SEPTEMBER 2025

Carbon Reduction Plan

KiwiRail's pathway to reaching net zero carbon emissions by 2050


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EXECUTIVE SUMMARY

KiwiRail's vision is to be the first choice for our customers as a trusted and sustainable partner in moving freight and people. By leveraging rail's energy efficiency and building on our low emissions profile, we aim to decarbonise our own operations and support the decarbonisation of New Zealand's transport sector.

We have set ambitious but feasible targets to reduce our Scope 1, 2, and 3 emissions, with specific actions and timelines to achieve these targets. Our Carbon Reduction Plan outlines our pathway to reducing emissions across various operational areas, including rail freight, ferries, vehicle fleet, other business activities and our value chain.

KiwiRail's commitment to achieving net zero carbon emissions by 2050 requires strong leadership, an ongoing focus on operational efficiency, investment in efficient technologies and infrastructure, and a clear commitment to sustainability.

For Scope 1 and 2 emissions, our target is to reduce emissions by 40 per cent by 2035 against the financial year 2019 (FY19) base year. Key initiatives such as the procurement of more efficient diesel locomotives and hybrid shunting technology, as well as the introduction of two new rail-enabled ferries are integral to reducing our Scope 1 and 2 emissions. Looking ahead, potential electrification of the Golden Triangle (subject to additional investment) would significantly reduce our footprint and reduce emissions from the land transport sector.

Rail is a naturally energy efficient, low carbon transport mode - every net tonne kilometre of freight moved by rail avoids on average, 60 per cent fewer emissions compared to road freight. KiwiRail is committed to increasing the freight volumes we carry, as this is one of the most impactful steps we can take to help decarbonise New Zealand's transport system. However, carrying more freight by rail will result in an increase in KiwiRail's overall (absolute) carbon footprint while we continue to use diesel as our prime fuel. While shifting freight to rail will provide a benefit to the country, it is important we can demonstrate improvement in our own energy performance despite a potential increase in absolute emissions. To do this, we have set an emissions intensity target to improve our rail freight operations by 46 per cent by 2035 (against an FY19 base year). This intensity target provides an indication of the relationship between fuel consumption and freight shifted. Achieving this target will require additional investment in further network electrification, as well as a continued focus on improving the energy efficiency of how we run our trains.

For Scope 3 emissions, we have set two reduction targets for 2035 against an FY24 base year: to reduce emissions from our business-as-usual operations by 30 per cent, and to improve the emissions intensity arising from our capital goods by 14 per cent. Reducing emissions from well-to-tank, embedding sustainability in our procurement processes and working with suppliers to reduce emissions are steps we are taking to reduce our Scope 3 emissions.

Our collaboration with the Energy Efficiency Conservation Authority (EECA) and membership in the Climate Leaders Coalition (CLC) and Sustainability Business Council (SBC) further strengthens our commitment to sustainability and achieving emissions reductions against all Scopes.

We have the potential to make the transition to a low-carbon, climate resilient business through smart asset planning and taking early action. While this transition will require additional investment, it will bring benefits and opportunities for our people, customers, communities, the environment, and the New Zealand economy.

1. INTRODUCTION

At KiwiRail, we're driving change—on track and beyond. As New Zealand's backbone for rail freight and passenger transport, we recognize our responsibility to support the shift toward a low-emissions future. This Carbon Reduction Plan sets out our vision to decarbonise our operations, reduce our negative environmental footprint, and contribute meaningfully to New Zealand's climate goals.

The challenges presented by climate change require a drastic reduction in greenhouse gas (GHG) emissions. Through the 2015 Paris Climate Change Agreement, New Zealand has committed to reducing greenhouse gas (GHG) emissions by 51-55 per cent by 2035 and to be net zero by 2050.

To achieve this, New Zealand needs investment into a low emission supply chain. The freight transport sector has a key role with all players needing to transition as quickly as possible. As a low-carbon transport provider, KiwiRail already plays a critical part in decarbonising New Zealand's transport sector and supporting New Zealand's climate goals.

KiwiRail's vision is to be our customers' first choice, as a trusted and sustainable partner to move freight and people. Sustainability is one of KiwiRail's strategic priorities that will help us realise this vision and continue to support the New Zealand economy.

Rail provides critical capacity, particularly for long-distance and heavy products, avoiding approximately one million truck trips annually along with the associated congestion and road maintenance costs, as well as providing improved road safety and environmental impacts.

As an energy efficient and low emissions form of transport, rail already achieves a lot for our economy and environment, but there is potential for it to do more. As a business which relies on diesel, we recognise the impact our operations have on the environment, and the carbon emissions we produce. By further improving our services and making them lower carbon, we can provide more effective and sustainable options for customers to move more freight with rail and thereby reduce overall transport sector emissions.

Our Rautaki Whakauka Sustainability Strategy 2025-2028 outlines our vision and objectives for sustainability across the pillars of environment, society and the economy. Since 2016, we have had an established Carbon Zero Programme through which we measure, manage and improve our energy and carbon performance across the business.

We have also had a collaboration agreement in place with the Energy Efficiency Conservation Authority (EECA) since its inception. EECA supports our Carbon Zero Programme through attending our quarterly Steering Group meetings and providing co-funded opportunities and guidance on improving our energy and carbon performance. In 2024, we joined the Climate Leaders Coalition (CLC), a coalition of New Zealand businesses which are working together to accelerate the transition towards a zero-carbon and climate-resilient future.

Reaching net zero carbon will be complex but achievable with strong leadership, investment in more efficient technologies and infrastructure, and a clear commitment to sustainability.

The pathway set out in this document, focuses on both short-term wins, such as ferry timetable optimisation, and long-term goals, such as further network electrification in the North Island (subject to further investment), ensuring that we remain a key player in sustainable transportation and logistics in New Zealand, and the export markets we serve. Investment in new generation electric locomotives and the required infrastructure will be one of the most certain and fastest ways to decarbonise key freight routes in New Zealand and to meet our carbon targets.

While this plan focuses on reducing carbon emissions, there is also a need to adapt to the effects of climate change that are already being felt. This is the focus of our Climate Adaptation Plan which can be found on our KiwiRail website.

We have set five carbon reduction targets:

Reduce Scope 1 & 2 gross emissions by

40%

by 2035 against a FY19 baseline

Reduce Scope 3 gross emissions (operational) by

30%

by 2035 against a FY24 baseline

Reduce rail freight carbon intensity (g CO_2e /NTK) by

46%

by 2035 against FY19 baseline

Reduce Scope 3 emissions intensity (capital goods) by

14%

by 2035 against a FY24 baseline

Achieve net zero by

2050

2. MEASURING OUR CARBON PERFORMANCE AND SETTING TARGETS

2.1. OUR TOTAL EMISSIONS FOOTPRINT

In the 2024 financial year, (FY24), KiwiRail emitted 319,500 tonnes of CO_2e across its Scope 1, 2 and 3 emission sources (Figure 2.1).

- **Scope 1** emissions are the direct emissions from sources owned or controlled by KiwiRail, such as the fuel used by our locomotives, vehicle fleet and ferries (204,543 t CO2e in FY24).
- **Scope 2** emissions are the indirect emissions that come from the generation of purchased electricity consumed by KiwiRail (1,830 t CO_2e in FY24).
- **Scope 3** emissions are all other indirect emissions that arise because of our activities. They come from sources that are not owned or controlled by the organisation such as business travel, waste to landfill, purchased goods and services, employee commuting, and leased assets. In recent years, KiwiRail has been increasing the number of Scope 3 emissions categories we measure (113,126 t CO_2e from operational activities in FY24). Scope 3 emissions from capital goods have been excluded from our footprint.

A note on our Scope 3 emissions:

In FY24, Scope 3 emissions from our **operational activities** were 113,126 tonnes of CO_2e making up 35 per cent of our total Scope 1, 2 and 3 footprint. These emissions were externally verified as part of our FY24 GHG inventory by Toitū Envirocare as our assurance provider.

Scope 3 emissions from our **capital goods**[1] **activities** were 87,386 tonnes of CO_2e. These were not verified as part of our FY24 GHG inventory process and have been excluded from our total emissions footprint. However, we have still set a target and identified some opportunities for emissions reduction from our capital goods emissions in section 4.2 of this plan. We plan to verify these emissions in the next financial year.

