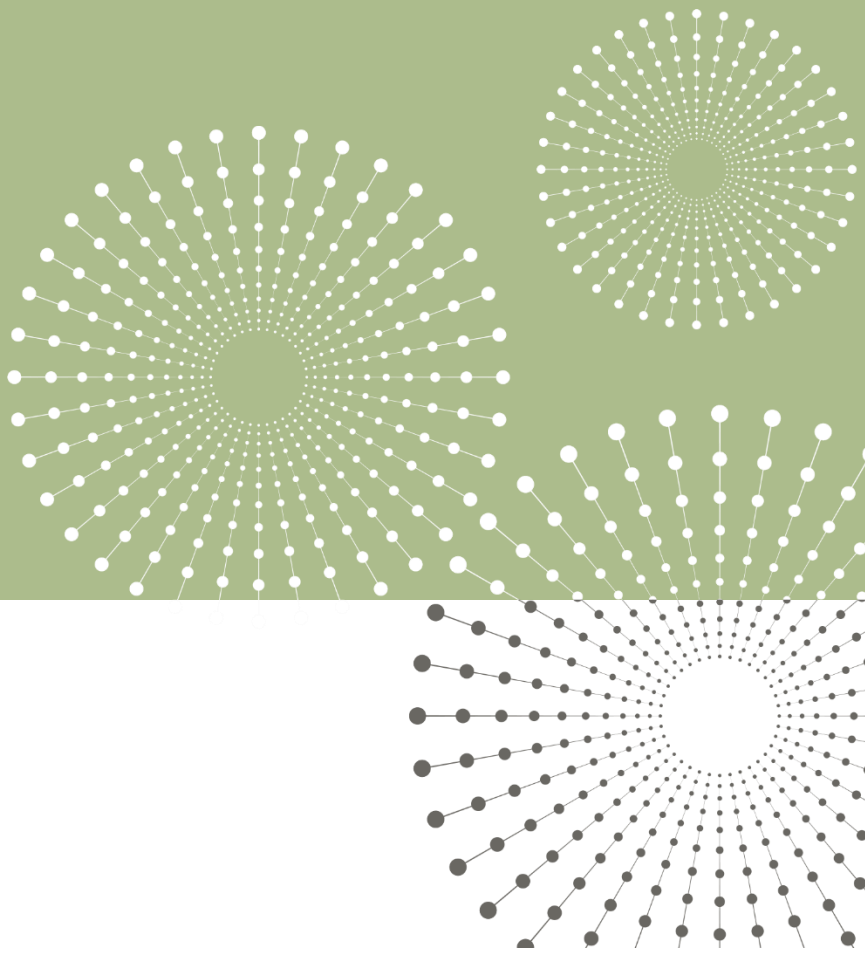
XRB | Te Kāwai Ārahi Pūrongo Mōwaho
EXTERNAL REPORTING BOARD

Climate-related disclosure

NZ CS 1: Guidance for all sectors



XRB staff guidance

July 2022

[WORKING DRAFT]

Contents

Introduction

Our approach to this guidance

Although this guidance has been developed explicitly to support those required to prepare disclosures under New Zealand Climate Standard 1 (NZ CS 1), it has been drafted with an eye to explaining the broader 'why and how' of climate-related risk and opportunity management. While disclosure is a vitally important output, the process of constructively engaging with climate-related risks and opportunities is equally important.

Our aim is to make this guidance as practical and accessible as it can be, given the relatively complicated subject matter it covers. The existing Taskforce on Climate-related Financial Disclosure (TCFD) guidance is the primary source material for this draft staff guidance. We focus on what preparers need to consider in applying TCFD guidance, which was developed in support of a voluntary regime, in the context of the mandatory disclosure requirements set out in in NZ CS 1. Guidance materials from other global sources provide additional reference points, and have been cited where they clearly add value without additional complexity.[i]

In drafting this guidance, we are seeking to illustrate how entities can approach the required disclosures in NZ CS 1. But an entity must exercise judgement, and first and foremost make its climate-related disclosures in a way that meets the needs and expectations of its primary users.

Finally, we have drafted this guidance to foster consistency through clarity of understanding, rather than through rules or templates. Climate-related disclosure is a swiftly evolving field and the greater the degree of freedom an entity can have to innovate and improve its analysis—while maintaining comparability and coherence—the better.

As the regime beds in and preparers become more familiar with the tasks at hand, we intend to provide opportunities for ongoing processes of feedback, review, and co-development of this guidance. This will no doubt see the approach taken to its development evolve as the requirements and expectations of primary users and preparers become clearer.

At various points in this guidance, we refer to real-world examples of existing, voluntary disclosure. Such examples were requested as a result of feedback received from numerous preparers. In referring to these examples we are not endorsing or validating the disclosures as 'good' or 'best' practice. They have simply been employed to explain or illustrate topics. Similarly, we have not reviewed or drawn any conclusions on the entity's broader voluntary disclosure, and instead note that these disclosures were made with respect to voluntary TCFD disclosures, not the mandatory requirements in NZ CS 1.

Before reading further an entity should read the disclosure requirements in [draft] **NZ CS 3 General Requirements for Climate-related Disclosures**. In particular, an entity should read the sections on

- Materiality
- Comparative information, consistency of reporting, and restatement of comparatives
- Methodologies, assumptions, and estimation uncertainty

1. Governance

The objective of the governance disclosures is to enable primary users to understand both the role an entity's governance body plays in overseeing climate-related risks and opportunities, and the role management plays in assessing and managing those climate-related risks and opportunities.

The quality of governance structures and functions are primary factors in determining whether an entity can successfully identify, analyse, and manage its climate-related risks and opportunities. For this reason, the TCFD place the governance disclosures in the outer, all-encompassing ring of the four that illustrate its categories of recommended disclosure (Figure 1).

Figure 1: The positioning of governance in relation to the other TCFD categories (adapted from TCFD 2022, p.18).

Good governance is in many respects the arbiter of success in all spheres of public and private sector activity. It is difficult to envisage any entity thriving to its fullest extent without governance structures in place which allow it to function effectively. Regarding climate-related risks, this could be argued to hold doubly true. The establishment of sound governance structures and functions which can cope with the breadth and depth of climate's reach, and its manifold uncertainties, is essential if an entity is to learn the lessons that a changing and challenging future might hold in time to successfully apply them.

Climate governance is a relatively new field, but examples of good practice and 'how to' guidance are already beginning to emerge. For instance, in relation to establishing effective climate governance on boards (or 'highest level governing bodies' for those entities who do not have a Board), the World Economic Forum (WEF) has established 8 guiding principles (Table 1).

There are additional resources an entity can draw on from organisations such as the Climate Disclosure Standards Board (CDSB), Carbon Disclosure Project (CDP), and the TCFD Knowledge Hub itself, offering insights on the delegation of climate-related risk and opportunity responsibilities to management-level roles.

Publisher	Year	Source	Pages
WEF	2019	How to Set Up Effective Climate Governance on Corporate Boards: Guiding principles and questions	**p.9-18**
CDSB	2021	TCFD Good Practice Handbook (2nd Edition)	**p.12-16**
CDP	2022	Climate Change 2022 Questionnaire	
TCFD	2022	TCFD Knowledge Hub - Governance	

Table 1: The WEF provides guidance on the implementation of its 8 principles for the establishment of effective climate governance at board (or equivalent) level. NZ CS 1 governance disclosures refer to aspects of the WEF's principles 1-6, with principle 7 referring to disclosure itself now a mandatory requirement. Principle 8 does not currently feature under NZ CS 1 but nevertheless represents good practice (adapted from WEF 2019).

