



**CLIMATE  
CHANGE RELATED  
DISCLOSURE REPORT**

NOVEMBER 2022



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THIS REPORT IS PREPARED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE TASKFORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD). NAPIER PORT IS ALSO AWARE OF THE FUTURE REQUIREMENTS OF THE AOTEAROA NEW ZEALAND CLIMATE STANDARDS WHICH ARE EXPECTED TO BE ISSUED BY THE NEW ZEALAND EXTERNAL REPORTING BOARD IN DECEMBER 2022. THESE NEW MANDATORY CLIMATE STANDARDS ARE BASED ON THE TCFD FRAMEWORK.

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# INTRODUCTION

This is the second report produced by Napier Port Holdings Limited (Napier Port) which seeks to provide stakeholders an understanding of the potential financial implications of climate change on its business.

The main focus of the second report is to highlight the progress that has been made to establish our key climate related metrics and emission reduction targets. The 2022 financial year (FY22) saw our emissions inventory being audited for the first time by Toitū Envirocare. This external certification has helped to establish a baseline from which we can now set emissions reduction targets and measure progress against.

Napier Port's sustainability journey is one of continuous improvement and the people of Napier Port are committed to improving its environmental, social and economic performance by identifying and managing risks and finding opportunities to use our resources more efficiently.

Napier Port expects to further develop and improve its climate change related disclosures as we gather more information and knowledge, and continue to deliver our sustainability goals and strategy. In particular, we have prioritised the development of emissions measurement.

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**DISCLAIMER:** *Quantifications in this report of financial impacts of climate change are estimates only and are not intended to constitute earnings guidance. No representation is made as to their accuracy, completeness or reliability. These risks and opportunities may not eventuate and if they do the actual impact may differ materially from these estimates. Other material risks and opportunities may exist or eventuate that are not included within this report.*

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# 1. GOVERNANCE

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## TCFD REQUIREMENTS:

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- **DESCRIBE THE BOARD'S OVERSIGHT OF CLIMATE-RELATED RISKS AND OPPORTUNITIES**
  - **DESCRIBE MANAGEMENT'S ROLE IN ASSESSING AND MANAGING CLIMATE-RELATED RISKS AND OPPORTUNITIES**
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The Napier Port Board of Directors is ultimately responsible for identifying the principal risks faced by Napier Port and taking reasonable steps to ensure that appropriate internal controls and monitoring systems are in place to manage and, to the extent reasonably possible, reduce the impact of these risks, including material climate-related risks. The Board reviews Napier Port's Risk Management Policy annually.

The Audit and Risk Management Committee supports the Board in this function by ensuring that management is implementing Napier Port's overall risk management framework and policy and monitoring corporate risk assessments and internal controls implemented. The Audit and Risk Management Committee reviews Napier Port's overall risk management framework on a six-monthly basis and the committee proceedings are reported back to the Board.

The Sustainability Committee reviews a separate climate-related risk register specifically for the management of climate-related risks. This is part of the Sustainability Committee's wider role to identify and consider relevant environmental, social and governance (ESG) matters to provide strategic guidance and feedback to the Board and management on Napier Port's ESG related strategies, policies, frameworks, initiatives, performance and reporting. The Sustainability Committee meets at least three times per year to review progress on the implementation of Napier Port's sustainability strategy, including the assessment of climate-related risks and actions, and the committee proceedings are reported back to the Board.

The Chief Executive and senior management team are responsible for ensuring that risks to the business, including climate-related risks, are identified and evaluated, effective responses and control activities developed, and appropriate monitoring and timely re-evaluation conducted, in accordance with Napier Port's Risk Management Policy. The General Manager Assets and Infrastructure has overall responsibility for the development and implementation of the sustainability strategy, including assessment of climate-related risks, and reports on progress to the Sustainability Committee.

The different levels of responsibilities and the supporting Risk Management Policy that governs the management of climate-related risks at Napier Port are illustrated in Figure 1.

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**FIGURE 1. GOVERNANCE OF CLIMATE-RELATED RISKS AT NAPIER PORT****RISK MANAGEMENT POLICY**

- Provides the overarching framework for identifying, assessing, managing and monitoring risk at Napier Port, including climate-related risks.
- Objectives of the policy include ensuring that Napier Port operates in a sustainable manner and protects the Port environment in accordance with its sustainability strategy.

**BOARD OF DIRECTORS**

- The Board is ultimately responsible for identifying the principal risks faced by Napier Port and taking reasonable steps designed to ensure that appropriate internal controls and monitoring systems are in place to manage and, to the extent possible, reduce the impact of these risks, including material climate-related risks.
- The Board receives reports and recommendations from, and has access to management reports provided to, the Audit and Risk Management Committee, in relation to Napier Port's overall risk management framework, and reviews the Risk Management Policy annually.
- The Board is also responsible for setting the strategic direction of Napier Port. This includes ensuring that the environmental, social and governance (ESG) risks and opportunities in Napier Port's sustainability strategy, including climate-related risks and opportunities, are integrated into the Group's long-term strategy and investment decision-making.
- The Board receives reports and recommendations from, and has access to management reports provided to, the Sustainability Committee, and reviews the Sustainability Committee Charter annually.

**AUDIT AND RISK MANAGEMENT COMMITTEE**

- Ensures that management is implementing Napier Port's overall risk management framework and policy.
- Monitors corporate risk assessments and internal controls implemented.
- Reports to the Board whether Napier Port's overall risk management framework and processes are sufficient.

