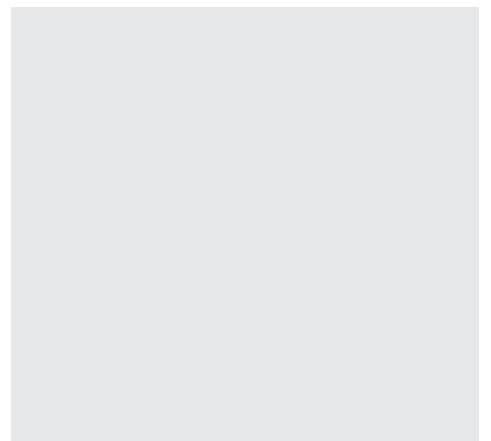


# Opportunities for a low emission freight sector in New Zealand



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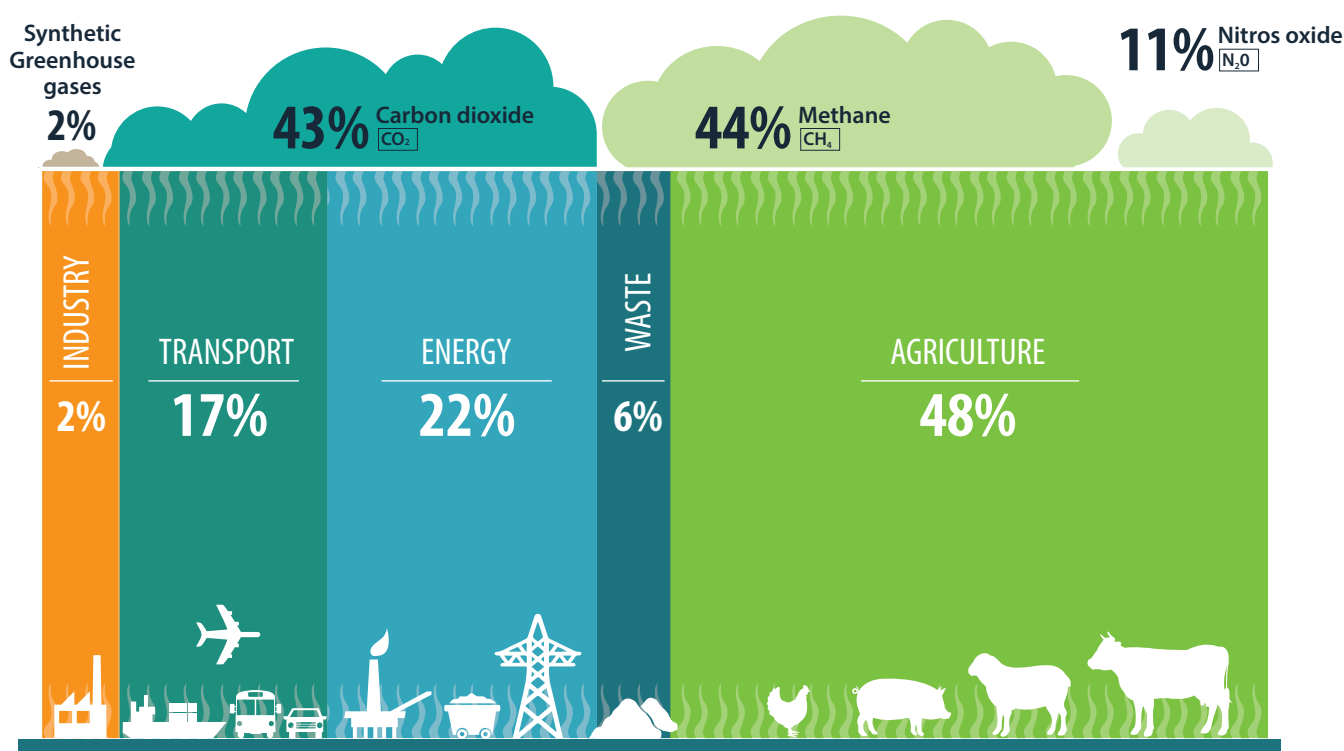
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# 1. Emissions and freight

New Zealand has committed to cut greenhouse gas emissions to 30% below 2005 levels by 2030. The Paris Agreement came into effect on 4th November 2016. Each ratifying country is required to demonstrate emission reduction activity in Nationally Determined Contributions documents, and report on progress every five years.