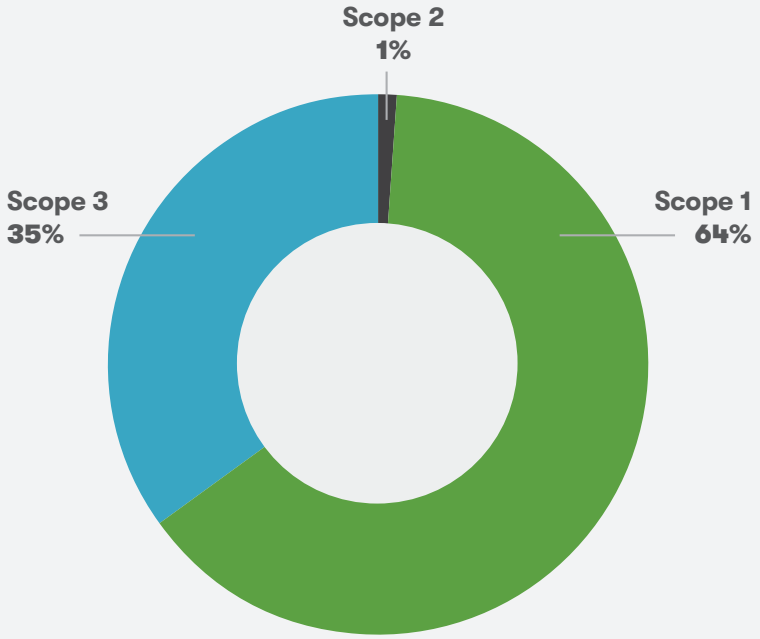


Figure 2.1: *KiwiRail's FY24 carbon footprint for Scope 1, 2 and 3 (operational) emissions (319,500 t CO_2e):*

[1] *For this plan, and the purpose of setting a Scope 3 target, emissions from KiwiRail's 'Capital Goods' will be reported separately to Scope 3 emissions arising from KiwiRail's other business activities. Capital goods is an emissions category identified by the GHG Corporate Value Chain (Scope 3) Accounting and Reporting Standard and are equivalent to "capital assets" as defined in financial accounting. However, unlike financial assets, emissions from Capital Goods are not amortised over their life but are accounted for in the year of their acquisition.*

KiwiRail has interpreted Capital Goods to refer to the emissions associated with the production of rail assets and infrastructure construction. Examples include emissions from the steel used to manufacture rail track, wagons or locomotives, and the delivery of capital projects such as the Auckland Metro Programme. Due to the non-recurring nature of the major capital projects that KiwiRail undertakes every few years, including Scope 3 emissions from this category would distort our emissions reporting. Emissions associated with renewals and the maintenance of the existing network are captured as part of our Scope 3 operational emissions.

2.2. SCOPE 1 AND 2 FOOTPRINT

Our Scope 1 and 2 emissions can be broadly split into three operational areas: emissions from rail freight operations (47 per cent); ferry operations (41 per cent); and emissions from remaining business activities (12 per cent) (Figure 2.2).

The last category includes emissions from fuel used in our scenic and commuter rail services; hoists, forklifts, generators, mobile plant and machinery; diesel and petrol used for our road vehicle fleet; electricity for traction, signaling and communications, as well as electricity and natural gas used by our facilities. These emissions are referred to as 'other emissions' in our emissions pathway.

Nearly 90 per cent of our Scope 1 and 2 carbon emissions come from the fuel used in our locomotives and ferries. While the most significant reductions must come from our rail and ferry operations, every part of our business has a role to play in lowering our overall footprint.

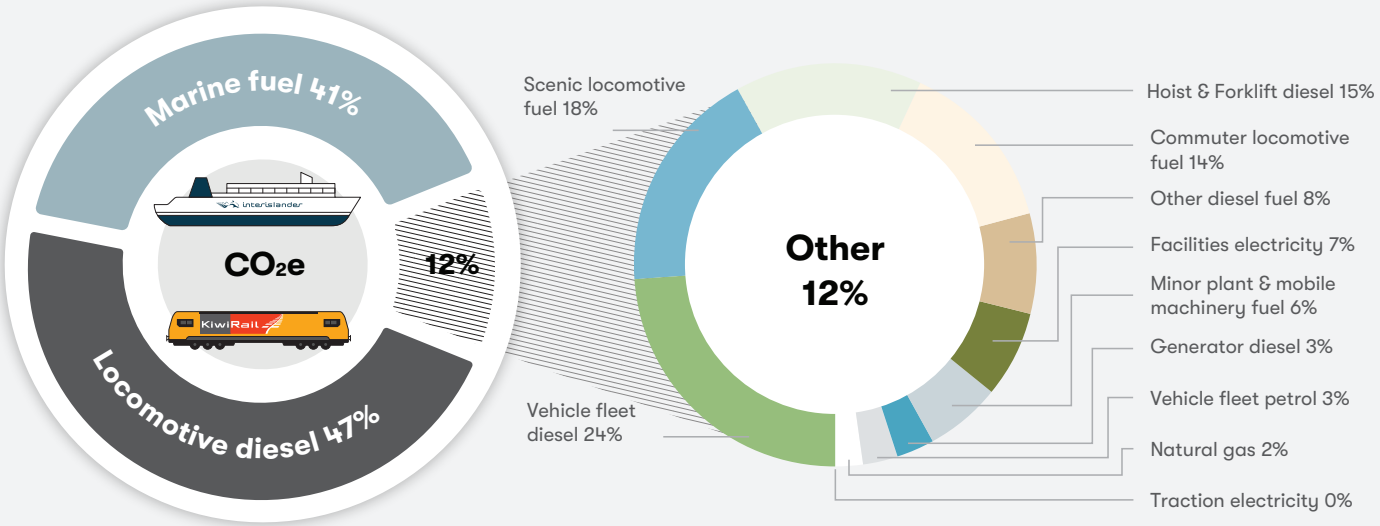


Figure 2.2: *KiwiRail's FY24 carbon footprint for Scope 1 and 2 emissions (206,373 t CO_2e)*

2.2.1. Scope 1 and 2 targets

KiwiRail is committed to managing and reducing its emissions. We measure our carbon emissions (CO_2e) on an intensity basis for rail freight operations, and on an absolute basis for the organisation. This recognises that carrying more freight by rail will result in an increase in KiwiRail's absolute carbon footprint while we continue to use diesel as our primary fuel, and the importance of having a way to demonstrate an improvement in our emissions intensity despite a potential increase in absolute emissions.

- On an **absolute basis**, we have set a near-term target to reduce our gross Scope 1 and 2 emissions by **40 per cent by 2035** against a FY19 baseline (Table 2.1).
- On an intensity basis, we have set a **near-term** target to reduce rail freight carbon intensity (g CO_2e /NTK) by **46 per cent by 2035** against a FY19 baseline.

Our rail freight carbon intensity factor provides an indication of the relationship between energy (diesel fuel and traction electricity) consumption and freight shifted. It is calculated as energy divided by net tonne kilometres (NTKs)[2] and tells us the emissions resulting from the energy required to shift a tonne of freight one kilometre. Improvement is show by a fall in the indicator, meaning less energy is required to shift each tonne of freight.

These ambitious but feasible targets support our **long-term goal** to be **net zero carbon**, by 2050. This target is aligned with a 'well-below 2 degrees Celsius' trajectory[3].

As part of our re-set of targets in 2024, KiwiRail modelled potential science-aligned targets with a well-below 1.5 degrees Celsius future. The targets modelled required a very significant reduction in operational emissions in a short timeframe. We modelled these targets with different base and end years and found it made little difference to the quantum of emissions reduction required.

Without significant external investment and rapid advancement in battery electric locomotive technology and alternative low carbon fuels for marine shipping, a 1.5 degree target would be extremely challenging for KiwiRail to achieve in the current business and policy environment. Instead, we have chosen to adopt a target that is aligned with a 'well below 2 degrees' emissions reduction pathway.