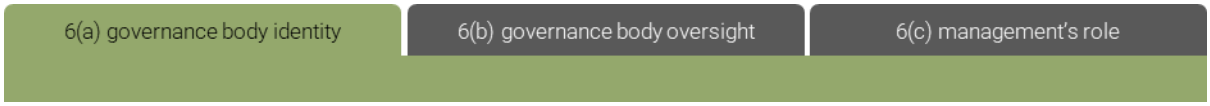
PRINCIPLE	IMPLEMENTATION ACTIONS
1. Climate accountability	The board or governance body is ultimately accountable for the long-term stewardship of the entity. Accordingly, the board or governance body should be accountable for the entity's long-term resilience with respect to potential shifts in the business landscape that may result from climate change. Failure to do so may constitute a breach of directors' duties.
2. Command of the subject	The board or governance body should ensure that it can access sufficient knowledge, skills, experience, and background to effectively debate and take decisions informed by an awareness and understanding of climate-related risks and opportunities.
3. Board structure	As the stewards for long-term performance and resilience, the board or governance body should determine the most effective way to integrate climate considerations into its structure and committees.
4. Material risk and opportunity assessment	The board or governance body should ensure that management assesses the short-, medium- and long-term materiality of climate-related risks and opportunities on an ongoing basis. The board or governance body should further ensure that the organization's actions and responses to climate are proportionate to the materiality of climate to the primary user.
5. Strategic integration	The board or governance body should ensure that climate systemically informs strategic investment planning and decision-making processes and is embedded into the management of risk and opportunities across the entity.
6. Incentivisation	The board or governance body should ensure that executive incentives are aligned to promote the long-term prosperity of the entity, including climate-related targets and indicators in their executive incentive schemes, where appropriate.
7. Reporting and disclosure	The board or governance body should ensure that material climate-related risks, opportunities and strategic decisions are consistently and transparently disclosed to all stakeholders – particularly to investors and, where required, regulators. Such disclosures should be made in financial filings, such as annual reports and accounts, and be subject to the same disclosure governance as financial reporting.
8. Exchange	The board or governance body should maintain regular exchanges and dialogues with peers, policymakers, investors, and other stakeholders to encourage the sharing of methodologies and to stay informed about the latest climate-relevant risks, regulatory requirements etc.

Navigating the Governance disclosures

There are three overarching disclosures in the Governance section of NZ CS 1. Two of the overarching disclosures, 6(b) and 6(c), contain sub-disclosures.

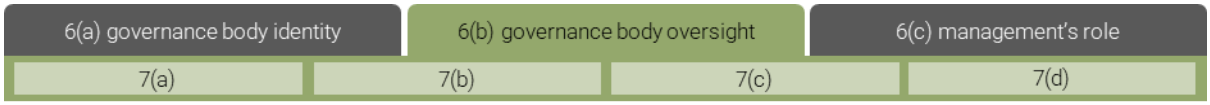
The disclosures are structured as follows:

1.1 Governance body identity (p.7):



Disclosure 6(a): Identity of the governance body responsible for oversight of climate-related risks and opportunities

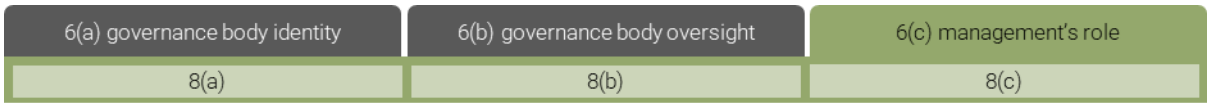
1.2 Governance body oversight (p.8):



Disclosure 6(b): a description of the governance body's oversight of climate-related risks and opportunities (see 7 (a) – (d)):

- **Disclosure 7(a):** the processes and frequency by which the governance body is informed about climate-related risks and opportunities
- **Disclosure 7(b):** how the governance body ensures that the appropriate skills and competencies are available to provide oversight of climate-related risks and opportunities
- **Disclosure 7(c):** how the governance body considers climate-related risks and opportunities when developing and overseeing implementation of the entity's strategy; and
- **Disclosure 7(d):** how the governance body 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 (see also paragraph 21(h)).

1.3 Management's role (p.11):



Disclosure 6(c): a description of management's role in assessing and managing climate-related risks and opportunities (see 8 (a) – (c)):

- **Disclosure 8(a):** how climate-related responsibilities are delegated to management-level positions or committees; and the process and frequency by which management-level positions or committees engage with the governance body
- **Disclosure 8(b):** the related organisational structure(s) showing where these management-level positions and committees lie; and
- **Disclosure 8(c):** the processes and frequency by which management is informed about, makes decisions on, and monitors, climate-related risks and opportunities

Guidance specific to each disclosure is provided in the following section.

1.1. Governance body identity: Disclosure 6(a)

6(a) governance body identity | 6(b) governance body oversight | 6(c) management's role

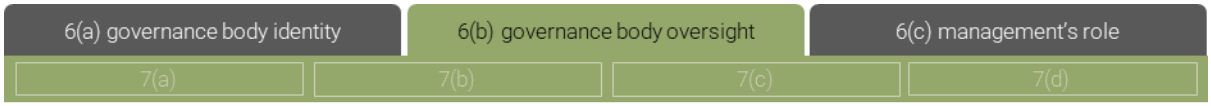
Disclosure 6(a): *Identity of the governance body responsible for oversight of climate-related risks and opportunities*

Primary users will want to know where ultimate responsibility for the oversight of climate-related risks and opportunities lies within the entity. This information will support capital allocation decision making on the part of primary users who wish to place a premium on the prioritisation of climate change.

The TCFD recommendations are based on the premise that a climate reporting entity (entity) operates with a board and an executive management team governance structure. The board is assumed to be ultimately responsible for the oversight of the entity with management carrying out the entity's core functions. Where this description holds true, preparers should refer to the board as the governance body responsible for oversight of climate-related risks and opportunities. However, if an entity does not have a board, and instead has a different governance structure (for instance, in the context of a managed investment scheme, an investment committee rather than a board), the preparer should identify the highest level of its governance hierarchy which oversees the climate-related risks and opportunities within the entity.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**

1.2. Governance body oversight: Disclosure 6(b)



Disclosure 6(b): *A description of the governance body's oversight of climate-related risks and opportunities (see 7(a) – (d))*

Primary users want to understand the extent to which climate-related risks and opportunities have been incorporated into the mainstream oversight functions of an entity's highest level governance body. This will contextualise the entity's position on climate-related risk for many primary users.

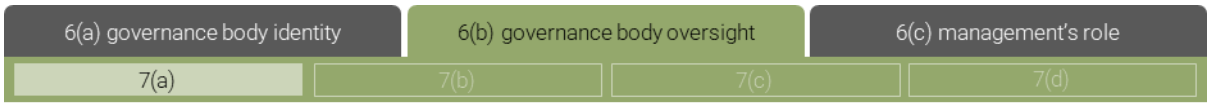
Many of the paragraph 7 disclosures may work well as figures or tables. For instance, preparers may choose to provide an organisation chart to communicate their governance structure and the processes involved in oversight of climate-related risk and opportunity in a clear and accessible manner.

Additional insights into current practices on governance disclosures that may be useful for CREs engaging in disclosure for the first time are provided in the sources cited below.

The information provided in response to disclosures 7(a) – (d) forms the basis of disclosure 6(b). Preparers must provide any additional information describing the governance body's oversight of climate-related risks and opportunities which they believe to be material to a primary user.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**
GRI	2022	GRI 2: General Disclosures 2021 – 3. Governance	**p.20-32**
WEF	2019	How to Set Up Effective Climate Governance on Corporate Boards: Guiding principles and questions	**p.11**

1.4.1 Governance body oversight: Disclosure 7(a)



Disclosure 7(a): *the processes and frequency by which the governance body is informed about climate-related risks and opportunities.*

Disclosure 7(a) gives primary users insight into the extent to which the entity's highest level governance body is prioritising climate-related risks and opportunities in its core oversight duties.

