Working Paper 2024/07

Collating climate statements contained in 2023 annual reports of NZSX-listed companies

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Title

Working Paper 2024/07 – Collating climate statements contained in 2023 annual reports of NZSX-listed companies

This paper forms part of the Institute's ClimateChangeNZ project.

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1.0 Purpose and overview

This working paper aims to contribute to research on how Aotearoa New Zealand might better report and manage climate risks and maximise opportunities in the transition to a low-carbon economy.

The Institute would like to acknowledge the companies that have been early adopters or voluntary reporters of the disclosure standards under the External Reporting Board's (XRB's) Aotearoa New Zealand Climate Standards (NZ CS). The current aspects of climate reporting in New Zealand, such as the standards, can be envisaged as small, turbulent streams that each flow into a larger, much calmer river. While the standards are novel and initially complex for some, they are important for better understanding, managing and acting on New Zealand's climate risks and the opportunities that may present themselves during the transition to a low-carbon economy. If New Zealand is to reach the calmer waters, we must embrace and endure the momentary chaos of the current.

In the same sense, the process of meeting New Zealand's nationally determined contribution can be considered one of the turbulent streams. We are fortunate that we have moved quickly in terms of creating, consulting on and publishing the standards, allowing time to fine-tune the information that is released into the public arena and aid in better understanding a strategy towards 2030.

The paper is designed for the XRB, New Zealand Exchange (NZX), preparers of climate-related financial disclosures, and climate policy analysts. It provides a quantitative assessment of the state of climate reporting in Aotearoa New Zealand through the lens of NZSX-listed companies that have published annual reports that mention NZ CS.

This quantitative research is intended to show how NZ CS are being applied by NZSX-listed companies in a voluntary manner, one year before they become mandatory for those that are defined as climate reporting entities (CREs) under the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021. This Act amends the Financial Markets Conduct Act 2013 (FMC), the Financial Reporting Act 2013 and the Public Audit Act 2001. It will require around 200 large financial institutions covered under section 461K of the FMC to start making climate-related disclosures.

The Institute is aware that PricewaterhouseCoopers (PwC) has recently published their fifth instalment in a series of reports that look into how climate-related risks and impacts on the financial statements are disclosed and how auditors considered climate-related impacts in key audit matters (KAMs). The reports focus on the NZX50 and can be found on their website.[1]

2.0 Background

2.1 Aotearoa New Zealand Climate Standards

In December 2022, in response to the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021, the XRB, under mandate, issued its Aotearoa New Zealand Climate Standards (NZ CS 1, NZ CS 2 and NZ CS 3). The three standards are summarised as follows:

- NZ CS 1 – *Climate-related Disclosures*: Contains the climate-related disclosure requirements for each of the four thematic areas (Governance, Strategy, Risk Management and Metrics and Targets [see Figure 1 below]) and the assurance requirements for greenhouse gas emissions disclosures.
- NZ CS 2 – *Adoption of Aotearoa New Zealand Climate Standards*: Provides optional adoption provisions.
- NZ CS 3 – *General Requirements for Climate-related Disclosures*: Contains the principles, the underlying concepts such as materiality, and the general requirements.[2]

Figure 1: The Aotearoa New Zealand Climate-related Disclosures Framework

Source: External Reporting Board (XRB), Director preparation guide, January 2024.[3]

Who needs to report?

Under the standards, entities defined as CREs must make climate-related disclosures in their annual reports, either through a copy of their climate statement, or a link to a website where this statement can be accessed. There will be around 200 CREs, which can be defined as:

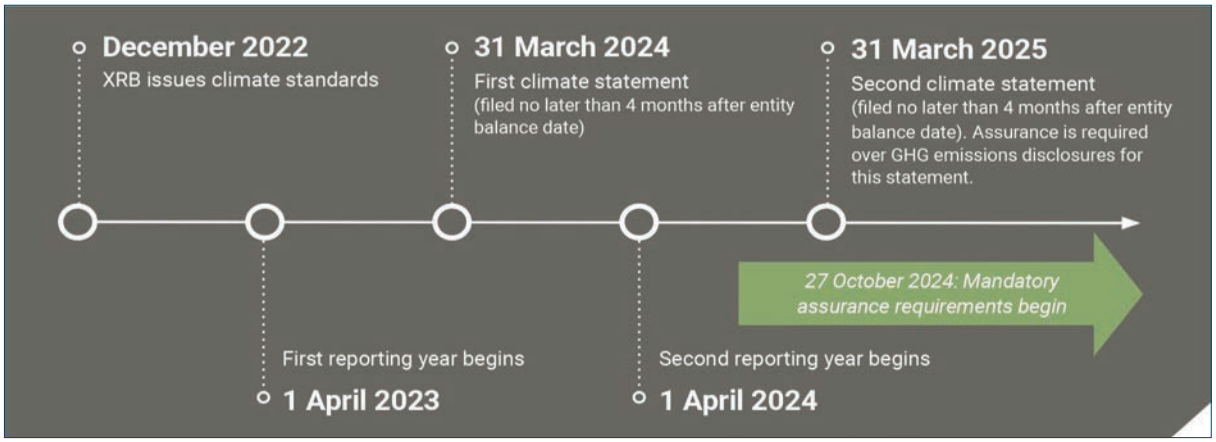
- large listed issuers with a market capitalisation exceeding $60 million; and
- large financial entities, including banks, insurers and managers of investment schemes with total assets exceeding $1 billion.[4,5]

When does reporting start?

Compliance with the standards is mandatory 'for annual reporting periods beginning on or after 1 January 2023'.[6] For most CREs, this means disclosures will be mandatory from FY24 onwards (see Figure 2 below for an example of a CRE's possible timeline).

Figure 2: Example timeline for an entity with a 31 March balance date

Source: External Reporting Board (XRB), Director preparation guide, January 2024.[7]



The standards and guidance are based on the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) 'with any additions beyond what is contained within the TCFD suite of documents made as best practice evolves and with a view to future proofing the standards'.[8]

The Institute notes that in 2022, the XRB produced a table comparing the draft NZ CS 1 disclosure requirements to the equivalent TCFD recommendations and guidance.[9]

As stated in Section 19B of the Financial Reporting Act 2013, the purpose of the climate standards is to:

- encourage entities to routinely consider the short-, medium-, and long-term risks and opportunities that climate change presents for the activities of the entity or the entity's group; and
- enable entities to show how they are considering those risks and opportunities; and
- enable investors and other stakeholders to assess the merits of how entities are considering those risks and opportunities.[10]

Essentially, the climate standards will provide investors and other users of annual reports with timely, reliable and comparable climate-related disclosures that will enable contribution to the overall aim of the standards: 'support[ing] the allocation of capital towards activities that are consistent with a transition to a low-emissions, climate-resilient future'.[11]

The Financial Markets Authority (FMA) will be responsible for the independent monitoring and enforcement of the climate-related disclosures regime and has established a three-year plan which includes setting initial compliance expectations (year 1, reporting periods commenced in 2023), supporting the development of best practice (year 2, reporting periods commencing in 2024) and steady-state guidance, monitoring and enforcement (year 3, reporting years commencing in 2025).[12]

The Institute also acknowledges work in this area that has taken place internationally, particularly the International Sustainability Standards Board's (ISSB's) IFRS S2 *Climate-related Disclosures*.[13] This Standard was published in June 2023 and will first be applied for annual reporting periods beginning on or after 1 January 2024 (FY25 onwards).[14] Similarly to NZ CS, IFRS S2 integrates and builds on the TCFD recommendations.

2.2 Where annual reports are published

There is an obligation in the Financial Markets Conduct Regulations 2014 for an FMC reporting entity to make its annual report public on its website and ensure it remains 'available for at least 5 years after it is first made available':

> The report must be available, free of charge, on an Internet site maintained by, or on behalf of, the entity in a way that ensures that— (a) the report is prominently displayed on the site; and (b) members of the public can easily access the report at all reasonable times.[15]

Listed issuers, being e-reporting entities, are also obliged under the NZX Listing Rules (see Rule 3.6) to prepare and deliver an annual report 'within three months after the end of each financial year'.[16] The annual report is then published on NZX's website for each entity.[17]

Although they are only required to upload their financial statements to the Companies Register (which is managed by the Ministry of Business, Innovation and Employment [MBIE]), many entities instead decide to upload their full annual report (which includes the financial statements).[18] About 66% of NZSX-listed companies lodge their annual report (not just their financial statements) as a matter of good practice (see Table 1 below). This means that many companies are actively making their annual reports easier for the public to access for reputation and branding benefits – not for compliance purposes.

Table 1: 2020 annual reports found on the Companies Register of NZSX-listed companies (as at 31 December 2020)[19]

	NZSX-listed companies found on the Companies Register [132]		
	Annual report filed (including financial statements)	Financial statements only filed (no annual report)	No report or financial statements filed (e.g. in receivership or liquidation)
2020 [132]	87 [66%]	36 [27%]	9 [7%]

2.3 Where NZ CS information is published

Under Section 461ZJ of the FMC (see Figure 3 below), a CRE's annual report must include (i) a statement that the entity is a CRE and (ii) a copy of its climate statements or group climate statements, or the address of (or a link to) the website where a copy of the statements can be accessed.

Figure 3: Section 461ZJ of the Financial Markets Conduct Act 2013

461ZJ Information about climate statements of climate reporting entities to be made available in annual report

(1) This section applies to every climate reporting entity that is required to prepare—

(a) climate statements or group climate statements under any of sections 461Z to 461ZB; and

(b) an annual report under the Companies Act 1993 or any other enactment.

(2) The climate reporting entity must include, in its annual report for the period ending on the balance date,—

(a) a statement that the entity is a climate reporting entity for the purposes of this Act; and

(b) a copy of the climate statements or group climate statements prepared by the entity under any of sections 461Z to 461ZB, or the address of (or a link to) the Internet site where a copy of those statements can be accessed.

(3) A climate reporting entity that contravenes this section commits an offence and is liable on conviction to a fine not exceeding $50,000.

(4) The offence in this section is an infringement offence (*see* subpart 5 of Part 8).

(5) In this section, **annual report** includes a concise annual report.

Section 461ZJ: inserted, on 27 October 2022, by section 8 of the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 (2021 No 39).

The XRB notes that 'beyond these requirements, the Financial Markets Conduct Act 2013 does not specify the location of the climate statements or group climate statements'.[20] The requirements for the location of disclosures, found in NZ CS 3 (General Requirements for Climate-related Disclosures), have been designed to '(a) support entities taking an integrated approach to climate change; (b) provide flexibility to entities to present their climate-related disclosures in a way that is most meaningful for their primary users; and (c) allow for evolution over time'.[21] The requirements in NZ CS 3 are as follows:

> An entity may provide its climate-related disclosures in a standalone document or within another document (for example, its annual report or a sustainability or integrated report).
>
> Where the climate-related disclosures are provided within another document, an entity must include a table within that other document, clearly identifying the location of the disclosures required by Aotearoa New Zealand Climate Standards.[22]

In addition to the location of climate statements, the FMC also has provisions for the lodgement of climate statements. Sections 461ZI(1) and (2) of the FMC state that every CRE that is required to prepare climate statements or group climate statements (under any of ss 461Z–461ZB) and every manager of a registered scheme that is a CRE (under s 461ZC) must ensure that, within four months of the balance date of the entity, copies of those statements are delivered to the Registrar of Financial Service Providers (Registrar) at the New Zealand Companies Office (Companies Office) for lodgement. In practice this means that an entity with a balance date of 31 December 2023 will be required to lodge its climate statement with the Companies Office before 30 April 2024.

Under clause 8 of Schedule 2 of the FMC, the Registrar has created the Climate-related Disclosures Register, hosted on the Companies Office website, which will display entities' climate statements and enable investors, other stakeholders and the general public to retrieve and view copies from a centralised list. The first climate statements are due to be lodged by 30 April 2024 and the Registrar and the Companies Office will be responsible for maintaining this online register and collecting the fees required from entities to lodge a climate statement (and the appropriate FMA levy).[23]

2.4 Larger implications that can be drawn from the climate-related disclosures regime

The Productivity Commission was approached by the Government in April 2017 to inquire into how New Zealand might transition to a low-emissions economy. It investigated the challenges of, and opportunities for, reducing New Zealand's emissions, in the context of achieving net-zero emissions by 2050.[24] The final report of the inquiry was released in August 2018 and identified various existing obstacles including barriers to low-emissions investments (e.g. information and inertia barriers, coordination failures, and technology and market risks) which could 'cause a disconnect between standard commercial decision making and the public interest in avoiding climate change'.[25]

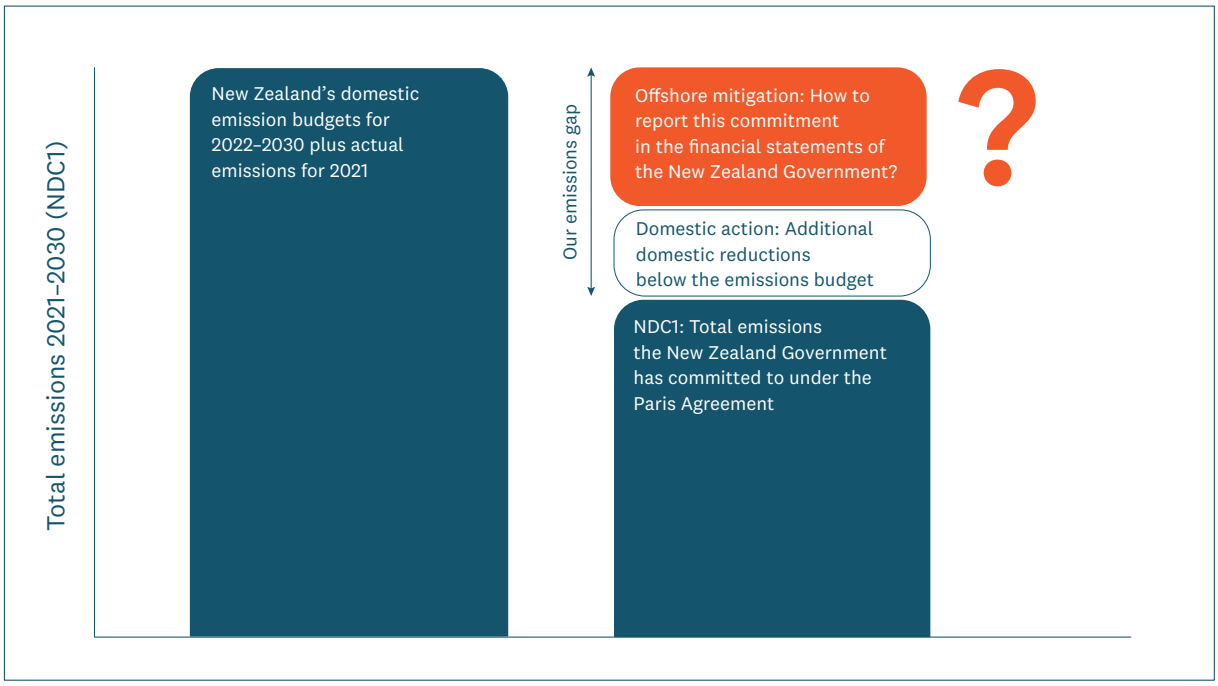
A suite of recommended actions and policy reforms was provided, including the uptake of mandatory climate-related financial disclosures which would 'help overcome information and inertia barriers that prevent entities from adequately addressing climate risk and capitalising on low-emissions opportunities [and] ... help to stop investors valuing assets or investment opportunities incorrectly, resulting in misdirected finance or stranded assets'.[26]

In October 2021 New Zealand updated its first Nationally Determined Contribution (NDC1), required under the Paris Agreement, to set a target of reducing greenhouse gas emissions by 50% below New Zealand's gross 2005 level by 2030 (alongside information to facilitate clarity, transparency and understanding required by all countries).[27] This commitment would highlight the emissions gap that exists between New Zealand's 2022–2030 domestic emission budgets (including actual emissions for 2021) and the target set by NDC1 (see Figure 4 overleaf). Once our emission reductions from country-wide actions are deducted, a shortfall remains. Unfortunately, this shortfall can only be met through reducing carbon domestically, or purchasing offshore carbon credits (see *Discussion Paper 2024/01: Risks hiding in plain sight: Does a commitment under the Paris Agreement to purchase offshore carbon credits create a requirement to report that commitment in the financial statements of the New Zealand Government?* for more detail).[28]

It is in part of this picture that the climate-related disclosures regime plays an important role in New Zealand's climate reporting if we are to reach the target set by NDC1. The creation of, and access to, widespread, timely, reliable and comparable information on low-emissions opportunities, examples of emissions reductions targets, and measurable emissions reductions that have been made is potentially critical to swiftly increasing the scale of New Zealand's domestic actions and reducing the reliance on offshore mitigation.

Figure 4: New Zealand's NDC Strategy for the period from 1 January 2021 to 31 December 2030

Adapted from Figure 22.1: Illustration of the role of international mitigation in the NDC compared to emissions budgets, He Pou a Rangi Climate Change Commission, *Ināia tonu nei: a low emissions future for Aotearoa*, May 2021 (p. 360) and from the Nationally Determined Contribution Strategy, July 2023 [Cabinet Paper], PowerPoint (p. 8).[29]



3.0 Methodology

3.1 Method

The Institute's research method consisted of four key steps:

Step 1: Find a soft copy of each NZSX-listed entity's annual report

We grouped annual reports based on the date of the data. For example, if a report is dated as 2023 but published in March 2024, it is part of the 2023 data set.

We took annual reports directly from the NZX Main Board webpage as at 31 December 2023 (under each entity's announcements).[30] We removed trusts and funds by only including companies with 'Limited' in their name.

If a company's annual report could not be found, it was excluded from step 2. This applied to three companies: two had been delisted and one was in voluntary administration and had not published a 2023 annual report.

Therefore, 130 annual reports were analysed in step 2.

Step 2: Use the search tool in Adobe Acrobat Pro to find key information

We searched all 'found' annual reports for the following terms:

- External Reporting Board
- XRB
- Financial Stability Board
- FSB
- NZ CS
- TCFD
- Climate
- Disclosures

Any results relating to NZ CS or the Task Force on Climate-Related Financial Disclosures (TCFD) standards were recorded on an Excel spreadsheet, and distinguished as explicit mentions, implicit mentions, or reporting (refer to the Glossary for more detail). Implicit mentions are defined as when companies do not use the terms External Reporting Board (XRB) or Aotearoa New Zealand Climate Standards (NZ CS) but do make reference to climate-related disclosures. Some examples of implicit mentions include the phrases 'climate-related financial disclosures', 'mandatory climate-related disclosure regime', or mentions of the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 or the FMC in isolation.

We then also searched the term 'sustainability' to ensure no relevant supporting documents were missed, as a number of entities presented climate disclosures in external 'sustainability reports'. In one instance, a company's external report regarding climate-related disclosures was not referred to in their annual report. It was instead found in the same NZX announcement that provided their annual report (this is discussed further in the observations in Section 5.0). We have included this external report in our analysis.

All relevant supporting documents found through this initial search were then subjected to the same analysis, with relevant mentions recorded on an Excel spreadsheet and distinguished under the same categories of explicit mentions, implicit mentions, or reporting.

Step 3: Assess wording more closely to distinguish NZ CS reporting

For companies that mentioned both NZ CS and TCFD and included some degree of climate reporting, we made a closer analysis of all references to NZ CS, to assess whether their reporting aligned with NZ CS or just TCFD. For example, Spark New Zealand Limited reported against all four TCFD recommendations (covering six pages) but was only fully compliant with one of the four thematic areas of NZ CS (covering one page).[31]

This analysis led to the creation of the final data set of all NZ CS reporting and mentions by NZSX-listed companies in 2023 annual reports and supporting documents.

Step 4: Divide annual reports into four categories

Based on the results of the eight-term search, we placed each disclosure into one of four categories (refer to the Glossary for more detail):

- Full disclosure – defined as an explicit declaration of full compliance with NZ CS.
- Partial disclosure – defined as any degree of disclosure where some but not all the NZ CS requirements were met. Companies that had used any of the Adoption Provisions offered under NZ CS 2 were categorised as partial disclosures as while these disclosures still comply with the standards, they do not provide a complete response to the disclosures required under NZ CS 1.

  Note: Often companies were explicit about this incompleteness, providing a breakdown of each requirement and whether they had disclosed this information. Another key indicator for distinguishing partial disclosures was when disclosures were made with an accompanying intent to publish 'with full compliance' in FY24.

  We also included disclosures as partial if they were fully compliant with TCFD and made some reference to NZ CS. We made this decision due to the overlap between the two standards, with the XRB basing 'Aotearoa New Zealand Climate Standards on the foundation provided by the TCFD'.[32]
- Intent to publish – encompassing both explicit and loose intent. We defined loose intent as not giving a specific year or stating that they will assess their degree of disclosure in future, for example, '[t]he Barramundi board will determine the appropriate climate risk reporting for Barramundi, in accordance with the new standards'.[33] Explicit intent to publish included all companies that clearly state they will be publishing an NZ CS-aligned disclosure in FY24.
- Non-specific – defined as when a company's annual report only contains implicit mentions of NZ CS alongside either a loose intent to publish or no intent to publish.

Once the data relating to how NZSX-listed companies are applying NZ CS in their annual reports was completed, a secondary analysis that looked into their use of TCFD was done. The 130 annual reports that were searched for the eight terms in step 2 were analysed regarding their type of disclosure against NZ CS (including no mention of NZ CS) and whether they also reported against, or mentioned, TCFD. See Table 6 on p. 17 for the results of this secondary analysis.

3.2 Limitations and assumptions

1. Our research looks at the type and quantity of information available. It does not assess the quality of this information. Hence, the extent to which information is accurate or informative is beyond the scope of this research.

2. In order to make our results clear, concise and accessible, we grouped companies' disclosures into four categories within which disclosures were moderately varied in extent and format. For example, partial disclosures included anything from three pages of reporting covering one of the four thematic areas (e.g. Winton Land Limited), to disclosures with 33 pages of reporting covering all four thematic areas with only a couple of requirements incomplete (e.g. Genesis Energy Limited).[34,35] Additionally, we grouped loose intents to publish with explicit intents to publish. We included loose intents because, for most of these companies, it is a legal requirement that they publish an NZ CS-aligned climate statement 'for annual reporting periods beginning on or after 1 January 2023'.[36]

3. For external reports to be collected and analysed as part of this research, a reference to the external report must be specifically mentioned in the entity's annual report (there is one exception, see Observation 1 in Section 5.0).

4.0 Results

Table 2 (below) summarises the Institute's analysis of the use of NZ CS reporting by NZSX-listed companies. As noted in Table 2, 66% (86 out of 130) of 2023 annual reports mentioned NZ CS. Three companies that did mention NZ CS in their 2023 annual reports have not been included in Table 2. Two companies stated that they have not adopted NZ CS (either as they are not a CRE or a subsidiary is required to prepare a group climate statement that includes their information) and one company's annual report referred to an external climate statement hosted on the their website, but the Institute was unable to find this. As a result, they were excluded from further analysis, reducing the number of 2023 annual reports that mentioned NZ CS to 86 out of 130 (this is discussed further in the observations in Section 5.0). This means that 32% (41 out of 130) did not mention NZ CS either explicitly or implicitly.

Of the 86 that mentioned NZ CS, 7% (6 out of 86) prepared climate statements that were considered by the Institute to fully comply with the standards; 44% (38 out of 86) made partial disclosures against the standards; 41% (35 out of 86) demonstrated an intent to publish; and 8% (7 out of 86) were non-specific.

Of the six companies that provided full disclosures, two contained climate statements in their annual report and four directed users to an external document (such as a sustainability report or website) where their climate statements could be found. Only two of those four companies' annual reports provided a link or address for the external document or website. The implications of this are explored more in the observations below.

Given that there were six companies with full disclosures and 38 companies with partial disclosures, 86 companies have not yet incorporated any degree of disclosure or reporting against the standards.

Table 2: Range of NZ CS disclosures in FY23 annual reports (as categorised by the Institute)

Types of NZ CS disclosures	Number of reports	Refer to
1. Full disclosure	6	Appendix 1
2. Partial disclosure	38	N/A
3. Intent to publish	35	N/A
4. Non-specific	7	N/A
Total number	**86**	**N/A**
Annual reports searched	**130**	**N/A**

Figure 5: Types of NZ CS disclosures made in the FY23 annual reports of NZSX-listed companies

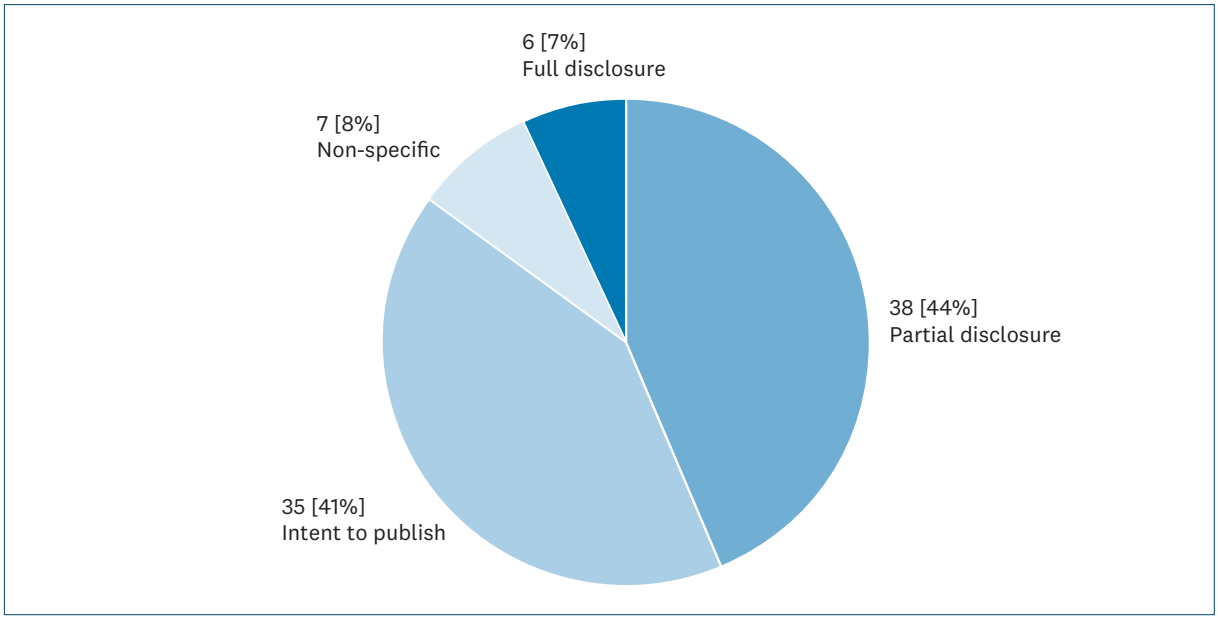


Figure 6 below summarises the Institute's secondary analysis of NZ CS reporting by NZSX-listed companies. Of the 86 companies that mentioned NZ CS, 50% (43 out of 86) also included either reporting against, or mentions of, TCFD (see Figure 6 below for a breakdown of the use of TCFD by the type of NZ CS disclosure).

Of companies that included full or partial disclosures against NZ CS:

- 68% (30 out of 44) also reported against or mentioned TCFD in their 2023 annual reports
  - 55% (24 out of 44) reported against TCFD in their 2023 annual reports
  - 13% (6 out of 44) mentioned TCFD in their 2023 annual reports
- 64% (28 out of 44) had previously reported against TCFD in their 2022 annual reports
- of the six companies that made full disclosures against NZ CS in FY23, Sanford and Seeka did not report against TCFD in 2022.

The outcome of this secondary analysis was expected by the Institute, as the majority of companies that are beginning to incorporate NZ CS disclosures, or have already made full disclosures, in their annual reports had already been regularly reporting against TCFD previously (see Figure 7 overleaf).[37] Given that the disclosures under NZ CS are based on the recommendations of TCFD, it was anticipated that companies that were previously reporting against TCFD would face fewer obstacles in developing and providing their disclosures against NZ CS.[38]

Figure 6: Types of NZ CS disclosures (as categorised by the Institute) and the use of TCFD in the FY23 annual reports of NZSX-listed companies

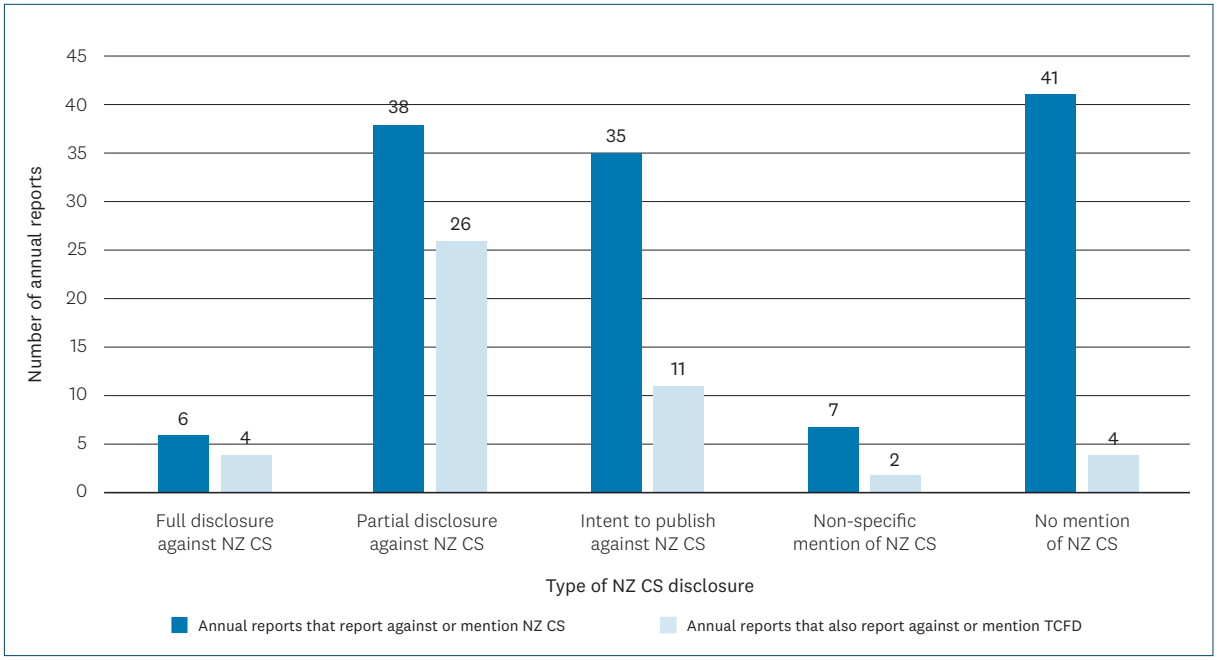
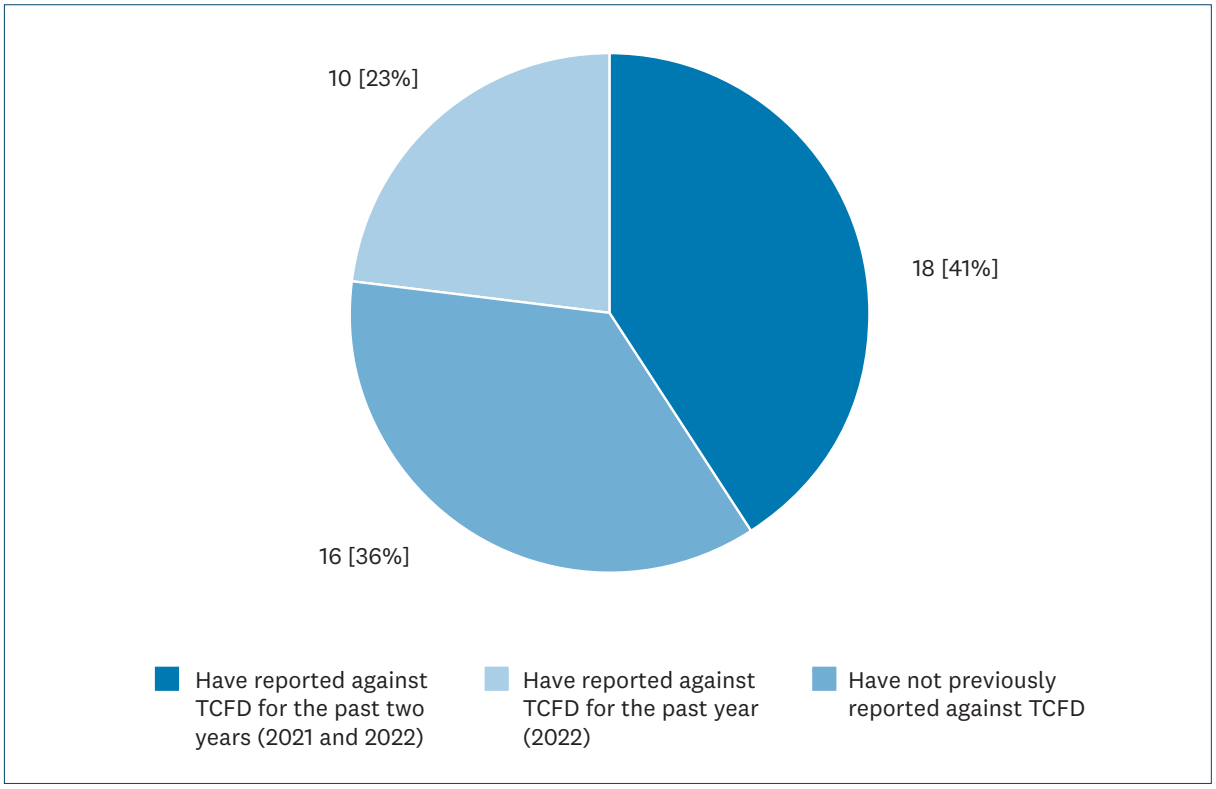


Figure 7: Previous use of TCFD by NZSX-listed companies that made either partial or full disclosures against NZ CS in FY23 annual reports



Following this analysis, we took a closer look at the climate statements of the six early adopters (see Table 3 below), in particular, the disclosures of their GHG emissions.

Table 3: Six early adopters who chose to fully report against NZ CS in FY23 annual reports

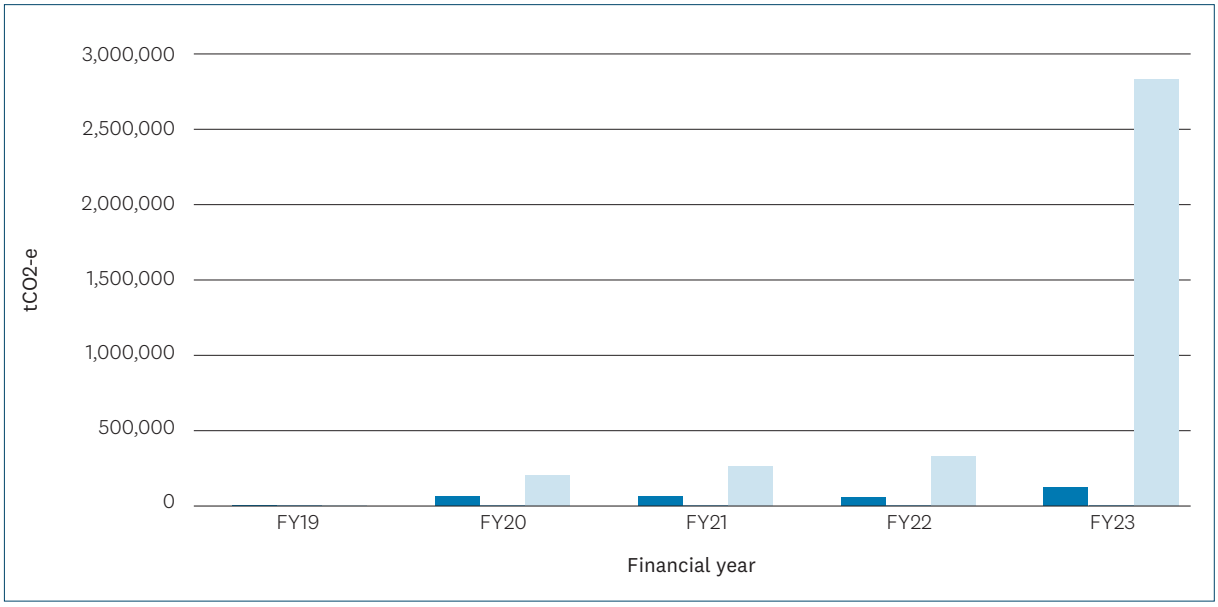
NZSX code	Legal name	Number of pages	See page
AIA	Auckland International Airport	13	27
IPL	Investore Property	10	42
MEL	Meridian Energy	32	62
SAN	Sanford	13	92
SEK	Seeka	15	105
THL	Tourism Holdings	22	121

Under paragraph 22(a) of NZ CS 1, entities must disclose their GHG emissions categorised as scope 1 ('direct GHG emissions from sources owned or controlled by the entity'); scope 2 ('indirect GHG emissions from consumption of purchased electricity, heat, or steam'); or scope 3 ('other indirect GHG emissions not covered in scope 2 that occur in the value chain of the reporting entity, including upstream and downstream GHG emissions').[39] Table 4 opposite and Figure 8 overleaf summarise the GHG emissions of the six NZSX-listed companies that made full disclosures under NZ CS in FY23. These values have been sourced directly from their respective climate statements (see Appendix 1 for excerpts of these climate statements). The GHG emissions disclosed in FY23 act as a benchmark to which values disclosed in FY24 (and onwards) can be compared to, allowing users to understand an entity's progress in meeting their emissions targets.

Table 4: Six early adopters' GHG emissions (disclosed in FY23 annual reports)

		Auckland International Airport	Investore Property	Meridian Energy	Sanford	Seeka	THL Holdings	Total
FY19	Scope 1	2,472	–	–	–	4,051	–	6,523
	Scope 2	3,423	–	–	–	3,973	–	7,396
	Scope 3	6,228	–	–	–	4,069	–	10,297
	Total	12,123	–	–	–	12,093	–	24,216
FY20	Scope 1	2,397	79	–	65,069	3,803	–	71,348
	Scope 2	3,224	11	–	2,423	3,696	–	9,354
	Scope 3	5,185	–	–	194,774	4,452	–	204,411
	Total	10,806	90	–	262,266	11,951	–	285,113
FY21	Scope 1	1,674	–	1,020	62,130	3,900	–	68,724
	Scope 2	2,615	–	14	2,349	4,487	–	9,465
	Scope 3	16,497	–	29,841	212,447	3,987	–	262,772
	Total	20,786	–	30,875	276,926	12,374	–	340,961
FY22	Scope 1	2,004	–	643	57,076	4,465	–	64,188
	Scope 2	3,007	–	2	1,466	5,708	–	10,183
	Scope 3	77,523	–	40,467	212,065	4,618	–	334,673
	Total	82,534	–	41,112	270,607	14,791	–	409,044
FY23	Scope 1	2,060	32	1,191	60,103	5,685	59,393	128,464
	Scope 2	2,231	19	2	1,493	2,892	1,953	8,590
	Scope 3	2,579,061	10,861	46,565	184,386	4,487	4,126	2,829,486
	Total	2,583,352	10,912	47,758	245,982	13,064	65,472	2,966,540

Figure 8: Six early adopters' GHG emissions (disclosed in FY23 annual reports)



	FY19	FY20	FY21	FY22	FY23
Scope 1	6,523	71,348	68,724	64,188	128,464
Scope 2	7,396	9,354	9,465	10,183	8,590
Scope 3	10,297	204,411	262,772	334,673	2,829,486

5.0 Observations

During this research, the Institute made eight interesting observations in relation to NZ CS and three observations regarding a company's financial statements. Although it is early in the process, it is timely to share some practical examples (the actual excerpts are contained in Appendix 2).

1. Good Spirits Hospitality Limited
   Good practice: Their annual report includes a statement that they are not a CRE.
   Good Spirits Hospitality Limited's annual report provides a brief background to the legislation and the standards and states that 'GSH does not qualify as a CRE and has not adopted NZ CS' (see p. 17 of the annual report). This was the only example of this that the Institute could find while completing this research.

2. Investore Property Limited
   Good practice: Their annual report includes a link to where climate-related disclosures can be found.
   Investore Property Limited's annual report provides a clear link in the Chair's Letter section that directs users to their website, where their Sustainability Report, which includes reporting against the XRB's standards, can be found (see p. 8 of the annual report).

3. Manawa Energy Limited
   Good practice: Their annual report includes an index for where climate-related disclosures can be found.
   Manawa Energy Limited's annual report provides a clearly presented and structured index that directs users to the pages of the annual report where the company's climate-related disclosures can be found (see p. 57 of the annual report). While Manawa Energy Limited have only partially reported against NZ CS, the Institute has decided to include this as good practice as it provides an example of how indices for NZ CS disclosures can be well presented.

4. Comvita Limited
   Technical observation: Two different dates are given for their first climate statement.
   In the annual report the intent to publish a climate statement is as at '30 June 2023' (see p. 89 of the annual report). In the financial statements the intent to publish a climate statement is as at 'as at 30 June 2024' (see p. 10 of the financial statements). For Table 2, we have used the date that was provided in the financial statements.

   Suggestions for improvement: Their annual report does not contain their financial statements.
   Comvita Limited published an annual report on 22 August 2023 that did not contain financial statements. Their financial statements were published on the same date but in a standalone report. This is an example of Recommendation 1 discussed below in Section 6.

5. SkyCity Entertainment Group Limited
   Technical observation: Confusion over what framework will be used.
   SkyCity Entertainment Group Limited's annual report clearly acknowledges the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 and the required climate-related disclosures under the XRB's standards, and notes on p. 98 that they are a CRE. This is followed by a statement that 'SkyCity is progressing towards TCFD-compliant reporting and aims to progress with detailed scenario analysis as part of its ongoing journey towards TCFD-compliant reporting' (see p. 98). The Institute could not find a statement related to progressing towards NZ CS-compliant reporting.

6. THL Holdings Limited
   Technical observation: Confusion over where detailed information can be found.
   THL Holdings Limited's annual report provides their climate disclosures within their annual report (see Appendix 1). While information is provided in this section, it also refers to different sections in the annual report where disclosure information, in some cases more detailed, can be found. No specific page numbers are provided and in two instances, the same section is referenced for multiple disclosure

requirements (i.e. strategy disclosures, metrics and targets and assurance of GHG emissions) (see p. 40 of the annual report for strategy disclosures and p. 41 for metrics and targets and assurance of GHG emissions). Alongside the disclosures made in their annual report, on p. 40 they also provide a link to their website where the disclosures are more clearly presented and structured (see Figure 9 below).

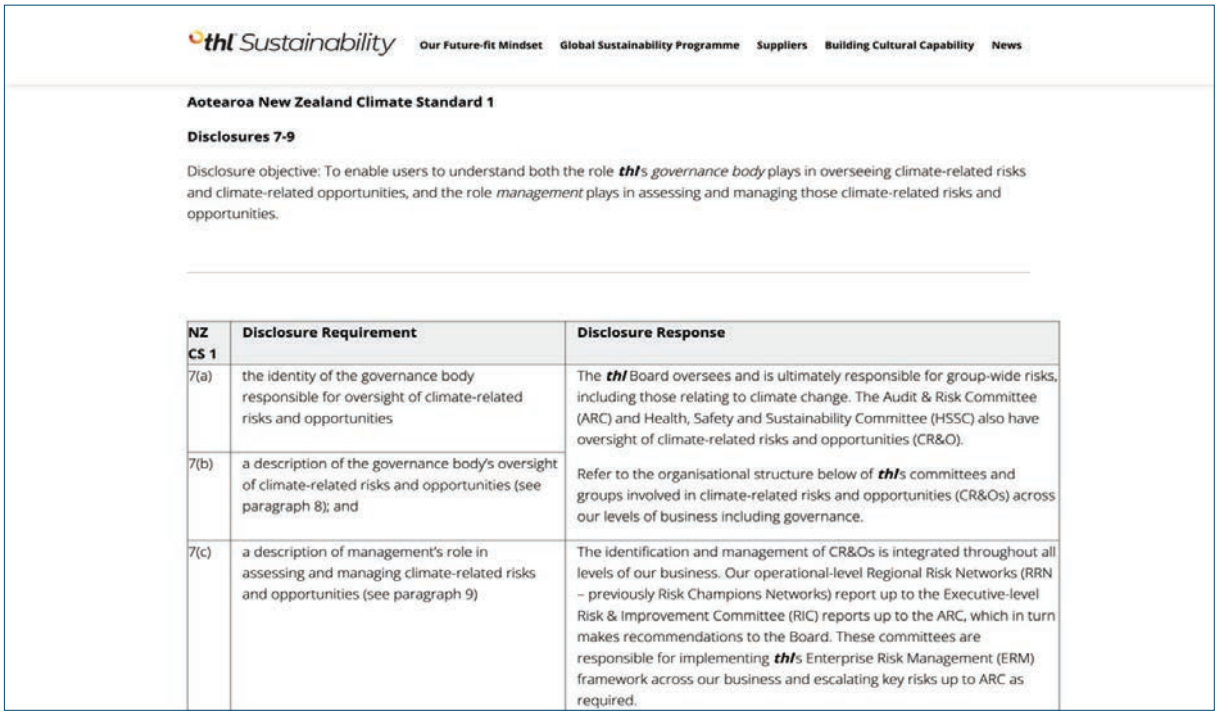
7. AoFrio Limited
   Suggestions for improvement: Their annual report does not include a link to where climate-related disclosures can be found.
   AoFrio Limited's annual report made a reference to their climate-related disclosure statement (hosted on their website) but did not include a direct link to where the statement could be found (see p. 79 of the annual report). The Institute attempted to find the statement on the company's website but could not. The only information provided in the annual report was '[t]he most recent climate-related disclosure statement is available on the Company's Website.'

8. Argosy Property Limited
   Suggestions for improvement: Their annual report does not refer to an external report containing their climate-related disclosures.
   Argosy Property Limited's annual report made no reference to their 2023 climate-related financial disclosure report. The only reference to an external report that the Institute could find was to their 2023 Sustainability Report (see p. 64 of the annual report) which also did not refer to their climate-related disclosure report. The climate-related disclosure report was instead found attached to their NZX announcement that stated the release of, and provided, their annual report.

9. Auckland International Airport Limited
   Suggestions for improvement: Their annual report does not contain their financial statements.
   Auckland International Airport Limited published an annual report on 24 August 2023 that did not contain financial statements. Their financial statements were published on the same date but in a standalone report. This is an example of Recommendation 1 discussed below in Section 6.

10. Chatham Rock Phosphate Limited
    Suggestions for improvement: Their annual report does not contain their financial statements.
    Chatham Rock Phosphate Limited published an annual report (titled *Management Discussion and Analysis*) on 1 August 2023 that did not contain financial statements. Their financial statements were published on the same date but in a standalone report. This is an example of Recommendation 1 discussed below in Section 6.

Figure 9: Climate disclosures made on THL Holdings Limited's website



6.0 Recommendations

Again, the Institute acknowledges those that have been early adopters or voluntary reporters of NZ CS. The standards are novel and the initial uptake observed is promising. In order to completely realise the potential value of the standards, the Institute makes the following recommendations, with the aim of strengthening transparency, clarity and ease for users in sourcing this information:

1. Financial statements must be in the annual report.

The Companies Act 1993, s 211(1)(b) states:

> Every annual report for a company must be in writing and be dated and, subject to subsection (3), must — include any financial statements or group financial statements for the accounting period that are required to be prepared under Part 11, Part 7 of the Financial Markets Conduct Act 2013, or any other enactment (if any).

See Observations 4, 9 and 10 for the three instances where the Institute found a company's financial statements outside of its annual report.

2. A company's annual report should contain its climate statement or a direct link to its climate statement.

As stated in the results, out of the five companies that reported full disclosures, only two provided the information in their annual reports. The remaining three reported this information either in an external document (e.g. a sustainability report) or on their website. Of those three, only one provided a link in their annual report to their climate statements. If users are not clearly directed to where they can find a company's climate statements, the value of NZ CS will be less robust.

In the Institute's view, companies' annual reports should be checked by the Companies Office staff during the uploading process (before they are made public) to ensure that they include climate statements or provide an address or link to where they can be found. If an address or link is not provided, the Companies Office should request that the company add this before the annual report and climate statement is made public (i.e. uploaded again). The Institute expects that this process is already included as part of the Companies Office's 'verification check' list before making filings public. This is important considering that (i) a majority of NZSX-listed companies are uploading their annual reports (not just their financial statements) to the Companies Register (see Section 2.2.); and (ii) previous research by the Institute indicated that many users of annual reports were using the Companies Register to access them.[40]

See Observation 2 for a good-practice example of this and Observations 7 and 8 for suggestions for improvement.

3. The content of a climate statement should be easy to identify.

Some of the companies that included climate statements (including partial disclosures) used a number of replicable practices to ensure this, most notably:

- a dedicated section for climate-related disclosures that can be found in the contents page of the annual report or external climate statement
- an index in the annual report or external climate statement that lists each disclosure required under NZ CS and where these disclosures are located with the corresponding page numbers
- sub-headings that clearly state what disclosures are being made.

The Institute recommends that clear labelling of sections and the use of page numbers should be consistent components of all climate-related disclosures.

See Observation 3 for a good-practice example of this and Observation 6 for a technical observation.

To conclude, for the system to be effective, the XRB (standard setters), the FMA (regulators), the NZX (the market) and the Companies Office (holder of the public register) need to work together to connect all the dots, so that reporters understand everyone's expectations and users can find this important information easily. Part of this is ensuring the annual report is the central 'go to' document for shareholders and wider stakeholders.

Glossary

The four thematic areas of NZ CS

NZ CS consists of disclosure requirements covering four thematic areas. These are as follows:[41]

Governance

Purpose: For primary users (existing and potential investors, lenders and other creditors) to understand both the role an entity's governance body (e.g. a board, or an investment committee) plays in overseeing climate-related risks and climate-related opportunities, and the role management plays in assessing and managing them.

Content:

- Focuses on the directors' role, as part of the entity's governance body, in providing oversight of climate-related risks and opportunities.
- Disclosure of information on how the governance body considers climate-related risks and opportunities when developing and overseeing implementation of an entity's strategy, and how the governance body ensures that the appropriate skills and competencies are available to provide oversight.

Strategy

Purpose: For primary users to understand how climate change is currently impacting an entity and how it may do so in the future.

Content:

- Identification of the entity's climate-related risks and opportunities (both transition risks like policy, reputational and market shifts, and physical risks like extreme weather events).
- Disclosure of current and anticipated impacts including financial impacts.
- It also contains the disclosure requirements around scenario analysis.

Risk Management

Purpose: For primary users to understand how an entity's climate-related risks are identified, assessed and managed and how those processes are integrated in existing risk management processes.

Content:

- Disclosure of how the risks identified in the Strategy disclosures will impact the entity's business model, strategy and financial planning.
- The integration of climate-related risks into existing risk management processes is important and will require directors to get more familiar with climate risk terminology. This includes concepts like hazard, vulnerability and exposure, which are fundamental to the way the Intergovernmental Panel on Climate Change talks about existing and future climate-related risk.

Metrics and Targets

Purpose: For primary users to understand how an entity measures and manages its climate-related risks and opportunities.

Content:

- Disclosure of scope 1, 2 and 3 GHG emissions. Legislation requires these to be assured.

