

Lowering business emissions

Carbon calculator for lower freight emissions

Case Study: Lyttelton Port Company

The transport sector contributes nearly 20% of New Zealand's total greenhouse gas emissions. In 2017, emissions from 'heavy transport' (including domestic road, rail and shipping) contributed 24% of the total transport sector emissions.

Lyttelton Port Company identified that smarter logistics solutions was one area where they could contribute to reducing carbon emissions.

In 2016, Lyttelton Port Company established MidlandPort, an inland hub where freight is consolidated and transferred by rail between Lyttelton and Rolleston. Since it was established, over 10 per cent of the Port's volume now moves through the inland port.

Lyttelton Port Company's Marketing Manager Simon Munt says MidlandPort has continually exceeded expectations.

"In 2016, two or three trains a week were moving containers to and from Midland to the Port. Now, KiwiRail operate up to sixteen return services a week from Midland.

"Not only is this taking up to 195 one-way truck trips off the road each day, it is ensuring that containers are moved to and from the Port efficiently without traffic delays and at lowest cost to customers."

A number of containers moving through MidlandPort are now being delivered via the

direct interface to iPort and the new Move Logistics Distribution Centre using a Combi Xpress Shuttle, allowing cross dock operations and container packing and devanning.

"The containers never touch the road, making Midland a key part of reducing our customers' carbon emissions and providing a sustainable logistics solution."

Running the numbers

Mr Munt says that thanks to a newly-developed carbon calculator, some LPC customers have been able to calculate that they are benefiting from up to 50 per cent carbon emissions reduction by using a supply chain that includes MidlandPort.

"Like LPC, many of our customers have strong commitments to sustainability and ambitious carbon emission reduction targets so we're focused on helping them achieve those targets. As part of their supply chain, we can assist them reach their goals by offering carbon efficient logistics solutions and tools to accurately evaluate different options."

Lyttelton Port Company's Environmental Manager Kim Kelleher explains how this fits

into LPC’s broader strategy: “we’ve set our targets aiming for net zero carbon emissions from our operations by 2050 but we have to make substantial reductions much sooner than that if we’re going to contribute to the emission reductions needed to help keep us close to the 1.5 degree trajectory.”

“The Port is a key link in the supply chain so helping importers and exporters evaluate and adopt lower carbon logistics options, we can have a positive effect in the wider supply chain.”

“One of the first customers we used the calculator for was The Warehouse Group, who we were able to calculate a saving of up to 50% in carbon reductions for by using LPC’s MidlandPort.”

“LPC’s carbon calculator is a great example of adding value for customers and helping us to achieve our sustainability goals,” says Michael Stirling, GM Group Transport.