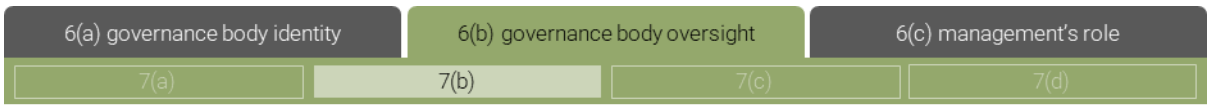
The TCFD, and other sources such as the Global Reporting Initiative (GRI) (cited below), provide guidance on how an entity can describe the processes and frequency by which the governance body is informed.

The Climate Financial Risk Forum (CFRF) recommend periodic regular updates to relevant board (or highest-level governance body) committee(s) on:

- The firm's progress in preparing for and implementing climate risk management
- Risk reporting metrics (Risk Appetite and metrics developed)

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**
GRI	2022	GRI 2: General Disclosures 2021 – 3. Governance Disclosure 2-12	**p.23**
CFRF	2020	Climate Financial Risk Forum Guide – Risk Management Chapter	**p.5-7**

1.4.2 Governance body oversight: Disclosure 7(b)



Disclosure 7(b): *how the governance body ensures that the appropriate skills and competencies are available to provide oversight of climate-related risks and opportunities.*

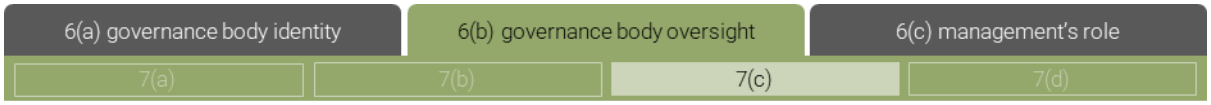
Disclosure 7(b) informs primary users as to the level of subject-specific capability the body has established to ensure climate-related risks and opportunities are managed competently. This may be internal to the entity or enhanced via external support to raise capabilities.

In the early years of the regime, disclosure 7(b) might simply reflect an entity's process of capacity building and the development of competencies that had not previously been focal areas. These capacities and competencies may be developed internally, or via access to external providers as a bridging mechanism but should ultimately aim to become facets of mainstream governance practices.

Publisher	Year	Source	Pages
ISSB	2022	Exposure draft: [Draft] IFRS S2 Climate-related Disclosures[1]	**p.33**

[1] Note that this is an exposure draft. This content may change in the final standard. Links may change.

1.4.3 Governance body oversight: Disclosure 7(c)



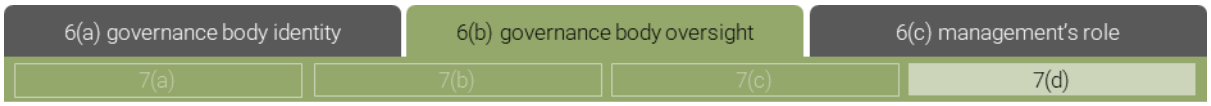
Disclosure 7(c): *how the governance body considers climate-related risks and opportunities when developing and overseeing implementation of the entity's strategy*

Primary users will seek clarity on the governance body's approach to integrating climate-related risks and opportunities into strategy development and implementation. This information helps to illustrate the merits of an entity's claims regarding the weight it attaches to climate-related risks and opportunities in its core strategic processes, and helps to contextualise subsequent Strategy disclosures.

Disclosure 7 (c) provides preparers with an opportunity to demonstrate the coherence of their efforts to incorporate climate-related risk and opportunity in the development of strategy and in bringing the entity's strategy to fruition (including via plans of action, annual budgets, business plans, etc.).

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**

1.4.4 Governance body oversight: Disclosure 7(d)



Disclosure 7(d): *how the governance body 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 (see also 21(h)).*

Disclosure 7(d) offers primary users a view of how the governance body makes climate-related risk and opportunity metrics and targets a tangible, meaningful component of management's core responsibilities, linked to management performance evaluation criteria.

An entity should simply set out how their highest-level governance body goes about selecting climate-related metrics and targets, monitors progress toward them, and oversees their achievement. The entity should make specific reference to any linked remuneration policy related to the achievement of these metrics and targets.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**

1.3. Management's role: Disclosure 6(c)

6(a) governance body identity	6(b) governance body oversight	6(c) management's role
8(a)	8(b)	8(c)

Disclosure 6(c): *A description of management's role in assessing and managing climate-related risks and opportunities (see 8(a) – (c))*

Primary users will want to understand how the assessment and management of climate-related risks and opportunities is delegated among the entity's executive management team. This information will add depth to a primary user's understanding of how the governance body's strategic direction on climate-related risk and opportunity is implemented by management.

An entity should describe their organisational structure(s) using figures or diagrams where appropriate.

How (and by whom) other risks are managed within the entity could in many cases serve as an indicator of where climate-related risk management responsibilities might best be assigned. The CFRF take the view that the management of climate-related risk should reside with one or two senior roles, such as Chief Risk Officer or Chief Investment Officer, to optimise accountability (CFRF 2020, p.6).

Additional insights that may be useful for CREs new to climate-related risk practices are provided in the sources below, and Table 2 provides an example disclosure highlighted by the CDSB.

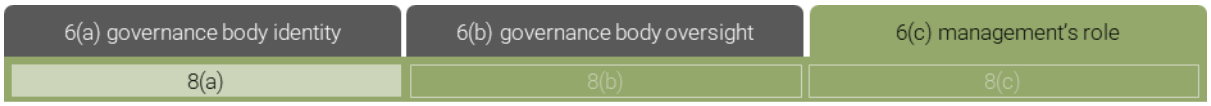
The information provided in response to disclosures 8(a) – (c) forms the basis of disclosure 6(c). Preparers must provide any additional information describing management's role in assessing and managing climate-related risks and opportunities which they believe to be material to a primary user.

Table 2: Ayala's graph and table approach is highlighted by the CDSB as good practice in clearly communicating the roles of board and management (adapted from CDSB 2021, pp.14-15).

POSITION	ROLES AND KEY TASKS
Chief Risk Officer (CRO)	The CRO is the highest management-level position with responsibility for climate-related risks and opportunities
	The CRO has also been mandated to lead the identification, assessment and management of climate-related risks and opportunities. The CROs lead responsibilities: • Lead management in the identification and assessment of climate-related risks and opportunities • Report to the Board-level committee the climate-related risks and opportunities identified by management, with corresponding anticipated financial impacts • Monitor the management of climate -related risks in relation to the overall risk exposure of the company • Ensure that the Group Risk Management and Sustainability receives appropriate organisational support to establish a framework and process for the inclusion of climate-related risks in the enterprise risk management program
Group Risk Management and Sustainability UNIT (GRMSU)	The GRMSU, as a support to the CRO, in the identification, assessment and management of climate-related risks and opportunities has additional responsibilities: • Present sustainability megatrends and climate-change updates during the annual risk assessment as part of establishing the context • Design a framework for the identification and assessment of climate-related risks • Establish a process to integrate climate-related risks in the enterprise risk register • Provide disclosures on the financial impact of climate-related risks in the annual integrated report
Enterprise Risk Management Council (ERM Council)	Composed of representatives of risk management experts across the group
	Semi-annually, the ERM Council provides the top emerging risks to GRMSU for reporting to CRO and Risk Management and Related Party Transaction Committee
	Platform for risk framework alignment, continuous risk process improvement and other group-wide projects
	Meets at least three times a year

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**
CFRF	2020	Climate Financial Risk Forum Guide – Risk Management Chapter	**p.5-7**
CDSB	2021	TCFD Good Practice Handbook – 2nd Edition	**p.14-15**

1.5.1 Management's role: Disclosure 8(a)



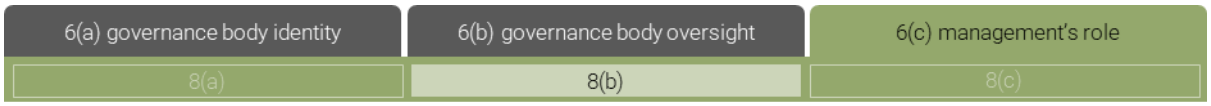
Disclosure 8(a): *how climate-related responsibilities are delegated to management-level positions or committees, and the process and frequency by which management-level positions or committees engages with the governance body*

Primary users want information on how management roles are delegated to assess and manage climate-related risks and opportunities, and subsequently implement any business model and/or strategy initiatives which aim to enhance the climate resilience of the entity.