## New Zealand's greenhouse gas emissions






**Figure 1:** New Zealand's emissions profile (Ministry for the Environment, 2015)

The transport sector accounts for 17.4% of total emissions, which was the equivalent of 14.7Mt CO<sub>2</sub>-eq in 2014<sup>1</sup>. The business sector, including all transport of freight, accounts for almost one-third of total transport emissions in New Zealand includes all freight transport and is based on the assumption that around one-fifth of light-duty road transport emissions arise from business activities.

Freight activity resulted in **2.9Mt CO<sub>2</sub>-eq** to New Zealand's emissions profile in 2014. Only 21 of the 158 countries who signed the Paris Agreement have included freight strategies in their emission reduction plans<sup>2</sup>, showing this sector is being overlooked by many countries, including New Zealand. New Zealand can build on existing climate change mitigation initiatives such as the Electric Vehicles Programme, by prioritising a freight programme.

<sup>1</sup><http://www.royalsociety.org.nz/media/2016/06/Report-Transition-to-Low-Carbon-Economy-for-NZ.pdf>

<sup>2</sup>SLoCaT - Intended Nationally-Determined Contributions Offer Opportunities for Ambitious Action on Transport and Climate Change

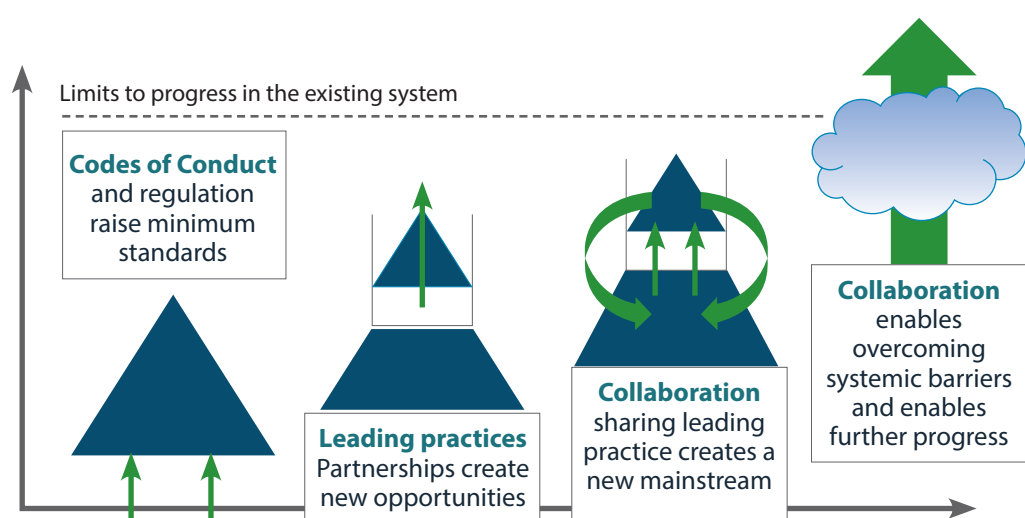
	 Rail	 Coastal shipping	 Road freight
GHG Emission (g-CO <sub>2</sub> -eq/t-km freight)	36	69	106
Annual freight movement 2014 (million t-km/yr)	4492	3930	23,301
<b>GHG (Mt/yr)</b>	<b>0.16</b>	<b>0.27</b>	<b>2.47</b>

**Figure 2:** Emissions from the freight sector by modal split (SBC sustainable freight procurement guidelines, 2016)

*Effective and efficient freight movement is critical to New Zealand's economic prosperity. For example, for an exporting nation reducing the internal transport costs borne by producers, processors and exporters is one way to improve our international competitiveness. Gains that can be made in this area flow into the rest of the economy.<sup>3</sup>*

With New Zealand's domestic freight movements projected to increase by 58% by 2042<sup>4</sup> across all commodity groups, all efficiency gains in freight practices represent major contributions to a downward trajectory in emissions. Efficiency, safety and sustainability go hand in hand as a win for businesses and the country. Freight efficiency is a significant area of continuous business improvement, and it delivers additional benefits of improved air quality, driver safety and well-being and environmental performance.