**SUSTAINABILITY COMMITTEE**

- Makes recommendations and reports to the Board on material ESG matters requiring governance decisions.
- Ensures the integration of ESG considerations into business planning and strategy, risk management, key policies, processes and culture.
- Oversees the development of Napier Port's ESG sustainability strategy and workplan.
- Monitors progress against the goals and actions included in Napier Port's sustainability strategy, including climate-related goals and actions.
- Ensures an appropriate framework is maintained for the management of ESG risks, including climate-related risks and opportunities. Reviews and monitors ESG-related risk assessments and the effectiveness of the related risk management processes.
- Oversees and reviews ESG reporting processes, including relevant internal controls and external review and audit processes.

**CHIEF EXECUTIVE AND SENIOR MANAGEMENT TEAM**

- The Chief Executive and senior management team are responsible for ensuring that risks to the business, including climate-related risks, are identified and evaluated, effective responses and control activities developed, and appropriate monitoring and timely re-evaluation conducted, in accordance with Napier Port's Risk Management Policy.
- The Chief Financial Officer, working with senior management, updates Napier Port's overall risk management framework and reports to the Audit and Risk Management Committee on a six-monthly basis.
- The General Manager Assets and Infrastructure has overall responsibility for the development and implementation of the sustainability strategy, including assessment of climate-related risks, and reports on progress to the Sustainability Committee.

**KEY STAFF TASKED WITH RISK MANAGEMENT ACTIVITIES (from Infrastructure, Finance and Operations teams)**

- Provide support with identifying, monitoring and assessing climate change risks and ensuring appropriate management actions are taken in relation to them.
- Responsible for maintaining the safety, performance and capability of Napier Port's infrastructure assets and plant and equipment over their projected economic lives.
- Maintain a 50-year property asset management plan.

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## 2. RISK MANAGEMENT

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### TCFD REQUIREMENTS:

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- **DESCRIBE THE ORGANISATION'S PROCESSES FOR IDENTIFYING AND ASSESSING CLIMATE-RELATED RISKS**
  - **DESCRIBE THE ORGANISATION'S PROCESSES FOR MANAGING CLIMATE-RELATED RISKS**
  - **DESCRIBE HOW PROCESSES FOR IDENTIFYING, ASSESSING AND MANAGING CLIMATE-RELATED RISKS ARE INTEGRATED INTO THE ORGANISATION'S OVERALL RISK MANAGEMENT**
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Napier Port's Risk Management Policy provides the overarching framework for identifying, assessing, managing and monitoring risk at Napier Port, including climate-related risks. Each Napier Port business unit is responsible for establishing and maintaining risk documentation to monitor and report risks that threaten achievement of business objectives. The Chief Executive and senior management team are responsible for ensuring that risks to the business are identified and evaluated, that effective responses and control activities are developed, and appropriate monitoring and timely re-evaluation is conducted. The Chief Financial Officer, working with senior management, updates the Napier Port enterprise risk register, drawing on business units' documentation, and reports this register to the Audit and Risk Management Committee at least on a six-monthly basis.

In addition to this process, for climate-related risks Napier Port has benchmarked against recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD) for identifying and assessing climate-related risks. The Napier Port infrastructure team, supported by others as required, are tasked with staying up-to-date with the latest climate-related research, conducting regular risk assessments and performing detailed climate change analysis. The Board and Management are also continually monitoring developments to existing and emerging regulatory requirements related to climate change as part of their risk assessment processes.

Envirolink, Gisborne District Council and Hawke's Bay Regional Council commissioned National Institute of Water and Atmospheric Research (NIWA) to undertake a review of climate change projections and impacts for the Tairāwhiti (Gisborne) and Hawke's Bay regions. Napier Port has relied on the resulting report<sup>1</sup> for projected changes in sea levels, wind, temperature and extreme events, which have been used as inputs for our risk assessments. The outputs allow us to analyse a range of potential future scenarios and explore the implications for Napier Port's assets, operations, financial plans and business model.

This report notes that future climate projections strongly depend on estimates for future greenhouse gas concentrations. In turn, those concentrations depend on global greenhouse gas emissions that are driven by factors such as economic activity, population changes, technological advances and policies for mitigation and sustainable resource use. This range of uncertainty was dealt with by the Intergovernmental Panel on Climate Change (IPCC) through consideration of 'scenarios' that describe concentrations of greenhouse gases in the atmosphere. These scenarios were called Representative Concentrations Pathways (RCPs)<sup>2</sup>.

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Our climate-related risk assessment process considers the RCP4.5 (1.8 degrees Celsius mean increase in global temperatures to 2100) and RCP8.5 (3.7 degrees Celsius mean increase in global temperatures to 2100) scenarios included in this report over a 30-year time horizon to 2050 – and 95-year time horizon to 2100. RCP4.5 is a 'stabilisation' pathway (where greenhouse gas concentrations stabilise by 2100) and RCP8.5 represents continuing high global emissions without effective mitigation, which will lead to high greenhouse gas emissions (a high-end pathway). The reason for choosing these two scenarios was to present a 'high-end' scenario if atmospheric greenhouse gas concentrations continue to rise at high rates (RCP8.5) and a scenario which could be realistic if moderate global action is taken towards mitigating greenhouse gas emissions (RCP4.5).

*Our climate-related risk management spans 50 years, aligning with asset management and scenario-based likelihood of risk occurring.*

For climate-related risk management, we believe a 50-year horizon is appropriate as it is aligned with the economic lives of our infrastructure assets and Napier Port's asset management plan, and we have used the following timeframes to assess the likelihood of climate-related risks occurring under each scenario: Short-term 0-20 years; Medium-term 20-50 years; and Long-term 50 plus years. We regularly monitor whether climate science requires us to reassess this approach.