An entity should focus on the 'who' and 'how' of climate-related risk and opportunity management in completing Disclosure 8 (a), documenting the assignment and delegation of responsibilities with respect to climate-related risks and opportunities.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**

1.5.2 Management's role: Disclosure 8(b)



Disclosure 8(b): *the related organisational structure(s) showing where these management-level positions and committees lie*

Other disclosures illustrate the delegation of roles and responsibilities, this disclosure gives primary users a contextual overview of where these delegated responsibilities lie within the entity.

In completing disclosure 8(b), preparers should be clear to illustrate the position within management hierarchies that the delegated management-level responsibilities described in 8(a) reside.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**
CDSB	2021	TCFD Good Practice Handbook – 2nd Edition	**p.14-15**

1.5.3 Management's role: Disclosure 8(c)

6(a) governance body identity	6(b) governance body oversight	6(c) management's role
8(a)	8(b)	8(c)

Disclosure 8(c): *the processes and frequency by which management is informed about, makes decisions on, and monitors, climate-related risks and opportunities.*

Primary users are interested in understanding the extent to which management actively engages in exercising the climate-related roles and responsibilities delegated to them by the board or governing body.

Disclosure 8(c) should involve a relatively straight-forward summary of how and how often management is involved in climate-related risk and opportunity monitoring and decision making.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures	**p.17**
CDSB	2021	TCFD Good Practice Handbook – 2nd Edition	**p.14-15**

2. Strategy

The objective of the strategy disclosures is to enable primary users to understand 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.

Primary users are increasingly expecting that an entity can back claims that their business model and strategy are resilient to climate change. The strategy section of NZ CS 1 therefore requires an entity to cover a broad range of issues.

For instance, an entity must demonstrate that it understands the current and anticipated impacts, and financial impacts, of climate change, accepting that these impacts may need to be expressed in range estimates due to both the uncertainties associated with climate change and the relatively early stage of impact data generation.

The strategy section also includes disclosures on the use of scenario analysis to test the resilience of an entity's business model and strategy. An entity will need to disclose which scenarios it has used and their related methodologies and assumptions (as required under **NZ CS 3**). Starting qualitatively is advisable, primarily to avoid a (typically fruitless) pursuit of precise quantification. Quantitatively complex scenario analyses risk being hampered by an absence of data to adequately parameterise them, and must be scoped so narrowly that they offer little by way of strategic insight. Sector level collaboration on scenario analysis can play an important role to enable individual entities to provide consistent and comparable disclosures on scenario analysis to primary users. This will put them in the best position to satisfy primary users that the tool has been used in a way has led to genuine improvements to the entity's business model and strategy, and therefore its ability to create enduring value.

An entity will also need to disclose the transition plan aspects of their strategy, and their associated financial plans to deliver transition. Amanda Blanc, CEO of Aviva Plc, and Co-chair of the UK's new Transition Plan Taskforce highlighted that 'The UK will only meet its net zero commitments if companies can fundamentally change the way they do business. A publicly stated ambition to reach net zero is an important starting point. But the tangible changes we urgently need will only come about when the private sector has robust, detailed plans that set out precisely how they will achieve their ambition. And for these transition plans to be an effective roadmap to a low carbon future, they must be consistent, credible and ambitious... No-one has ever decarbonised an entire economic system before. The scale of the challenge is enormous, but so are the opportunities that we can create.'

Publisher	Year	Source	Pages
UK TPT	2022	A Sector-Neutral Framework for private sector transition plans: Call for Evidence	**p.4**
TCFD	2020	Guidance on Risk Management Integration and Disclosure	**p.5**
XRB	2022	Scenario analysis: Getting started at the sector level	

Navigating the Strategy disclosures

There are five overarching disclosures in the Strategy section of NZ CS 1. Each overarching disclosure contains sub-disclosures.

The disclosures are structured as follows:

2.1 Current impacts (p.17):

Disclosure 10(a): a description of its current climate-related impacts (see 11(a) – (c)

- **Disclosure 11(a):** its current physical and transition impacts
- **Disclosure 11(b):** the current financial impacts of its physical and transition impacts identified in paragraph 11(a), and
- **Disclosure 11(c):** if the entity is unable to disclose quantitative information for paragraph 11(b), an explanation of why that is the case

2.2 Scenario analysis (p.20):

Disclosure 10(b): a description of the scenario analysis it has undertaken (see 12)

- **Disclosure 12:** An entity must describe the scenario analysis it has undertaken to help identify its climate-related risks and opportunities and better understand the resilience of its business model and strategy. This must include a description of how it has analysed, at a minimum, a 1.5 degrees Celsius climate-related scenario, a 3 degrees Celsius or greater climate-related scenario, and a third climate-related scenario

2.3 Risks and opportunities (p.23):

Disclosure 10(c): a description of the climate-related risks and opportunities it has identified over the short, medium, and long term (see 13(a) – (d))

- **Disclosure 13(a):** how it defines short, medium and long term and how the definitions are linked to its strategic planning horizons and capital deployment plans
- **Disclosure 13(b):** a description of the time horizon over which each climate-related risk or opportunity could reasonably be expected to have a financial impact
- **Disclosure 13(c):** whether the risks and opportunities identified are physical or transition risks or opportunities and, where relevant, their sector and/or geography, and
- **Disclosure 13(d):** how climate-related risks and opportunities serve as an input to its financial planning processes, including for capital deployment and funding

2.4 Anticipated impacts (p.27):

Disclosure 10(d): a description of the anticipated impacts of climate-related risks and opportunities (see 14 (a) – (c))

- **Disclosure 14(a):** the anticipated impacts of climate-related risks and opportunities reasonably expected by the entity
- **Disclosure 14(b):** the anticipated financial impacts of climate-related risks and opportunities reasonably expected by the entity, and
- **Disclosure 14(c):** if the entity is unable to disclose quantitative information for paragraph 14(b), an explanation of why that is the case

2.5 Transition plans (p.31):

Disclosure 10(e): a description of how it will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future state (see 15(a) – (c)

- **Disclosure 15(a):** a description of its current business model and strategy
- **Disclosure 15(b):** 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
- **Disclosure 15(c):** the extent to which transition plan aspects of its strategy are aligned with its financial planning processes, including for capital deployment and funding

Guidance specific to each disclosure is provided in the following section.

2.1. Current impacts: Disclosure 10(a)

Disclosure 10(a): *a description of its current climate-related impacts (see 11(a) – (c))*

Primary users will want insight into how climate change currently affects an entity. The crux of this disclosure therefore lies in the understanding that an entity has of the current physical and transition impacts of climate change.

The information provided in response to disclosures 11(a) – (c) forms the basis of disclosure 10(a). Preparers must add any additional information describing current climate-related impacts that they believe to be material to primary users.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.18**

2.3.1 Current impacts: Disclosure 11(a)

Disclosure 11(a): *its current physical and transition impacts*

This disclosure provides primary users with information illustrating how acute and chronic climate-related impacts affect an entity. Some (particularly chronic) impacts may have originated in previous years, but if they present a current material impact, primary users will expect an entity to describe how.

An entity's current impacts may have affected it via multiple routes, many of which may be indirect. For instance, an entity may have been forced to change aspects of its operations, alter its priorities, or adjust its perspective on what it can and cannot control throughout its value chain due to physical and transition impacts (Table 3).

In fulfilling this disclosure, an entity is not required to calculate what *proportion* of a climate-related impact was attributable to climate change. For example, flood damage is an impact resulting from the exposure of an entity's vulnerable premises to the climate-related hazard of increased extremes of precipitation, but there is no need for the entity to attempt to attribute what proportion of the impact of a given flood event resulted from climate change, above and beyond a 'business as usual' flood event.