As we continue to refine our modelling and gain better insights into our new assets and future developments, the projected emissions reductions across different parts of our business may evolve. This is reflected in our updated forecast (as at September 2025) emissions assessment in Table 2.1, which shows a slight variance from our modelled reductions. However, our overarching target remains unchanged: to achieve a 40 per cent reduction in Scope 1 and 2 emissions by 2035. While our current trajectory places us just below this target, we are actively working to close the gap and stay on course.

***Table 2.1:** Our journey to 2035 for Scope 1 and 2 emissions – key figures*

	FY19 base year (t CO_2e)	FY24 (t CO_2e)	FY35 target year (t CO_2e)	FY24 modelled reduction by business area	FY24 modelled reduction to 40% target	Updated forecast (September 2025) reduction by business area	Updated forecast (September 2025) reduction to 40% target
Rail Freight[4]	118,585	99,672	80,317	32%	16%	40%	20%
Rail freight intensity CO_2e/NTK	*0.027*	*0.028*	*0.015*	46%	-	*38%*	-
Interislander	93,509	85,194	53,428	43%	17%	31%	12%
Other	21,905	14,882	8,244	62%	6%	55%	5%
Vehicle Fleet	6,178	6,625	2,873	53%	1%	53%	1%
Total - Scope 1 and 2	240,177	206,373	144,861	-	40%	-	39%

[2] *Net Tonne Kilometres (NTK) is a measure that we use to report the amount of freight activity on our rail network, where a single unit represents one tonne travelling one kilometre. It excludes the weight of the train (locomotives and wagons).*

[3] *At the time of setting our Scope 1 and 2 target, an SBTi rail freight sector pathway did not exist. Further, by moving more freight to rail, our absolute footprint would increase, but overall freight sector emissions would decrease. On this basis, the CLC granted KiwiRail an exemption to setting a target that is aligned with a 1.5 degrees Celsius pathway, while we pursue efforts to reduce emissions in line with a well below 2 degrees Celsius pathway.*

[4] *FY35 figures for rail freight emissions take into account forecast growth in freight.*

Each part of our business has a part to play in meeting our 2035 target and supporting the decarbonisation of New Zealand's transport emissions. Reductions modelled to meet our 2035 target are indicated in the bubbles above each business area (Figure 2.3).

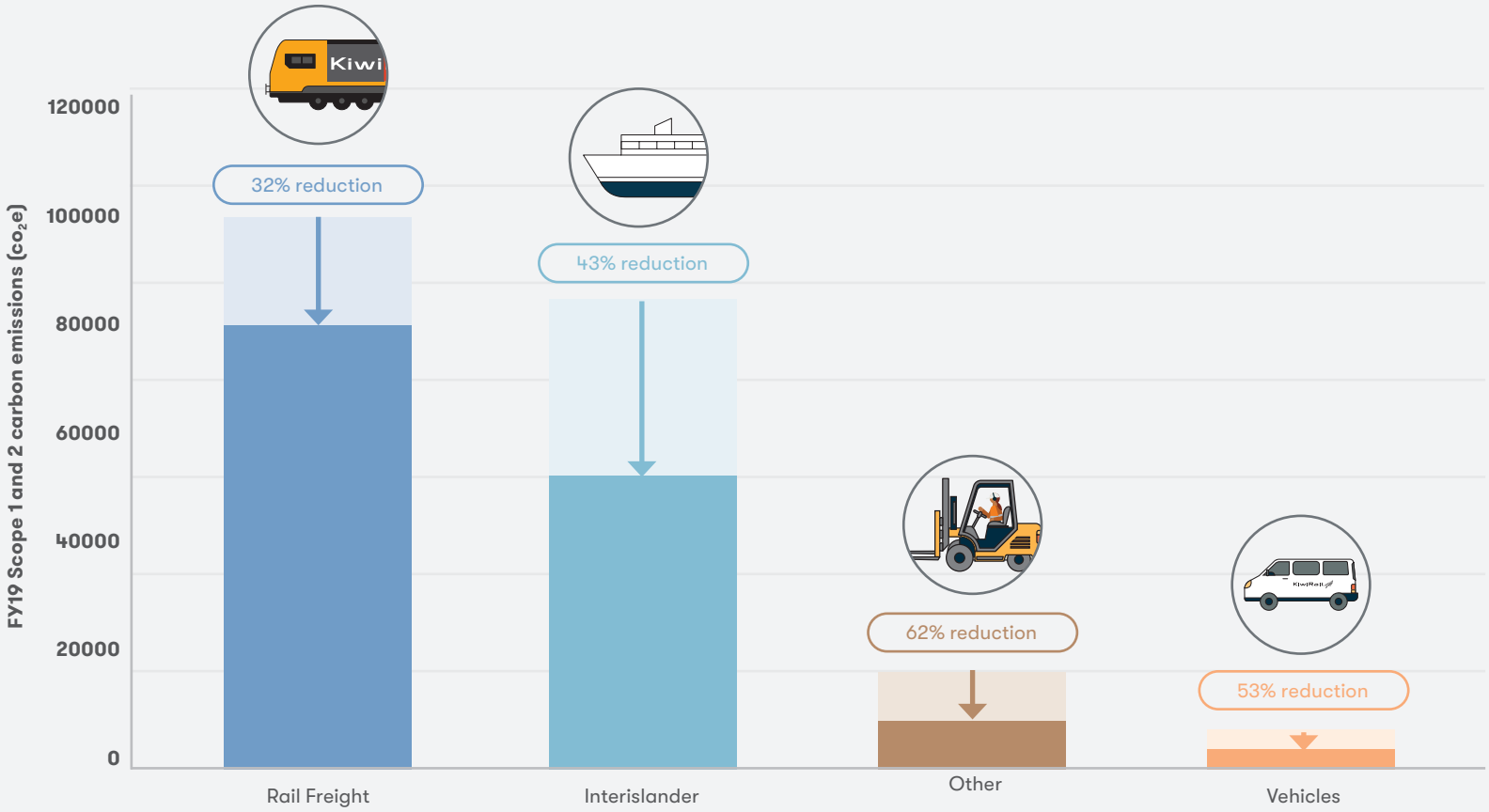


Figure 2.3: *Achieving our 2035 target for our Scope 1 and 2 emissions – Modelled contribution to reduction by operational area against FY19 base year*

2.3. OUR SCOPE 3 FOOTPRINT AND TARGETS

In recent years, KiwiRail has been increasing the number of Scope 3 emissions categories it measures. In FY22, we included a limited set of Scope 3 emissions in our Greenhouse Gas (GHG) inventory for verification for the first time. We have been working on improving the breadth and quality of what we report and our Scope 3 (operational) footprint was verified again in FY24. We have used FY24 as the base year for our Scope 3 targets as it is the most complete inventory we have to assess future reductions against.

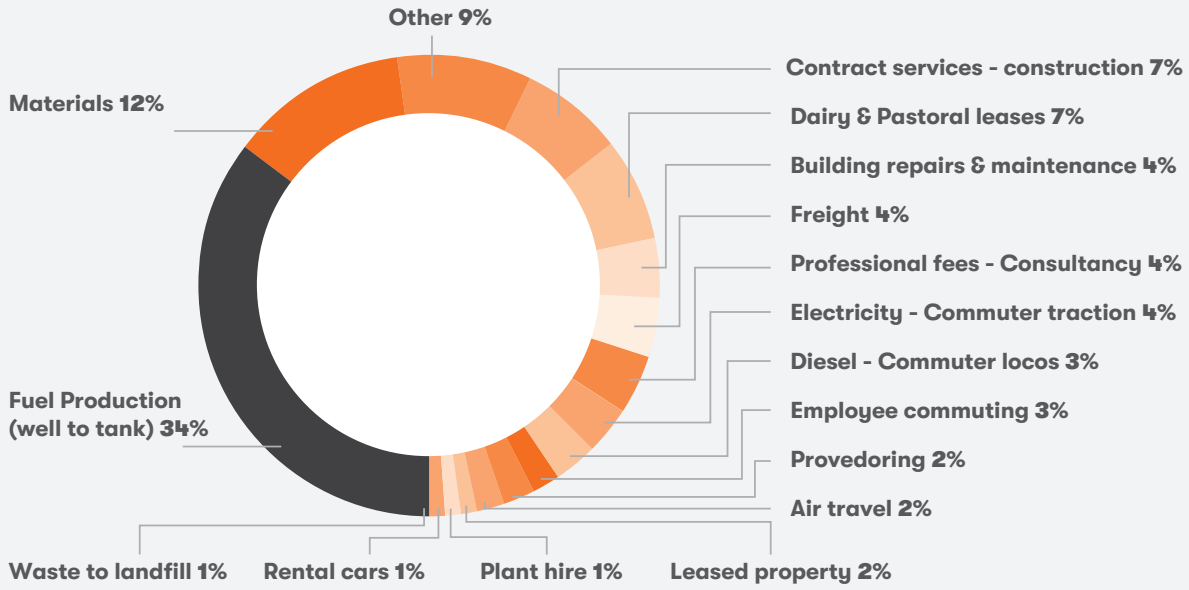


Figure 2.4: *KiwiRail's FY24 carbon footprint for Scope 3 emissions – from our operational activities (113,126 CO_2e)*

