

WELLINGTON  
AIRPORT



**WELLINGTON AIRPORT**  
**CLIMATE-RELATED DISCLOSURES FY23**

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Wellington Airport plays a vital role in our region’s wellbeing. We drive the local economy by supporting travel, trade and tourism while connecting people with loved ones around the country and the world.

**At the same time, we are deeply conscious of our responsibilities to our people, community, and wider environment. This is behind our goal of net zero emissions for our own operations by 2030 and our support for airlines in their decarbonisation goals. Our Kaitiakitanga work programme outlines how we are looking after our people, the environment and our local community in more detail [here](#).**

As part of this we recognise the impacts climate change could have on our business. We have a comprehensive maintenance and review programme in place which helps to address the acute and chronic impacts of climate change, including weather and coastal related phenomena, to safeguard the airport’s operations.

While our analysis shows our airport infrastructure is resilient to a wide range of climate hazards and well equipped to respond

to these in the future, our work has provided a pre-emptive roadmap to follow in order to minimise physical climate-related risk and ensure we can adapt flexibly in different future scenarios. This exercise has highlighted the importance of supporting our airline partners and other tenants to decarbonise.

This report outlines how we are meeting this challenge and planning for the future in a responsible and sustainable way. We have endeavoured to align our FY23 climate-related disclosures voluntarily with Aotearoa New Zealand Climate Standards issued by the External Reporting Board, with mandatory alignment coming into effect for our FY24 disclosures.

**Matt Clarke**  
CEO

**Rachel Drew**  
Chair



From 2024 New Zealand businesses will be required to produce mandatory climate-related disclosures following the Financial Sector (Climate-Related Disclosures and Other Matters) Amendment Act which came into force in 2021.

**Wellington Airport is working towards being fully compliant with these requirements for our FY24 results, following standards set by the New Zealand External Reporting Board (XRB) which are consistent with the recommendations of the Taskforce for Climate Related Financial Disclosures (TCFD).**

This year we are voluntarily complying with these requirements a year ahead of schedule, reflecting the importance of this issue. Our report covers how we manage governance, strategy, risk, and measure progress towards metrics and targets.

While working to keep in line with the Paris Agreement goal of limiting global warming to 1.5 degrees, our strategy has also been tested in three different climate scenarios. By necessity, we will be regularly reviewing and adjusting our approach to managing our emissions and mitigating the impacts of climate change.

**OUR TARGETS**

**NET ZERO  
BY 2030**

**30%  
WASTE AND WATER  
REDUCTION BY 2030**



**Recent achievements by Wellington Airport**

- Setting a goal of net zero for our Scope 1 and 2 emissions by 2030. We have committed to set near-term company-wide emissions reductions in line with climate science with the Science Based Targets initiative (SBTi).
- Achieving Level 2 (Reduction) Certification from the Airport Carbon Accreditation programme in December 2022.
- Rated fifth best participating airport in the world for performance and management of environmental, social and governance (ESG) efforts by GRESB.
- Converting \$100 million of bank facilities into sustainability linked lending across its banking group, creating direct financial incentives by aligning lower interest rates with meeting agreed sustainability targets.
- Improving the energy efficiency of buildings and infrastructure.
- 100% of Airside Operations vehicles (excluding Fire Service vehicles) fully replaced by hybrid/electric models.
- Partnering with electric aircraft manufacturer Heart Aerospace alongside other New Zealand airports and airlines to speed up the decarbonisation of aviation.
- Completed the development of a new electric bus charging facility to support the new fully electric airport bus service.





## Governance body oversight

**Our Board has ultimate accountability for the management of business risks, including those related to climate change. The Board has two sub-committees: the Audit and Risk Committee, and Remuneration Committee.**

The Board has taken an active role in Wellington Airport’s approach to climate-related risk, including endorsing a TCFD-aligned approach in 2020. The Board reviews risk disclosures annually prior to release via Wellington Airport’s annual Kaitiakitanga (ESG) report, released alongside the annual financial statements.

The Board receives regular reporting from the executive-led Kaitiakitanga Committee on climate-related risks, opportunities and actions; and receives dashboard reporting which includes updates on climate-related risks and opportunities and shows progress against climate-related metrics and targets, including Wellington Airport’s net zero target.

The Board delegates oversight of risk management to the Audit and Risk Committee, which considers all material business risks and makes recommendations to the Board via reports.

Climate-related risks are managed, categorised and assessed against standardised criteria and filtered for compliance through the organisation’s Enterprise Risk Management Committee. Board members are invited to observe these sessions and information from this process is reported annually to the Audit and Risk Committee. The Enterprise Risk Management Committee meets three times per year.

The Remuneration Committee sets Executive Team remuneration, including incorporation of ESG performance metrics into incentive schemes.



## Management’s role

**Climate-related work programmes and actions are the responsibility of the Executive team, the Kaitiakitanga Executive Committee and the Sustainability Manager.**

The Kaitiakitanga Executive Committee considers risks and opportunities and is responsible for practical implementation of all carbon reduction initiatives alongside other ESG goals. This committee is comprised of the Executive Leadership Team, alongside the Financial Controller and is chaired by the Sustainability Manager. It meets monthly to track progress against key sustainability and climate-related initiatives and targets.

In conjunction with Wellington Airport’s Sustainability Manager, executive team leaders facilitate and drive initiatives in their respective areas that stem from these meetings. Each executive team member is tasked with implementing defined initiatives to reduce Wellington Airport’s environmental impact and adapt to the effects of climate change.

The Executive Team is also supported by externally led workshops and reports to identify and prioritise climate-related risks and resilience strategies. In the last year, this has included workshops with Beca on physical risk, GHD on resilience, independent academic reports, and WSP New Zealand Ltd on climate scenario analysis and further refinement of risk assessments.

### CONFIGURATION OF COMMITTEES

#### Audit and Risk Committee

Three Board members. In attendance: CEO, CFO, Financial Controller, Business Performance Manager and external auditors as required

#### Remuneration Committee

Three Board members. In attendance: CEO, GM People and Culture as required

#### Enterprise Risk Management Committee

CEO, CFO, GM Corporate Affairs, GM Aeronautical Operations, GM Infrastructure and Development, GM People and Culture, GM Commercial, Financial Controller

#### Kaitiakitanga Executive Committee

CEO, CFO, GM Aeronautical Operations, GM Corporate Affairs, Financial Controller, Head of Operations, GM Commercial, GM Infrastructure and Development, GM People and Culture, Sustainability Manager, Head of Aviation

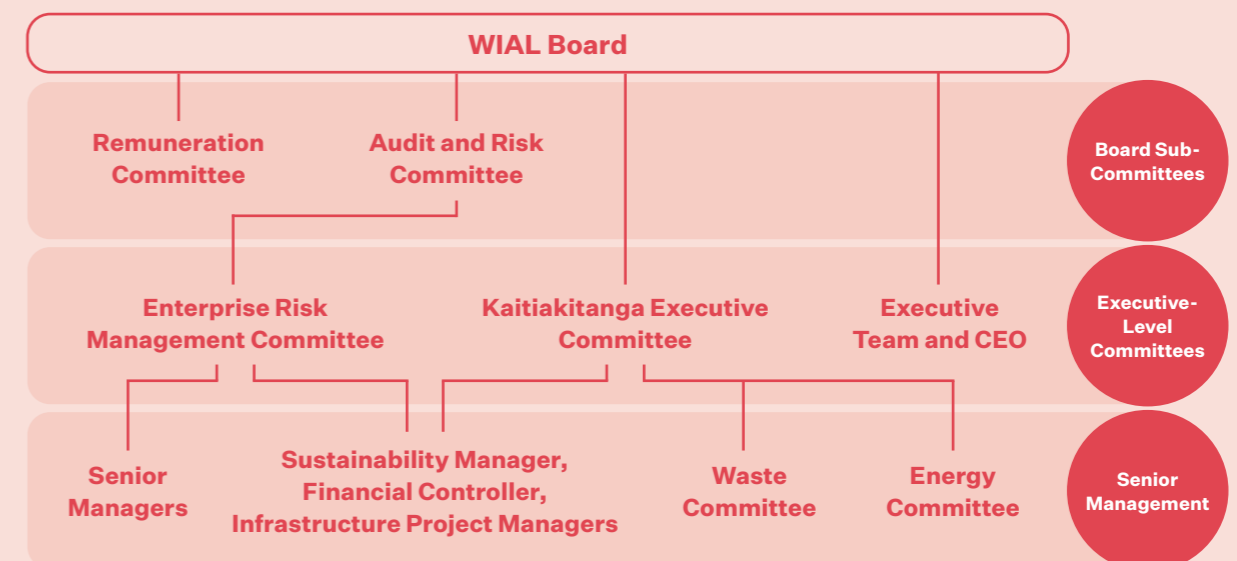
#### Waste Committee

Sustainability Manager, Retail Manager, Head of Operations, Manager Ambassador Programme (Operations), Asset Manager