Exemptions available under the Adoption Provisions of NZ CS 2

NZ CS 2 provides seven adoption provisions from the disclosure requirements under NZ CS 1. An entity may choose whether to use one or more of the provisions. Some provisions exempt certain disclosures whereas others require alternative information to be disclosed. If an entity elects to use any of the adoption provisions, it must include a description of the provisions used in conjunction with its statement of compliance with Aotearoa New Zealand Climate Standards. The provisions can be summarised as follows:[42]

Adoption Provision 1: Current financial impacts

Provides an exemption for an entity to disclose the current financial impacts of its physical and transition impacts. This applies to an entity's first reporting period.

Adoption Provision 2: Anticipated financial impacts

Provides an exemption for an entity to disclose (i) the anticipated financial impacts of climate-related risks and opportunities reasonably expected by the entity and (ii) a description of the time horizons over which the anticipated financial impacts of climate-related risks and opportunities could reasonably be expected to occur. This applies to an entity's first reporting period.

Adoption Provision 3: Transition planning

Provides an exemption for an entity to disclose (i) the transition plan aspects of its strategy, including how its business model and strategy might change to address its climate-related risks and opportunities and (ii) the extent to which transition plan aspects of its strategy are aligned with its internal capital deployment and funding decision-making processes. This applies to an entity's first reporting period.

If an entity elects to use this adoption provision, it must provide a description of its progress towards developing the transition plan aspects of its strategy.

Adoption Provision 4: Scope 3 GHG emissions

Provides an exemption for an entity to disclose their scope 3 GHG emissions (gross emissions in metric tonnes of carbon dioxide equivalent (CO2e) classified as scope 3). This applies to an entity's first reporting period.

An entity may choose to apply the adoption provision in this paragraph to all its scope 3 GHG emissions sources, or a selected subset of its scope 3 GHG emissions sources. If an entity discloses a selected subset of its scope 3 GHG emission sources, it must identify which sources it has not disclosed.

Adoption Provision 5: Comparatives for Scope 3 GHG emissions

Provides an exemption for an entity to disclose comparative information for the immediately preceding two reporting periods, for each metric disclosed in the current reporting period.

If an entity elects to use Adoption Provision 4, this adoption provision (i) provides an exemption from providing comparative information for scope 3 GHG emissions in an entity's second reporting period and (ii) permits an entity to provide one year of comparative information for scope 3 GHG emissions in an entity's third reporting period.

Adoption Provision 6: Comparatives for metrics

Provides an exemption for an entity to disclose comparative information for the immediately preceding two reporting periods, for each metric disclosed in the current reporting period. This applies to an entity's first reporting period.

In an entity's second reporting period, this adoption provision permits an entity to provide one year of comparative information for each metric.

Adoption Provision 7: Analysis of trends

Provides an exemption for an entity to disclose an analysis of the main trends evident from a comparison of each metric from previous reporting periods to the current reporting period. This applies to an entity's first and second reporting period.

Definitions relating to the Institute's methodology

The Institute has used the following terms defined below to distinguish the varying degrees to which companies have reported against NZ CS and/or TCFD:

Reporting: Means that the company has made disclosures against a climate standard. The term encompasses full or partial disclosures:

- Full disclosure – means all requirements of the standards have been met. For NZ CS, an explicit declaration of full compliance was required.
- Partial disclosure – means some but not all of the requirements have been met.
- Mentions: Means the company has not made disclosures against a climate standard but has made reference to them either explicitly or implicitly:
  - Explicit mentions – includes the use of the terms 'Aotearoa New Zealand Climate Standards'/'NZ CS' or 'External Reporting Board'/'XRB' in conjunction with 'climate[-]related disclosures' or 'Task Force on Climate-Related Financial Disclosures'/'TCFD'. Only explicit mentions of TCFD were recorded.
  - Implicit mentions – when companies do not use the terms 'Aotearoa New Zealand Climate Standards'/'NZ CS' or 'External Reporting Board'/'XRB' but do make reference to climate-related disclosures. Some examples of implicit mentions include the phrases 'climate-related financial disclosures', 'mandatory climate-related disclosure regime', or mentions of the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 in isolation.

Intent to publish: Means the company has expressed an inclination to make disclosures against a climate standard in future:

- Explicit intent – when companies clearly state they will be publishing an NZ CS-aligned disclosure in FY24.
- Loose intent – when companies do not provide a specific year in which disclosures will be made or state they will assess their degree of disclosure in future.

Non-specific: When companies refer to the standards implicitly (see definition above) AND express loose intent (see definition above) or no intent to publish.

Abbreviations

Companies Office	New Zealand Companies Office
CRE	Climate Reporting Entity
FMA	Financial Markets Authority
FMC	Financial Markets Conduct Act 2013
FY	Financial year
GHG	Greenhouse gasses
KAMs	Key audit matters
MBIE	Ministry of Business, Innovation & Employment
NDC	Nationally Determined Contribution
NDC1	New Zealand's first Nationally Determined Contribution
NZ CS	Aotearoa New Zealand Climate Standards
NZX	New Zealand Exchange
NZSX	New Zealand Stock Exchange
PwC	PricewaterhouseCoopers
Registrar	Registrar of Financial Service Providers
TCFD	Task Force on Climate-Related Financial Disclosures
XRB	External Reporting Board

Appendix 1: Six early adopters' climate statements

Company name	Publication type	Page number
Auckland International Airport	Annual report	27
	Climate change disclosure	28
Investore Property	Annual report	42
	Sustainability report	43
Meridian Energy	Annual report	62
	Climate-related disclosure	63
Sanford	Annual report	92
Seeka	Annual report	105
	Climate-related disclosure	106
Tourism Holdings	Annual report	121

Auckland International Airport
Annual report 2023

As part of a continual review cycle and recognising the paramount importance of managing critical risks, the committee assesses and analyses the various critical risks and activities involved in managing them. This approach ensures that critical risks are proactively identified, evaluated, and controlled in a manner that safeguards the health, safety and wellbeing of employees, visitors and the overall business operations. Previously, the method of evaluating critical risks was completed through a bowtie process, however, in an ongoing commitment to enhance risk control effectiveness, a shift in approach occurred during FY23. The new process has been adopted to further strengthen risk management practices. Auckland Airport's critical risks include categories and subcategories across aircraft incidents, pedestrians vs vehicles, high-risk work, asset failure, uncontrolled release of energy, breach of security, chronic and acute impact on health, and acts of nature. The continuous review and evaluation of these critical risks enable the Safety and Operational Risk Committee to stay at the forefront of risk management practices.

The company has a Crisis Management Team (CMT), made up of leadership team members and senior employees from across the business which has an established governance structure to manage fast-evolving risk situations in a robust and practical way. The CMT is responsible for making strategic, business response, emergency communications, staff health and welfare, and government relations decisions. In early 2023, the CMT was stood up in response to the severe weather events. During the January 2023 weather event the success of the CMT resulted in the reopening of the domestic terminal within 14 hours and the reopening of the international terminal within 36 hours. The CMT framework is always reviewed following critical incidents to identify areas of continuous improvement.

Auckland Airport's business is also subject to other internal and external audit and review, including in particular the regular external audit by New Zealand's Civil Aviation Authority to ensure operational certification and verification of our Safety Management System.

Sustainability (environmental and social) risk

Auckland Airport operates in a commercial environment where there is always potential for economic, environmental and social sustainability risks. The company recognises its unique role in protecting the New Zealand natural environment through its role at the border and the role that the visitor economy plays in all areas of sustainability.

Auckland Airport has in place appropriate mechanisms and controls to identify where these risks are material to the company and to manage these as required. Sustainability is a key responsibility of Auckland Airport's Board and leadership team. In identifying sustainability risks, the company assesses common risks across the business to determine the likelihood and severity of those risks and, subsequently, whether they are a concern for the company. In addition to managing the risks associated with sustainability, we are committed to external disclosure and benchmarking, and report on a number of sustainability performance indicators. Auckland Airport has a sustainability policy which outlines the company's commitment to our sustainability strategy.

Auckland Airport recognises the role it has to play in eradicating modern slavery. In the 2023 financial year, the company has undertaken work to identify and assess the risks of modern slavery in Auckland Airport's supply chain and has identified focus areas to enable the company to continue to progress eradicating modern slavery. In the last year, the company has strengthened our capability in this area by procuring modern slavery software for supplier onboarding and supply chain auditing.

The company will not tolerate any form of modern slavery in our operations or supply chain and we are committed to building a supply chain that is aligned with our approach. Auckland Airport's modern slavery policy and supplier code of conduct confirms our commitment to operate in a responsible and sustainable manner and our commitment to work with suppliers that share this value. In December 2022, Auckland Airport published its third modern slavery statement in accordance with the Modern Slavery Act 2018 (Cth) Australia.

The impacts of climate change, including rising sea levels and temperatures, and unpredictable weather patterns could have negative effects on the infrastructure and property assets of the company and is a key risk to our business. During the 2023 financial year, Auckland Airport undertook comprehensive scenario analysis to further test the organisation's resilience to climate change. The results of the analysis, as well as more detail on Auckland Airport's climate-related risks and opportunities, are outlined in our 2023 Climate Change Disclosure Report which is aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the External Reporting Board (XRB) climate-related disclosures standards.

Auckland Airport is approved by the Ministry of Primary Industries (MPI) as a Place of First Arrival for international arriving aircraft, people and cargo to New Zealand. Auckland Airport's kaitiakitanga is beyond compliance, and therefore the company sees this MPI approval as a privilege, not a right, and with this comes significant responsibility. Auckland Airport's biosecurity policy outlines our commitment to this responsibility by proactively working with border agencies, health agencies, airlines and tenants to collaboratively keep New Zealand free of any new exotic pests and diseases. Auckland Airport has had an acute focus on maintaining a strong biosecurity awareness culture during the 2023 financial year through tailored awareness and training programmes delivered to our own employees, stakeholders and workers based at the airport. These efforts in building a biosecurity culture resulted in Auckland Airport being awarded the MPI Biosecurity Award in October 2022.

Auckland International Airport
Climate change disclosure 2023

Our climate disclosure plans

Auckland Airport has voluntarily published climate-related disclosures aligned with the TCFD recommendations for two years.

For the third year, we are following the guidelines of the Task Force on Climate Related Disclosures (TCFD) to disclose the impact of climate change on our business and our impact on climate change. This year, we are compliant with the New Zealand External Reporting Board's (XRB) Climate-related Disclosure standards.

2021

- Adopted the guidelines of TCFD to disclose the impact of climate change on our business for the first time
- Identified and assessed climate-related risks and opportunities
- Set a suite of new sustainability targets to 2030

2022

- Continued to align our climate change disclosure with TCFD guidelines
- Identified additional physical climate-related risks and improved understanding of the potential impacts of the physical risks under different scenarios
- Identified a much broader range of transitional risks relating to policy, market and reputation
- Escalated climate-related risks to sit within the company executive-level risks, increasing Board oversight of risks and controls

2023

- Advanced our understanding of climate-related risks by fully complying with the XRB standard one year before it becomes mandatory
- Conducted climate scenario analysis across three possible futures, drawing from the tourism sector and property and construction sector-wide scenarios
- Evaluated and quantified the potential financial impact of material climate-related risks
- Measured a broader range of climate-related metrics
- Undertook further modelling of climate-related physical risks

2024

- Track performance against climate-related metrics and targets
- Continue to advance our understanding of physical climate-related risks and plan and adapt to these
- Review quantification of financial impact of climate change as understanding of risks improves

Climate-related Disclosure Standards

In 2015, the Financial Stability Board established the TCFD to review how the financial sector can take account of climate-related issues.

In 2017, the TCFD released recommendations for climate-related financial disclosures which promote transparency, leading to better climate-risk management. The recommendations are structured around four thematic areas that represent core elements of how organisations operate: governance, strategy, risk management, and metrics and targets. These are intended to interlink and inform each other.

In 2021, the New Zealand Government passed legislation to enable mandatory climate-related disclosures. This means that from 2024, Auckland Airport will be required by law to publish annual disclosures on the impact climate change has on our business. The XRB has published a suite of standards which align with the TCFD recommendations.

Auckland International Airport
Climate change disclosure 2023 (continued)

Auckland International Airport
Climate change disclosure 2023 (continued)

Governance

Board oversight of climate-related risks and opportunities

Auckland Airport's Board of Directors is responsible for reviewing and ratifying the risk-management structure, processes and guidelines which are developed, maintained and implemented by management, including climate change. The Board sets the company's risk appetite on an annual basis and tracks the development of any existing risks and the emergence of new risks to the company. The Board also considers climate change issues when reviewing and guiding business strategy, plans and budgets. In the development of Auckland Airport's new business strategy, Building a Better Future, climate change was a key consideration. 'Future Resilience' is one of the five foundations that make up our strategic vision. Further information about our Building a Better Future strategy and future resilience foundation can be found in the 2023 Annual Report.

The Board also considers climate change when setting management incentives. In the 2023 financial year, all members of the executive leadership team, including the Chief Executive, had a portion of remuneration linked to sustainability key performance indicators including climate change. Sustainability metrics and targets are set by management and approved by the Board, and performance against these tracked over time.

The Board has delegated risk oversight and monitoring (including in relation to climate change) to the Safety and Operational Risk Committee (SORC) which currently comprises four Board Directors. The SORC is responsible for assisting the Board in discharging its responsibilities in relation to risks, and oversees, reports and makes recommendations to the Board on the safety, environmental (including climate change) and operational risk profile of the business. The SORC receives a quarterly report from management on whole-of-company risks and controls, including the physical and transitional impact of climate change on the business.

The Board assesses a range of skills, including sustainability and climate change competencies on a skills matrix. Two Board members have been assessed as having high competence in climate change and sustainability in the 2023 financial year, with a further four having practical and direct experience and two with some experience.

Management responsibilities for climate-related risks and opportunities

Auckland Airport's management is responsible for the active identification of risks and implementation of mitigation measures, including for climate change, to achieve and maintain operational and strategic objectives. Management has developed an enterprise risk management framework, designed to promote a culture which ensures a proactive and consistent approach to identifying, mitigating and managing risk on a company-wide basis. Our Chief Executive oversees the risk framework and reporting to the SORC, including climate-related risks, and the Chief of each business unit is responsible for assessing and monitoring the risks specific to their business unit.

The Sustainability team oversees the implementation of the sustainability programme including material climate change initiatives and controls. This includes ongoing monitoring of climate change modelling and research, and the advancement of our ongoing climate change disclosures.

Figure 1. Governance of climate-related risks at Auckland Airport

Auckland International Airport
Climate change disclosure 2023 (continued)

Strategy

Resilience of business strategy

Auckland Airport has an extensive coastline given our unique location adjacent to the Manukau Harbour. As a result, physical inundation and flooding of assets due to sea-level rise and extreme weather events is one of our key climate-related risks. Our business model is built on the operation and development of aeronautical infrastructure and commercial property. This means impacts from sea-level rise and extreme weather events could significantly affect our business operations.

In addition, due to the high carbon profile of the aviation industry, there are various risks to the business associated with the transition to a low-carbon economy. Global and domestic carbon policies impacting aviation activity, as well as public perceptions towards air travel, have the potential to affect Auckland Airport.

We keep abreast of global and local trends in climate change research and modelling and undertake regular environmental scans and analysis of key factors such as: developments in global carbon policy; public perception of aviation; and technological advancements to decarbonise aviation, so that we are able to respond to any emerging risks early.

Current climate-related impacts

While the full impact of climate change is yet to affect businesses, the Board and management are conscious of these risks and have maintained comprehensive business interruption and major disruption insurance to mitigate the impact of physical climate change impacts.

The 2023 financial year brought with it several extreme weather events that financially impacted Auckland Airport. In January 2023, Auckland Airport experienced the most significant flooding that has ever occurred in its International Terminal due to Auckland receiving 201mm of rainfall within 24 hours (see case study). Two weeks later Cyclone Gabrielle brought high winds making the airfield unsafe for ground handling and baggage operations. As at 30 June 2023, Auckland Airport has incurred $8.4 million in flood-related expenses. However, Auckland Airport is yet to quantify the full extent of its losses. Further costs associated with necessary remedial works, lost productivity and revenue are likely to become clearer over time.

These events, as well as additional impacts associated with the transition to a low carbon economy, illustrate the scale of risk climate change poses to Auckland Airport and the wider tourism industry. This demonstrates the importance of understanding these risks and preparing transition and adaptation plans.

Auckland International Airport
Climate change disclosure 2023 (continued)

Case study: January 2023 floods

On 27th January 2023, Auckland received the highest ever recorded level of rainfall in a 24-hour period, which came on top of an already wet summer with January 2023 being the wettest month since records began in 1853. Flooding around the city was widespread, with water levels up to rooftops in some areas. Multiple lives were lost in the floods and landslides that occurred over the Auckland Anniversary weekend.

Auckland Airport received over 200 mm of rainfall in a single day. The worst impacts were felt inside the International Terminal, where flooding halted all passenger processing and restricted aircraft movements. With the local transport networks also disrupted, and accommodation across the city limited, many passengers slept in the International Terminal with some choosing to stay for up to four days. The flooding also impacted the whole aviation network, with many long-haul flights diverted to Christchurch Airport and several flights having to return to their place of origin. The generosity and teamwork of Auckland Airport employees, contractors and airline partners in response to the event ensured domestic travel was able to resume after approximately 24 hours and international flights after 37 hours.

Flood Modelling, undertaken by Auckland Airport in 2020 and 2022, demonstrated that the international terminal was safe from flooding until well into the 2040s. However, the unprecedented level of rainfall received on 27th January came much earlier than predicted under even the worst case climate scenario. This event demonstrated the importance of transition and adaptation plans. While the 'worst-case' scenario cannot necessarily always be foreseen and planned for, it is important to remain adaptive and consider climate change in all aspects of company operations.

Auckland Airport has a comprehensive stormwater masterplan that guides infrastructure development around the precinct. Upgrades to the stormwater network commenced in 2020, carried out in parallel with our infrastructure development programme. Since the January flooding event, key projects have been brought forward to improve resilience against severe weather events. Stormwater improvements were incorporated into upgrades along George Bolt Memorial Drive, the new terminal exit road and the under-construction Te Ara Kōrako.

201mm

of rainfall fell in 24 hours at Auckland Airport

Auckland International Airport
Climate change disclosure 2023 (continued)

Scenario analysis

During the 2023 financial year, Auckland Airport undertook scenario analysis to further test the organisation's resilience against climate change. Drawing from the sector-wide scenarios developed for the tourism and construction and property sectors, Auckland Airport developed three climate-related scenarios that cover all relevant aspects to the business. These scenarios describe plausible and distinct futures with different assumptions of the potential climate-related impacts.

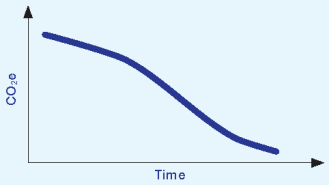
Auckland Airport followed TCFD guidance for scenario analysis as summarised in Figure 2. A range of internal stakeholders from the sustainability and strategy teams led the development of the scenarios with input from the Executive Leadership Team in a workshop format. The three scenarios represent a rapid and orderly transition (low emissions scenario), a disorderly and delayed transition (a medium emissions scenario) and a hothouse world where emissions continue to rise unabated (a high emissions scenario). Physical climate change modelling has been undertaken using representative concentration pathways (RCP) 2.6, 4.5 and 8.5. These scenarios are outlined on the the following page.

Figure 2. A summary of the scenario analysis process undertaken.

Step 1: Assess materiality of climate-related risks	• Identify current climate change risks and opportunities • Assess likelihood and impact of each risk
Step 2: Identify driving forces	• Identify the external driving forces which may impact Auckland Airport's climate change risks • Rank driving forces based on uncertainties and impacts
Step 3: Develop scenarios	• Form scenarios based on different combinations of driving forces • Describe how each driving force develops and its impact over the time horizon • Describe how the driving forces could interact
Step 4: Evaluate business impacts	• Evaluate potential effects on the organisation under each of the scenarios • Quantify potential financial impact of risks to the business • Identify key sensitivities
Step 5: Assess effectiveness of business strategy against scenarios	• Identify potential responses to risks under scenarios • Evaluate effectiveness of responses across scenarios, as well as responses to specific scenarios • Identify what adjustments to strategic/financial plans need to be made

Auckland International Airport
Climate change disclosure 2023 (continued)

Scenario 1: An Orderly, Rapid Transition



Tightening of international frameworks results in global emissions peaking around 2030 and declining rapidly in an orderly fashion in line with a 1.5°C pathway.

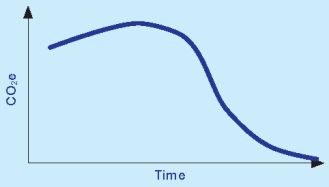
IMPACT ON AUCKLAND AIRPORT

- High transition risk in the short term: regulatory changes and market demand drives innovation so decarbonisation becomes the norm
- Low physical risk: limited interruption to business activity from physical climate change impacts

DRIVING FORCES

1. **Temperature and weather patterns**
   - Lowest modelling pathways (RCP 2.6 and similar): ~1.5°C temperature increase
   - The frequency and intensity of severe weather events slightly amplify over time
2. **Price of carbon**
   - Moderate increases in the price of carbon which impacts the cost of infrastructure development programme and price of travel
3. **Attitudes towards high carbon activities**
   - Public becomes more aware of the carbon impact of business activities (aviation, transport and construction), resulting in increased demand for low carbon transport
4. **State of biodiversity in New Zealand**
   - Physical impacts are limited and efforts to maintain New Zealand's unique biodiversity are successful so the country remains an attractive nature-based tourism destination
5. **Government regulation**
   - International aviation is included in national carbon budgets and targets
   - Strong decarbonisation policy nationally and globally
6. **Technology development**
   - Successful development and deployment of low carbon aviation technologies in the 2030s due to financial incentives and market demand

Scenario 2: A Disorderly and Delayed Transition



Global emissions peak around 2040, after which rapid decarbonisation occurs to limit warming to 2°C.

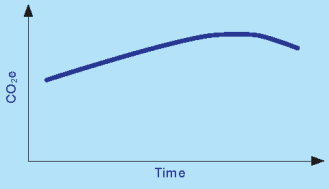
IMPACT ON AUCKLAND AIRPORT

- High transition risk: Sudden push for rapid decarbonisation post-2040 to limit warming to 2°C
- Physical risk: Infrequent disruption to critical infrastructure

DRIVING FORCES

1. **Temperature and weather patterns**
   - Medium modelling pathways (RCP 4.5 and similar): ~2.4°C temperature increase Severe weather events slowly increase in frequency and intensity
2. **Price of carbon**
   - High increase in carbon price which impacts the cost of infrastructure development and price of travel
3. **Attitudes towards high carbon activities**
   - Post-2040, very little tolerance for high emitting activities
4. **State of biodiversity in New Zealand**
   - Slow, irreversible biodiversity decline
   - NZ's efforts to maintain its unique biodiversity are unsuccessful and therefore the country is increasingly less appealing as a destination for nature-based tourism
5. **Government regulation**
   - Little additional decarbonisation policy until post-2040, after which policy is rapidly updated to limit physical impacts of climate change
6. **Technology development**
   - Slow deployment of low carbon technologies in short-term, with rapid uptake in later years to meet Carbon Offsetting and Reduction Scheme for Internationa Aviation targets
   - Main focus of decarbonisation is on short regional routes

Scenario 3: A Hothouse World



Global emissions continue to rise
Efforts to mitigate climate change are only implemented by the largest global emitters once it is too late

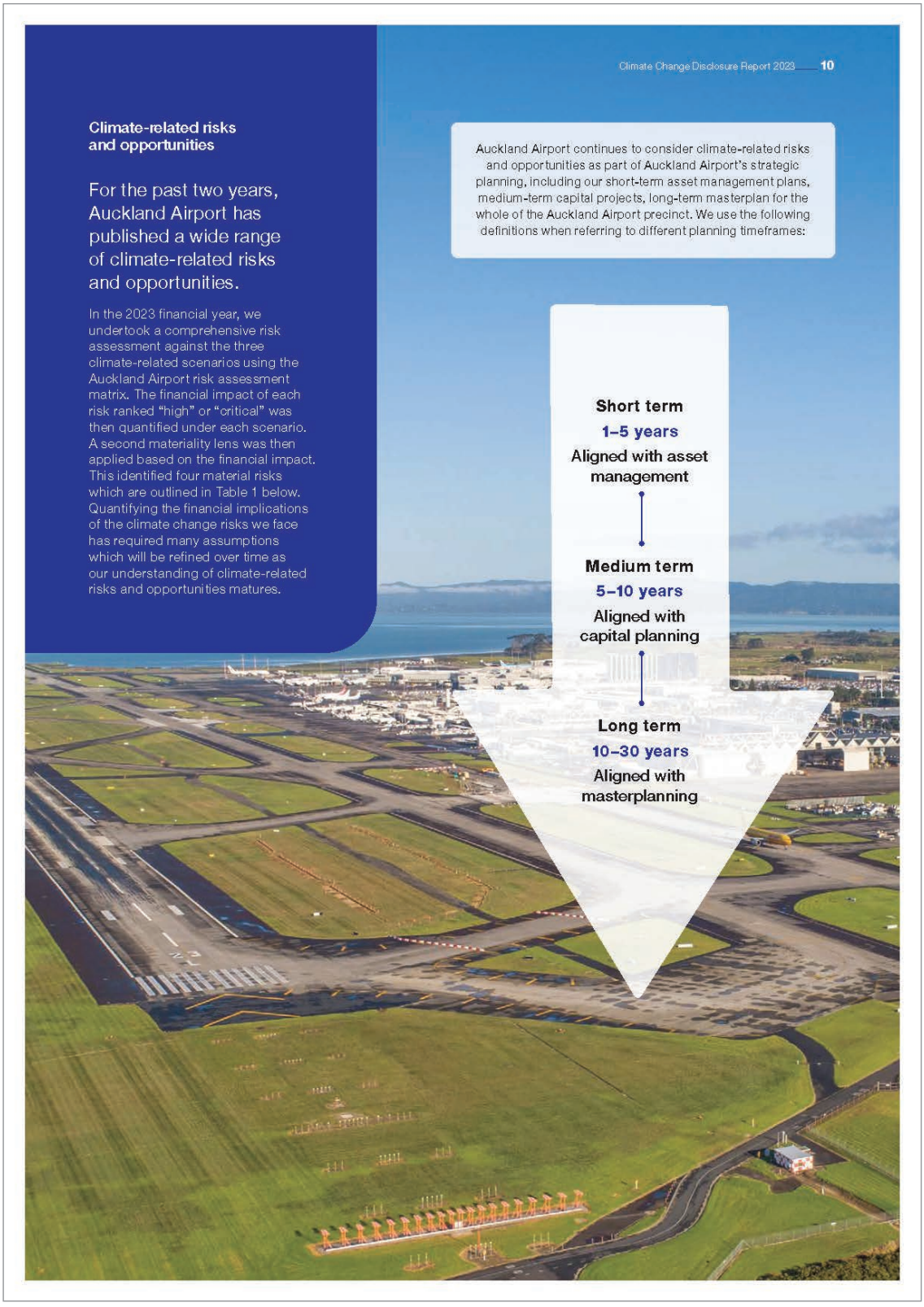
IMPACT ON AUCKLAND AIRPORT

- Low transition risks: limited climate change policy or reputational risk
- High physical risks in long term: frequent severe weather events cause regular disruption to critical assets

DRIVING FORCES

1. **Temperature and weather patterns**
   - Highest modelling pathways (RCP 8.5 and similar): ~4.3°C temperature increase Increase in frequency and severity of weather events over time
2. **Price of carbon**
   - Does not increase much from current price
3. **Attitudes towards high carbon activities**
   - Public aware of climate change but don't change behaviours
   - Business activity is unconstrained and unchallenged
4. **State of biodiversity in New Zealand**
   - Physical impacts are widespread and biodiversity declines over time
   - New Zealand tourism pivots to focus on cultural elements to attract international tourists
5. **Government regulation**
   - Little to no decarbonisation policy for aviation
   - Reversal of national or global decarbonisation policy
6. **Technology development**
   - Aviation continues to rely on fossil fuels for the vast majority of its activities as decarbonisation efforts are unsuccessful
   - Limited uptake of zero emissions aircraft in NZ

Auckland International Airport
Climate change disclosure 2023 (continued)



Auckland International Airport
Climate change disclosure 2023 (continued)

Table 1: Financial impact of material climate change risks

Risk type	Anticipated impact on Auckland Airport	Potential financial impact of unmitigated risk and timeframe	Quantification methodology	Current and future controls
Physical (Flooding)	Costs of damage to infrastructure, and loss of revenue from business interruption and operational delays due to flooding of areas and assets critical to airport operations	$0–$70 million per event Long term	• Estimated potential financial impact is the cost associated with a significant flooding event with a 100-year Annual Return Interval under RCP 2.6, 4.5 and 8.5 • Validated against experience from flooding event in January 2023 • Considers the impact of sea level rise under each scenario	• Stormwater masterplan kept up to date considering latest climate change modelling • Maintenance of infrastructure undertaken in consideration of climate change • Implementation of stormwater network upgrades to withstand future severe weather events • Investment in stormwater network brought forward as a result of January 2023 flooding • Development of a second runway further inland and on higher ground • Insurances held for business interruption and damage
Transition (Policy and Legal)	Loss of revenue due to moderation in growth caused by external decarbonisation policy and pricing mechanisms	$0–$35 million Medium term	• Potential financial impact is an annualised figure of reduction in the 2050 net profit after tax (NPAT) from retail, carparking, transport licence fees and hotels compared to unconstrained forecast • Aeronautical income assumed to be unchanged as the building blocks methodology will recover aeronautical charges over the reduced passenger volumes • Internal price elasticity figures have been used to determine impact on passenger demand if an emissions-related levy is introduced compared to forecast passenger numbers to 2050	• Policy engagement and advocacy • Decarbonisation of operational emissions and investment in low-carbon infrastructure • Provision of infrastructure to enable adoption of low-carbon aircraft energies and technologies
Transition (Reputation)	Loss of revenue due to moderation in growth caused by changes to public sentiment towards air travel due to carbon footprint	$0–$40 million Long term	• Potential financial impact is an annualised figure of reduction in the 2050 net profit after tax (NPAT) from retail, carparking, transport licence fees and hotels compared to unconstrained forecast • Aeronautical income assumed to be unchanged as the building blocks methodology will recover aeronautical charges over the reduced passenger volumes • Assumes that Auckland Airport forecast annual passenger growth is reduced between 2035 and 2050	• Effective monitoring of consumer perceptions in New Zealand and key inbound markets • Maintaining a diverse portfolio of markets and strengthening short-haul markets • Provision of infrastructure to enable adoption of low-carbon aircraft energies and technologies

Auckland International Airport
Climate change disclosure 2023 (continued)

Risk type	Anticipated impact on Auckland Airport	Potential financial impact of unmitigated risk and timeframe	Quantification methodology	Current and future controls
Transition (Reputation)	Higher interest rates and cost of capital if investors and financiers avoid aviation sector due to carbon footprint	Too uncertain to quantify Medium term	• This risk has not been quantified as there is insufficient information available to develop assumptions on how this could impact Auckland Airport. • However, this risk is deemed material, so it remains within the disclosed risks.	• Decarbonisation of operational emissions and investment in low-carbon infrastructure • Transparent disclosure of greenhouse gas inventory and decarbonisation initiatives

Climate-related risks have the potential to impact assets, as noted in our 2023 Financial Statements. No risks or opportunities identified are considered to have impacts warranting material changes to the valuation of Auckland Airport's assets given the long-term nature of the assessment and the mitigations that are planned in advance.

Climate-related opportunities

Climate change also presents opportunities for Auckland Airport. These include:

- Lowering operating costs by reducing energy consumption and other efficiency initiatives
- Playing a role in bringing new renewable electricity generation capability into the New Zealand market
- Supporting communities to enhance the environment that is impacted by the physical impacts of climate change
- Supporting our airline partners to reduce their emissions through provision of electrification and low-emission fuels infrastructure
- Advancing the sustainability capability of the New Zealand design and construction sector.

These opportunities have not been quantified as they are not considered to have a material financial impact on the business.

Business model and transition plan

Auckland Airport groups its revenue-making activities into three categories: aeronautical, retail and carparking, and commercial property. A full business model description, and the refreshed company strategy, can be found in Auckland Airport's Annual Report for the 2023 financial year on the company's website.

Auckland Airport's company strategy places a focus on sustainability. In 2020, we committed to reaching net zero direct (scope 1 & 2) emissions by 2030, developing a decarbonisation pathway which reflects a 90% reduction in scope 1 & 2 emissions from 2019 levels. Further information can be found in the metrics and targets section on page 14.

Our company strategy shapes our capital plan. The decarbonisation pathway, as well as physical climate adaptation measures such as upgrades to our stormwater system, are integrated into budgets for capital projects to ensure a transition to a low carbon, climate-resilient future is part of every project. Following the flooding event in January 2023, Auckland Airport brought forward investment in planned stormwater upgrades. Our company strategy and capital allocation are likely to continue to evolve over time as the understanding of climate-related risks and opportunities, and the transition and adaptation measures required, improves.

Auckland International Airport
Climate change disclosure 2023 (continued)

Risk management

Our enterprise risk management framework and company policy guide our approach to managing risks in relation to climate change. Risks are identified at all levels of the organisation, and all employees are responsible for implementing, managing and monitoring the processes and risk plans with respect to material business risks, as appropriate.

All enterprise-wide material risks, including those relating to climate change, are assessed through Auckland Airport's risk assessment matrix. This matrix assesses the likelihood of the risk occurring, and the impact on the business should it occur, to produce a total "risk rating". Risk ratings are described as "residual risks" and "inherent risks", reflecting the impact to the business with or without controls in place to mitigate the risks.

Auckland Airport's process for risk management is continuous and is designed to provide advanced warning of material risks before they eventuate. In addition to identifying and assessing risks, the process includes:

- Risk mitigation strategy development
- Reporting
- Compliance, monitoring and evaluation to ensure the ongoing integrity of the risk management process.

Managing climate-related risks

Climate-related risks and opportunities have been identified and assessed using climate science, independent peer reviewed research, climate scenario modelling specific to Auckland Airport and in-house expertise. Following the initial assessment of climate-related risks (in accordance with TCFD guidance) in the 2021 financial year, management undertakes a yearly review identifying and assessing climate-related risks and their impacts. This review is led by the Sustainability team with input from the Executive Leadership team and function leads across the business. These function leads represent the various operations that have the potential to be impacted by climate change. The function leads have expertise and responsibilities to identify the potential ways that climate change may impact their area of Auckland Airport operations.

Key components of the annual review include:

- Identifying new information or data that may change the underlying assumptions of the risk, for example, policy changes or updates to climate models
- Assessing each risk against the risk assessment matrix for the low, medium and high emissions scenarios.

Priority physical and transitional climate-related risks (those with a materiality of medium, high, or extreme) are included in Auckland Airport's enterprise-wide risk register, which is updated by management on a quarterly basis. In the 2022 financial year, climate-related risks were escalated to be classified an executive-level risk. The SORC receives a quarterly update on executive-level risks, the controls in place to mitigate the risk and the planned actions to address them.

Climate-related risks that have a risk rating of medium or higher are assigned controls to reduce the residual risk to a lower level. Management is responsible for identifying and implementing these controls, with the Board providing confirmation that the controls sufficiently mitigate the risk to an acceptable level.

Auckland International Airport
Climate change disclosure 2023 (continued)

Metrics and targets

Auckland Airport recognises that the aviation industry contributes to climate change. The impacts of climate change, including rising sea levels and temperatures, and unpredictable weather patterns will impact our company, the local community, New Zealand and the planet.

We seek to take a leading-practice approach to managing and reducing our carbon emissions.

Managing our own footprint

Having measured and disclosed our carbon emissions since 2008, and being the first airport in the world to set a carbon reduction target under the Science-Based Targets Initiative, in 2021 we lifted our sights and challenged ourselves again by setting a suite of new sustainability targets.

1. Scope 1 = direct emissions from business activity. Scope 2 = indirect emissions from the generation of purchased electricity.

Net Zero

scope 1 and 2 emissions by 2030 resulting in

↓90%

reduction in emissions from 2019 levels (27% reduction in FY23)

↓20%

reduction in potable water use from 2019 levels by 2030 (29% reduction in FY23)

↓20%

reduction in waste to landfill from 2019 levels by 2030 (3% reduction in FY23)

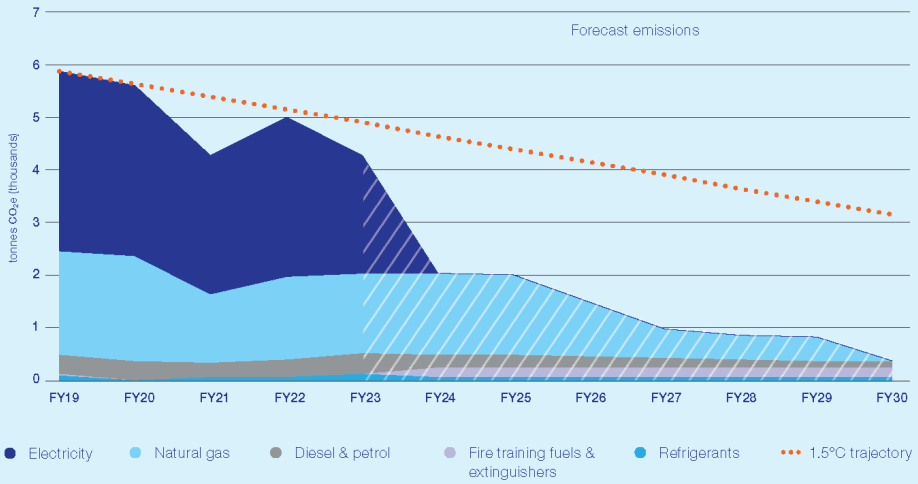
Our planned pathway to Net Zero aligns with a 1.5-degree warming trajectory and will see us reduce scope 1 and 2 emissions[1] by 90% by 2030. We will achieve this by:

- Using electricity generated from a mix of on- and off-site renewable generation, likely from 2024.
- Phasing out the use of natural gas in the terminal through the incremental replacement of natural gas boilers with electric alternatives
- Electrifying our corporate vehicle fleet
- Using refrigerants with the lowest global warming potential possible

From 2030, the residual emissions (estimated to be 10% of 2019's scope 1 & 2 emissions) will be permanently neutralised through the purchase of certified carbon removals. The certification scheme has not yet been decided.

Auckland Airport's scope 1 and 2 decarbonisation pathway

The decarbonisation pathway aligns with a 1.5°C trajectory and FY23 performance shows a 27% reduction from the baseline year.



Auckland International Airport
Climate change disclosure 2023 (continued)

Reducing our indirect emissions

Scope 1 and 2 emissions make up only a small proportion of Auckland Airport's greenhouse gas emissions inventory. The vast majority of emissions that occur as a consequence of the operation of New Zealand's largest airport are outside of our operational control. We are actively partnering with stakeholders across the airport ecosystem to address these emissions and work towards Aotearoa New Zealand's goal to reach net zero by 2050.

We are working with our airline, ground handling and air navigation partners to increase operational efficiency and reduce the impact of aviation on the environment. This includes:

- Provision of two banks of common-use electric vehicle (EV) chargers on the airfield to support ground handlers in their transition to electric ground support equipment (GSE)
- Supplying ground power units (GPUs) and pre-conditioned air at all international gates so aircraft can connect to New Zealand's low-carbon electricity supply instead of burning jet fuel while at the gate. GPUs will also be installed at all gates in our new domestic jet facility, opening 2028/2029
- Ongoing work with Airways and airlines to reduce aircraft fuel burn by setting fuel-saving flight paths, allocating taxiways to minimise aircraft taxi time and just-in-time pushback allowing aircraft to delay engine use.

Auckland Airport remains committed to supporting initiatives to work through the challenges in decarbonising aviation. Following the publication of New Zealand's first Emissions Reduction Plan in 2022, a joint government-industry leadership body, Sustainable Aviation Aotearoa, was established to prepare for and accelerate the adoption of lower emissions aircraft. Auckland Airport is proud to be an active member of this group. We are also working closely with our airline partners to understand their plans to introduce alternative aircraft fuels and technologies, and the infrastructure requirements to enable these to be deployed at Auckland Airport.

Emissions reduction has been integrated into the large-scale infrastructure development programme planned over the next ten years. We are working with our design and construction partners to reduce embodied carbon in the materials of our developments. Where possible, projects are targeting sustainability certification, including the Transport Hub which is targeting a Gold Parksmart rating for the car park, the first parking building expected to achieve the Parksmart rating in New Zealand, and a 5-Star Green certification for the adjoining office building. Mānawa Bay is also targeting a 5-Star Green rating for its design and build with a number of other key sustainability initiatives underway including: optimising resources, reducing carbon emissions, supporting local communities and enhancing the environment.

We are also future-proofing our transport network to enhance connectivity and provide for low-emission transport modes.

Other scope 3 emissions are made up of potable water use and wastewater treatment, waste sent to landfill, staff business travel, and tenant electricity use.

Auckland Airport's 2023 carbon emissions

This year, our scope 1 and 2 emissions have decreased as we progress along our decarbonisation pathway. Natural gas use has decreased with the introduction of our first electric heat pump which has reduced the need for gas boilers to operate at full capacity. Electricity emissions have also dropped, however this is largely due to the lower emission factor for New Zealand grid electricity this year from a higher percentage of renewable electricity being generated within the country. It is expected that scope 1 and 2 emissions will continue to reduce over time as natural gas continues to be phased out from the terminal and electric vehicles continue to be purchased.

Scope 3 emissions, on the other hand, have increased year-on-year with the acceleration of business activity post-COVID-19. Waste and water use have increased due to the tripling of passengers between 2022 and 2023. Business travel and construction activity have also increased as border restrictions have lifted and the business financial performance recovers.

This year we have introduced a much broader range of scope 3 emissions (including aircraft full flight emissions and airside vehicles), so total reported scope 3 emissions have increased significantly year-on-year. We expect to also report on surface access (staff, tenant and passenger commuting) emissions in future years once higher quality data is available.

Below is a summary of Auckland Airport's greenhouse gas emissions.

Scope		FY19	FY20	FY21	FY22	FY23
Scope 1	Tonnes CO_2e	2,472	2,397	1,674	2,004	2,060
Scope 2[2]	Tonnes CO_2e	3,423	3,224	2,615	3,007	2,231
Scope 3	Tonnes CO_2e	6,228	5,185	16,497	77,523[3]	2,579,061[4]
Scope 1 & 2 emissions intensity	tonnes CO_2e per m^2 terminal area	39.23	36.10	28.06	25.69	25.75
Scope 1 & 2 emissions intensity	tonnes CO_2e per passenger	0.30	0.39	0.73	0.94	0.27

2. FY19-FY22 scope 2 emissions have been restated in FY23 as the methodology for calculation has changed. Electricity transmission and distribution (line losses) for the entire Auckland Airport precinct (including tenants) is now included in scope 3 instead of separating into scope 2 and scope 3.
3. In FY22 Auckland Airport reported aircraft landing and take-off emissions for the first time, resulting in a much higher scope 3 emissions footprint.
4. In FY23 Auckland Airport introduced a wider range of scope 3 emissions sources in an aim to align disclosure with the international Airport Carbon Accreditation framework. This includes aircraft full flight emissions as well as contractor vehicles, airside vehicles and tenant electricity use.

Auckland International Airport
Climate change disclosure 2023 (continued)

For the full 2023 emissions profile, please refer to Auckland Airport's Greenhouse Gas Emissions Inventory Report on the company website. This report outlines further detail about the calculation methodology for Auckland Airport's emissions, including consolidation approach, emission factors and excluded emissions.

Information within the Greenhouse Gas Emissions Inventory Report is stated in accordance with the requirements of the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004)* ("the GHG Protocol").

Additional climate-related metrics

Auckland Airport has quantified the following additional climate-related metrics in the 2023 financial year.

Metric	FY23	Explanation
Amount or percentage of assets or business activities vulnerable to transition risks	Almost all (>90%) of the business may be impacted to some extent by climate-related transition risks	Auckland Airport's aeronautical and commercial lines of business may be impacted to varying degrees by transition risks associated with climate change. These impacts include reductions in revenue following potential changes in demand or volume of activity at Auckland Airport.
Amount or percentage of assets or business activities vulnerable to physical risks	13% of the Auckland Airport precinct	Percentage of land area modelled to be impacted by sea level rise and extreme weather events in future under RCP 8.5.
Proportion of revenue, assets, or other business activities aligned with climate-related opportunities, expressed as an amount or percentage	De minimis	Climate-related opportunities have been considered as having low materiality and therefore have not been quantified.
Amount, in reporting currency, of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities	$2.86 million	Capital expenditure on assets or projects which are separately identifiable, material and whose main purpose is mitigation of climate-related risks or realisation of opportunities. Given climate resilience and decarbonisation is a key focus for many Auckland Airport projects, capex has not been captured for those projects where it is not reasonably practical to separate sustainability elements from the rest of the project. For example, Mānawa Bay's fully electric food court, installation of larger stormwater infrastructure and Green Star rated buildings.
Internal emissions price	N/A	Auckland Airport does not use an internal emissions price for business activity. However, where needed, the current NZ Emissions Trading Scheme price is used. The future carbon prices under the tourism sector climate-related scenarios have been utilised within Auckland Airport's climate-related scenario analysis.
Proportion of management remuneration linked to climate-related risks or opportunities in the current period, expressed as a percentage, weighting, description or amount in reporting currency	10% of total Short-Term Incentive for Chief Executive and direct reports	The proportion of the Short-Term Incentive that is linked to climate change is confirmed by the Board for the Chief Executive at the start of the financial year.

Investore Property
Annual report 2023

Chair's Letter (cont)

Given the nature of Investore's portfolio and the fact that it has outsourced management to SIML, Investore has very low scope 1 and 2 greenhouse gas emissions. Accordingly, Investore believes it can have the most effective impact on transitioning to a low carbon future by working with its tenants on improving their energy efficiency and lowering their greenhouse gas emissions (which are scope 3 emissions for Investore). Investore remains in regular conversation with its largest tenants around how best to support them in reducing their emissions.

Consistent with this approach, Investore has recently obtained Green Star Performance ratings for 16 of its properties, comprising hardware stores and standalone supermarkets. These ratings will enable Investore to work with its tenants to develop opportunities for energy and water improvement initiatives to improve ratings.

To assess its overall sustainability performance, Investore completes the Global Real Estate Sustainability Benchmark (GRESB) assessment. The first assessment was completed in 2022 and Investore is targeting being in the top quartile of comparator companies over time.

For FY23 the Investore Board has elected to prepare a separate Sustainability Report which includes reporting against the Aotearoa New Zealand Climate Standards. A copy of this report can be found on Investore's website **www.investoreproperty.co.nz**.

Governance

Director John Harvey retired from the Investore Board on 31 May 2022, having been a Director since Investore's inception as a listed company in 2016. On behalf of the Board, I would like to thank John for his service and wish him all the best for the future.

Investore's Manager, SIML, appointed Director Ross Buckley to the Board on 1 June 2022, consistent with its rights under the Management Agreement between SIML and Investore. The Board undertook a full skillset review when Ross joined the Board, noting that Ross' strong background in audit, management and finance complemented the Board's current skillset.

Following the conclusion of Emma McDonald's tenure as a Future Director under the Institute of Director's Future Directors' Programme, the Board was pleased to announce the appointment of Erika McDonald as a future director with the release of the FY23 Interim Results. Erika attends Board meetings but does not vote or have any rights or obligations of a director.

McDonalds, Takanini

Governance

This section enables an understanding of the role the Investore Board plays in overseeing climate-related risks and climate-related opportunities, and the role SIML management plays in assessing and managing those climate-related risks and opportunities.

Sustainability Responsibilities of the Investore Board

Understanding material sustainability matters relevant to Investore	Approving Investore's sustainability objectives, targets, and performance indicators, and monitoring progress against these	Setting and overseeing implementation of Investore's Sustainability Policy
Overseeing the adoption and implementation of a climate change risk assessment process	Monitoring Investore's greenhouse gas emissions and, in conjunction with SIML as manager, setting appropriate reduction targets	Reviewing Investore's performance against determined sustainability initiatives and outcomes achieved

The Investore Board is responsible for the oversight of climate-related risks and opportunities within the Investore business. Due to the relatively small size of the Investore Board, and the fact that sustainability considerations impact on all areas of the Investore business, the whole Board takes overall responsibility for sustainability.

The Investore Board charter sets out the role of the Board and Investore's commitment to ensuring that its business is operated in a sustainable manner. The Charter can be found in the Investor Centre section of the Investore website, **www.investoreproperty.co.nz**

The Board receives regular quarterly reports on the sustainability progress of Investore, including performance against the sustainability strategic plan.

Investore has appointed SIML to manage the business of Investore. Accordingly, while the Investore Board has primary responsibility for the governance of sustainability matters and sets the strategy of the company in respect of sustainability, Investore relies on SIML to assist with execution of Investore's strategic sustainability initiatives. The Boards of Stride Property Limited and Stride Investment Management Limited have established a Sustainability Committee to oversee sustainability activities within Stride, and this Committee provides support and advice to the Investore Board.

Day to day responsibility for implementing strategic initiatives related to climate risk and sustainability sits with the SIML executive team. The SIML sustainability team reports to the General Manager Corporate Services, who is a member of the SIML executive team and reports directly to the SIML CEO. As Investore has no employees, remuneration factors related to climate risk and sustainability are not relevant. However, Investore has been advised that all members of the SIML executive team have sustainability objectives included as part of the key performance indicators on which their short term incentive is based. Further information can be found in Stride's FY23 sustainability report on the Stride website (**www.strideproperty.co.nz**) when it is released.

Investore Property
Sustainability report 2023

Strategy

This section is intended to enable an understanding of how climate change is currently impacting Investore and how it may do so in the future.

Investore's Strategy

Investore's strategy is to invest in quality, well-located large format retail properties throughout New Zealand, and actively manage shareholders' capital, to maximise distributions and total returns over the medium to long term. Investore owns a portfolio of large format retail properties which range from standalone supermarkets and hardware stores, to supermarkets with associated convenience shops, to large format retail centres, geographically diversified across New Zealand. Investore outsources its management to SIML, and accordingly has no employees of its own. Further information on the Investore business, its portfolio and its strategy can be found on pages 4 to 6 of this report.

Current Physical Impacts of Climate Change

Investore, through its manager, SIML, is currently undertaking an assessment of the potential physical impacts of climate change across its portfolio utilising the S&P Global Climanomics platform. It is expected that this will be completed during FY24.

New Zealand experienced the physical impacts of climate change during the first months of 2023, with the Auckland Anniversary Weekend floods in January 2023 and Cyclone Gabrielle in February 2023. No property owned by Investore suffered any damage as a result of these events. The SIML team that manages the Investore properties contacted tenants following the events to offer support if needed, including in relation to tenant operations.

Current Transition Impacts of Climate Change

Due to the nature of Investore's business and its portfolio of large format retail properties, Investore has very low scope 1 and 2 emissions (51.3 tCO_2e for FY23).

The major contributors to Investore's scope 1 and 2 emissions are fugitive emissions from air conditioning systems (61% of total scope 1 and 2 emissions for FY23) and electricity consumption (36% of total scope 1 and 2 emissions for FY23).

Investore's activities in reducing emissions are therefore directed towards these categories of emissions:

- Investore has commenced a project of understanding and planning to replace harmful refrigerants across its properties
- During FY24 Investore will explore the feasibility of installing solar panels on one or more of its properties

Strategy

While Investore has low scope 1 and 2 emissions, it works with tenants to seek to reduce operational emissions from the buildings owned by it (scope 3 emissions for Investore), as these scope 3 emissions materially outweigh Investore's scope 1 and 2 emissions.