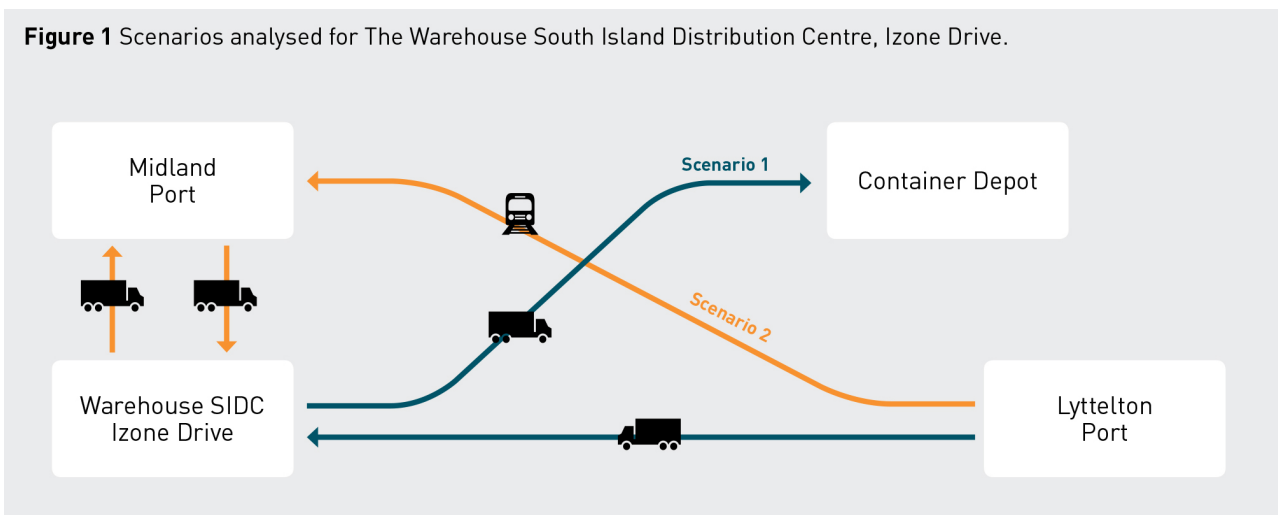


AECOM NZ Ltd was commissioned to develop a robust calculation methodology and model to calculate the annual emission reductions that can be achieved by moving freight by rail compared to road transport to and from Lyttelton Port and LPC’s MidlandPort.

“Understanding the carbon impact for different transport options is a key step in helping LPC and its clients make informed decisions to reduce their emissions” says Maurice Marquardt, Sustainability Practice Lead at AECOM.

The model is based on international best practice and calculation methodologies for greenhouse gas emissions and has been peer reviewed by Enviro-Mark Solutions.

Figure 1 Scenarios analysed for The Warehouse South Island Distribution Centre, Izone Drive.



Approach to analysis

The GHG emissions for each scenario were calculated using the below formula and agreed parameters:



The GHG emissions were calculated for the relevant scenarios in tCO₂e per twenty-foot equivalent unit (TEU) and then an estimated annual TEU volume for The Warehouse was applied to show the associated emissions¹.

KiwiRail Deputy Chief Executive/Chief Operating Officer Todd Moyle says the success of the Midland port operation demonstrates the crucial contribution rail can make to transport networks in this country.

“With freight volumes expected to grow significantly in coming years we will need all our transport networks working together to ensure our goods get to market. Using rail as part of a multi-modal supply chain benefits everyone by minimising emissions, reducing road congestion and maintenance costs and improving safety.

“Road congestion along Brougham Street has been identified for many years as an impediment to the supply chain, so we are very pleased to playing a part in resolving

that issue.”

Partnering and collaborating are key to identifying opportunities for reducing carbon emissions from freight transport, and Mr Munt says LPC is proud to have worked with other SBC members KiwiRail and AECOM NZ Ltd to develop this tool.

“Using the carbon emission evaluation tool LPC assists MidlandPort customers evaluate the most carbon sensitive logistics options. They receive a detailed report comparing options so they can select the best solution.”

About Lyttelton Port Company

Lyttelton Port Company (LPC) is the largest Port in the South Island of New Zealand, and the country’s second largest export hub. We facilitate the movement of \$5 billion of exports and \$5 billion of imports every year. We are the gateway for the goods that keep Canterbury and the South Island moving 24/7, year round. LPC is a proud member of the NZ Sustainable Business Council and the Climate Leaders Coalition.

About the Climate Leaders Coalition

The Climate Leaders Coalition was launched in July 2018 with 60 original signatories to create a movement of business action on climate change. Signatories account of 60% of New Zealand’s gross emissions, employ more than 170,000 people, and represents nearly one third of private sector GDP.

About the Sustainable Business Council

SBC is a membership organisation, with a long-term aim to make sustainability mainstream within New Zealand businesses. They do this by inspiring businesses by creating a community of positive change, supporting members to go further and celebrating their leadership and success. SBC is part of the BusinessNZ family and is the New Zealand Global Network partner to the World Business Council for Sustainable Development.