2.3.1. Scope 3 emissions from operational activities

Target: Reduce Scope 3 operational emissions by **30 per cent by 2035** measured against an FY24 base year. This excludes emissions from the 'capital goods' category.

Our FY24 footprint for Scope 3 emissions was 113,126 tonnes of CO_2e making up 35 per cent of our total Scope 1, 2 and 3 footprint (Figure 2.4). To measure these emissions, we applied a consumption-based method to our Scope 3 activities where data was available, and a spend-based method to our FY24 General Ledger spend categories to assess remaining activities.

Within our operational scope 3 emissions, the biggest source (34 per cent) is well-to-tank emissions which are directly correlated to the petrol and diesel used by our locomotives, ferries, vehicle fleet and other plant and equipment. After emissions from well-to-tank, emissions from 'materials' and 'construction contractors' are the next largest sources.

These results reflect the high fuel consumption we have as a business, as well as the work undertaken through maintenance and renewals contracts to maintain the existing network over the past 12 months. Where we have not yet established our own reduction opportunities, we have assumed a reduction pathway in line with that organisation or sector's publicly stated commitments (where those are available).

2.3.2. Scope 3 emissions from capital goods

Target: Reduce Scope 3 capital goods emissions **by 14 per cent in intensity by 2035** against an FY24 base year (achievement of this target will be dependent on the mix of construction activities and materials in 2035). This data was not verified as part of our FY24 GHG inventory.

Scope 3 emissions from our capital goods include the embodied carbon (cradle to gate) from materials such as rail track, bridges, sleepers, pandrols (rail fastenings), locomotives, wagons, culverts, ballast, rail turnouts and construction contractors [5] used in our capital projects (Figure 2.5).

Investment in KiwiRail's capital works programme varies year to year, depending on external funding (primarily from central government), repairs to the rail network from weather events, and other natural disasters. These factors are outside of KiwiRail's control and therefore make it more difficult to plan for absolute emissions reduction in the medium to long-term so we have chosen an intensity-based target for specific materials with a clear reduction pathway for this part of our footprint.

The 14 per cent reduction target is calculated by quantifying material or activity-specific carbon intensity reductions through KiwiRail design improvements, supplier commitments, contractor activities and ballast recycling.

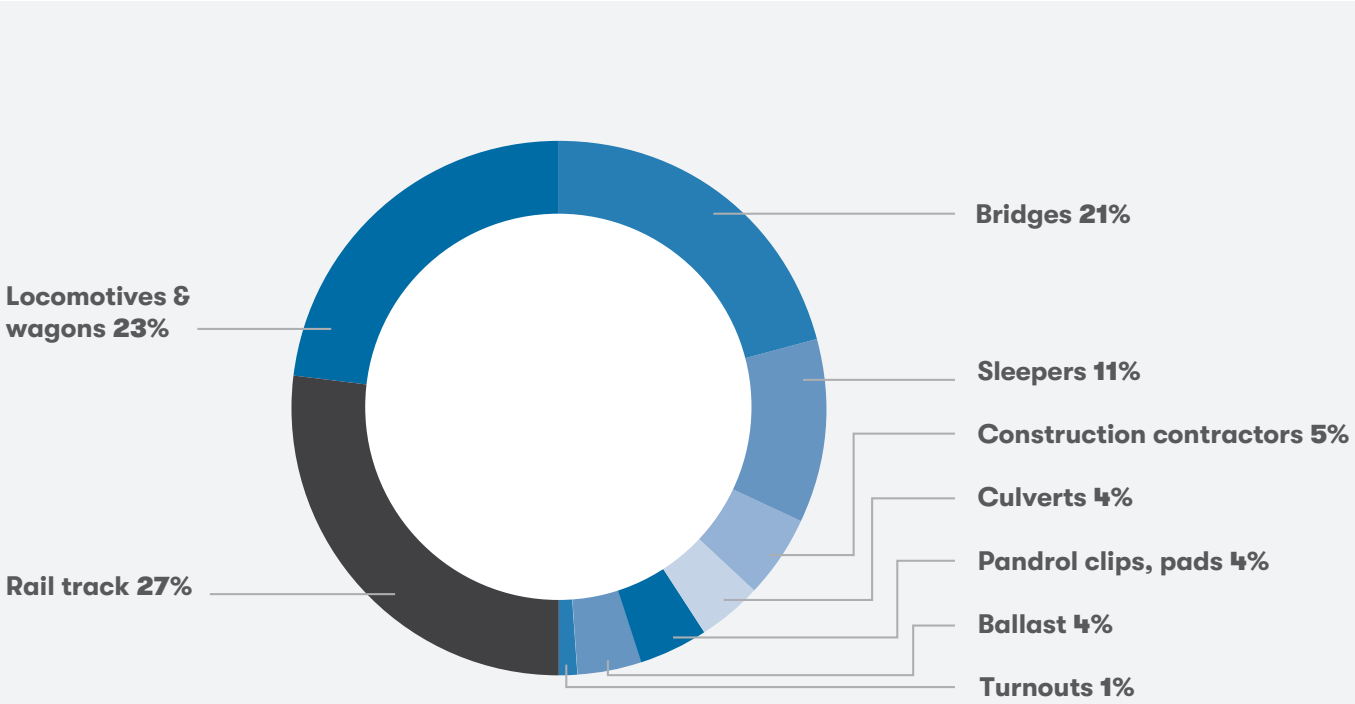


Figure 2.5: *KiwiRail's FY24 carbon footprint for Scope 3 emissions – from capital goods (87,386tCO_2e)*

To calculate the embodied emissions from our capital goods, we employed a bottom-up approach. We began by quantifying the materials purchased in FY24 and then calculated the carbon emissions associated with their manufacture and transport. A qualitative materiality assessment was conducted to exclude materials that were not significant sources of construction emissions, such as rail screws and sleeper pads.

Construction contractor data includes materials, fuel consumption, and waste disposal from contractors undertaking capital works on behalf of KiwiRail. This data is generally provided to KiwiRail as part of contractor's contractual reporting requirements.

Carbon emissions for materials were calculated using Environmental Product Declarations (EPDs). When EPDs were not available, we used proxies, such as material emission factors published by the Ministry for the Environment (MfE) or other agencies. This also included transport emissions where they could be quantified.

[5] *Emissions recorded from our construction contractors in FY24 include those from the Auckland Metro Programme and Wellington Metro Upgrade Programmes only. We aim to expand this reporting to more programmes in future.*

2.4. EMBEDDING TARGETS WITHIN BUSINESS PLANNING CYCLES

Our 2035 target for Scope 1 and 2 emissions is one of the key KPIs included in our annual business planning cycle. It is broken down into the contribution each business unit must make to support achievement of the target alongside their key actions in their business plan.

Our rail freight carbon intensity metric is published annually in our Statement of Corporate Intent (SCI), quarterly to Treasury, and alongside our carbon footprint in our Annual Integrated Report. It will also be regularly reported to our Board.

Our Sustainability Strategy and plans for Carbon Reduction and Climate Adaptation will be reviewed and adjusted as part of our annual planning cycle to maintain their relevance in a changing world.