Sustainable developments

As many of Investore's properties are leased to a single tenant, Investore has limited ability to influence emissions at existing properties, particularly as the larger tenants control the fit out decisions for their properties, including lighting and heating. Although Investore is the owner of the building, it does not operate the building. Investore can, however, influence operational emissions where it develops a new building for a tenant.

Investore is currently developing a new Countdown supermarket on property owned by it in Hakarau Road, Kaiapoi. Investore is targeting a 5 Green Star rating for this property, which will have a range of sustainable initiatives as part of its development. Investore is working closely with its tenant to achieve the targeted sustainability initiatives, demonstrating Investore's strategy of partnering with its tenants to deliver sustainable outcomes for its properties.

Green ratings for existing buildings

Investore is focussed on ensuring its portfolio supports its sustainability objectives. One way of demonstrating this is through obtaining green ratings for its properties. During FY23 Investore obtained Green Star Performance ratings for 16 of its supermarket and hardware stores. Green Star Performance is the only New Zealand tool for rating existing buildings (other than office buildings), and focusses on the operation and performance of entire buildings.

Obtaining Green Star Performance ratings across two portfolios – one consisting of standalone supermarkets and one consisting of standalone hardware stores - enables Investore to compare the performance of similar stores, allowing us to work with tenants to understand where improvements can be made to energy and water efficiency, which is within the control of tenants.

Achieving ratings for additional properties (other than new properties) is expected to be more difficult, as they are not homogeneous, and no benchmarks are currently available in New Zealand, meaning each property would need to be rated individually, requiring significant amounts of historical data (which is often held by the tenant) and management resources.

Climate Scenarios

The New Zealand External Reporting Board, which developed the Standards, encourages sectors to develop climate-related scenarios for that sector, which will help achieve consistent and comparable disclosures. The sector scenario analysis for the construction and property sector was led by the New Zealand Green Building Council, with involvement from entities across the value chain within the sector. The three scenarios selected by the construction and property sector are:

An orderly 1.5°C scenario

where decarbonisation policies are enacted immediately and smoothly

A disorderly scenario

where significant decarbonisation is delayed until 2030, which leads to global warming being limited to <2°C by 2100

A hot house scenario

where global warming reaches >3°C above pre-industrial levels by 2100, due to no further decarbonisation policies being enacted and emissions continuing to rise

These scenarios were selected as they were considered to provide the greatest test of the strategy and approach of the participants in the sector. An outline of each of the scenarios is set out on the following pages, with more detailed descriptions of each scenario, as well as the sources of data used to construct each scenario, available on the New Zealand Green Building Council's website: **www.nzgbc.org.nz**

Climate-related scenarios are not intended to be probabilistic or predictive, or to identify the 'most likely' outcome 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.

Investore works closely with its manager, SIML, on its climate scenario analysis, and has adopted the scenarios developed by the construction and property sector in considering the resilience of its business strategy under different climate change scenarios.

The time horizons considered in the development of the scenarios are:

Short term: present – 2030

Medium term: 2031 – 2050

Long term: 2050 – 2100

While impacts beyond 2050 have been included in the scenarios and underlying data sources, the scenario narratives themselves have predominantly focussed on short to medium term timeframes (i.e. present-2050) as these are the predominant focus for business strategy planning for the sector.

In assessing the impacts of climate-related risks and opportunities on Investore's business, Investore has utilised the following timeframes:

Short term	Medium term	Long term
Present – 2030	**2031 – 2040**	**2041 – 2050**

These time frames are consistent with the sector scenarios where the narrative primarily relates to the time period to 2050. These time horizons are also consistent with Investore's business planning time frames, which are based on 10 year cycles and do not extend beyond 2050.

Investore's consideration of the impact of the scenarios on its business and strategy is at a preliminary stage, and further work is required to fully assess the impact of the scenarios. Our preliminary assessment is set out on the following pages.

Climate Scenarios

Description	Policy Ambition	Policy Reaction	Technology Change	Behaviour Change	Physical Risk	Transition Risk	Socio-political Instability
An 'Orderly' 1.5°C scenario where globalisation policies are enacted immediately and smoothly (globally, in New Zealand, and within the sector). Whole of life carbon emissions reduction requirements for buildings is 90% by 2050.	1.5°C	Immediate & smooth	Fast change	Fast change	Moderate	Moderate	Low/moderate
A 'Disorderly' scenario where significant decarbonisation is delayed until 2030 (globally, in New Zealand, and within the sector). This leads to global warming being limited to ~2.0°C by 2100. The sector faces high transition risk after 2030 as entities rush to decarbonise.	~2.0°C	Delayed	Slow/fast change	Slow/fast change	Moderate	High	Moderate
A "Hot House World" scenario where global warming reaches >3.0°C above pre-industrial levels by 2100. No further decarbonisation policies are enacted (globally, in New Zealand, or within the sector). Emissions continue to rise. The sector faces limited transition risks but extreme physical climate risks, particularly towards the end of the century.	3.0°C	None – current policies	Slow change	Slow change	Extreme	Low	High

Orderly 1.5°C Scenario

The world succeeds in limiting global temperature increase to 1.5°C above pre-industrial temperatures.

Global emissions decline steadily to achieve net zero CO2 emissions globally by 2050. New Zealand climate policies are ambitious and in line with the rest of the world's, with the building and construction sector adopting and prioritising decarbonisation policies. The energy grid shifts rapidly away from fossil fuel use, with the New Zealand grid reaching 100% renewable by 2050. Alternative fuels are used as a backup, and renewables are utilised onsite instead of fossil fuels.

The shadow price of carbon increases dramatically to align with a 1.5°C trajectory, steadily rising to $250/tCO2e by 2050. As a result, the cost and lead-times for low carbon materials and products increase through the 2020s and 2030s, but they become more cost and time effective than traditional materials by 2040. The construction sector grows significantly as carbon-supporting infrastructure is replaced with greener, low carbon infrastructure.

Regulatory changes for the property and construction sector include government procurement policies targeting recycled materials and circular economy principles. Stringent energy and carbon caps for new buildings are phased in rapidly. Existing buildings must disclose energy and carbon performance, take steps to remove all reliance on fossil fuels for operation, and scale up energy efficiency.

Pressures on centralised infrastructure increase with the demand for electrification, closing of fossil fuel power stations and direct climate impacts on storm and wastewater networks.

Modular, circular designs will take precedence, with existing building re-use being in demand rather than new builds. Rapid densification puts pressure on horizontal infrastructure, necessitating significant upgrades.

Significant behavioural change results in an increased demand for energy efficient buildings, increased pressures on public transport, the rise of circular business models and a higher consumer awareness regarding low carbon buildings.

The key risks faced under this scenario are transition risks due to the greater focus on reducing carbon.

	Increase in average global air temperature (relative to pre-industrial levels)		Average sea level rise in NZ (from a 1995-2014 baseline)	Increase in number of hot days in NZ (from a 1986-2005 baseline)	Increase in rainfall intensity in NZ (from a 1986-2005 baseline)	Increase in extreme wind speeds in NZ (from a 1986-2005 baseline)
2041 - 2060	1.6°C	2031 - 2050	0.19m	40%	6%	Up to 5%
2081 - 2100	1.4°C	2081 - 2100	0.39m	40%	6%	Up to 5%
2025	20%		5.22M	$84/tCO2e	0.07kgCO2/kWh	
2050	90%		6.13M	$250/tCO2e	0.00kgCO2/kWh	
	Whole of life carbon emissions reduction requirements for buildings		NZ Population	Carbon price (NZD)	Electricity grid emissions	

Disorderly Scenario

Under this scenario there is a delayed transition, where policy, technology and behaviour changes remain slow up until 2030.

As global emissions continue to rise during the 2020s, concerns about meeting Paris Agreement Goals drives a sudden shift in global policy around 2030. Abrupt and stringent decarbonisation policies are enacted in the 2030s, succeeding in limiting global warming to below 2°C above pre-industrial levels by 2100.

New Zealand follows suit with the rest of the world, leading to abrupt policy and market changes for the property and construction sector post-2030. There is no initial increase in carbon price up to 2030, at which point price rapidly increases to reach $250/tCO2e by 2050.

During the 2020s there is a slow increase in demand for electricity, followed by a surge in demand in the 2030s as New Zealand rushes to electrify our transport networks. The electricity sector is unprepared for the sudden shift in demand at 2030, which causes a delay in adequate expansion of the grid during the 2030s and leads to supply constraints. These constraints result in more frequent blackouts and fluctuations in electricity prices.

During the 2020s, increased regulation within the sector attempts to address the need to decarbonise, but regulation is uneven and conflicting regulations lead to uncertainty. At 2030 more stringent and more orderly regulatory changes are introduced. During the 2020s there is less investment signalling for both new and retrofit low carbon buildings, which causes further uncertainty and lack of momentum until 2030. At 2030, significant regulatory changes demand an immediate step change in building energy and carbon requirements.

Limited investment during the 2020s means the spike in demand for low carbon materials, low energy technology and onsite generation in 2030 causes significant disruption for the sector. Competition for availability of products, materials, professional advice and competent installers impacts significantly on both new building and retrofit projects resulting in escalation in development costs.

Pressures on centralised infrastructure are compounded after 2030 due to increasing densification and the increasing impacts of physical climate risks. Spatial planning to prioritise decarbonisation and densification versus climate resilience and managed retreat is inconsistent across the country. This inconsistency leads to increasing uncertainty for the construction and property sector regarding which assets are most likely to become stranded.

Initially the construction and property sector is slow to decarbonise, but 'fast movers' get the opportunity to utilise materials, capital, and knowledge while late movers are disadvantaged when demands peak post-2030.

This scenario presents more extreme transition risk, as the need to transition is more focussed over a short time period. In addition there will be some physical risk due to the delay in transitioning to a low carbon future.

	Increase in average global air temperature (relative to pre-industrial levels)		Average sea level rise in NZ (from a 1995-2014 baseline)		Increase in number of hot days in NZ (from a 1986-2005 baseline)	Increase in rainfall intensity in NZ (from a 1986-2005 baseline)	Increase in extreme wind speeds in NZ (from a 1986-2005 baseline)
2041 - 2060	1.7°C	2031 - 2050	0.2m		40%	6%	Up to 5%
2081 - 2100	1.8°C	2081 - 2100	0.6m		40%	6%	Up to 5%
2025	0%		5.22M		$35/tCO$_2$e	0.08kgCO$_2$/kWh	
2050	80%		6.13M		$250/tCO$_2$e	0.02kgCO$_2$/kWh	
	Whole of life carbon emissions reduction requirements (for buildings)		NZ Population		Carbon price (NZD)	Electricity grid emissions	

Hot House World Scenario

This scenario involves a 'hot house world' where global emissions continue to grow. Global average temperature rises to greater than 3°C above pre-industrial levels by 2100.

New Zealand's climate change policy remains in keeping with the rest of the world. No further policies are introduced to curb emissions, with the building and construction sector following suit. Regulatory changes are slow and focus on adaptation and managing climate-driven immigration/refugees. The price of carbon remains at $35/tCO2e to 2050. Mandates are introduced to conserve energy for critical functions, as asset and infrastructure damage due to climate change are realised.

New Zealand's electricity grid is gradually decarbonised further in line with current policies. Emission grid factors remain at 0.06 kgCO2/kWh by 2050 which means buildings wishing to achieve net zero carbon emissions must invest in their own zero carbon generation.

Existing low carbon materials are readily available due to low demand but there is little innovation beyond technologies and materials currently available. Investment is prioritised towards adaptation and climate resilience. Some assets become stranded as building codes increasingly become more stringent regarding the need for buildings to withstand climate impacts (such as storm events, extreme rainfall, heatwaves, and floods).

Centralised infrastructure will show failures and stresses, with some assets becoming stranded due to the physical impacts of climate change. Consequently, local councils increase rates to invest in protection and restoration of certain assets.

There are no incentives for meaningful behavioural change. A significant breakdown of social cohesion occurs, with heat stress and mental health impacts from climate change at record levels. Food insecurity and growing populations drive retreat from cities.

This scenario presents more extreme physical risk, with little transition risk.

	Increase in average global air temperature (relative to pre-industrial levels)	Average sea level rise in NZ (from a 1995-2014 baseline)	Increase in number of hot days in NZ (from a 1986-2005 baseline)	Increase in rainfall intensity in NZ (from a 1986-2005 baseline)	Increase in extreme wind speeds in NZ (from a 1986-2005 baseline)
2041 - 2060	2.1°C	2031 - 2050: 0.24m	100%	8.6%	5-10%
2081 - 2100	3.6°C	2081 - 2100: 1.08m	300%	26.1%	Up to 10%
2025	0%	5.25M	$35/tCO2e	0.08kgCO2/kWh	
2050	50%	6.93M	$35/tCO2e	0.06kgCO2/kWh	
	Whole of life carbon emissions reduction requirements (for buildings)	NZ Population	Carbon price (NZD)	Electricity grid emissions	

Impact of Scenarios on Investore's Strategy

Investore's preliminary view of the impact of each of the three climate scenarios described on its strategy is described on this page. Further work is required to fully assess the resilience of Investore's strategy under each of the scenarios.

Orderly 1.5°C Scenario

Investore's preliminary view is that its strategy of reducing the environmental impact of its portfolio through improving energy and water efficiency and developing sustainable properties will provide resilience in the orderly scenario. Investore is positioning its portfolio for a low carbon future which will ensure it is prepared for regulatory changes and tenant demand in the orderly scenario.

Investore already has very low scope 1 and 2 emissions, and recognises that it can play a more significant role in the transition to a low carbon future through working closely with its tenants. This is the basis for Investore's work in obtaining Green Star Performance ratings for its properties, as well as its commitment to developing sustainable buildings.

Disorderly Scenario

While further work is required to fully assess the risks of this scenario to Investore's strategy, Investore's preliminary view is that this scenario presents some risk to its business, which will likely arise as a result of regulations and tenant behaviour in seeking to meet sudden and strict building efficiency and environmental standards.

Investore's sustainability strategy involves working with its tenants, and we consider that this will be even more important under the disorderly scenario.

There is some risk to Investore should tenants suddenly all demand system upgrades to become more efficient, and Investore needs to consider this risk further to develop a mitigation strategy.

Hot House World Scenario

Investore considers the physical impact of climate change as part of its operations, including for example when upgrading facilities such as roof replacements.

Further work is required to assess the resilience of Investore's assets to the physical implications of a hot house world scenario as described. We expect this will be further informed by the results of the physical risk assessment being undertaken utilising the S&P Global Climanomics platform.

Climate-Related Risks And Opportunities

Investore has worked with SIML as manager to consider physical and transition risks to its business under each of the three scenarios described above, and across three time horizons:

Short term: present – 2030

Medium term: 2031 – 2040

Long term: 2041 – 2050

The scenario analysis undertaken considers the impacts beyond 2050, although the narratives predominantly focus on the timeframe out to 2050. In assessing climate-related risks and opportunities, Investore has elected to focus on the timeframe out to 2050, as this is the longest timeframe for planning that is currently considered by Investore. The time horizons selected are consistent with the Investore strategic planning horizons as Investore plans in 10 year cycles for capital and maintenance expenditure on the buildings it owns. While the life of a building can last beyond 2050, Investore considers this to be the long term horizon for its planning purposes, and accordingly has set 2050 as the longest timeframe considered for each of the risks assessed.

Investore considers climate-related risks as part of its decision-making for acquisitions, developments and upgrades of properties. Transition risks are reflected in decisions to obtain green ratings for properties, as well as build sustainably. Physical risks are considered as part of decision-making around acquisitions, and it is expected that further information will be available as a result of the physical risk assessment being undertaken utilising the S&P Global Climanomics platform.

Investore's preliminary assessment of its climate-related risks and their anticipated impact are set out in the table on page 29 and following, with work on quantifying the risks yet to be completed. This table may not describe all of the climate-related risks faced by Investore – some risks may be unknown and other risks, currently believed to be immaterial, could turn out to be material. Investore has yet to integrate these risks into its enterprise risk management framework, to assess how a 'major' climate risk compares with a business risk rated 'high' or 'critical' on Investore's business risk register.

Climate-Related Risks And Opportunities

Risk/opportunity	Impacts	Type	Scenario	Time Horizon	Anticipated Impact
Stricter regulatory requirements for energy efficiency of properties	Stricter regulations, including energy and carbon caps for existing and new buildings, could lead to higher capital expenditure for retrofitting buildings, as well as higher costs of developing new buildings, and the potential for stranded assets if the cost of upgrading is not feasible. Cascading impacts include the potential for low carbon materials which are needed to meet requirements not being available or only being available at very high cost.	Transition	Orderly	Present-2050	Major
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor
Introduction of regulations requiring disclosure of energy and carbon performance for all properties	Introduction of regulations requiring mandatory disclosure of energy and carbon performance for all properties, leading to additional costs for having buildings assessed to obtain a performance certificate, as well as the costs of improving energy and carbon performance to meet tenant or market demands (or alternatively earn lower rents). There may also be a shortage of assessors, leading to a time lag and therefore potential inability to let the property during this time.	Transition	Orderly	Present-2050	Major
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor
Increased costs of materials and building operations due to price of carbon	Increasing carbon price impacts cost of materials and increases costs of upgrading existing buildings to meet energy efficiency targets.	Transition	Orderly	Present-2050	Major
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor
Increased urbanisation as people move to main cities	Opportunity for well-located assets to be more in demand as population grows in urban areas, supporting Investore's focus on well-located assets in key urban regions	Opportunity	Orderly	Present-2050	Opportunity
			Disorderly	2030-2050	Opportunity
			Hot house	2040-2050	Opportunity

Major Moderate Minor Opportunity

Risk	Impacts	Type	Scenario	Time Horizon	Anticipated Impact
Increase in extreme weather events	Increase in frequency and severity of extreme weather events such as cyclones, storms, floods and resulting fires, which may lead to increased capital expenditure to retrofit buildings to improve their resilience to weather events, as well as increased operational costs from repairing damage. Downstream impacts may also include increased cost of insurance and potentially the inability to obtain insurance coverage in certain areas or for specific risks, as well as disruption to supply chains and tenant businesses, potentially resulting in inability to pay rent. Downstream impacts also result from damage to infrastructure and accelerated deterioration of building materials.	Physical	Orderly	Present-2050	Moderate
			Disorderly	2030-2050	Moderate
			Hot house	Present-2050	Major
Reduced investor appetite due to not meeting expectations	Investors seek to exit or not invest due to inability to meet expectations or requirements, including where emissions reduction targets are not met or not seen as sufficiently ambitious.	Transition	Orderly	Present-2050	Moderate
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor
Demand for low carbon construction products and processes outstrips supply	Policy change requiring low carbon construction products and processes progresses faster than supply chains can adapt, resulting in project delays due to low carbon materials not being readily available and in high demand, and increased cost as demand outstrips supply. Cascading impacts results from delays in completing projects, delaying commencement of leases and cashflows.	Transition	Orderly	2030-2050	Moderate
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor
Increased demand for electricity	Move to more renewable energy and increased demand due to electrification replacing fossil fuels potentially results in increased cost of electricity and more uncertainty of supply. Downstream impacts include impacts on tenant businesses, potentially impacting their ability to pay rent.	Transition	Orderly	Present-2050	Moderate
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor
Litigation risk	Regulatory or litigation action against Investore as a result of not meeting regulatory requirements, resulting in a financial impact from defending the action and/or potential fines or damages. There may also be reputational impacts from not being seen as a responsible corporate citizen, which may impact on investor and/or tenant appetites.	Transition	Orderly	Present-2050	Moderate
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor

Major Moderate Minor Opportunity

Risk	Impacts	Type	Scenario	Time Horizon	Anticipated Impact
Failure to meet technological advances and tenant expectations regarding energy efficiency and low carbon technology	Increased capital or operating expenditure due to upgrading buildings to be more energy efficient and meet changing market requirements, such as installation of electric vehicle infrastructure; potential reduced rental from property that fails to meet tenant expectations and therefore is less desirable to tenants; risk of stranded assets if they do not meet tenant expectations.	Transition	Orderly	Present-2050	Moderate
			Disorderly	2030-2050	Major
			Hot house	Present-2050	Minor
Risk to assets due to sea level rise and greater sea surge events	Damage to properties in exposed areas, as well as increased costs of maintenance and repair and the need to use more robust materials in the repair of buildings. Cascading impacts may also arise due to disruption to tenants' business and supply chains, increased costs of insurance, higher rates due to Council expenditure on infrastructure in affected areas, and potentially early retirement of affected assets.	Physical	Orderly	Present-2050	Minor
			Disorderly	2030-2050	Moderate
			Hot house	2030-2050	Moderate
Rising mean temperatures	Higher temperatures result in higher demand for cooling within properties, resulting in increased costs and greater load on plant and equipment which could lead to more frequent maintenance or a shorter life for equipment.	Physical	Orderly	2030-2050	Moderate
			Disorderly	2030-2050	Moderate
			Hot house	2030-2050	Major
Increase in rainfall intensity	Changes in ground conditions and slope stability undermines assets and connected infrastructure, resulting in damage to or loss of assets. Downstream impacts may include damage to infrastructure servicing assets (even if the asset itself is not impacted) or stranded assets if ground instability occurs around assets. Development works may also be impacted through reduced time to undertake earthworks.	Physical	Orderly	2030-2050	Moderate
			Disorderly	2030-2050	Moderate
			Hot house	2030-2050	Major
Increase in drought conditions	Risk of increased water scarcity from more and/or longer drought conditions, leading to increased water costs. Flow on effects may include higher costs to tenant businesses from water consumption, impacting overall occupancy costs and potentially reducing capacity for rent, as well as increased rates due to the need for Councils to cover infrastructure upgrades.	Physical	Orderly	2030-2050	Minor
			Disorderly	2030-2050	Minor
			Hot house	2030-2050	Moderate

Major Moderate Minor Opportunity

Risk Management

This section is intended to describe how Investore's climate-related risks are identified, assessed, and managed and how those processes are integrated into existing risk management processes.

Traditionally, risk assessments are completed to understand the nature and determine the level of risk of actions or events. The level of risk is traditionally identified as a combination of consequence and likelihood of an action or event occurring. A risk assessment informs the actions or decisions to reduce risks or to take advantage of opportunities. All value chain stages are in scope for the identification and assessment of climate-related risks and opportunities.

To address the evolving impacts of climate change, risk is described as the combination between hazards, exposure and vulnerability. Climate change creates gradual impacts e.g., sea level rise, that occurs when an ongoing trend reaches various tipping points in relation to a process, system or activity. This requires more of an emphasis on consequences (i.e. what can happen and how severe could it be) rather than how likely it is to happen. The combination of hazard, exposure to the hazard, and the vulnerability of the system or process to the hazard, creates the risk.

The probability aspect of the impact of a climate-related hazard is assessed against the consequences at different timeframes and across different scenarios to determine the level of risk. Investore has used the timeframes short (present to 2030), medium (2031 - 2040) and long (2041 - 2050). These were felt to be the most appropriate for Investore's business and its planning cycles.

SIML, as manager of Investore, has reviewed climate risks on an annual basis to date, with the outcome of the review and the resulting risks and their impacts presented to the Stride Sustainability Committee and the Investore Board. While Investore considers an annual review to be appropriate, it would review more frequently should circumstances arise that required this, such as a material change in metrics.

The climate risk process has not yet been integrated into Investore's enterprise risk management processes, and accordingly we have not yet considered the relative impact of particular climate risks against other risks to Investore's business. This will be considered during FY24.

Metrics and Targets

This section is intended to enable an understanding of how Investore measures and manages its climate-related risks and opportunities. Metrics and targets also provide a basis to compare entities within a sector or industry.

Greenhouse Gas Inventory - Commentary

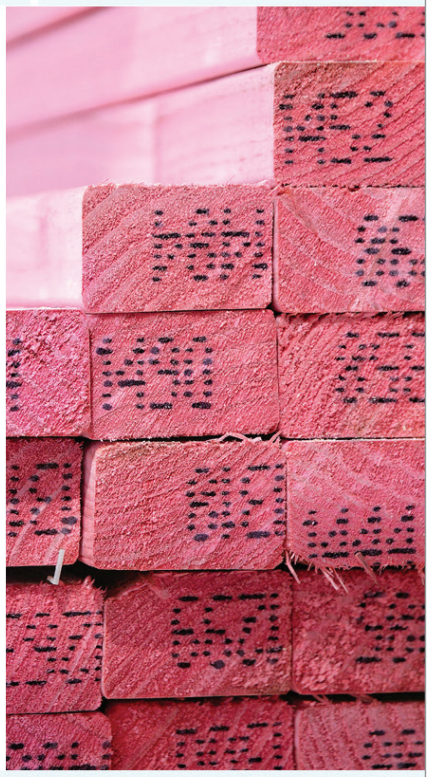
Set out on pages 38 and following is Investore's GHG inventory report for FY23, its first report.

As manager of Investore, SIML includes Investore's GHG emissions in its own GHG inventory as SIML applies an operational control approach to identify and determine the boundary of SIML's GHG inventory. SIML's organisational boundary for GHG reporting includes all of the entities managed by SIML, on the basis that SIML is the property and business manager and therefore has "operational control". Investore is also reporting on its own GHG inventory, and accordingly there is some duplication in GHG reporting across SIML and Investore. However, Investore considers it important to report on its own GHG emissions, to enable users to understand Investore's GHG profile.

Due to Investore's portfolio of large format retail properties, and the nature of its business operations, Investore has very low scope 1 and 2 emissions.

The major contributors to Investore's scope 1 and 2 emissions are fugitive emissions from air conditioning systems (61% of total scope 1 and 2 emissions for FY23) and electricity consumption (36% of total scope 1 and 2 emissions for FY23). Investore has strategies to address these emissions (see page 10).

Investore is also reporting scope 3 emissions for FY23. The most material scope 3 emissions for Investore are tenant electricity, tenant gas and tenant waste to landfill. Investore works with its tenants to obtain tenant consumption data to enable it to report on these as part of its scope 3 emissions reporting (subject to limitations and exclusions as set out in the report).



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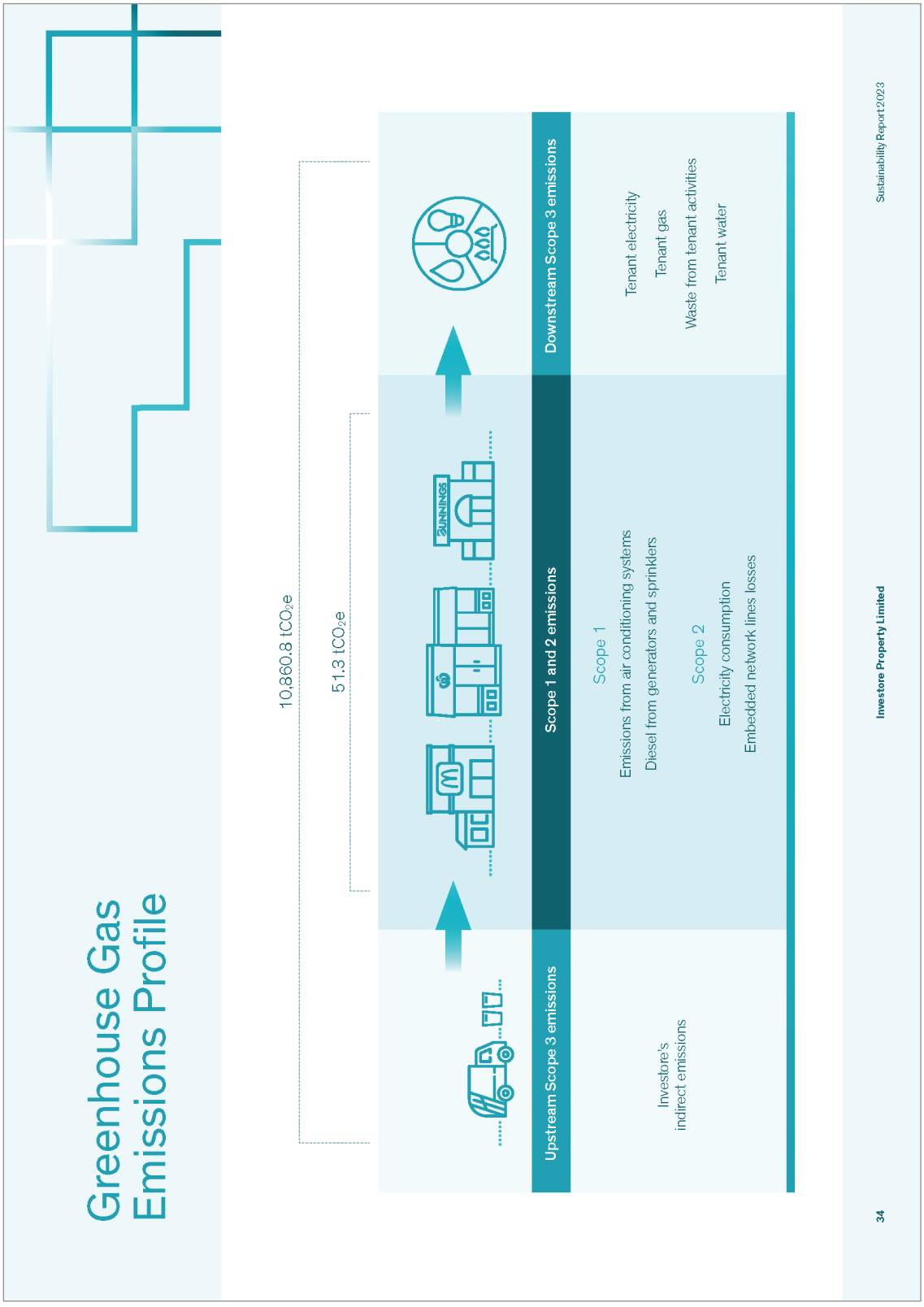


Metrics

The key metrics that Investore considers are most relevant for its business, including those that Investore monitors as part of its regular assessment of performance against its sustainability strategic plan, are set out below.

Metric	FY23 Data	Commentary
Greenhouse gas emissions	Investore's GHG inventory is set out on pages 38 and following	Investore's total scope 1 and 2 emissions have decreased from FY20, its baseline year, although its scope 1 emissions have risen from FY22 (not reported) due to fugitive emissions from air conditioning systems increasing. This highlights the importance of Investore's strategy of developing a plan to remove harmful refrigerants from its portfolio.
Greenhouse gas emissions intensity	Scope 1 and 2 GHG emissions per sqm NLA = 0.002 tCO2e Scope 3 GHG emissions per sqm NLA = 0.0435 tCO2e Total GHG emissions per sqm NLA = 0.0437 tCO2e	Tracking emissions intensity will enable us to compare intensity year on year. We will also seek to identify benchmarks for comparison purposes going forwards.
Internal carbon price	$60 per tCO2e (draft)	Investore is aligning with the Stride internal price of carbon policy which Stride is trialling during FY24. Stride will put a shadow price on its emissions set by reference to the spot price of carbon under the Aotearoa New Zealand Emissions Trading Scheme. This price was approximately $60 per tCO2e on 1 April 2023, and accordingly is the price Stride has adopted for FY24 on a trial basis. As it applies to Investore, Investore expects to use the internal price of carbon to assist with quantifying the GHG emissions impact of decisions, including assessing feasibility of refurbishment or maintenance decisions.
Executive remuneration	Investore has no employees, and accordingly executive remuneration is not relevant. However, the Investore Board has been advised that the objectives of all executive team members of SIML, its manager, included sustainability objectives and measures. Performance against these sustainability objectives and measures are part of the assessment of short term incentives.	Investore will continue to monitor the setting of sustainability objectives for the SIML executive team, as part of its oversight of the manager's performance.

Metrics

Metric	FY23 Data	Commentary
Percentage of eligible portfolio by value that has a green rating	42% of Investore large format retail properties[1] by value have Green Star Performance ratings New supermarket at Hakarau Road, Kaiapoi, targeting 5 Green Star Design & As Built rating	There has been considerable progress in achieving green ratings during FY23, primarily Green Star Performance ratings for 16 large format retail properties. Achieving ratings for additional properties is expected to be more difficult, as they are not homogeneous, so would need to be rated individually, requiring significant amounts of historical data (often held by tenants) and management resources.
Energy intensity - consumption as a percentage of total floor area	Scope 2[2] = 0.61kWh per sqm NLA Scope 3[3] = 260.5 kWh per sqm NLA	Energy consumption intensity will allow us to track and compare intensity year on year. We will also seek to identify benchmarks for comparison purposes.
Energy consumption data coverage (actual data as a percentage of total data including estimated)	Scope 2 = 96.0% Scope 3 = 96.9%	This metric reports on our ability to collect data, as more accurate and complete data will enable more accurate reporting and consideration of achievement of targets.

1. Excluding properties categorised as 'Development and Other' in the consolidated annual financial statements of Investore for FY23.
2. Includes actual and estimated scope 2 electricity consumption (kWh).
3. Includes actual and estimated scope 3 electricity consumption (kWh) and scope 3 gas consumption (kWh).

Targets

Investore is in the process of setting sustainability targets. Investore acknowledges that Stride (which includes SIML, the manager of Investore) has set ambitious emissions reduction targets, including reducing scope 1 and 2 emissions by 42% by 2030 from the FY20 baseline year.

Stride reports on emissions across all of its managed entities, and therefore the Stride target will include the Investore scope 1 and 2 emissions. As Investore has very little scope 1 and 2 emissions, Investore will review appropriate emissions reduction targets during FY24.

Investore acknowledges that its main scope 1 emissions are from air conditioning systems, and accordingly during FY24 it will complete a project to understand and plan to replace harmful refrigerants across its properties. Investore also has material scope 3 emissions, at least partly related to tenant electricity consumption, and accordingly during FY24 Investore will explore the feasibility of installing solar panels on one or more of its properties.

Investore will explore obtaining additional green ratings for its properties, although it notes that achieving ratings for additional existing large format retail properties is expected to be more difficult.

Meridian Energy
Annual report 2023

Aiming for best disclosure on climate

The Government requirement for all listed companies to publicly disclose their climate-related issues is one we welcome. We've been voluntarily preparing **Climate-related Disclosures** since 2019 because, as a company publicly committed to decarbonisation, we consider it a vital part of holding ourselves responsible to stakeholders.

The Task Force on Climate-related Financial Disclosures framework has served as a robust way to show our progress in governance, risk management, strategy and our climate-related metrics and targets. Still, we believe we can go further. We aimed to substantially voluntarily align our FY23 **Climate-related Disclosure** with the Aotearoa New Zealand Climate Standards, released last year, ahead of our first full compliance year in FY24.

We continue to measure and publicly report on our full value chain emissions. Our FY23 GHG emissions inventory, including data sources and quantification methodology, has been independently assured to a reasonable level against the requirements of ISO 14064-1:2018, the Greenhouse Gas Protocol and the Corporate Value Chain Standard.

Building on our **Climate-related Disclosures** and publicly available **Biodiversity and Deforestation Commitments**, this year we plan to pilot the adoption of the Taskforce on Nature-related Financial Disclosures' framework, which has the potential to enable us to have more holistic impacts on nature.

The changes linked to these new disclosures don't stop there. As part of a change programme to further build our climate-related disclosure expertise, we've made important changes to our risk-assessment methodologies, and refreshed our climate scenarios in our latest **Climate-related Disclosure**.

For more details on what we're disclosing, refer to **Climate-related Disclosures** and **Greenhouse Gas Inventories** on our website.

Governance

Board oversight of climate-related risks and opportunities

Meridian is on a journey to build maturity in the way climate change is incorporated into strategic and operational decision making. As we build in capability, this disclosure will evolve.

Meridian's Board of Directors is responsible for the management of risks and opportunities for the organisation, including those related to climate change. Two Board committees support the Board in this function for climate change:

1. The Audit and Risk Committee has oversight of climate related risks and opportunities. It assists the Board in fulfilling its responsibilities in all matters related to identifying, assessing, monitoring, and managing risk (including climate risk).
2. The Safety and Sustainability Committee exists to support the Board in all matters related to safety and sustainability, including performing reviews of Meridian's primary sustainability impacts and performance, its **Climate Action Plan**, and its Sustainability Policy.

Both committees meet on a quarterly basis, where they review progress against goals and targets for addressing climate-related issues. For example, a standing Safety and Sustainability Committee agenda item is the 'Sustainability update', which contains a summary of the Group sustainability initiatives including progress and outcomes per initiative for the quarter to date (tracking against targets where relevant), and plans for the quarter ahead. The Audit and Risk committee monitors progress made to embed climate-related risk into business practices, and reviews key climate-related risks annually, or when statuses change. Both Committee proceedings are reported back to the Board. Additional Committee and Board disclosures occur for specific issues as required – for example, as climate-related policy changes.

The Board sets objectives and targets for climate-related issues annually and holds Management accountable for implementing these via:

- Policies – including annual reviews of Meridian's Risk Management Policy, Remuneration Policy, and Sustainability Policy.
- Strategic objectives and performance incentives that are set in the Executive Scorecard each financial year – objectives are set for both short and long-term.
- Oversight of key risks.

Board Skills & Competence

The Board ensures appropriate skills and capability are available to provide oversight of climate-related risks and opportunities through the maintenance of a director skills matrix. Meridian's FY23 **Corporate Governance Statement** shows the Director skills matrix and attendance at various Committee meetings.

When there are significant changes to climate-related risks, relevant regulation, or Board membership, the Board may hold a session to upskill members on latest requirements, good practice, and the implications for Meridian. The most recent of these sessions was held in May 2023.

The Board accesses climate-related expertise from within Meridian, and from external specialists when required. For example, Meridian seeks independent external climate scientific advice for the purposes of informing short, medium and long-term assumptions about the physical impacts of climate change on its operations, such as hydro inflows. A number of Meridian Board members are also actively involved in Chapter Zero New Zealand (chapterzero.nz) a global network of board directors committed to taking action on climate change and hosted in Aotearoa by the Institute of Directors.

Monitoring Progress

The Executive Scorecard is the mechanism used to monitor performance of strategic objectives and embed performance against climate-related goals into the remuneration of the Executive Team. The scorecard is set against the key initiatives in Meridian's business plan and defines the criteria for adequate, good, and excellent performance on each. The Executive Scorecard is built by the Chief Financial Officer and the Chief People Officer and is agreed by the People, Remuneration and Culture Committee on behalf of the Board. The initiatives that make up the scorecard are the key initiatives in the Business Plan for the financial year. They are defined through the business planning process by considering strategic goals and risks – including climate-related elements. The People, Remuneration and Culture Committee reviews progress on behalf of the Board twice a year. Details of the elements that make up the Executive Scorecard are provided in the Metrics and Targets section.

Management's role in assessing and managing climate-related risks and opportunities

The Board assigns climate-related responsibilities to management using mechanisms such as policy and the Executive Scorecard. Management reports to the Board Committees on a quarterly basis.

As an example of how Management tables climate-related issues with the Board, during FY23, Management tabled papers with the Safety and Sustainability Committee – such as the electrification of Meridian's Manapōuri Power Station staff boat – the Mararoa (as a part of the Half by 30 emissions reduction programme).

Meridian Executive Team members are responsible for ensuring the business is identifying, assessing and monitoring climate-related risks and opportunities. Meridian's annual climate-related disclosure process is facilitated by the Sustainability and Risk functions with a primary governance pathway via the Audit and Risk Committee to the Board. Furthermore, during FY23 sustainability-related guidance was added to the Investment Committee initiative card template regarding a range of criteria, including climate risk. This template is the basis for all initiatives that go to Meridian Investment Committee.

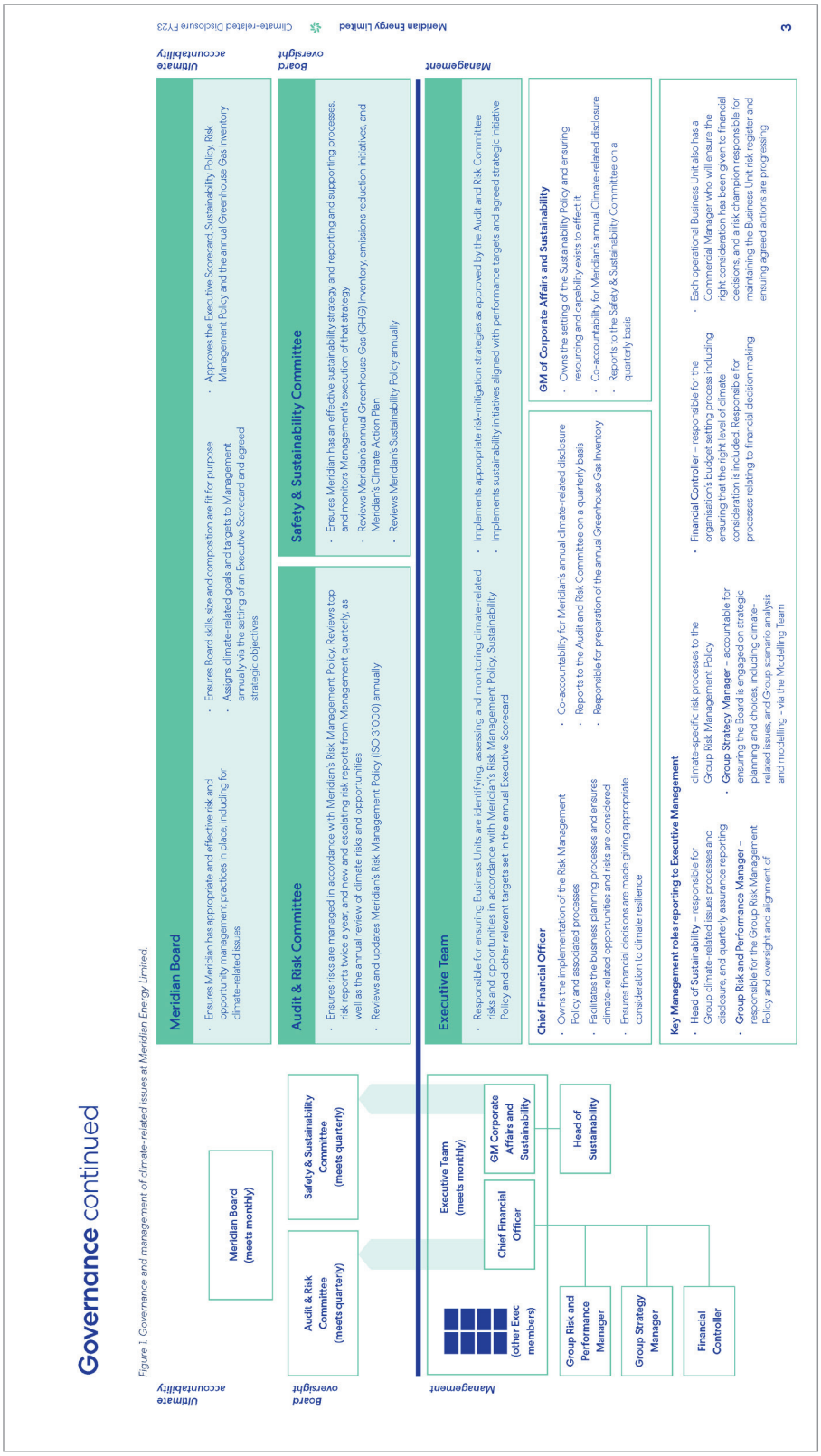
The Sustainability and Risk functions work with a cross-business management group to complete an annual update of climate-related risks and opportunities. This review considers significant context changes that could create new risks or opportunities, or change the materiality of existing ones.

Progress on management actions associated with climate-related risks and opportunities are reported to the Board, or one of the Committees, depending on the topic. For example, progress on the Renewable Development Pipeline is reported to the Board; action against the **Climate Action Plan** is reported to the Safety and Sustainability Committee and the Audit and Risk Committee receive updates on enterprise level risks and progress to embed climate risk and opportunity management into business processes.

An outline of key climate-related risk and opportunity responsibilities and processes at both Board and Management level is provided in Figure 1.

Meridian Energy
Climate-related disclosure 2023

Meridian Energy
Climate-related disclosure 2023 (continued)



Risk Management

Identifying and assessing climate-related risks and opportunities – methodology

Meridian evolved its climate risk and opportunity assessment methodology this year, informed by methodologies outlined by the Intergovernmental Panel on Climate Change (IPCC) and Aotearoa New Zealand's National Climate Change Risk Assessment (NCCRA) method report. A change programme is also underway to further embed climate considerations into business processes and decision making.

Meridian management adopted a new approach to the annual exercise of identifying and assessing climate-related risks and opportunities this financial year. The process applies its newly adopted climate scenarios, and aligns with Meridian's updated Risk Management Policy and Risk Management Framework. The new process has three steps:

1. **First Pass:** In this step a team including a scenario subject matter expert (SME), sustainability SMEs and risk SME reviewed a matrix of physical and transition climate hazards against Meridian elements that could be impacted (e.g. assets or business activities). A list of risks and opportunities was generated and these were consolidated and cross referenced with existing company risks to generate a first pass list. The list of risks was validated in a workshop with owners and functional SMEs[1] from across the business to determine which risks would progress to the next stage of assessment. This workshop was also used to share relevant changes to context (including regulatory considerations), and scenario detail.
2. **Detailed Assessment:** This step involved workshops with the risk/opportunity owners and functional SMEs. In these sessions the impacts of the risks were captured, and physical risks were assessed for vulnerability and exposure. Transition risks were assessed using likelihood and consequence scales consistent with other risk assessments at Meridian. If these sessions identified that further analysis was required, then the third step is completed in a different session once all relevant data is available.
3. **Action Planning:** The final step confirms what management action is required.

Once the annual review is completed, the risks and opportunities are transferred to the Business Units for actioning and monitoring. If a risk aligns with a key corporate risk, or becomes one in its own right, the corporate risk register is updated for tracking in accordance with the Risk Management Policy.

All value chain stages were included in the scope of the assessment outlined above, and Meridian identified items that are customer/demand driven through to potential supply chain impacts (focused on tier 1 suppliers, with some extension to tier 2[2]). While all value chain stages are in scope, Meridian acknowledges that many of our suppliers are early in their maturity journey and, as a result, data and information is limited in some areas. Meridian's procurement process includes undertaking due diligence on a range of areas, including sustainability. Meridian plans to extend this to include greater climate-specific content to promote action and increase access to climate-related information to those Meridian works with.

Outside the annual review process of climate-related risks and opportunities, management actively responds to emerging issues, including regulatory issues. For example, any climate-driven policy announcements or consultations (such as consultation on New Zealand's second Emissions Reduction Plan), prompt a review of impacts and implications for Meridian, which is escalated to the Board if required. Individual and material risks and opportunities also have more frequent management action(s) and reporting requirements beyond the annual process, including to the Board. This includes the advancement of Meridian's Southern Green Hydrogen project and new assets from the Renewable Development Pipeline.

1 SMEs included representatives from across the business such as: Generation (engineering and strategy), Retail (new energy solutions), Renewable development and Wholesale (financial trading, and portfolio strategy).
2 Tier 1 suppliers refer to those who directly supply Meridian with goods or services. Tier 2 suppliers refer to those who supply Meridian's tier 1 suppliers. Furthermore, Meridian considers direct suppliers to be those providing goods and services that input directly to electricity generation, and indirect suppliers those who provide goods and services not directly related to the production of electricity. Meridian has defined its assessment supplier scope based on a 'tier' categorisation basis.

Risk Management continued

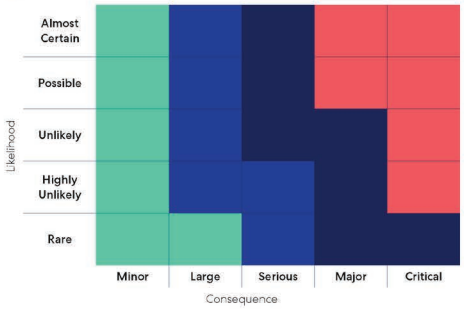
Time horizons and risk scoring

Meridian's climate-related disclosure process considers scenarios across three time horizons. This year Meridian has adopted longer time horizons that align with the climate-related scenarios, and can take into account the useful life of assets (beyond a typical business case horizon). These horizons will continue to be reviewed based on emerging and relevant context, including climate science. The time horizons are as follows:

- Short term: from today through 2030
- Medium term: from 2030 to 2050
- Long term: from 2050 to 2100

Transition risks are assessed using the same likelihood/consequence framework used to assess other risks within the business (see Figure 2). These risks tend to consider a short-to-medium time horizon as extremely high uncertainty exists on transition impacts beyond a mid century time horizon.

Figure 2. Climate-related risk/opportunity heat map.

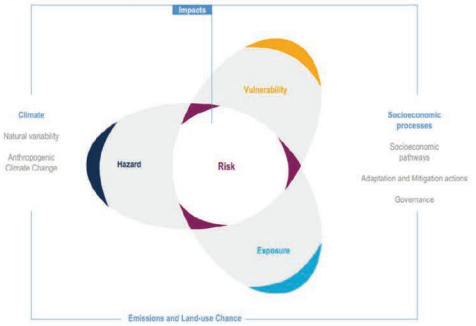


Note: Extreme = Red , High = Dark Blue, Medium = Blue, Low = Green.

In Meridian's case, physical risks need to be considered using a longer time horizon as its core business relies on assets that have useful lives over that period.

Under Meridian's new climate risk assessment process for physical risks, the exposure/vulnerability assessment was used for the first time this year (informed by IPCC AR5 – refer Figure 3), its application is expected to evolve as maturity develops.

Figure 3. IPCC AR5 risk graphic – reproduced here from IPCC AR6 Working Group II report.



Risk Management continued

Table 1. High level risk assessment criteria for physical risks.

Low	Medium	High	Extreme
Local interest or moderate regional interest. Can be handled via Business as usual.	Moderate interest nationally or significant regional interest. Moderate impact on the way Meridian will operate.	Substantial reduction to the value of Meridian or ability to achieve Meridian's strategic objectives. High interest nationally due to prolonged or significant disruption to people, environment or communities.	Impacts so significant they would impact Meridian's viability as a business or be of significant interest nationally due to permanent disruption to multiple groups.

The overall risk rating assessment is defined by the risk owner by considering all of the information gathered through the process including an assessment of the urgency of action. The assessment uses the Low, Medium, High, Extreme scale to be consistent with other Meridian risks. The high level definitions for each risk rating level are shown in Table 1. A check for consistency is applied after all risks have been assessed.

Managing climate-related risks and opportunities

The impacts of risks are quantified as part of Meridian's annual climate-related disclosure process (completed via initial group workshops and further risk/opportunity-specific meetings). This process also includes the assessment and recording of any management actions completed and/or required to manage these risks.

The use of the Low-Medium-High-Extreme rating scale to indicate the relative significance of climate-related risks and opportunities is primarily driven by their potential/actual impacts on enterprise value.

Meridian has adopted a conservative approach for climate-related disclosures, disclosing some risks and opportunities that are well below what would be considered material by New Zealand Stock Exchange requirements. For climate-related disclosure purposes, inclusion is based on guidance from the NZ Climate Standards and considers whether the matter would be of interest to Meridian's current and potential stakeholders or investors. It involves answering a key question – would this impact a decision to invest in or do business with Meridian? Some of the guidance considerations to answer this question include:

- Risks and opportunities should be considered individually and in combination.
- A well-managed risk or a lack of a process may count as relevant.
- Is there information from a sector perspective that readers would want to compare across organisations?
- If in doubt, disclose it.

An overview of the most material physical and transitional financial impacts are outlined in the Strategy section of this disclosure.