#### Energy Committee

Sustainability Manager, Facilities Manager, Wellington Airport Energy Management Consultants (Lumen), Asset Manager

### GOVERNANCE OF CLIMATE-RELATED RISKS AND OPPORTUNITIES AT WELLINGTON AIRPORT





## Wellington Airport's business model

**Wellington Airport's business is divided between its regulated aeronautical business and commercial business including transport, retail, property and accommodation.**

The airport's aeronautical business includes the provision of terminal, runway, apron and ancillary facilities to support the movement of aircraft and passengers. This operates on a regulatory model where the airport's revenues are based on a calculation of a reasonable rate of return on its regulatory asset base and expenditure. Wellington Airport divides its required revenue over the expected number of passengers, resulting in a per-passenger charge paid by airlines. These charges are reset in consultation with airlines at least every five years.

The airport's commercial business provides additional services to meet customer needs ancillary to core aviation services. It also operates an investment property portfolio, including a large format retail park unconnected to the airport terminal.

### FLEXIBLE GROWTH STRATEGY

Wellington Airport's growth and investment strategy is centred on its [2040 Masterplan](#) which maps out the most efficient pathway to cater to increasing passenger numbers. Our 130 hectare site is constrained by residential housing to the east and west, Evans Bay to the north, and Cook Strait to the south. It is therefore essential to manage our small footprint as efficiently as possible in order to cater to a growing population, passenger demand, and changing mix of aircraft types.

In 2019, the airport reached an agreement to acquire the southern half of the Miramar Golf Course to the east, providing much-needed space for flexibility to adapt to future requirements as they arise.

During 2022, Wellington Airport achieved designations over its landholdings which provides flexibility and certainty for efficient growth into the future. This includes the flexibility to adapt plans as aircraft types change in order to achieve sustainability goals. For example, airlines may upgauge to larger, more fuel-efficient aircraft types; conversely, they may move to smaller, more numerous electric aircraft.

### ENVIRONMENTAL STRATEGY

The Airport's Kaitiakitanga strategy recognises the vital importance of decarbonisation, social responsibility and protection of the local environment. We understand our responsibility to manage an efficient operation that delivers excellent connectivity and customer experience while doing everything we can to care for our people, our community and the environment. We are committed to playing our part in limiting global warming to 1.5°C above pre-industrial levels. This is reflected in our targets and full suite of actions underway to help us to:

- Achieve our Net Zero 2030 target;
- Support the local community through sponsorship, outreach and noise mitigation; and
- Reduce our waste output and wider environmental footprint.

### FINANCIAL STRATEGY

Our financial strategy is linked to climate outcomes, supported by Sustainability Linked Loans. This creates direct financial incentives by aligning interest rates with agreed sustainability targets. Wellington Airport will be charged a lower interest cost and line fee for achieving the sustainability goals, and a higher rate if those goals are not achieved.

The four main sustainability target areas are:

- Addressing greenhouse gas emissions that the airport is directly responsible for (Scope 1 and 2), Science Based Target Initiative (SBTi) validation of reduction targets and public reporting of Scope 3 emissions.
- Supporting and enabling low-emission commercial flights at Wellington Airport through electric, hybrid and/or sustainable aviation fuelled aircraft.
- Progressing through the internationally recognised Airport Carbon Accreditation programme, which runs independent assessments of airports around the world.
- Reducing the level of waste ending up in landfills from our operations.

### RESILIENCE OF STRATEGY TO CLIMATE-RELATED RISKS

Aspects of Wellington Airport's business model and strategy allow us to manage the potential downside of our climate-related risks:

- A decline in passenger growth rates over time may not affect aeronautical revenues, due to the regulatory pricing model which is based on a return on regulatory assets and costs (though sudden unexpected demand shocks would affect revenue).
- The airport is partially hedged against flight disruptions and delays, due to its rental car, in-terminal retail and accommodation businesses.
- The airport is partially protected from declining or disrupted aeronautical revenue, via its commercial or non passenger related businesses comprising retail and investment property.
- Wellington has a high concentration of short-haul flights which provide a comparatively greater opportunity to transition to new fuel types in a shorter timeframe than other airports that are more reliant on international travel.
- Our analysis shows that our Net Zero 2030 targets can be realistically achieved with limited offsets due to the airport company's own minimal Scope 1 and 2 carbon footprint, with the cost of new aircraft models and energy requirements largely falling on airlines and electricity generators and distributors.

Our climate adaptation strategy also incorporates the following actions to minimise the physical impact of climate change on our business:

- Planned seawall redevelopment to protect the airport from extreme weather events, sea level rise and inundation.
- Regular review and upgrade of stormwater capacity.
- Future climate scenarios and projections are frequently considered when planning maintenance programmes, new developments and the design of airport infrastructure.



## Climate scenario analysis

**Wellington Airport has identified its priority climate-related risks and opportunities and performed climate scenario analysis.**

Climate scenario analysis is a strategic exercise and a key component of climate-related disclosures which helps us to identify material climate-related risks and opportunities as well as current and anticipated impacts from climate change. We then work to effectively consider the priority climate-related risk and opportunities in our strategic decisions, operations, and processes.

Current impacts on our business model and strategy driven by climate-related events are in Table 1. Note that we are still developing our methodology for estimating the financial impact of climate impacts to our business model and strategy. The anticipated impacts from climate-related risks and opportunities that we reasonably expect are in Appendix A.

Materiality ratings that were applied to our priority climate-related risks and opportunities were judged by the level of risk severity under each scenario shown in Table 2.

**TABLE 1: CURRENT CLIMATE-RELATED IMPACTS**

Area	Current impacts to Wellington Airport’s strategy and business model
<b>Transition</b>	<ul style="list-style-type: none"> <li>• Council funding decisions and regulatory Government costs.</li> <li>• Increasing cost of resource consents.</li> <li>• Growing city population and lack of transport upgrades, resulting in longer and more unreliable travel times between the airport, city and region.</li> <li>• Carbon Neutral Government Programme requirements – currently no specific requirements for air travel reduction but the Programme’s 2023 update highlights air travel as a top emissions source across the majority of organisations.</li> <li>• Protests and risk of litigation.</li> <li>• Planning in a time of uncertainty of the future of low emissions aircraft technology.</li> </ul>
<b>Physical</b>	<ul style="list-style-type: none"> <li>• Extreme weather events both locally and across the country e.g., storm surge and waves on access roads.</li> </ul>

**TABLE 2: MATERIALITY RATINGS AND DEFINITIONS**

Rating	Definition
● <b>Extreme</b>	These risks and opportunities present very significant impacts and/or have an extremely high likelihood of occurring under a given scenario. They should be a key focus of our strategic planning efforts.
● <b>High</b>	These risks and opportunities present significant impacts and/or have a high likelihood of occurring under a given scenario. They should be given due consideration as part of our strategic planning efforts.
● <b>Moderate</b>	These risks and opportunities present moderate impacts and/or have a moderate likelihood of occurring under a given scenario. They should be considered as part of our strategic planning efforts but are of lower priority compared to 'high' risks and opportunities.
● <b>Low</b>	These risks and opportunities present limited or no impacts and/or have a low likelihood of occurring under a given scenario. They should be documented as part of our risk management processes but are not a priority for strategic planning.

Wellington Airport considers climate related risks and opportunities across three-time horizons. They are aligned with our 2030 Net Zero Emissions Target, airline pricing consultation periods, and 2040 Master Plan. The assessment of climate related risks and opportunities included assigning a time horizon to each risk and opportunity.

Climate scenario analysis workshops were facilitated by WSP New Zealand Ltd with a group of our key senior leaders in attendance. The three climate scenarios used for scenario analysis are outlined on the following page and included in detail in Appendix C (see page 32).