3. ACHIEVING OUR SCOPE 1 AND 2 TARGETS

Creating a carbon reduction pathway for KiwiRail involves outlining a strategy to reduce carbon emissions across its operations. Since KiwiRail is a major player in New Zealand's transport sector operating freight services and enabling or operating passenger services, the pathway must consider various factors including infrastructure, fleet management, and technology advancements.

We have modelled a pathway to achieve our 2035 target; some initiatives require ongoing focus to improve how we run our assets to improve energy efficiency. Other initiatives will require major capital investment to decarbonise our rail and ferry fleet, and some of these initiatives are not yet funded. More detail is provided in the pathway for actions between now and 2035 as we have more certainty for that period. We will model our emissions reduction pathway beyond 2035 in more depth in future, as information becomes available about potential new motive technologies to support decarbonisation, as well as the level of investment KiwiRail can secure.

To achieve net zero carbon, our first goal is to reduce gross emissions as far as possible; emissions that cannot be eliminated will have to be offset but considering offsetting should be KiwiRail's last resort in achieving a net zero footprint. Due diligence will need to be applied when considering offset options as the credibility of some offset programmes is being questioned.

The most appropriate offset options will evolve as we near 2050 and have a better view of KiwiRail's residual footprint. Options could include investing in re-forestation and/or renewable energy projects either on our own land, or in partnership with others.

While we have focused on sharing the main emissions reduction actions in our pathway, these are not exhaustive. We are always exploring more ways to reduce our emissions footprint which is managed through our Carbon Zero Programme.

3.1. RAIL EMISSIONS PATHWAY

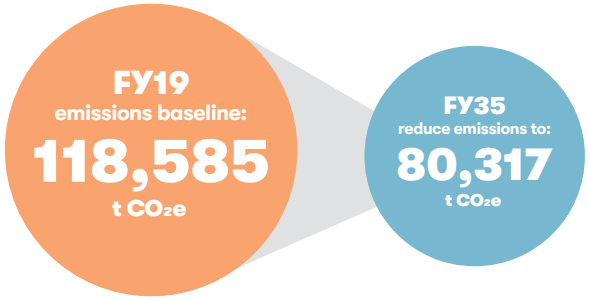
A **32 per cent emissions reduction** by 2035 has been modelled for our rail freight emissions as well as a **46 per cent improvement** in our rail freight intensity metric.

KiwiRail owns and operates around 160 mainline locomotives, including 15 electric locomotives which are being refurbished. We also have approximately 34 shunt locomotives which support our rail freight operations. Our mainline locomotive fleet will reduce to around 140 in 2030 after our new 'DM' locomotives are commissioned into service, and older locomotives are retired from our fleet.

We carry approximately **12 per cent of domestic freight** and **25 per cent of New Zealand's exports**, but our ambition is to carry more freight by rail. We aim to reduce overall transport sector emissions by enhancing the reliability of our services and lowering their carbon footprint, making rail a more attractive option for customers. New Zealand's freight activity is forecast to continue growing out to 2050, and an integrated transport system including rail and road will be an important part of this.

A priority for some of our customers is to understand the carbon impact of their freight movements by rail. Customers want to understand how they can reduce carbon in their supply chain by shifting freight to rail from other modes.

We currently provide almost 100 customers with a regular Steel Wheels report which sets out carbon savings achieved by using rail freight. The actions detailed below will help us improve our rail-freight intensity metric, supporting our customers' needs while growing the overall volumes of freight we move.



KiwiRail Steel Wheels FY2024 (between 1/07/23 and 30/06/24)

Your partner in sustainable freight

Your freight travelled a total of

3,482m

Net Tonne Kilometres (NTKs)

=

Equivalent to

1,001,726m

Truck trips avoided

84.7m

Fuel savings (litres)

or

229,434

Carbon emission savings (tonnes)

Table 3.1: *Key actions at a glance for our rail operations (updated forecast as of September 2025)*

This year, we will also launch a carbon calculator on our website, which allows rail freight customers and Great Journeys passengers to look up the carbon savings they can achieve by using rail for specific trips. We will continue to refine and improve the accuracy and accessibility of our carbon reporting to customers

Table 3.1 shows the actions we are taking or could take to help reduce our rail freight emissions. Cumulatively, we could achieve up to a 40 per cent reduction in absolute emissions from our FY19 base year, which is more than the 32 per cent modelled at the time of setting our targets. However, achieving this reduction would be dependent on significant unconfirmed investment to electrify the Golden Triangle.

Actions to reach our 2035 emissions target	Timeframe	CO_2e emissions improvement (% against FY19 base year)
Electric shunt machines: 11 x electric shunt machines (ESMs) commissioned into service.	2025	A small benefit, but not quantified
Electric locomotives: 15 x electric locomotives (EFs) refurbished and reinstated to run between Hamilton and Palmerston North.	2026	3%
Efficient diesel locomotives: 66 x efficient diesel locomotives (DMs) commissioned into service (10-20% improvement on current South Island fleet).	2028	4%
Hybrid shunt locomotives: 24 x yard shunt locomotives (DSHs) diesel-battery hybrid commissioned into service.	2028-2029	A small benefit, but not quantified
Improving operational efficiency: • Shutting down trailing locomotives through installation of a 'remote offline' switch for our Locomotive Engineers • Maintaining focus on Driver Advice System (DAS) utilisation and compliance, as well as DAS training for new Locomotive Engineers • Improved oversight and reporting of our locomotive idling emissions • Reviewing and optimising timetables on certain routes • Increasing payload utilisation – long, full trains • Other measures managed through our Carbon Zero Programme	2030	10%
Adjustments for gross tonnage volume change: To account for assumed increase in KiwiRail owned containers		-7%
Business case - Electrification of the Golden Triangle (Auckland - Hamilton - Tauranga) (**subject to significant unconfirmed investment)**. Business case to be submitted to Treasury in 2025.	2035	30%

HIGHLIGHT

We have developed a staged plan to decarbonise rail freight operations:

- **Step 1** (underway) Continue to replace our 50-year-old diesel locomotives with new generation models. That will offer improved emissions intensity.
- **Step 2** (underway) Complete investigations into the best option to use electric propulsion for the Golden Triangle and key feeder lines.
- **Step 3** (subject to investment decisions) Install overhead electrification on the required parts of the Golden Triangle rail network and introduce new hybrid battery-electric locomotives through a progressive rollout by 2035.

The business case will inform future investment decisions for decarbonising the transport system and continuing to improve the emissions benefits of rail freight and passenger services.

BUSINESS CASE: GOLDEN TRIANGLE ELECTRIFICATION PROJECT

New Zealand and KiwiRail have committed to achieving net zero carbon emissions by 2050 but to reach that goal we need to invest in infrastructure that enables emissions reduction.

In 2023, KiwiRail received Budget funding to complete a Business Case for electrification of the Golden Triangle (Auckland - Hamilton - Tauranga). The Golden Triangle contains one third of New Zealand's population and is the busiest part of the rail freight network carrying about 30 per cent of the rail network's total freight. Additional investment into electrification of the rail system (using hybrid locomotives that are powered through overhead lines and batteries) can deliver significant emission reductions.

Coupled with our existing electrification from Hamilton to Palmerston North, using electric trains in the Golden Triangle, would allow us to move around 55 per cent of KiwiRail's freight task on electric trains. This change would not only reduce carbon from KiwiRail's own operations but provide a certain and dependable decarbonised option for the wider New Zealand freight sector. Customers who want to reduce their emissions by moving to rail will further amplify the benefits of investing in rail electrification.

We know our customers increasingly want to reduce carbon in their supply chain and carrying freight by rail can help them do that. Inter-regional passenger transport would also potentially benefit from the infrastructure created for electric freight trains, further supporting emissions reduction from the transport sector.

3.2. FERRY EMISSIONS PATHWAY

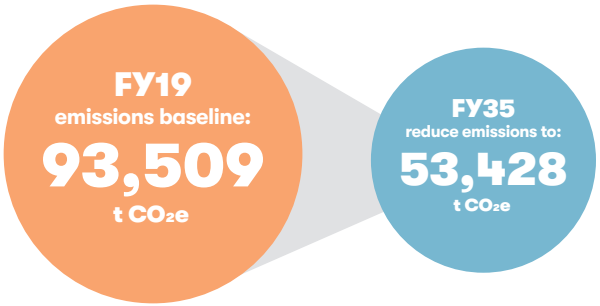
A **43 per cent reduction** in absolute emissions by 2035 has been modelled for our ferry fleet.