To determine whether the risk should be incorporated into Meridian's enterprise risk register, the thresholds described in Meridian's Risk Management Framework are applied. Those risks assessed as "High" or "Extreme" will feature in the enterprise risk register which is regularly reviewed at Board level. Decisions to mitigate, transfer, accept or control are made on a risk-specific basis and are informed by:

- Viable mitigation and/or control options.
- Views on the most appropriate entity and/or individual to take mitigation action(s).
- Materiality and likelihood.

Decisions regarding the public disclosure of a risk or opportunity, having taken into account Meridian's materiality threshold guidance, require consultation with the risk or process owners. The Risk and Sustainability teams recommend disclosure content to the Chief Financial Officer and GM of Corporate Affairs and Sustainability. Audit and Risk Committee has final approval on behalf of the Board.

Construction at of Meridian's sixth wind farm, Harapaki, in the Hawke's Bay.

Risk Management continued

Climate-related risks and integration with Group risk management approach

Meridian's Risk Management Policy provides the overarching framework for assessing, monitoring and managing risks, including climate-related risks. The policy meets ISO 31000:2018 Risk management – Guidelines (Second edition).

An overview of the policy, which is available on Meridian's website[1], outlines the categories of risk considered, such as people, financial, environmental, reputational and strategic risks.

At an operational level, Meridian's Executive Team assesses and monitors climate-related risks and opportunities in accordance with the levels of risk assigned through the Risk Management Policy (risk response categorisations are shown in Table 2).

Meridian's climate-related risks are assessed with the same Low, Medium, High, Extreme categories as the Group Risk Management approach. Climate-related risk that form part of other High or Extreme company risks are embedded in those risks, and those that are stand-alone risks are added to the company register to be monitored through governance levels as described by the Risk Management Policy.

Table 2. Level of risk categorisation and response as determined by Meridian's Risk Management Policy.

Risk rating	Low	Medium	High	Extreme
Ownership	Manager or subject-matter expert	General Manager together with their direct report	General Manager	Chief Executive
Resourcing	Staff and resources applied based on risk/reward assessment	General Manager together with their direct report	Priority focus of staff and resources reducing risk and building mitigation in response	High-priority focus with significant organisational effort directed at moving risk out of the Extreme rating
Reporting	Business units oversee and review actions	Risk-review process with GM and their direct reports to ensure adequate assessments of risk and treatments are in place	Biannual formal reporting to Audit and Risk Committee meeting	Monthly reporting to the Board
Monitoring	Business units monitor improvement initiatives via quarterly reviews.	Monitoring undertaken by peers or self-monitoring as appropriate	Risk owner (GM) to select most appropriate monitoring (peer or external) to ensure the steps Meridian is taking are necessary and sufficient	Risk owner (CE) needs to consider whether Meridian needs independent advice to provide assurance that the steps being taken are necessary and sufficient

1 meridianenergy.co.nz/about-us/investors/governance/risk-management

Strategy

Meridian's business model and strategy

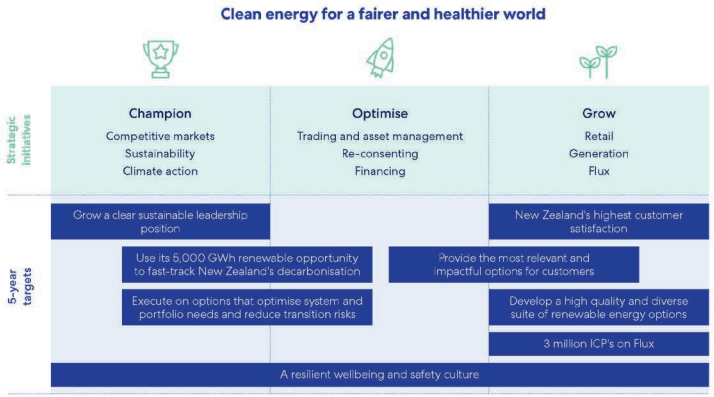
Meridian's purpose, Clean Energy for a Fairer and Healthier World, inherently means it is in its DNA to contribute meaningfully to the transition to a net-zero and climate-resilient future. Meridian's business model is anchored in creating short, medium and long-term value by generating electricity from renewable energy sources (wind, water and sun) and retailing electricity to customers. Meridian has started to build on its electricity generation heritage with further generation investment, and provide targeted decarbonisation offers in sectors such as transport and process heat.

The Meridian Group undertakes the following activities:

- **Meridian New Zealand** – 7 large hydro power stations and 5 large wind farms contributing 30% of national electricity generation, sitting alongside a retail business with two brands (Meridian Energy and Powershop) that sell electricity to 15% of residential customers in NZ (excluding New Zealand's Aluminium Smelter [NZAS])
- **Flux** – a subsidiary that offers highly configurable energy software, operating in three countries (New Zealand, Australia and the United Kingdom)
- **Dam Safety Intelligence** – a subsidiary company that offers dam-management expertise to dam owners in New Zealand and internationally.

Meridian's strategy delivers value by integrating the activities above. It presents this strategy internally using the framework shown in Figure 4.

Figure 4. Meridian Energy strategy – summary.



Meridian Energy
Climate-related disclosure 2023 (continued)

Strategy continued

Meridian's modelling work

Meridian has utilised two central models that explore the strategic and operational implications of climate change for its business focussing on hydrological implications – Evolution and Revolution.

Meridian's modelling uses historical weekly hydro inflow sequences – this historic data represents a distribution of possible hydro inflow profiles for a given year. These hydro inflow distributions are then applied to future years, but with adjustments applied for climate change effects (intensifying seasonality and volatility). The scenarios each use an average hydro inflow profile from the distribution of future climate-change-adjusted hydro inflow sequences. Extreme future climate-change-adjusted hydro inflow sequences may be used for targeted analysis if needed.

Meridian is awaiting the first update on glocal temperature and rainfall projections since 2014, with Coupled Model Intercomparison Project 6 results, to be released. NIWA is working on these outputs, and the first downscaled temperature and rainfall projections for New Zealand since 2014 are due to be released imminently. River-flow projections will follow this, and will be used in Meridian's modelling to explore out to 2060.

The resilience of Meridian's strategy and business model to climate scenarios

The Meridian Board and Management hold an annual strategy review that includes outside-in and forward-looking strategic planning, taking into consideration any changes to climate scenarios. Meridian's climate scenarios describe plausible and distinct futures with different assumptions of the potential climate-related impacts, as outlined earlier. The annual strategy review informs choices for Meridian's existing strategic initiatives and targets, and the adoption of any shifts from here. Core to the review is ensuring that the strategy is resilient to plausible futures, including different climate-related impacts.

Overall, Meridian is in a unique position to benefit from the transitional impacts of climate change – its strategy, business model and capability is anchored around a focus on climate action. The products and services Meridian offers can be enablers for businesses and individuals across Aotearoa to decarbonise, with potential for us to enable decarbonisation abroad through the hydrogen opportunity.

Meridian has implemented a number of changes to the organisation's structure over the last two years which have been driven by the need to support New Zealand's decarbonisation goals.

The physical impacts of climate change present notable opportunity as hydro-generation potential better aligns with the seasonal electricity demands unique to New Zealand. Meridian must ensure its assets, and those of its local and international partners, are resilient, particularly to acute weather events. Meridian has not yet identified a climate-related physical issue that materially affects its business model and strategy today, but Meridian notes that it will become increasingly affected by the physical impacts of climate change over the longer term.

Based on the assessment of climate-related actual and potential impacts at both the individual risk and opportunity level outlined further below, Meridian has assessed its business model and strategy to be resilient to the climate scenarios assessed. Mitigating actions at the individual risk/opportunity level are outlined in Tables 3–6.

The management actions Meridian is taking to maximise resilience of its strategy and business model to the climate-related risks and opportunities identified are also outlined.

Risk and opportunity summary

Meridian has categorised climate-related risks and opportunities as being driven by either:

- **physical impacts** arising from climate impacts such as floods and other climate system changes. Physical impacts can be acute (extreme weather event) or chronic (sea-level rise and other gradual changes); or
- **transition impacts** that arise as the economy and people transition to a lower-carbon future, such as changes to policy and customer demand that are primarily motivated by climate interests.

There are several climate-related risks and opportunities that in combination may make it easier or harder to support New Zealand's decarbonisation, or represent different types of challenges in how we adapt to the impacts of climate change.

Meridian's identified physical risks are dominated by impacts on water / hydroelectricity generation, asset damage from extreme weather events, and/or impacts on the goods and services procured through its global supply chain. Identified physical opportunities also exist for potential water seasonality changes and also electricity demand increases from its customers for applications such as irrigation or summer cooling.

Meridian's identified transition risks feature in the shorter term due to the combined effect of significant renewable energy generation build underway (bringing new capacity over time), alongside growing electricity demand, with a likely increasing carbon price impacting thermal generation in the New Zealand electricity system. The net effect expected is some impact on power system flexibility due to more scarce flexible energy products in the shorter term and until new builds and flexible demand products become available at increased scale. Transition opportunities are very significant for Meridian, driving growth and investment to support the electrification of transport and process heat at scale and catalysing the hydrogen opportunity.

A summary of our climate-related risks and opportunities, including assessment outcome, financial quantification where feasible, and management actions in place, is provided in Tables 3–6.

Refer to the Metrics and Targets section to identify which climate-related risks and opportunities Meridian's metrics and targets connect to.

Strategy continued

Meridian's planning horizons

Meridian's climate-related scenarios, risks and opportunities consider three time horizons: short term (up to 2030), medium term (2030 to 2050) and long term (2050 to 2100). Each climate-related risk and opportunity disclosed here is aligned with the time horizon that has the actual or potential greatest financial impact on Meridian.

Meridian's business planning and capital allocation timeframes are currently defined as: short 1–5 years; medium 5–10 years; and long term 10–30 years. Transitional climate impacts strongly influence short term business planning and capital allocation decisions (such as investment in a renewable energy generation pipeline). Meridian's climate-related scenarios inform physical climate risks and opportunities which increase in impact (and uncertainty) over longer time horizons. We use this information to inform business planning and capital allocation decisions today such as land purchases and design of new assets.

Climate-related impacts and influence on financial planning

Meridian undertakes financial planning annually, taking into consideration Meridian's five-yearly strategic targets, 10-year Wholesale Market Outlook (WMO) model and climate scenarios that extend to a 2100 time horizon. Major investment decisions have typically been made on a 30 year time horizon, but we are starting to consider this longer time frame.

Climate-related risks and opportunities are factored into financial planning and capital allocation by accounting for climate-related transitional impacts in Meridian's WMO and longer-term climate scenarios. For example, factoring in plausible demand increases over time for electricity driven by policy impacts and customer demand for transport electrification. These demand pathways then inform things like the scope of Meridian's renewable energy generation pipeline and its assumptions for the planned allocation of capital over time for future investments. Climate-related risks and opportunities are also factored into funding decisions on a project-by-project basis.

For example, as a part of embedding its evolved climate risk assessment methodology during FY23, Meridian started to consider potential impacts from combined climate hazards for site evaluations for Renewable Development pipeline projects under different climate scenarios.

Meridian also has an established Green Finance Framework[1] which is aligned with Market Standards: International Capital Markets Association Green Bond Principles (GBP), Climate Bonds Standard version 3.0 (CBS), and the Asia Pacific Loan Market Association Green Loan Principles (GLP). The Framework sets out the process, criteria and guidelines under which Meridian intends to issue and/or manage existing and future bonds and loans under the Programme which contribute towards achieving Meridian's sustainable objectives. The Framework enables Meridian to connect company strategy and vision to financing requirements and provide investors who want an investment that aligns with the Market Standards with a mechanism to make that investment.

Tekapo A, with snow-capped Southern Alps behind, at the start of the Waitaki Hydro Scheme.

1 www.meridianenergy.co.nz/about-us/investors/reports/green-finance

Strategy continued

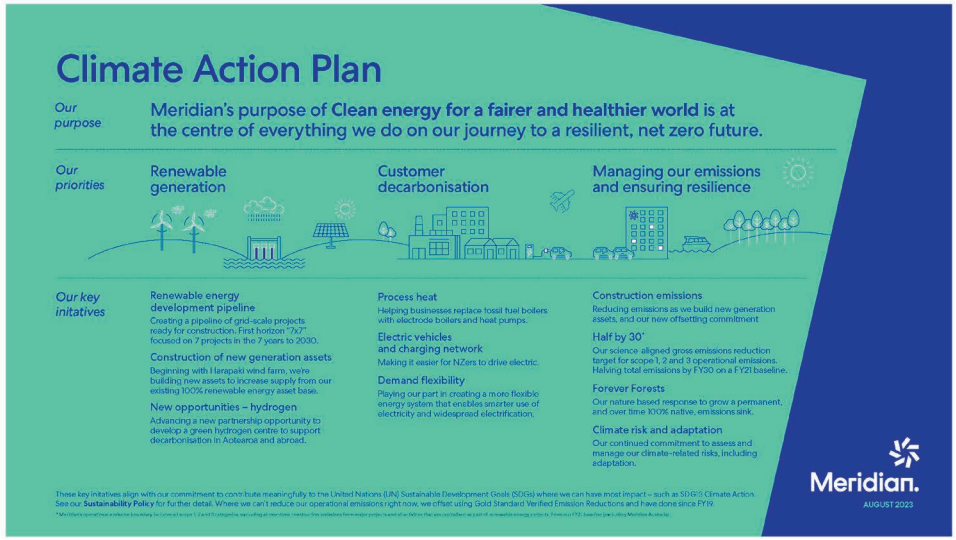
Transition and adaptation in Meridian's strategy

Meridian's contribution to the transition to a net-zero emissions future is outlined in its Climate Action Plan (CAP) which details three climate priorities, and the key initiatives underpinning each – summarised in Figure 5 opposite.

Key initiatives such as the construction of the Harapaki wind farm and process heat and transport electrification offers, are all opportunities that provide value for Meridian and support its customers and others to decarbonise. Meridian has developed a roadmap to halve our FY21 operational business emissions by FY30, and has completed a range of practical initiatives to reduce one-off construction emissions. More detail on progress against these key initiatives is provided in the Metrics and Targets section. Meridian's Safety and Sustainability Committee gets quarterly progress updates on the advancement of all of these initiatives and our financial plans capture the impacts of our committed and likely transition activities.

Meridian's approach to adaptation is to ensure that its assets and services remain resilient to the physical impacts of climate change. Meridian does this by assessing risks in its current operations and putting in place mitigations (refer to the 'More intense extreme rainfall events in hydro catchments' risk in Table 3, for example), and completing due diligence on business growth activities where relevant. Meridian's financial plans, and any project-specific requirements, allow for associated assessment and mitigation costs.

*Figure 5. Meridian **Climate Action Plan**.*



Strategy continued

Meridian's climate scenarios, methodology and assumptions

During FY23, Meridian developed three scenarios to help identify potential climate risks and opportunities and inform its strategic planning more broadly. Two of these built on Meridian's prior long-standing Evolution and Revolution models. The purpose of this scenario refresh is to incorporate broader considerations (such as additional international context), extend the time horizon to better consider Meridian's longer-life assets, and aid comparability of its in-house scenarios with recognised international and local scenarios.

Meridian recognises that many plausible futures exist with differences in global temperature pathways, and changes in climate motivated regulations, or changing consumer preferences. It is also plausible that climate action in New Zealand occurs at a different pace to that elsewhere in the world, potentially creating unique transition impacts for us.

Meridian's chosen three scenarios are not forecasts but aim to provide sufficiently distinct and plausible futures to help Meridian test the resilience of its business model and strategy, and identify and assess climate-related risks and opportunities. The scenarios were developed by Meridian with expert, independent peer review and advice from a climate scientist. Meridian's Executive team and Board, both reviewed and endorsed these scenarios.

Meridian began by identifying the list of transitional and physical variables captured in the context of its unique business – for example, changes in the frequency/intensity of storm events, precipitation, carbon pricing and policy intervention levels in New Zealand and abroad. Meridian also developed scoring criteria to benchmark international and local scenarios against. As a result of this review, Meridian concluded it could best access the necessary variables by sourcing data and information from a combination of: the Network for Greening the Financial System (NGFS), Intergovernmental Panel on Climate Change (IPCC) Shared Socioeconomic Pathways, New Zealand – Climate Change Commission (CCC) and New Zealand – National Institute of Water and Atmospheric research (NIWA) Representative Concentration Pathway scenarios. Meridian is able to complement this more widely accessible work with additional bespoke work it had already completed, to help understand possible hydro catchment specific impacts from climate change.

Of note, Meridian's prior Revolution and Evolution models extended to 2050 and were anchored on respective 1.5°C-2°C and 4°C pathways - they assumed the same level of temperature increase between now and 2050. This was due to similar physical impacts of climate change occurring over that time period (including the availability of water and wind energy) regardless of the temperature-increase scenario chosen from the Intergovernmental Panel on Climate Change, that is, the 1.5°C–4°C warmer worlds are not significantly different.

However, Meridian noted a 4°C warmer world in 2100 would present significant challenges, in terms of both its potential physical impacts on Meridian's dam structures and the uncertainty about how society would function in those circumstances and what an electricity business would look like as a result. Transition impact assumptions had been the primary drivers of distinction between these scenarios (models) in the past. Meridian has chosen to align its existing Revolution and Evolution scenarios with its new overarching scenarios that extend out to 2100, based on the transition impacts they represented up to the 2050 time horizon. This means that Meridian's Evolution scenario has served as an input to its Adaptive Evolution scenario below, which assumes a 2.6°C temperature rise outcome this century.

A summary is provided over the page.

West Wind Farm at dusk, Te Whanganui-a-tara Wellington

Strategy continued

Meridian's climate scenarios

Net Zero Revolution

The world reaches net-zero by 2050 but with higher costs due to divergent policies introduced across sectors and a quicker phase out of fossil fuels.

Globally, some countries achieve net-zero targets faster and easier than others, gross emissions are lower but remain a problem addressed by offsets, and nationally, some sectors face higher burdens to cut emissions than others, while other sectors are protected from policy pressures.

However, accelerated uptake of consumer electrification and industrial decarbonisation is rapid, broad, and well-supported. New investment in renewable energy generation is required with a phase-out of fossil fuels occurring rapidly.

Emissions are in line with a climate goal limiting global warming to 1.5°C by the end of the century, with low overshoots (<0.1°C) of 1.5°C in earlier years. This leads to high transition risks, but lower physical climate risks. Hydro inflows favourable in the medium term.

Key scenario assumptions include:

Global response

Policy ambition	Policy reaction	Technology change	CO_2 removal approaches	Regional policy variation
1.4°C (SSP/RCP2.6)	Immediate but divergent	Fast change	Low-medium use	Medium variation

NZ Response & Physical Risk

Risks to assets	Risks to generation	Ease of development	Government intervention	Market response
Small increase	Small increase	Easier	Medium	High demand; High competition

Data sources:
- Global – to 2050 – NGFS Divergent Net Zero
- Global – to 2100 – IPCC Shared Socioeconomic Pathway SSP1-2.6
- New Zealand – to 2050 – CCC Headwinds
- New Zealand – to 2100 – NIWA Representative Concentration Pathway RCP2.6
- Meridian Revolution model

Adaptive Evolution

A lack of international coordination of the climate response occurs and each region operates independently. Globally, existing climate policies are delayed or postponed and new climate policies are not introduced until 2030. The level of action differs across countries and regions based on currently implemented policies, leading to a "fossil-fueled recovery" out of the economic crises of the early 2020s as countries rely on coal, oil, and gas developments to underpin energy security and drive economic growth at the expense of climate goals.

In New Zealand, subsidies in place today are wound back, slowing the rate of electrification and decarbonisation. While these processes do still occur, financial and reputational incentives are lower.

Globally, annual emissions do not begin to decrease until after 2030. Stronger policies are then needed to limit warming but take time to be implemented. Emissions decline but lead nonetheless to 2.6°C of warming associated with moderate to severe physical risks. Hydro inflows favourable in the medium term are impacted by drought. Transition risks are relatively low.

Key scenario assumptions include:

Global response

Policy ambition	Policy reaction	Technology change	CO_2 removal approaches	Regional policy variation
2.5°C (SSP/RCP4.5)	NDCs	Slow change	Low-medium use	Medium variation

NZ Response & Physical Risk

Risks to assets	Risks to generation	Ease of development	Government intervention	Market response
Moderate increase	Moderate increase	Same	Low-medium	Medium demand; High competition

Data sources:
- Global – to 2050 – NGFS Nationally Determined Contributions (NDCs)
- Global – to 2100 – IPCC SSP2-4.5
- NZ – to 2050 – CCC Current Policies
- NZ – to 2100 – NIWA RCP4.5
- Meridian Evolution model

Hot House

Globally, only currently implemented policies are preserved, leading to high physical climate risks.

The economic costs of climate change impacts are strong, making finance for new investments more expensive, which in turn limits new renewable investment. Demand growth is muted but still occurs. The national and global economy is battered by increasing physical risks.

Emissions grow until 2080 leading to about 3°C of warming and severe physical risks. This includes irreversible changes like higher sea level rise. Significant drought impacts hydro generation.

Key scenario assumptions include:

Global response

Policy ambition	Policy reaction	Technology change	CO_2 removal approaches	Regional policy variation
3°C+ (SSP/RCP8.5)	No change	Slow change	Low use	Low variation

NZ Response & Physical Risk

Risks to assets	Risks to generation	Ease of development	Government intervention	Market response
Large increase	Large increase	Harder	Low	Low demand; High competition

Data sources:
- Global – to 2050 – NGFS Current Policies
- Global – to 2100 – IPCC SSP3-7.0
- NZ – to 2050 – CCC Current Policies
- NZ – to 2100 – NIWA RCP8.5*

* When available, NIWA RCP7.0 will be used – expected in 2024.

Strategy continued

Climate considerations in asset management

An overview of Meridian's assets and a summary of regional climate change impacts is provided in Figure 6. The ranges represent the variation across the three scenarios.

Meridian's hydroelectric generation assets have in place comprehensive dam safety assurance plans which include a Probable Maximum Flood (PMF) load case which sets the basis to ensure infrastructure is resilient to an inflow event up to this level. The PMF values are highly conservative and were last updated in 2016 for the Waitaki catchment and 2017 for the Waiau catchment – these are reviewed every 10 years. Meridian looks forward to advancing the committed Dam Safety Hydrology Group collaboration to have the Probable Maximum Precipitation (PMP) methodology updated to increase robustness in the context of climate change. PMP is a key input to PMF load case estimate to inform extreme flood hazards for Meridian reservoirs and dams. The resulting tool from this work will enable us to better assess future climate hazard projections considering a number of different climate scenarios.

Meridian's existing wind assets, and soon also grid scale solar and battery assets, have a typical design life of 30 years. Meridian also has assets on these sites with longer lifespans, such as sub stations. When making new investments in land/renewable generation infrastructure, Meridian has started to consider longer time horizons for these assets as a part of its updated risk assessment methodology (outlined in the Risk Management section). This includes consideration from factors such as sea level rise, land stability or more severe storm events. This process is helping us to understand the choices available to us to maximise resilience against potential future climate hazards.

Figure 6. Meridian generation assets and potential climate change impacts.

Climate impacts to existing assets, all scenarios with a long-term view to 2100.

Waikato

Storm events will become more likely, we can expect more hot days per year and 0–15% increase in average precipitation.

Hawke's Bay

Storm events will become more likely, we can expect more hot days per year.

Lower North Island

There may be a 0-15% increase in average precipitation and the risk of storm events will increase.

Waitaki catchment

We expect an increase in winter precipitation of 5–20% and a decrease in summer precipitation of 0–10%. There would be a greater risk of drought or prolonged dry periods as well as a risk of more frequent flood events.

Southland and Manapōuri catchment

There may be an increase in winter precipitation of 5–20% and decrease in summer precipitation of 0–10%. There would be a greater risk of drought or prolonged dry periods as well as a risk of more frequent flood events.

Impact to Meridian assets

Hydro

Periodic review of probable maximum inflows to Meridian catchments will inform its dam safety processes and procedures ensuring physical climate resilience of the assets.

Wind

A 30-year design life for equipment means more frequent upgrades to the latest technology. At these points Meridian tests continued viability of the site and ensures that the new equipment will be resilient to likely changes over their lifetime.

Strategy continued

Table 3. Physical risks.

Risk	Assessment summary	Current impacts (FY23)	Future impacts	Management actions
PR1 – More intense, extreme rainfall events in hydro catchments Risk of increased costs or reduced generation capacity from the current probable maximum flood (PMF) increasing, or damage to assets or dam failure if the current estimate of PMF is incorrect and exceeded.	New Zealand dam safety guidelines specify estimation of PMF using a conservative assessment of probable maximum precipitation (PMP) that Meridian plans for. Climate change means the estimates of PMP and PMF need to be kept up to date with the latest climate science. **Type:** Physical risk assets and to operations **Time horizon:** Medium term (2030–2050) **Risk Rating** • Hazard: Extreme rainfall (inflow event) • Exposure[1]: Low (% revenue) • Vulnerability[2]: Medium • Overall risk rating: Medium **Materiality:** Following commitment to Dam Safety Hydrology Group (DSHG) revision of PMP process, and establishing a process to incorporate climate change impacts, this risk is downgraded at an enterprise level and is no longer a key enterprise risk. Risk disclosed here to demonstrate the risk is being actively managed, and for comparability to prior year disclosures.	Meridian has had no events where inflow rainfall has exceeded the PMP for a catchment. To improve Meridian's confidence that the PMP is set accurately in the context of potential future climate impacts, Meridian is contributing to work by the DSHG. This work will provide a new tool to better update the PMP and PMF inflow estimates for Meridian's catchments, and will allow estimates of climate change impacts to be included in the estimates forecasts to set of PMP used levels. **Actual financial:** nil	Projected increases in intensity of extreme rainfall events may result in larger estimates of extreme inflow events to Meridian's reservoirs. As there is little margin in the available flood storage or spill capacity for Meridian's catchments, this would most easily be mitigated by reducing the maximum storage level in its main storage reservoir (Pukaki), and changes to the flood management operating rules. Or, in the longer term, by making physical modifications to the dam structures to increase flood storage capacity, and/or to increase spill outlet capacity. The first option would reduce the net water storage capacity of the Waitaki Scheme, reducing the amount of energy the system can produce annually. The second option would require investment of hundreds of millions and take many years to implement. Thus, if PMP updates indicate an increase in PMP and PMF this would most likely be managed through changes to the operating range in the main storage reservoir (Pukaki), and flood management operating rules. If managed as above, there is unlikely to be any change to the risk of actual damage to dam structures causing business interruption (restriction on generating) from passing extreme floods. Significant increases to PMP/PMF in a longer term horizon may require the business to consider structural changes to its dams and spill outlets to mitigate, but regular (10 yearly) review of PMP to consider climate change forecasts with a 20-30 year time horizon will allow this to be added to Asset Management and Business plans. **Potential financial:** $10-$15 NZ million per annum annualised over the medium term period. This represents exposure less than 1.5% of average forecast generation revenue.[3] **Quantification methodology:** Estimated potential financial impact is an annualised figure over a 20-year time horizon of estimated civil construction costs and negative revenue impacts. Damage to dam structures and the cost of business interruption from an extreme event of sufficient scale is not included in the quantification as it is not practical to assess the additional risk of damage to the dams and spillways from passing extreme spill events made larger by climate change.	Contribute to industry DSHG work to update PMP methodology and ensure it can incorporate projections of climate change impacts to ensure PMP can be assessed based on contemporary climate change projections. This will inform the ongoing 10-year reviews. Implement ongoing programme of 10 yearly PMP/PMF reviews, incorporating current projections of climate change impact. Last reviews: • 2016 for Waitaki Valley catchments • 2017 for Waiau catchments. Meridian's current Waitaki Valley flood rules are being updated to reflect the updated PMF estimate. Also, as part of Meridian's Resource Consent Renewal submission it is proposed that Flood Management is made a management process rather than specified as consent conditions. This will allow changes to PMP estimates and make any necessary changes to reservoir operations and flood rules simpler to implement. Insurance is in place for both physical damage and business interruption after 30 days, resulting from damage to generation assets.

1 Risk rating exposure refers to how much of the asset, business activity or other element is exposed to the hazard when it occurs.
2 Vulnerability assesses how much damage could happen to the elements exposed to the hazard – it considers sensitivity and adaptive capacity.
3 Forecast total generation revenue - annual average over 20-year outlook, as stated in FY23 valuation report.

Meridian Energy
Climate-related disclosure 2023 (continued)

Strategy continued

Table 3. Physical risks continued.

Risk	Assessment summary	Current impacts (FY23)	Future impacts	Management actions
PR2 – Increased hydro inflow volatility due to changing seasonal weather patterns (rain and drought) Risk to electricity generation and wholesale prices from unpredictable weather and greater likelihood of drought.	Whilst Meridian expects average annual and seasonal hydro inflow profiles to cause improved generation and demand alignment (see opportunity table 3), Meridian also expects increased volatility in the weather such as prolonged dry periods and larger inflow events when they occur. This will make it harder to manage lake levels to balance reducing the need to spill when it is wet, and retaining enough water to last a dry season. **Type:** Physical risk to operations **Time horizon:** Long (2050-2100) **Risk rating** · Hazard: Drought and rain · Exposure: Low (% revenue) · Vulnerability: High · Overall risk rating: High **Materiality:** This risk is not a key risk to Meridian in the short term, but does connect to existing Enterprise Risk Adverse hydrological conditions. The potential impacts of climate change will be managed for this long term risk via annual review, to ensure any additional mitigation actions needed in the short term are adopted, also informing the assessment of the existing Enterprise Risk.	Meridian is experiencing increased weather volatility. However, it is challenging to isolate the impact of climate change from other seasonal variation (e.g. El Niño, and La Niña) and so the short term impacts have not been calculated. Meridian has not incurred direct material costs or investments in FY23 as a result this risk, but investment in the construction of new renewable generation assets, over time, will result in an increased generation capacity and peak time flexibility. **Actual financial:** Not feasible to quantify as there are a considerable number of non-linear interactions in the current market between inflows and prices. It is also difficult to assess the current climatic influence on inflow volatility within the same year.	Meridian expects increasing weather volatility over time, the degree of which is dependent on the climate scenario. Our Hot House scenario presents the most weather volatility. It is becoming more difficult to accurately predict patterns therefore harder to determine the ideal lake level. If the level is too high, Meridian increases the risk of needing to spill, while if too much water is used during the wet season, Meridian risks not having enough to get through a prolonged dry season. Meridian is investing in increasing capacity and peak time flexibility to be able to better manage this. The potential financial impact to Meridian is on average neutral, with some notable range. The reputational and strategic risk is more significant as it could impact its ability to deliver Meridian's strategy of supporting New Zealand's decarbonisation. **Potential financial:** Not yet quantified due to significant uncertainty associated with the basis for any potential financial quantification. Meridian sees potential for both a negative, and positive financial impacts.	Management actions which contribute to mitigating this risk include: · Increasing generation capacity through new wind and solar · Grid level battery storage to help balance peak capacity · Virtual power plant which also helps peak capacity by allowing EV/battery users to sell back to the grid when demand is high · Negotiating flexibility into the contract with Tiwai Point aluminium smelter (NZAS) · Incorporating flexibility into future projects like Southern Green Hydrogen As noted in the Transition opportunities table, many of the above actions, are actually opportunities for Meridian, which also have the benefit of mitigating this risk.

Meridian Energy
Climate-related disclosure 2023 (continued)

Strategy continued

Table 3. Physical risks continued.

Risk	Assessment summary	Current impacts (FY23)	Future impacts	Management actions
PR3 – Damage to assets from extreme weather Risk to assets from extreme weather events (extreme rainfall impact on hydro operations treated separately).	Meridian's climate scenarios highlight the potential range of impacts across its asset base. Meridian expects climate change to bring more frequent and intense storms for example (refer Figure 6). There is a risk that one or a number of such events strikes one of Meridian's assets, potentially doing damage to some wind turbines, solar farms and batteries, including access infrastructure (e.g. slips prevent road access to site). Cyclone Gabrielle demonstrated that while Meridian's assets themselves might have adaptive capacity during extreme weather events, damage to the surrounding land and infrastructure can also significantly disrupt its operations. **Type:** Physical risk to operations **Time horizon:** Long (2050-2100) **Risk rating** · Hazard: Storms · Exposure: Extreme · Vulnerability: High · Overall: Medium **Materiality:** The risk of natural disaster is a key risk being actively monitored at Meridian Board level. Meridian notes impacts on a third party's infrastructure which it depends on/has less control over, could increase the overall risk rating.	During cyclone Gabrielle, Meridian's Harapaki wind farm site in Hawke's Bay suffered damage to access roads and associated infrastructure, and to a lesser extent, a number of erosion channels. Overall the project site held up reasonably well, in part due to the limestone road construction methodology. Impacts to Meridian included a minor project delay (one quarter) and remediation costs from damage. **Actual financial impact:** Damage $5-$10 NZ million – will largely be covered by contract works insurance. **Quantification methodology:** Actual costs incurred from site repair and recovery.	Extreme weather events will become more frequent over time. Meridian's hydro assets have comprehensive dam safety plans that apply very conservative thresholds, which mean short term risks are low (refer to risk 'extreme rainfall in hydro catchments'). Meridian's existing wind assets, and soon also grid scale solar and battery assets, have a typical design life of 30 years. Meridian also has assets on these sites with longer lifespans such as sub stations. NIWA is expected to deliver updated national climate projections for Aotearoa New Zealand in 2024. Meridian plans to use these outputs when available to assess the impact on all of its assets. **Potential financial impact:** not yet quantified – to be considered as a part of the asset climate impact assessment. Potential impacts will vary by asset type and location.	Meridian is awaiting the NIWA data update to reassess the likely impact on assets. Meridian continues to work with local government and the National Emergency Management Agency on hazard analysis and applying lessons learned. The risk of a natural disaster continues to be a material risk reviewed on a regular basis by the Executive and the Board. Mitigation includes insurance cover of $1.2bn for asset damage and business interruption. The climate related factor is small compared to the earthquake risk. The chance of a flood or storm event impacting all assets is low. When making new investments in land/renewable generation infrastructure, Meridian has started to consider longer time horizons for these assets as a part of its updated risk assessment methodology (outlined in the Risk Management section). This includes consideration of factors such as sea level rise, land stability or more severe storm events. This process helps Meridian to understand choices available to maximise resilience against potential future climate hazards.

Strategy continued

Table 3. Physical risks continued.

Risk	Assessment summary	Current impacts (FY23)	Future impacts	Management actions
PR4 – Physical supply chain risks – reliable access to global supply chain goods and services Risk to Meridian's supply chain due to global climate changes.	Climate change will impact the operations of Meridian's suppliers globally and potentially impact their ability to supply materials. Meridian needs a better understanding of where its suppliers source key materials to confidently know how exposed and vulnerable Meridian is to climate change in its supply chain. Meridian has completed an initial mapping exercise to identify where some of its critical components are sourced from, and has an understanding of alternative suppliers/source locations if needed. **Type:** Physical risks to supply chain **Time horizon:** Long (2050-2100) **Risk rating** • Hazard: Multiple potential climate hazards • Exposure: Extreme • Vulnerability: Medium • Overall: High **Materiality:** This climate-specific risk is not currently identified as a key risk to Meridian. This risk has been included to demonstrate to the audience of this disclosure that Meridian has information gaps relating to its supply chain vulnerability that Meridian wishes to address.	Meridian is not aware of any material supply chain challenges this FY related to its suppliers as a result of physical impacts from climate change. Meridian has a complex range of suppliers who in turn source key materials from across the globe. **Actual financial impact:** Nil material. *Note: Meridian has a separate Transition supply chain risk.*	Meridian expects its current and future suppliers to be exposed and vulnerable to physical impacts from climate change. As climate change becomes a greater focus for companies around the world, Meridian expects greater visibility of these risks and its suppliers are able to provide more transparency. **Potential financial impact:** Not yet quantified. Requires increased visibility of Meridian's global supply chain to form a stronger basis for reasonable quantification.	Meridian has started a project to implement new technology over the next 2-3 years that will allow more centralisation and improvement of data collection regarding its supply chain. Furthermore, Meridian will be implementing an enterprise Supplier Relationship management (SRM) framework which broadly sets in place the governance, roles, category management plans and connection to the contracted reporting and disclosures between the parties. This will drive the expectation that the 'owners' of the relationship are working to lift either one or both of supplier capability and disclosures of their supply chain to manage this risk. Investigation planned to secure long-term agreement with wind turbine supplier to further mitigate supply chain risks (including geopolitical, pandemic, climate-related).

Strategy continued

Table 4. Transition risks.

Risk	Assessment summary	Current impacts (FY23)	Potential future impacts	Management actions
TR1 – Power system flexibility There is a risk to earnings due to increasingly scarce flexible energy products, and increased volatility of wholesale electricity prices (from intermittent generation).	Thermal generation in New Zealand currently plays a significant role in responding to periods of reduced renewable supply, such as dry periods in the hydro catchments. It is likely that much (or all) of this thermal plant will be replaced by renewable energy options over time. In the short-to-medium term, whilst new renewable generation build is underway, and thermal energy is limited and with alternate flexible products at scale on the way, it is likely that this will lead to higher levels of electricity spot price volatility, and increasing demands on flexible elements within the existing power system, such as hydro. This risk has significantly influenced Meridian's strategy and decision making to ensure Meridian is contributing to a resilient, efficient and flexible energy supply for New Zealand. **Type:** Transition risk to earnings **Time Horizon:** Short term (now to 2030) **Risk rating** · Hazard: Other (multiple drivers) · Likelihood: Almost certain · Consequence: Large · Overall: Medium **Materiality:** This risk is not a key risk to Meridian, but is linked to the company risk – market supply. This risk has been included to demonstrate that the risk is being actively managed.	Improved 'outage' or scheduled works on the Ōhau hydro chain maintenance, minimises outage time. Introduction of flexible outages that will go ahead based on market situation (e.g. wind / NZ demand). Swaption portfolio change – new swaption arrangement provides greater flexibility and a stronger fit to Meridian's generation asset profile. Negotiated peak demand flexibility with the Tiwai Aluminium Smelter Demand flex contracts for large Retail customers. **Actual financial**: $20 NZ million **Quantification methodology:** approximate current annual spend for availability of flexibility products.	This risk will reduce over time. The short to medium term impacts relate to the advancement of identified management actions (right), and continued security of flexible options to manage supply. Ruakākā battery operational mid decade. **Potential financial:** $20–$80 NZ million annualised over the short term. Represents exposure of less than 7% of average forecast generation revenue.[1] **Quantification methodology:** High-level estimate of annual costs, and informed by the actual costs of current risk instruments and internal views on the magnitude of potential changes to electricity spot price volatility and investments that may be required to provide flexibility.	Mature commodity risk framework in place (Electricity Hedging Policy) that includes specific limits on allowable exposure to spot electricity price risk. Within that framework the cost of mitigation is traded off against the impacts of accepting the risk. Continue to invest in assets and strategies that increase flexibility including outage planning, battery and virtual power plan solutions. Asset management and outage planning to deconflict with any source constraints i.e., plan some outages whilst windy so wind generation provides outage generation cover. Actively investigating new options to provide flexibility in place of that provided by thermal, such as hydrogen and large-scale batteries. Virtual Power Plant (VPP) initiative will enable greater access to demand flexible products such as industrial heat processes, solar, batteries, hot water cylinders etc. See Metrics and targets section for performance against relevant actions above.

1 Forecast total generation revenue - annual average over 20-year outlook, as stated in FY23 valuation report.

Strategy continued

Table 4. Transition risks continued.

Risk	Assessment summary	Current impacts (FY23)	Potential future impacts	Management actions
TR2 – Carbon price uncertainty Risk to earnings due to higher wholesale market prices caused by carbon price rise during a period when Meridian is supply constrained (key drivers being dry winter period and where shorter term capacity constraints exist).	This risk is directly correlated to Power system flexibility due to carbon price benchmarking in some financial derivative product arrangements, associated with meeting our commodity risk framework requirements. This represents Meridian's most significant exposure to carbon price escalation. Meridian is also exposed through price offers of thermal generators particularly through winter. This year has seen peaky prices due to a combination of plenty of hydro capacity meaning thermal generators have been needed to cover peaks but setting prices high through peaks and low offpeak in order to be dispatched. **Type:** Transition risk to earnings **Time Horizon:** Short term (now to 2030) **Risk rating** · Hazard: Carbon pricing · Likelihood: Possible · Consequence: Large · Overall: Medium **Materiality:** This risk is not a key risk to Meridian, but is linked to Power system flexibility. This risk has been included to demonstrate this disclosure that carbon price risk is considered and managed.	Negligible impacts during FY23 with minimal calling on financial derivative products. More widely, the price for NZ ETS collapsed from late 2022 as the NZ Government did not adopt the Climate Change Commissions (CCC) recommendations. In late July 2023 following a legal challenge, the Government has changed approach and affirmed the CCC's recommendations. This has seen prices recover and set expectations for higher prices. Meridian recently submitted on discussion documents for a review of the NZ Emissions Trading Scheme (ETS), and a redesigned NZ ETS Permanent Forest Category. The potential for changing Government policy settings are likely to continue. The potential for changing Government policy settings are likely to continue to remain a risk for long-term pricing and investment.	This risk will reduce over time, consistent with the Power system flexibility risk. **Potential financial:** Meridian has not yet quantified the carbon price component of the risk through exposure in the security of financial derivative products, this is likely to be a small part of the Power System Flexibility potential financial impact, based on ensuring the availability of financial derivative products over the next 5-10 years.	Management actions outlined under Power system flexibility apply here, which ultimately reduce dependency on flexible products priced from a carbon price benchmark. See Metrics and targets section for performance against relevant actions above.
TR3 – Transition supply chain risks –affordable and timely access to global supply chain goods and services There is a risk of renewable energy asset development/maintenance costs increasing, and timely access to goods being impacted, due to increased global demand for associated goods and services because of international policy and market demand for low carbon products.	As the world is decarbonising there will be global competition for the same products and materials. Meridian is a small purchaser on a global scale so it has to be strategic in how it secures the goods and services required. Meridian has completed an initial mapping exercise to identify where some of its critical components are sourced from, and have an understanding of alternative suppliers / source locations if needed. At the same time, Meridian is committed to ethical sourcing and recognises that its suppliers having growing businesses in a range of countries with differing employment standards. There is opportunity to increase Meridian's visibility of its global supply chain, and increase its assessment quality for this risk. **Type:** Transition risk to supply chain **Horizon:** Short term (to 2030) **Risk rating** · Hazard: Supply chain · Likelihood: Almost certain · Consequence: Large · Overall: Medium **Materiality:** This climate-specific risk is not a key risk to Meridian, but it does have a related Enterprise risk Economic climate, driven by a range of factors such as COVID-19, the Russian-Ukraine conflict and growing global demand for renewables. This risk has been included to demonstrate that the risk is being actively managed.	Meridian has been experiencing increasing lead times and increasing prices, however, the impact of increased competition from climate-motivated demand is negligible compared to the impact of geo-political factors, inflation, and COVID-19 related supply chain disruptions. **Actual financial impact:** Nil material or specifically attributable to this risk (other factors dominated) *Note: Meridian has a separate Physical supply chain risk.*	Over time Meridian expects the installed capital cost of wind and solar generating technology to fall, however, in the short term, global demand may mean these savings are not realised. Furthermore, this demand surge introduces possible environmental and social standard risks requiring investments in supply-chain transparency, and possible cost premiums from sole sourcing where required to mitigate the risks. **Potential financial impact:** Not yet quantified due to significant uncertainty associated with the basis for any potential financial quantification. Supply chain impacts influenced by multiple factors beyond climate-specific.	Meridian ensures all development contracts are negotiated at the beginning of a project and are incorporated into the financial investment decision. Meridian is building supply chain capability including technology that allows more centralisation and functionality to support increased visibility of its supply chain. Today Meridian completes Modern Slavery due diligence across its high risk procurement categories, and targeted additional due diligence for major developments, to aid in its ethical sourcing commitment. This includes seeking visibility of mineral re-purposing, recycling and recovery initiatives. Investigation planned to secure long-term agreement with wind turbine supplier to further mitigate supply chain risks (including geopolitical, pandemic, climate-related).

Strategy continued

Table 5. Physical opportunities.

Opportunity	Assessment summary	Current impacts (FY23)	Potential future impacts	Management actions
PO1 – Annual and seasonal hydro inflow profiles improving generation and demand alignment	Projected changes to Meridian's inflow profiles in the Waiau and Waitaki catchment areas are likely to better match anticipated changes in New Zealand's electricity demand profile. **Time horizon:** Long term (2050-2100) **Alignment to TCFD:** Energy source, Resilience **Opportunity rating** · Exposure: Medium · Benefits: Large · Overall rating: Medium **Materiality:** This is not a key opportunity for Meridian but is a noteworthy benefit of potential interest to its stakeholders. This opportunity has been included for visibility that Meridian has identified and assessed the potential future impact.	Meridian is not yet seeing an increase it can attribute to climate change. El Niño and La Niña weather patterns tend to have a more immediate impact which may mask long term climate patterns. **Actual financial impact:** nil	Meridian expects to see margin uplift as a result of price-participation improvement. This would be a result of Meridian's electricity supply and demand better aligning during wholesale market trading – largely hydroelectricity assets would be expected to achieve higher returns as a result of the changes to the hydro inflow profile from climate change. **Potential financial impact:** $10–$60 NZ million annualised. Represents exposure of less than 5% of average forecast generation revenue.[1] **Quantification methodology:** Estimated potential financial impact is an annualised figure modelled over a 30-year time horizon. This is calculated using an assumed increase in price participation of 2%–10% by 2050 for Meridian generation assets and the relative margin uplift under Revolution and Evolution modelling demand outlooks (representative of Net Zero Revolution and Adaptative Evolution scenarios). There is significant uncertainty in this calculation.	Wholesale market team manages the changing inflow profile using a market optimisation approach informed by weekly inflow forecasts and analyses of short- to medium-term weather patterns.
PO2 – Increased electricity demand from agriculture irrigation and summer cooling load	Changing weather patterns mean Meridian's customer base may increase electricity consumption as a result of physical climate change impacts, mainly for agricultural irrigation or for summer cooling. **Time horizon:** Long (2050-2100) **Alignment to TCFD model:** Resilience, Markets **Opportunity rating** · Exposure: Low · Benefits: Large · Overall rating: Medium **Materiality:** This is not a key opportunity for Meridian but has been included for visibility that it has identified and assessed the potential future impact of electricity use changes customers may experience as a result of changing weather patterns due to global warming.	Meridian is not yet seeing a material increase in electricity demand it can directly attribute to the physical impacts of climate change (i.e., irrigation / summer cooling needs). **Actual financial impact:** nil	As the number and intensity of hot days and periods of drought increases, Meridian would expect demand from agriculture, residential and commercial cooling to increase. The scale of demand increase is highly dependent on our climate future. For example, between Meridian's Adaptive Evolution and Hot House scenarios, hot days per year could increase by 5–50 in some regions. Hydro assets could be used more to manage peaking capacity. Planned increase in solar generation capacity will align well with potential electricity demand increase from physical climate impacts. **Potential financial impact:** $5–$10 NZ million per annum. Represents exposure of less than 1% of average forecast generation revenue.[1] **Quantification methodology:** Annualised financial impact range over the long term based on potential electricity demand difference between an Adaptive Evolution and Hot house scenario future.	To respond to the potential requirement for new renewable generation Meridian maintains a pipeline of development options. See Metrics and targets section for performance against relevant actions above.

1 Forecast total generation revenue - annual average over 20-year outlook, as stated in FY23 valuation report.

Strategy continued

Table 6. Transition opportunities.

Opportunity	Assessment summary	Current impacts (FY23)	Potential future impacts	Management actions
TO1 – Electrification of transport and process heat, and virtual power plant	Increased electricity demand through transport and process heat electrification is an opportunity for business growth. These use case applications also create additional potential benefit through demand flexibility – offering a new market opportunity through a Virtual Power Plant (VPP). By working smartly with EV chargers, industrial heat processes, solar, batteries, hot water cylinders and Meridian customers, a VPP will make things simple for customers to maximise uptake. **Time horizon:** Medium (10-30 years) **Alignment to TCFD:** Resource efficiency, resilience, markets, products/services **Opportunity rating** · Likelihood: Possible · Benefit: Significant · Overall rating: High **Materiality:** This opportunity is a central part of Meridian's Retail Strategy with progress reporting and governance oversight at Board level. The opportunity is a feature in the shared Executive Scorecard.	During FY23 Meridian's efforts have focused on the continued roll out of its Zero charging network, additional commitments from customers secured for process heat electrification with demand response provisions included, and the piloting of a Virtual Power Plant. **Actual financial:** $1 NZ million **Quantification methodology:** Accounts for costs and revenue associated with Zero charging network roll out, process heat electrification work during FY23 and minor early VPP pilot costs.	Revenue upside most significant over the medium term. Potential effects of transport and process heat electrification, and VPP uptake based on Evolution and Revolution modelling (linked to Meridian's Net Zero Revolution and Adaptive Evolution scenarios). **Potential financial impact:** $10-$40 NZ million. Represents exposure of less than 3.5% of average forecast generation revenue.[1] **Quantification methodology:** Estimated potential financial impact is an annualised figure modelled over a 30-year time horizon. This is calculated using assumed new electricity demand profiles for these use cases under Evolution and Revolution models and applying a possible margin range. There is significant uncertainty to this calculation.	Meridian is pursuing alternative forms of electricity demand across workstreams focused on the electrification of industrial heat and transport, and the scaling of a Virtual Power Plant. Initiatives include: · Certified Renewable Energy (CRE) offer and decarbonisation fund · Process heat electrification offer · Zero EV charging network · EV pricing plan offer · Virtual power plant · Meridian's development pipeline to underpin generation capacity growth for multi-sector decarbonisation See Metrics and targets section for performance against relevant actions above.
TO2 – Sustainability leadership and ESG performance	Meridian has an established focus on sustainability and ESG performance. As this has become a key criteria for investors (among other stakeholders), Meridian could maintain an advantage over organisations not relatively as mature. **Time horizon:** Short term (now to 2030) **Alignment to TCFD:** Markets **Opportunity rating** · Likelihood: Possible · Benefit: Major · Overall rating: High **Materiality:** This opportunity is potentially material to Meridian with performance reporting and improvement plans having oversight up to Board level, via the Safety and Sustainability Committee, and measures in the shared Executive Scorecard.	**Potential financial:** major **Quantification methodology:** with significant uncertainty associated with any quantification method, Meridian has opted not to disclose a specific indicative figure.	Attractive investment proposition through sustainability leadership. **Potential financial:** Major. **Quantification methodology:** with significant uncertainty associated with any quantification method, Meridian has opted not to disclose a specific indicative figure.	Develop and deliver new climate-focused initiatives such as the renewable development pipeline and the new Harapaki wind farm currently under construction. Deliver and disclose progress against business emission reductions – Half by 30. Maintain wider ESG performance to retain inclusion in the S&P Asia Pacific Dow Jones Sustainability Index. See Metrics and targets section for performance against actions outlined above.

1 Forecast total generation revenue – annual average over 20-year outlook, as stated in FY23 valuation report.

Meridian Energy
Climate-related disclosure 2023 (continued)

Strategy continued

Table 6. Transition opportunities continued.

