the foundation for road transport decarbonisation: alternative fuels, efficient vehicles, efficient logistics, collective mobility, and driver training.

Reflecting New Zealand's unique geography and road network, we have added a sixth pillar: green infrastructure.



In this case, we are referring to infrastructure that is designed and engineered to mitigate emissions throughout its lifetime – for example, upgrading bridges and other structures that cannot support heavy high-productivity and zero emission vehicles (ZEVs).

Green infrastructure design offers benefits both in terms of mitigating climate impact and adapting to the changing climate as weather extremes become more frequent.



Greenhouse gas emissions and climate change

The most common greenhouse gas emissions produced from human activity include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), and are usually measured in terms of carbon dioxide equivalent (CO₂e).

Greenhouse gases are necessary for Earth to not be too cold to sustain life, but an excessive amount throws our climate system out of balance.

Greenhouse gas emissions from human activity, such as burning fossil fuels, leads to the enhanced greenhouse effect. This is when surplus heat from the sun becomes trapped close to Earth's surface, causing climate instability most obviously observed in altered weather patterns.

Transport emissions are measured via three main approaches; tank-to-wheel (TTW), well-to-wheel (WTW), and life-cycle analysis or assessment (LCA).

Climate scientists have been measuring the concentration of CO₂ in our atmosphere in parts per million molecules of air (ppm) since 1958.

The safe upper limit of atmospheric CO₂ to maintain a stable climate is widely agreed to be 350ppm. It hasn't been that low since the late 1980s and as at 2026 hovers between 420-430ppm.

Transport's role

Transport is New Zealand's second-largest emitting sector, representing roughly 18% of all emissions.

Of that percentage, approximately 29% are produced by heavy vehicles which move 93% of the country's freight tonnage and comprise 4% of the total fleet.

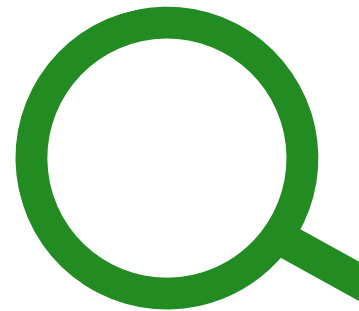
Tank to Wheel (TTW)	Well to Wheel (WTW)	Life-cycle Assessment (LCA)
The TTW approach measures emissions produced through the operation of the vehicle (tailpipe emissions).	In addition to tailpipe emissions, a WTW approach measures emissions generated through the extraction, production, and distribution of the fuel.	An LCA goes further to also include the emissions generated from the manufacturing, maintenance and disposal of vehicles and equipment.

Update on work programme

Over the last three years, the IRU has undertaken a work programme to evidence, test and implement the Green Compact's strategic pillars. This work is ongoing, but has so far produced several reports including the 2025 Green Compact Survey Report. The findings of that report form the basis of this adapted framework for New Zealand, supported by local case studies.

Transporting New Zealand has also been providing submissions and recommendations on emission reduction plans, emission reduction policies, and supporting a fit-for-purpose battery and hydrogen fueling network.

POLICY RECOMMENDATIONS



1

Review EECA's Low Emissions Heavy Vehicle Fund with a view to increasing industry uptake of energy efficient technologies, including the retrofitting of aerodynamic upgrades.

2

Introduce **full capital expensing** for high-productivity and low-emission heavy vehicles to accelerate fleet renewal.

3

Continue to lift freight productivity and innovative heavy vehicle uptake through **vehicle dimensions and mass (VDAM) reform**.

4

Strengthen bridges and culverts to ensure fuel efficient higher capacity trucks and zero emission heavy trucks can operate on more of the roading network.

5

Review the expiry of the **low and zero emission truck road user charge exemption** in light of slower uptake compared to cars and buses, and specific barriers facing the freight industry.

ALTERNATIVE FUELS

The use of fossil-fuel alternatives in transport, such as battery electricity and hydrogen power is increasing across the globe. Rapid technological advances are leading to lower battery prices and longer ranges between charging.

Objective

To accelerate the uptake of low and zero carbon fuels in order to reach carbon neutrality by 2050, while maintaining freight mobility.

Alternative fuel options

Battery electric (BEV)

The life-cycle emissions of battery electric trucks, including the impacts of battery manufacturing and maintenance are between 63-84% lower than for diesel internal combustion trucks.

The total cost of ownership for BEV and PHEV (plug-in hybrid electric) trucks appears to be becoming more competitive with diesel equivalents. Although their current upfront price premium and heaviness restricts their viability for many freight businesses, their capability is continuously improving.