Multiple beneficial outcomes can only be delivered through collaboration either within or across logistics supply chains. OI NZ and Lion collaborated on a project to move glass between the OI-NZ site and the Lion warehouse. The previous approach was to load 26/28 pallets of glass bottles onto the truck. To make the movement more efficient sideways loading was trialled, enabling 30/32 pallets to be moved in one load. This collaboration involved invested effort from both sides; OI-NZ invested in new hoists with Lion willingly partnering on the trial and offering rescheduled delivery windows as the new system was being set up. This is an example of the type of collaborative initiative with win-win outcomes that needs to be more widely adopted across the sector.



**Figure 3:** The role of collaboration to drive systemic change

<sup>3</sup><http://www.transport.govt.nz/assets/Uploads/Our-Work/Documents/GPS-2015.pdf>

<sup>4</sup><http://www.transport.govt.nz/assets/Uploads/Research/Documents/National-Freight-Demand-Study-Mar-2014.pdf>

## 2. Freight efficiency initiatives

### 2.1 Sustainable Business Council - Freight Efficiency Group

Sustainable Business Council (SBC), a division of BusinessNZ, has 86 members including many of New Zealand's largest businesses across a wide range of industries. The SBC advocates a better way of doing business, one that helps create a sustainable future for New Zealand.

SBC's Freight Efficiency Group has been collaborating on business solutions for freight efficiency for two years. It is made up of:



The group's goal is that the NZ freight industry will make a significant contribution to reducing our emissions from the transport sector. We will achieve this by:

- Creating an environment where collaboration and partnerships are the norm, by raising awareness and influencing freight owners and consumer expectations and choices;
- Broadening considerations for services beyond cost alone – to include health and safety, environmental benefits, innovation, standardisation and greater transparency on performance; and
- Working closely with government and other agencies to drive strategic decision and technology/innovation solutions that deliver efficiencies.

The group has worked closely with KiwiRail on maximising opportunities to utilise their services. It has and produced Sustainable Freight procurement guidelines<sup>5</sup> to drive emission reduction and sustainable business practise through their supply chains.

<sup>5</sup> [www.sbc.org.nz/\\_data/assets/pdf\\_file/0011/119783/Sustainable-procurement-guidelines-for-freight.pdf](http://www.sbc.org.nz/_data/assets/pdf_file/0011/119783/Sustainable-procurement-guidelines-for-freight.pdf)

## 2.2 Energy Efficiency and Conservation Authority - Heavy Vehicle Programme

Energy Efficiency and Conservation Authority (EECA) is working to make New Zealand a better place to live – economically, environmentally and socially – through the better use of energy. This involves promoting and supporting energy efficiency, renewable energy and carbon emissions reduction programmes to businesses and consumers.

From 2013 to 2016 EECA worked with 153 road carriers who each used more than 1 million litres of fuel each year. The programme enabled them to look at core aspects of business operation and put in place programmes of continuous improvement that drove safety improvements and emission reductions. This included maintenance, tyres and efficient driver behaviour.

Over the course of the programme 4.7 million litres (13,000 tonnes of CO<sub>2</sub> emissions) were saved<sup>6</sup>. Additional benefits include improved business practices, strong driver safety cultures, reduced repairs and maintenance costs and significant uptake of telematics systems, which allow visibility to monitor progress

in real time. The programme demonstrated that potential for emission reduction exists, but to scale up adoption there needs to be a stronger demand for uptake from the market.

A number of factors contributed to a lower level of uptake of the Programme. These need to be considered before any further investment.

Low diesel fuel prices in late 2015 through to mid-2016, combined with increased demand for freight services, deterred a number of transport operators from joining or prioritising the programme or from implementing the full range of fuel efficiency initiatives offered by the programme.

A lack of resource within the sector hampered the timely and accurate collection of fuel use data that was needed to be able to measure the effectiveness of the various programme initiatives was a major factor in EECA deciding to place the programme on hold.



<sup>6</sup>These figures are based on a very conservative 5% 'notional savings' methodology where operators have completed SAFED driver training. Adjusting the notional savings figure to a more realistic figure of 7% to reflect additional efficiencies such as tyre maintenance would increase fuel savings to 6.7 million litres and CO<sub>2</sub> emission savings of 18,000 tonnes.

### 3. Industry consultation on low emission opportunities

The SBC's Freight Efficiency Group has created a guidance document, for use in its procurement process to reduce emissions, and procure services from freight operators with sustainability credentials. This approach was based on building pro-active partnerships between freight owners and operators with mutual benefit, moving away from transactional relationships to squeeze margins and get the cheapest cost.