These climate scenarios are plausible and challenging descriptions of how the future might look. They are based on a set of assumptions from key drivers to understand how physical and transition risks could evolve in different futures and describe a clear story with a series of causes and effects.

This assessment identified two priority long-term physical risks, two priority short- to medium-term transition risks, one priority medium-term transition risk and one key medium- to long-term opportunity, shown in Table 3 on pages 14 and 15.

**TIME HORIZONS FOR CLIMATE-RELATED RISKS AND OPPORTUNITIES**



**WELLINGTON AIRPORT CLIMATE SCENARIOS<sup>1</sup>**

- Orderly scenario:** Aotearoa New Zealand achieves net zero emissions by 2050. Carbon emissions and the impact of climate change are lowered due to rapid and effective policy transition and stimuli.
- Disorderly scenario:** Rapid policy, technology, and behaviour change is delayed. Sudden implementation of climate policy and other stimuli post-2030 causes a disorderly transition.
- Hot house world:** CO2 emissions continue to rise unabated. No new policies or other stimuli are introduced to curb emissions. Severe climate impacts experienced, which causes supply chain disruptions and issues for transport systems.

To effectively consider climate related risks and opportunities in our strategic decisions, we have identified a list of 6 priority risks and opportunities. Our more comprehensive climate-related risk register contained 27 physical climate risks, 15 transition risks, and 6 opportunities.

1. See Appendix C for the full climate scenarios

**Future work**

**We are actively working on developing a methodology to quantify the financial impacts of priority climate-related risks and opportunities.**

We look forward to improving and iterating on our climate scenario analysis for FY24. We expect updates to our climate scenarios to include the latest climate science and projections, a broader perspective and insight, and to include aspects relevant to our commercial business. The climate scenarios for FY24 will be developed in collaboration with other airports, and further developed to align the XRB Climate Standards with the methodology also disclosed. We are looking to more closely align our climate scenarios with our partners in the aviation sector, Wellington City Council, and Infratil.

This will be important as we develop our transition plan. The transition plan will be an important piece of work that details how our business model and strategy might change to address our priority climate-related risks and opportunities.

**TABLE 3: MATERIALITY RATING OF PRIORITY CLIMATE-RELATED RISKS AND OPPORTUNITIES AND RELEVANT TIME HORIZONS** ● Extreme ● High ● Moderate ● Low

	Time horizon	Orderly	Disorderly	Hot House	Management actions / mitigations
<b>Physical risks</b>					
Storm surge causes road flooding (access issues) and/or damage to airport infrastructure.	Long-term	●	●	●	The main concern is inundation restricting access to the airport in the hot house world scenario. We are proactively engaging with Waka Kotahi and Wellington City Council to monitor planned resilience upgrades to key access roads to the airport. Wellington Airport is investing in the adaptive capacity of infrastructure to reduce the impact of sea level rise by upgrading the marine defences and stormwater infrastructure.
Increasing severity and frequency of extreme weather events impacts key destination airports (both freight and passenger).	Long-term	●	●	●	Wellington Airport has assessed and considered this risk. We intend to collaborate with other airports to discuss cross-sector priority climate risks and opportunities.
<b>Transition risks</b>					
Government regulations result in increased costs and/or reduced passenger numbers (e.g. passenger caps, increased carbon price, Capex/Opex costs to comply with regulations).	Short-term	●	●	●	We are active in submitting on proposed regulatory and legislative changes, and closely engage with government to understand potential developments. We are proactively working to provide infrastructure to encourage a greater market share of low/zero emission aircraft, to minimise exposure to emissions-related levies. Assessment of infrastructure required to service novel aircraft is incorporated into capex and opex forecasting. This is developed through: <ul style="list-style-type: none"> <li>Establishment and contributions to Electrification of Regional Aircraft (ERA) working group.</li> <li>Engagement and consultation with Air NZ and Sounds Air – the early adopters of electric/ SAF/ hydrogen aircraft technology.</li> </ul>
	Medium-term	●	●	●	
Public scrutiny and/or reputational risks associated with failure to meet net zero and/or ESG targets.	Short-term	●	●	●	Wellington Airport regularly engages with stakeholders in a transparent manner to support decision making. We proactively provide infrastructure to service low/zero emissions aircraft, to decouple emissions from growth and to decarbonise operations. <p>We are creating a net zero/low carbon airport by reducing our Scope 1 and 2 emissions including via:</p> <ul style="list-style-type: none"> <li>Optimisation of building energy use.</li> <li>Adopting alternative-energy sources on-site.</li> <li>Transitioning to an EV fleet.</li> </ul>
	Medium-term	●	●	●	
Technology advancement (e.g., electric, hydrogen aircraft, SAFs) does not move quickly enough to enable aviation sector to meet New Zealand’s net zero 2050 decarbonisation goals.	Medium-term	●	●	●	Strategic steps are implemented to support this target include partnerships with Heart Aerospace to support the development of low emission technologies, various work groups include New Zealand Airport Association and Blenheim Airport to identify opportunities for decarbonisation.
<b>Opportunity</b>					
Improved market share against carbon-dependent transport modes (e.g., electric plane Cook Strait crossing as alternative to ferries).	Medium-term	●	●	●	Actively investigating opportunities for zero emissions planes and accompanying services e.g., Member of Heart Aerospace’s Industry Advisory Board.
	Long-term	●	●	●	





**ADAPTATION EXAMPLE: MARINE DEFENCES RENEWAL**

**Wellington Airport is in the design stages for the redevelopment of our marine defences, as the existing seawalls and breakwater are reaching the end of their design lifespans.**

The integrity of the seawalls is crucial given sea levels are rising and the frequency and severity of storms continues to increase.

Work is underway to ensure our marine defences remain resilient, and are adaptable to sea level and storm surge changes into the future. This has been informed by NIWA climate projections and wave data obtained by Wellington Airport.

As well as protecting the runway from inundation and erosion, the marine defences also protect the Moa Point Road and tunnel, and major pipelines transporting most of Wellington’s wastewater to and from the Wastewater Treatment plant.



## Risk management framework

**Wellington Airport’s Management team has day-to-day responsibility for identifying and managing climate related risks and opportunities.**

A system called Quantate, which functions as a central risk register, allows us to configure reporting for all levels of the business and assign risk owners and treatment options. Risks are reported to the Board through the Audit and Risk Committee who oversee risks and associated management actions based on the according level of priority,

severity and level of control in place. Monthly Kaitiakitanga Executive Committee meetings detail specific workstreams, progress, future actions, deadlines and stakeholders involved in the execution of actions associated with addressing climate-related risk.

The Quantate register is managed by the Financial Controller.

As well as this ‘bottom up’ approach to identifying climate-related risks, we are also working on an integrated approach to managing these risks across the organisation.

### WELLINGTON AIRPORT CLIMATE RISK MANAGEMENT FRAMEWORK



## Managing physical risks from climate change

**Physical climate risks have been assessed for Wellington Airport by Beca.<sup>2</sup> This is updated annually by the Sustainability Manager.**

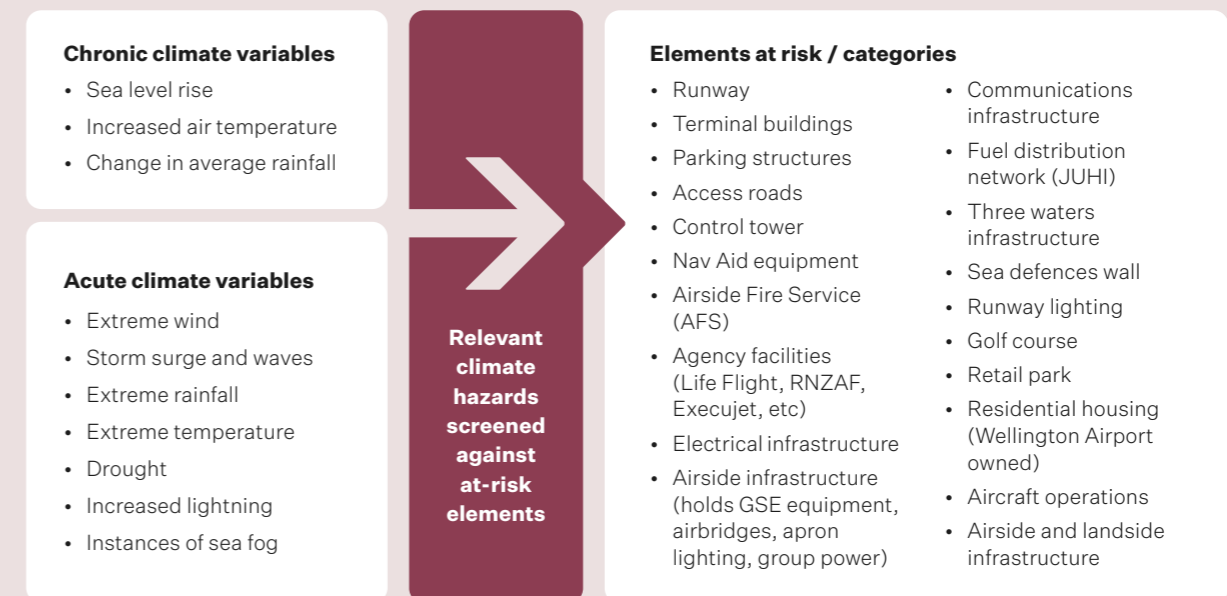
This assessment looked at the vulnerability, exposure, and risk to each element at Wellington Airport across different timeframes and scenarios. The climate variables and elements considered are below.