Opportunity: Smart charging

Shifting electricity use to off-peak hours reduces strain on the grid and maximizes the use of renewable energy. Smart chargers for EVs automatically respond to signals from the grid and will accordingly slow down, speed up or pause charging based on overall demand - saving time, money, and reducing emissions.

Smart charging for heavy electric vehicles is being actively developed, with the Energy Efficiency and Conservation Authority (EECA) offering co-funding for the establishment of public charging stations on major freight routes.



Hydrogen fuel cell electric (FCEV)

Hydrogen fuel cell electric heavy vehicles offer reduced CO₂ emissions compared to diesel equivalents. This is regardless of whether the hydrogen is produced using renewable, natural gas, or carbon-based electricity sources. They also typically offer higher range and load capacity than battery electric trucks.

Dual fuel hydrogen

Dual fuel hydrogen vehicles have a combustion engine that uses a hydrogen injection system to run on a blend of hydrogen and diesel. This technology can reduce carbon emissions by up to 40% in dual-fuel mode, while maintaining range and load capacity. The technology can be retrofitted into diesel internal combustion vehicles, reducing cost.



The Government has an ambitious goal to increase the network to 10,000 public chargers by 2030, but these will mostly only be suitable for light vehicles.

Case study: TR Group

TR Group is a vehicle leasing company that owns one of the country's largest low and zero-emission truck fleets. Their battery electric trucks have been available for rental since 2021.

Through TR's partnership with hydrogen fuel company Hiringa Energy, hydrogen FCEVs have also been deployed in a number of scenarios. In one case, an FCEV truck powered on green hydrogen supplied by TR Group was used to transport solar panels to a solar farm in Ruakākā.

Over three weeks and several thousand kilometres travelled, the truck's use prevented up to 10 tonnes of CO₂ from being emitted, while imposing an additional cost of just 0.1% for the whole project.

What New Zealand needs

Widespread charging infrastructure that is suitable for trucks is crucial to incentivising uptake. Even just for cars, Aotearoa has one of the lowest charger-to-EV ratios in the OECD.

We want to see the installation of heavy vehicle charging depots on freight routes prioritised and supported by Government funding.

Heavy zero-emission trucks are currently exempt from paying road user charges until 30 June 2027. While the initial RUC exemption for light vehicles was linked to achieving around 2% of the fleet, the Government should take a more flexible approach for trucks. Uptake in the truck fleet is progressing more slowly, reflecting higher upfront costs, limited model availability, and operational constraints.

In this context, policymakers should consider reviewing the expiry of the heavy vehicle RUC exemption, taking into account the ongoing commercial and operational barriers facing the heavy freight sector.

We continue to advocate for full capital expensing of low and zero emission trucks to improve cash flow for fleet operators and make investment in alternative fuels more financially viable.

EFFICIENT LOGISTICS

Strategies including trip consolidation, backloading, and the use of high productivity motor vehicles (HPMV) to shift more freight with fewer trucks reduces energy intensity, offering huge emission reduction benefits where the use of alternative fuels is not yet practical.



Objective

To promote the use of efficient logistics processes and systems in the road transport sector, often with greater leveraging of digital solutions, like telematics software.

Case study: GoBackload

GoBackload is a digital freight-matching platform that connects trucks returning from deliveries, whether empty or with unused capacity, with customers who need goods transported from nearby locations. This is a relatively new and innovative way to reduce unnecessary heavy vehicle trips, enabled by the digital information age.

At the time of writing, GoBackload reports that its users have moved over 3,000 loads on trips that would otherwise have had empty capacity.

By utilising this spare capacity, the service displaces the additional trips that would have been required to move the same cargo and, as a result, has prevented an estimated 96 tonnes of CO₂ emissions to date.

What New Zealand needs

Having more productive trucks on our network reduces emissions intensity, boosts labour productivity, reduces congestion, and improves safety outcomes.

That's why we support reforming our Vehicle Dimensions and Mass (VDAM) rules, which are currently restricting uptake of more efficient, high-capacity HPMVs on suitable parts of our road network.

Digital solutions continue to be a huge asset to fleet decarbonisation. Backloading services and telematics systems with real-time data help businesses to optimise routes, deliveries and collections, leading to substantial reductions in both operational costs and emissions.

Transporting New Zealand partners with several companies offering these services to incentivise uptake among our membership and the wider road freight industry.



COLLECTIVE MOBILITY

Congestion is a huge problem impacting productivity and the environment in our cities. Measures to incentivise collective mobility by shifting unnecessary private vehicle trips to public transport reduce per-passenger emissions and frees up roads for crucial freight journeys.

Objective

Support smart policies that move people from their private cars to other modes.