As the freight procurement guidelines were being developed, the group requested a session with their current freight operators in order to seek their feedback on the proposed content. They wanted to demonstrate the importance of collaboration for the greater industry good – with beneficial outcomes for all involved. The session involved direct competitors of both freight owners and freight operators, but the session resulted in an agreed set of guidelines. In addition, the group requested dialogue on the role of collaboration for emission reduction more broadly across the sector.

SBC and EECA partnered to deliver three events in Auckland, Wellington and Christchurch. It was important to maximise

engagement by having regional, free events. Sophie Punte, Executive Director of the Smart Freight Centre (Netherlands) shared examples of freight efficiency collaboration from overseas. Road, rail and shipping industry representatives presented on their emission reduction activities, and upcoming areas of focus. The events included facilitated open forums for discussion to capture attendees' views on the challenges, opportunities and priorities for how to transition the freight sector to a low emission sector. The list of event attendees can be found in Appendix 1 and their feedback on the current challenges, opportunities and priorities are discussed in this paper and displayed in Appendix 2.

The feedback has been collated and refined into a series of insights and opportunities. SBC will progress the relevant opportunities at the request of the Freight Efficiency Group and other stakeholders. The insights and opportunities can be used to inform policy and programme development with Ministry of Transport, Ministry of Business, Innovation and Employment, EECA and other agencies.



## 4. Emerging insights and recommendations

**The main findings and recommendations from the workshops are presented. They start with changes that can be made by individual freight owners and operators, and cover the role of collaboration, investment in infrastructure and policy and legislation.**

### 4.1 Promote shared value between freight owners and operators

Freight operators service a market that prioritises low margins, resulting in limited profit for many years. There is a will from operators to implement continuous improvement practices and make sound investment decisions, but this is limited by the ability to allow time and access to resourcing to implement any changes.

The Health and Safety at Work Act (2015) signalled a change in responsibility and has placed a greater onus on duty of care. The SBC Freight Efficiency Group's freight procurement guidelines<sup>7</sup> go beyond compliance, in order to place value on longer term partnerships that deliver mutual benefit and ensure shared positive outcomes with the freight operator. They are using their procurement practises to ensure operators are paid a fair value for their service, rather than be the cheapest possible. The procurement partnerships will deliver efficiencies by recognising operators invested in improving the efficiencies of their fleet and caring for and upskilling their drivers. The operators will have longer, more secure contracts, enabling them to be better placed to explore efficiency initiatives and driver training.

There is a strong appetite from freight operators to improve the efficiencies of their fleet. This could include:

- installing telematics systems to monitor performance and report back to the business and their customers in quick timeframes<sup>8</sup>;
- upgrading vehicles to more efficient models;
- providing training and mentoring for drivers;
- fleets utilising renewable fuels – biodiesel and electricity.

EECA is currently working with Ministry of Transport and Ministry of Business, Innovation and Employment to investigate potential policy options in the freight sector. The opportunities listed above can be further researched in order to quantify the emissions reduction opportunities and co-benefits. The SBC Freight Efficiency Group and other stakeholders could provide feedback on the barriers and opportunities to determine the appropriate programmes of support.

Freight operators are required to provide information on compliance and business practice to multiple organisations, including New Zealand Transport Agency, Inland Revenue, ACC and their insurance company, resulting in duplication of effort. Finding ways to help operators reduce compliance costs and undertake best practise could be achieved by having a 'single source of truth' at the Government Agency level. Any work relating to demonstrating improved fuel efficiency, driver training and wellbeing etc. would create a level playing field for operators, and could be linked directly to inform ACC levy/premiums etc. The system could also be used as the basis for approval to allow operators to fast track drivers through the licence class system, so they are incentivised to reach Class Five certification in a transparent, structured way. Freight owners could use this platform to have stronger assurance on operator performance. A pre-qualification scoring standard could be used to ensure well performing operators are incentivised.

<sup>7</sup> [http://www.sbc.org.nz/\\_data/assets/pdf\\_file/0011/119783/Sustainable-procurement-guidelines-for-freight.pdf](http://www.sbc.org.nz/_data/assets/pdf_file/0011/119783/Sustainable-procurement-guidelines-for-freight.pdf)

<sup>8</sup> A container transport and logistics company operating in Otago upgraded their telematics system in May 2014. The number of speeding events dropped 84% in the first month. Over the course of a two year programme that included maintenance programmes, driver training, and using the telematics to report on performance, their fuel efficiency has improved from 55.61 litres/100km to 51.02 litres/100km.