An entity could describe the current physical or transition impacts of:

- discrete events (i.e., storms, droughts, protests, legal action)
- ongoing changes (i.e., to temperatures, precipitation, prices, regulations), or
- benefits realised (i.e., via market changes, resource efficiencies, etc.)

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.46-52**
TCFD	2021	Status Report	**p. 56-74**
TCFD	2021	Implementing the Recommendations of the TCFD	**p.18**
EU	2019	Guidelines on reporting climate-related information	**p.13-14**
BEIS	2022	Mandatory climate-related financial disclosures by publicly quoted companies, large private companies and LLPs Non-binding guidance	**p.12-14**

Table 3: Illustrative examples of current climate change impacts on an entity (Adapted from TCFD, 2021, p.18)

Entity receptor	Examples of current physical and transition impacts of climate change
Business model (including operations)	Transitioning our distribution fleet from internal combustion engine to electric vehicles to reduce Scope 1 emissions and avoid rising fossil fuel costs
Products and services	Developed a new certification service for contracted supply chain partners to verify their on-farm climate-resilience practices
Supply chain and/or value chain	Flooding at supplier's warehouse resulted in two-week delay in supply of packaging material, causing a subsequent delay in our orders being shipped to our customers
Adaptation and mitigation activities	Contracted property search agent to secure new long-term lease on cool-store and packaging plant, relocating operations out of fluvial flood plain to reduce insurance costs and risk of disruption
Investment in R&D	Invested in research into drought-resistant variants of existing horticultural products
Acquisitions or divestments	Acquired regenerative farming consulting business to help our contracted supply chain partners to reduce their on-farm emissions and enhance their environmental credentials
Access to capital	Development of climate-related risk disclosure to gain access to European capital markets

2.3.2 Current impacts: Disclosure 11(b)

Disclosure 11(b): *the current financial impacts of its physical and transition impacts identified in paragraph 11(a)*

This disclosure provides information about the impacts of climate change on an entity's financial performance, financial position, and cash flow, within the current reporting period. This will illustrate for primary users the entity's current financial sensitivity to climate-related impacts. Primary users can use this information to determine how well the entity is financially managing the climate-related impacts it faces, and as a gauge of the extent to which future climate-related risks and opportunities might affect its financial position, performance, and cash flows.

These impacts and interactions may be complex and therefore difficult to calculate with precision, so primary users will want to see preparers applying a considered, albeit necessarily subjective, estimation of how climate has affected the entity financially if quantitative data cannot be obtained.

An entity should make use of cross-industry metric categories in its assessment of financial impacts as these will likely provide a useful starting point.

If an entity finds it is not practical or feasible to precisely account for the financial impacts of climate change, the entity should **begin qualitatively** in its description of current financial impacts, **building toward quantification over time**. It should be possible for an entity to describe in broad terms how climate-related impacts have weakened or strengthened its financial position, performance, and cash flows through affecting current costs, revenues, or affecting its value chain.

Where an entity finds it is feasible to do so, it should quantify current climate-related impacts on its financial position, performance, and cash flows. Where impact information is provided quantitatively, it can be expressed as a single value or as a range. Where current financial impacts carry significant uncertainties they should be expressed as ranges, but where the impact is direct and unambiguous a single value may be more appropriate (illustrative examples are provided in Table 4).

Over time, the data from previous reporting periods will provide longitudinal context for primary users and preparers. However, prior to such contextual data becoming available, preparers should consider including any previous financial impact information they feel will be material to primary users.

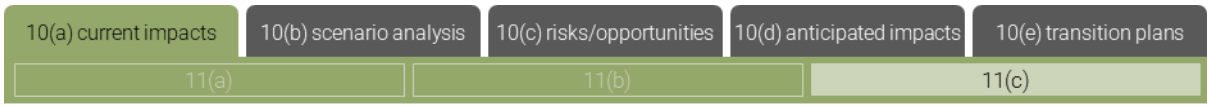
Table 4: Illustrative examples of the estimated financial impacts

Examples of current physical and transition impacts of climate change	Estimated financial impact in current reporting period:
Transitioning our distribution fleet from internal combustion engine to electric vehicles to reduce Scope 1 emissions and avoid rising fossil fuel costs	Financial Position Replacement of vehicles, installation of chargers $x
Developed a new certification service for contracted supply chain partners to verify their on-farm climate-resilience practices	Cash flows operating cash flows $x
Flooding at supplier's warehouse resulted in two-week delay in supply of packaging material, causing a subsequent delay in our orders being shipped to our customers	Financial Performance Estimated lost revenue $x (in cancelled/lost orders)
Contracted property search agent to secure new long-term lease on cool-store and packaging plant, relocating operations out of fluvial flood plain to reduce insurance costs and risk of disruption	Financial Performance Costs to renegotiate lease $x Decrease in insurance costs $x
Invested in research into drought-resistant variants of existing horticultural products	Financial Performance R&D Expenditure $x
Acquired regenerative farming consulting business to help our contracted supply chain partners to reduce their on-farm emissions and enhance their environmental credentials	Cash flows Business acquisition $x
Development of climate-related risk disclosure to gain access to European capital markets	Financial Performance finance expenses $x

First-time adoption relief is available for this disclosure (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.46-52**
TCFD	2021	Implementing the Recommendations of the TCFD	**p.74-78**

2.3.3 Current impacts: Disclosure 11(c)



Disclosure 11(c): *if the entity is unable to disclose quantitative information for paragraph 11(b), an explanation of why that is the case.*

Primary users will seek financial bottom-line information which facilitates a ready comparison between different investment propositions. However, where quantitative financial impact data cannot be reliably sourced, primary users will see the value in qualitative, descriptive information, providing they feel confident regarding the rigour and transparency of the entity's efforts to provide it.

An entity should provide a brief description of the process it has followed in attempting to quantify the financial effects of the current climate-related impacts it faces. There are undoubtedly ambiguities and complexities to navigate in doing so, as many climate-related impacts will directly or indirectly affect factors such as market values, energy costs or operational efficiency, which are extremely difficult to put a precise figure to. Explaining what was considered, why its quantification is challenging, and how these challenges might be overcome in future, may assist primary users in evaluating these disclosures.

Publisher	Year	Source	Pages
ISSB	2022	Exposure draft: [Draft] IFRS S2 Climate-related Disclosures[2]	**p.37**

[2] Note that this is an exposure draft. This content may change in the final standard. Links may change.

2.2. Scenario analysis: Disclosure 10(b)

Disclosure 10(b): *a description of the scenario analysis it has undertaken (see 12)*

Primary users will want to understand, with as much clarity and coherence as possible, how future risks and opportunities might affect the business model and strategy of an entity.

However, there is significant uncertainty surrounding the sensitivity of the climate to the concentration of atmospheric GHGs, and further uncertainty regarding the extent to which global efforts to reduce GHG emissions will be successful. These and other critical uncertainties make it very difficult for an entity to assess future climate-related risks and opportunities, or the impacts that these may carry.

Scenario analysis offers one of the few routes available to an entity to systematically explore and prepare for uncertain future change. As such, it must be handled well if other aspects of an entity's strategy disclosures are to be considered credible by primary users. Primary users will be interested in understanding the scenario analysis process the entity has followed, and what the core assumptions underpinning the analysis were, and whether these align with those used by peers.

For example, preparers may choose to employ scenario analysis to better understand the future-facing aspects of:

- The climate-related risks and opportunities disclosed under 10(c)
- The anticipated impacts and financial impacts of climate-related risks and opportunities disclosed under 10(d), and
- How their business model and strategy might change to address its climate-related risks and opportunities, disclosed under 15(b)

The information provided in response to disclosure 12 forms the basis of disclosure 10(b). Preparers must add any additional information describing the scenario analysis they have undertaken which they believe will be material to a primary user.