Congestion charging

In 2025 the Land Transport Management (Time of Use Charging) Amendment Bill was passed, allowing local authorities to implement congestion pricing schemes. Transporting New Zealand supports this measure but opposes applying charges to public transport, emergency, and freight vehicles.

The purpose of congestion charging is to discourage unnecessary trips being made at peak times, supporting the flow of traffic and reducing tailpipe emissions.

Road freight businesses are already highly motivated to move freight at off peak times due to the high costs of operation. However, demand is largely inflexible, being highly dependent on the times that freight procurers can dispatch

or accept deliveries. This means that congestion charges do not result in material changes in heavy vehicles travelling at peak times.

Smart public transport investment

Public transport is vital for a well-functioning economy, and the significant subsidies it receives reflect that.

However, uptake remains lower than it could be, and NZTA's research shows that fare cost is not the primary barrier for most passengers. Instead, users consistently point to factors such as limited availability and accessibility, long distances to stops or stations, and lengthy journey times.

We support evidence-based investment in public transport that addresses these impediments. Improving service coverage, accessibility, and travel times will drive greater usage more effectively than direct fare subsidies.

EFFICIENT VEHICLES

Reducing the emissions intensity of our existing fleet is an immediate-term opportunity while the transition to ZEVs is a longer-term strategy for net-zero emissions.

Alongside the utilisation of more efficient diesel trucks, vehicle technologies such as low rolling resistance tyres, improved aerodynamics, and waste heat recovery are already making a difference.

Objective

To increase adoption of the most accessible energy efficient technologies by incentivising fleet renewal and retrofitting.

Euro VI

European vehicle emission standards limit harmful emissions of air pollutants like nitrogen oxides (NOx), particulate matter (PM), and carbon monoxide (CO), rather than CO₂ emissions. However, as well as improving air quality, Euro VI engines can also offer reduced fuel consumption and CO₂ emissions. Manufacturers report that Euro VI trucks are between 5-10% more fuel efficient than previous generation Euro V models.

HPMV's

Heavy truck and trailer combinations that can carry larger loads than standard truck combinations can reduce CO₂ on a kilometre/weight basis by up to 35% compared to standard trucks, as fewer truck trips are required.

Examples of efficiency upgrades to trucks and trailers

Aerodynamic modifications:

- Smooth-side van trailers
- Side skirtings
- Roof deflectors
- Chassis fairings
- Under-hood air cleaners

Tyres:

- Low resistance tyres
- Dual tyres to replace single wide tyres

Case study: Conroy Removals

Over the years, Conroy Removals has improved operational efficiency by introducing the concept of B-Train units moving three containers. Typically, the fleet had previously been limited to carting either one 40-ft container or two 20-ft containers per trip.

The B-Train configuration enables the movement of three containers at once, delivering a 50% productivity increase. For example, six 20-ft containers are transported in two trips instead of three. This reduces the number of journeys required both on highway and inter island movements, lowering driver demand and easing congestion.

Their newest truck on the block, the FAW JH6, is assigned to tow their B-Train units and though the FAW will use slightly more fuel to carry an extra container than the earlier tractor unit and semi configuration, it is still more efficient than undertaking an additional journey.



What Transporting New Zealand are asking for

To drive greater uptake of proven efficiency technologies, such as low rolling resistance tyres and aerodynamic upgrades, targeted financial support should be expanded. This could include extending eligibility for these technologies under EECA's Low Emissions Heavy Vehicle Fund, making it easier to invest in cost-effective retrofits.

Full capital expensing on modern vehicle purchases like HPMVs or Euro VIs would further incentivise timely fleet renewal by reducing tax liability and increasing cashflow.

Alongside financial incentives, increasing awareness among transport operators, their customers, and the wider public is essential. Many myths persist about HPMVs with a prevailing, uninformed view that big trucks are bad. In reality, their ability to carry larger loads reduces the total number of trips required, delivering improvements in emissions intensity, productivity, and road safety outcomes.

Transporting New Zealand will continue to promote the benefits of HPMVs and dispel myths, while Government-led information campaigns, similar to EECA's promotion of fuel-saving measures during the 2026 energy shock, could also play an important role in highlighting their environmental and commercial benefits.

DRIVER TRAINING

Truck drivers continue to be our industry's greatest asset, playing a central role in decarbonising commercial road transport. Skilled drivers can reduce fuel use by up to 35% compared to untrained drivers.

Objective

Fuel-efficient driver training should be comprehensive, widely accessible and encouraged, if not mandatory for truck drivers. Ongoing monitoring of driving practices is widely undertaken to identify further opportunities for fuel-saving.



SAFED NZ (Safe and Fuel Efficient Driving) is one course that has trained over 8,000 truck and bus drivers since 2010, with fuel savings averaging 7.58% for trucks and 5.24% for buses. SAFED instructors are available in every region throughout the country.