Opportunity	Assessment summary	Current impacts (FY23)	Potential future impacts	Management actions
TO3 – New markets – green hydrogen/ammonia (Southern Green Hydrogen)	Meridian is pursuing an opportunity to produce green hydrogen/ammonia at scale to meet growing international demand, and potential domestic use for hard to abate use cases. It is anticipated the green hydrogen/ammonia plant will be designed to ramp down to support the NZ electricity sector during years of low inflows or high demand. **Alignment to TCFD:** Markets, products/services, resilience. **Time horizon:** Medium term (2030-2050) **Opportunity rating** · Likelihood: Possible · Benefit: Major · Overall rating: High **Materiality:** This opportunity is potentially material to Meridian with performance reporting and improvement plans having oversight up to Board level.	Meridian completed an RFP during FY23 to confirm development partners Woodside and Mitsui & Co., Ltd., to advance the Southern Green Hydrogen opportunity. Murihiku Regeneration, representing Ngāi Tahu and local rūnanga of Murihiku, are working closely with the project team to ensure alignment with their local vision for the region. Work this year has continued with a focus on establishing a Joint Venture, and finalising the workstreams required, to advance toward a Final Investment Decision (FID) by 2026. **Actual financial:** $3 NZ million **Quantification methodology:** Meridian SGH project expenses for FY23	Meridian FTEs will continue to advance specific workstreams up to FID in 2026. Progress beyond this point would include construction efforts and transition to an operating facility and supply to ammonia market(s). **Potential financial:** Not quantified. **Quantification methodology:** At this stage of the Project there remains significant underlying uncertainties that mean the potential future financial impacts remain unquantifiable. The uncertainties include: tenure of existing large demand, MW size of SGH plant, ammonia offtake price and terms, capex for plant and underlying project opex. The pre-FID development period aims to confirm these underlying uncertainties in an effort to build a compelling business case.	Complete the establishment of a SGH Joint Venture and begin work on workstreams Meridian is responsible for, final investment Decision planned for 2026. See Metrics and targets section for performance against relevant actions above.

Metrics and Targets

Greenhouse gas emissions

- Meridian prepares an annual GHG Inventory, including scope 1, 2 and 3 emissions. Its FY23 GHG Inventory is available on the Meridian website, and a summary of these emissions are reproduced from its GHG Inventory in Table 7, of note:
- Emissions for the base year (FY21) were restated, as a result of a change in emission factor methodology impacting base year emissions, greater than our significance threshold of 5%. New spend-based emission factors were published in FY23, and have been applied.
- The largest absolute increase compared to FY22 for operational emissions was in upstream transportation and distribution (2,397 tCO2e) due to increase in scope 3 distribution emissions.
- One-time construction emissions have increased associated with the construction of a wind farm (see action taken to avoid)
- 100% of business emissions (including one-time construction) are now offset.

Meridian's GHG Inventory is stated in accordance with the requirements of International Standard ISO 14064-1:2018: Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals, the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) and the Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011).

Meridian applies the operational control and consolidation approach to its emissions and its GHG Inventory outlines how it has derived its facilities and operations within the boundary. This consolidation approach allows Meridian to focus on those emission sources over which it has control and for which it can therefore implement management actions, consistent with Meridian's corporate responsibility objectives. Facilities included in Meridian's GHG Inventory boundary include:

- **Meridian NZ:** comprised of legal entities: Meridian Energy Limited, Dam Safety Intelligence Limited
- **Flux NZ:** comprised of legal entities: Flux Federation Ltd, Flux UK Ltd

Emission factors used in the preparation of Meridian's GHG Inventory are outlined in section 11, page 22 of its GHG Inventory. In summary, emission factors used were sourced from Ministry for the Environment (MfE, New Zealand)[3] or Department for Business, Energy & Industrial Strategy (DBEIS, United Kingdom)[4].

Meridian's GHG Inventory is subject to independent reasonable assurance by Deloitte Ltd in accordance with International Standard on Assurance Engagements (New Zealand) 3410: Assurance Engagements on Greenhouse Gas Statements ('ISAE (NZ) 3410'), issued by the New Zealand Auditing and Assurance Standards Board.

Table 7. FY23 GHG emissions.

Business activity	Scope	FY23 Total Emissions tCO_2e	Offsets**	FY21 tCO_2e (base year)	FY22 tCO_2e	FY23 remaining tCO_2e
Operational	Scope 1	1,191	1,191	1,020	643	0
	Scope 2 (market based)	2	2	14	2	0
	Scope 3 operational	32,270	32,270	29,557	32,225	0
	Subtotal	33,463	33,463	30,591	32,870	0
Energy purchased and on-sold*	New Zealand electricity	0	0	0	0	0
One-time construction	Scope 3 one-time construction	14,295	14,295	284	8,242	0
		14,295	14,295	284	8,242	0
Total Group value chain emissions (S1, 2 & 3 (market based))* **		47,758	47,758	30,875	41,112	0

Additional indicators	FY21	FY22	FY23
Electricity generation (kWh) Meridian NZ	12,692	13,557	13,903
Emissions from fuel used to generate electricity (tCO2e)	0	0	0
Generation emissions intensity (tCO2e.GWh of generation)****	0	0	0

* Emissions of Meridian's retailed electricity using the market-based methodology. In New Zealand we use the annual netting off methodology.

** Offsets include credits cancelled by suppliers against their own emissions, and Gold Standard Voluntary Emission Reductions for the balance.

*** Total emissions are calculated using the market-based methodology for Scope 2 emissions. All emissions exclude historical Meridian Australia emissions (business sold end January 2022).

**** Meridian's generation emissions intensity is calculated using an industry accepted metric. The GHG emissions included are those from the fuel used in generation. As Meridian uses only renewable energy to generate electricity, this is 0%.

3. Ministry for the Environment. 2022. Measuring emissions: A guide for organisations: 2023 detailed guide. Wellington: Ministry for the Environment. environment.govt.nz/publications/measuring-emissions-a-guide-for-organisations-2023-detailed-guide/
4. UK Government GHG Conversion Factors for Company Reporting: 2023 full set v1.1 www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023

Metrics and Targets continued

Meridian has a GHG reduction target of halving FY21 operational emissions by FY30 – which includes a 50% scope 1 and 2 reduction, and a 50% scope 3 reduction (excluding all one-time construction emissions from major projects and all activities that are capitalised as part of renewable energy projects).

Meridian has had approval from the Science Based Targets initiative (SBTi) that its commitment to reduce absolute scope 1 and 2 GHG emissions by 50% by FY30 from a FY21 base year is in line with a 1.5°C trajectory, with its further commitment noted to also reduce absolute scope 3 GHG emissions by 50% within the same timeframe[5].

Meridian has also committed to set long-term emission-reduction targets with the SBTi in line with reaching net zero by 2050, and it's excited to be part of the Business Ambition for 1.5°C campaign. Meridian publicly discloses on its Half by 30 initiatives, and progress towards this commitment annually. Meridian's **Climate Action Plan**, which includes its Half by 30 roadmap (and interim targets to FY30), is publicly available on the Meridian website.

Meridian's Half by 30 target is also included in the summary Metrics and targets table below.

Meridian's **Climate Action Plan** also outlines one of its top priorities – renewable energy generation – which includes the construction of new assets to increase capacity in New Zealand. Meridian is pleased to have begun construction at two sites – Harapaki wind farm and Ruakākā Energy Park. How Meridian builds matters. Meridian can bring significant reductions to the emissions from its construction activities and it is important to Meridian to decouple the growth of its development pipeline with growth in associated emissions – both during construction and the operational life of its assets. Refer to Table 10 for detail on associated one-off construction project targets.

Key risks that may affect Meridian's ability to reduce business emissions include:

- decoupling business growth from emissions growth. As Meridian looks to invest in and build further renewable generation facilities, it must continue to proactively minimise one-off construction emissions and 'design out' future operational emissions. Meridian sets Sustainability Management Plans for all new renewable generation projects, with KPIs including emissions reporting and reduction requirements. Meridian will continue to report on the actions taken to minimise these emissions, and demonstrate its commitment to continuous improvement over time.
- addressing the large proportion of operational emissions (>95%) in its supply chain. Meridian is committed to addressing these emissions, and is approaching this in a targeted way where its efforts will create impacts that would not yet otherwise occur. There is an inherent risk in addressing supply-chain emissions based on the independent organisations in Meridian's supply chain, and the number and size of the organisations involved.
- some emission sources are in the 'hard to abate' sectors, such as those involving air travel and heavy vehicles and machinery. Meridian does not track a GHG emission-intensity metric. As a generator of 100% renewable energy, the fuel source for the electricity generated has no emissions. Therefore, GHG emission intensity is not the most relevant metric for Meridian to adopt to track emission reductions.

5. Excluding Meridian Australia FY21 emissions from the baseline after its sale in January 2022.

Ika Rere electric ferry, Days Bay, Te Whanganui-a-tara Wellington

Metrics and Targets continued

Remuneration

Meridian's annual report provides a detailed description of its approach to remuneration. Pay for Executives includes a 30% Short term incentive (STI) component and 50% for the Chief Executive. Up to 40% of the STI is based on performance against a Board-approved scorecard. Table 8 describes alignment to climate-related issues within each performance area.

Table 8: Executive Scorecard Summary FY23.

Performance Area	Description	Climate change alignment	Weighting
Decarbonisation Led Growth	Develop a high quality diverse suite of renewable energy options	Focus is on leveraging opportunities to support New Zealand and international decarbonisation efforts	20%
Customer	Customer satisfaction and growth	Includes adding power system flexibility which directly addresses one of the transition risks	20%
Optimise Business performance	Execute options and optimise portfolio needs while reducing risk	Includes operational changes that support NZ's move to 100% renewable energy	20%
NZ Aluminium Smelter (NZAS) Closure Mitigation	Find new sources of demand in the South Island to mitigate the impact of potential NZAS closure	N/a	20%
Sustainability	Grow a clear sustainability leadership position through purposeful action	Strong ESG performance including emissions reduction goals	10%
Investment Stability	Regulatory, legal and government relations accelerate and improve NZ's decarbonisation transition	Includes industry and other external influence to support NZ's decarbonisation	10%

The sum of the above may also be varied based on workplace safety culture, overall workplace engagement, and individual performance.

As described in the Governance section, when annually setting and assessing performance against the Executive Scorecard, the Board considers key initiatives that are designed to address material risks, opportunities and to execute Meridian's strategy.

Exposure to Risks and Opportunities

Physical Risks

100% of Meridian's generation assets are exposed to the physical risks of climate change to a degree – impacts vary by asset type, location, and time horizon (as summarised in the Strategy section). Meridian's hydro assets have lower relative vulnerability and any potential negative financial impact from extreme inflow events (physical risk) is mitigated by improving average annual alignment (physical opportunity) between New Zealand electricity demand and the outlook for wetter winters and drier summers. Meridian is implementing mechanisms to factor 30 year forecasts into hydro generation asset planning that will inform any investments required to further mitigate risks. For example, Meridian is working with Dam Safety Hydrology Group on revised precipitation forecasts to accommodate climate change more accurately.

The vulnerability of wind, solar, and battery is influenced by geographic location and potential impacts to land and surrounding infrastructure.

The lifecycles of the assets are 30 years, after which time Meridian typically plans for these to be replaced with new, more efficient, technology. Cyclone Gabrielle demonstrated that damage to roading and transmission outside of our control can slow projects, impact its ability to generate, and slow maintenance. The financial impacts for events such as this are largely mitigated by insurance.

Specific physical risks to our assets from exposure to potential climate-related impacts include those in the Strategy section: PR1, PR2 and PR3.

Transition Risks

As presented in the Strategy section, Meridian uses hedging to manage the power system flexibility risk that is created by a reduction in thermal generation. Meridian's investment of $20m equates to 2% of forecast generational revenue.[6] Supply chain impacts are difficult to estimate but the impact of delays to its renewable pipeline could be significant to the timeframe or revenue of a delayed project.

Climate-related opportunities

Meridian's strategy has been anchored on climate action and supporting New Zealand's decarbonisation. Meridian's current renewable generation capacity is 2.8GW and it has a pipeline to start projects that will increase by 786MW (or 30% of current capacity) by 2030 and a deep pipeline of 4.7GW (or 170% of current capacity) of advanced prospects that might start by 2050. This does not include grid scale battery projects which would provide 200MW.

6 Forecast total generation revenue – annual average over 20-year outlook, as stated in FY23 valuation report.

Meridian Energy
Climate-related disclosure 2023 (continued)

Metrics and Targets continued

Capital Deployment

Most asset maintenance that builds resilience to climate change will be drawn from operational budgets. Table 9 describes the capital expenditure and investment towards climate-related risks and opportunities.

Table 9. FY23 climate-related Capital deployment.

Item	FY23 Spend	Method/assumptions
New renewable development (supports climate-related risks and opportunities: PR2, TR1, TR2, PO2, TO1, TO2)	$259m	Includes costs relating to Harapaki project and Ruakākā battery. We have a further approx. $2.5–3.5bn estimated over 7 years to the end of FY30 which covers 7 projects.
Investment in energy solutions projects (supports climate-related risks and opportunities: PR2, TR1, TR2, TO1, TO2)	$4.8m of capital expense recognised on the balance sheet Approximately $2m of operating expenditure incurred	The amount reflects spend on various energy solution initiatives undertaken by the Retail business unit. These initiatives range from offering rooftop solar to both residential and commercial customers, building out EV charging network across New Zealand, supporting commercial customers transition to electric fleet and enabling industrial customers to convert from fossil fuel-based boilers to fully electric. The amount budgeted for FY24/FY25 initiatives is around $7m.
Certified Renewable Energy (supports climate-related opportunities: TO1, TO2)	$0.5m	Meridian markets Renewable Energy Certificates (RECs) that enable Customers to report their business' market-based scope 2 emissions, the ones linked to their electricity usage, as zero. These certificates enable customers to demonstrate their commitment to sustainability, applies market influence on generators to increase renewable generation and provides tangible evidence that they are supporting renewable energy generation. These are tradable securities and Meridian ring fences profits generated from the creation and issuance of these certificates for charitable purposes with KidsCan being the main recipient in FY23.
Southern Green Hydrogen (supports climate-related risks and opportunities: PR2, TR1, TR2, TO2, TO3)	Commercially sensitive	Work this year has focussed on identifying partners and establishing a joint venture and the workstreams required to advance towards an investment decision by 2026.

Selected metrics – with no targets

Meridian applies carbon-pricing assumptions in its climate-related models, which are informed by current New Zealand emissions unit (NZU) pricing and policy assumptions. In FY22, the carbon pricing assumptions applied ranged from $70/tonne CO2eq in the short term up to $250/tonne CO2eq in the longer term. Meridian committed to establishing in FY23 an internal emissions price focused on catalysing delivery against its Half by 30 target – its current approach uses NZ Emissions Trading Scheme (ETS) pricing as a proxy for specific projects, also factoring in avoided offsetting costs if material and relevant. Meridian is assessing the adoption of a higher internal carbon price, to drive decarbonisation pace and reflect the social cost of carbon – its **Climate Action Plan** will continue to be updated as Meridian advances this work.

Selected metrics – with targets

Meridian's priority metrics and targets to manage its climate-related risks and opportunities, and performance against them, are outlined in Table 10. As an overarching approach, Meridian adopts bespoke metrics and targets for material climate-related risks and opportunities, including enabling project-specific metrics and targets.

Meridian has implemented some structural changes to help better leverage climate-related opportunities. This included setting up a new team focussed on Energy Innovation in its Retail business unit. This has led to a change in focus and at the time of this disclosure, a long term approach to targets and metrics is still in development. Meridian looks forward to sharing targets and metrics in the 2024 disclosure that exhibits its progress in helping its customers lower their emissions, and how Meridian creates more flexibility in the New Zealand power system.

Metrics and Targets continued

Table 10. Climate-related metrics and targets summary.

	Target	Baseline and History	Performance	Method/assumptions
GHG gross operational emissions	Half by 30: 50% reduction in operational emissions by FY30, from an FY21 baseline. Comprised of SBTi verified targets: · reduce absolute scope 1 and 2 GHG emissions by 50% by FY30 from a FY21 base year, in line with a 1.5°C trajectory. · further commitment noted to also reduce absolute scope 3 GHG emissions by 50% within the same timeframe. Note more detailed targets for Meridian's Half by 30 goal are disclosed in its **Climate Action Plan**.	**FY21 (baseline):** 30,591 t CO2eq (scope 1 + 2 = 1,034 t CO2eq of total, scope 3 = 29,557 tCO2eq). **FY22:** 7.4% increase to 32,870 t CO2eq (scope 1 + 2 = 645 t CO2eq of total, scope 3 = 32,225 t CO2eq).	**FY23**: 33,463 t CO2eq (scope 1+2 = 1,193 t COeq of total, scope 3 = 32,270 tCO2eq), a 9% increase on FY21 baseline. Refer to Meridian's **Climate Action Plan** and GHG Inventory for full detail on underlying emissions sources and outcomes of planned emission reduction initiatives during FY23.	Meridian's **Climate Action Plan** details the assumptions in the plan to halve operational emissions. Method of calculation: Meridian's emissions are prepared using the operational consolidation approach and stated in accordance with the requirements of International Standard ISO 14064- 1:2018: Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals, the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) and the Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011). Target supports Strategy section climate related opportunity: TO2.
Reduction of emissions for one off renewable energy projects	**FY23 Harapaki project:** · emissions /100km travelled <25kg CO2/100km (excludes site plant and machinery). · >1 continuous improvement per quarter that leads to tangible sustainability benefits. **FY23 Ruakākā project:** · Emissions target for plant & machinery of 2l:m3 (2 litres of diesel per cubic metre of material moved), equates to 2l / 5.39kgCO2e/m3. · >5 continuous improvements per quarter that leads to tangible sustainability benefits. · 100% of monthly GHG data provided.	**FY22:** 8243 t CO2eq (Harapaki emissions). **FY21:** 285 t CO2eq (Harapaki emissions). Targets were established in FY23 (base year) following the establishment of processes to capture full emissions.	**FY23 Harapaki:** · 20kgCO2e CO2/100km (target achieved). · 1 per month (target achieved). **FY23 Ruakākā:** · Emissions plant and machinery target 1.8l / 5.39kgCO2e/m3. · Ruakākā project has been in the construction phase a minority of FY23, performance on other targets not yet available. Refer to Meridian's **Climate Action Plan** for full detail on its focus and impacts to reduce one-off construction emissions.	Sources of Uncertainty: Historical data (FY22 and earlier) excluded some emissions elements (for example construction of pond used for onsite water). Method of calculation: The Ruakākā project has only been operating since March 23 so there is no historical data to provide. Target supports Strategy section climate-related opportunity: TO2.
Forever Forests emission removals A permanent carbon sink – transitioning to 100% natives over time.	Create a supply of high quality emission removals equivalent to Meridian's expected residual operational emissions by FY30 (circa 15,000 tCO2eq), optimising other benefits also such as biodiversity and social outcomes. 700,000 trees in the ground by the end of FY24. We track metrics on land acquired, stems planted and NZUs received for this project to ensure we are on track. We have acquired 100% of the land needed. Disclosed here annual progress on stems planted and credits received. The target this programme is designed around is to secure at least a 15,000 t CO2eq annually supply of credits from FY30. The target was last base-lined to FY21, consistent with Meridian's Half by 30 base year target.	**FY21 (baseline):** no credits received, on track for FY30 credit target. **FY22:** no credits received, on track for FY30 credit target. In FY23 we secured 100% of the required land. We started receiving the first tranche of credits from 2020 plannings with further planting registered with the Ministry for Primary Industries (MPI).	**FY23:** 2364 credits received based on FY22, this equates to 2364 tCO2eq (on target). We have now secured 100% of the land required.	Sources of uncertainty include: · potential change in Government policy to exclude exotics from the permanent category of the ETS (relevant to Meridian's initial mixed model approach of exotics/ natives, transitioning to 100% natives over time). · survival rate of plants. · any significant delays in delivery of seedlings. Method of calculation: Based on credits in the current year for the previous year's position. Target supports Strategy section climate-related opportunity: TO2.

Metrics and Targets continued

Table 10. Climate-related metrics and targets summary continued.

	Target	Baseline and History	Performance	Method/assumptions
Renewable generation pipeline	7 projects underway by 2030. 3 buildable options by 2024.	**FY22 (baseline):** One confirmed financial investment decision. On track. In 2022 we had the Harapaki project underway, commitment to invest in a 100MW battery and 120MW solar farm, and plans to consent a 60MW wind farm (Mt Munro). The full pipeline represents 2.3GW, with 1.1GW secured and 1.2GW under advanced prospecting. Baseline capacity is 2.8GW.	**FY23:** Two confirmed financial decisions. On track to meet targets. **Underway:** Ruakākā grid scale battery project, and Harapaki wind farm. **Announced:** The solar farm (120MW) at the same site is on track for a financial decision in December 2023. Mt Munro (60MW) resource consent application was lodged in May 2023. We have a deep pipeline of 4.7GW (to 2050), with 1.5GW secured, and 3.2GW in advanced prospects.	Sources of uncertainty: · Cost and time to build (materials, shipping, civil works). · Regulatory changes (environmental consents and cost). · Ability to connect to transmission network in a timely manner. Method of calculation: Based on projects and progress on confirming projects in the Development pipeline. A project is confirmed following the Financial Investment Decision. Target supports Strategy section climate-related risks and opportunities: PR2, TR1, TR2, PO2, TO1, TO2.
New renewable generation and storage delivery	176MW capacity from end FY24.	**FY21 (baseline):** The Harapaki wind farm (176MW) was announced FY21 (February 21) and on site works were under way August 21.	Cyclone Gabrielle delayed the Harapaki project (176MW) by 1 quarter and it will start generating from October 2023. Progress this year has included: · 95% of cabling installed. · 95% of earthworks and roading complete. · Switchyard components installed. · Services building has been blessed and is certified for commercial use. Ruakākā battery project started March 23 and completion is expected Sept 24.	Sources of uncertainty: · Weather affecting remainder of civil works (site is at 730–1,100m elevation). · Increases in allowed inflation escalators within contracts. · Freight and materials – costs and lead times are very high. · The extent of any future COVID-19 or geo-political impacts. · Access to experienced staff. Method of calculation: Installed capacity quantified at asset commissioning. Target supports Strategy section climate-related risks and opportunities: PR2, TR1, TR2, PO2, TO1, TO2.
Southern Green Hydrogen	Take Southern Green Hydrogen to a positive Final Investment Decision by 2026.	In FY22 a feasibility study was completed and the selection of developers was under way. Target baseline FY23.	FY23: The project has managed to attract two very large and capable international partners.	Sources of uncertainty: · Offtake customer yet to be finalised and subject to further negotiation. · International subsidy regimes yet to be clarified. · Tenure of existing large demand in Southland will impact timelines. · Cost and time uncertainties (supply chain constraints, inflationary pressures). Target supports Strategy section climate-related risks and opportunities: PR2, TR1, TR2, TO3.

Metrics and Targets continued

Table 10. Climate-related metrics and targets summary continued.

	Target	Baseline and History	Performance	Method/assumptions
Transport electrification	250 AC EV chargers (500 charging points) implemented by FY23. This was set as an ambitious stretch target. Targets for this will be superseded by customer decarbonisation targets in the next disclosure.	**FY21 (baseline):** nil. **FY22:** 61 chargers (122 charging points) installed.	**FY23:** 237 charge points operational (202 AC, 25 DC) Over the course of this project Meridian's proposition evolved to place more focus across home, business and public charging, extended from AC only into DC charging as well. Meridian won EECA co-funding to deliver journey chargers in remote South Island locations including a battery backed charging solution using 2nd hand EV batteries. This project will help to complete the government's original target of a DC public charger every 75km on NZ's state highways. Meridian is also partnering with Wellington and Hutt City Councils to deliver close to 100 mainly DC destination charge points in the region.	Sources of uncertainty: • Connecting to electricity networks – complexity, cost and timing relating to EV charging electrical connection, especially for public charging is a challenge facing Charge Point Operators (CPOs). • Timely procurement of EV chargers. Method of calculation: count of installed chargers and charging points. Target supports Strategy section climate-related risks and opportunities: PR2, TR1, TR2, TO1, TO2.
Commercial-scale solar delivered	FY23 targets are commercially confidential, but include a kWp installation target for commercial-scale solar. Targets for this will be superseded by customer decarbonisation targets in the next disclosure.	**FY22 (baseline):** nil. In FY22 customer commitment was announced and others made but not yet announced with further build planning underway.	**FY23:** Targets met.	No significant sources of uncertainty to note. Target supports Strategy section climate-related opportunity: TO2.
Process heat electrification	600GWh agreed by FY23. This was set as an ambitious stretch target. Targets for this will be superseded by customer decarbonisation targets in the next disclosure.	**FY21 (baseline):** nil. **FY22:** 300GWh agreed.	**FY23:** 472GWh agreed This is a strong result against a target that was set as an ambitious stretch goal. Meridian also developed and contracted demand flexibility which makes these projects more effective and financially viable.	Government Investment in Decarbonising Industry Fund expanded to support further decarbonisation projects over the next four years. This commitment will enable Meridian and others to continue delivering industry emissions abatement. Connecting to electricity networks and unlocking government co-funding are challenges facing businesses electrifying process heat. These challenges are likely to impact on the speed of project delivered. Method of calculation: Sum of the GWh of agreed projects. Target supports Strategy section climate-related opportunities: TO1, TO2.

CLIMATE RELATED DISCLOSURE

SANFORD AND CLIMATE CHANGE

Climate change is shaping the world. It is influencing the oceans where the seafood we harvest grows, the markets we buy goods from and sell into, and the behaviours of our customers and consumers.

Over Sanford's 150+ year history, the business has adapted to the changing nature of our oceans and weather conditions. However, we now face a challenge of unpredictable and more wide-reaching accelerated change. We have a commercial need and a social obligation to respond to those changes.

New Zealand seafood products, and their low emissions footprint, are well placed to establish themselves as a climate-friendly source of nutrition for the global community. Realising that requires Sanford, as fishers, farmers, processors, and sellers of seafood to do its part in ensuring that we are contributing to a low carbon future as well as stable and resilient food production and economic systems.

This voluntary climate statement, covering FY23, has been prepared with guidance from the Aotearoa New Zealand Climate Standards (NZCS[1]). These standards are published by the External Reporting Board and are aligned with the TCFD framework. Using these standards provides a consistent framework upon which entities review and disclose climate relevant information relating to their business. In preparing this disclosure, further work and improvements for Sanford's processes, systems and disclosures have been identified in the section titled "Future Work". Sanford's first mandatory reporting period under the NZCS is our next financial year, FY24.

1. INTRODUCTION

Sanford fishers and marine farmers contend with weather and climate events on a daily basis. Many of our operations require 365 days per year care, attention and attendance to ensure we make the most out of the incumbent growing conditions and to maintain the assets that allow Sanford to safely and efficiently harvest and grow seafood for New Zealand and the world. In doing so, Sanford's teams must deal and cope with the changes in conditions that the weather and climate bring – Sanford's fishers and farmers have learnt over time to ensure that their primary operations are guided by nature, the natural environment and its changing conditions. Over recent times Sanford's teams have experienced the acceleration of the effects of climate change – more frequent and persistent surface water warming events that have led to algae blooms, more prevalent La Niña/El Niño events affecting growing conditions, more frequent rainfall-driven harvest closures for mussel farms, along with significant acute climatic events causing rainfall, flooding, and slips which close roads and key supply routes – as happened during 2022 in the Nelson-Tasman region, and in 2023 in the Coromandel and Eastern North Island. These events also washed forestry slash, debris and silt into the marine environment in the East Cape region which then settled to the seafloor, significantly disrupting and affecting local fishers' harvesting activities.

Whereas Sanford's teams experience, observe and adapt to weather and marine conditions and their changes on a daily basis, forecasting the longer term climatic induced potential changes quickly becomes increasingly complex within the bio-physical marine domain. Forecasting biological responses to physical forcings is challenged by the complexity of linked and nested systems; from climatic forces acting upon physical oceanic processes such as waves, surface water temperatures, coastal and ocean currents, and the upwelling of new nutrients to the nested chemical and biological systems that operate within that domain, such as the reproduction and growth processes for key fishery species or their food sources. The base scientific understanding of climatic related impacts across those nested systems is not equal. Looking into the future across those systems tests and challenges existing assumptions, knowledge, and expertise. Existing scientific knowledge does not provide all the certainty desired for across and between those nested bio-physical systems that contribute toward the seafood system.

The outcome means that when Sanford looks into future scenarios, as required under the climate related disclosure regime, we must do so accepting a level of uncertainty – a level which might be greater than that for many businesses in other sectors. Sanford finds value in undertaking climate scenario analysis and building the same into our business strategy. Sanford sees this as a vital and necessary step in ensuring that we are able to continue our 150+ year heritage of providing beautiful seafood to New Zealand and the world into the future.

1. www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/.

Sanford
Annual report 2023

DISCLAIMER

Sanford has utilised its best efforts in preparing this climate statement with information effective to 30 September 2023 (FY23). We urge readers to consider the nature of changing environmental conditions and the scale and nature of uncertainties in the science of understanding changes to the climate and its consequential changes to marine environments, along with further consequential changes to biological and ecological processes occurring within that environment. Scales of uncertainty in scientific understanding typically increase with each of those steps and additional complexities introduced, accordingly we encourage a level of caution to be used when evaluating representations.

This report contains forward-looking statements including metrics, targets and risk realisation potentials. Those statements necessarily involve assumptions, forecasts and projections around the environment in which Sanford will operate in the future, each of which is subject to their own levels of uncertainty. While our team have used their expertise, industry knowledge and collective experience to arrive at the conclusions and disclosures within this climate statement, it must be recognised by the reader that those statements are influenced by the uncertainty of the underlying assumptions, science and the science communities understanding of consequential and cumulative climate factors influencing marine environments and marine biological process. The forward-looking climate related statements within this disclosure may therefore be less reliable than other statements within Sanford's other reporting. Nothing in this report should be inferred to be capital growth, earnings, or any form of financial or legal guidance or advice.

2. GOVERNANCE

Board

Sanford's Board of Directors is responsible for the oversight of risks and opportunities for Sanford, including those related to climate change. Responsibilities are set out in the Board Charter. The Board itself maintains responsibility for overseeing climate change progress, and is provided with information on important climate related matters at most meetings via management reports. During FY23, the following in-depth climate related discussions were held with the Board.

- June 2023: Overview of climate science and potential effects on our marine environment; review of Sanford's emissions footprint and reduction target; distribution of Institute of Directors Climate Governance survey.
- July 2023: Climate Related Disclosure (CRD) overview and requirements, outcomes of management climate risk and opportunity prioritisation workshop, outcomes of management's future climate scenario analysis workshop, review of climate risk prioritisation processes and outcomes; decision that Sanford's governance forum for climate related topics is to be the Board.

Skills and competencies of the governance group in relation to climate change

Sanford's Board skills matrix includes climate change within the 'sustainability' skills category. The latest Board skills matrix can be found within Sanford's Corporate Governance Statement. The Board itself reviews its performance, composition and structure on an annual basis and, with the support of the Nominations Committee, plans for changes in Board composition to ensure skills and experience suitability to achieve the Board's strategic and functional purpose.

Integration of climate related risks and opportunities into strategy

Climate events have consistently been the number one priority risk for Sanford since 2016 when we first disclosed publicly our top 10 enterprise level business risks. That consistency and visibility resulting from its prominence in the risk register, coupled with regular updates to the Board via management reports, and from divisional leads to the executives in relation to operational impacts, provides the opportunity for climate related issues to become embedded into strategy during periodic strategic reviews.

During FY23, the Board was presented with Sanford's long term emissions reduction target along with the accompanying energy transition pathway, cost estimates and assumptions, which had earlier been reviewed and recommended for adoption by the executive leadership team (ELT). On an annual basis, the Board reviews business targets and ambition for the forthcoming year along with progress against the target for the year prior, including for those targets relating to each of climate mitigation and climate adaptation. During FY23, executive management and the Board had visibility of a balanced scorecard for the business, updated monthly, which includes as a Key Performance Indicator, the Scope 1 and 2 carbon emissions intensity.

Management's role in assessing and managing climate related risks and opportunities

The Board delegates to the CEO responsibility to manage the business to deliver on strategy. The CEO (along with the executive management) thereby hold accountability for the inclusion and delivery of actions relating to climate change into risk management, business planning, business processes and capital allocation within the overall budgets and financial delegations set by the Board. The management team are responsible for preparing reporting and disclosure of climate related risks and opportunities, along with the identification of associated metrics and targets. During December 2022, management co-ordinated in-depth climate risk workshops with a wide cross-functional team from within Sanford, along with future climate scenario analysis to highlight and review risks, opportunities and to stress test our business model against those future climate potentials. Management have discretion, within the limits of approved budgets and delegated financial authority, to utilise external expertise to support those processes.

As part of ongoing operations, management track and monitor proxies for climate impact such as water temperatures and dissolved oxygen concentrations in Big Glory Bay, Greenshell™ mussel conditions and water quality parameters, rainfall runoff generated harvest closures for marine farms, and catch rates for wild harvest species. This monitoring occurs monthly or more frequently. Whereas monitoring and measurement of these parameters is currently performed as part of normal operations, they are yet to be collated into specific "climate impact" reporting metric(s). This is a programme of work we intend to complete in coming years.

OVERVIEW AND RELATIONSHIPS IN RELATION TO CLIMATE RELATED RISKS, OPPORTUNITIES AND DISCLOSURE

BOARD

SANFORD BOARD

Sets strategic direction, reviews and approves strategic goals, operational plans and budgets to achieve those. Reviews risk assessment policies and controls and establishes the appropriate levels of risk appetite, inclusive of those related to climate change. Reviews, endorses and monitors progress against climate related risks, metrics, targets and disclosure. In addition to reporting from the AFRC, the Board receives updates at each meeting (~ 8 per year) on key sustainability issues and trends via management reports. Reviews remuneration policies and incentive schemes.

AUDIT, FINANCE AND RISK COMMITTEE (AFRC)

A committee of the Board established to assist the Board in fulfilling oversight responsibilities in relation to financial management and related reporting, including the review of overall systems for risk management across Sanford.

NOMINATIONS COMMITTEE

A committee of the Board established to assist the Board in fulfilling oversight responsibilities in relation to Board composition and structure, including in relation to sustainability and climate related expertise.

EXECUTIVE

CHIEF EXECUTIVE AND EXECUTIVE MANAGEMENT TEAM

Manages the business to deliver on strategy. Sets the risk management framework. Accountability for including actions and commitments relating to climate change into risk management, business planning, budgeting and business processes. Includes identifying and monitoring climate related risks and opportunities and reporting those to the AFRC and Board. Allocates capital toward climate related mitigation and responses within the overall budget set by the Board.

Promotes a positive risk awareness culture within the business. Monitors processes for risk reviews, and reports the same to the AFRC and Board as relevant.	Reviews monthly sustainability updates which include sections on climate change policy, regulation, trends, and operational impacts.	Organises, facilitates and leads climate scenario evaluation and climate related risk and opportunity workshops. Engages third-party experts to assist when appropriate such as audits, climate research and disclosure support.

EXECUTIVE AND GENERAL MANAGERS

Responsible for ensuring climate related impacts and risks within each business area are managed, monitored and escalated appropriately.

Implements and acts upon risk mitigation strategies approved by the Board, CEO and executive management team.	Monitors emerging and developing risks, including those relating to climate. Manages risk reporting and monitoring of residual risk levels. Climate related risks primarily overseen by the GM Sustainability with oversight risks reported and monitored by the Group Risk Manager.	Manages the collection of data to support tracking of metrics internally or with external assistance. Tracks climate relevant research, trends and regulation.

OPERATIONS

OPERATIONS

All Sanford employees are empowered to be responsible for risk management. The Sanford Enterprise Risk Assessment Guide provides the structural guidance at the operational level around risk tolerance and notification levels using a scaled basis (very low or low rated events notified to supervisor/manager, medium rated to GMs and managers, high rated to executives and GMs, and extreme level events to CEO, executive and Board).

3. STRATEGY

Our Business Strategy

Sanford's strategic goals and focus was subjected to a review and refresh process during 2022. Our values remain at the heart of what we do: Care, Passion and Integrity, all whilst Achieving Together. Our vision is to be New Zealand's seafood leader for quality, value and reputation. To deliver on our mission 'To sustainably grow shareholder value', the strategic priorities set during 2022 were: to grow Salmon, grow Mussels, sustain Deepwater, and turnaround Inshore. Sanford performs materiality assessments to identify and prioritise the most important topics resulting from our business activities with consideration of the viewpoints of our stakeholders[2]. Those topics inform our strategy and form the basis for our integrated reporting. Climate considerations feature prominently within those topics, with our emissions footprint being a key topic within the healthy oceans and ecosystems outcome; our risk management processes and climate adaptation approach are material topics within the operational excellence outcome pillar. Our workplan and disclosures for each material topic can be found within this Annual Report (pages 40 to 41 and Appendix F).

Current climate impacts

Our activities are already experiencing the impacts from climate change in the following ways:

Current physical impacts

- Acute and extreme weather events impact our operations. Extreme events such as the flooding and rainfall events in the Nelson-Marlborough region during August 2022 led to temporary run-off water quality related harvest closures for some marine farming areas, damage to our marine farm infrastructure, along with the temporary closure of key road networks used to transport goods, materials, and staff to and from some of our sites in the area. Climate change driven events are also affecting wildcatch harvesting operations though more extreme weather events in the Southern Ocean resulting in fewer available fishing days for, in particular, our scampi fishing vessels in areas surrounding the Auckland Islands, whilst changes in the Antarctic ice shelf are increasing hazards as well as changing seasonality for our toothfish operations.
- Climatic driven changes in water temperature, chemistry and quality. A recent 'triple-dip' La Niña climatic pattern which persisted through 2020, 2021 and 2022 contributed toward marine physical process changes that act to reduce phytoplankton production and/or accelerate algae blooms in key aquaculture farming areas, thereby affecting mussel growth rates. Those same La Niña related marine physical processes contributed to significant marine heatwave conditions being present in many coastal water bodies around New Zealand over the same 2020-2022 time period, with corresponding effects upon phytoplankton density and population structure along with dissolved oxygen levels in upper surface water layers, which contributed to a slight increase in salmon mortalities being experienced during FY22 at our Big Glory Bay salmon farm. These events, along with climate related risk assessments, prompted further deployment of mitigation approaches during FY22 and FY23 at our Big Glory Bay salmon farm, such as deploying additional pens to reduce stocking densities, more intensive harmful algal monitoring, and greater deployment of aeration and oxygenation equipment to improve fish health, welfare and resilience to stress factors made worse through climate change.

Current transition impacts

- Stakeholder desire for, and increasing regulation in support of, greater clarity and understanding of climatic related impacts upon our operation has resulted in our teams spending more time reviewing, investigating and improving our adaptation tools in relation to managing through the impacts from climate change.
- Sanford is an indirect participant within the New Zealand Emissions Trading Scheme (ETS). Our fuel suppliers surrender NZ ETS units on our behalf for our fuel purchasing, directly impacting our cost base.
- Cost structures for some key inputs for our business units, in particular the cost of feed ingredients required for our farmed salmon, are susceptible to variability as a consequential result of climatic impacts – even if our specific core ingredient sources are not directly affected. For example, global fish meal pricing is influenced by the availability of anchovy from a key fishery in Peru, which in 2023 experienced a closure affecting global fish meal prices, a key ingredient for many feed formulations.

2. See Material topics and responses, Appendix D of Sanford Annual Report 2023.

Looking forward – scenario analysis

To assist our forecasting of climate related risks and opportunities over the short, medium and long-terms, as well as to test our business strategy and model, we undertook a climate scenario analysis exercise. This process involved a wide cross-functional group of senior leaders within Sanford and consisted of two workshops facilitated by external specialists. Being our first scenario analysis exercise it was treated as a stand-alone process. The workshops held comprised:

- Risk Prioritisation Workshop – 28 November 2022. To identify the highest ranked priority risks and opportunities.
- Climate Scenario Analysis Workshop – 12 December 2022. To take the six highest ranked priority risks and opportunities and test them under three future climate scenarios.

In accordance with the requirements of NZ CS1, three future climate scenarios were analysed, each of which represent an alternative potential future (limited warming within +2°C, warming > 4°C, and a divergent net-zero scenario where warming is limited to 1.5°C through the deployment of strict and disordered policy approaches). We made use of two scenario definitions created for the New Zealand seafood sector by the Aotearoa Circle along with an additional scenario sourced from the Network for Greening the Financial System. Selection of those scenarios was made in order to (a) ensure consistency of scenario approach across the New Zealand seafood sector, and (b) with the addition of the divergent net zero scenario as it represents quite a different potential future not captured within the Aotearoa Circle scenarios, one in which a strong and divergent policy approach is used to successfully deliver emissions reductions. Sanford was one of the partner organisations who contributed to the development of those scenarios by the Aotearoa Circle, both technically and financially. Sanford did not undertake its own specific modelling in the development of those scenarios.

The boundary for the scenario analysis was at the Sanford Group level, including all entities and subsidiaries. The assessment accounted for both direct operations along with those within our value chain, upstream and downstream such as suppliers, partners and customers. Time horizons relevant for the analysis were discussed by participants during the initial workshop in light of our business processes and strategy setting practices.

Time horizons utilised for the scenario analysis and associated climate risk and opportunity materiality were:

	TIME INTERVAL	YEARS	RELEVANT BUSINESS PROCESS
Short-term	1-5 years	2022-2027	Operational planning timeframes relevant for biological cycles such as seed to harvest planning (mussels, salmon).
Medium-term	6-10 years	2028-2032	Sanford strategic goals and targets typically set over these time frames, i.e. out to 2030. More certainty of climatic impact and policy settings over these time frames.
Long-term	10+ years	2032+	Longer term strategy planning. Lifespan relevant timeframe for significant assets such as property and vessels.

Climate Scenarios

CLIMATE SCENARIOS	KAHAWAI 2050 "ORDERLY TRANSITION"	DIVERGENT NETZERO "DISORDERLY TRANSITION"	MAKO 2050 "INTENSE AND SEVERE OUTCOMES"
Scenario definition source	Aotearoa Circle (seafood sector specific)	Network for Greening the Financial System	Aotearoa Circle (seafood sector specific)
	Kahawhai, a relatively abundant coastal finfish which transition through several stages of life development, collaborating to avoid danger, and well known to fight hard when caught. This scenario describes a 2050 world that has succeeded in implementing the Paris Agreement (net zero by 2050)	Divergent NetZero scenario reaches net zero emissions around 2050 but with higher transition costs due to divergent policies being introduced across sectors leading to rapid phase out of oil use	Mako are a fast, aggressive, and unpredictable shortfin shark species. This scenario describes a 2050 world where change moves rapidly through the marine domain, a failure to curb emissions means that humanity and nature are facing the consequences of significant climate disruption
Scenario analysis end point	2050, NetZero	2050, NetZero	2050
Climate policy	Immediate, smooth, predictable	Immediate but divergent across sectors	Lagging, absent, and/or ineffective
2050 carbon price est. (USD2010/tCO$_2$)	USD180	USD700	USD55
Transition risk severity – (technology and policy)	Moderate	High	Low
Physical risk severity	Low-medium	Medium-high	Extreme
Global warming	<2°C	1.5°C	>=4°C
Climate impacts (to 2050)	+0.7°C air temp	+0.7°C air temp	+1.0°C air temp

CLIMATE SCENARIOS	KAHAWAI 2050 "ORDERLY TRANSITION"	DIVERGENT NETZERO "DISORDERLY TRANSITION"	MAKO 2050 "INTENSE AND SEVERE OUTCOMES"
Global population (2050)	~8.5b		~11b
Marine bio-physical impacts (to 2050)	+0.8°C coastal sea surface temperature	+0.8°C coastal sea surface temperature	+1.5°C coastal sea surface temperature
	+0.23 m sea level rise	+0.20 m sea level rise	+0.28 m sea level rise
	8.0 pH Ocean acidification	8.0 pH Ocean acidification	7.94 pH Ocean acidification
	1% decline in dissolved oxygen	Not specified in scenario definition	2% decline in dissolved oxygen
Fishery production	Net global reduction in primary production (-2%). Some fluctuation in species distributions which some impact on fisheries management		Net global reduction in marine primary production (-5%). Greater uncertainty in fishery stock location, migration, and biological responses
NZ resource and fishery management	Regulation becomes more flexible or makes use of existing settings to allow for flexibility (variation in catch, addition of new species). Decisions with high near-term costs are taken to improve long-term sustainability and resilience		Reactive responses by fishery managers to changing circumstances. Initial public distrust and reduced reputation gives way to support for primary sectors and their role in national food security and self-sufficiency
Global production in seafood sector	124 MT Aquaculture 71 MT Fisheries		160 MT Aquaculture 80 MT Fisheries

Climate related risks and opportunities

During scenario analysis workshops, participants prioritised climate related risks and opportunities from an initial long list developed during the earlier workshop. To assess materiality of these risks and opportunities, the workshop utilised Sanford's Risk Assessment Guide (SRAG) to define those into High, Moderate, or Low materiality ratings across each time horizon and scenario. The results of this activity are shown in the table below.

KEY:

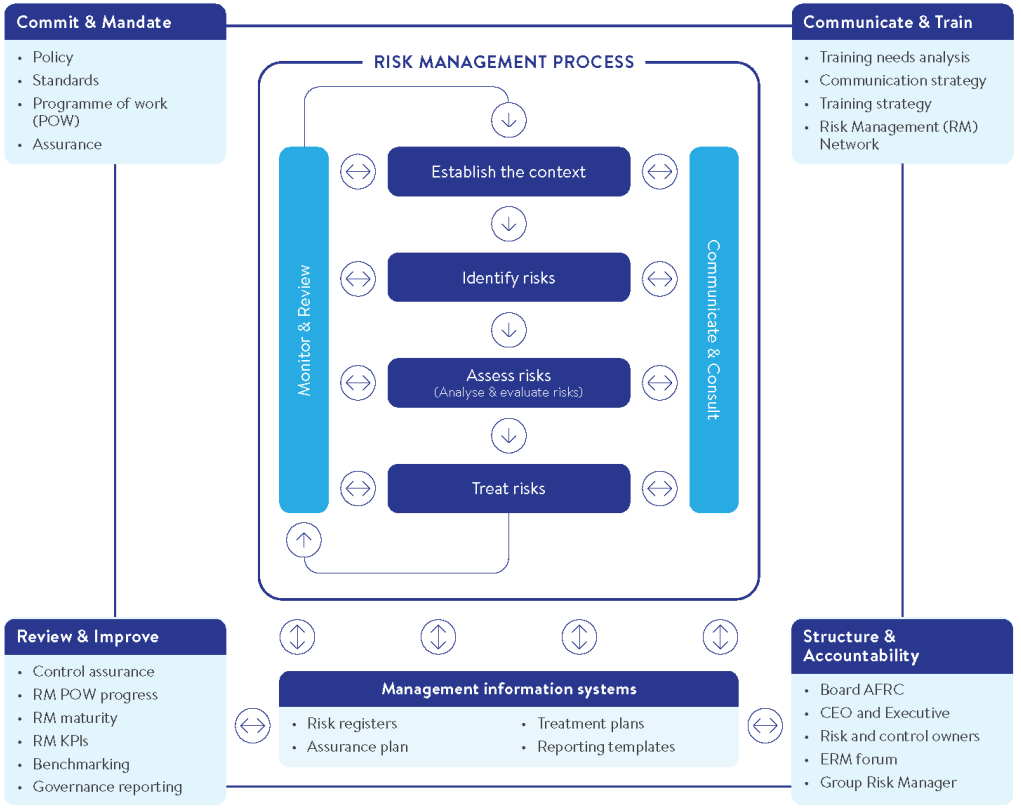
Rating	Action	Sanford Risk Assessment Guide Equivalence (2022)
HIGH	Highest priority for management efforts	Extreme
MODERATE	Should be closely monitored	High
LOW	Requires a level of monitoring	Low

PRIORITY RISK AND OPPORTUNITY		SCENARIO DESCRIPTION	KAHAWAI 2050			DIVERGENT			MAKO 2050			MANAGEMENT RESPONSE
		TIME HORIZON	SHORT	MED.	LONG	SHORT	MED.	LONG	SHORT	MED.	LONG	
Physical	Risk	More frequent and severe extreme weather events impacting Sanford's ability to conduct operations										• Strategic allocation of geographically diverse farm locations and quota holdings. • Strategic investment in R&D, and facilities for climate resilient seed stock for farms (e.g. SPAT$_{NZ}$). • Direct monitoring of climate relevant water variables in key growing locations. • Allocation of capital toward climate mitigation initiatives such as aeration plant at Big Glory Bay. • Participation in sector wide adaptation pathway planning initiatives. • Planned (FY24-25) review of business processes for capital expenditure to provide structural response to reduce climate risks and impact.
	Risk and/or opportunity	Shift in the distribution or production capacity of wild fisheries due to chronic climate driven forces										
	Risk	Changes in water temperature, chemistry and quality impacting the welfare and/or productivity of farmed species	salmon mussels			salmon mussels			salmon mussels			
Transitional	Risk	Current and emerging climate-related regulation of the seafood sector										
	Risk	Increased operational costs due to decreased fuel availabilities and more expensive energy and aquaculture inputs										
	Risk and/or opportunity	Changing consumer preferences around seafood and subsequent impacts on the market										

4. RISK MANAGEMENT PROCESSES

Sanford's climate risk prioritisation and scenario analysis process was performed as a standalone exercise during late calendar year 2022. Risks were assessed and prioritised against the Sanford Risk Assessment Guide (SRAG) consequence and likelihoods.

Sanford's Enterprise Risk Management Policy and processes are reviewed over a 2 yearly frequency, the most recent of which occurred during FY23 and resulted in the creation of a Risk Management Policy and Enterprise Risk Management Framework. The policy approach and framework are consistent with the New Zealand Stock Exchange Corporate Governance Principles and aligned with the ISO 31000:2018 Risk Management - Guidelines. The Policy covers all value chain activities and requires that our risk management processes consider all internal and external stakeholders that have an impact upon Sanford operations. Risk prioritisation, inclusive of climate-related risks, are undertaken initially during executive level risk workshops and are then subsequently reviewed by the AFRC. A summary of the outcome of those risks, along with their prioritisation is contained within Appendix B of Sanford's 2023 Annual Report.



5. METRICS AND TARGETS

Greenhouse Gas Emissions:

SCOPE	CATEGORY	2023	2022	2021	2020
S1	Direct emissions (fuel, refrigerants) [tCO_2e]	60,103	57,076	62,130	65,069
S2	Indirect emissions from electricity, location based [tCO_2e]	1,493	1,466	2,349	2,423
S3	Indirect emissions from value chain, upstream and downstream [tCO_2e]	184,386	212,065	212,447	194,774
SANFORD GROUP INTENSITY METRICS*					
	Scope 1, 2 and 3 emissions per $ revenue [tCO_2e/thousand$]	0.44	0.51	0.57	0.56
	Scope 1, 2, and 3 emissions per GWT harvest [tCO_2e / tonnes GWT]	2.18	2.47	2.48	2.14
WILDCATCH DIVISION INTENSITY METRICS*					
	Fishing operations: Scope 1 and 2 emissions per GWT harvested [tCO_2e/tonnes GWT]	1.38	1.49	1.27	1.281
	Land based operations: Scope 1 and 2 emissions per GWT processed on land [tCO_2e/tonnes GWT]	0.07	0.07	0.10	0.10
MUSSELS DIVISION INTENSITY METRICS*					
	Farming operations: Scope 1 and 2 emissions per GWT harvested [tCO_2e/tonnes GWT]	0.12	0.10	0.11	0.10
	Processing operations: Scope 1 and 2 emissions per GWT processed on land [tCO_2e/tonnes GWT]	0.14	0.12	0.13	0.14
SALMON DIVISION INTENSITY METRICS*					
	Farming operations: Scope 1 and 2 emissions per GWT harvested [tCO_2e/tonnes GWT]	0.50	0.39	0.41	0.41
	Processing operations: Scope 1 and 2 emissions per GWT processed on land [tCO_2e/tonnes GWT]	0.10**	0.03	0.04	0.05

*For intensity calculations: Sanford Group revenue per financial statements, Sanford Group harvest represents total harvest from Sanford and 3rd parties harvesting under Sanford quota or contract – values per Annual Reporting. Wildcatch intensity (Scope 1 and 2) for fishing operations based upon GWT harvested by Sanford owned vessels only (1L quota returns), and for land based operations based upon GWT processed at Sanford owned wildcatch land based sites (incl. Sanford and 3rd party supplied). Mussels division intensity (Scope 1 and 2) for farming operations based upon GWT harvested by Sanford owned vessels only (from harvest declaration forms), and for processing operations based upon GWT processed at Sanford owned landbased mussel processing sites (incl. Sanford and 3rd party supplied). Our systems do not have the full resolution to itemise all Scope 3 emissions categories by business division, accordingly Scope 3 emissions are included in the Group intensity metrics only.