Publisher	Year	Source
TCFD	2017	Final Report: Recommendations of the TCFD

2.4.1 Scenario analysis: Disclosure 12

Disclosure 12: *An entity must describe the scenario analysis it has undertaken to help identify its climate-related risks and opportunities and better understand the resilience of its business model and strategy. This must include a description of how it has analysed, at a minimum, a 1.5 degrees Celsius climate-related scenario, a 3 degrees Celsius or greater climate-related scenario, and a third climate-related scenario*

This is key information for most primary users of climate related disclosures. Scenario analysis offers insights into the potential impacts of climate-related risks and opportunities for an entity, and as such provides primary users with a window on the entity's plausible future viability that would otherwise be unavailable to them.

Engaging with scenario analysis disclosures can be challenging for primary users. To date, under voluntary disclosure regimes, entities have given relatively sparse descriptions of the scenario analysis they have undertaken, making comparability difficult, and any information put forward in support of their claims of climate resilience difficult to evaluate.

Primary users therefore need disclosures which allow them to evaluate the merits of the assumptions an entity has employed, the process it has followed, and how well its scenarios are aligned with higher-level pathways and projections that others in the sector may be using.

Outputs that are understandable (clear and concise), complete and consistent and coherent will reassure primary users that the entity has meaningfully engaged in the scenario analysis process, inspiring confidence in its outputs despite the complexity, uncertainty, and unavoidable subjectivity it typically involves.

In disclosing under paragraph 12, preparers must read **NZ CS 3**, particularly paragraph 50, and include the required disclosures on methodologies and assumptions used as part of scenario analysis. If an entity's sector has undertaken scenario analysis at the sector level, this should provide helpful inputs for this disclosure, assuming the entity has used similar assumptions in its own scenario analysis.

An entity can opt to follow the six-step approach set out in XRB staff guidance to get their scenario analysis underway (Figure 2). This is based on the recommended approach to climate-related scenario analysis as set out by the TCFD in its 2020 guidance, and adapted by XRB staff for sectors in Aotearoa New Zealand getting started on scenario analysis. The TCFD also provides extensive guidance on employing scenario analysis in strategic management (2020, p.33-41).

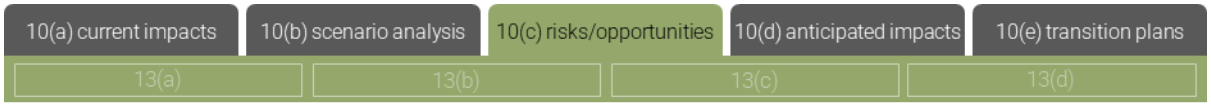
An entity should take a relatively high-level approach in their first year of scenario analysis, touching on a broad range of different aspects of physical and transition risk and opportunity. This will provide an overview of the climate-related risk and opportunity landscape, from which more detailed work can be planned. In subsequent years an entity might then opt to undertake a narrower, deeper dive into climate-related factors of greatest importance to the resilience of their business model and strategy, conducting a more thorough analysis of specific categories of physical or transition risk or opportunity. During these later, more sophisticated analyses where the scope is narrowed, financial modelling and other forms of quantitative analysis becomes a much more manageable undertaking.

Publisher	Year	Source	Pages
TCFD	2017	Final Report: Recommendations of the TCFD	**p.27-30**
TCFD	2020	Guidance on Scenario Analysis for Non-Financial Companies	**p.15-41, p.70-83**
MITSloan	2017	Using Scenario Planning to Reshape Strategy	

STEP	KEY TASKS AND PROCESSES	OUTPUTS
1 Stakeholders	**Engage internal stakeholders and assess the external environment** • Engage the Board/governance body as project sponsors; task Senior Leaders and Management to undertake entity-level scenario analysis • Explore climate-related risks and opportunities currently affecting the entity, *OR* • Review risks and opportunities put forward by a sectoral analysis; add any entity-specific risks and opportunities CREs see as requiring further analysis	Briefing paper, project charter
2 Focal question	**Define or validate the focal question and scope** • Define a focal question and scope of relevance to the entity's analysis, *OR* • Validate the focal question and scope of a sectoral scenario analysis, noting any amendments required to tailor the scenarios with respect to their time horizon, geography, technology, market or value chain coverage, in order to address the entity's need to assess the resilience of its business model and strategy	Focal question, scope, and timeframe
3 Driving forces	**Identify or refine driving forces** • Identify driving forces and assess their interaction with the entity's business model and strategy, *OR* • Review driving forces put forward by sectoral analysis and assess their interaction with the entity's business model and strategy, noting any additional driving forces which the entity may need to account for in its own analysis	Driving forces prioritisation, conceptual model
4 Outcomes & pathways	**Select or review scenario outcomes and pathways, developing additional combinations as necessary** • Select scenario temperature outcomes and emissions pathways which are most relevant and challenging for the entity, *OR* • Check the scenario outcomes and pathways selected at sectoral scale are sufficiently relevant and challenging for the entity, developing additional outcome and pathway combinations if deemed necessary	Scenarios from most relevant and challenging pathways
5 Draft & quantify	**Refine narratives and quantify to suit entity-specific needs** • Draft scenario narratives which follow each scenario's internal logic to develop a plausible pathway to the selected outcome, *OR* • Refine the sectoral scenario narratives to incorporate specific reference to the entity • If required and deemed feasible, generate new, entity-specific data illustrating the implications of the scenarios for the entity's business model, strategy and financial planning.	Narratives, quantified where appropriate
6 Assess strategic resilience	**Apply scenario insights in strategic management** • Document the implications of the scenarios for the entity's business model and strategy. • Investigate and prioritise options to address these implications, developing transition plan aspects of strategy as needed. • Monitor signals of change to identify trends; review, and plan to reiterate the process.	Assessment of resilience of business model and strategy

Figure 2: The six steps of the TCFD scenario analysis process (adapted from TCFD, 2020, p.20-31). An entity can follow TCFD guidance in developing strategy-relevant scenarios for use in their climate-related risk and opportunity analysis.

2.3. Risks and opportunities: Disclosure 10(c)



Disclosure 10(c): *a description of the climate-related risks and opportunities it has identified over the short, medium, and long term (see 13(a) – (d))*

Primary users will want to understand the material climate-related risks and opportunities that an entity has identified, in order to allow them to gauge the entity's viability as an investment option.

Climate-related risks and opportunities should be described in terms of their:

- anticipated timeframe of occurrence (i.e., short, medium, and long terms, with an explanation of what these timeframes mean for the entity and how they have been defined)
- type (i.e., whether physical or transition)

Disclosure of commercially sensitive information: Concerns about the disclosure of commercially sensitive information have been raised both internationally and in New Zealand, particularly regarding the disclosure of opportunities.

The TCFD are clear that an entity should not claim business confidentiality as a reason for avoiding disclosure. As a matter of principle, an entity should err on the side of disclosure. However, judgement will be required as to the level of granularity of disclosures, particular with respect to opportunities. In exercising that judgement, the entity should have regard for TCFD's suggested considerations:

- whether the information provides the organisation with an economic benefit that translates into a competitive advantage because the information is unknown to its competitors
- whether making such information public may cause a considerable economic loss for the organisation
- consider a stepwise approach to disclosure – rather than decide not to disclose. For example, a company may start by disclosing *broader*, qualitative information and move to more *specific,* quantitative data and information over time.

Zespri provided an example of opportunity disclosure in their 2021 Climate Change Risks and Opportunities report (2021, p.9). The information is described at a high-level, avoiding specifics which could create any loss of competitive advantage:

"The primary opportunity for Zespri and its supply chain partners is to increase investment in climate adaptation practices over the short-term to increase resilience, before both physical and transition climate-related risks mount to pose altogether more challenging circumstances. There is some evidence the physical impacts of climate change could act in favour of kiwifruit production. For example:

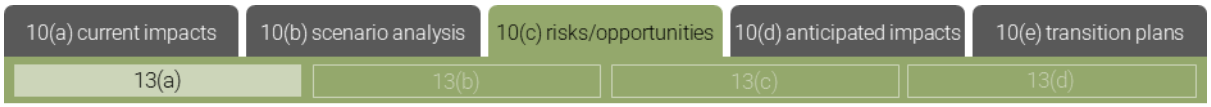
- *Warmer temperatures and longer growing seasons in some regions may result in higher quality fruit (e.g., increased dry matter) and yield.*
- *Warmer temperatures may make existing sites with sub-optimal growing conditions (e.g., colder) more favourable and alternative growing locations may become more suited to production."*

Disclosures should be as specific as an entity deems to be practically and commercially possible.