Diesel use by KiwiRail's ferries is affected by a variety of factors including the number of Cook Strait crossings, weather, and timetables. In April 2025, KiwiRail announced that Aratere will be retired in August this year reducing our fleet from three ferries to two. As a result, the number of Cook Strait crossings we make will reduce by approximately 25 per cent. The impact of this is that emissions reduction from our ferry fleet will now occur earlier than modelled when setting our Scope 1 and 2 emissions target in 2024.

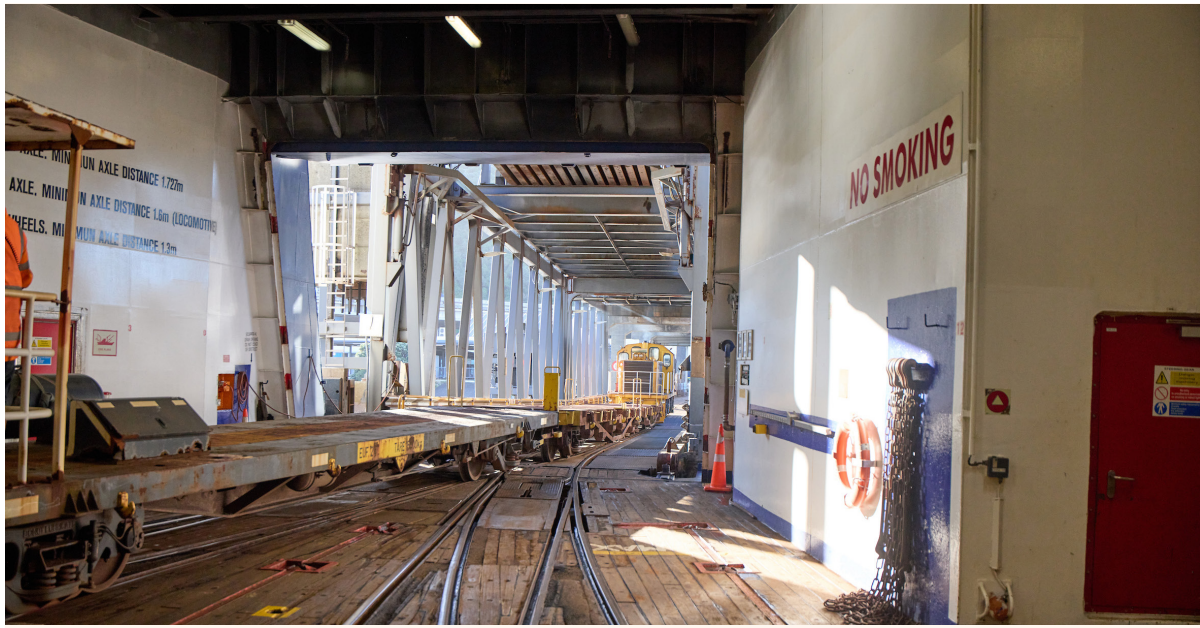
KiwiRail has two new rail-enabled ferries arriving in 2029 - see ferry highlight. Until then, Interislander will continue providing a reliable and safe Cook Strait service with our current ferries, carrying passengers, cars and commercial vehicles along with rail freight.

Despite the current fleet nearing the end of life, fuel efficiency remains a key focus. We have several measures including timetable refinement and optimisation, and regular hull maintenance and cleaning.

We have also deployed a fuel optimisation system on Kaitaki. The system calculates an optimal propulsion based on real time weather data and sea state information. It interfaces with the ferry's propulsion system to execute the propulsion plan through continuous active adjustments of the ferry (speed, pitch, and shaft power).



HIGHLIGHT



NEW RAIL-ENABLED INTERISLANDER FERRIES

The procurement of the new ferries is being led by Ferry Holdings Limited, a 100% Crown owned company established by the NZ Government (under Schedule 4A of the Public Finance Act 1989). In March 2025, the Government announced the decision that two new rail-enabled ferries would be procured and enter service by December 2029.

The new ferries will feature both road and rail decks, allowing more efficient loading and unloading of freight using single-shunt rail movements. At approximately 200 metres long, they will be larger than the current fleet, providing capacity to serve current and future demand for people and freight. Designed with modern system redundancies and future-proofing solutions, we also expect to see the emissions profile of the new ferries improve over their asset lifetime.

The identical ferries will improve Interislander's efficiency by reducing ongoing maintenance costs and, for the first time, allow KiwiRail to use a single standardised asset management, training and operational approach. KiwiRail has welcomed this decision as rail-enabled ferries will ensure the lowest operating cost for rail freight customers and increased capacity for road transport operators.

Table 3.2: *Key actions at a glance for our ferries (updated forecast as of September 2025)*

Actions to reach our 2035 emissions target	Timeframe	CO_2e emissions improvement (% against FY19 base year)
Retirement: Retirement of Aratere ferry from the Interislander, reducing the fleet from three to two ferries	2025	20%
Improving operational efficiency: • Implementing recommendations from energy audits on the ferries (co-funded by EECA) • Fuel optimisation system (Q-tag) • Timetable optimisation • Regular hull maintenance and cleaning • Improved coating system	2029	11%
New ferries: Two new rail enabled ferries with increased carrying capacity are commissioned into service (with capability to run on low carbon fuels and/or hybrid engine operation in future).	From 2030	Absolute emissions will be similar to the existing two ferry operation, but emissions intensity will improve over time

Table 3.2 shows the actions we are taking to help reduce our ferry emissions. Together, these initiatives show that we could achieve a 31 per cent reduction in emissions from our ferry footprint (against FY19 base year), which is less than our 43 per cent modelled at the time of setting our targets. However, we know that the new Interislander ferries will be designed with modern system redundancies and future-proofing solutions to reduce carbon emissions over their asset lifetime. Uptake of zero or near zero GHG emissions technologies, fuels and/or energy sources will be the subject of future carbon reduction plans."

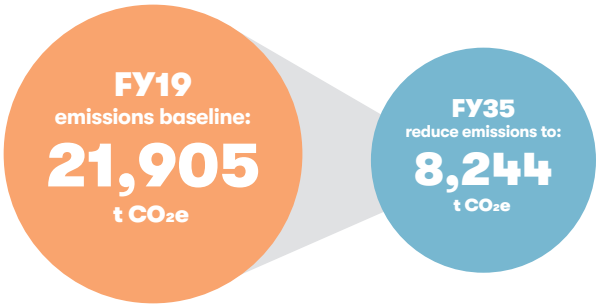
3.3. OTHER EMISSIONS PATHWAY

A **62 per cent emissions reduction** has been modelled from this part of our footprint to ensure the business meets its 40 per cent emissions reduction target by 2035.

The largest part of the 'other' footprint includes emissions from fuel used on our passenger services (Te Huia and Capital Connection) and our scenic trains (Great Journeys New Zealand). Last year we successfully reduced emissions from our TranzAlpine service by approximately 18 per cent per journey - see highlight. From 2028, our scenic and commuter services will also benefit from the more efficient new diesel locomotives (DM fleet) that are coming into service. While there are some initiatives that could lead to an incremental fuel improvement on these services, large step changes in emission reduction is limited while we run diesel locomotives.

After emissions from our passenger and scenic services, KiwiRail's forklift and hoist fleet is the next greatest source of emissions in the 'other' category. We already have 24 small electric forklifts in our fleet with positive feedback from our teams on their usability. With technology improving year on year, we know that there is an opportunity to decarbonise our large hoist fleet to battery-electric or hybrid diesel-electric as part of our future fleet strategy. This will be the subject of further exploration with our operations teams over the next one to two years.

While the specific timing for some of these actions is still to be finalised, we have made some assumptions that emission reductions will start to occur from 2031 and by 2050 it's expected that KiwiRail's forklift and hoist fleet will be powered by zero-carbon technology.