## 4.2 Collaboration across the value chain and wider industry

The industry engagement events revealed a sense of a 'common goal' for New Zealand that can be achieved through collaboration. Our distance from international markets means efficiencies at a domestic level are crucial to ensure favourable competition at this scale. New Zealand can leverage its interconnectedness, centralised legislation, common language and philosophical alignment on the need for collaboration with mutual benefit to compete better on a global scale.

Some examples of successful collaborations that resulted in tangible emission reductions already exist, but they are insufficiently documented and shared. This is a missed opportunity to change the public perception of the freight sector. Working with freight owners and transport operators to define the principles and processes of successful collaborations in New Zealand, and promoting the work being done, will build confidence within the sector to expand collaboration. These examples would support the broader uptake of the SBC Sustainable Freight procurement guidelines.

Collaboration across the supply chain at scale reveals opportunities to optimise routes, share loads, optimise modal share and leverage reverse logistics opportunities. There is a commercial opportunity to do this if freight owners are prepared to share their data in such a way that protects commercial confidentiality. There are limited platforms that support the sharing of big logistics data, consolidated with the intention of maximising efficiency for specific regions or routes. Working with an industry sector with a good coverage of data available through telematics (such as forestry or meat and dairy) to establish a platform would enable identification of volumes and movements of freight that could be optimised. The collaborating parties would benefit from shared outcomes of more efficient movements and reduced emissions. SBC is willing to develop a partnership model that would deliver this.

## 4.3 Investment in an integrated intermodal network

The freight task is projected to increase 58% compared to 2012 by 2042<sup>9</sup> across all modes of transport. Auckland's freight task is projected to increase by 78% over the next 30 years<sup>10</sup>. Freight

owners require a mix of road, rail and shipping options that operate as an integrated, intermodal network, with smooth and efficient connections between modes.

Feedback from the events included strongly expressed sentiment that KiwiRail is critical to the freight owners' success. The role of rail can be strengthened through further investment across key commercial routes that enable KiwiRail to build on their performance and capability and improve incrementally on their customer service offering. The true value of rail comes from its role in the domestic freight network, as well as the environmental benefits from emission reduction, and health and safety outcomes from less freight on the roads. Investing in a network with a long term future view of the central role of rail will give freight owners more certainty in structuring their distribution around rail in the short and medium term.

The current Government Policy Statement on Land Transport 2015/16 – 2024/25<sup>11</sup> (GPS) has four key purposes for a land transport system: -

- effective where it moves people and freight where they need to go in a timely manner;
- efficient where it delivers the right infrastructure and services to the right level at the best cost;
- safe where it reduces the harms from land transport; and
- in the public interest where it supports economic, social, cultural and environmental wellbeing.

An integrated intermodal freight network that includes road, rail, shipping and air will address each of these key outcomes, and also provide resilience through the ability to find alternatives quickly if one or more modes is affected. There is an opportunity for coastal shipping to have a stronger role in the movement of non-just in time goods inter-island as an example of the way different investment models for modes currently inform the domestic freight market. Investment programmes to improve freight productivity to date have focussed on:

- moving more freight on fewer trucks and making improvements to the main freight corridors (roads); and
- Inland ports creating key freight hubs creating intermodal opportunities between road and rail.

The GPS needs to focus on integration of investment across all modes, and the role of inland ports and freight hubs for improving the interconnectivity, as well as opportunities for freight consolidation.

<sup>9</sup> <http://www.transport.govt.nz/assets/Uploads/Research/Documents/National-Freight-Demand-Study-Mar-2014.pdf>

<sup>10</sup> <http://www.transport.govt.nz/assets/Uploads/Land/Documents/Auckland-Transport-Alignment-Project-Foundation-Report.pdf>

<sup>11</sup> <http://www.transport.govt.nz/assets/Uploads/Our-Work/Documents/GPS-2015.pdf>

At the metro level, the design and investment of freight and commuter movements on road, rail and to/from ports will continue to grow in importance as the freight task and urban populations increase. Auckland's East West Link is a major project to improve travel time through better connections for rail and freight hubs as well as many other transport modes. Both the GPS 2015 and the Auckland Transport Alignment Plan cite a need to build a sound knowledge base on how the freight system is currently performing, assumptions that are used for future modelling scenarios and the outcomes of investment from an economic, social and environmental wellbeing perspective. This can be achieved through better stakeholder engagement and collaborative forums such as that demonstrated by the Upper North Island Freight Accord model. SBC is willing to partner to facilitate the freight perspective and ensure it is fed consistently in to planning and programme development.