**Impacted by a one time loss of 160kg of R438a refrigerant at Bluff processing site.

Details and assumptions in GHG Inventory

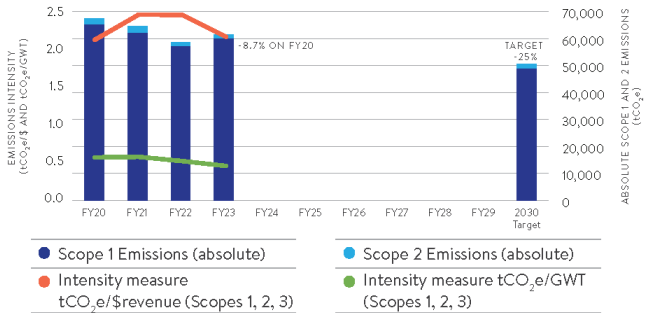
Sanford measures its impact and emissions in accordance with Sanford's GHG Reporting Policy, which follows the Greenhouse Gas Protocol. Key details from that policy are shown in the table below:

DETAIL	APPROACH, ASSUMPTION, BASIS
Annual measurement period	1 October to 30 September, following our financial year cycle
Base emissions measurement year	FY20: 1 October 2019 to 30 September 2020
Base year assurance	FY20 emissions assurance provided by Toitu following ISO 14064-1 assurance standard
Base year recalculation approach	In case of structural changes to our business, substantial changes by third parties to emissions factors, or discovery of significant errors or a number of cumulative errors that exceed a 5% materiality threshold shall trigger a recalculation of the FY20 base year to ensure like for like comparisons. Organic growth or decline does not trigger recalculation
Consolidation approach	Operational control basis, as defined by the GHG protocol
Organisational boundaries	All Sanford's New Zealand and Australian operations, including joint ventures and investments. Sanford's GHG inventory covers all direct (Scope 1 and 2) and material indirect (Scope 3) emissions categories
Exclusions	The following entities, that Sanford had an interest in during the period, are excluded from our emissions inventory: Two Islands Co NZ Limited (50% ownership), Barnes Oysters (14.29% ownership), Primestone Nominees (75% ownership)
Scope 3 emissions inclusion	Scope 3 emissions GHG Protocol categories are screened (last screening FY21) and subject to a 1% materiality threshold measured across all Scope 3 categories. This resulted in categories C1, C2, C3, C4, C5, C9, C11 and C12 being deemed material categories. C15 is included as it represents JV NIML operations and is likely to pass the 1% Scope 3 threshold in the future A cumulative exclusion threshold for Scope 3 is set at 5% (the cumulative exclusions do not exceed this value)
Emissions factors	Emissions factors used in Sanford's inventory are based on the latest factors deployed within the third party maintained Sphera software system's emission factor library which utilises those available from: • New Zealand Ministry for the Environment • DEFRA (Department for Environment, Food, and Rural Affairs, UK) • The Eora global supply chain database (**www.worldmrio.com**) And in the absence of those, relevant sector information is utilised • For key emissions intensive suppliers specific emissions factors direct from suppliers own data, analysis, and life cycle assessment studies are utilised
Gases included in inventory	All Kyoto Protocol greenhouse gasses, CO_2, CH_4, N_2O, HFCs, PFCs, SF_6
Recalculations implemented in FY23	FY21-22 Scope 2 emissions restated due to retrospective release of national grid emissions factors by MfE for 2021-2022 released in August 2023 FY20-22 Scope 3 category 11 emissions factor updated (based on cooking time for product) FY20-22 Scope 3 category 12 emissions updated due to change in food loss and waste factor applied (move from fresh seafood waste factor to frozen) Scope 3 category 1 component salmon feed: feed suppliers in 2023 updated their calculation basis for supplier specific emissions factors for feeds from FY23 onwards. If the FY23 factors were applied retrospectively, the reported Scope 3 cat 1 emissions would reduce by 37k tonnes, 41k tonnes and 36k tonnes for FY22, FY21 and FY20 respectively.

Targets

Sanford has a GHG reduction target of 25% reduction in absolute Scope 1 and 2 GHG emissions by 2030 from a 2020 baseline. This target was set to align with best practices[3] following a review of opportunities and identification of an emissions reduction pathway for our business. Our energy reduction pathway and emissions reduction target have been reviewed by Toitū and confirmed to align with the ambition levels of a well below 2 degrees classification as defined by the Science Based Targets initiative (SBTi).

Our progress towards that target over recent years is indicated below:



Sanford experienced a reduction in absolute emissions over the FY21 and FY22 periods as harvest activity in both the wildcatch and mussels divisions also reduced. During FY23 harvest activity increased as did the year-on-year absolute Scope 1 and 2 emissions. FY23 absolute Scope 1 and 2 emissions represent a reduction of 8.7% on the FY20 base year. Emissions intensity relative to Greenweight harvest at the Group level reduced in FY23, primarily driven by increases in harvest volumes. Sanford has been successful at gaining value from the harvest, which has resulted in decreases in emissions intensity per $ revenue over the period FY20-FY23. It is anticipated that there will be a level of emissions growth in coming years, as overall harvest volumes increase back to, and exceed those levels from FY20 as a result of growth strategies in Mussels and Salmon divisions.

Sanford's challenge is to ensure the deployment of efficiency projects, fuel changes and behavioural change projects internally to deliver further emissions reduction as the harvested GWT grows.

Key risks that have potential to affect Sanford's ability to effectively reduce emissions and achieve its target include:

- Decoupling business growth from emissions growth. The global population is growing and demanding quality nutrition. Seafood is well placed to support that growth in demand, particularly through growth in aquaculture segments, considering that seafood represents a very low emissions source of protein and nutrition. The more of that growing demand that can be met by low emissions food systems, the better for the global environment. Volume growth in seafood sectors therefore has a place to play in solving the challenge of efficiently and effectively feeding the world – Sanford accepts the responsibility not only to encourage dietary shifts towards lower emissions footprint foods, but to improve our own emissions efficiency in food production.
- Sanford's pathway requires that actions be taken, such as efficiency improvement projects like recent propellor and nozzle upgrades, auxillary generator upgrades, and boiler enhancements on some of Sanford's largest deepwater vessels, as well as actions that require support from others. Key to achieving the target is the availability of price practicable sustainable marine fuel blends within New Zealand ports. Sanford has made early steps during FY23 on its collaboration journey to work with aligned sectors and fuel importers and logistics providers to understand and overcome the challenges associated with supply of those fuels into New Zealand.
- 'Hard to abate' emissions from our vessel fleet dominate Sanford's Scope 1 emissions profile. These are emissions sourced from high capital value, long-lifespan assets, where technology is lagging.

In the absence of an applicable SBTi sector pathway which covers the fisheries and aquaculture sectors, Sanford has determined that a 'less than 1.5 degrees' aligned target for 2030 is both impractical and implausible due to:

- The nature of more than 85% of our primary Scope 1 and 2 emissions (i.e. those classified as hard to abate characterised by high capital value and long life assets, where technological decarbonisation solutions are lagging), and
- The existing lack of policy support, logistics and infrastructure for sustainable marine fuel deployment at scale prior to 2030.

Sanford's emissions reduction pathway does not currently assume the use of offsets.

3. We considered the Science Based Targets initiate (SBTi) guidance for targets to represent best practices.

Seeka
Annual report 2023

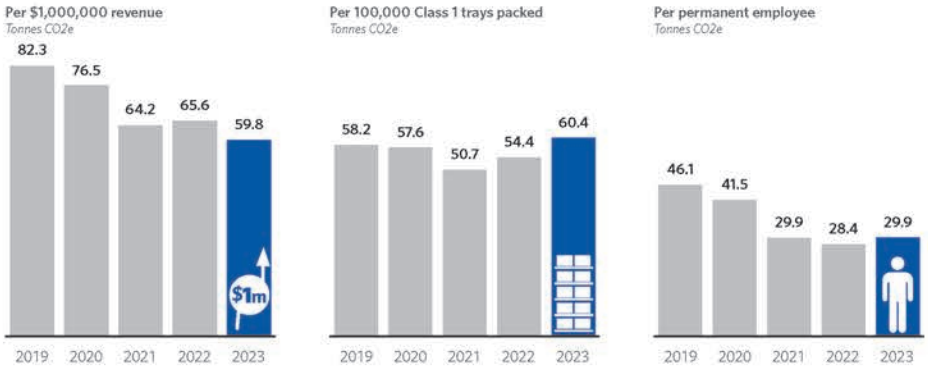
Main contents

Intensity-based performance measures

Seeka is in a fast-growing industry. While it is important to report our absolute carbon result, as an expanding business it is equally important to report our efficiency gains. Our total emissions are benchmarked against three intensity-based measures:

- Tonnes CO2e per $1,000,000 revenue
- Tonnes CO2e per 100,000 Class 1 trays packed
- Tonnes CO2e per permanent employee

The 2022 drop in yields and a second drop in 2023 impacted the intensity measures.



Climate-related risks and opportunities

Climate change is both an opportunity and a threat to the business. A changing climate impacts the land and our people, and the quantity and quality of the fruit Seeka handles. Seeka is working to assess climate-related risks and impacts and is formulating strategies to ensure the business remains resilient in a changing environment.

Over the past ten years, Seeka has expanded operations to encompass all major kiwifruit growing regions in New Zealand and to the Goulburn Valley in Australia. Seeka is growing and packing a bigger range of fruit, including kiwifruit, avocado, Kiwiberry, nashi, pear, plum, jujube, persimmon and citrus. By growing diverse crops in different regions, Seeka is building a knowledge base on how different soil types and climates impact plant health and fruit yields. These learnings are guiding Seeka's orchard practices and orchard developments.

Seeka is committed to growing sustainable futures for our employees, growers, communities, and shareholders. Addressing climate change and creating appropriate mitigation and adaption strategies are core to enabling a sustainable future.

Seeka is making its first disclosures of its climate-related risks and opportunities, as at 31 December 2023. Seeka's climate disclosures provide insights into potential risks and opportunities, and how Seeka is building resilience in a changing environment. The disclosures comply with the External Reporting Board's (XRB's) Climate-related Disclosures (NZ CS 1). Seeka's climate-related risks are regularly reviewed and incorporated into Seeka's risk management register.

See Seeka's public climate disclosures at www.seeka.co.nz/climate-change

Seeka
Climate disclosure 2023

Public Climate Disclosure

ClimateTracker

Introduction

At Seeka a changing climate and an increase in severe weather events is both an opportunity and a threat to the business. This impacts the land and our people and the quantity and quality of the fruit Seeka handles. Seeka is working to assess climate-related risks and impacts and is formulating strategies to ensure the business remains resilient in a changing environment.

Over the past ten years, Seeka has expanded its operations to encompass all major kiwifruit growing areas in New Zealand and to the Goulburn Valley in Australia. Seeka is growing and packing a range of fruit, including kiwifruit, avocado, kiwiberry, nashi, pears, plums, jujube, persimmons and citrus. By growing diverse ranges of crops in different regions, Seeka is building its knowledge base on how different soil types and climates impact plant health and fruit yields. These learnings are guiding Seeka to adapt orchard practices and guide future development.

Seeka
SELECT EXCELLENCE

Seeka is committed to growing sustainable futures for our employees, growers, communities, and shareholders. Addressing climate change and creating appropriate mitigation and adaption strategies is core to enabling a sustainable future. These climate disclosures provide insight to Seeka's stakeholders on what risks and opportunities lie ahead of the Company, and how Seeka is building resilience in a changing environment.

Our Climate Disclosure

This website presents our climate disclosure in accordance with the Aotearoa New Zealand Climate Standards NZ CS 1, NZ CS 2 and NZ CS 3, to help build resilience and improve our adaptability as a business in response to climate change.

NZ CS 1 is comprised of four main disclosure areas, plus additional supplemental data under the companion NZ CS 3 standard.

Click any disclosure area in the tabs above, to see our detailed climate disclosure data:

Governance describes the role our climate *governance body* plays in overseeing climate-related risks and opportunities, and how *management* assesses and manages these

Strategy describes how climate change is currently impacting our business and how it may do so in the future

Risk Management describes how our climate-related risks are identified, assessed, and managed and how those processes are integrated into our existing risk management processes

Metrics and Targets describes how we measure and manage our climate-related risks and opportunities

Supplemental Data additional data required under NZCS3

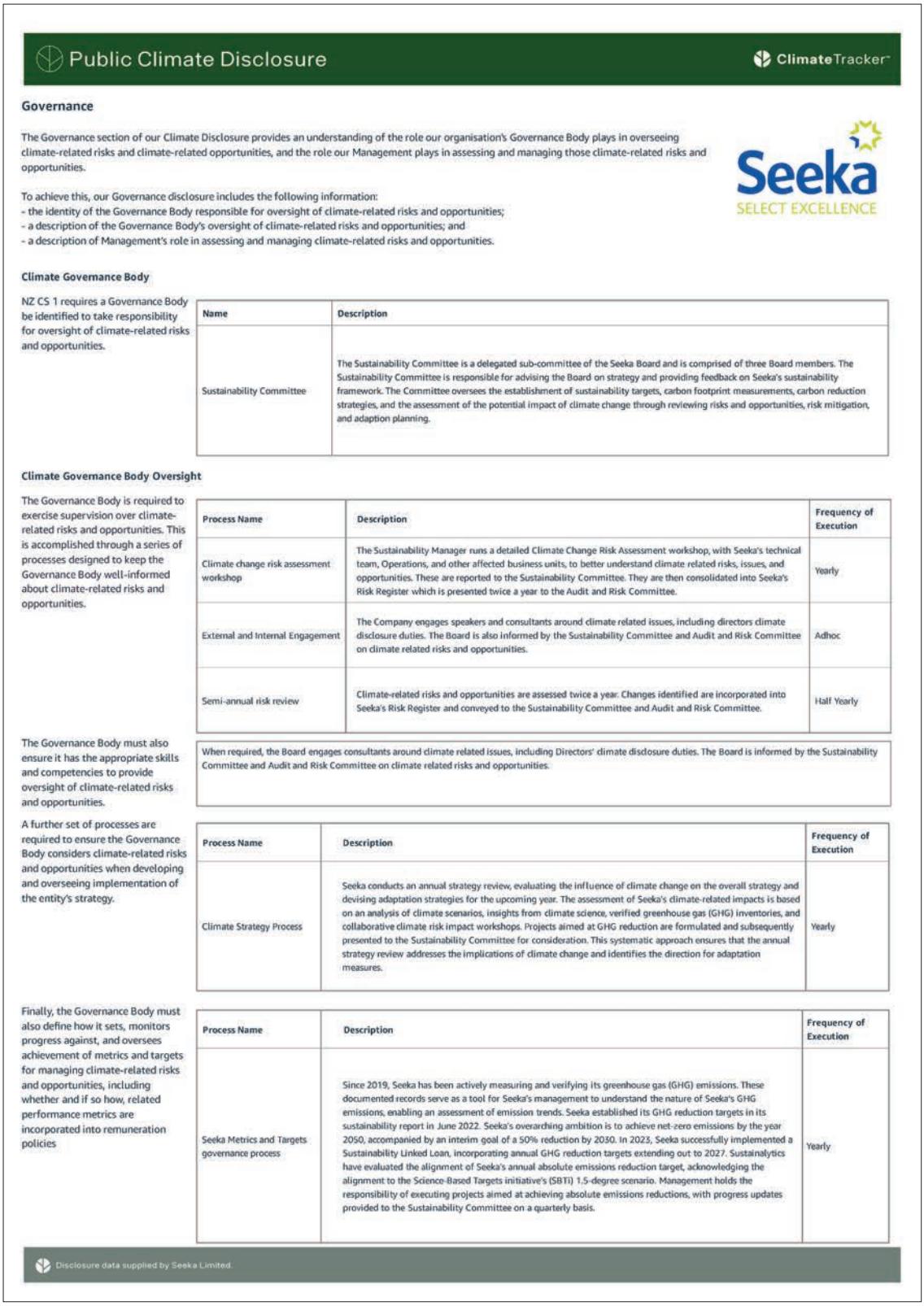
Organisation Data

Primary Operating Country	Currency	Organisation Identifier Type	Secondary Operating Country
New Zealand	Nzd	Nzbn	Australia

Address Line 1	Address Line 2	Address Line 3	City	Postcode	Country
34 Young Road	Paengaroa		Te Puke	3189	New Zealand

Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)



Public Climate Disclosure — ClimateTracker

Governance

The Governance section of our Climate Disclosure provides an understanding of the role our organisation's Governance Body plays in overseeing climate-related risks and climate-related opportunities, and the role our Management plays in assessing and managing those climate-related risks and opportunities.

To achieve this, our Governance disclosure includes the following information:
- the identity of the Governance Body responsible for oversight of climate-related risks and opportunities;
- a description of the Governance Body's oversight of climate-related risks and opportunities; and
- a description of Management's role in assessing and managing climate-related risks and opportunities.

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Climate Governance Body

NZ CS 1 requires a Governance Body be identified to take responsibility for oversight of climate-related risks and opportunities.

Name	Description
Sustainability Committee	The Sustainability Committee is a delegated sub-committee of the Seeka Board and is comprised of three Board members. The Sustainability Committee is responsible for advising the Board on strategy and providing feedback on Seeka's sustainability framework. The Committee oversees the establishment of sustainability targets, carbon footprint measurements, carbon reduction strategies, and the assessment of the potential impact of climate change through reviewing risks and opportunities, risk mitigation, and adaption planning.

Climate Governance Body Oversight

The Governance Body is required to exercise supervision over climate-related risks and opportunities. This is accomplished through a series of processes designed to keep the Governance Body well-informed about climate-related risks and opportunities.

Process Name	Description	Frequency of Execution
Climate change risk assessment workshop	The Sustainability Manager runs a detailed Climate Change Risk Assessment workshop, with Seeka's technical team, Operations, and other affected business units, to better understand climate related risks, issues, and opportunities. These are reported to the Sustainability Committee. They are then consolidated into Seeka's Risk Register which is presented twice a year to the Audit and Risk Committee.	Yearly
External and Internal Engagement	The Company engages speakers and consultants around climate related issues, including directors climate disclosure duties. The Board is also informed by the Sustainability Committee and Audit and Risk Committee on climate related risks and opportunities.	Adhoc
Semi-annual risk review	Climate-related risks and opportunities are assessed twice a year. Changes identified are incorporated into Seeka's Risk Register and conveyed to the Sustainability Committee and Audit and Risk Committee.	Half Yearly

The Governance Body must also ensure it has the appropriate skills and competencies to provide oversight of climate-related risks and opportunities.

When required, the Board engages consultants around climate related issues, including Directors' climate disclosure duties. The Board is informed by the Sustainability Committee and Audit and Risk Committee on climate related risks and opportunities.

A further set of processes are required to ensure the Governance Body considers climate-related risks and opportunities when developing and overseeing implementation of the entity's strategy.

Process Name	Description	Frequency of Execution
Climate Strategy Process	Seeka conducts an annual strategy review, evaluating the influence of climate change on the overall strategy and devising adaptation strategies for the upcoming year. The assessment of Seeka's climate-related impacts is based on an analysis of climate scenarios, insights from climate science, verified greenhouse gas (GHG) inventories, and collaborative climate risk impact workshops. Projects aimed at GHG reduction are formulated and subsequently presented to the Sustainability Committee for consideration. This systematic approach ensures that the annual strategy review addresses the implications of climate change and identifies the direction for adaptation measures.	Yearly

Finally, the Governance Body must also define how it sets, monitors progress against, and oversees achievement of metrics and targets for managing climate-related risks and opportunities, including whether and if so how, related performance metrics are incorporated into remuneration policies

Process Name	Description	Frequency of Execution
Seeka Metrics and Targets governance process	Since 2019, Seeka has been actively measuring and verifying its greenhouse gas (GHG) emissions. These documented records serve as a tool for Seeka's management to understand the nature of Seeka's GHG emissions, enabling an assessment of emission trends. Seeka established its GHG reduction targets in its sustainability report in June 2022. Seeka's overarching ambition is to achieve net-zero emissions by the year 2050, accompanied by an interim goal of a 50% reduction by 2030. In 2023, Seeka successfully implemented a Sustainability Linked Loan, incorporating annual GHG reduction targets extending out to 2027. Sustainalytics have evaluated the alignment of Seeka's annual absolute emissions reduction target, acknowledging the alignment to the Science-Based Targets initiative's (SBTi) 1.5-degree scenario. Management holds the responsibility of executing projects aimed at achieving absolute emissions reductions, with progress updates provided to the Sustainability Committee on a quarterly basis.	Yearly

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Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

Management's role in Climate Governance

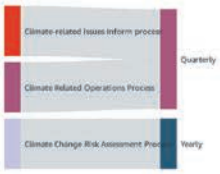
Management also play a role in responding to climate change. The organisation must define how it ensures that climate-related responsibilities are assigned to management-level positions or committees, and also define the process and frequency by which management-level positions or committees engage with the governance body.

How climate-related responsibilities are assigned to management-level positions or committees

The Board delegates climate responsibilities to the Sustainability Committee, which in turn assigns climate related responsibilities to management level positions to action the climate work programme.

Process Name	Description
Climate-related issues Inform process	The Sustainability Manager actively participates in monthly orchard and post-harvest management meetings to ensure appropriate consideration of climate-related impacts. Should the staff perceive climate-related risks to have a material impact on Seeka's business and its responses to climate change, these concerns are communicated to the Sustainability Committee on a quarterly basis.
Climate Change Risk Assessment Process	The Sustainability Manager runs a Climate Change Risk Assessment workshop, with Seeka's technical, Operations, and other affected business units, to better understand climate related risks, issues and opportunities. These are agreed and reported up to the Sustainability Committee. They are then consolidated into Seeka's Risk Register which is presented twice a year to the Audit and Risk Committee, with the Audit and Risk Committee reporting on risks up to the Board
Climate Related Operations Process	The Sustainability Manager works with Seeka's technical Team and Operations to understand climate related issues arising from Seeka operations, which feeds in to risks, issues and opportunities, and reporting upwards to the Sustainability Committee.

Frequency of engagement processes execution



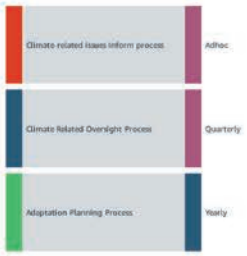
These Management roles are located within an organisational structure(s), which must show where these management-level positions and committees lie within the organisation.

The accountability for climate change considerations ultimately sits with the CEO. The CEO has delegated oversight and direction of Seeka's Sustainability programme to the CFO. The Sustainability Manager, who reports to the CFO, is responsible for the Climate-Related processes and outputs. The CFO and Sustainability Manager present quarterly to the Sustainability Committee.

Finally, Management must use a set of processes to remain informed about, make decisions on, and monitor, climate-related risks and opportunities as they arise.

Process Name	Description
Adaptation Planning Process	Adaptation planning occurs towards the end of the Climate Change Risk Assessment process and looks at viable mitigations that can address climate risks.
Climate-related issues Inform process	issues and opportunities that arise within Seeka from affected parties, either in response to other climate-related processes or from operations, are raised with the Sustainability Committee if staff judge these to have a material impact on Seeka's business and climate-related responses.
Climate Related Oversight Process	The Senior Management Team (SMT) at Seeka integrates climate-related impacts into their operational and strategic decision-making processes. Oversight of the climate work program's advancement is the responsibility of the Sustainability Committee, which reports to the Board.

Frequency of oversight processes execution



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Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

Strategy

The Strategy section of our Climate Disclosure provides an understanding of how climate change is currently impacting an entity and how it may do so in the future. This includes the scenario analysis an entity has undertaken, the climate-related risks and opportunities an entity has identified, the anticipated impacts and financial impacts of these, and how an entity will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future.

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To achieve this, our Strategy disclosure includes the following information:
- a description of its current climate-related impacts;
- a description of the scenario analysis it has undertaken;
- a description of the climate-related risks and opportunities it has identified over the short, medium, and long term;
- a description of the anticipated impacts of climate-related risks and opportunities; and
- a description of how it will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future state.

Current Climate-related Impacts

NZ CS 1 requires a description of the current physical and transition impacts, and their current financial impacts.

Current physical and transition impacts

Name	Impact Description	Financial Impact Category	Current Financial Impact ($, low value)	Current Financial Impact ($, high value)
Carbon costs increasing cost of goods sold	The cost of carbon has led to an increase in costs related to Seeka's fuel, fertiliser, electricity and refrigerant gas inputs. Seeka is exposed to the cost of carbon until we transition to low-carbon alternatives. Seeka invests in solar panels, is transitioning away from high global warming potential refrigerant gases and is encouraging the transition to hybrid leased vehicles.	Cost Of Goods Sold	-500,000	-100,000
Sustainable financing in the form of a sustainability linked loan and green bonds are available.	Seeka has entered into a NZD$201m Sustainability Linked Loan, which has three targets that will generate a savings to interest cost if achieved and an increase in interest costs of not achieved.	Interest Costs	-100,000	100,000
Extreme weather events reducing crop yields and impacting fruit quality.	Heavy rain, flooding, frost, hail, high winds, heat waves, and ˙re can physically damage plants and fruit, and impact fruit yields and fruit quality. In the 2023 harvest season across New Zealand and Australia, Seeka was impacted by a frost, hail, and two Cyclone events. This resulted in much lower yields than anticipated.	Net Pro˙t After Tax	-25,000,000	0
Regulatory changes restrict chemical applications for pest control and crop maintenance	The chemical hydrogen cyanamide (Hi-Cane) is used in a controlled manner on conventional, primarily Hayward, kiwifruit orchards. Hi-Cane improves kiwifruit yields by promoting uniform budbreak and flowering. The Environmental Protection Authority is currently assessing the use of Hi-Cane in New Zealand and it is likely that Hi-Cane will be phased out over the next 10 years. Trials of suitable alternatives are underway. However, not finding a viable alternative would reduce the uniformity of fruit maturity resulting in lower yields.	Revenue	0	50,000

If we're unable to disclose current quantitative impact information, an explanation is needed.

Explanation for current quantitative financial information

Not applicable.

Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

Scenario Analyses Undertaken

Strategy requires analysis of different scenarios that help identify climate-related risks and opportunities and better understand the resilience of our business model and strategy. This analysis needs to include a description of how a minimum of three scenarios were analysed, including: a 1.5 degrees Celsius climate-related scenario, a 3 degrees Celsius or greater climate-related scenario, and a third climate-related scenario.

Climate-related scenario analyses

Scenario Name	Scenario Description	Scenario Temperature Alignment	Scenario Business Coverage	Time Horizon
1.5 degree scenario	Under the RCP2.6 Seeka anticipates impacts include changes to the growing environment and occasional severe climate-related events. Seeka would generally encounter stable conditions, minimizing disruptions to its operations. It is possible that a climatic event would occur periodically and Seeka would maintain reserves for these occasional events, which is reduced by Seeka's geographical spread. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) anticipates that the overall area of suitable land for growing kiwifruit increases.	One Point Five Degrees Celsius	Company Wide	Medium Term
2.1 - 3.0 degree warming	Under the RCP4.5 scenario Seeka's kiwifruit growing environment could encounter challenges like altered precipitation patterns, potential shifts in growing seasons, and increased severe weather events. Adaptation measures would need to be implemented over the next decade, which would include improving irrigation infrastructure, modifying growing methods, and exploring kiwifruit varieties better suited to the evolving climate. Additionally, this scenario may bring about higher carbon prices for inputs to Seeka's business. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) anticipates that the overall area of suitable land for growing kiwifruit increases. However, it is noted that decreased winter chill hours will reduce the growing suitability in Northland and coastal Bay of Plenty.	Two Point One To Three Degrees Celsius	Company Wide	Medium Term
3.1 to 4 degree scenario	Under the RCP8.5 scenario Seeka may confront challenges, including more frequent extreme weather events, temperature extremes, and possible disruptions to the supply chain. Similar adaption measures to above would need to be adopted, which may not be fast enough to mitigate the effects of the change in climate. It would be likely that input costs with a carbon impact would increase. Seeka has gained experience in growing kiwifruit in harsh environments through its Seeka Australia operations. These growing techniques could be applied to New Zealand. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) anticipates that the overall area of suitable land for growing kiwifruit increases. However, it is noted that decreased winter chill hours will reduce the growing suitability in Northland and coastal Bay of Plenty.	Three Point One To Four Degrees Celsius	Company Wide	Medium Term

Climate-related risks and opportunities

The Strategy needs to define different time horizons for planning a response to climate change. These include the Climate Planning Horizons (short, medium and long term) and how these are linked to Strategic Planning Horizons and Capital Deployment Plans of the organisation.

Climate planning horizons

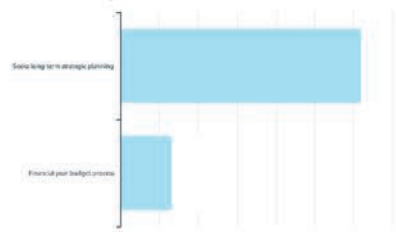
Climate Planning Horizon	Horizon Start	Horizon End
Short Term	2019	2025
Medium Term	2026	2030
Long Term	2031	2050

Business Planning Horizons

Business Planning Horizon	Description	Horizon Start	Horizon End
Financial year budget process	Budgeted and business planning for the next calendar year, including capital expenditure allocation.	2024	2025
Seeka long term strategic planning	Seeka's business strategy planning process. This process looks at short, medium and long term risks, opportunities and impacts to the business, and applies this over our annual business/strategy development process.	2023	2028

Climate planning horizons - Gantt view

Business planning horizons - Gantt view



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Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

The Strategy also needs to take account of the different climate-related risks and opportunities that have been identified that will impact the organisation, whether they are physical or transition risks or opportunities, and including (where relevant), their sector and geography.

Climate related risks

Risk Name	Risk Type	Likelihood of Occurring	Priority	Time Horizon	Description
Changing weather patterns leading to a reduction in fruit yields and fruit quality.	Acute Physical	Medium	Medium	Medium Term	Changing weather patterns could increase rainfall over summer and decrease winter chill hours over winter which could lead to lower yields, reduced fruit quality and storage, and a greater reliance on artificial budding chemicals. An increase in the risk of droughts could lead to dryer soils degrading soil quality and biodiversity. Increasing winter temperatures may result in increasing energy demand to cool fruit.
Extreme weather events leading to a reduction in fruit yields and fruit quality.	Acute Physical	Medium	Medium	Short Term	Extreme weather events such as heavy rain (flooding), frost, hail, high winds, heat waves and ' re can physically damage plants and fruit. These events can damage plants and fruit yields and quality.
Changing consumer preference and market restrictions	Market	Medium	Medium	Short Term	Market access could become restricted with changes to border acceptance criteria. Changing consumer preferences favouring low carbon and organic fruit could reduce the demand for conventional fruit.
Increasing cost of inputs with a carbon footprint	Market	Medium	High	Short Term	Market mechanisms are increasingly being utilised as a tool to charge polluters with a carbon footprint. Rising demand for carbon neutrality could increase the cost of carbon offsets.
Regulatory restrictions - Chemical use	Policy And Legal	Medium	Medium	Short Term	Regulatory changes restricting the use of chemicals required for pest control and crop maintenance, which could impact crop yields and fruit quality.
Rising sea levels can cause coastal erosion and rising water tables	Chronic Physical	Low	Low	Medium Term	Rising sea levels could cause a rise in the water table and an increase in the salinity of ground water. Soils will no longer drain as freely causing rot. Unprotected coastal orchards are at increasing risk of coastal erosion. Very few kiwifruit orchards and post-harvest operations are coastal and are not expected to be impacted by rising sea levels.
Risk to fruit yields due to the introduction of new pests and diseases	Acute Physical	Medium	Medium	Medium Term	There is a risk that pest species will survive winter periods due to reduced frost events which act as a natural regulator. Increased temperatures could also create climates that are suitable for new exotic pests and diseases.
Regulatory restrictions - Water use	Policy And Legal	Medium	Medium	Short Term	Tightening of orchard water use restrictions could lead to insufficient water access, which could impact crop yields and plant health.

Climate related opportunities

Opportunity Name	Opportunity Type	Likelihood of Occurring	Priority	Time Horizon	Description
Increased Atmospheric CO2	Products And Services	Medium	Low	Short Term	Higher soil CO2 levels can have a positive impact on plant water use efficiency by optimizing photosynthesis, reducing transpiration, enhancing stress tolerance, and promoting the development of robust root systems. These adaptations contribute to a more efficient use of water resources, supporting sustainable plant growth in varying environmental conditions.
Sustainable Financing	Markets	Medium	High	Short Term	Sustainable financing for sustainability driven companies and low-carbon developments is an opportunity that holds the potential to transform how projects are funded and executed.
Changing Consumer Preference and market access	Markets	Medium	High	Medium Term	The growing consumer demand for sustainably produced and healthy foods represents a significant opportunity for Seeka. This trend reflects a shift in consumer preferences towards environmentally conscious and health-oriented choices. Market access could become more open if New Zealand transitions faster than other global economies.
Regional Climate Shifts	Products And Services	Medium	Low	Medium Term	The opening of new growing regions due to climate change offers Seeka strategic opportunities for geographic expansion, crop diversification, and enhanced resilience. By embracing these opportunities, Seeka can adapt to the evolving climate landscape while fostering growth and sustainability in its operations.

The Strategy must also define how climate-related risks and opportunities serve as an input to our capital deployment and funding decision-making processes.

Climate-related Risk input to capital deployment and funding decision-making processes

Seeka incorporates climate-related risks and opportunities into its capital deployment and funding procedures. Capital investments have been made in projects aimed at mitigating transitional and physical risks associated with a changing climate. Seeka assesses products and services for their susceptibility to carbon price fluctuations, potential exposure to supply chain disruptions, and overall greenhouse gas (GHG) impact. To address Seeka's electricity emission sources, the company has invested in the installation of solar panels on its packhouse roof spaces. This initiative not only contributes to the reduction of Seeka's demand on the national energy grid but also facilitates the direct provision of renewable energy to post-harvest operations.

Disclosure data supplied by Seeka Limited

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

Climate-related Opportunity input to capital deployment and funding decision-making processes

Seeka evaluates capital deployment on a balanced approach of risk and reward. If opportunities to invest in climate-related assets have a financial return, these will be considered.

Anticipated impacts and financial impacts

Next, the Strategy must look at the impact arising from these climate-related risks and opportunities, including
- the anticipated impacts of climate-related risks and opportunities reasonably expected by the entity;
- the anticipated financial impacts of climate-related risks and opportunities reasonably expected by an entity;
- a description of the time horizons over which the anticipated financial impacts of climate-related risks and opportunities could reasonably be expected to occur; and
- where quantitative information about financial impacts isn't available, an explanation is required.

Anticipated physical and transition impacts

Name	Impact Description	Financial Impact Category	Primary Potential Financial Impact	Time Horizon	Anticipated Financial Impact ($, low value)	Anticipated Financial Impact ($, high value)
Changing weather patterns leading to a reduction in fruit yields and fruit quality.	Changing weather patterns could increase rainfall over summer and decrease winter chill hours over winter which could lead to lower yields, reduced fruit quality and storage, and a greater reliance on artificial budding chemicals. An increase in the risk of droughts could lead to dryer soils degrading soil quality and biodiversity. Increasing winter temperatures may result in increasing energy demand to cool fruit.	Net Profit After Tax	Reduced Gross Margin	Long Term	-25,000,000	0
Rising sea levels can cause coastal erosion and rising water tables	Rising sea levels could cause a rise in the water table and an increase in the salinity of ground water. Soils will no longer drain as freely causing rot. Unprotected coastal orchards are at increasing risk of coastal erosion. Very few kiwifruit orchards and post-harvest operations are coastal and are not expected to be impacted by rising sea levels.	Net Profit After Tax	Reduced Gross Margin	Long Term	-200,000	0
Changing consumer preference and market restrictions	Market access could become restricted with changes to border acceptance criteria. Changing consumer preferences favouring low carbon and organic fruit could reduce the demand for conventional fruit.	Revenue	Increased Or Decreased Revenue	Medium Term	-10,000,000	10,000,000
Extreme weather events leading to a reduction in fruit yields and fruit quality.	Extreme weather events such as heavy rain (flooding), frost, hail, high winds, heat waves and ' re-can physically damage plants and fruit. These events can damage plants and fruit yields and quality.	Net Profit After Tax	Reduced Gross Margin	Medium Term	-25,000,000	0
Increased Atmospheric CO2	Higher soil CO2 levels can have a positive impact on plant water use efficiency by optimizing photosynthesis, reducing transpiration, enhancing stress tolerance, and promoting the development of robust root systems. These adaptations contribute to a more efficient use of water resources, supporting sustainable plant growth in varying environmental conditions.	Net Profit After Tax	Increased Gross Margin	Medium Term	0	5,000,000
Increasing cost of inputs with a carbon footprint	Market mechanisms are increasingly being utilised as a tool to charge polluters with a carbon footprint. Rising demand for carbon neutrality could increasing the cost of carbon offsets.	Cost Of Goods Sold	Increased Operating Expenditure	Medium Term	-500,000	-100,000
Regional Climate Shifts	The opening of new growing regions due to climate change offers Seeka strategic opportunities for geographic expansion, crop diversification, and enhanced resilience. By embracing these opportunities, Seeka can adapt to the evolving climate landscape while fostering growth and sustainability in its operations.	Net Profit After Tax	Increased Gross Margin	Medium Term	0	10,000,000
Regulatory restrictions - Chemical use	Regulatory changes restricting the use of chemicals required for pest control and crop maintenance.	Cost Of Goods Sold	Increased Operating Expenditure	Medium Term	-200,000	0
Regulatory restrictions - Water use	Tightening of orchard water use restrictions	Capex	Increased Capital Expenditure	Medium Term	-5,000,000	0
Risk to fruit yields due to the introduction of new pests and diseases	There is a risk that pest species will survive winter periods due to reduced frost events which act as a natural regulator. Increased temperatures could also create climates that are suitable for new exotic pests and diseases.	Net Profit After Tax	Reduced Gross Margin	Medium Term	-25,000,000	0
Sustainable Financing	Sustainable financing for sustainability driven companies and low-carbon developments is an opportunity that holds the potential to transform how projects are funded and executed.	Interest Costs	Increased Or Decreased Interest Costs	Medium Term	-100,000	100,000

Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

If we're unable to disclose anticipated quantitative impact information, an explanation is needed.

Explanation for future quantitative financial information

Not applicable.

Transition plan aspects of the Strategy

Finally, the Strategy must account for how our organisation will transition towards a global and domestic economy transitions towards a low-emissions, climate-resilient future state. The transition plan includes:
- a description of our current business model and strategy;

Current business model and strategy

Current Business Model	Current Strategy
Seeka's vision is to connect sustainable produce to the world. Sustainability is central to Seeka's business and lies at the heart of the brand value Growing Sustainable Futures.	Seeka is navigating the challenges posed by a changing climate. By actively assessing and addressing climate-related risks and opportunities, Seeka aims to build resilience. Seeka has committed to net-zero carbon emissions by 2050. In 2023 Seeka entered into a Sustainability Linked Loan which aligns financial returns to sustainability performance. Seeka is implementing its strategy by methodically reducing carbon-intensive practices and working to achieve incremental reduction targets. Seeka focuses on enhanced energy efficiency, the integration of new solar power facilities, the shift to low-emission vehicles, and the rerouting of organic ...

- how our business model and strategy might change to address its climate-related risks and opportunities

Potential future business model and strategy

Proposed Business Model Changes	Proposed Strategy Changes
Seeka's business model is set to respond to the challenges and opportunities presented by climate change. As climate patterns shift, impacting the agricultural sector, Seeka is likely to adapt its practices to ensure sustainability and resilience.	Seeka will adapt its strategy as necessary to respond to climate-related risks and opportunities.

- the extent to which transition plan aspects of its strategy are aligned with its internal capital deployment and funding decision-making processes.

Transition plan alignment with capital deployment and decision making

Capital funding decisions are made during the company's yearly budgeting and long-term planning processes. Seeka considers capital allocation to sustainability and climate reduction projects, including solar power installation and refrigerant gas replacements.

Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

Risk Management

The Risk Management section of our Climate Disclosure provides an understanding of how our climate-related risks are identified, assessed, and managed and how those processes are integrated into our existing risk management processes.

To achieve this, our Risk Management disclosure includes the following information:
- a description of our processes for identifying, assessing and managing climate-related risks; and
- a description of how our processes for identifying, assessing, and managing climate- related risks are integrated into our overall risk management processes

Processes for identifying, assessing and managing climate-related risks

This section requires a description of:
- a description of our processes for identifying, assessing and managing climate-related risks
-a description of how our processes for identifying, assessing, and managing climate- related risks are integrated into our overall risk management processes

Integration of climate-related risk management processes

Climate Related Risk Management Process Name	Process Description	Integration into Risk Management Processes
Climate Risk Reporting Process	Once the Sustainability Committee has assessed climate-related risks, these are collated and summarised for the Audit and Risk Committee, and reported into that committee for inclusion into the overall Seeka Risk Management Framework.	Seeka integrates its climate-related risks and opportunities into the broader framework of its business audit and risk management processes.
Climate Change Risk Assessment Process	Climate related risks are collated through a workshop with members from finance, sustainability, operations and research and development.	The Sustainability Committee assesses the risks, collates them, then reports the risks to the Audit and Risk Committee for inclusion in the risk register.
Enterprise Risk Management Process	Risks are presented to the Audit and Risk Committee, which reviews the risks and provides any feedback. Risks are then reported to the Board semi-annually.	This process describes the wider risk management process governed by Seeka's Audit and Risk Committee.

- the tools and methods used to identify, and to assess the scope, size, and impact of, the climate-related risks we have identified

Climate-related risk tools and methods

Climate risk workshops, involving key stakeholders such as the Sustainability Manager, R&D Technical Team, and Operations Team, facilitate in-depth discussions on potential risks. These insights are systematically documented in a risk register, considering factors like the likelihood of occurrence, sensitivity of exposure, and adaptability of at-risk elements. The risk matrix is then utilized to categorize and prioritize risks based on severity. Scenario analysis, incorporating different climate projections, aids in exploring the potential impact of climate change. This methodology enables Seeka to make informed decisions and develop effective strategies to mitigate climate-related risks.

- the short-term, medium-term, and long-term time horizons considered, including specifying the duration of each of these time horizons;
- whether any parts of the value chain are excluded;
- the frequency of assessment

Time horizons, value chain and frequency of climate-related risk management processes

Climate Related Risk Management Process Name	Process Type	Process Description	Time Horizon	Value Chain Coverage	Value Chain Exclusions	Frequency of Assessment
Climate Change Risk Assessment Process	Identify	Climate related risks are collated through a workshop with members from ' nance, sustainability, operations and research and development.	All Climate Planning Horizons	All Segments	Downstream	Yearly
Climate Risk Reporting Process	Report	Once the Sustainability Committee has assessed climate-related risks, these are collated and summarised for the Audit and Risk Committee, and reported into that committee for inclusion into the overall Seeka Risk Management Framework.	All Climate Planning Horizons	Direct Operations	Downstream	Yearly
Enterprise Risk Management Process	Assess	Risks are presented to the Audit and Risk Committee, which reviews the risks and provides any feedback. Risks are then reported to the Board semi-annually.	All Climate Planning Horizons	All Segments	Downstream	Yearly

- our processes for prioritising climate-related risks relative to other types of risks

Risk relative prioritisation process

Seeka maintains a single risk register that incorporates climate change. This means that climate change risks are tested under the same methodology as all other risks and therefore prioritised in accordance with the remaining unmitigated risks that exists. Climate change is in Seeka's top 10 risks for the Company.

Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

Metrics and Targets

The Metrics and Targets section of our Climate Disclosure provides an understanding of how we measure and manage our climate-related risks and opportunities. Metrics and targets also provide a basis to compare entities within a sector or industry.

To achieve this, our Metrics and Targets disclosure section includes the following information:
- the metrics that are relevant to all entities regardless of industry and business model;
- industry-based metrics relevant to its industry or business model used to measure and manage climate-related risks and opportunities;
- any other key performance indicators used to measure and manage climate-related risks and opportunities; and
- the targets used to manage climate-related risks and opportunities, and performance against those targets

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Metric categories

This section requires metrics in the following categories:
- greenhouse gas (GHG) emissions: gross emissions in metric tonnes of carbon dioxide equivalent (CO2e) classified as
(i) scope 1;
(ii) scope 2 (calculated using the location-based method);
(iii) scope 3

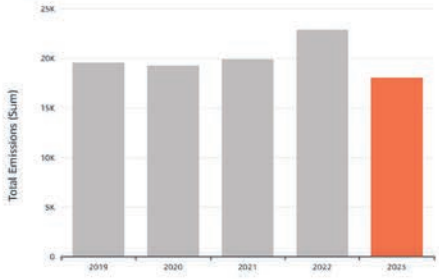
Scope 1 emissions - metric tonnes of *carbon dioxide equivalent (CO2e)*

Scope 2 emissions - metric tonnes of *carbon dioxide equivalent (CO2e)*

In May 2021, Seeka grew by more than 20% with the acquisition of OPAC, a kiwifruit business based in Ōpōtiki. This contributed to Seeka increasing its absolute carbon footprint in 2021. Full-year operation at OPAC, along with the acquired Orangewood and Seeka Gisborne businesses, contributed to a further increase in 2022. In 2023 Seeka reduced its carbon footprint by 21% compared to 2022, which was aided by lower crop volumes.
Seeka has not used offsets. Seeka's emissions and targets stated in this disclosure do not rely on offsets.

Annual CO2e footprint, 2019 to 2022

Absolute carbon footprint in tonnes CO2e



Annual CO2e footprint, 2019 to 2022

Absolute carbon footprint in tonnes CO2e

Year	Scope 1	Scope 2	Scope 3	Scope 4	Total
2019	4,051	3,973	4,069	7,411	19,504
2020	3,803	3,696	4,452	7,269	19,220
2021	3,900	4,487	3,987	7,490	19,864
2022	4,465	5,708	4,618	8,048	22,839
2023	5,685	2,892	4,487	4,923	17,987

Scope 1: Direct emissions controlled by Seeka
Scope 2: Indirect emissions from purchased electricity
Scope 3: Indirect transport emissions from Seeka's supply chain
Scope 4: Other indirect emissions from Seeka's supply chain

- GHG emissions intensity

Emissions Intensity Metric	Measurement Unit	Value
Emissions per $million revenue 2023	Tonnes CO2e per $million revenue	60
Emissions per class 1 packed tray 2023	Tonnes of CO2e per class 1 Trays packed	60
Emissions per permanent employee 2023	Tonnes of CO2e per permanent employee	30

Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

- transition risks: amount or percentage of assets or business activities vulnerable to transition risks;
- physical risks: amount or percentage of assets or business activities vulnerable to physical risks;
- climate-related opportunities: amount or percentage of assets, or business activities aligned with climate-related opportunities;
- capital deployment: amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities;
- internal emissions price: price per metric tonne of CO2e used internally by an entity; and
- remuneration: management remuneration linked to climate-related risks and opportunities in the current period, expressed as a percentage, weighting, description or amount of overall management remuneration

Amount or percentage of assets or business activities vulnerable to transition risks	Amount or percentage of assets or business activities vulnerable to physical risks	Amount or percentage of assets, or business activities aligned with climate-related opportunities
25 Percent	50 Percent	15 Percent

Amount of capital expenditure ($), financing, or investment deployed toward climate-related risks and opportunities	Price per metric tonne ($) of CO2e used internally by an entity	Management remuneration linked to climate-related risks and opportunities in the current period
3,000,000	70	0 Percent

Targets

This section describes targets used to manage climate-related risks and opportunities, and performance against those targets:
- the time frame over which the target applies;
- any associated interim targets;
- the base year from which progress is measured;
- a description of performance against the targets;

Targets - Core Data

Target Name	Target Description	Start Date	End Date	Base Year
Sustainability Linked Loan - Annual GHG reduction	Emit no more than 9,219 tonnes of Scope 1 and 2 GHG Emissions, excluding emissions resulting from the Gisborne Refrigerant Leak.	Jan 1, 2023	Dec 31, 2023	Jan 1, 2022
Sustainability Linked Loan - Renewable Energy Target	Install at least 345kW of newly installed solar energy generation capacity above baseline.	Jan 1, 2023	Dec 31, 2023	Jan 1, 2023

- for each GHG emissions target:
(i) whether the target is an absolute target or intensity target;
(ii) our view as to how the target contributes to limiting global warming to 1.5 degrees Celsius;
(iii) our basis for the view expressed in (ii), including any reliance on the opinion or methods provided by third parties; and
(iv) the extent to which the target relies on offsets, whether the offsets are verified or certified, and if so, under which scheme or schemes

Targets - Additional Data

Target Name	Type of Target	Measurement Unit	Contribution to Limiting Warming	Basis of View	Reliance on Offsets	Value of Target
Emissions reduction target to 2025	Absolute Target	Percentage	Reduction of absolute scope 1 and 2 emissions by 30 percent.	This target will reduce Seeka's total and intensity based emissions by 30% across all measures.	None	30
Emissions reduction target to 2030	Absolute Target	Percentage	Reduction of scope 1 and 2 emissions by 50 percent	This target will reduce Seeka's total and intensity based emissions across all measures by 50%.	None	50

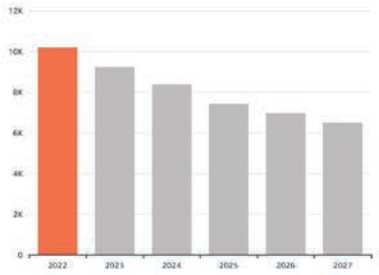
Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

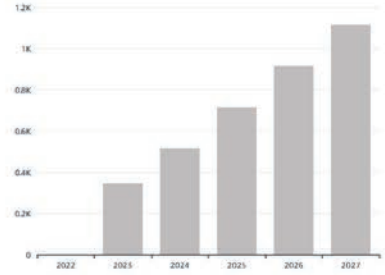
Reduction thresholds for absolute category 1 and 2 emissions

Category 1 and 2 tonnes CO2e



Solar installation thresholds

Total new generating capacity kW



GHG Emissions

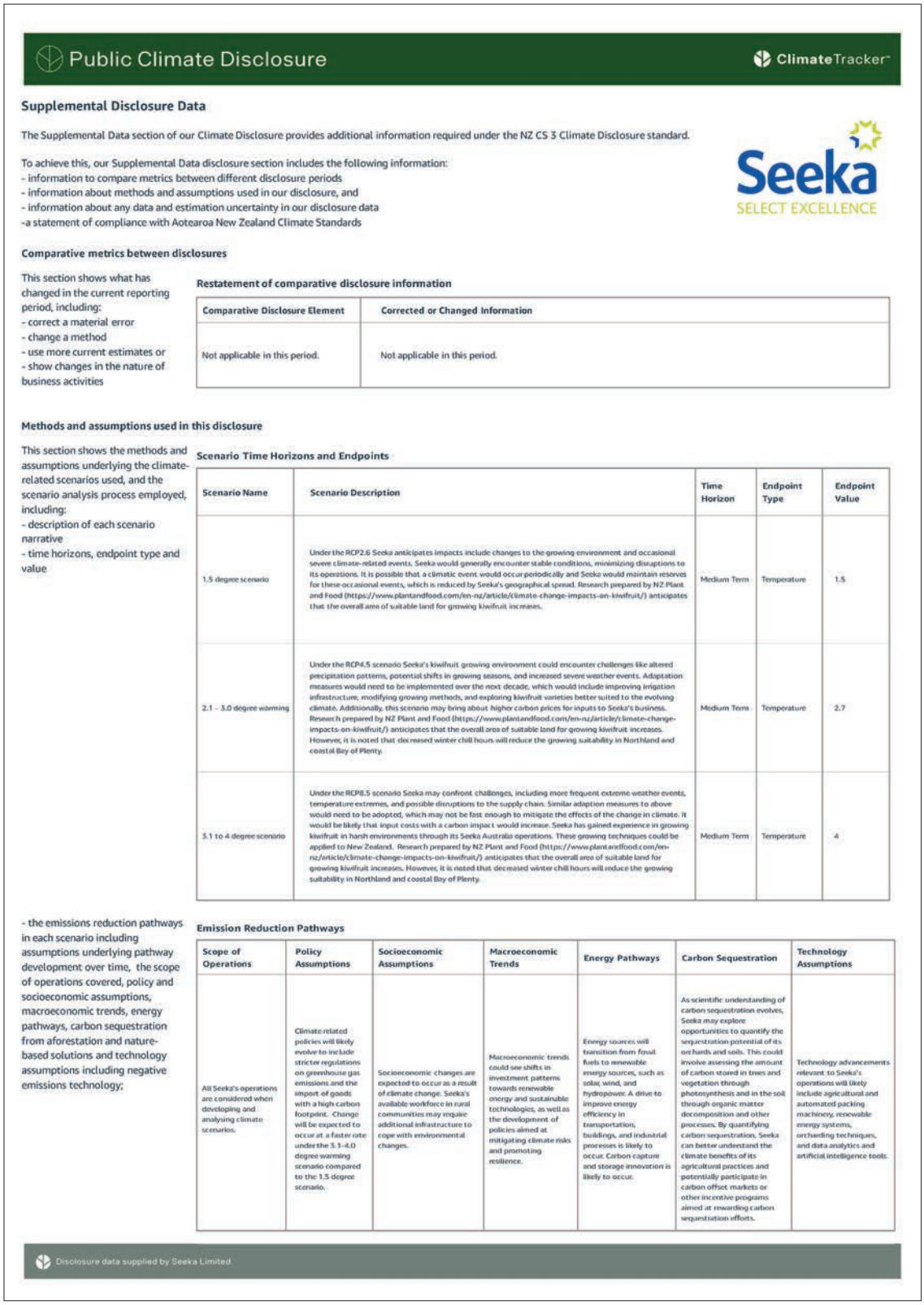
- a statement describing the standard or standards that its GHG emissions have been measured in accordance with	Emissions were calculated in accordance with the ISO 14064-1: 2018 standard, and independently verified by Toitū Envirocare.
- the GHG emissions consolidation approach used: equity share, financial control, or operational control	Equity Share
- the source of emission factors and the global warming potential (GWP) rates used or a reference to the GWP source	Emissions factors are sourced from the Ministry for the Environment. 2023. Measuring emissions: A guide for organisations: 2023 summary of emission factors. Wellington: Ministry for the Environment.