Responsibility for adaptation of infrastructure to the physical impacts of climate change

primarily sits with the airport’s Infrastructure and Development team.

Airport infrastructure is inspected regularly, and its resilience against the impacts of climate change is regularly assessed. Future climate scenarios are frequently considered when planning new developments, and the design of airport infrastructure accounts for future conditions, including sea level rise and increased storm events.

### WELLINGTON AIRPORT PHYSICAL CLIMATE RISK ASSESSMENT SCOPE



2. Methodology derived from: Ministry for the Environment’s Guide to Local Climate Change Risk Assessments, and 2022 ICAO report: Climate Change: Climate Risk Assessment, Adaptation and Resilience- Key Climate Change Vulnerabilities for Aviation Organisations

## Managing transition risks

**We are working alongside aviation industry partners to decouple carbon emissions from aircraft movements and passenger traffic, which sit at the centre of our transition risk profile.**

We are collaborating closely with key related stakeholders including connected airports, airline stakeholders, aircraft manufacturers, alternative fuel suppliers and engineering partners. This collaboration is intended to progress infrastructure and technology to alleviate the environmental concerns that sit at the source of the airport’s transition risk profile.

Wellington Airport consistently responds to relevant government decision making and submission opportunities, and participates actively in key government/industry partnerships such as Sustainable Aviation Aotearoa, established as a key initiative under the Government’s Emissions Reduction Plan. This enables us to play an active role in the crafting of regulation, ensuring that our position and interests are understood and considered.

The transition risks assessment is updated annually by the Sustainability Manager. Transition risks relating to the commercial business have been excluded for FY23 and will be added for FY24.

The long list of transition risks was developed in collaboration with Auckland and Christchurch Airports to ensure we are assessing these risks with a national lens. We have engaged external consultants to inform our understanding of climate change risks and opportunities. This has included work from WSP New Zealand Ltd, Beca, and a report by our independent researcher that has all informed our analysis and thinking.

We also appreciate the concern and interests raised by the airport’s users, local community and stakeholders. Consultation is frequently undertaken with the local community as an essential part of our development and decision-making processes. Consultation helps to integrate the airport’s development steps into its locality and also allows the airport to enact initiatives to target specific climatic concerns raised by members of the surrounding community.

## Other risk assessment tools

**Wellington Airport works to incorporate the management of climate-related risk into everyday decision making. Some of the ways we do this include:**

- Our sustainability induction workshops for all new staff includes information on Wellington Airport’s climate risk management to ensure they are familiar with the organisation’s risk mitigation initiatives and their respective roles in helping to fulfil these.

- Climate mitigation and adaptation implications are increasingly considered as part of all significant capital expenditure requests prior to approval.
- The Sustainability Manager maintains oversight of climate related initiatives and the development of long-term strategy to ensure that collective progress is maintained across the executive team.

## Wellington Airport’s climate-related metrics and targets

Target	Initiative taken in pursuit of target
<b>Metric: GHG emissions</b>	
<ul style="list-style-type: none"> <li>• Net zero Scope 1 and 2 emissions by 2030</li> <li>• Scope 1 and 2 absolute (gross) emissions are 30% below FY17 by 2030</li> <li>• Absolute zero by 2050</li> </ul>	<ul style="list-style-type: none"> <li>• Our emissions are independently verified and publicly reported annually.</li> <li>• Monthly emissions updates are reported to the Kaitiakitanga Executive Committee.</li> <li>• Prioritise projects that reduce our emissions, such as replacing our natural gas boilers with sustainable alternatives.</li> <li>• Explore alternative energy sources like solar generation.</li> </ul>
Science Based Target	<ul style="list-style-type: none"> <li>• SBT commitment letter was signed by CEO in August 2023 and submitted to the SBTi.</li> </ul>
ACA accreditation	<ul style="list-style-type: none"> <li>• FY23 emissions are submitted for ACA level 2 accreditation.</li> <li>• Aiming for ACA level 3 accreditation for FY24.</li> </ul>
Embodied emissions	<ul style="list-style-type: none"> <li>• Our airfield maintenance contract now includes a clause for contractor to report embodied emissions.</li> <li>• All new infrastructure projects require the contractor to report embodied emissions.</li> </ul>
Replace majority of fossil fuel use in fleet	<ul style="list-style-type: none"> <li>• All airside vehicles replaced by electric/hybrid vehicles in FY24.</li> <li>• Residual fuel emissions from emergency diesel generators and the Airport Fire Service fleet will be credibly offset.</li> </ul>
Reduce electricity emissions	<ul style="list-style-type: none"> <li>• Improved our heating and cooling system, reducing energy use in the terminal buildings by 14.7% in FY23 compared to FY20.</li> <li>• Eliminate Scope 2 electricity emissions by switching to certified renewable sources within the next year.</li> <li>• Explore alternative electricity sources like solar.</li> <li>• Rollout of LED lighting across terminal, airfield lighting and property portfolio.</li> </ul>
Use only high quality, internationally recognised offsets for our residual emissions.	<ul style="list-style-type: none"> <li>• Certified renewable energy will be purchased for FY24 from Mercury.</li> <li>• Staff flight emissions are offset using Air New Zealand’s Voluntary Emissions Contribution Programme.</li> <li>• We are investigating alternative and credible offset providers for other residual emissions.</li> </ul>

Target	Initiative taken in pursuit of target
<b>Metric: Waste</b>	
Reducing waste-to-landfill by 30%, compared to FY20 baseline	<ul style="list-style-type: none"> <li>We have partnered with For the Better Good to compost coffee cups from the terminal to grow crops at our community garden.</li> <li>Newly designed bins are also being installed in the terminal this year to help better sort and recycle our waste.</li> <li>We are actively working with all operators to quantify waste streams to then reduce waste to landfill and reduce contamination of recycling.</li> </ul>
<b>Metric: Water</b>	
Reducing potable water use by 30%, compared to FY20 baseline	<ul style="list-style-type: none"> <li>Work is underway with Wellington Water to identify reliable historic usage records.</li> <li>All new-build and retrofit projects will utilise low-flow tap designs and reduced flush toilets.</li> <li>Greywater recycling and rainwater harvesting are also on the airport's radar to reduce dependence on reticulated supply.</li> </ul>
<b>Metric: Executive remuneration</b>	
ESG modifier	<ul style="list-style-type: none"> <li>The executive remuneration scheme includes an ESG modifier. This is determined at the discretion of the Board and based on Wellington Airport's achievement of ESG targets.</li> </ul>
<b>Metric: Finance</b>	
Sustainability linked lending targets	<ul style="list-style-type: none"> <li>We have converted \$100 million of existing bank facilities into sustainability linked loans, creating direct financial incentives by aligning lower interest rates with meeting agreed sustainability targets.</li> </ul>
<b>Metric: Staff training</b>	
Sustainability inductions for every new staff member	<ul style="list-style-type: none"> <li>Every new full-time employee at Wellington Airport receives a sustainability induction, delivered by the sustainability manager.</li> </ul>
<b>Metric: GRESB</b>	
GRESB rating over 90/100	<ul style="list-style-type: none"> <li>Achieved 96 out of 100 for 2023.</li> </ul>
<b>Metric: Biodiversity</b>	
No current metric / target	<ul style="list-style-type: none"> <li>Partnering with Trees that Count, Te Motu Kairangi and Predator Free Wellington to support the regeneration of the Miramar Peninsula.</li> </ul>

## Managing carbon emissions within our control

### Wellington Airport has set ambitious carbon emission reduction targets for our Scope 1 and Scope 2 emissions:

- To reduce Scope 1 and Scope 2 emissions to net zero by 2030.
- To reduce Scope 1 and Scope 2 absolute (gross) emissions by 2030 to below 30% of our FY2017 baseline.