HIGHLIGHT

REDUCING DIESEL USAGE ON THE TRANZALPINE

Our TranzAlpine service carries passengers between Christchurch and Greymouth and is one of our scenic rail journeys from our Great Journeys New Zealand brand. Until recently, it operated using two diesel locomotives. This was to ensure it would have enough power to make it through sections of its journey.

However, after engaging with relevant teams, and looking at recent performance, it was deemed not necessary to run the service with two locomotives. As of October 2024, the TranzAlpine now runs with one locomotive which has reduced emissions from this scenic service by approximately 18 per cent per journey, delivering a positive outcome for our passengers and the environment.

Table 3.3: *Key actions at a glance for our other emissions (updated forecast as of September 2025)*

We also expect to reduce carbon emissions by using diesel generators less at our container terminals—shifting more energy use to electrified reefer towers—and potentially on our locomotives, if we're able to electrify the Golden Triangle network – see GTEP case study.

Table 3.3 shows the actions we are taking or could take to help reduce our other emissions. Together, these initiatives show that we could achieve a 55 per cent reduction in absolute emissions from our FY19 base year, which is less than our 62 per cent modelled at the time of setting our targets. We will work on other reduction measures across these 'other' assets to close the gap.

Actions to reach our 2035 emissions target	Timeframe	CO_2e emissions improvement (% against FY19 base year)
GJNZ operational efficiency: TranzAlpine reduces from two locomotives to one for regular service	2026	17%
Natural gas replacement: all gas connections replaced with lower carbon alternatives or disconnected	2030	2%
Energy efficiency: improvement projects across property portfolio, including: • complete energy audit of Wellington Railway Station co-funded by EECA • investigate lighting controls project for mechanical workshops and yards	2026	Small benefit, not quantified
National grid electricity: reduction in non-renewable generation of electricity grid as New Zealand aims for 92% renewable electricity generation by 2035	2035	14%
Hoists (includes forklifts and reach stackers): asset replacement with lower carbon technology	2035	15%
Generators/gensets: asset replacement with lower carbon technology and sourcing power from electric reefer towers rather than diesel gensets	2035	7%

3.4. VEHICLE FLEET EMISSIONS PATHWAY

A **53 per cent emissions reduction** has been modelled for our vehicle fleet based on the conversion of cars, utes, and vans from petrol/diesel to electric/low emissions fuel by 2035.

We have assumed that all our SUVs and cars will be electric by 2032, and all our utes will be low/zero carbon by 2035.

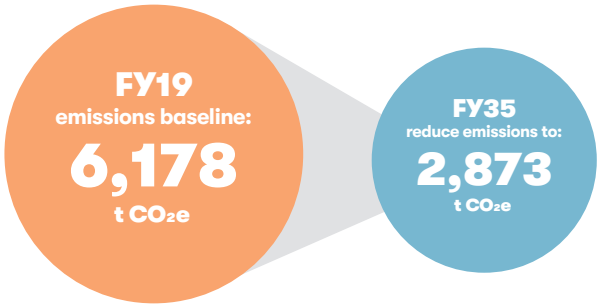
KiwiRail has a road fleet of approximately 1,078 vehicles which serve various functions, site types and locations across the country. The fleet is a mixture of owned and leased vehicles, including cars, utes, vans, trucks and hi-rail vehicles (vehicles with the ability to run on rail as well as road). Emissions from our diesel utes, trucks and hi-rail vehicles contribute the most emissions from our vehicle fleet (89 per cent).

Low carbon technology for passenger and light commercial class types has been around for some time with electric and hybrid options becoming more popular. KiwiRail already owns a small number of electric SUVs and we plan to increase the proportion of electric vehicles in our fleet over time.

In the near term, there are several actions which will support us to reach our vehicle emissions target by 2035. We have recently secured co-funding from EECA for a fleet optimisation study to determine which fleet vehicles are feasible to replace with EV equivalents. The assessment will consider the common routes and distances vehicles travel and the functions they fulfil. EECA has also co-funded us to conduct electrical site surveys at approximately 29 of our sites to understand what upgrades will be required to facilitate EV charging infrastructure.

Later in 2025 we will trial two electric utility terrain vehicles (UTVs) in our container terminals and yards, while our infrastructure teams will trial a Plug-in hybrid electric vehicle (PHEV) ute in various terrains. If successful, the UTVs could be used as an alternative to our yard utes at some sites, while the PHEV ute could be suitable to replace diesel utes.

We will monitor suitable options to transition our truck and hi-rail fleet to low/zero carbon. We have not included potential emissions reduction from these vehicles in our pathway yet, however we could see some of these vehicles transitioning from 2035. More investigation is required.



4. ACHIEVING OUR SCOPE 3 TARGETS

Embedding sustainability in our procurement processes is one way we can achieve Scope 3 emissions reduction. For example, our Procurement team lead a Strategic Vendor Relationship Management (SVRM) process with some of our strategic suppliers. Sustainability is a standing agenda item in these sessions and allows us to engage with suppliers on emissions reduction opportunities.

Another way to leverage procurement processes is to integrate emissions criteria into our supplier selection by recognising suppliers with strong sustainability credentials (such as those using renewable energy, low-carbon materials, or efficient transportation methods). KiwiRail has developed a Sustainable Outcomes Toolkit to guide our procurement work for both operational and capital spend.

One of the priority outcome areas of our Sustainable Outcomes Toolkit is carbon reduction. We ask our tenderers what their commitments to carbon reduction are and whether it is possible for them to reduce emissions in the products and/or services they are tendering for. Setting reduction targets with contractors on capital works can also help drive positive change. We have done this through some of our capital works programmes including the Auckland Metro Programme.

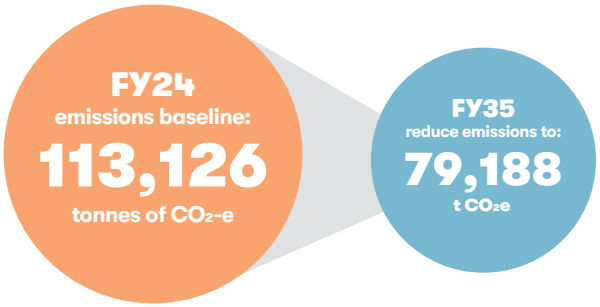
4.1. OPERATIONAL EMISSIONS PATHWAY

A **30 per cent reduction from Scope 3** emissions (operational) by 2035 against a FY24 baseline has been modelled. This is the first time we have set a reduction target for our Scope 3 emissions.

The largest source of our Scope 3 operational emissions footprint comes from to our well-to-tank emissions (34 per cent). This covers everything required for fuel production, including distribution and transport; from getting oil out of the ground, refining it into diesel, then getting it into fuel tanks.

This represents the biggest opportunity to reduce our Scope 3 emissions. Our improvement target has been set based on the emissions reductions we plan to achieve across our Scope 1 emissions pathway for diesel use from our locomotives and other vehicle fleets (ferries, vehicle fleet and other).

Other reduction activities will include reducing waste to landfill, as well as a reduction of emissions from metro commuter rail (traction electricity) in line with Aotearoa New Zealand's aim to achieve a 92 per cent renewable electricity grid by 2035.



HIGHLIGHT

IMPROVING OUR SCOPE 3 EMISSIONS DATA

We are taking steps to improve the quality of our Scope 3 data. In 2025, we conducted our first employee commuter survey and had more than 1,000 responses (approximately 20 per cent of all staff).

The results will be used to refine and improve our employee commuting emissions data in FY26 and will enable a larger piece of work for the business to explore more sustainable commuting for employees.

This year, we will conduct a supplier engagement survey to ask what our suppliers are doing to reduce emissions, and the targets and commitments they have made. Survey results will help improve the data of quality in some parts of our Scope 3 footprint from spend or industry averages to supplier specific.