Another SBC insight through undertaking broader stakeholder engagement is the role of investment models to enable decisions to be made that support strong social, economic and environmental outcomes. This need has been cited in the GPS, the Auckland Transport Alignment Project, New Zealand Transport Agency's National Land Transport programme<sup>12</sup> and the Safer Journeys strategy. The Infrastructure Sustainability Council of Australasia framework is being used for a number of significant projects including the City Rail Link, Auckland Airport, and Panuku Development Auckland. It can be used on all types of infrastructure as a framework to improve the productivity and liveability of industry and communities. There is strong capability in New Zealand to utilise this framework at the design, construction and operation phase of the major freight corridors and the broader transport network.

## 4.4 Pathways, policy and legislation

Current legislation predominantly applied to the transportation of goods are the Land Transport Act 1998 and the Land Transport Management Act 2003. The legislation is focussed on utilisation of the road network, primarily driver and vehicle requirements to deliver health and safety outcomes, rather than enabling legislation for the efficient movement of goods. Recent policy levers have included the introduction of permits for High Productivity Motor Vehicles (HPMVs) and the work done to grant permits issued at local government level for HPMV travel on the roads. A review of the current legislation in line with strengthening interconnectivity, intermodality and emission reduction is recommended, along with considering the interaction with other legislative frameworks such as the Resource Management Act.

The Nationally Determined Contribution of 30% emission reduction in New Zealand by 2030 vs 2005 was socialised at the freight events. Dialogue included the importance of the transport/freight sector as a contributor to this outcome. What are the opportunities to cut emissions from freight by 30% by 2030? What are some of the transitions we would see towards lower emission operations and how would the conditions be created to enable these choices to be made? A pathway of activity through to 2030 should be developed by stakeholders from across the freight sector, including local and central government. An associated action plan should be developed including the initiatives and policy settings required, and could include some of the recommendations already highlighted in this report.

Such policy settings should strengthen the incentive to use fuel efficient/low emission vehicles across all classes of road transport, by linking performance to registration costs. Currently, electric vehicles (including heavy electric vehicles) are exempt from Road User Charges. This principle can be applied more broadly across the fuel efficiency performance of both the heavy and light vehicle fleet.

<sup>12</sup> <http://www.transport.govt.nz/ourwork/keystrategiesandplans/gpsonlandtransportfunding/gps2015/gps-2015-online/section-3-investment-in-land-transport/>

## 5. Summary of Recommendations

**The world is changing and the freight sector needs to respond. SBC will work with leaders in and across sectors to ensure that challenges are turned into opportunities that benefit business and the environment.**

In 2016, SBC's Freight Efficiency Group committed to adopt the sustainable freight procurement guidelines, and promote their use in their own value chains. SBC is working with the All of Government Procurement Team at the Ministry of Business, Innovation and Employment on a joint procurement model for

electric vehicles. SBC's Climate Action Group on Low Carbon Transport has held a technical development session for the use of biodiesel in business fleets, which engaged 18 businesses in a 'myth busting' webinar.

**Table 1: Summary of SBC recommendations**

Opportunity area	Recommendation	Lead organisation(s)	Collaborators
<b>Promote shared value between freight owners and operators</b>	Socialise the shared value derived from the sustainable freight procurement guidelines more broadly	SBC	BusinessNZ, Road Transport Forum, media
	Research and quantify efficiency initiatives such as installing telematics systems, upgrading vehicles to more efficient models, providing training for drivers, and renewable fuels	EECA	SBC Freight group, Industry stakeholders
	Develop a central system of operator profiles that links compliance and performance information.	NZ Transport Agency	Freight operators, ACC, insurance companies, Inland Revenue, others
<b>Collaboration across the value chain and wider industry</b>	Develop case studies on the principles and processes of successful collaborations in logistics in New Zealand	SBC	Freight owners and operators involved in successful collaborations, EECA
	Develop a model for collaboration to share information on freight movement in an industry sector and/or key freight region/route	SBC Freight Efficiency Group	Other stakeholders
	Cross sector collaboration to design 30% emission reduction from the freight sector vs 2005 by 2030	Collaboration model	Ministry of Transport, Ministry for the Environment, SBC, EECA, RTF, NZTA, NZSF, KiwiRail, central and local government agencies
<b>Invest in an Integrated Intermodal Network</b>	Strengthen the role of rail in the integrated intermodal network through longer term collaboration, planning and investment	KiwiRail, current customers and potential customers	Crown
	Investment in a dry dock for larger container ships for mandatory servicing.	Progression of Joint Venture	
	SBC's role as an advocate for the freight efficiency group is leveraged through the stakeholder engagement process on key programmes or projects	SBC has prioritised the Auckland Transport Alignment Plan and Intelligent Transport Systems Forum	To be identified