These targets are published annually, and we internally track progress towards these targets monthly. We have committed to set near-term company-wide emission reductions in line with climate science with the Science Based Targets initiative (SBTi) as of August 2023.

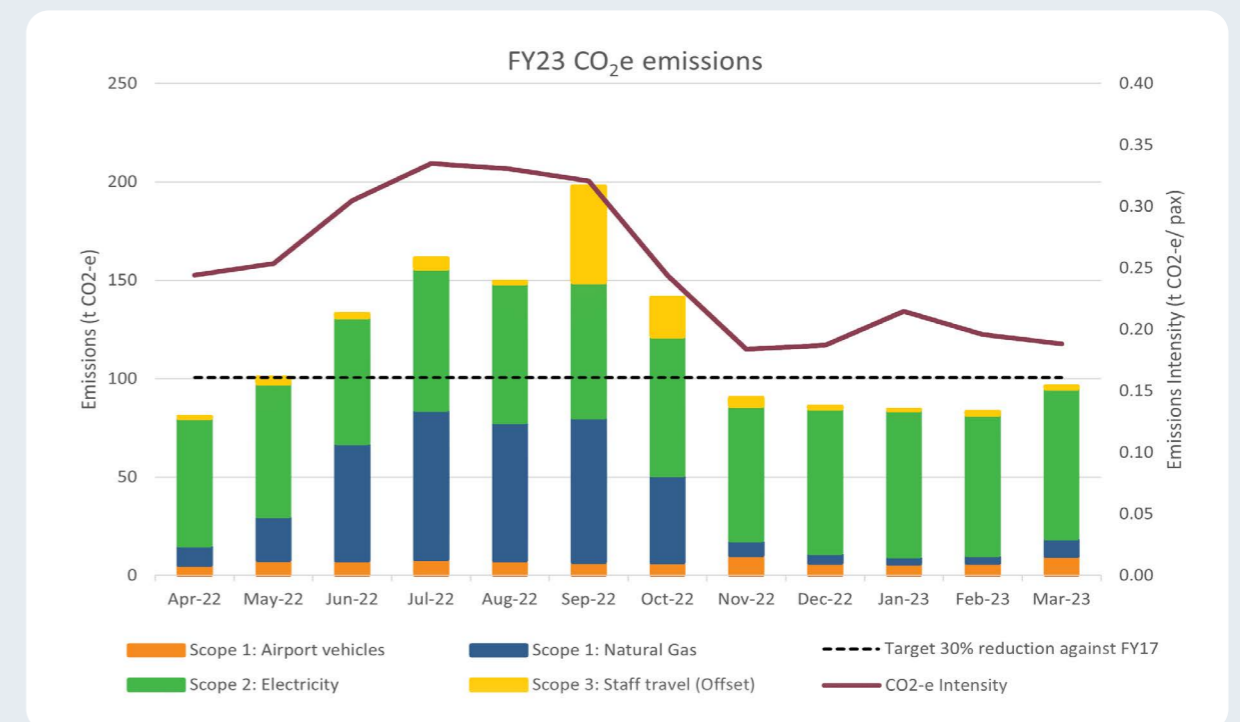
This will provide independent verification that our pathway for emissions reduction is in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to 1.5°C above pre-industrial levels.

Carbon emissions that we have reported for FY23 fall under three categories: Scope 1, Scope 2, and limited Scope 3 emissions (staff travel). As we recover from the Covid-19 pandemic, FY23 is the first year that travel has largely returned to normal. Due to this recovery, our net emissions are slightly higher than FY22. However, our Scope 1 and 2 emissions intensity per passenger has decreased compared to FY22, showing that we are decoupling increasing demand from emissions.

**TABLE 4: WELLINGTON AIRPORT SCOPE 1 AND 2 GHG EMISSIONS**

	FY17	FY19	FY20	FY22	FY23
Scope 1 (tCO2-e)	734	827	690	375	473
Scope 2 (tCO2-e)	913	715	819	705	841
<b>Total (tCO2-e)</b>	<b>1,647</b>	<b>1,542</b>	<b>1,509</b>	<b>1,080</b>	<b>1,314</b>
Emissions intensity (kgCO2-e / pax)	0.28	0.24	0.25	0.31	0.25

All figures reported above are independently verified.





Wellington Airport regularly monitors the emissions that are generated by the operations of our airport campus, and this is reported monthly at the Kaitiakitanga Executive Committee. Emission reductions in FY23 are attributable to the following actions:

- Optimising heating and cooling systems: This has reduced building energy use by 14.7% in FY23 compared to FY20, even when accounting for the fact FY23 was a warmer year.
- Rollout of LED lighting across terminal and airfield lighting: To date, Wellington Airport has replaced around 60% of its internal lighting with LED alternatives.
- Staff travel has been offset through Air New Zealand's Voluntary Emissions Contribution Programme.

In 2018 we set a goal of reducing our direct emissions by 30% in absolute terms by 2030, compared to our FY17 baseline. Through enacting sustainability initiatives, we anticipate that we will exceed our 30% reduction target through 2030. Short term and long-term initiatives are in Appendix B with the capex committed reported against each initiative. In FY23, we are sitting at 27% below our FY17 baseline. The absolute target helps us to prioritise initiatives that will reduce absolute emissions and reduce reliance on offsets to meet our net zero target.

Looking ahead, we anticipate several key projects to further drive and keep our emissions down. We expect our decarbonisation trajectory to be non-linear in nature, with several key projects expected to manifest varying levels of decrease in emissions over the next eight years. See next page for our expected journey to net zero.

Our FY23 carbon emissions have been verified in accordance with ISO 14064-1:2018, the Greenhouse Gas Protocol (2004) and are aligned with the requirements for ACA accreditation Level 2. Refrigerant emissions have been excluded. This is because no leakage has been recorded, we have not recharged our chillers in the last 10 years, and the industry standard assumptions for calculated refrigerant leakage are not relevant for our chillers.

In December 2022 we achieved Airport Carbon Accreditation (ACA) Level 2 certification. Our baseline year is 2017, when reduction targets were first set. We have submitted our FY23 carbon emissions for ACA level 2 accreditation. We plan to progress to ACA level 3 accreditation for FY24. This involves expanding our carbon emissions inventory to include Scope 3 emissions that align with ACA guidelines.