In accordance with Napier Port's Risk Management Policy, we assess the significance of each identified climate-related risk using a likelihood and consequence matrix. The climate-related risk register assesses the likelihood of risks occurring during the short-term, medium-term and long-term timeframes outlined above, to recognise the longer-term nature of climate-related risks. This varies from the overall risk management framework which assesses the likelihood of a risk occurring based on whether it is probable to occur within the next 12 months. For both, the consequence of the identified risk is assessed based on the potential level of impact on our people, assets/ infrastructure, operations and systems, environment, reputation and financial planning. Based on the likelihood and consequence, levels of risk are categorised as either very high, high, medium or low. This allows us to determine the appropriate response for each issue identified. Climate-related risks are reviewed at least annually to ensure they reflect material changes in our knowledge, business strategy, and operating environment.

During the 2021 financial year (FY21), using the process described above, we completed a 'Whole of Port' Climate Change Risk Assessment – looking at infrastructure resilience, trade forecasting, land levels, weather conditions, emergency preparedness and habitat modification. We identified 53 climate-related risks and opportunities and these were reviewed again during FY22. An overview of the top physical and transition impacts is contained in our strategy section.



## 3. STRATEGY

### TCFD REQUIREMENTS:

- **DESCRIBE THE CLIMATE-RELATED RISKS AND OPPORTUNITIES THE ORGANISATION HAS IDENTIFIED OVER THE SHORT, MEDIUM AND LONG-TERM**
- **DESCRIBE THE IMPACT OF CLIMATE-RELATED RISKS AND OPPORTUNITIES ON THE ORGANISATION'S BUSINESSES, STRATEGY AND FINANCIAL PLANNING**
- **DESCRIBE THE RESILIENCE OF THE ORGANISATION'S STRATEGY, TAKING INTO CONSIDERATION DIFFERENT CLIMATE-RELATED SCENARIOS, INCLUDING A 2 DEGREE OR LOWER SCENARIO**

Napier Port's purpose is very clear: together we build a thriving region by connecting our customers, people and community to the world. This drives everything we do and sets the scene for our business strategy, which provides a robust and comprehensive direction for the future. Our strategic goals are Customer Connection, Harnessing Data and Technology, Networked Infrastructure and Collaborative Partnerships, all underpinned by our Culture of Care foundation. Sustainability is now embedded in our foundation also and aligned with our goals to ensure sustainable progress occurs throughout our whole business, operations and supply chain.

Our business is exposed to climate-related risks outside our port gate, including transport links and the impact of climate change on our community and customers. We intend to work collaboratively with relevant territorial authorities and community groups, sharing information and developing solutions, to deliver a more resilient business and region. During FY22 Napier Port has been actively sharing climate-related information with Hawke's Bay Regional Council's Climate Action Hub.

For Napier Port, a warmer world in 2100 consistent with the RCP8.5 scenario would result in potential physical impacts on our infrastructure, create uncertainties as to how our region would be affected and be required to adapt, and affect what our business may look like as a result. The transition impacts of climate change caused by strong climate action policy will also create a mix of risks and opportunities for our business. We have identified and assessed these risks and opportunities, undertaking analysis of the potential impacts for our business.

Our analysis of how climate change impacts us is undertaken out to 2100, as this time horizon aligns with the economic lives of our core infrastructure assets. As described in the risk management section, we have assessed the likelihood

of risks occurring over the following timeframes: short-term (0-20 years), medium-term (20-50 years) and long-term (50 plus years). We have utilised two scenarios to explore the strategic and operational implications of climate change for our business, RCP4.5 and RCP8.5, over a 30-year time horizon to 2050 and 95-year time horizon to 2100.

The physical and transition risks included below are from Napier Port's 'Whole of Port' Climate Change Risk Assessment and are rated very high, in accordance with the risk management policy and specific climate-related timeframes noted above. This assessment is based on the likelihood of the risk occurring (likely or almost certain) and consequence (greater than \$5 million), in at least the RCP8.5 scenario in the medium to long-term. Under the RCP4.5 (2 degrees or lower scenario), these risks are also present, although they would manifest themselves at a later date.

From the analysis undertaken, at this stage, we do not consider that the effects of climate change materially change our overall strategy. Sustainability will be embedded into our ways of working as we continue to collaborate to look after people, planet and place, including completing the actions contained in our sustainability strategy. The more financially material infrastructure improvement actions are required over the medium to long-term to ensure that we continue to have a resilient and agile infrastructure network. Planning to address this will be embedded within our asset management plans and infrastructure masterplan. In the short-term we will continue to complete more detailed investigations of climate-related effects and ensure these are considered in Napier Port's Master Planning process. We will also include climate-change effects and policy within Napier Port's procurement processes. Work in these two respective areas is ongoing.



## PHYSICAL RISKS

Climate change related effects result in a number of risks to Napier Port infrastructure, in particular due to its coastal location and susceptibility to sea-level rise. Our assets are susceptible to physical risks today, including from acute weather and natural disaster events. Climate change modelling indicates that higher temperatures will increase the likelihood of extreme weather events that may affect operations and damage infrastructure and there will be the ongoing impacts of sea-level rise which may cause erosion and flooding.