Opportunity area	Recommendation	Lead organisation(s)	Collaborators
	Use the ISCA framework to apply consistent principles for the design, construction and operation of major freight corridors and the broader transport network.	Central and Local government procurement specifies ISCA framework	
	Use the Government Policy Statement Review to strengthen the integration of modes from a policy and investment perspective.	Minister of Transport	
<b>Policy and Legislation</b>	Review the Land Transport Act (1998) and the Land Transport Management Act (2003) to strengthen interconnectivity and emission reduction outcomes.	Ministry of Transport	
	Link fuel efficiency performance to vehicle registration cost.	Ministry of Transport/ New Zealand Transport Agency	

# Appendix 1

## List of workshop attendees

3R Group Ltd	Ministry of Business, Innovation and Employment
AECOM	McCarthy Transport
Alexander Group Holdings Ltd	Methanex NZ Ltd
Auckland Council	Ministry for the Environment
Auckland Transport	Ministry of Social Development
Bathurst Resources	Ministry of Transport
Beca	National Road Carriers
BP Oil New Zealand Limited	New Zealand German Business Association Inc.
Coastal Oil Logistics Limited	New Zealand Post Limited
CODA Group	New Zealand Shipping Federation
Commercial Roadskills Limited	New Zealand Steel Ltd
Contact Energy	New Zealand Transport Agency
Coretex	New Zealand Trucking Association
Corys Electrical Ltd	New Zealand Manufacturers & Exporters Association
Countdown	Office of the Parliamentary Commission for the Environment
DB Breweries	OfficeMax
Dominion Salt Limited	O-I New Zealand
Enviro-mark	Opus
Environment Canterbury	Philip Wareing Ltd
Ernst & Young Limited	Ports of Auckland
EROAD	PostHaste
Fleet Focus Ltd	Restaurant Brands New Zealand Ltd
Fonterra Co-operative Group Limited	RJ Lincoln Ltd
Foodstuffs SI Ltd	Road Transport Association
Freeman Media	Sanford Limited
Fujitsu	Silver Fern Farms
GBC Winstone	Sime Darby Commercial (NZ) Limited
Hall's Group Ltd	T&G Global Limited
Hamburg Sud New Zealand Ltd	TERNZ
HEB Construction	The Warehouse Group
Hilton Haulage	thinkstep
Intent Group	TIL Freight
J2 Transport Strategy	Tohora Enterprises Ltd
Keith Andrews	Toll New Zealand
Kevin Rolfe Consulting Limited	Toyota
KiwiRail	Transfercar Global Inc.
Kotahi Logistics LP	Vehicle Inspection New Zealand
La Nuova Apparelmaster	Waste Management
Landcare Research	Webster Group Ltd
Linfox Logistics	Wright Communications
Lion	Z Energy Limited
Massey University	Zero Emission Vehicles Limited

## Appendix 2

### Summary of workshop feedback

#### Challenges

- Supply chain efficiencies e.g. filling empty containers for return more
- Current levels of congestion on motorways (Auckland southern)
- Lack of supporting infrastructure
- Individual businesses may not see how their actions can make a difference
- How to convince Government to support businesses initiatives by easing policies
- Lack of Government commitment to regulate shipping emissions. Without this, ports face losing competitive advantage if they take action.
- Multiple parties involved. Require cross industry collaboration
- Driver capability and training
- A central Government that is too hands off on transport policy
- Lack of time and resources for transport operators
- Refrigerated containers-high power use on land. How can we reduce?
- Impact on neighbouring communities-trucks (noise & emissions, safety); Rail (noise & emissions); Ships (emissions & noise)
- Cost competitiveness
- Culture change-how and what needs to change and when
- RFP / Tender process focus too heavily on price
- Adequate investment in infrastructure
- Dated legislation leading to a lack of integration
- Telling a consistent and cohesive story for Government
- Getting Government "clients" to move away from price only focus and really value non-price attributes
- Food waste, food production, food harvesting.
- Larger ships slow steaming customer service
- How do we increase coastal (shipping) through NZ as opposed to line-haul