## Wellington Airport's journey to net zero

Gas boiler replacement converted in FY27

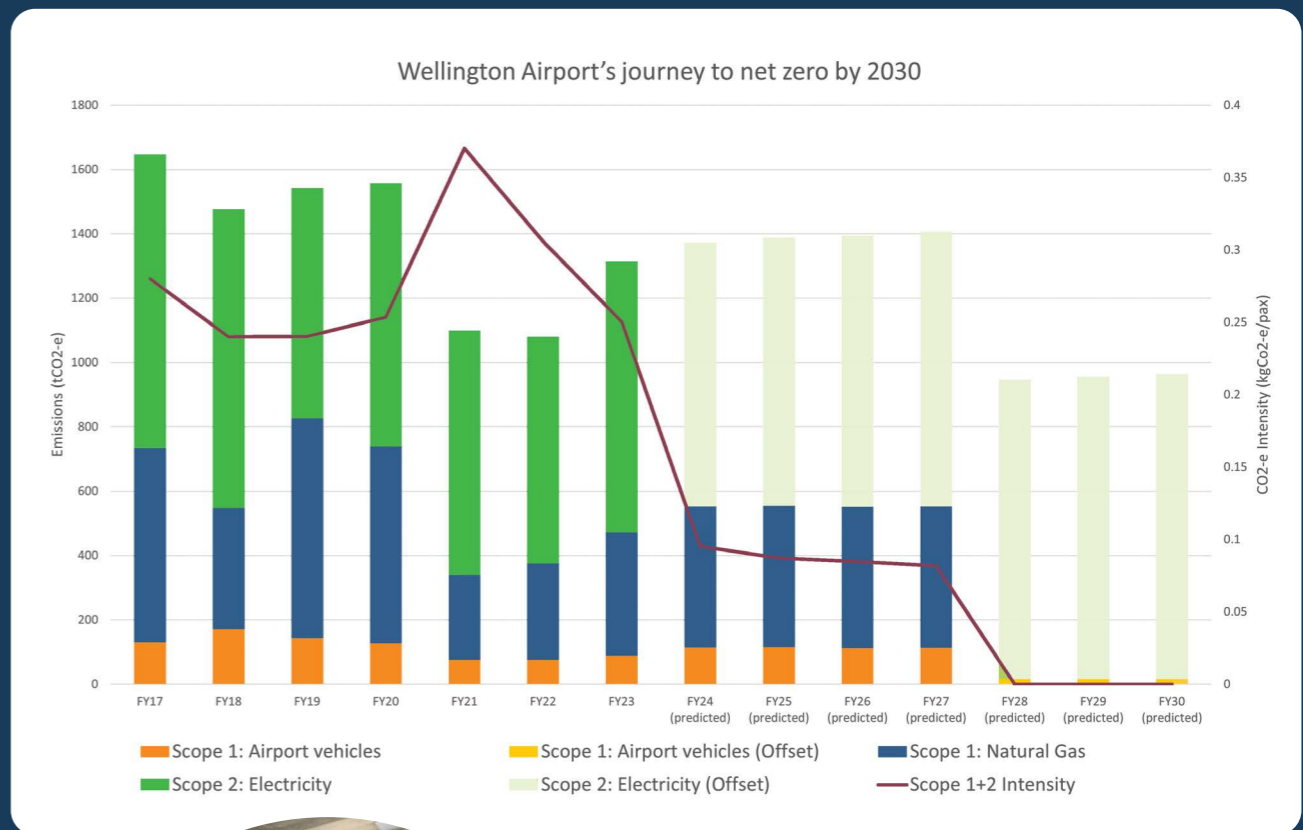
Electricity emissions are credibly offset using NZECs from FY24

Most airport fossil fuel uses are replaced by FY27

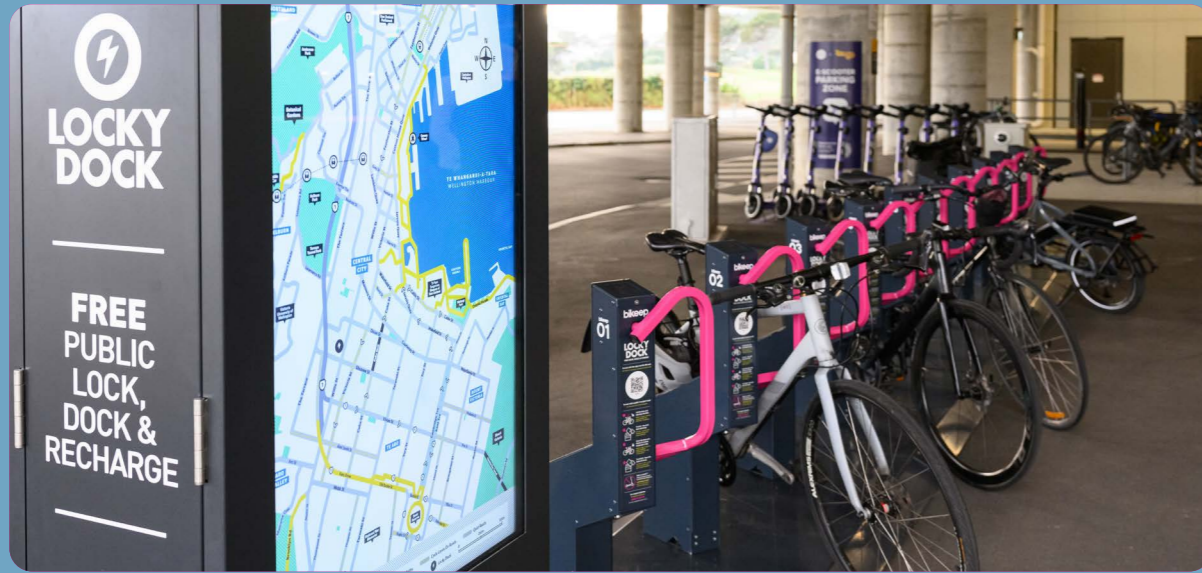
Emissions intensity spike in FY21 and FY22 due to Covid-19 effects

AFS fossil fuel use is credibly offset from FY27

Carbon emissions intensity decreasing demonstrates that GHG emissions and growth are to be decoupled



**WE EXPECT NET ZERO ACHIEVED BY FY28**



## Reducing indirect emissions

**Wellington Airport appreciates that we do not operate in isolation within the aviation industry. At present, we are pursuing Airport Carbon Accreditation (ACA) certification, up to Level 2. This requires us to report verified Scope 1 and Scope 2 emissions.**

Moving forward, we are eager to be a leader in the transition of not only airport but also aircraft technology towards a zero-carbon future. As part of this, we will be looking to progress our ACA

levels to level 3 for FY24 which will mean including and reducing emissions from Scope 3 activities. These are emissions not directly produced by us, but from an extended range of activities associated with the airport (such as air travel).

This will involve the development of a comprehensive Scope 3 profile, working with external stakeholders, and development of onsite infrastructure to enable and support external developments in process and technology.



Wellington Airport is a key connection for air and land travel. While we are not directly responsible for these emissions, we have an important part to play in enabling and influencing emission reductions.

### AVIATION

- **Battery-electric aircraft** are seen as a primary solution for the decarbonisation of regional and general aviation operations. We have signed up to support Heart Aerospace's wider Electric Aircraft Advisory group, to assist in technical and operational preparations ahead of Heart Aerospace's ES-30 aircraft launch
- **Sustainable aviation fuel (SAF)** is a type of fuel specifically designed to reduce the environmental impact of aviation. It is an alternative to conventional jet fuel derived from fossil fuels such as crude oil. We continue to work with airlines to develop a further SAF pilot, with the aim of achieving a shipment of SAF directly to WLG for use on aircraft departing from the airport.
- **Hydrogen technology** investment at Wellington Airport includes investigating the following, in partnership with Hiringa Energy:
  - » Installing facility for a hydrogen tank and delivery system on site,
  - » Investigating uses for hydrogen-powered Ground Service Equipment.
- **Performance Based Navigation** has been implemented at Wellington Airport since 2018. This ensures aircraft use their Global Positioning System (GPS) to follow optimised flight paths with better accuracy and continuous descent profiles, meaning they'll consume less fuel, create less noise and emit less carbon dioxide.

### LAND TRANSPORT

- In October last year we were proud to welcome the new **Airport Express bus** service into action. Ten new purpose-built, fully electric buses make up the Airport Express fleet, which runs between Wellington Railway Station and Wellington International Airport every 10 – 20 minutes, seven days a week.
- We have built an **electric bus charging facility** to support the new airport bus service on Kauri Street at the site of the old Miramar South School. The new depot provides overnight bus changing capabilities, driver amenities and vehicle wash down facilities. This 10-bus depot is the second fully electric depot in New Zealand.
- We have newly installed **e-scooter parking and additional bike racks**. In May this year we installed 10 new Locky Docks providing free and extremely safe bike parking – the first at any airport in New Zealand. We are investigating replacing our airside bus and staff shuttle bus with a hydrogen or electric solution.
- We have rolled out **EV charging stations** in the multi-level carpark building and plan to install more chargers as needed to meet demand. We also accommodate installation of chargers to support rental car operators at the Airport.
- More electric vehicle and ground service equipment (GSE) **electrical charging infrastructure** going in airside to support emission reduction efforts airside by our ground handlers and tenants.



**ACA:** Airport Carbon Accreditation is the only institutionally-endorsed, global carbon management certification programme for airports. It independently assesses and recognises the efforts of airports to manage and reduce their carbon emissions through 6 levels of certification: ‘Mapping’, ‘Reduction’, ‘Optimisation’, ‘Neutrality’, ‘Transformation’ and ‘Transition’.

**Acute risk:** Physical risks emanating from climate change that are event-driven such as increased severity of extreme weather events.

**Aotearoa New Zealand Climate Standards:** Standards issued by the External Reporting Board (XRB) that comprise the climate-related disclosure framework.