Case study: KAM Transport

KAM Transport's in-house driver training programme and investment in efficient vehicles have played indispensable roles in acquiring their Toitū Enviromark Gold accreditation. They achieved this through their robust environmental policy and these practical strategies:

- Operating a fleet predominantly made up of fuel-efficient (diesel) Euro VI trucks
- Digitally monitoring and improving fuel-efficient driving
- Running a driver reward programme for excellence in fuel efficiency
- Optimising freight through capacity reports to reduce trips and emissions.

What we're asking for

While fuel efficient driving courses are very effective at helping freight businesses to reduce fuel use, the cost can be up to \$1,200 per driver and there are no permanent Government subsidies available. In response to the 2026 global energy shock, EECA offered co-funding for up to 50% of the cost of fuel-saving in-cab coaching from one provider.

We want to see this initiative expanded, with continued support for businesses to reduce fuel use and thereby emissions, beyond temporary fuel crises.

GREEN INFRASTRUCTURE

Ensuring our network can accommodate more efficient vehicles, alongside innovative solutions to improve the performance and lifespan of infrastructure, are key drivers of transport decarbonisation.

This encompasses various strategies, like:

- Strengthening roads, bridges and culverts to accommodate more productive vehicles
- Reducing obstructive road engineering that causes stop-start traffic, such as excessive speedbumps
- Using renewable, circular and locally sourced materials in the construction, composition and maintenance of roads, where they meet performance requirements.

With the National Land Transport Fund heavily oversubscribed, we need to be smarter about investment by protecting the infrastructure we already have, while unlocking revenue from additional funding mechanisms such as tolling and public-private partnerships.

Case studies: A costly detour

Mass limits on the deteriorating Fernhill Bridge over the Ngaruroro River on State Highway 50 left some trucks undertaking a 40-kilometre detour to complete deliveries several times a day.

The detour was costing six local freight companies an estimated \$2.36 million a year and producing an additional 500 tonnes of CO₂ emissions through additional diesel consumption.

Fortunately funding to strengthen the bridge was confirmed in late 2025, and once complete it will be suitable for HPMVs and 50MAX configurations.

Advancing low-carbon roading materials

Selwyn District's Glentunnel Domain Road was the first in the country to be surfaced with recycled rubber chip. The project diverted close to 1,800 waste tyres from disposal and gave them a new life, directly saving an estimated 20–30 tonnes of CO₂.



Further emissions savings come from the reduced reliance on imported bitumen and the longer lifespan of the road compared to traditional materials.

The project's outcomes are still being monitored, but all initial results are pointing towards it being a successful trial, setting a promising precedent. Should rubberised road surfacing be rolled out more widely, a significant amount of CO₂ emissions could be avoided nationwide.

What we're advocating for

Transporting New Zealand will continue to call for smart, long-term, coordinated investment into New Zealand's infrastructure with a focus on improving the assets we already have. Aotearoa has a poor record in terms of getting value-for-money when it comes to infrastructure, not least due to political point-scoring and project cancellations.

Our country needs cross-party commitment to a stable infrastructure pipeline, providing the confidence needed to invest in upgrades that improve freight efficiency, reduce emissions, and future-proof the network.

Adapting to a changing climate

A broader climate strategy for New Zealand's road transport sector and indeed the whole economy must include both mitigation and adaptation measures. Even if the world stopped using fossil fuels tomorrow, we will still experience years of altered weather patterns due to historical emissions.

Severe weather events have impacted our infrastructure time and time again, with storms, flooding, and slips having the most damaging impacts to transport systems. Some areas of the country will also be subject to sea level rises that jeopardise coastal road and rail networks.

The most significant way we can prepare for that reality is by investing in our infrastructure.

Future-proofing your operations

Risk-informed site and route planning

Freight operators can reduce exposure by considering flood zones, slip-prone areas, and coastal hazards when selecting depot locations and planning routes.

Operational responses to extreme weather

Clear safety protocols should be in place for high-risk conditions. For example, avoiding the operation of high-sided or empty vehicles in strong winds to reduce rollover risk.

Supply chain expectations

As climate disruptions become more frequent, operators and their customers will need to have explicit conversations about service expectations. Contracts may need to evolve to include force majeure provisions, delivery flexibility, and other risk-mitigating approaches during extreme weather events.

Insurance and financial resilience

Insurance availability and affordability are likely to change as climate risks increase. Operators should regularly review coverage, consider risk mitigation measures that may reduce premiums, and generally factor climate risk into long-term financial planning.

Find more
resources and a
list of references
for this Green
Compact update