- a summary of specific exclusions of sources, including facilities, operations or assets with a justification for their exclusion.

Excluded Source	Justification for Exclusion
Zespri Class 1 trays, freight related emissions from port to consumer.	Sales channels for these products are handled outside of Seeka's control and emissions accounted for by Zespri. Seeka has no control as to which markets the kiwifruit goes to.
Embodied emissions from procured goods	Seeka accounts for the embodied emissions of procured goods where they are considered material and where the emissions factors are available.

Disclosure data supplied by Seeka Limited.

Seeka
Climate disclosure 2023 (continued)



Public Climate Disclosure

ClimateTracker

Supplemental Disclosure Data

The Supplemental Data section of our Climate Disclosure provides additional information required under the NZ CS 3 Climate Disclosure standard.

To achieve this, our Supplemental Data disclosure section includes the following information:
- information to compare metrics between different disclosure periods
- information about methods and assumptions used in our disclosure, and
- information about any data and estimation uncertainty in our disclosure data
-a statement of compliance with Aotearoa New Zealand Climate Standards

Seeka
SELECT EXCELLENCE

Comparative metrics between disclosures

This section shows what has changed in the current reporting period, including:
- correct a material error
- change a method
- use more current estimates or
- show changes in the nature of business activities

Restatement of comparative disclosure information

Comparative Disclosure Element	Corrected or Changed Information
Not applicable in this period.	Not applicable in this period.

Methods and assumptions used in this disclosure

This section shows the methods and assumptions underlying the climate-related scenarios used, and the scenario analysis process employed, including:
- description of each scenario narrative
- time horizons, endpoint type and value

Scenario Time Horizons and Endpoints

Scenario Name	Scenario Description	Time Horizon	Endpoint Type	Endpoint Value
1.5 degree scenario	Under the RCP2.6 Seeka anticipates impacts include changes to the growing environment and occasional severe climate-related events. Seeka would generally encounter stable conditions, minimizing disruptions to its operations. It is possible that a climatic event would occur periodically and Seeka would maintain reserves for these occasional events, which is reduced by Seeka's geographical spread. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) anticipates that the overall area of suitable land for growing kiwifruit increases.	Medium Term	Temperature	1.5
2.1 - 3.0 degree warming	Under the RCP4.5 scenario Seeka's kiwifruit growing environment could encounter challenges like altered precipitation patterns, potential shifts in growing seasons, and increased severe weather events. Adaptation measures would need to be implemented over the next decade, which would include improving irrigation infrastructure, modifying growing methods, and exploring kiwifruit varieties better suited to the evolving climate. Additionally, this scenario may bring about higher carbon prices for inputs to Seeka's business. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) anticipates that the overall area of suitable land for growing kiwifruit increases. However, it is noted that decreased winter chill hours will reduce the growing suitability in Northland and coastal Bay of Plenty.	Medium Term	Temperature	2.7
3.1 to 4 degree scenario	Under the RCP8.5 scenario Seeka may confront challenges, including more frequent extreme weather events, temperature extremes, and possible disruptions to the supply chain. Similar adaption measures to above would need to be adopted, which may not be fast enough to mitigate the effects of the change in climate. It would be likely that input costs with a carbon impact would increase. Seeka has gained experience in growing kiwifruit in harsh environments through its Seeka Australia operations. These growing techniques could be applied to New Zealand. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) anticipates that the overall area of suitable land for growing kiwifruit increases. However, it is noted that decreased winter chill hours will reduce the growing suitability in Northland and coastal Bay of Plenty.	Medium Term	Temperature	4

- the emissions reduction pathways in each scenario including assumptions underlying pathway development over time, the scope of operations covered, policy and socioeconomic assumptions, macroeconomic trends, energy pathways, carbon sequestration from aforestation and nature-based solutions and technology assumptions including negative emissions technology;

Emission Reduction Pathways

Scope of Operations	Policy Assumptions	Socioeconomic Assumptions	Macroeconomic Trends	Energy Pathways	Carbon Sequestration	Technology Assumptions
All Seeka's operations are considered when developing and analysing climate scenarios.	Climate-related policies will likely evolve to include stricter regulations on greenhouse gas emissions and the import of goods with a high carbon footprint. Change will be expected to occur at a faster rate under the 3.1-4.0 degree warming scenario compared to the 1.5 degree scenario.	Socioeconomic changes are expected to occur as a result of climate change. Seeka's available workforce in rural communities may require additional infrastructure to cope with environmental changes.	Macroeconomic trends could see shifts in investment patterns towards renewable energy and sustainable technologies, as well as the development of policies aimed at mitigating climate risks and promoting resilience.	Energy sources will transition from fossil fuels to renewable energy sources, such as solar, wind, and hydropower. A drive to improve energy efficiency in transportation, buildings, and industrial processes is likely to occur. Carbon capture and storage innovation is likely to occur.	As scientific understanding of carbon sequestration evolves, Seeka may explore opportunities to quantify the sequestration potential of its orchards and soils. This could involve assessing the amount of carbon stored in trees and vegetation through photosynthesis and in the soil through organic matter decomposition and other processes. By quantifying carbon sequestration, Seeka can better understand the climate benefits of its agricultural practices and potentially participate in carbon offset markets or other incentive programs aimed at rewarding carbon sequestration efforts.	Technology advancements relevant to Seeka's operations will likely include agricultural and automated packing machinery, renewable energy systems, orcharding techniques, and data analytics and artificial intelligence tools.

Disclosure data supplied by Seeka Limited

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

- why the scenarios are relevant and appropriate to assessing the resilience of the business model and strategy to climate-related risks and opportunities;
- sources of data used to construct each scenario;

Scenario Relevance and Datasources

Scenario Name	Relevance Description	Scenario Datasource
1.5 degree scenario	This scenario considers a business model that has time to adapt to a changing climate. The rate of change is expected to be at a slower pace and manageable over time. It would be expected that Seeka could adjust orcharding practices and adjust to a change in growing regions.	Seeka have used the information provided by NIWA which focused on nationwide climate change impacts, with a detailed emphasis on the Bay of Plenty, to assess the likely impact of these scenarios. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) has also been used to draw conclusions on suitable growing areas in the future.
2.1 - 3.0 degree warming	This scenario considers a business model that has some time to adapt to a changing climate. The rate of change is expected to be at a moderate pace and Seeka may not be able to fully adjust orcharding practices and change growing areas to fully mitigate potential loss.	Seeka have used the information provided by NIWA which focused on nationwide climate change impacts, with a detailed emphasis on the Bay of Plenty, to assess the likely impact of these scenarios. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) has also been used to draw conclusions on suitable growing areas in the future.
3.1 to 4 degree scenario	This scenario considers a business model that does not have time to adapt. The rate of change exceeds the time available to plan and adjust business practices. It would be likely that the business would su er loss under this scenario.	Seeka have used the information provided by NIWA which focused on nationwide climate change impacts, with a detailed emphasis on the Bay of Plenty, to assess the likely impact of these scenarios. Research prepared by NZ Plant and Food (https://www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit/) has also been used to draw conclusions on suitable growing areas in the future.

- how the scenario analysis process has been conducted, including:
  - whether scenario analysis is a standalone analysis or integrated within the entity's strategy processes;
  - the governance process used to oversee and manage the scenario analysis process, including the role of the governance body and management;
  - if modelling has been undertaken, a clear description of what modelling was undertaken and why the model was chosen as the appropriate model; and
  - which external partners and stakeholders are involved.

Scenario Analysis Process

Scenario Analysis Process Name	Scenario Analysis Process Type	Governance Body Scenario Analysis Role	Management Scenario Analysis Role	Modeling Undertaken	Reason for Selection of Model	Stakeholder Involvement
Seeka Climate Scenario Analysis	Standalone	The Board have delegated the review of climate change scenarios to the Sustainability Committee. Management prepared the information and presented this to the Committee as part of the annual strategy review process.	Seeka's Senior Management are responsible for the preparation of climate scenarios. Information is collated from a workshop, with input from the CFO, Sustainability Manager, and members of the Technical Team. The CFO offers financial insights, the Sustainability Manager provides sustainability guidance, and the technical team contributes real-world orchard experience.	Seeka began with climate risk projections provided by NIWA (National Institute of Water and Atmospheric Research) under Representative Concentration Pathways (RCPs). These pathways represent different greenhouse gas concentration trajectories. Seeka's approach involved assessing the potential impacts of climate change on its operations under the scenarios provided by NIWA. Seeka focused on understanding how changes in temperature, precipitation, extreme weather events, and other climatic factors may affect its business activities.	Seeka chose to use NIWA (National Institute of Water and Atmospheric Research) modeling as it is recognized as a leading scientific institution with expertise in climate modeling in New Zealand. NIWA's projections are tailored to regional New Zealand's specific climate conditions. NIWA's modeling covers a range of Representative Concentration Pathways (RCPs), which represent different greenhouse gas concentration trajectories.	None

Disclosure data supplied by Seeka Limited

Seeka
Climate disclosure 2023 (continued)

Public Climate Disclosure — ClimateTracker

- a description of the methods and assumptions used to calculate or estimate GHG emissions, and the limitations of those methods

Greenhouse Gas Methods and Assumptions

GHG Method Used	GHG Assumptions Used	Limitation of GHG Method Assumptions	Rationale for Choosing GHG Method
Seeka has measured and verified its GHG emissions in accordance with ISO 14064-1:2018 & ISO 14064-3:2019. Verification has been provided by Toitu Envirocare. Emissions factors were sourced from the Ministry for the Environment.	Scope 3 emissions are inherently difficult to fully capture. For example, contractor fuel use is not provided from all contractors. Where information is not provided a fuel-use intensity (per ha) calculation is used based on internal operations. Not all upstream suppliers provide accurate embodied carbon calculations. To calculate the embodied emissions from packaging (cardboard and plastic) Seeka uses a number (CO_2e per tonne of product produced) made publicly available by its supplier. Seeka encourages its suppliers to measure their emissions and provide this information to their customers.	Seeka has used best endeavours to calculate scope 3 emissions. Where information is not directly accessible, assumptions have been used to best reflect the carbon footprint.	Seeka adopts ISO 14064-1:2018 to ensure a standardised and credible approach to measuring and reporting greenhouse gas emissions.

Data and estimation uncertainties

- the uncertainties relevant to quantification of GHG emissions, including the effects of these uncertainties on the GHG emissions disclosures
- an explanation for any base year GHG emissions restatements

GHG Emission Uncertainty

Area of Uncertainty	Description	Effects of Uncertainty
Scope 3 Emissions	The uncertainty in Seeka's scope 3 emissions calculation stems from limitations related to data availability from suppliers and acceptable emissions factors. Seeka has used best endeavours to report scope 3 emissions and have used estimates where information is not readily available.	The uncertainties associated with data availability and emissions factors in Seeka's scope 3 emissions calculation may either overstate or understate the result.

Statement of Compliance with Aotearoa New Zealand Climate Standards

The contents of this disclosure comply with all requirements of the Aotearoa New Zealand Climate Standards 1, 2 and 3.

Disclosure data supplied by Seeka Limited

Apollo RV Manufacturing (*part of the Action family*) – Brisbane building for the future

It has been a positive and highly productive year for the manufacturing team in Brisbane, with continued growth and expanded production. The team has repeatedly set new production output records, achieving a 20% increase in factory output in FY23. Work on new product designs and vehicle models is ongoing; a highlight this year was the introduction of the new Euro Mini (2-Berth van) into production.

We are committed to creating new product ranges to meet the needs of current and future customers through quality design and building a diverse range of products.

As a result of this strong growth, the team in the Brisbane factory has increased from 200 to over 300 crew. Critical to the success of our expanded team is building a strong and supportive health, safety and wellbeing culture.

We continue to uplift safety across the business with a constant focus on eliminating and controlling critical risk areas in our manufacturing operations. We have also launched new leadership programmes focused on culture, performance teamwork and development opportunities. We have continued to manage the impacts of major supply chain disruptions for vehicles and key components used in production. This included making significant improvements in our inventory management, reducing inventory holdings and increasing inventory turns, to maximise efficiency in procurement and reduce costs.

Looking ahead, the team is excited for what lies ahead. We have built the foundations we need and are excited to be working on a number of projects that will continue our growth and improve sustainability performance including reducing waste, emissions and improving energy efficiency to contribute to future-fit priority goals.

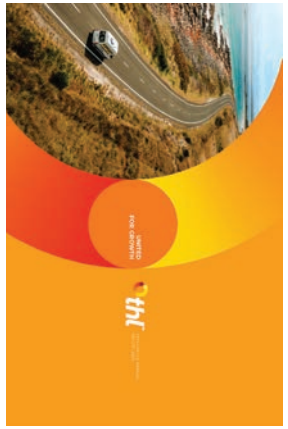
> The team have really stepped up to the challenges of the last couple of years. Being able to continue to grow despite these challenges has established the foundation we need moving forward.
>
> JOSH ANNELLS, GM – BRISBANE MANUFACTURING

Future Fleet - Preparing for the transition to eRV

The emissions from our motorhome fleet is our greatest sustainability challenge and highest priority future-fit goal. This year we are developing six new EV campervans in the New Zealand market, built by Action Manufacturing on a chassis manufactured by a key OEM manufacturer. We plan to trial this new EV rental product for the 2023/24 New Zealand summer. Notably, the travel range is expected to be up to 250kms, a meaningful increase from ***thl***'s earlier 2018 EV trial which had an expected range of up to 140kms. The Board has approved a level of ongoing annual capital expenditure to trial EV and other sustainable new vehicle technologies. Our category of vehicles (light commercial, long-range) remains a low priority for Original Equipment Manufactures (OEMs) globally, but we continue to explore tipping points, technology developments and partnership opportunities in each market.

FUTURE FLEET PROGRAMME
TRANSITIONING TO A LOW-CARBON FLEET

GOALS
- Product harm
- Product GHGS
- Products repurposed



Tourism Holdings
Annual report 2023

Our Global Sustainability Programme

Our sustainability strategy implemented through our Global Sustainability Programme is underpinned by the 23 science-based goals of the Future-Fit Business Benchmark. For more information, see the Creating Systems Value and the FY23 Health Check sections of this report.

We are focused on addressing our most significant sustainability impacts. These include the emissions from our fleet of Internal Combustion Engine (ICE) vehicles and our operations, ensuring our products do not cause harm to people or the environment, and protecting the health of communities and ecosystems where we operate and where our products and activities have an impact.

Our work on our Climate & Carbon Strategy, building our cultural capability, embedding a sustainable procurement framework, and embedding Ignition future-fit branch actions at each location is highlighted in this report. We transparently share our progress towards all 23 future-fit goals in the updated FY23 Health Check and how we protect the value we create through our Enterprise Risk Management framework – find both in Our Responsible Management Disclosures section.

Our priority in FY23 has been to onboard, embed and integrate the global sustainability workstreams at a country and branch level following the merger, bringing in new locations, businesses and teams. Future-fit progress is a core component of ***thl*** country, business and branch plans, supported with resources, training and tools, this year 127 rental crew completed new future-fit modules as part of our TRX 25 customer experience training. The year ahead holds exciting opportunities to activate and expand the impact of our future-fit progress across all regions.

IGNITION
CREATING FUTURE-FIT BRANCHES

GOALS
- Renewable energy
- Water use
- Operational emissions
- Operational GHGS
- Operational waste

Ignition – branch sustainability impact

The Ignition Programme is delivered locally in every branch and is the foundation of our sustainability progress. All branches have targets and actions underway for five priority impact areas for our operations: energy efficiency and renewables, water conservation, waste, operational emissions and community contribution. Country and Branch Impact Reports track progress on actions, reduction targets and emissions impacts annually. We share some highlights from our Ignition Programme 2023 review (based on FY22 verified data) and look forward to reporting impact across our expanded operations, including all Apollo sites, in 2024.

- Our San Francisco branches moved to 100% renewable energy in FY23 through the community energy purchase scheme.
- Overall, the US branches reduced energy use by 15% and operational emissions by 38% from FY20.
- A major focus on water in response to severe drought conditions has seen US operations reduce water use by over 50% in the last four years.
- Australia delivered a significant reduction in overall operational emissions which reduced by 22% from FY20. Energy efficiency changes reduced energy use by 20% in the same period.
- The Melbourne manufacturing site reduced waste generation by 35% over the last three years, through waste reduction initiatives implemented by our factory team.

Five Sustainability Focus Areas for all branches globally

ENERGY EFFICIENCY

CONSERVING WATER

REDUCING WASTE TO LANDFILL

LOWERING EMISSIONS

COMMUNITY CONTRIBUTION

Climate & Carbon Strategy

Our Climate & Carbon Strategy remains front and centre for the business. At ***thi*** we're facing this challenge head-on through our Future Fleet programme, despite the frustratingly slow - but improving - progress of low-emissions RV technologies, read more on page 23. We have also updated our Climate Risks and Opportunities (CR&O) and the scenarios we use, to reflect our global business and new disclosure standards. See Our Responsible Management Disclosures section for our CR&O summary reporting aligned with the Taskforce on Climate-related Financial Disclosures (TCFD).

This year's carbon footprint looks different from prior years, being a 'transitional' footprint now including many Apollo sites. Our FY23 full footprint with commentary is in Our Responsible Management Disclosures section. Reflecting our status as a merged business, we will be restating our baseline in FY24 to capture our full global business activities and Scope 3 emissions. This will also require an update to our science-aligned carbon reduction target, currently an absolute reduction in emissions of 50.4% from a FY20 baseline by 2032 to limit warming within 1.5 degrees Celsius.

In our view, any target needs to be accompanied by a realistic plan for achievement. We have been frustrated by the lack of progress across our supply chain to transition to zero or low-emissions chassis. We are therefore not comfortable setting a reduction target for our Scope 3 emissions as was our intention in FY23, but will be continue to stay abreast of developments.

In the meantime we will in FY24 seek to set interim and intensity targets to drive change which will require the whole business to get behind our climate and carbon challenge. We're in good shape to make progress as we engaged a consultant (WSP) to deliver our first *Future Fleet Global Scan* of infrastructure readiness for eRVs, ICE phase-out regulation deadlines, technology tipping points, climate trends and innovation grants.

CLIMATE & CARBON STRATEGY
DECARBONISING OUR BUSINESS

GOALS
- Operational GHGs
- Product GHGs

OUR PRIORITY CLIMATE RISKS & OPPORTUNITIES (CR&O)

A high proportion of our business is exposed to transition risks, in particular the need to decarbonise our fleet. A low to moderate portion of our business is exposed to physical risks, including the impacts of extreme weather events.

Quantitative metrics for our climate disclosures will be developed in FY24 aligned with industry metrics. These will be informed by qualitative metrics that are already used within our Future-Fit Business Benchmark.

Sustainable Procurement Framework

Our Global Sustainable Procurement Working Group, supported by country-level groups, continues to make strong progress against our five-year 'Flexible Framework' plan. We have moved from embedding sustainable procurement in FY23 to improving practices in FY24 and working towards circular economy outcomes in FY25.

Achievements include the continued on-boarding of suppliers to our Supplier Code of Conduct which has been positively received; publication of our Sustainable Procurement Policy; ongoing future-fit hotspot assessments of supplier categories now linked to our tender process; and sustainable procurement as a key element in our Global Uniform Project.

We've also taken positive steps in our supplier diversity approach, with a Supplier Diversity plan developed in Australia as part of our Reconciliation Action Plan (RAP). A pilot partnership in New Zealand was not effective in delivering value for local suppliers given ***thl***'s vehicle-focussed supplier requirements - this is an area for further development. A product stewardship assessment has set us up well for a pilot project with RVSC suppliers who are keen to partner with us on sustainability.

SUSTAINABLE PROCUREMENT
OUR GLOBAL FRAMEWORK AND CIRCULAR ECONOMY PILOTS

GOALS
- Procurement
- Products repurposed

Modern Slavery Statement

This year we worked with Edge Impact to complete a global assessment of our modern slavery risks as a merged business. We completed a gaps and opportunities analysis and progressed work on our global Modern Slavery Statement and Implementation Roadmap covering the six key pillars shown below. The Statement will be made available online on the ***thl*** sustainability website: www.thlsustainability.com

- STRATEGY
- GOVERNANCE
- INTERNAL CAPACITY
- SUSTAINABLE PROCUREMENT
- EXTERNAL COLLABORATION
- GRIEVANCE & REMEDIATION

Our FY23 Carbon Footprint

Our FY23 greenhouse gas (carbon) footprint has been independently assured by McHugh & Shaw Ltd. It is considered consistent with the mandatory requirements of ISO 14064-1:2018, with Reasonable Assurance (Scope 1/ISO Category 1 Emissions and Scope 2/ISO Category 2 Emissions) and Limited Assurance (Scope 3/ISO Category 3-6 Emissions).

Our FY23 carbon footprint is a 'transitional' footprint given the merger with Apollo businesses. To capture as much data as possible, we took a materiality approach to include the larger sites in our footprint which now covers approximately 85% of our total combined sites. Excluded sites include three sites in the UK / Ireland, three newly acquired Action Manufacturing sites and two Australian dealership sites. Scope 1 and 2 emissions for specific sites across Canada, Australia, the UK and Ireland have been included as partial years from date of acquisition.

Our transitional footprint continues to be based on our previous approach (full Scope 1 and 2 and limited Scope 3), keeping to a FY19 baseline for consistency with previous years, with customer journeys included in our Scope 1 emissions. Our total transitional footprint as a much larger merged business is 65,472 tCO_2e, this includes data for merged business units since date of acquisition. This footprint includes an increase in our operational emissions of 73% from FY22 (an increase of 4% from our FY19 baseline year), and also an increase in our customer journey emissions of 58% from FY22 (a decrease of 22% from our FY19 baseline year).

Prior to the merger, our intention was to extend our FY23 footprint to include our full Scope 3 emissions. However, given the additional data required from Apollo businesses, we will instead be restating our entire greenhouse gas inventory in FY24, to include full Scope 1, 2 and 3 emissions. FY24 will then become our new baseline year, which will enable us to refine our science-aligned target as discussed in the Climate & Carbon Strategy section in this report.

In the following graphs we have included customer journey emissions in Scope 1 but have also reported them separately for consistency with previous years. As international visitors return to New Zealand, Kiwi Experience has restarted after a period of hibernation and we have seen a corresponding increase in their emissions and from our Discover Waitomo tourism operations.

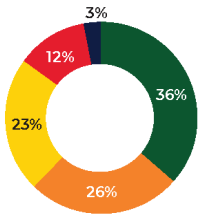
Note: ***thl*** uses the ISO 14064-1:2018 standard but also aligns with language and framing from the GHG Protocol's standards. ***thl*** follows the equity share approach.

Our full Scope 3 GHG inventory in FY24 will align with the GHG Protocol Value Chain (Scope 3) Standard.

Country-specific emission factors have been used if available. For further information please visit www.thlsustainability.com.

GROUP-WIDE OPERATIONAL GHG EMISSIONS FY23* – EXCLUDING CUSTOMER JOURNEYS

(tonnes CO_2e) (transitional year)

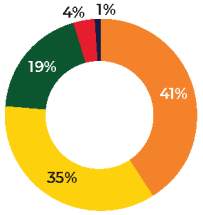


New Zealand	2,773
Australia	1,958
US	1,724
Canada	911
UK & Ireland	219
Joint ventures	0
Total GHG emissions (tonnes CO_2e)	7,585

73% increase on FY22 (includes data for merged business units since acquisition date).

GROUP-WIDE CUSTOMER JOURNEY GHG EMISSIONS FY23

(tonnes CO_2e) (transitional year)

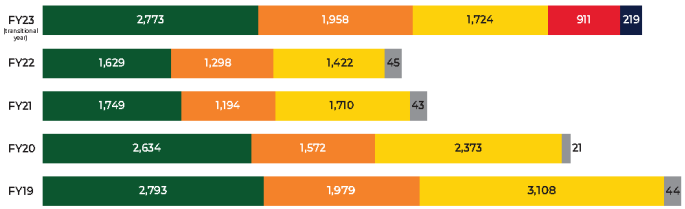


Australia	23,768
US	20,472
New Zealand	11,030
Canada	2,034
UK & Ireland	583
Joint ventures	0
Total GHG emissions (tonnes CO_2e)	57,887

58% increase on FY22 (includes data for merged business units since acquisition date).

GROUP-WIDE OPERATIONAL GHG EMISSIONS YEAR-ON-YEAR – EXCLUDING CUSTOMER JOURNEYS

(tonnes CO_2e)



	Total GHG emissions (tonnes CO_2e)	New Zealand	Australia	US	Canada	UK & Ireland	Joint ventures
FY23 (transitional year)	7,585	36%	26%	23%	12%	3%	0%
FY22	4,394	37%	30%	32%	0%	0%	1%
FY21	4,696	37%	26%	36%	0%	0%	1%
FY20	6,600	40%	24%	36%	0%	0%	0%
FY19	7,924	35%	25%	39%	0%	0 %	1%

Our 'transitional' operational carbon footprint includes:

Scope 1 Direct GHG emissions: transport fuel used in our company cars, fuel used at our sites (LPG, natural gas, diesel) and customer journeys included in Scope 1 but also reported separately

Scope 2 Indirect GHG emissions from energy: emissions associated with purchased electricity

Scope 3 Other indirect GHG emissions: fuel used by staff commuting to work; air and taxi travel; waste sent to landfill; and motorhome maintenance materials (replacement tyres, batteries and water)

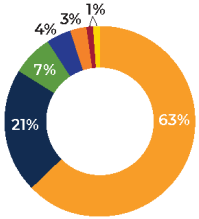
GROUP-WIDE GHG EMISSIONS BY SCOPE FY23 – INCLUDING CUSTOMER JOURNEYS IN SCOPE 1

(tonnes CO_2e)

(transitional year)	Total tonnes CO_2e
Scope 1	59,393
Scope 2	1,953
Scope 3	4,126
Total FY23 footprint (tonnes CO_2e)	65,472

GHG EMISSIONS BY BUSINESS UNIT FY23 – EXCLUDING CUSTOMER JOURNEYS

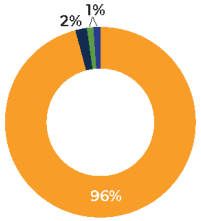
(tonnes CO_2e)



(transitional year)	
Self Drive Experiences (Global)	4,808
Manufacturing	1,619
Kiwi Experience	559
Discover Waitomo	306
Dealerships Australia	211
Head Office	57
thl Digital	25
Total GHG emissions (tonnes CO_2e)	7,585

GHG EMISSIONS BY BUSINESS UNIT FY23 – INCLUDING CUSTOMER JOURNEYS

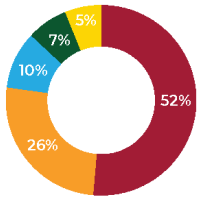
(tonnes CO_2e)



(transitional year)	
Self Drive Experiences (Global)	62,695
Manufacturing	1,619
Kiwi Experience	559
Discover Waitomo	306
Dealerships Australia	211
Head Office	57
thl Digital	25
Total GHG emissions (tonnes CO_2e)	65,472

GROUP-WIDE GHG EMISSIONS BY EMISSION SOURCE FY23 – EXCLUDING CUSTOMER JOURNEYS

(tonnes CO_2e)



(transitional year)	
Transport & Stationary Fuels	3,920
Electricity	1,953
Materials	747
Air Travel	533
Waste sent to Landfill	424
Taxi Use	8
Total FY23 footprint (tonnes CO_2e)	7,585

Our Climate Disclosures

Below please find a summary of ***thl***'s climate-related disclosures, aligned with External Reporting Board (XRB) / Te Kāwai Ārahi Pūrongo Mōwaho standard NZ CS 1. NZ CS 1 was developed in response to the TCFD framework and adjusted to take account of the International Sustainability Standards Board (ISSB) development of sustainability reporting standards.

For our full disclosures, please visit the ***thl*** sustainability website: thlsustainability.com.

Governance: NZ CS 1 disclosures 7, 8, 9

Refer to Our Global Sustainability Work Programme and Future-Fit Health Check sections of this report.

The ***thl*** Board oversees and is ultimately responsible for group-wide risks, including those relating to climate change. The Audit & Risk Committee (ARC) and Health, Safety and Sustainability Committee (HSSC) also have oversight of climate-related risks and opportunities (CR&O).

The identification and management of CR&Os is integrated throughout all levels of our business. Our operational-level Regional Risk Networks (RRN – previously Risk Champions Networks) report up to the Executive-level Risk & Improvement Committee (RIC) reports up to the ARC, which in turn makes recommendations to the Board. These committees are responsible for implementing ***thl***'s Enterprise Risk Management (ERM) framework across our business and escalating key risks up to ARC as required.

Climate-related risks are standing strategic and operational agenda items that are reported to the ARC and RIC on a bi-monthly / quarterly basis. Members of our Board regularly consider the integration of climate and sustainability into strategic decision-making through ARC meetings.

The ARC and HSSC consider CR&O when developing and overseeing the implementation of business strategy. Each ***thl*** business unit develops business plans that must include elements of our 23 science-based future-fit goals. Our priority goal is 'Products emit no greenhouse gases' (GHG), which presents the significant challenge to rapidly decarbonise our fleet. Our subsidiary, Action Manufacturing, leads our Future Fleet strategy and is developing new EV campervans for the New Zealand market. The ***thl*** Board has approved ongoing capital expenditure to trial EV and other low carbon vehicle technologies.

The ARC selects and reviews metrics and targets at quarterly meetings. The ARC and HSSC have oversight over the Future-Fit Business Benchmark qualitative metrics including an annual health check and score across future-fit goals. ARC meetings focus on priority goals for ***thl*** which include procurement, product harm and product GHG emissions.

The methodology for identification and assessment of quantitative metrics will be progressed in FY24 to prepare for mandatory FY24 reporting and full financial disclosures in FY25. Key performance metrics are not yet incorporated into our remuneration policies – the status of this will be reviewed in FY24.

Our Chief Responsibility Officer and Responsible Management (RM) Team undertake climate and carbon reporting associated with ***thl***'s CR&Os. Our RM team works with stakeholders to undertake the measurement and verification of ***thl***'s GHG emissions and, through the ERM framework, sees that the CR&Os identified, assessed and mitigated.

CR&Os are managed by ***thl***'s RIC and mitigation will be implemented via our new regional-specific risk networks. The ARC reviews CR&Os on a quarterly basis.

A key project for FY24 is a review of strategic decision-making processes at the governance and management level. This review will identify the triggers for influencing sustainability, including climate resilience when making decisions with regard to supply chains, business operations, and capital projects.

Strategy: NZ CS 1 disclosures 10 – 16

Refer to Our Climate & Carbon Strategy and Future Fleet sections of this report.

This year we have seen developments in extreme climate-related weather events globally. ***thl*** has experienced the impact of these on our operations and revenue, including the recent Canadian wildfires and Cyclone Gabrielle which caused damage to the roading infrastructure. This led to the closure of Waitomo Caves for five days and interrupted customer demand. ***thl***'s fleet was utilised as emergency mobile housing to contribute to relief efforts during the Auckland floods and Cyclone Gabrielle.

As with last year, this year's climate scenario analysis has adopted the scenarios developed by the Network for Greening the Financial System (NGFS). The global coverage and integrated assessment of risks at the NGFS make their scenarios relevant and appropriate

to ***thl***'s multinational operations. Additionally, the NGFS scenarios have informed the core assumptions of the recently released New Zealand Tourism Sector Climate Scenarios.

Further information on our scenarios will be made available at: thlsustainability.com.

Priority risks and opportunities for ***thl*** and management actions are described in the Climate and Carbon Strategy section of this report. Further management actions are described in the Future Fleet section.

thl is committed to addressing our CR&Os and have identified their anticipated impact on key areas of our business, **see below table**.

	Area	Anticipated climate-related impacts
RISKS	Business model	Extreme physical risks could close certain attractions or eliminate tourism in whole regions, thus seasonally impacting ***thl***'s revenue from its tourism business.
	Supply chain	The scarcity in low-emissions and cost-effective technology to decarbonise the fleet could expose ***thl*** to higher operating costs from increases in fuel price and loss of revenue from changing customer preferences.
	Products and services	The pace of regulatory change in phasing out ICE vehicles could lead to stranded assets. ***thl*** may find it difficult to on-sell ICE vehicles.
	Access to capital	Accessing capital and loans may become more challenging due to stringent sustainability criteria.
OPPORTUNITIES	Business model	Growth into non-tourism markets will support diversification and resilience of ***thl***'s business model, e.g., acquiring 100% ownership of Action Manufacturing in 2022.
	Supply chain	Development of new supplier options for electric, plug in hybrid, and hydrogen fuel cell RVs in the European, UK and US markets.
	Products and services	Expansion into emergency management through partnerships that support housing for people displaced by extreme weather events.
	Access to capital	Enhanced market credentials and international financing options resulting from verified science-based emissions reduction targets.

At ***thl***, we are continuously working to manage, minimise and ultimately eliminate our GHG. We acknowledge that we are a part of a wider system and aim to work in partnership with other leading organisations in the industry to help drive the transition towards a low emissions RV and tourism sector.

Our Future Fleet programme is a core strategic goal of ***thl***, and it aims to address our greatest sustainability challenge of decarbonising our motorhome fleet. The actions we take to decarbonise our fleet will determine our resilience in a low-emissions future economy.

To prepare for mandatory reporting in FY24 and full financial disclosures in FY25, we have started the process of developing our methodology for identifying and assessing the financial impact of our CR&Os.

thl used three NGFS climate scenarios: **Orderly – Net Zero 2050; Disorderly – Delayed Transition and Hothouse – Current Policies** and assigned a materiality rating of high to low to each CR&O to meet the XRB's definition of materiality.

thl considers climate risks and opportunities across three-time horizons shown in the Climate & Carbon section. These align with business planning, capital allocation and risk management timeframes.

thl has categorised climate-related risks and opportunities as physical impacts from climate change and transitional impacts that arise as the economy and people transition to a lower carbon future.

thl has identified three transition risks, two physical risks and two opportunities through the Future Fleet Scan report and scenario analysis with stakeholders. Together these make up ***thl***'s priority CR&Os which could impact ***thl***'s business model. See thlsustainability.com for more information on how these were rated under the three NGFS climate scenarios.

We are continuously working to integrate our response to climate change into our business model and strategy. Refer to 'We are RV' for an in-depth description of our Build/Buy - Rent - Sell model (for RVs). Through our Future Fleet Programme, future-fit goals and Future Fleet, we have the foundations to prepare a transition plan in FY24.

Risk Management: NZ CS 1 disclosures 17 – 19

Refer to Enterprise Risk Management section of this report.

Metrics, Targets & Assurance of Greenhouse Gas Emissions: NZ CS 1 disclosures 20 – 26

Refer to Climate & Carbon and Greenhouse Gas inventory (our FY23 Carbon Footprint) sections of this report.

Our FY23 Future-Fit Health Check

KEY - Health Check assessments show how ***thl*** is performing against the Future-Fit Break-Even Goals

- We are off track and need to redesign our course
- We have gaps and need to rethink how to address them
- We have gaps but know how to close them
- We are on track and can continue our journey

Future-Fit Break-Even Goals	FY19 Health Check	FY20 Health Check	FY21 Health Check	FY22 Health Check	FY23 Health Check	FY23 Review Commentary
BE01: Renewable energy						Renewable energy use has increased, San Francisco branches moved to 100% renewable energy community plan in FY22. Renewable energy programmes are being investigated in each region. Branch Action Plans have an energy efficiency focus with progress on LED lighting upgrades, installing timers, sensors and energy efficient equipment. Australia branches reduced energy use by 22%. A Future Fleet Global Scan of renewables in the grid mix was completed in FY23.
BE02: Water use						Branch actions underway focusing on water conservation awareness, leak detection, process efficiency in high water use activities, installing low flow facilities, water tanks and investigating recycled water where appropriate. US branches achieved a >50% reduction in branches over the last four years. We will reassess our water conservation impacts and practices and review new branch locations for water stress to prioritise water conservation at these locations.
BE03: Natural resources						This goal applies to businesses which directly manage natural resources. At ***thl***, we manage natural resources in Waitomo, NZ. Our environmental management practices at Discover Waitomo meet a high standard, guided by an Environmental Management Plan, with intensive monitoring oversight provided by the Environmental Management Advisory Group. Through our *Kaimahi for Nature* community conservation work we are making a positive impact through restoring our natural environment. We have undertaken an initial assessment of nature-based risks and opportunities aligned with draft TNFD guidelines.
BE04: Procurement PRIORITY GOAL						We progressed Level 2 - Embed of our five-year sustainable procurement framework in FY23. A Supplier Code of Conduct was rolled out to suppliers in each region we operate. Analysis of supplier hotspot assessments were completed for our main supplier categories and a Modern Slavery assessment of global policies and processes has been completed. A Modern Slavery Roadmap and Statement is in development. Training and continuous improvement is a focus of the Global Sustainable Procurement Working Group and lead managers.
BE05: Operational emissions						At a branch level we do not generate measurable liquid, gas or solid emissions released directly into nature. Emissions created by use of some chemical products and by potential spills are difficult to measure and not considered material. With expanded manufacturing activities we will review our operational emissions approach and impact again in FY24.
BE06: Operational GHGs						Operational emissions had reduced by over 20% in each country prior to the merger and new country and branch carbon impact reports have been rolled out to track improvements and impacts. Our FY23 footprint will again include emissions for Kiwi Experience coach operations. Post-merger, our increased manufacturing operations impacts on our operational GHG emissions will be reviewed in FY24 (excludes emissions from use of our products).
BE07: Operational waste						Operational waste remains a challenge due to the complexity of our vehicles, and branch moves due to the merger have increased waste in FY23. Branch Action Plans are in place to reduce, reuse, repurpose and recycle in each location, and Action Manufacturing has made significant progress in repurposing reprocessing and recycling its waste. As activity levels return and manufacturing expands, reducing waste is an ongoing challenge. Actions include working with suppliers on product stewardship and reducing packaging. Recycling and waste management at a national level will be a particular focus area for our New Zealand branches in FY24.
BE08: Operational Encroachment on Ecosystems or Communities						Most branches are now located in areas of low risk of impact on sensitive areas, ecosystems and community health and we have a framework to assess encroachment impacts for new locations. Our most significant location for operational impacts on communities and ecosystems is Waitomo NZ where we are actively working to restore and enhance ecosystems and cultural sites. We have done an initial assessment of our nature-based risks and opportunities (NR&O) using the draft TNFD framework and in FY24 will review our performance of this goal taking these NR&O into account.
BE09: Community health						We are working with partners to protect the health of communities where we operate and where our products impact through the Accelerate programme. We actively engage in industry responsible travel programmes, are progressing on our Reconciliation Action Plan in Australia and local community contribution activities from our branches.

Future-Fit Break-Even Goals	FY19 Health Check	FY20 Health Check	FY21 Health Check	FY22 Health Check	FY23 Health Check	FY23 Review Commentary
BE10: Employee health						Health, safety and wellbeing remains a top priority, and we have the systems, resources, capability and culture in place to meet this goal. In FY23 we have focused on critical health and safety risks and mental health with the trial of Mental Health First Aid training that will be rolled out to leaders in all sites globally in FY24. We also made improvements to our hazards register.
BE11: Living wage						We continue to make progress on this goal as a priority to close current gaps. In NZ & the US we continue movements towards a ***thl*** Future-Fit wage. In Australia, Canada and the UK and Ireland we will continue to investigate living wage models that meet Future-Fit criteria in each region in FY24.
BE12: Fair employment terms						As previously assessed, we perform well against the majority of the fitness criteria for this goal in NZ and AU. The US is the focus for this goal to review and make progress, with key issues relating to variation in employment regulations, such as paid parental leave which impact fitness progress.
BE13: Employee discrimination						As previously assessed, we have the policies, procedures and training in place to achieve this goal. We will continue to review our progress and implement initiatives focused on diversity and inclusion, including building our cultural capability globally.
BE14: Employee concerns						We have developed new mechanisms through the *Report It Now* platform. A *Speak Up* training and internal campaign was paused to bring on the rest of the group post-merger. The Policy has been translated and posters are available in English and French for Canada and English and Spanish for the US, ready to be launched June 2023.
BE15: Product communications						Safe and responsible use of our products is a critical priority. All customers receive instructions on safe driving and operating equipment in the motorhome, along with online manuals and instruction videos. Responsible Travel programmes help customers travel responsibly and address potential impacts from inappropriate use of vehicles.
BE16: Product concerns						We recognise the significance of this goal due to the complexity of motorhomes and the potential impact for people and the environment if issues arise. We have robust mechanisms in place for customers to raise concerns and roadside assistance to ensure guests have the information they need. Our customers and owners have channels to raise concerns, get support and advice and we proactively manage any issues identified.
BE17: Product harm PRIORITY GOAL						We are committed to ensuring our products do not cause harm to people or the environment. The highest potential impacts for communities and destinations are issues connected to freedom camping and accidents caused by poor driving / traffic management. We promote responsible travel and safe driving and traffic management at our branches. Responsible travel programmes help our customers avoid causing harm when using our products.
BE18: Product GHGs PRIORITY GOAL						Reducing the GHG emissions from our fleet remains our highest impact and greatest challenge. We are working on this through our Future Fleet programme and developing a new eRV pilot fleet in NZ. Industry partnerships with OEMs will be key to moving forward. We account for the customer journey emissions for our rental fleet as a Scope 1 emission and have set a science-aligned absolute reduction target to reduce emission by 50.4% by FY32 based on FY20 data. Further work on restating our baseline and developing a Scope 3 emissions target for use of sold products will be a focus in FY24.
BE19: Products can be repurposed						This goal is complex as our vehicles include many components and materials, and repurposing infrastructure varies by region. We are investigating more circular materials in our design and build work at Action and in Brisbane. The Global Sustainable Procurement Working Group is scoping product stewardship and repurposing opportunities in each market/country including extended producer responsibility changes. Data on the impact of our products at end of life is not currently collected but we are reviewing new AI tools to help understand our whole-of-life impacts.
BE20: Business ethics						A hotspot assessment of high-risk roles has been completed. We have a Code of Ethics and a Governance and Ethics Committee which includes the CEO. The Exec team has undertaken Ethics training and a review of the Code of Ethics is under way. All staff complete ethics training on an annual basis, and this is monitored.
BE21: Right tax						A hotspot assessment of high-risk roles has been completed. We have a Code of Ethics and a Governance and Ethics Committee which includes the CEO. The Exec team has undertaken Ethics training and a review of the Code of Ethics is under way. All staff complete ethics training on an annual basis, and this is monitored.
BE22: Lobbying & advocacy						We do not directly undertake lobbying activities, but we are active in a number of Tourism and RV Industry Groups. We proactively encourage the groups we engage with to make sustainability progress to address the key impacts, risks and issues impacting future-fit progress.
BE23: Financial assets						As a company we do not directly manage financial investment assets, beyond standard financing activities. We have reviewed this goal and many of the risk areas identified do not apply directly to our activities or are managed in other goals.

Our Enterprise Risk Management Framework

At ***thl*** we take an integrated approach to Enterprise Risk Management (ERM), managing risks at all levels of the organisation. We identify and manage our strategic, operational and regulatory risks using our ERM Framework – a suite of policies and tools including our ERM Policy and our online Risk Register which allows us to manage all our risks including risks from, and contributing to, climate change.

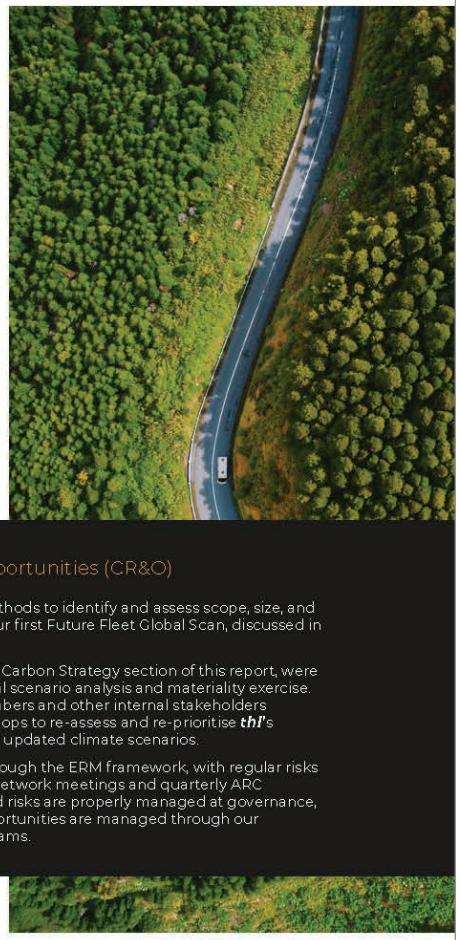
Risks and opportunities identified by our operational Risk Champions are reviewed and reported up to Risk Owners in the Risk & Improvement Committee (RIC). RIC provides Executive-level governance and a consistent approach to ERM across ***thl***. In turn, RIC reports key strategic and 'front and centre' operational risks up to the Audit & Risk Committee (ARC) who provide Board-level oversight of our ERM. Our critical risks are detailed below, noting that climate-related risk is a standing critical strategic risk reported to the ARC, with further priority climate risks and opportunities detailed in the Climate & Carbon Strategy section of this report and discussed in the text box below.

FY23 has seen the Responsible Management team focus on integrating risks from Apollo businesses which have a very similar risk profile to risks already captured under the ERM. We have been working with the RIC and ARC to identify risk appetite for critical risk areas and have delivered control measure projects for our higher-rated risks. Examples include reviewing emergency preparedness across our branches globally and assessing the risk of modern slavery in our supply chain.

Our ERM framework was externally assessed and a Risk Culture survey of key stakeholders undertaken. Results indicated that ***thl*** has a 'reasonably mature approach to risk with some variability across the merged business; it is clear that the tone at the top and culture is healthy with regard to engagement around risk in general, with risk well defined and understood, but there is a big opportunity to engage front-line staff more in general business risks and to improve the ERM system'. A wider internal Risk Culture survey of the business is to be undertaken in FY24.

In FY24 we will continue to focus on the effectiveness of our controls and delivery of control measure projects; development of risk metrics and improvement of our ERM system; refining our climate risk and opportunity management and reporting; and engaging our crew through themed risk months focussed on critical risks.

Below are the key short, medium and long-term strategic risks and 'front and centre' operational risks as agreed and owned by the RIC.



thl's Climate-related Risks & Opportunities (CR&O)

To understand our CR&O we used two methods to identify and assess scope, size, and impact: a Climate Scenario Analysis and our first Future Fleet Global Scan, discussed in this report and on thlsustainability.com.

Our priority CR&O, shown in the Climate & Carbon Strategy section of this report, were assessed and reviewed through our annual scenario analysis and materiality exercise. In June 2023, our Executive-level RIC members and other internal stakeholders attended climate scenario analysis workshops to re-assess and re-prioritise ***thl***'s priority CR&O and test these against three updated climate scenarios.

Our climate-related risks are managed through the ERM framework, with regular risks reviews, quarterly RIC and Regional Risk Network meetings and quarterly ARC meetings. This ensures our climate-related risks are properly managed at governance, management and operational levels. Opportunities are managed through our Transformation and Future Fleet workstreams.