The information provided in response to disclosures 13(a) – (d) forms the basis of disclosure 10(c). Preparers must add any additional information describing climate-related risks and opportunities which they believe will be material to a primary user.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.18**
Zespri	2021	Climate Change: Risks and Opportunities	**p.9**

2.5.1 Risks and opportunities: Disclosure 13(a)



Disclosure 13(a): *how it defines short, medium, and long term and how the definitions are linked to its strategic planning horizons and capital deployment plans*

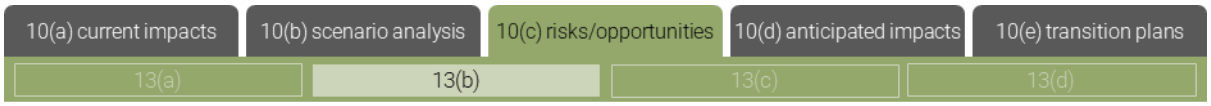
Primary users want to know how an entity has assessed and incorporated the timeframes involved in climate-related risks and opportunities in their strategic planning processes. Some risks and opportunities may already be evident, while some may evolve over periods of years or even decades into the future. Primary users need to clearly understand to what extent an entity's operational and strategic planning horizons align with the timescales of climate-related physical and transition risks and opportunities it has identified.

An entity should explain how it has selected short, medium, and long-term timeframes of relevance to the analysis of climate-related risks and opportunities, referencing how these relate to the entity's strategic planning and investment processes.

The entity should consider explicitly pointing out any instances where a timeframe of climate-related risk and opportunity analysis *does not* align with the timeframes of its strategic planning and/or investment decision making process, explaining why the incompatibility is immaterial or how it will be addressed.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.18,** 11

2.5.2 Risks and opportunities: Disclosure 13(b)



Disclosure 13(b): *a description of the time horizon over which each climate-related risk or opportunity could reasonably be expected to have a financial impact on the entity*

Investors globally are seeking a deeper understanding of the financial impacts of climate-related risks and opportunities. While expectations that this can be achieved in a precise or accurate manner are realistically low at this point in the maturity of climate-related risk disclosure, there is a growing desire among primary users to understand, at least in broad terms, *when* financial impacts might reasonably be anticipated to affect the entities they are investing in.

To begin with, an entity may opt to estimate the time horizon (and perhaps the scale) of financial impacts it anticipates encountering in categorical rather than precise terms. For instance, the entity may choose to group risks and opportunities into broad categories of short, medium, and long term in year 1 (

Table 5), refining the precision of these descriptions to as great a degree as possible thereafter.

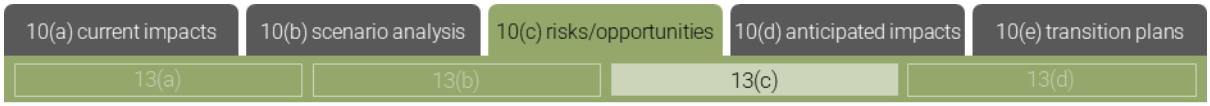
☺	First-time adoption relief is available for this disclosure (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.11, 17**
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.46-52**

Table 5: if an entity has identified five risks and three opportunities with potential financial impacts, they may opt to provide categorical estimations of when each risk and opportunity might arise, and with what scale of financial impact

Scale of potential financial impacts	**Time horizon**		
	Short term (x-x years)	Medium term (x-x years)	Long term (x-x years)
Small ($x to $x)	**Transition Risk 1; Transition Risk 2**	**Physical Risk 1**	**Physical Opportunity 1; Physical Opportunity 2**
Moderate ($x to $x)	**Transition Opportunity 1**	**Physical Risk 2**	**Transition Opportunity 4; Physical Risk 3**
Large ($x to $x)	**Transition Risk 3; Transition Opportunity 2**	**Transition Opportunity 3**	**Physical Risk 4**

2.5.3 Risks and opportunities: Disclosure 13(c)



Disclosure 13(c): *whether the risks and opportunities identified are physical or transition risks or opportunities and, where relevant, their sector and/or geography*

Primary users have come to expect risks and opportunities to be characterised as either physical or transitional, as this is a framework for risk comparison which is now globally accepted.

Physical risks and opportunities are those resulting from climate change itself, including via temperature, rainfall, storms, extreme events, and sea level rise.

Transition risks and opportunities are those resulting from the economic, regulatory, social, technological, and legal responses *to* climate change (Figure 3Figure 3).

An entity should provide a short summary or table describing the characteristics of the climate-related risks and opportunities it has identified. There are several examples of climate-related risks and opportunities provided by the TCFD (cited below). Additional examples of climate-related risks and opportunities in a New Zealand context are illustrated in Table 6.

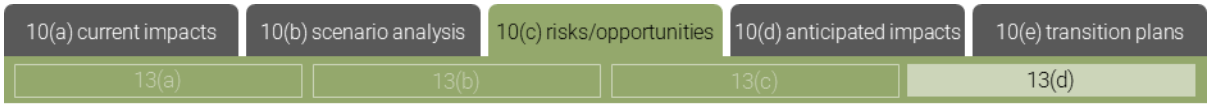
Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.74-76,** 18, 9

Figure 3: A conceptual breakdown of physical and transition risk

Table 6: Illustrative examples of climate-related physical and transition risks and opportunities in a New Zealand context

Type	Illustrative risks
TRANSITION	Increasing NZU price under the ETS imposing additional costs on an entity
	Mainstream adoption of alternative proteins in key dairy and red meat export markets undermining market share for primary sector entities
	Shift away from NZ as tourist destination due to carbon-footprint of traveller air-miles, reducing revenues for tourism and hospitality sector entities
PHYSICAL	Extra-tropical cyclones tracking across New Zealand and damaging farmlands, infrastructure
	Extended drought conditions hitting key water-sensitive dairy areas
	Increasing incidence of fluvial flooding (river flooding) striking urban centres and densely populated suburbs
	Sea-level rise accelerating coastal erosion, undermining water and electricity infrastructure
Type	**Illustrative opportunities**
TRANSITION	Energy efficiency gains in process heat triggered by emissions reduction obligations reducing overhead costs for industry
	Emergence of new, high-value markets in low-emissions, low-intensity primary produce
	Transport mode shifts to reduce emissions (cycling, walking, mass-transit, clean vehicles) improving productivity by reducing worker sick days and cutting commute/transit times lost to traffic gridlock.
PHYSICAL	Development of new fisheries as sub-tropical species migrate into New Zealand's exclusive economic zone (EEZ)
	Longer growing period and greater number of growing-degree days enabling the development of new horticultural enterprises
	Warmer winter temperatures reducing the energy demand and costs of heating

2.5.4 Risks and opportunities: Disclosure 13(d)



Disclosure 13(d): *how climate-related risks and opportunities serve as an input to its financial planning processes, including for capital deployment and funding*

This disclosure informs primary users about the relative prominence of climate-related risks and opportunities in an entity's financial planning. This information also contextualises for primary users the entity's statements regarding risk mitigation, and transition planning to follow.