The physical impacts of climate change considered most material to Napier Port are described below:

### INCREASE IN SEA LEVEL

One of the major and most certain consequences of increasing concentrations of atmospheric greenhouse gases and associated warming is the rising sea level. The NIWA report includes projections of the approximate years when specific sea-level rise (SLR) increments will be met. A 0.5m SLR increment is projected to be reached by 2075 under RCP8.5 and by 2090 under RCP4.5. A 1.0m SLR increment is projected to be reached by 2100 under RCP8.5<sup>3</sup>.

Based on research, inundation of certain areas of the Port is a remote possibility today when there is the combination of high tides, storm surge and swell events (extreme sea levels), coupled with high rainfall. Climate change effects, predominantly the sea-level rise described above, is projected to increase the frequency of inundation that may cause damage or operational issues for the Port. As an example, an extreme sea level event of 2.42m changes from a 1/500 annual recurrence interval (ARI) to a 1/10 ARI under RCP4.5 in the short to medium-term (2040)<sup>4</sup>.

Potential inundation of the Port due to extreme sea levels has been modelled under future scenarios. This modelling shows potential areas of inundation based on extreme sea levels and projected sea-level rise under RCP4.5 and RCP8.5 to 2040 and 2090.

A significant portion of the Port is of a sufficient elevation and not expected to be effected by SLR-induced inundation under extreme sea levels, in particular the container terminal, wharves and adjacent infrastructure.

There are areas of the northern log yard which have the potential for some minor inundation even today across the eastern side due to extreme sea-level events. This is expected to get worse under both RCPs, minor inundation can be reasonably expected every 5 years in the short to medium-term (2040) under RCP4.5. In the longer term (2090) under RCP4.5, and both the short and long-term under RCP8.5, the level of inundation is much more extensive across this area.

Inundation of the road to the northern log yard and several nearby sheds are shown to be inundated due to extreme sea levels at relatively lower ARIs in the longer-term (2090). In the long-term the pavement in the northern log yards will need to be raised to prevent regular flooding with an estimated cost of \$10-\$15 million.

The western reclamation area is subject to inundation from extreme sea levels even today, but this area has not been fully developed and will be developed to design levels sufficient to exceed future extreme sea levels arising from climate change.

### EXTREME RAINFALL EVENTS

Climate change is expected to result in an increase in the frequency and intensity of extreme rainfall events. The NIWA report notes that short duration rainfall events have the largest relative increases compared with longer duration rainfall events. Rainfall depths for 1-in-50-year and 1-in-100-year events are projected to increase across the greenhouse gas concentration scenarios and future time periods<sup>5</sup>.

The Port has seen minor issues with stormwater management in recent years due to extreme rainfall events that the systems were not designed for. The stormwater system will be further compromised by sea-level rise with more outlets likely to be below sea level which impacts the system's ability to discharge effectively resulting in backing up of stormwater. This is likely to result in inundation if the extreme rainfall coincides with extreme sea levels. Detailed modelling is to be completed to better understand the system capacity both currently and under future scenarios so appropriate plans can be put in place. Likely options include additional drainage networks or pumping stations.

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## EROSION

The East Beach area of Napier Port has a history of significant movement of shingle to the north and south during swell events depending on swell direction. Erosion has been managed using ad-hoc shore protection where key infrastructure is situated, such as the Plant Services workshop. Climate-related risks are expected to increase erosion in this area. In the long-term a hard structure may be required to provide long-term protection in this area with a preliminary estimated cost of \$10–\$15 million.

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## DROUGHT

Drought has been highlighted as one of the key risks for Hawke's Bay, with some of the largest increases to the annual number of days of soil moisture deficit compared to other parts of the country<sup>6</sup>. The largest impact is expected to be in the meat industry with increased drought frequency resulting in changes to pasture composition. Increased droughts coupled with occasional heavy rainfall could have major adverse effects on soil stability.

The meat industry is a significant exporter through Napier Port and drought therefore poses a risk to revenue in the medium term and almost certainly in the long term under both Representative Concentrations Pathways (RCPs). Other industries such as apples and timber are in a better position to manage the risk of drought through various practices, although horticulture will have an increased reliance on water security.

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## TRANSITION IMPACTS

The transition impacts of climate change caused by strong climate action policy are also a mix of risks and opportunities for our business.

Government regulation to encourage shift to low carbon economy (like the recently released Aotearoa New Zealand Emission Reduction Plan) may result in:

- increased fuel costs particularly for Napier Port's mobile plant;
- requirements to invest in new technologies, equipment and supporting infrastructure to move away from diesel-powered plant; and
- policies to increase the use of rail which may require additional infrastructure investment and changes to Napier Port's operating model.

Opportunities may include additional revenue streams from requirements for ships to use shore power while in Port and opportunities to partner in the supply chain to provide low carbon or zero emission solutions for customers.

The transition impacts considered most material to Napier Port are:

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### GOVERNMENT REGULATION TO ENCOURAGE SHIFT TO LOW CARBON ECONOMY RESULTING IN HIGHER FUEL COSTS

Government policy may increase emissions taxes on fuel by greater amounts to encourage the significant reduction in emissions required to achieve net zero emissions by 2050. This will likely significantly increase diesel fuel costs and operating costs for Napier Port, which is currently reliant on diesel fuel to power tugs, mobile harbour cranes, and container handling equipment.

The higher fuel costs may encourage the shift to alternative fuels throughout the region which may ultimately reduce the fuel imported through Napier Port and the revenue that this generates.