**Base year:** An historical datum (a specific year or an average over multiple years) against which an entity’s metric is tracked over time.

**Carbon dioxide equivalent (CO<sub>2</sub>e):** The universal unit of measurement to indicate the global warming potential of each of the seven GHGs, expressed in terms of the global warming potential of one unit of carbon dioxide for 100 years. It is used to evaluate releasing (or avoiding releasing) any GHGs against a common basis.

**Certified renewable energy (NZECs):** Certified Renewable Energy enables Meridian’s business customers to match the amount of electricity they use on an annual basis, with an equivalent amount of electricity put into the

national grid from one of Meridian’s hydro stations or wind farms – which have been independently verified as producing 100% renewable electricity.

**Chronic risk:** Physical risks emanating from climate change that relate to longer-term shifts in precipitation and temperature and increased variability in weather patterns, such as sea level rise.

**Climate-related disclosure framework:** Climate-related disclosure framework has the same meaning set out in section 9AA of the Financial Reporting Act 2013.

**Climate-related opportunities:** The potentially positive climate-related outcomes for an entity. Efforts to mitigate and adapt to climate change can produce opportunities for entities, such as through resource efficiency and cost savings, the adoption and utilisation of low-emissions energy sources, the development of new products and services, and building resilience along the value chain.

**Climate-related risks:** The potential negative impacts of climate change on an entity. See also the definitions of physical risks and transition risks.

**Climate-related scenario:** A plausible, challenging description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces and relationships covering both physical and transition risks in an integrated manner.

Climate-related scenarios are not intended to be probabilistic or predictive, or to identify the ‘most likely’ outcome(s) of climate change. They are intended to provide an opportunity for entities to develop their internal capacity to better understand and prepare for the uncertain future impacts of climate change.

**Emissions intensity:** Intensity ratios express GHG emissions impact per unit of physical activity or unit of economic output. A physical intensity ratio is suitable when aggregating or comparing across entities that have similar products. A declining intensity ratio reflects a positive performance improvement.

**ESG:** Environmental, social and governance (ESG) refers to a collection of corporate performance evaluation criteria that assess the robustness of a company’s governance mechanisms and its ability to effectively manage its environmental and social impacts.

**Financial impacts:** The translation of impacts into current or anticipated impacts on financial performance, financial position and cash flows.

**FMA:** The Financial Markets Authority (FMA) regulates financial markets in New Zealand. They also regulate the New Zealand Climate Standards.

**Governing body:** The Wellington International Airport Limited Board.

**Greenhouse gas (GHG):** The greenhouse gases listed in the Kyoto Protocol: carbon dioxide (CO<sub>2</sub>); methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF<sub>3</sub>), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>).

**Materiality:** The XRB defines information as material if omitting, misstating, or obscuring it could reasonably be expected to influence decisions that primary users make based on an entity’s climate-related disclosures.

**Physical risk:** Risks related to the physical impacts of climate change.

**Reporting period / financial year:** April 1 to March 31.

**RCP:** Representative Concentration Pathway (RCP) is a greenhouse gas concentration trajectory adopted by the IPCC.

**SAF:** Sustainable Aviation Fuels (SAF) are defined as renewable or waste-derived aviation fuels that meets sustainability criteria.

**SBT:** Science-based targets (SBT) provide a clearly-defined pathway for companies to reduce greenhouse gas (GHG) emissions, helping prevent the worst impacts of climate change and future-proof business growth. Targets are considered ‘science-based’ if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to 1.5°C above pre-industrial levels.

**Scope 1 emissions:** Direct GHG emissions from sources owned or controlled by the entity.

**Scope 2 emissions:** Indirect GHG emissions from consumption of purchased electricity, heat, or steam.

**Scope 3 emissions:** Scope 3 encompasses emissions that are not produced by the airport itself and are not the result of activities from assets owned or controlled by them, but by those that it’s indirectly responsible for up and down its value chain.

**Transition risk:** Risks related to the transition to a low-emissions, climate-resilient global and domestic economy, such as policy, legal, technology, market and reputation changes associated with the mitigation and adaptation requirements relating to climate change.

**XRB:** The External Reporting Board (XRB) develops and issues reporting standards on accounting, audit and assurance, and climate, for entities across the private, public, and not-for-profit sectors. They developed and issues the New Zealand Climate Standards.



APPENDIX A

## Anticipated impacts of priority climate-related risks and opportunities

Area	Anticipated climate-related impacts to Wellington Airport
<b>Risks</b>	
Business model	Extreme physical risks could restrict accessibility of customers travelling from Wellington City to the airport and customers on flights travelling between Wellington Airport and destination airports. This will impact our revenue from reliable inbound and outbound flights.
Supply chain	Scarcity in low emissions and cost-effective technology to decarbonise assets and operations accompanied by the pace of regulatory change could expose Wellington Airport to higher operating costs from increased carbon prices
Customer demand	The risk of increased cost of travel and associated carbon prices from the implications of stringent transition policies may see less travellers able to afford travel, specifically long-haul travel. Alternatively, the loss of revenue from changing customer preferences if Wellington Airport and airlines do not achieve on decarbonisation targets.
Access to capital	Accessing capital and loans may become more challenging due to stringent sustainability criteria.
Reputation	The impact of the public’s attitudes and scrutiny on Wellington Airport’s performance is influenced by the perception of our progress to decarbonise operations and decouple emissions while continuing to grow.
<b>Opportunities</b>	
Business model	Growth and investment into decarbonisation of Wellington Airport’s own operations and implementing stringent requirements for airlines will support the resilience of our business model.
Market share	Development of new supplier and partnership options for those offering low emissions technologies. Through investment in decarbonisation and sustainable commitments Wellington Airport will be recognised in the market.
Access to capital	Transitioning away from emissions dependent operations will enhance our opportunity to gain market credentials and financing options, resulting from forward-thinking alignment with regulation and reduction targets.

## APPENDIX B

## Capital deployment towards initiatives related to climate-related risks and opportunities

Note: Estimated spend is based on projected figures and is subject to airline pricing consultation.

This is not an exhaustive list of climate-related initiatives with capital committed.




Description	FY24 estimated spend
<b>Key short term initiative</b>	
<p><b>Purchasing of NZECS certificates to eliminate our Scope 2 electricity emissions:</b> We intend to work with our electricity supplier, Mercury Energy, to procure NZECS certificates which will certify the electricity the airport consumes is attributable to a renewable generation source. This move will bring our market-based Scope 2 emissions to zero. Mercury has committed to reinvesting all RECS proceeds to further developing renewable energy generation infrastructure.</p>	\$40,000
<p><b>Continued rollout of LED lighting:</b> We are progressing with the replacement of conventional lighting with LED alternatives across the terminal, carparks, and wider property portfolio. While our progression of the NZECS initiative will eliminate our Scope 2 emissions, the increased energy efficiency through adoption of LEDs is critical to reducing our absolute emissions.</p>	\$150,000
<p><b>Replacement of exterior lighting with LED:</b> commencing in FY24, we have budgeted for the commencement of the transitioning of our external lighting towers from sodium-based lights to LED systems.</p>	\$1.3 million
<p><b>Reduction of our ground transport fuel use through replacement of our ground internal combustion engine (ICE) fleet with EV/hybrid alternatives:</b> The majority of Wellington Airport's ground-based fuel emissions is from our ground vehicle fleet (95% in FY22). The remainder of emissions is from monthly testing of the airport's two diesel backup generators and the airport's marine vessels.</p> <p>In FY22, we procured a fully electric LDV van in FY22 to replace fossil fuel bus operations, then in FY23 acquiring two MG LS EV's to replace the two 15 year old Nissan X-Trails, and now in FY24 replacing operations final two fossil fuelled vehicles AP1 (2015 Ford Ranger) and AP5 (2015 Nissan Navara) and Airport Fire Services R5 (2006 Mitsubishi Challenger) with three 2023 Plug-In Hybrid Electric vehicles. <i>This will save around 10.4tCO<sub>2e</sub> annually (11.8% of FY23 fuel emissions).</i></p>	\$260,000