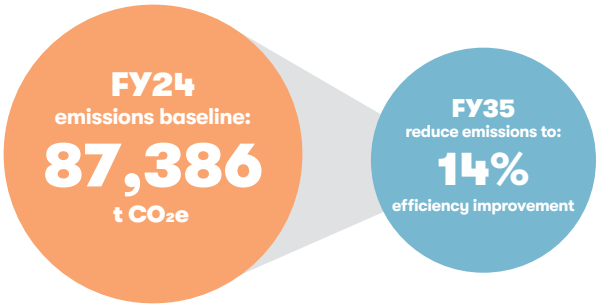
4.2. CAPITAL GOODS EMISSIONS PATHWAY

A **14 per cent reduction in intensity from Scope 3** emissions (capital goods) by 2035 against a FY24 baseline has been modelled. This is the first time we have set a reduction target for our Scope 3 capital goods emissions.

The reduction in Scope 3 carbon from materials consumed in our capital works programme partly rely on carbon reduction commitments of our key material suppliers. This target recognises that emissions from capital goods are hard to abate and, as many of the components used on our rail network are specialised and subject to strict engineering specifications, the supply of lower-carbon alternatives is limited.

However, when key material contracts come up for renewal, we will use the opportunity to assess the market for lower-carbon options through our procurement processes, including assessing potential suppliers against our carbon-reduction objectives.

KiwiRail has already made improvements in bridge and culvert designs that require 10-20 per cent less materials and utilise lower carbon construction methodologies. Further reductions in emissions are expected for bridge and culvert replacements, and other capital works.



HIGHLIGHT

SUPPORTING OUR SUPPLIERS TO DECARBONISE OUR VALUE CHAIN

In the construction sector, concrete is a carbon-intensive material. This is due to the cement component and manufacturing process, so any opportunity to reduce cement volumes should be considered through design, procurement & construction phases of a project.

There are now several alternate materials to substitute cement mixes – including supplementary cementitious materials (SCMs), which lower the carbon content of concrete.

KiwiRail has begun enabling the use of lower carbon cement on some of its capital projects, such as our Drury Rail Stations programme where the piling works and precast stormwater pipes were poured with a lower carbon concrete product.

Several actions were needed to make this happen. During procurement, we asked contractors for tangible project-specific initiatives that they would implement during this project to support our sustainability goals. Our strong project engagement on sustainability has ensured this was more than a bid commitment - the contractors have followed through by adopting a low-carbon mix design for piling works and are proactively identifying further opportunities to reduce carbon across the build.

5. BRINGING IT ALTOGETHER

There is no single solution to reducing carbon emissions at KiwiRail and multiple technologies, fuel switching, and energy efficient measures will need to be deployed at different times on our pathway to reach our 2035 emissions reduction target and to achieve net zero carbon by 2050. Based on our latest emissions assessment, Figure 5.1 shows the updated forecast emissions reductions that can be achieved from different parts of our business by 2035. It is anticipated that with these initiatives (some already funded and others still subject to funding) our current trajectory places us just below our target, but we are actively working to close the gap.

At present, for our Scope 1 and 2 emissions, efficient diesel locomotives, battery and hybrid shunting technologies, and further network electrification (subject to further investment) on the busiest part of our freight network, can all play complementary roles in delivering carbon savings for our rail footprint, which is our largest source of emissions. The new rail-enabled ferries will also support us on our pathway. Diesel will still play a transitional role in our business, but we acknowledge that there needs to be a large step-change reduction between now and 2050.

KiwiRail's commitment to reducing Scope 3 emissions acknowledges the broader environmental impacts of its supply chain and operational dependencies.

Through more efficient fuel use, engaging suppliers, and prioritising low-carbon procurement, KiwiRail is making progress to reduce emissions across its supply chain too.

We have the potential to make the transition to a low-carbon, climate resilient business within several decades by smart asset planning and taking early action. While this transition will have short–term cost implications, it will bring about long-term benefits and opportunities for our people, customers, communities, the environment and the New Zealand economy.

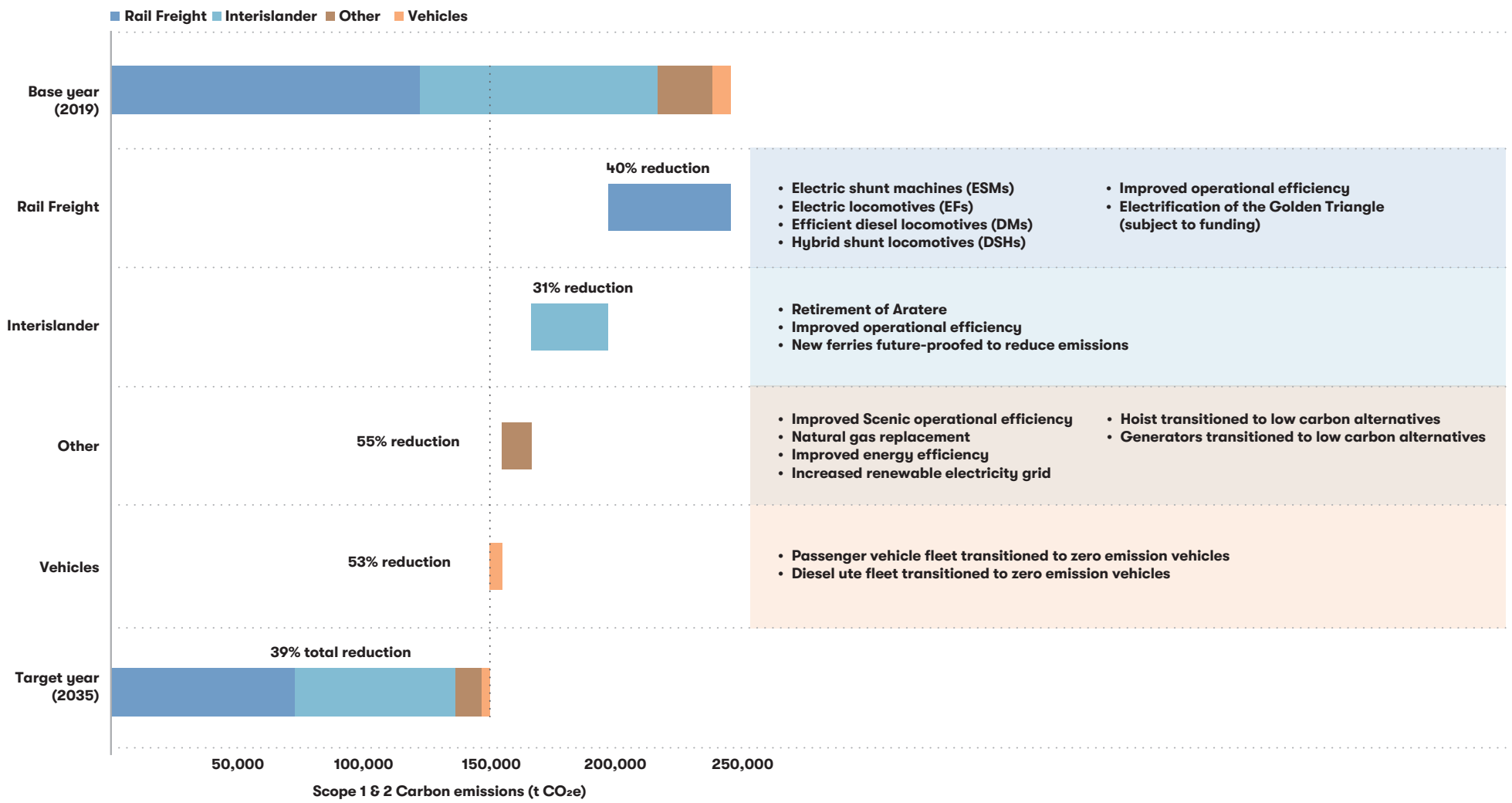


Figure 5.1: *KiwiRail's updated carbon reduction pathway for Scope 1 and 2 emissions to 2035 (against FY19 base year)*

Disclaimer: *The projections, pathways, and strategies outlined in this Carbon Reduction Plan are based on the best available data, methodologies, and assumptions at the time of publication (September 2025). While every effort has been made to ensure accuracy and reliability, future developments—including technological advancements, regulatory changes, investment and stakeholder input—may influence the outcomes and feasibility of the proposed actions. KiwiRail acknowledges that these projections are subject to change and will continue to review and update our approach as new information becomes available. This plan should therefore be viewed as a living document, guiding our commitment to reducing emissions while remaining adaptable to evolving circumstances.*

KiwiRail