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### GOVERNMENT REGULATION TO ENCOURAGE SHIFT TO ALTERNATIVE FUELS

Combined with the above there will almost certainly be government regulation to ban or limit the procurement of, and reduce the use of, diesel-powered machines and encourage the shift to machines powered by alternative fuels (e.g. electricity, hydrogen). It is expected that import bans will precede the outright ban of diesel equipment, which will provide some time to adapt.

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Napier Port is expected to transition in a planned orderly way with emission reduction pathways under development as part of the wider sustainability strategy. The transition triggers are likely to be a mix of fuel and other price pressures, investment cycles, and equipment and alternative energy availability and reliability.

The development of the required infrastructure is expected to occur over a longer period and require additional capital investment.

Napier Port currently has an Electrical Master Plan under development which shows that electrical capacity at the Port will likely need to more than double to meet all the future anticipated electrical demands. The Electrical Master Plan will provide an effective pathway to meet future electrical demand. There are, however, numerous policy risks which may affect the electrification programme:

- A ban on the importation of diesel equipment within a short timeframe may result in the need to accelerate infrastructure investment, uneconomically extending the lifetime of plant or affecting expansion aspirations;
- An early ban in the importation of diesel equipment may result in effective and reliable alternative low emission options not being readily available;
- Policy that results in dramatic increase in fuel price may result in earlier than expected move to an electric fleet. If electrical infrastructure is not ready this may result in higher than desired operating costs.

The decision-making process for investing in low emission versus diesel technology poses a risk when considering the lifespan of equipment, in particular key plant with relatively longer lifespans such as tugs and mobile harbour cranes. Decisions today are relatively simple due to costs and available technology and will likely be in 20 years' time when low emissions technology will be established and cost effective. In the intervening period the decision-making process is more complex and where policy risk could have a significant effect. Higher fuel costs may result in an earlier than expected move to alternative technologies that could result in existing equipment becoming redundant before the end of its expected useful life.

This is not an issue where equipment can be retro-fitted such as mobile harbour cranes or for equipment that has a relatively low lifespan (< 10 years), but may pose an issue for the tugs with a long remaining useful life, limited ability to retro-fit and an established (although immature) move to alternative technology.

Actions Napier Port are taking to mitigate these risks are considering future fuel cost risk in equipment purchasing and investment decisions, considering whether equipment can be retro-fitted in investment decisions and regularly assessing the remaining life and residual value of key equipment as a result of climate change pressures.

## SHIPPING

Global shipping is one of the largest contributors to global emissions. Although there are proven emerging technologies, these are generally limited to use in environmentally sensitive areas and there is nothing on the horizon that would indicate any significant change away from current technologies. It is expected that the focus will be on an incremental reduction in fuel consumption.

Ship to shore power, particularly for cruise ships and where connected to a 'green' grid, may become expected by government or the operators themselves. This would require significant additional electrical capacity, with the standard for cruise ships being 20 MW, more than double the Port's current capacity. This provides a risk if driven by government policy, and pricing to support the investment is not able to be achieved, but also provides an opportunity to provide a service to customers who demand it as part of their own sustainability goals.





Larger ships not only provide a lower cost per TEU for their operators, they naturally have lower emissions per TEU. Higher fuel prices or a drive to lower emissions will likely continue to drive larger ship sizes as well as encourage slow steaming and schedule optimisation. Napier Port is well placed to handle future ship sizes with the current Master Plan and the newly operational Te Whiti (6 Wharf), but should continue to monitor the influence of climate change on ship sizes.

## RAIL




Notwithstanding New Zealand's topography and lack of rail infrastructure compared to other countries, currently rail has significantly lower emissions per tonne compared to road freight, and also provides other benefits, in particular reducing the number of trucks on New Zealand's roads. In the short-term, a lack of national and regional rail infrastructure is and will remain a major hindrance to a significant step change in the use of rail. In the medium term, it is likely that road transport will reduce their emissions as technologies become available.

In the long-term (50+ years), under both RCPs, it is expected that New Zealand's rail network will be effectively emission free, running on alternative fuels such as hydrogen for long haul routes or potentially a fully electrified network, which will likely result in a significant uptake of rail. A significant increase in cargo transported by rail would require changes in Napier Port's operational layout and associated infrastructure investment.



TOP PHYSICAL RISKS				
				
RISK DRIVERS	INCREASE IN SEA LEVEL	EXTREME RAINFALL EVENTS	EROSION	DROUGHT
SCALE	High to Very High	High	High to Very High	High to Very High
LIKELIHOOD	Almost certain	Almost certain	Almost certain	Almost certain
TIMEFRAME	Medium to Long-term	Long-term	Medium to Long-term	Medium to Long-term
FINANCIAL IMPLICATIONS	\$10-\$15 million	Still being determined	\$10-\$15 million	\$5 million
METHODOLOGY	<ul style="list-style-type: none"> <li>Potential financial impact is estimated capital expenditure required, based on current civil construction costs in today's money.</li> </ul>		<ul style="list-style-type: none"> <li>Potential financial impact is estimated capital expenditure required, based on current civil construction costs for shore protection in today's money.</li> </ul>	<ul style="list-style-type: none"> <li>Potential financial impact is an estimate of the annualised impact on trade volume in today's dollars.</li> </ul>
RISK MITIGATION	<ul style="list-style-type: none"> <li>Northern log yards will need to be re-developed to raise the level of pavement.</li> <li>Ensure the western reclamation area is developed to levels to meet future extreme sea levels due to climate change.</li> </ul>	<ul style="list-style-type: none"> <li>Modelling of the stormwater system capacity under future scenarios.</li> <li>Assess capacity of the outer breakwater drain under future scenarios and frequency of drain cleaning.</li> </ul>	<ul style="list-style-type: none"> <li>Detailed investigation and potential design of hard structure to provide long-term protection in the East Beach area.</li> </ul>	<ul style="list-style-type: none"> <li>Napier Port has limited direct control in managing this risk. Napier Port will keep an active interest on potential impacts and how that might change export volumes, shipping patterns and changes in exports through the regular master planning process.</li> </ul>