Description	FY24 – 34 estimated spend
<b>Key long term initiative</b>	
<p><b>Elimination of natural gas usage, through replacing our boiler system with an energy efficient alternative,</b> based on heat pump technology. We anticipate this system to have high efficiency, reduce our operational costs and, and eliminate our reliance on natural gas usage to reduce Scope 1 emissions.</p>	\$11.7 million
<p><b>Chiller replacement:</b> The key solution for mitigating emissions associated with chiller refrigerant leakage is replacing existing high GWP refrigerants, such as R22, R134A and R410A, with charging agents that yield lower GWPs. This ought to be viewed as a priority us, owing to Chiller 1 and 2's reliance on R22.</p>	Estimate not confirmed yet.
<p><b>Fixed Electrical Ground Power and Pre-Conditioned Air (FEGPs and PCA)</b> can significantly minimise reliance on Auxiliary Power Unit (APU) usage, by using ground-sourced electricity to supply electricity to aircraft systems and air to the aircraft cabin when their engines are shut down. This ensures that critical onboard systems can operated without relying on APU usage and associated jet fuel consumption. From FY24, Wellington Airport will look at installing these to reduce aircraft emissions (our Scope 3 emissions).</p>	\$7.5 million
<p>The ongoing maintenance and strengthening of <b>marine protection structures</b> to ensure the integrity of the airfield platform and instrument landing systems are preserved. This includes increasing resilience against seismic events, climate change, sea level rise, and the increasing frequency and intensity of storms.</p>	\$110 million









APPENDIX C

# Wellington Airport climate scenarios<sup>3</sup>

	 <b>Orderly scenario</b>	 <b>Disorderly scenario</b>	 <b>Hot house world</b>
<b>Global narrative</b>	In this scenario, strong and immediate climate change action is taken in the mid-2020s resulting in lowered emissions, lowered physical impacts, rapid policy intervention, and effective industry stimulus. A large-scale transition away from fossil fuel energy sources, moderate deployment of carbon dioxide removal and rapid advances in technology enables countries to reach the net zero goal. Action taken is within the carbon budgets estimated to provide a strong probability of limiting global warming to 1.5 degrees by 2050.	A disorderly transition with little policy action until post 2032 after which strong, rapid action is needed to limit warming to 2°C by 2050. This scenario assumes countries or territories recover from Covid-19 using fossil-fuel heavy policies, so emissions increase, and carbon budgets are not met. Only after 2032 are new climate change policies introduced.	Emissions continue to rise unabated as no additional climate change policies are introduced. Fossil fuel use continues to increase, and global CO2 emissions continue to rise, and global warming is expected to reach higher than 3°C by 2080. Physical impacts from climate change are severe. Global tensions by 2050 are high as physical impacts from climate change force mass migrations.
<b>NZ aviation sector</b>	All aviation is mostly decarbonised through the uptake of sustainable fuels by 2050. The residual emissions are credibly removed through permanent carbon sinks. Air traffic management efficiencies are prioritised.	Aviation proves hard to decarbonise. Low emissions fuels are available by 2040, but costs are high, and aviation still contributes to climate change by 2050. Other modes of transport rapidly decarbonise. Domestic tourism makes up the majority of visitor expenditure as long-haul travel has dramatically declined. The cost of flying increases so much by 2050 that land travel is more common.	Supply chain disruptions are common. Severe storms, including lightning incidents, flooding, sea level rise near airports, economic shocks, disruptions and geopolitical tensions limit numbers of international visitors, reduce tourism offerings, restrict areas open to visitors, and increase the costs of flying both domestically and internationally.
<b>Aircraft technology</b>	Electric aircraft introduced on <200km sectors from 2028. Electric aircraft on <400km sectors from 2030.  Hydrogen technology for long haul flights from 2040.  SAF is produced domestically, being available for use for aviation from 2030. SAF to represent 80 – 90% of aviation fuel use in 2050, reducing non-electric/non-hydrogen aviation emissions by 62%.	Historical fuel efficiency improvements continue. Technology transition is significantly delayed. No significant commercial electric aircraft is available until 2035. No hydrogen until 2040.  SAF is produced domestically, being available for use for aviation from 2040, but costs are very high.	Historical fuel efficiency improvements continue. Technology transition is significantly delayed. No significant commercial electric aircraft is available until 2040. No hydrogen until 2050. SAF is produced domestically and available for aviation from 2050, but costs are high and the SAFs industry competes with food production.
<b>NZ tourism sector</b>	The tourism sector is thriving by 2050. Visitors choose New Zealand for the unique experience. Domestic tourism is popular. It makes up a greater proportion of tourism expenditure than historical levels because the costs of long-haul travel increased with the introduction of sustainable aviation fuels (SAFs) globally in the 2030s. Strong private and public sector investment helps to strengthen critical infrastructure, including airports.	The tourism sector is struggling by 2050. Long-haul travel has become very expensive, so only a small number of wealthy people visit from overseas. Domestic travel has increased, though it is also costly.	Desire for long haul air travel remains high, but disruptions are common due to climate change increasing the price of travel and causing regular disruptions. The shift to electric and hydrogen vehicles is slower than in other scenarios. Tourism remains a viable industry by 2050, and New Zealand is judged to be a destination of choice as climate change impacts are less severe here than in other parts of the world. Rising costs of long-haul travel due to climate-related disruptions means those that travel here stay longer. Despite the disruption, the sector has opportunities to leverage longer term visitors and longer tourism seasons.

3. Wellington Airport climate scenarios are based on sources including independent academic input, tourism scenarios, IATA Roadmaps, ATAG Waypoint 2050, NIWA and the NZ SeaRise Programme.

	 <b>Orderly scenario</b>	 <b>Disorderly scenario</b>	 <b>Hot house world</b>									
<b>Social attitudes to travel</b>	Social consciousness of climate impact but widespread recognition of action taken by aviation industry. No demand impact from 2040, when low emission technology is available. The tourism sector has become a world leader for championing regenerative tourism with a low environmental footprint by 2050.	10% of travellers decide to travel less often due to concern not enough action is being taken to address climate change. Social pressure to limit travel and ‘flygskam’ (flight-shaming) is a strong motivator for some people to avoid high emissions travel. People still holiday, but travel tends to be closer to home and involve less frequent, long-haul trips. International and domestic visitor expenditure has declined, and domestic travel dominates the market.	Hot house world indicates behaviour has not changed. Climate impacts devastate communities, tourism operators and supply chains. The toll on physical and mental health is high.									
<b>Government policy</b>	Assume policy signalled (but not enacted) so far is sufficient to achieve 1.5 degrees. Continued update of carbon budgets. International aviation brought into carbon budgets from Budget 3. Existing Emissions Reduction Plans form basis of govt policy with focus on technology development rather than restriction of movements or excessive passenger levies.	Policy remains similar to pre-Covid-19 times throughout the 2020s, with little focus on emissions reductions. From 2035, the rush to create policies to rapidly reduce emissions results in a lack of cohesion and connection across policy settings. Post-2035 there is a sudden increase in carbon price, and restrictions on air travel (frequent flyer levy and/ or cap on aircraft movements).	Policy remains similar to the present. New policy focuses on adaptation, not mitigation. Globally, there is no climate policy ambition. New Zealand has made a small effort to reduce emissions by 2050.									
	 <b>Orderly scenario</b>	 <b>Disorderly scenario</b>	 <b>Hot house world</b>									
	<b>No. hot days &gt;25°C per year</b>	<b>Average air temperature Wellington</b>	<b>Sea level rise</b>	<b>Carbon price</b>	<b>No. hot days &gt;25°C per year</b>	<b>Average air temperature Wellington</b>	<b>Sea level rise</b>	<b>Carbon price</b>	<b>No. hot days &gt;25°C per year</b>	<b>Average air temperature Wellington</b>	<b>Sea level rise</b>	<b>Carbon price</b>
<b>2050 physical climate hazard indicators</b>	11 days <i>(currently 7 days)</i>	13.6°C <i>(currently 13.3°C)</i>	0.15m <i>(currently 0.06m)</i>	\$277 NZD/t <i>(currently \$35 NZD/t)</i>	12 days <i>(currently 7 days)</i>	13.8°C <i>(currently 13.3°C)</i>	0.22m <i>(currently 0.06m)</i>	\$369 NZD/t <i>(currently \$35 NZD/t)</i>	13 days <i>(currently 7 days)</i>	13.9°C <i>(currently 13.3°C)</i>	0.26m <i>(currently 0.06m)</i>	\$35 NZD/t <i>(currently \$35 NZD/t)</i>

WELLINGTON  
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SUSTAINABLE AVIATION STARTS HERE