#### Opportunities

- Adopt freight lanes to reduce delays, improve delivery and fuel efficiency
- Know what future freight commodities look like to shape the freight system appropriately
- Show on retail goods a 'measurement of emissions' used to procure goods. Use the public to drive back changes through the supply chain
- Low sulphur fuel-national standards - adopt MARPOL VI standards
- Coordinating back load opportunities with other freight users.
- Sharing of best practice
- Consumer incentives-transparency of sustainable supply chain to attract consumers to product / service
- Suppliers / manufacturers need to put sustainability on the agenda when tendering instead of price & service provision
- Similar to Smartway carriers-EECA programme should provide acknowledgment of success
- Global leader in heavy vehicle driver assisted technology testing
- Low carbon trip labels for goods
- Urban freight models
- EV truck trials supported by EV contestable fund
- Electric hybrid heavy vehicles
- Move from LPG/Diesel driven forklift to electric
- Biofuel / advanced renewable fuel mandate model after EU reduction policies-Lots of potential in NZ
- Share power for vessels-fewer emissions- very expensive technology
- LED lighting
- EV's on ports plus hybrids and automation
- Collaborative agreements from ports on actions e.g. cold ironing
- Collaboration required between ports, Governments and shipping companies

- Food mapping-understanding where our food comes from and goes to will help identify opportunities for efficiencies and improve food systems with numerous co-benefits= 30% global emissions
- Adjusting changing freight delivery times to optimise use of the road network + reduce congestion for all road users
- NZ scale ideally suited to collaboration. This will benefit from facilitation
- Collapsible containers
- Electric trains for freight
- Synchromodality
- Truck emission ratings-reward scheme
- Hamburg Sud already has a large team looking into emissions/environment issues. Ask these companies to share information
- Collaborate on cost saved or market opportunities
- Engaging company drivers and employees in the journey-make it personal.
- Use the connectedness of business to drive change-peer pressure / collaboration
- Driver behaviour measured through technology
- Driver training
- Leverage focus on driver impact and combine with safety
- Use different modes (eg bike, electric bike) in central Auckland especially during rail link construction
- More rail to and from port plus optimising truck loading. Use technology so trucks are full into and out of port
- More coastal shipping
- Sales force PHEV's use of telematics to prove/disprove business case.
- HV's using bus lanes
- What is the role of Govt? Articulate what industry needs to Govt-listen. Get clarity on outcomes, quantify opportunities
- Roadmaps developed through collaboration
- Experiment at a regional scale Re: infrastructure-modal optimisation
- Freight sector councils-intermodality eg containers across network (Govt support for innovation)
- Review arbitrary constraints around some activities
- Data - small scale first-sharing by sector
- Increase RUC to pay for better infrastructure
- Raise awareness of emissions from transport (education)
- NZ to be seen as leading the way (small scale, speak same language, central legislation)

#### Priorities

- Collaboration across stakeholder groups
- Determine collaborative opportunities (modes, routes, freight type)
- Recognise corporate advantage of being environmentally sustainable
- Demonstrating cost savings to others
- Reporting emissions output either by sector or mode
- Use telematics data (with agreement from operators)
- Develop positive incentives for businesses to measure
- Battery powered trailers need RUC exemptions
- Fair rates to operators
- Fair share for carriers
- Transport operators having enough resources to implement the fuel saving initiatives
- Maintenance programmes for vehicles
- Driver wellness and efficiency
- Improving driver performance
- Road network infrastructure improvements during construction-HPMV sympathetic
- All points to infrastructure investment requirements
- Developing rail as a real alternative
- Utilise rail for freight
- Resource consent changes
- Identify what the shared objectives are (Govt, Industry, Public and consumers)
- Freight task research to customise a (identify where infrastructure barriers are impacting inefficient raw material manufacturing for export) solution for NZ (Govt funded)
- NZ should ratify the MARPOL convention!