## TOP TRANSITION IMPACTS

			
<b>RISK DRIVERS</b>	<b>GOVERNMENT REGULATION TO ENCOURAGE SHIFT TO LOW CARBON ECONOMY RESULTING IN HIGHER FUEL COSTS</b>	<b>GOVERNMENT REGULATION TO ENCOURAGE SHIFT TO ALTERNATIVE FUELS</b>	<b>GOVERNMENT REGULATION TO ENCOURAGE INCREASED USE OF RAIL</b>
<b>SCALE</b>	High to Very High	High to Very High	High to Very High
<b>LIKELIHOOD</b>	Moderate risk in short term. Almost certain in medium to long-term	Almost certain	Almost certain
<b>TIMEFRAME</b>	Short to Medium-term	Medium to Long-term	Long-term
<b>FINANCIAL IMPLICATIONS</b>	To be determined	Still being determined as options continue to be assessed	Greater than \$10 million
<b>METHODOLOGY</b>			<ul style="list-style-type: none"> <li>Potential financial impact is high-level estimate of capital expenditure required, in today's money.</li> </ul>
<b>RISK MITIGATION</b>	<ul style="list-style-type: none"> <li>Ensure fuel price escalation risk is considered in forecasting.</li> </ul>	<ul style="list-style-type: none"> <li>Consider flexibility in electrical infrastructure development as part of the Electrical Master Plan.</li> <li>Consider future fuel cost risk in equipment purchasing and investment business cases.</li> <li>Consider equipment that can be retro-fitted in investment decision-making process.</li> <li>Regularly assess the remaining life and residual value of key equipment as a result of climate change pressures.</li> </ul>	<ul style="list-style-type: none"> <li>Changes to Napier Port's operational layout in line with existing provisions in the Master Plan to increase our on-Port rail infrastructure.</li> <li>Further consideration of climate change related effects will be included in Napier Port's Master Planning process.</li> </ul>

## 4. METRICS AND TARGETS

### TCFD REQUIREMENTS:

- **DISCLOSE THE METRICS USED BY THE ORGANISATION TO ASSESS CLIMATE-RELATED RISKS AND OPPORTUNITIES IN LINE WITH ITS STRATEGY AND RISK MANAGEMENT PROCESS**
- **DISCLOSE SCOPE 1, SCOPE 2, AND, IF APPROPRIATE, SCOPE 3 GREENHOUSE GAS (GHG) EMISSIONS, AND THE RELATED RISKS**
- **DESCRIBE THE TARGETS USED BY THE ORGANISATION TO MANAGE CLIMATE-RELATED RISKS AND OPPORTUNITIES AND PERFORMANCE AGAINST TARGETS**

*During FY21, we focused on defining our GHG inventory to enable a better understanding of our emissions profile. During FY22, we have taken this expanded GHG inventory and collected the associated data to create a base year for emissions reporting.*

### GREENHOUSE GAS (GHG) EMISSIONS

Napier Port has been measuring their Scope 1, 2 and limited Scope 3 emissions for a number of years which have been reported in the Annual Report and on the Napier Port website. Historical emissions that were reported up until the year ended 30 September 2021 are reported on the same basis. However, reported emissions for FY22 include a wider range of Scope 3 emissions and been externally certified by Toitū Envirocare. The additional Scope 3 emissions now include freight and employee commuting. This is a significant milestone in our emissions reduction journey and the audit certification can be found on our website at: [www.napierport.co.nz/environment/environmental-monitoring/](http://www.napierport.co.nz/environment/environmental-monitoring/).

The certification means we've measured and managed the operational emissions of our organisation in accordance with ISO 14064-1:2018 and the GHG Protocol.

### DEFINING OUR (GHG) EMISSIONS INVENTORY

Last year, we worked with an external consultant, BraveGen, to define our GHG inventory scope to reflect best practice including identifying a wider range of Scope 3 emissions. This expanded definition of our GHG inventory is being used to determine and report Napier Port's emissions from FY22. This provides a better understanding of Napier Port's emissions profile, identifies where opportunities for reductions are, enables

setting of GHG targets and measures, and reporting overall progress. The GHG emissions sources included in this inventory were identified with reference to the methodology in the GHG Protocol and ISO 14064-1:2018 standards. We are also now using BraveGen's GHG emissions inventory software to record and report these emissions.

Under the GHG Protocol, these emissions are classified under the following categories:

**Scope 1** – Direct GHG emissions occurring from sources that are owned or controlled by the company.

**Scope 2** – Indirect GHG emissions occurring from the generation of purchased electricity, heat and steam consumed by the company.

**Scope 3** – emissions that occur as a consequence of the company's activities, but from sources not owned or controlled by the company. These have been further categorised using the Scope 3 standard categories:

- Purchased goods and services (category 1);
- Business travel (category 3);
- Employee commuting (category 3);
- Capital goods (category 4);
- Fuel and energy-related activities not included in Scope 1 or 2 (category 4);
- Waste generated in operations (category 4);
- Upstream transportation and distribution - electricity (category 4);

Additional Scope 3 categories are not reported where they are not relevant to our business. The *excluded* Scope 3 categories include:

- Upstream leased assets (category 4);
- Downstream transportation and distribution (category 3);
- Processing of sold goods (category 5);



- Use of sold products (category 5);
- End-of-life treatment of sold products (category 5) and
- Franchises (category 5).