Risk	Description	Impact	Risk Controls	Relevant Capitals See *About this report* for more information
Cyber security	Within our global digital landscape we face numerous cyber threats that can severely impact operations, reputation and customer trust. One of the most significant risks is the potential for a data breach and unauthorised access to sensitive information.	Financial losses due to regulatory fines, legal settlements and recovery costs. Loss of customer trust may also result in reduced revenue. Business disruption: for business-critical systems productivity could be affected, along with customer service and overall business continuity.	Implementation of comprehensive cyber and data policies, standards, software, and processes outlining how we will address cyber security risks and protecting our assets in line with our Written Information Security Programme. Prioritising cyber risks, undertaking regular risk assessments to identify assets across our global landscape, and implementing strategies to mitigate risks. Technology controls have increased with implementation of firewalls to monitor and control traffic, endpoint protection, vulnerability scanning and monitoring and Multi Factor Authorisation deployment across business-critical systems. Employee training and awareness programmes tailored to specific business units to share best practices for data handling procedures and phishing prevention.	
Supply chain disruption	Supply chain issues (i.e. shipping delays, product shortages, manufacturing disruptions) contributing to delays and/or a shortage of vehicles, increased manufacture cost, potentially causing rental booking cancellations and delaying retail vehicle deliveries.	Impact on delivery for customers and/or increase in cost of vehicle buy/build/maintenance impacting profitability. Potential reputational and revenue impact.	Maintain ongoing relationships and communication with existing suppliers and potential new suppliers; regular monitoring, review and production meetings; fleet and revenue planning; increased raw material stock. Reforecast revenue quarterly in line with reforecasted manufacturing assumptions; reschedule vehicle sale plans; and explore alternative rental / sales product types.	
Major market shocks or abnormal macroeconomic factors	Global or local macroeconomic factors or market shocks that impact supply or demand in all or some of the markets we operate in including: pandemic, war, terrorism, economic recession and geopolitical tensions. Some markets in which ***thl*** operates have already entered recession with the potential for other markets to enter recession.	Market shocks can lead to a material reduction and increased volatility in rental demand, vehicle sales demand and margins and overall tourism visitor numbers. This in turn could have a significant impact on profitability and potentially capital structure.	Active monitoring of global trends and the economic environment; agility and diversification in business models, product offerings and across geographies. Development of domestic tourism and non-tourism markets and non-RV related manufacturing. Long-term fixed costs and commitments minimised where appropriate to maintain cost flexibility; and internal and external monitoring of the forward-booking trends to detect changes and adapt pricing or fleet as required. Strong fiscal management of balance sheet to quickly adjust debt levels. Competitive tension amongst lenders to minimise borrowing rates.	
Long-term global inflation	Long-term global inflation causes significant detrimental impact to vehicle sales margins and overall business model, as seen with OEM pricing, shipping and other supply chain increases.	A significant reduction in profitability could occur if long term inflation becomes embedded in the manufacturing supply chain and these cost rises are not able to be passed on to vehicle purchasers causing a loss of sales margin and threatening the overall business model.	Fleet planning consideration given to ROFE impact; regular meetings and active monitoring of supply chain and availability; reviewing and adjusting fleet sales scheduling.	
Competitor behaviour - new or existing competitors disrupt market	New or existing competitors entering or expanding in the market (including manufacturers entering the rentals space). Peer-to-peer market continuing to grow.	Additional fleet supply and new entrant behaviours alter market dynamics, putting business model, revenue and profitability at risk.	Regular fleet and pricing review; price checks; mystery shoppers; competitor assessments; multi-channel distribution presence; explore alternative rental / sales product types. Continued product development based on current customer need.	
Megatrends in tourism	Market shifts, technology advancements and changing preference/attitudes can cause shifts in tourism patterns and demands both in the short and long-term.	Reduction in inbound tourism reduces demand, impacting profitability and ROFE. External factors increase the cost of air travel. Potential reputational impact.	Maintain presence in core markets through geographic spread of ***thl*** businesses; develop new markets; continue to source non-tourism revenue opportunities and to engage with tourism bodies; monitor economic/external environment; manage balance sheet ratios, flex fleet; drive and communicate sustainability progress to meet/anticipate customer expectations.	

Risk	Description	Impact	Risk Controls	Relevant Capitals See *About this report* for more information
Regulatory and legal compliance	Changing governments or political contexts can cause changes in regulatory and legal requirements in a short period of time. With ***thl*** operating in numerous countries and several areas of operations (including adventure tourism/tourism, automotive manufacturing and transportation), the legislative context is complex.	Potential reputational, legal and financial impacts e.g., exposure to litigation; revenue loss; and operational disruption.	Ongoing regular monitoring of upcoming legal policy and compliance changes; proactive engagement with legal advisers in each region. ***thl*** Future Fleet Global Scan highlights changing regulation with regard to internal combustion engine vehicle import cut-off dates and eRV charging infrastructure.	
Vehicle technological and obsolescence risks	Our business relies on motorhome manufacturing, rentals and sales. There are several potential risks associated with the possible poor selection of future fleet and investment in new, low-emission vehicle technology alongside the expected rapid pace of technology change. Evolving technology and regulatory changes such as internal combustion engine sales / import cut-off dates may cause parts for repair to no longer be available and/or entire vehicles to become obsolescent.	Early adoption of the wrong product leads to lack of reduction in emissions contributing to climate change; financial consequences. Obsolescence of existing fleet leads to impairment of all or some of fleet; operational impacts of poor decisions, disruption to daily activity.	Continue delivery of the Future Fleet programme including Future Fleet eRV trials and regular external Future Fleet Global Scans providing an overview of regulation, low-emissions technology tipping points, renewable energy infrastructure and climate trends.	
Health, Safety & Wellbeing (HSW)	The safety of our crew and customers remains a critical priority to ***thl***. The key operational health and safety risks to our business to proactively manage are on-site traffic management, working at heights, manufacturing services and adventure tourism.	Potential for serious injury or loss of life; financial and reputational consequences; operational disruption; impact on mental health of those directly and indirectly impacted by a HSW event.	Regular internal and external site audits and assessments, with outcomes being captured as part of ongoing risk assessments; HSW team working within operational business units to capitalise on global learnings and implement best practices at a site level; process, procedure and training remains a core area following the merger; ensuring that our crew have the right training and equipment to do their roles safely; global HSW Steering Committee with quarterly meetings. Ongoing assessment of high risk practices, equipment and products including assessing latest technology which may enable risk elimination. Relaunch of H&S management and recording platform enabling greater risk transparency and management of incidents.	
Labour supply risk: recruitment and retention	Globally, recruitment challenges are easing but we remain in a low unemployment, high wage inflation environment in all jurisdictions. The challenge continues to prepare to have the right number of crew with the right skills to deliver operationally. This is a particular risk in the lead-up to peak periods.	Lack of skilled labour and sustainable labour force/high churn impacting operations and customer offering. Loss of key crew members resulting in loss of knowledge, skills or reputation that could impair the execution of the business strategic plan.	Clear strategies to retain our crew through personal development plans, wellbeing and appropriate remuneration for each role where possible aligned with our Future-Fit Living Wage. Regarding talent acquisition, our brand as an employer of choice has been redefined to reflect the significant opportunities of our merged businesses; and development of assets to support effective recruitment is underway.	
Extreme weather events including from climate change	Globally, extreme weather events continue to cause disruption and ongoing impacts to the communities we operate in and the destinations our customers visit. These weather events have the potential to impact operations and infrastructure (including closing off areas), cause loss of fleet, and disrupt our customers' travel plans to tourism destinations as well as posing a potential safety risk.	Disruption to travel infrastructure impacting customers, staff or suppliers, and/or impacting operations. Disruption to our Discover Waitomo glowworm tours, cave and karst ecosystem and glowworm population.	Continue to proactively monitor potential significant events and climate conditions and their possible impact on our customers, crew and assets; Emergency Response branch scan completed and BCP updates underway; regular training and crew awareness/engagement. Telematics enables us to communicate with our customers, monitor who is in/near impacted areas and provide advance warning. Initial Taskforce on Nature-related Financial Disclosures (TNFD) assessment undertaken with a particular focus on our Discover Waitomo business. ***thl*** Climate Risks & Opportunities have been re-prioritised to reflect our merged, global business and disclosed in alignment with the Taskforce for Climate-related Financial Disclosures (TCFD) and XRB Climate Standard NZ CS 1. See Climate & Carbon Strategy, Enterprise Risk Management and Health Check sections of this report for more information.	

Appendix 2: Seven practical examples of observations made by the Institute

NZSX-listed company name	Publication type	Page number
AoFrio	Annual report	135
Argosy Property	Annual report	136
Comvita	Annual report	137
	Financial statements	138
Good Spirits Hospitality	Annual report	139
Investore Property	Annual report	140
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SkyCity Entertainment Group	Annual report	142
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"The Board should demand integrity in financial and non-financial reporting, and in the timeliness and balance of corporate disclosures."

Principle 4 – Reporting and disclosure

The Board is committed to the promotion of investor confidence by timely, balanced, accurate and meaningful reporting of financial and non-financial information, including both positive and negative news. As a listed company there is an imperative imperative to ensure the market is informed and that the Company's listed securities are being fairly valued by the market.

Trading in shares

AoFrio has a detailed share trading policy which applies to all Directors and employees. Under the Rules for Trading in AoFrio Securities no Director or employee may use confidential non-public price sensitive information in his or her position to engage in securities trading for personal benefit or to provide benefit to any third party. Short-term trading in AoFrio shares and buying or selling (while in possession of non-public price-sensitive information) is strictly prohibited.

Given the small size of the Company, all Directors and employees must obtain consent to trade in AoFrio securities prior to trading. All members of the Board need to consent to the application. Once these consents have been received the Chair of the AoFrio Board or (where the Chair is unavailable) the Chair of the Board's Audit Committee, will approve or decline the application. The Company monitors trading and reports share movements to the Board at every meeting.

The integrity of the Company's financial reporting and disclosures is supported through a number of mechanisms, including:

Continuous disclosure

The Board seeks to promote investor confidence by ensuring that dealing in its securities take place in an efficient, competitive and informed market. The Company strives to ensure that all investors have equal and timely access to market sensitive information. The Company considers that evenly balanced disclosure (during good times and bad) is fundamental to building shareholder value and earning the trust of staff, customers, suppliers, communities and shareholders.

The Company has a Board-approved Group Market Disclosure Policy (available on the Company's Website) and established disclosure procedures, which aim to ensure Directors and staff are aware of and fulfil the Company's disclosure obligations in accordance with best practice and the NZX Listing Rules.

The Board has delegated responsibility for the day-to-day oversight of the Company's continuous disclosure obligations to a Disclosure Committee comprising the Chairman of the Board, the Chief Executive Officer and the Chief Financial Officer. In addition, the Group Market Disclosure Policy requires Directors and management to regularly consider if there is any information that may require disclosure, and there is a standing agenda item at Board meetings regarding continuous disclosure. All market disclosures are made to the NZX and are available on the Company's Website.

The Board promptly reviews and approves material announcements and specifically considers with management at each Board meeting whether there are any issues which might require disclosure to the market under the NZX continuous disclosure requirements.

The Company operates an Investor website which is designed to provide relevant public information to all Investors. For further details on how the Company engages with its shareholders and investors, refer to the Group Market Disclosure Policy which is available on the Company's Website.

Financial Reporting

The Board has overall responsibility for ensuring the integrity of the Company's reporting to shareholders, including for financial statements that comply with generally accepted accounting practice. The Audit Committee assists the Board to fulfil its responsibilities in this area. The Committee makes enquiries of management and the external auditors (including requiring management representations) so that the Company can be satisfied as to the validity and accuracy of all aspects of AoFrio's financial reporting.

The Company's financial results are reported in its Annual Report in accordance with New Zealand Equivalents to International Financial Reporting Standards and International Financial Reporting Standards (IFRS). The Annual Report includes detailed financial commentary and notes to the financial statements which also explain any changes to financial reporting.

The Board receives formal assurances from the Chief Executive Officer and Chief Financial Officer that the annual financial statements for the group present fairly, in all material respects, the financial position of the AoFrio Group at 31 December and the financial performance and cash flows for the financial year, and that they comply with IFRS.

AoFrio strives to improve the clarity and readability of its financial statements, while continuing to comply with all the requirements of the financial reporting standards including the Companies Act 1993, the Financial Markets Conduct Act 2013, and the NZX Listing Rules.

The Company ensures that financial information reported in investor materials for road shows, Company overviews and other documents is portrayed in an accurate, fair, and understandable format, and is disclosed to the NZX in accordance with the Company's Group Market Disclosure Policy.

Climate Reporting

The Company's climate-related disclosure statement required by Part 7A of the Financial Markets Conduct Act 2013 is prepared annually, with the first disclosure statement made for the FY23 year. The climate-related disclosure statement includes commentary around the areas of climate governance, strategy, risk management, and targets. The climate-related disclosure statement also provides key metrics for the Company.

The Company seeks to ensure that its climate information is presented in a manner that achieves fair presentation and contains relevant and unobscured information.

The Board is ultimately accountable for the oversight of climate-related risks and opportunities and approving the Company's climate-related disclosure statement.

The most recent climate-related disclosure statement is available on the Company's Website.

Non-Financial Reporting

The Company provides non-financial disclosures at least annually, including on environmental, social and governance (ESG) practices and performance, in its Annual Report.

Balanced Disclosures

The Company's aim is that its reporting is balanced, clear and objective and includes consideration of material environmental, economic and social factors and explains how operational and non-financial objectives are measured.

The Company discloses its Code of Conduct, its Board and Committee Charters and certain key governance documents and policies on the Company's Website.

AoFrio
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Argosy Property
Annual report 2023

GENDER BALANCE

As at 31 March 2023 the gender balance statistics for the Company's Directors, Officers and all employees were as follows:

Gender Diversity

	Directors	Officers	All employees
Female	1 (2022: 1)	3 (2022: 3)	16 (2022: 13)
Male	5 (2022: 5)	10 (2022: 10)	21 (2021: 22)
Total	6 (2022: 6)	13 (2022: 13)	37 (2021: 35)

As at 31 March 2023, the age statistics for the Company's Directors, Officers and all employees were as follows:

	Directors	Officers	All employees
Under 30	Nil (2022: Nil)	Nil (2021: Nil)	4 (2022: 4)
30-50 yrs	2 (2022: 2)	7 (2022: 7)	17 (2022: 17)
Over 50	4 (2022: 4)	6 (2022: 6)	16 (2022: 14)

Argosy has adopted a Diversity Policy which is available on its website (www.argosy.co.nz). This policy was updated during the year to include gender diversity targets for 2026. The Board considers that Argosy is making good progress with its diversity objectives. You can see further information on diversity on page 14 of the 2023 Sustainability Report.

REMUNERATION REPORT

Under the guidance of the Remuneration Committee, the Board has established a remuneration framework which is designed to attract, retain and reward individual employees to deliver high performance aligned to business objectives, strategy, shareholder interests and investment performance.

Employee Remuneration

An employee's remuneration is comprised of the following components:

- fixed remuneration;
- variable or 'at risk' components.

The fixed remuneration component (including salary, KiwiSaver contributions, health and disability benefits and vehicles) is designed to reward employees for their skills and experience and the accountability of their role. The variable component is comprised of a short-term incentive scheme for all permanent employees and a long-term incentive scheme for eligible senior executives.

Fixed Remuneration

Fixed remuneration is the primary basis for remunerating the Company's employees. Each employee's fixed remuneration is determined based on their responsibilities, capability, performance and market benchmarks. Fixed remuneration for permanent employees is comprised of their base salary and benefits. Benefits may include:

- KiwiSaver employer superannuation contributions;
- life and disability insurance;
- health insurance; and
- private use of a company vehicle.

Short Term Incentive Scheme (STI)

The STI is a discretionary variable pay scheme for permanent employees, designed to reward participants for high performance and the Company's success over the financial year.

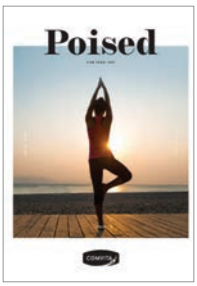
- The STI for all employees other than the CEO and CFO is based on Company and individual performance measures with stretch performance goals.
- The Company performance measure is based on specific annual Company targets, which are linked to the Company's strategy and approved by the Board.
- Individual goals and performance measures are agreed between each manager and their direct reports, to encourage outstanding performance.
- Measures and stretch performance goals are reviewed each financial year.
- The STI for each of the Chief Executive Officer and Chief Financial Officer is based solely on Company performance.

Long Term Incentive Scheme (LTI)

The Company has established an LTI scheme for senior executives. The scheme remunerates senior executives for sustained performance over a three year period. Under the LTI scheme, the Company may issue performance share rights (PSRs) to eligible employees each year (currently the Chief Executive Officer and Chief Financial Officer). Each PSR entitles its holder to one share in Argosy on its vesting date, subject to meeting LTI performance measures. Each PSR has a vesting date three years after commencement of the financial year in which it is issued.

The LTI performance measure is a comparison of the Company's Total Shareholder Return (TSR) against the TSR of a comparator group of listed entities determined by the Board.

- Comparator entities are chosen from the S&P/NZX All Real Estate Gross Index.
- TSRs of the entities in the comparison group over the performance period (which is three years) will be ranked from highest to lowest.



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stakeholder engagement process and materiality assessment at least every two years using external experts to assist. The results and process itself, are reviewed by the Committee, and the results are communicated to the Board.

Takeover protocols (Recommendation 3.6)

The Board has established experience in respect of the various NZX and statutory requirements in the event of a takeover approach for the company. The key requirements of the Takeover Code are well understood by the Board.

Further, Comvita has established formal protocols that set out the procedure to be followed if there is a takeover offer in accordance with Recommendation 3.6 of the NZX Code.

Principle 4 – Reporting and Disclosure

The Board demands integrity both in financial reporting and in the timeliness and balance of disclosure on entity affairs.

Comvita is committed to ensuring integrity and timeliness in its financial reporting and in providing information to the market and shareholders that reflects a considered view on the present and future prospects of the company.

Continuous disclosure (Recommendation 4.1)

Continuous disclosure obligations of NZX require all listed companies to advise the market about any material events and developments as soon as the company becomes aware of them. The company has policies and monitoring in place to ensure that it complies with these obligations. In particular, the company has a Continuous Disclosure Policy applicable to all Directors, officers and employees that is available on the company's website.

Charters and policies (Recommendation 4.2)

Key corporate governance documents are available on the company's website.

Financial reporting (Recommendation 4.3)

The Audit and Risk Committee oversees the quality and integrity of external financial reporting, including the accuracy, completeness and timeliness of financial statements. It reviews half-year and annual financial statements and makes recommendations to the Board concerning accounting policies, areas of judgement, compliance with accounting standards, stock exchange and legal requirements and the results of the external audit. Management accountability for the integrity of the company's financial reporting is reinforced by certification from the Chief Executive Officer and Chief Financial Officer in writing that the company's financial statements are fairly stated in all material aspects.

Non-financial reporting (Recommendation 4.4)

Comvita is committed to non-financial reporting that is balanced, clear and objective. Broader reporting of environmental, social and governance factors is contained in this Annual Report. These disclosures have been developed with reference to Global Reporting Initiative Standards (GRI). This report links disclosed information to the GRI indicators as Comvita journeys towards reporting in accordance with GRI.

Comvita's consolidated financial statements and GHG inventory report are subject to independent external assurance. It is Comvita's intention that the rest of its sustainability reporting is also subject to assurance in the future. Where external assurance is not currently undertaken, data is gathered by appropriate internal business owners / experts, compared to the previous reporting period and cross-checked against other data.

Comvita is currently undertaking a project to build on and leverage its existing sustainability reporting framework in preparation for the release of its first climate statement under the new Aotearoa New Zealand Climate Standards. This is expected to be issued as at 30 June 2023. Comvita prepared its first GHG emissions report with an assurance report as at 30 June 2022, which will be mandatory under the climate standards by 2025.

Principle 5 – Remuneration

The remuneration of Directors and senior executives is transparent, fair and reasonable. Making sure team members and Directors get the rewards they deserve is the responsibility of the Safety and Performance Committee.

Comvita has a Remuneration Policy for Directors and officers, a copy of which is available on the company's website.

Non-executive Directors' remuneration (Recommendation 5.1)

The fees payable to Non-executive Directors are determined by the Board within the aggregate amount approved by shareholders. The Board considers external information of peer companies in terms of scale and complexity when setting remuneration levels. The current Directors' fee pool limit is $610,000, approved at the 2016 Annual Shareholders' Meeting. Information on payments to each Director is set out in the statutory information section at the back of the financial statements.

Senior executive remuneration (Recommendation 5.2)

For FY23, senior executive remuneration was made up of base or fixed remuneration, a short-term incentive plan and a long-term incentive plan, subject to Board approval.

Comvita
Financial statements 2023

STANDARDS, AMENDMENTS AND INTERPRETATIONS ADOPTED DURING THE PERIOD

Climate related standards

In December 2022, The External Reporting Board ('XRB') of New Zealand issued Aotearoa New Zealand Climate Standards, a new climate-related disclosure framework. Three new standards were issued: NZ CS 1 Climate-related Disclosures, NZ CS 2 Adoption of Climate-related Disclosures, and NZ CRDC Climate-related Disclosures Concepts. The standards are aligned to the International Task Force on Climate-related Disclosures ('TCFD') disclosure framework which focuses on governance, strategy, risk management, and metrics and targets.

The Group is currently undertaking a project to build on and leverage its existing sustainability reporting framework in preparation for the release of its first climate statement under these new standards. This is expected to be issued by the Group as at 30 June 2024. The group prepared its first Greenhouse gas emissions report with an assurance report as at 30 June 2022.

There are no other new standards that are not yet effective that would be expected to have a material impact on the Group, in the current or future reporting periods, and foreseeable future transactions.

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Good Spirits Hospitality
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In December 2022, the XRB issued its Aotearoa New Zealand Climate Standards (NZ CS or Standards). CREs are required to make climate-related disclosures in their annual reports for accounting periods commencing on or after 1 January 2023.

GSH does not qualify as a CRE and has not adopted NZ CS nor opted to make climate related or other non-financial disclosures including environmental, economic and social sustainability governance reporting.

PRINCIPLE 5: REMUNERATION

The remuneration of directors and executives should be transparent, fair and reasonable.

Recommendation 5.1 Director remuneration

An issuer should recommend director remuneration to shareholders for approval in a transparent manner. Actual director remuneration should be clearly disclosed in the issuer's annual report.

Director's remuneration for the accounting period ended 30 June 2023 is disclosed in the Shareholder and Statutory Information section of the Annual Report and in note 25 to the Financial Statements.

Recommendation 5.2 Remuneration policy for directors and officers

An issuer should have a remuneration policy for remuneration of directors and officers, which outlines the relative weightings of remuneration components and relevant performance criteria.

GSH's Director and Senior Management Remuneration Policy sets out policies which are fair, simple and transparent.

Remuneration of directors

Directors are entitled to remuneration from GSH for directors' fees, professional services provided and reasonable travel, accommodation, and other expenses incurred in the course of performing duties or exercising powers as directors. No Directors are entitled to any retirement benefits. Details of Director's remuneration are disclosed in the "Shareholder and Statutory Information" section of the Annual Report and in note 25 to the Financial Statements.

Remuneration of GSH employees including officers

GSH provides the opportunity for its employees to receive, where performance merits, a total remuneration package for equivalent market-matched roles. GSH's Remuneration and Nomination Committee reviews the annual performance for all senior officers of the Group. The review takes into account external benchmarking to ensure competitiveness with comparable market peers, along with consideration of an individual's performance, skills, expertise and experience.

Total remuneration is made up of two components being: fixed remuneration and short-term performance-based cash remuneration.

Fixed Remuneration

Fixed remuneration consists of base salary.

Short-Term Incentive

Short-term incentives (STI) are at-risk payments designed to motivate and reward performance, typically in that financial year. The target value of an STI payment is set annually, usually as a percentage of the officer's base salary. The relevant percentage ranges from 10% to 20%.

Further information regarding employee remuneration is disclosed in the "Shareholder and Statutory Information" section of the Annual Report and in note 25 to the Financial Statements.

Investore Property
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Chair's Letter (cont)

Given the nature of Investore's portfolio and the fact that it has outsourced management to SIML, Investore has very low scope 1 and 2 greenhouse gas emissions. Accordingly, Investore believes it can have the most effective impact on transitioning to a low carbon future by working with its tenants on improving their energy efficiency and lowering their greenhouse gas emissions (which are scope 3 emissions for Investore). Investore remains in regular conversation with its largest tenants around how best to support them in reducing their emissions.

Consistent with this approach, Investore has recently obtained Green Star Performance ratings for 16 of its properties, comprising hardware stores and standalone supermarkets. These ratings will enable Investore to work with its tenants to develop opportunities for energy and water improvement initiatives to improve ratings.

To assess its overall sustainability performance, Investore completes the Global Real Estate Sustainability Benchmark (GRESB) assessment. The first assessment was completed in 2022 and Investore is targeting being in the top quartile of comparator companies over time.

For FY23 the Investore Board has elected to prepare a separate Sustainability Report which includes reporting against the Aotearoa New Zealand Climate Standards. A copy of this report can be found on Investore's website **www.investoreproperty.co.nz.**

Governance

Director John Harvey retired from the Investore Board on 31 May 2022, having been a Director since Investore's inception as a listed company in 2016. On behalf of the Board, I would like to thank John for his service and wish him all the best for the future.

Investore's Manager, SIML, appointed Director Ross Buckley to the Board on 1 June 2022, consistent with its rights under the Management Agreement between SIML and Investore. The Board undertook a full skillset review when Ross joined the Board, noting that Ross' strong background in audit, management and finance complemented the Board's current skillset.

Following the conclusion of Emma McDonald's tenure as a Future Director under the Institute of Director's Future Directors' Programme, the Board was pleased to announce the appointment of Erika McDonald as a future director with the release of the FY23 Interim Results. Erika attends Board meetings but does not vote or have any rights or obligations of a director.

McDonalds, Takanini

Auditor fees

Please see **Note 27** of the financial statements.

Donations

Manawa Energy Limited donated $20,000 to the Red Cross New Zealand Disaster Fund that was established following Cyclone Gabrielle. This does not include the $280,000 provided to environment funds or trusts, educational scholarships and community group sponsorships.

NZX Corporate Governance Code

Manawa Energy Limited has complied with the recommendations of the NZX Corporation Governance Code, except where noted in this report, or in our **Corporate Governance Statement**.

We did not comply with recommendation 8.5 of the NZX Corporate Governance Code in respect of the timeframe for sending the Notice of Meeting for the 2022 ASM to shareholders. This was due to unexpected issues that delayed our ability to finalise the meeting agenda. We did comply with the timeframe for sending the Notice of Meeting set out in the Companies Act.

Our Corporate Governance Statement and other governance policies and procedures are available on our **website**. The Corporate Governance Statement set out in more detail our compliance with the NZX Corporate Governance code and is current as at 15 May 2023.

Sustainability disclosures

Aotearoa New Zealand Climate-related Disclosures (NZ CS 1)

We have aligned this index with the Aotearoa New Zealand Climate-related Disclosures Standard (NZ CS 1). Our work has been aligned with the TCFD framework to date and there are additional disclosures required under the Aotearoa New Zealand standard. We are working towards full compliance with these additional requirements.

NZ CS 1 Disclosure	Paragraph reference	Page
Governance		
Identity of governance body	7(a)	Not disclosed
Governance body's oversight	7(b), 8(a) to (d)	**Board committees** pg 46 **Managing risk and audit** pg 47
Management's role	7(c), 9(a) to (c)	**Managing risk and audit** pg 47
Strategy		
Current impacts	11(a), 12(a) to (c)	Not disclosed
Scenario analysis	11(b), 13	Not disclosed
Risks and opportunities	11(c), 14(a) to (c)	**Building a climate-resilient business** pg 33
Anticipated impacts	11(d), 15(a) to (d)	**Building a climate-resilient business** pg 33
Transition planning	11(e), 16(a) to (c)	**Building a climate-resilient business** pg 33
Risk Management		
Processes	18(a), 19(a) to (e)	**Managing risk and audit** pg 47
Integration	18(b)	**Building a climate-resilient business** pg 33
Metrics and Targets		
Metric categories	21(a), 22(a) to (h)	**Building a climate-resilient business** pg 33
GHG emissions	22(a), 24(a) to (d)	**Greenhouse gas emissions** pg 58
Industry-based metrics	21(b)	Not disclosed
Other KPIs	21(c)	Not disclosed
Targets	21(d), 23(a) to (e)	Not disclosed

Manawa Energy
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SkyCity Entertainment Group
Annual report 2023

The key tenants of SkyCity's new emissions reduction strategy are summarised below:

- Scope 1 emissions (direct emissions from sources owned or controlled by SkyCity) - to drive reductions in Scope 1 emissions, SkyCity will focus on future infrastructure investments and introduce a carbon cost to investment decisions. The primary focus is on energy efficiency, phasing out gas, shifting to less harmful refrigerants, and focusing on the end-of-life processes for assets;
- Scope 2 emissions (indirect emissions from electricity purchased by SkyCity) – in the long term, SkyCity will benefit from the New Zealand and South Australian Governments' commitment to 100% renewable electricity generation by 2030 - however, in the meantime, SkyCity will investigate the purchase of renewable energy credits through its partner electricity providers; and
- Scope 3 emissions (indirect emissions from sources not owned or controlled by SkyCity but resulting from SkyCity's activities) – SkyCity will continue to build awareness, capability, and capacity within its employees, customers, and communities to drive reductions in SkyCity's Scope 3 emissions and its stakeholders' emissions.

The focus will be on activities that:

- reduce environmental impacts;
- may relate to impacting lifestyle choices outside of the workenvironment, benefit the wider community and contribute to SkyCity's social licence; and
- build sustainability capability and awareness for all staff and other stakeholders.

Whilst SkyCity's new emissions reduction strategy covers a reduction in Scope 1, 2 and 3 emissions, the majority of SkyCity's reduction initiatives will focus on reducing SkyCity's Scope 1 and 2 emissions. Many of the reduction initiatives are currently being implemented across SkyCity, but further improvements can be made.

SkyCity will continue to conduct an annual audit of its carbon footprint to measure and track its progress to its science-based targets.

Climate Change Governance and Risks

The Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 was passed into legislation in October 2021 in New Zealand and requires certain organisations (including SkyCity) to make climate-related disclosures from financial years commencing on or after 1 January 2023, in accordance with climate standards published by the External Reporting Board based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). SkyCity is progressing towards TCFD-compliant reporting and aims to progress with detailed scenario analysis as part of its ongoing journey towards TCFD-compliant reporting.

SkyCity is a signatory to the Climate Leaders Coalition, a group representing a variety of businesses from different industries which contribute to nearly half of New Zealand's emissions. The Climate Leaders Coalition recognises the role that business can play in bringing about change and demonstrates the significant leadership direction being taken by businesses on the issue of climate change. In June 2022, members of the Climate Leaders Coalition launched a new Statement of Ambition to accelerate business action on climate change. SkyCity, as a member of the Climate Leaders Coalition, has committed to:

- measure its emissions, have them independently verified, and report them publicly;
- adopt short and long term gross absolute science aligned targets for Scope 1, 2, and 3 emissions to support the delivery of substantial reductions needed to limit future warming to 1.5 degrees Celsius;
- assess climate change risks and opportunities (including in the value chain), set objectives and/or target(s) to reduce these risks and maximise opportunities, and publicly disclose them;
- proactively enable its employees, board members, customers, and suppliers to reduce their emissions and climate change risks;
- embed plans within its businesses to accelerate climate action across mitigation, adaptation, and transition, and incorporate te ao Māori perspectives; and
- prepare for the next frontier of climate action, including considering the assessment of nature-based risks and long-term climate positive targets.

SkyCity has currently committed to reduce absolute Scope 1 and 2 Green House Gas emissions by 63% by 2030 and by 90-95% by 2050 (from a 2014-2015 base year).

Climate & Carbon Strategy

Our Climate & Carbon Strategy remains front and centre for the business. At ***thl*** we're facing this challenge head-on through our Future Fleet programme, despite the frustratingly slow - but improving - progress of low-emissions RV technologies, read more on page 23. We have also updated our Climate Risks and Opportunities (CR&O) and the scenarios we use, to reflect our global business and new disclosure standards. See Our Responsible Management Disclosures section for our CR&O summary reporting aligned with the Taskforce on Climate-related Financial Disclosures (TCFD).

This year's carbon footprint looks different from prior years, being a 'transitional' footprint now including many Apollo sites. Our FY23 full footprint with commentary is in Our Responsible Management Disclosures section. Reflecting our status as a merged business, we will be restating our baseline in FY24 to capture our full global business activities and Scope 3 emissions. This will also require an update to our science-aligned carbon reduction target, currently an absolute reduction in emissions of 50.4% from a FY20 baseline by 2032 to limit warming within 1.5 degrees Celsius.

In our view, any target needs to be accompanied by a realistic plan for achievement. We have been frustrated by the lack of progress across our supply chain to transition to zero or low-emissions chassis. We are therefore not comfortable setting a reduction target for our Scope 3 emissions as was our intention in FY23, but will be continue to stay abreast of developments.

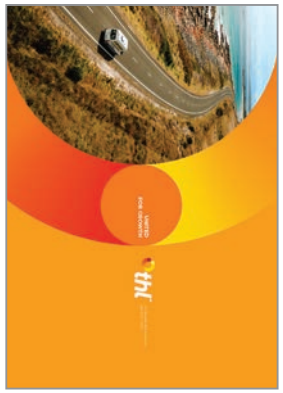
In the meantime we will in FY24 seek to set interim and intensity targets to drive change which will require the whole business to get behind our climate and carbon challenge. We're in good shape to make progress as we engaged a consultant (WSP) to deliver our first *Future Fleet Global Scan* of infrastructure readiness for eRVs, ICE phase-out regulation deadlines, technology tipping points, climate trends and innovation grants.

CLIMATE & CARBON STRATEGY
DECARBONISING OUR BUSINESS
GOALS
- Operational GHGS
- Product GHGS

OUR PRIORITY CLIMATE RISKS & OPPORTUNITIES (CR&O)

A high proportion of our business is exposed to transition risks, in particular the need to decarbonise our fleet. A low to moderate portion of our business is exposed to physical risks, including the impacts of extreme weather events.

Quantitative metrics for our climate disclosures will be developed in FY24 aligned with industry metrics. These will be informed by qualitative metrics that are already used within our Future-Fit Business Benchmark.



THL Holdings
Annual report 2023

Our Climate Disclosures

Below please find a summary of ***thl***'s climate-related disclosures, aligned with External Reporting Board (XRB) / Te Kāwai Ārahi Pūrongo Mōwaho standard NZ CS 1. NZ CS 1 was developed in response to the TCFD framework and adjusted to take account of the International Sustainability Standards Board (ISSB) development of sustainability reporting standards.

For our full disclosures, please visit the ***thl*** sustainability website: thlsustainability.com.

Governance: NZ CS 1 disclosures 7, 8, 9

Refer to Our Global Sustainability Work Programme and Future-Fit Health Check sections of this report.

The ***thl*** Board oversees and is ultimately responsible for group-wide risks, including those relating to climate change. The Audit & Risk Committee (ARC) and Health, Safety and Sustainability Committee (HSSC) also have oversight of climate-related risks and opportunities (CR&O).

The identification and management of CR&Os is integrated throughout all levels of our business. Our operational-level Regional Risk Networks (RRN – previously Risk Champions Networks) report up to the Executive-level Risk & Improvement Committee (RIC) reports up to the ARC, which in turn makes recommendations to the Board. These committees are responsible for implementing ***thl***'s Enterprise Risk Management (ERM) framework across our business and escalating key risks up to ARC as required.

Climate-related risks are standing strategic and operational agenda items that are reported to the ARC and RIC on a bi-monthly / quarterly basis. Members of our Board regularly consider the integration of climate and sustainability into strategic decision-making through ARC meetings.

The ARC and HSSC consider CR&O when developing and overseeing the implementation of business strategy. Each ***thl*** business unit develops business plans that must include elements of our 23 science-based future-fit goals. Our priority goal is 'Products emit no greenhouse gases' (GHG), which presents the significant challenge to rapidly decarbonise our fleet. Our subsidiary, Action Manufacturing, leads our Future Fleet strategy and is developing new EV campervans for the New Zealand market. The ***thl*** Board has approved ongoing capital expenditure to trial EV and other low carbon vehicle technologies.

The ARC selects and reviews metrics and targets at quarterly meetings. The ARC and HSSC have oversight over the Future-Fit Business Benchmark qualitative metrics including an annual health check and score across future-fit goals. ARC meetings focus on priority goals for ***thl*** which include procurement, product harm and product GHG emissions.

The methodology for identification and assessment of quantitative metrics will be progressed in FY24 to prepare for mandatory FY24 reporting and full financial disclosures in FY25. Key performance metrics are not yet incorporated into our remuneration policies – the status of this will be reviewed in FY24.

Our Chief Responsibility Officer and Responsible Management (RM) Team undertake climate and carbon reporting associated with ***thl***'s CR&Os. Our RM team works with stakeholders to undertake the measurement and verification of ***thl***'s GHG emissions and, through the ERM framework, sees that the CR&Os identified, assessed and mitigated.

CR&Os are managed by ***thl***'s RIC and mitigation will be implemented via our new regional-specific risk networks. The ARC reviews CR&Os on a quarterly basis.

A key project for FY24 is a review of strategic decision-making processes at the governance and management level. This review will identify the triggers for influencing sustainability, including climate resilience when making decisions with regard to supply chains, business operations, and capital projects.

Strategy: NZ CS 1 disclosures 10 – 16

Refer to Our Climate & Carbon Strategy and Future Fleet sections of this report.

This year we have seen developments in extreme climate-related weather events globally. ***thl*** has experienced the impact of these on our operations and revenue, including the recent Canadian wildfires and Cyclone Gabrielle which caused damage to the roading infrastructure. This led to the closure of Waitomo Caves for five days and interrupted customer demand. ***thl***'s fleet was utilised as emergency mobile housing to contribute to relief efforts during the Auckland floods and Cyclone Gabrielle.

As with last year, this year's climate scenario analysis has adopted the scenarios developed by the Network for Greening the Financial System (NGFS). The global coverage and integrated assessment of risks at the NGFS make their scenarios relevant and appropriate

to ***thl***'s multinational operations. Additionally, the NGFS scenarios have informed the core assumptions of the recently released New Zealand Tourism Sector Climate Scenarios.

Further information on our scenarios will be made available at: thlsustainability.com.

Priority risks and opportunities for ***thl*** and management actions are described in the Climate and Carbon Strategy section of this report. Further management actions are described in the Future Fleet section.

thl is committed to addressing our CR&Os and have identified their anticipated impact on key areas of our business, **see below table**.

	Area	Anticipated climate-related impacts
RISKS	Business model	Extreme physical risks could close certain attractions or eliminate tourism in whole regions, thus seasonally impacting ***thl***'s revenue from its tourism business.
	Supply chain	The scarcity in low-emissions and cost-effective technology to decarbonise the fleet could expose ***thl*** to higher operating costs from increases in fuel price and loss of revenue from changing customer preferences.
	Products and services	The pace of regulatory change in phasing out ICE vehicles could lead to stranded assets. ***thl*** may find it difficult to on-sell ICE vehicles.
	Access to capital	Accessing capital and loans may become more challenging due to stringent sustainability criteria.
OPPORTUNITIES	Business model	Growth into non-tourism markets will support diversification and resilience of ***thl***'s business model, e.g., acquiring 100% ownership of Action Manufacturing in 2022.
	Supply chain	Development of new supplier options for electric, plug in hybrid, and hydrogen fuel cell RVs in the European, UK and US markets.
	Products and services	Expansion into emergency management through partnerships that support housing for people displaced by extreme weather events.
	Access to capital	Enhanced market credentials and international financing options resulting from verified science-based emissions reduction targets.

At ***thl***, we are continuously working to manage, minimise and ultimately eliminate our GHG. We acknowledge that we are a part of a wider system and aim to work in partnership with other leading organisations in the industry to help drive the transition towards a low emissions RV and tourism sector.

Our Future Fleet programme is a core strategic goal of ***thl***, and it aims to address our greatest sustainability challenge of decarbonising our motorhome fleet. The actions we take to decarbonise our fleet will determine our resilience in a low-emissions future economy.

To prepare for mandatory reporting in FY24 and full financial disclosures in FY25, we have started the process of developing our methodology for identifying and assessing the financial impact of our CR&Os.

thl used three NGFS climate scenarios: **Orderly – Net Zero 2050; Disorderly – Delayed Transition and Hothouse – Current Policies** and assigned a materiality rating of high to low to each CR&O to meet the XRB's definition of materiality.

thl considers climate risks and opportunities across three-time horizons shown in the Climate & Carbon section. These align with business planning, capital allocation and risk management timeframes.

thl has categorised climate-related risks and opportunities as physical impacts from climate change and transitional impacts that arise as the economy and people transition to a lower carbon future.

thl has identified three transition risks, two physical risks and two opportunities through the Future Fleet Scan report and scenario analysis with stakeholders. Together these make up ***thl***'s priority CR&Os which could impact ***thl***'s business model. See thlsustainability.com for more information on how these were rated under the three NGFS climate scenarios.

We are continuously working to integrate our response to climate change into our business model and strategy. Refer to 'We are RV' for an in-depth description of our Build/Buy - Rent - Sell model (for RVs). Through our Future Fleet Programme, future-fit goals and Future Fleet, we have the foundations to prepare a transition plan in FY24.

Risk Management: NZ CS 1 disclosures 17 – 19

Refer to Enterprise Risk Management section of this report.

Metrics, Targets & Assurance of Greenhouse Gas Emissions: NZ CS 1 disclosures 20 – 26

Refer to Climate & Carbon and Greenhouse Gas inventory (our FY23 Carbon Footprint) sections of this report.

Endnotes

1 See PricewaterhouseCoopers (PwC). (n.d.). Do the financial statements of NZX50 June-September 2023 reporters reflect the impact of climate change? Retrieved 19 December 2023 from www.pwc.co.nz/insights-and-publications/2023-publications/do-the-financial-statements-of-NZX50-June-September-2023-reporters-reflect-the-impact-of-climate-change.html

2 See External Reporting Board (XRB). (29 January 2024). Director preparation guide. Retrieved 18 March 2024 from www.xrb.govt.nz/standards/climate-related-disclosures/resources/director-preparation-guide

3 See External Reporting Board (XRB). (29 January 2024). Director preparation guide. Retrieved 18 March 2024 from www.xrb.govt.nz/standards/climate-related-disclosures/resources/director-preparation-guide

4 See External Reporting Board (XRB). (29 January 2024). Director preparation guide. Retrieved 18 March 2024 from www.xrb.govt.nz/standards/climate-related-disclosures/resources/director-preparation-guide

5 See the Financial Markets Conduct Act 2013 ss 461O–461S.

6 See External Reporting Board (XRB). (14 December 2022). *Aotearoa New Zealand Climate Standard 2: Adoption of Aotearoa New Zealand Climate Standards (NZ CS 2)*, p. 10. Retrieved 8 December 2023 from www.xrb.govt.nz/dmsdocument/4763

7 See External Reporting Board (XRB). (29 January 2024). Director preparation guide. Retrieved 18 March 2024 from www.xrb.govt.nz/standards/climate-related-disclosures/resources/director-preparation-guide

8 See External Reporting Board (XRB). (14 December 2022). *Aotearoa New Zealand Climate Standard 1: Climate-related Disclosures (NZ CS 1)*, p. 17. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/aotearoa-new-zealand-climate-standard-1

9 See External Reporting Board (XRB). (July 2022). Comparison Table: XRB to TCFD. Retrieved 18 March 2024 from www.xrb.govt.nz/standards/climate-related-disclosures/consultation/exposure-draft

10 See the Financial Reporting Act 2013, s 19B.

11 See External Reporting Board (XRB). (29 November 2023). Aotearoa New Zealand Climate Standards. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards

12 See Financial Markets Authority (FMA). (June 2023). Climate-related Disclosures Monitoring Plan 2023-2026. Retrieved 28 February 2024 from www.fma.govt.nz/assets/Guidance/Crd-monitoring-plan-2023-2026.pdf

13 See International Sustainability Standards Board (ISSB). (June 2023). IFRS S2 Climate-related Disclosures. Retrieved 18 March 2024 from www.ifrs.org/content/dam/ifrs/publications/pdf-standards-issb/english/2023/issued/part-a/issb-2023-a-ifrs-s2-climate-related-disclosures.pdf?bypass=on

14 See International Sustainability Standards Board (ISSB). (June 2023). IFRS S2 Climate-related Disclosures, pp. 43–44. Retrieved 18 March 2024 from www.ifrs.org/content/dam/ifrs/publications/pdf-standards-issb/english/2023/issued/part-a/issb-2023-a-ifrs-s2-climate-related-disclosures.pdf?bypass=on

15 See the Financial Markets Conduct Regulations 2014, reg 61D.

16 See NZX. (1 April 2023). NZX Listing Rules. Retrieved 13 December 2023 from www.nzx.com/regulation/nzx-rules-guidance/nzx-listing-rules

17 See NZX. (1 April 2023). NZX Listing Rules. Retrieved 13 December 2023 from www.nzx.com/regulation/nzx-rules-guidance/nzx-listing-rules

18 Financial statements only are required to be delivered to the Registrar for lodgement (at the Companies Office). See Financial Markets Conduct Act 2013, s 461H (1) 'Every FMC reporting entity must ensure that, within 4 months after the balance date of the entity, copies of the financial statements or group financial statements that are required to be prepared under any of sections 460, 461, and 461B, together with a copy of the auditor's report on those statements, are delivered to the Registrar for lodgement.'

19 See McGuinness Institute. (2020). *Report 17: ReportingNZ: Building a Reporting Framework Fit for Purpose*, Table 6 (p. 57). Retrieved 7 December 2023 from www.mcguinnessinstitute.org/publications/project-2058

20 See External Reporting Board (XRB). (14 December 2023). *Aotearoa New Zealand Climate Standard 3: General Requirements for Climate-related Disclosures (NZ CS 3)*, p. 21. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/aotearoa-new-zealand-climate-standard-3

21 See External Reporting Board (XRB). (14 December 2023). *Aotearoa New Zealand Climate Standard 3: General Requirements for Climate-related Disclosures (NZ CS 3)*, p. 21. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/aotearoa-new-zealand-climate-standard-3

22 See External Reporting Board (XRB). (14 December 2023). *Aotearoa New Zealand Climate Standard 3: General Requirements for Climate-related Disclosures (NZ CS 3)*, p. 9. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/aotearoa-new-zealand-climate-standard-3

23 See New Zealand Companies Office. (n.d.). Climate-related Disclosures Register. Retrieved 28 February 2024 from www.companiesoffice.govt.nz/all-registers/climate-related-disclosures

24 See New Zealand Productivity Commission. (n.d.). Low-emissions economy. Retrieved 28 February 2024 from www.productivity.govt.nz/inquiries/lowemissions

25 See New Zealand Productivity Commission. (August 2018). *Low-emissions economy: Final report*, p. 7. Retrieved 28 February 2024 from www.productivity.govt.nz/assets/Documents/lowemissions/4e01d69a83/Productivity-Commission_Low-emissions-economy_Final-Report_FINAL_2.pdf

26 See New Zealand Productivity Commission. (August 2018). *Low-emissions economy: Final report*, p. 7. Retrieved 28 February 2024 from www.productivity.govt.nz/assets/Documents/lowemissions/4e01d69a83/Productivity-Commission_Low-emissions-economy_Final-Report_FINAL_2.pdf

27 See Etwell, J. et al. (12 July 2023). Mandatory climate-related disclosures in New Zealand. Buddle Findlay. Retrieved 28 February 2024 from www.buddlefindlay.com/insights/mandatory-climate-related-disclosures-in-new-zealand

28 See McGuinness Institute. (7 February 2024). *Discussion Paper 2024/01 – Risks hiding in plain sight: Does a commitment under the Paris Agreement to purchase offshore carbon credits create a requirement to report that commitment in the financial statements of the New Zealand Government?* Retrieved 28 February 2024 from www.mcguinnessinstitute.org/publications/discussion-papers

29 See Ministry for the Environment. (3 July 2023). *Nationally Determined Contribution Strategy* [Cabinet Paper] [CAB-23-MIN-0283], Appendix 1: Nationally Determined Contribution Strategy (3 July 2023) and a Minute of decision (3 July 2023). Retrieved 6 January 2024 from environment.govt.nz/assets/publications/NDC-strategy-proactive-release.pdf

See also Climate Change Commission. (31 May 2021). *Ināia tonu nei: a low emissions future for Aotearoa*. Retrieved 21 June 2021 from www.climatecommission.govt.nz/our-work/advice-to-government-topic/inaia-tonu-nei-a-low-emissions-future-for-aotearoa

30 See NZX. (n.d.). NZX Main Board (NZSX). Retrieved 8 December 2023 from www.nzx.com/markets/NZSX

31 See Spark New Zealand Limited. (2023). Spark Annual Report 2023, pp. 44, 74–77, 154. Retrieved 18 March 2024 from www.nzx.com/announcements/416562

32 See External Reporting Board (XRB). (14 December 2022). *Aotearoa New Zealand Climate Standard 1: Climate-related Disclosures (NZ CS 1)*, p. 18. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/aotearoa-new-zealand-climate-standard-1

33 See Barramundi Limited. (2023). *Barramundi Annual Report FY23*, p. 32. Retrieved 15 December 2023 from www.nzx.com/announcements/418220

34 See Winton Land Limited. (2023). Winton Land Limited Annual Report 2023, pp. 22, 24–25. Retrieved 15 March 2024 from www.nzx.com/announcements/416741

35 See Genesis Energy Limited. (2023). Genesis Energy Limited Integrated Report 2023, pp. 79–111. Retrieved 15 March 2024 from www.nzx.com/announcements/416938

36 See External Reporting Board (XRB). (14 December 2022). *Aotearoa New Zealand Climate Standard 1: Climate-related Disclosures (NZ CS 1)*, p. 15. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/aotearoa-new-zealand-climate-standard-1

37 For a more detailed analysis of TCFD information disclosed in the annual reports of NZSX-listed companies, see McGuinness Institute. (April 2024). *Working Paper 2023/04 – Analysing TCFD Information Disclosed in 2017–2022 Annual Reports of NZSX- listed Companies*. Retrieved 9 September 2024 from www.mcguinnessinstitute.org/publications/working-papers

38 For example, Manawa Energy Limited (previously Trustpower Limited) stated in its FY22 annual report: 'We are prepared for the Government's implementation of mandatory climate-related disclosures from the 2023 financial year and already share much of the information that we expect will be required by the new legislation.' See Manawa Energy Limited. (2022). Manawa Energy Annual Report 2022, p. 8. Retrieved 7 March 2024 from www.nzx.com/announcements/392094

39 See External Repor.ng Board (XRB). (14 December 2022). Aotearoa New Zealand Climate Standard 1: Climate-related Disclosures (NZ CS 1), pp. 10, 14. Retrieved 13 December 2023 from www.xrb.govt.nz/standards/climate-related-disclosures/aotearoa-new-zealand-climate-standards/aotearoa-new-zealand-climate-standard-1

40 See McGuinness Institute. (June 2020). *Report 17: ReportingNZ: Building a Reporting Framework Fit for Purpose*, p. 43. Retrieved 15 December 2023 from www.mcguinnessinstitute.org/publications/project-2058

41 See External Reporting Board (XRB). (2024, 29 January). Director preparation guide. Retrieved 18 March 2024 from www.xrb.govt.nz/standards/climate-related-disclosures/resources/director-preparation-guide

42 See External Reporting Board (XRB). (14 December 2022). Aotearoa New Zealand Climate Standard 2: Adoption of Aotearoa New Zealand Climate Standards (NZ CS 2), pp. 6–8. Retrieved 8 December 2023 from www.xrb.govt.nz/dmsdocument/4763

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