Using the BraveGen software we have defined how emissions for Scope 1, 2 and 3 will be sourced, and documented any emission sources that will be excluded from the inventory.

### GHG EMISSIONS REPORTING

In FY22, our total carbon emissions were 9,744.4 tonnes which was down from 10,284.3 tonnes in FY21. This is shown in Figure 1 below.

The decrease in total emissions correlates with a decrease in annual cargo volumes during FY22. This has seen a decrease in Scope 1 emissions to 7,154.8 tonnes from 8,627.3 tonnes in FY21. The lower volumes resulted in a decrease in fuel usage for cranes, tugs, the pilot boat and diesel generators.

Partially offsetting this decrease is an increase in Scope 2 and 3 emissions.

Our purchased electricity (Scope 2) emissions increased to 1,758.7 tonnes from 1,430.0 tonnes in FY21.

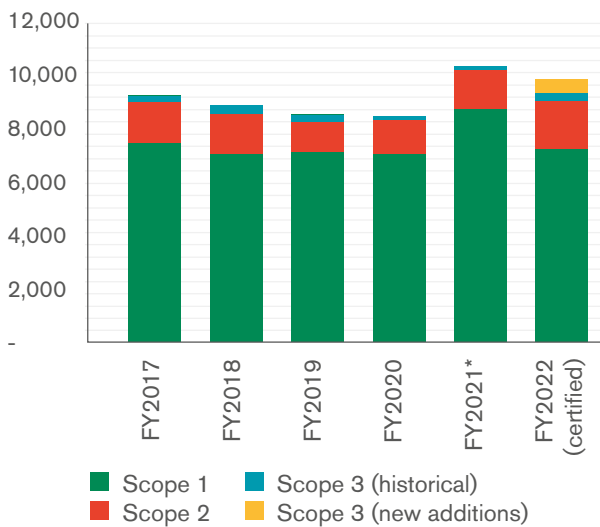
Contributing to this was the Ministry for the Environment materially increasing the Scope 2 electricity emissions factor for FY22 (an 18% increase).

Scope 3 emissions were expected to increase given the scope was widened for FY22 to capture emissions relating to freight and employee commuting. As a result, Scope 3 emissions increased from 227.0 (FY21 adjusted) tonnes to 830.9 tonnes when compared to the prior year.

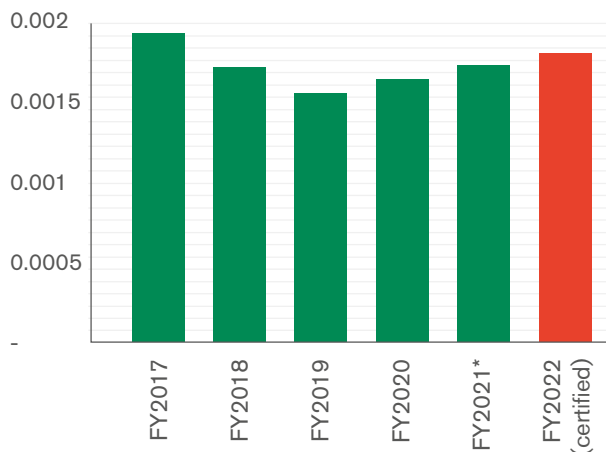
However, our tCO<sub>2e</sub> per tonne metric increased from 0.00173 to 0.00181 in FY22 as shown in the chart below (Figure 2). This is attributable to the impact of the two new Scope 3 emissions categories in FY22.

On a like for like basis, with these two new Scope 3 emission sources excluded, our carbon emissions per tonne decreased by 0.7%.

**FIGURE 1: TOTAL CARBON EMISSIONS tCO<sub>2e</sub>**



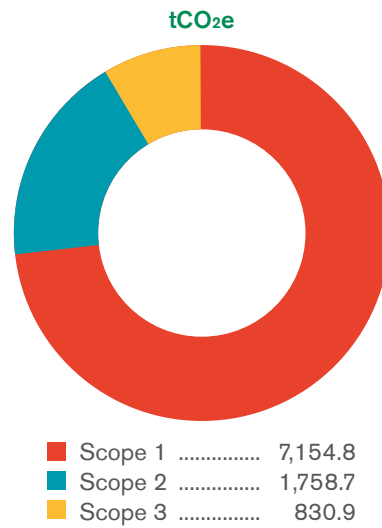
**FIGURE 2: CARBON EMISSIONS tCO<sub>2e</sub> PER TONNE**



\* FY21 Scope 3 emissions relating to waste – landfill with gas recovery has been increased by 63.

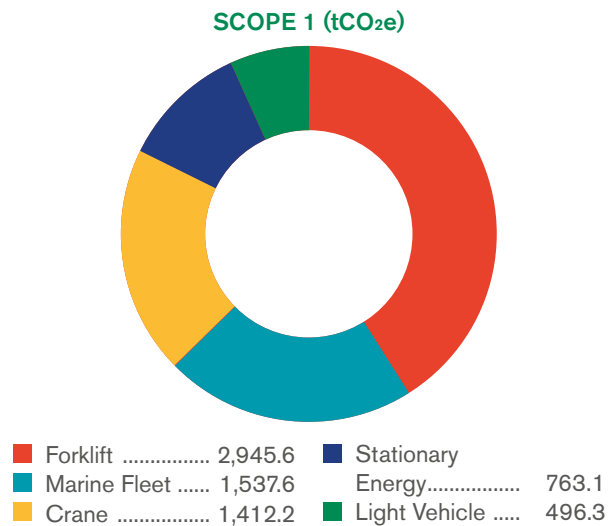
Key insights into our carbon footprint and our FY22 emissions baseline are represented by the graphs below:

**Figure 3: Total emissions broken down by scope**



**Figure 4: Scope 1 emissions broken down by top emitters**

73% of Napier Port's total FY22 emissions related to Scope 1 emissions. This is due to its large fleet of mobile plant and marine assets. These machines are all diesel consumers and are utilised across day and night shifts throughout the financial year.

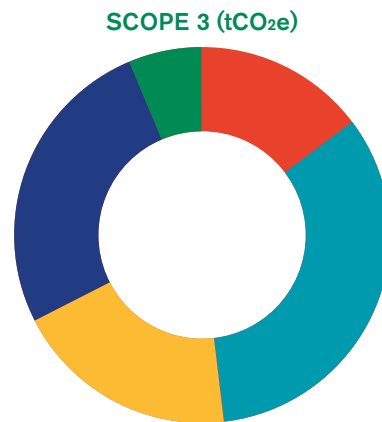


**Scope 2 emissions broke down by top emitters**

18% of Napier Port's total FY22 emissions related to Scope 2 emissions. The top emitters within the category are powering refrigerated ('reefer') containers, operational wharf and street lightning towers, and tug shore power and related infrastructure.

**Figure 5: Scope 3 emissions broken down by top emitters**

9% of Napier Port's total FY22 emissions related to Scope 3 emissions. Breaking down the Scope 3 emissions data further, 59% of total Scope 3 emissions are attributable to the two new scope categories: freight (diesel trains operating between Napier Port and Manawatū Inland Port) (33%) and employee commuting (26%).



■ Waste – landfill with gas recovery .....	122.7
■ TEU Rail Freight – diesel tkm* (new) .....	277.6
■ Electricity T&D* losses kWh .....	162.4
■ Employee commuting (new) .....	216.7
■ Other, including air travel/water supply m <sup>3</sup> .....	51.5

\*tkm = tonnes per kilometre

\*T&D = transmission and distribution

## SETTING TARGETS – DE-CARBONISING NAPIER PORT

We expect infrastructure improvements over time combined with new technology to enable us to contain emissions as trade volumes increase.

Napier Port has a number of de-carbonisation initiatives currently underway, aligning with the goal of reducing our carbon footprint:

- 3 electric vehicles and 2 hybrid vehicles introduced;
- 2 new Eco Reachstackers have been ordered;
- 14 LED floodlight towers now installed (up from 9 in FY21);
- At least 50% air travel reduction, offsetting emissions for domestic air travel;
- Investigating electrification/alternative fuels of Napier Port's tugs, cranes and forklifts;
- Investigating options for hydrogen usage and generation.

Our sustainability strategy includes an action for Napier Port to develop and adopt an emissions reduction strategy to support Napier Port's goal of net zero emissions by 2050. During FY22 an initial emissions reduction strategy has been developed. This is intended to provide the necessary framework for those charged with governance to collectively agree the most effective emissions reduction pathway for Napier Port. At a high level the strategy aims to:

- Focus on the reduction of diesel consumption given it's the primary source of our current emissions

- Align investment in low emissions technology with
  - Our asset renewal programme
  - Any future Napier Port container terminal transformation programme
  - The availability of emerging technology
- Grow our electrical infrastructure through potential electrical capacity upgrades. These upgrades would be designed and constructed to facilitate out of season electrical power for mobile harbour cranes
- Establish a decision-making framework that:
  - Requires mandatory consideration of low emissions technologies for any investment or business case
  - Explores the possibility of establishing an internal price of carbon (shadow price) to be used in investment or business development decisions, including the procurement of electricity

This strategy framework will continue to be further developed in the near future and will involve further investigations into the viability of alternative fuel sources and the array of new low emissions technology.

Napier Port's Sustainability Strategy and Action Plan is available on our website at: [napierport.co.nz/wp-content/uploads/2021/08/Napier-Port-Sustainability-Strategy-and-Action-Plan.pdf](http://napierport.co.nz/wp-content/uploads/2021/08/Napier-Port-Sustainability-Strategy-and-Action-Plan.pdf)



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## REFERENCES:

1. Climate change projections and impacts for Tairāwhiti and Hawke's Bay – Prepared for Envirolink, Gisborne District Council and Hawke's Bay Regional Council – November 2020.
  2. 2013 IPCC Fifth Assessment Report.
  3. Climate change projections and impacts for Tairāwhiti and Hawke's Bay – Prepared for Envirolink, Gisborne District Council and Hawke's Bay Regional Council – November 2020 (page 35).
  4. Climate change projections and impacts for Tairāwhiti and Hawke's Bay – Prepared for Envirolink, Gisborne District Council and Hawke's Bay Regional Council – November 2020 (page 16).
  5. Climate change projections and impacts for Tairāwhiti and Hawke's Bay – Prepared for Envirolink, Gisborne District Council and Hawke's Bay Regional Council – November 2020 (page 14).
  6. Climate change projections and impacts for Tairāwhiti and Hawke's Bay – Prepared for Envirolink, Gisborne District Council and Hawke's Bay Regional Council – November 2020 (page 15).
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