An entity could meet this disclosure by providing a brief narrative description, figure or table illustrating how its analysis of climate-related risks and opportunities is integrated within their wider financial planning, capital deployment and funding processes. As the entity's climate-related risk and opportunity analysis matures over time, the precision of these descriptions will likely improve, and substantive examples of climate-related linkages to financial planning, capital deployment and funding may be cited.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.18**

2.4. Anticipated impacts: Disclosure 10(d)

Disclosure 10(d): *a description of the anticipated impacts of climate-related risks and opportunities (see 14(a) – (c))*

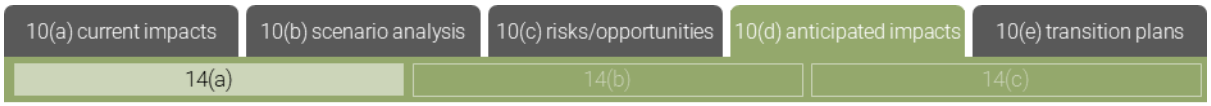
Primary users will expect an entity to have a clear understanding of the anticipated impacts of climate-related risks and opportunities the entity faces. As with the climate-related risks and opportunities identified under 10(c), their anticipated impacts and financial impacts will help to inform a primary user's view of the entity's viability as an investment option.

It is important that preparers bear in mind that this information need not be precise to be relevant – in most cases it can and should remain high level. An entity should provide information conveying its considered opinion of the potential scope and scale of anticipated impacts, translating these estimations into financial terms to as great a degree as possible, while being wary of straying into insupportable precision.

The information provided in response to disclosures 14(a) – (d) forms the basis of disclosure 10(d). Preparers must add any additional information describing the anticipated impacts of climate-related risks and opportunities which they believe will be material to a primary user.

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.46-52**

2.6.1 Anticipated impacts: Disclosure 14(a)



Disclosure 14(a): *the anticipated impacts of climate-related risks and opportunities reasonably expected by the entity*

While disclosure 11(a) explored the current climate-related impacts facing an entity, this disclosure aims to inform primary users about plausible future impacts an entity may face resulting from climate-related risks and opportunities.

As with the current impacts disclosed under 11(a), an entity could describe the anticipated physical and transition impacts of:

- discrete events (i.e., storms, droughts, protests, legal action)
- ongoing changes (i.e., to temperatures, precipitation, prices, regulations), or
- realisable benefits (i.e., via market changes or resource efficiencies),

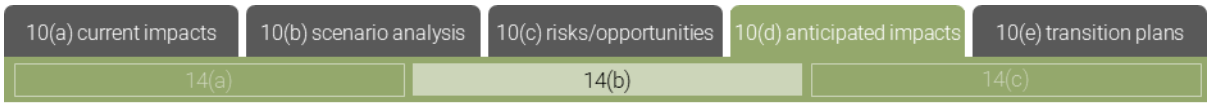
as illustrated in Table 7.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.10-11, 18**

Table 7: Anticipated climate-related risks and opportunities and the entity receptors via which they may affect CREs (adapted from TCFD 2021, p.18)

Entity receptor	**Examples of anticipated climate-related impacts**
Business model (including operations)	The need to eliminate face-to-face customer interactions with international clients in future to meet emissions reduction targets
Products and services	The planned phasing out of a product line based on an anticipated future shift in consumer preference toward a zero-emissions alternative
Supply chain and/or value chain	Anticipated future scarcity in a key supply chain component due to a globally signalled drive to de-carbonise the transport sector
Adaptation and mitigation activities	Committing to emissions reduction measures to achieve net-zero status by 2035, with associated trade-offs in the entity's other investment choices
Investment in research and development	Research budgeted for transition risk-resilient product lines
Acquisitions or divestments	Divestments to diminish stranded asset risk in response to the enactment of net-zero emissions targets could see reduced short-term returns
Access to capital	Development of climate-related risk disclosure to facilitate access to European capital markets may carry cost/resourcing impacts
Entity receptor	**Examples of anticipated climate-related opportunities**
Business model (including operations)	Cost savings and additional market growth opportunities due to a shift toward virtual rather than face-to-face customer interactions
Products and services	Creation of new market niches and expansion of existing markets for low-emissions products/services
Supply chain and/or value chain	Development of new upstream supplier options with shorter lead times and fewer logistical choke points due to need to reduce Scope 3 emissions
Adaptation and mitigation activities	Enhanced market credentials and international financing options resulting from documented and verified emissions reduction measures
Investment in research and development	Creation of new value propositions through disruption to existing, emissions intensive products/services create scope for growth
Acquisitions or divestments	Acquisition of IP (or existing entities) which provides entry to low emissions markets/niches
Access to capital	Increased access to (and reduced costs of) capital via Sustainability Linked Loans/Green financing options

2.6.2 Anticipated impacts: Disclosure 14(b)



Disclosure 14(b): *the anticipated financial impacts of climate-related risks and opportunities reasonably expected by an entity*

This is a critical disclosure in support of the allocation of capital on the part of primary users based on risk appetite. Investors' differing requirements in relation to anticipated risk and return need to be catered for via the provision of financial impact information, which is as relevant, accurate and verifiable as can be practically achieved.

An entity is expected to make reasonable efforts to disclose the anticipated financial impacts of climate-related risks and opportunities on its financial performance financial position and cashflows, with examples of the type of impacts to consider provided in Table 8. Preparers also need to read paragraphs 46 to 49 of **NZ CS 3** which require the disclosure of significant assumptions and sources of estimation uncertainty.

Alongside the analysis of different climate-related scenarios, the TCFD suggest an entity draw on its metrics, targets, and transition planning in attempting to gauge anticipated financial impacts (TCFD, 2021, p.48-49).

It is important to note the limitations imposed by the uncertainty of forward-looking projections of change. These limitations mean that primary users will seek transparency on how anticipated financial impacts have been calculated. Any significant assumptions, and other sources of estimation uncertainty should be made clear.

Where financial impact information is provided quantitatively, an entity should consider using range estimates. Disclosing a range enables an entity to communicate the estimation uncertainty of potential outcomes. If the outcome is considered to be relatively certain and unambiguous, a single value may be more appropriate than a range.

The TCFD consider the factor's affecting an entity's financial impacts from climate change to include (adapted from TCFD, 2021, p.11):

- the entity's exposure to, and anticipated effects of, specific climate-related risks and opportunities
- the entity's planned responses to manage its risks or seize opportunities, and
- the implications of the entity's planned responses on its income statement, cash flow statement, and balance sheet

This means the entity should disclose the anticipated financial impacts of its climate-related risks and opportunities if no action is undertaken. In considering the financial impacts associated with the entity's planned responses (which may overlap with the entity's transition plan), it is important that the entity considers the effectiveness of its responses. Entities should be cautious when analysing this. Due to the uncertainty involved with climate change, its responses may or may not be effective in the future and they may have a limited mitigating effect given the degree to which the risks or opportunities could depend on the actions of others. It will be clearer to primary users to disclose information on the financial impacts of risks and opportunities materialising and response separately. Entities should not use responses to mask anticipated financial impacts. However, in the narrative accompanying disclosure 14(b), the entity may wish to cross-reference actions set out in transition plan disclosure 15(b) or other information, explaining the extent to which it believes its planned actions may reduce anticipated financial impacts, were they to be successfully implemented and effective.

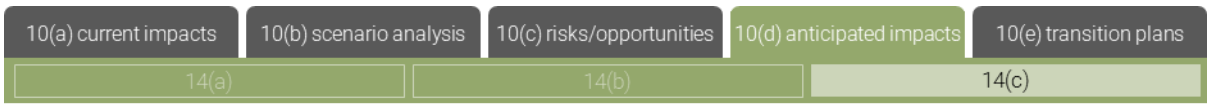
☺ First-time adoption relief is available for this disclosure (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.48-51**
TCFD	2021	Implementing the Recommendations of the TCFD	**p.11**

Table 8: The anticipated financial impacts of climate-related risks and opportunities on financial performance and position (Adapted from TCFD, 2021, p.49-51)

Anticipated financial impacts of climate-related risks and opportunities
increases in revenue from new products or services from climate opportunities;
increases in cost due to carbon prices, business interruption, contingency, or repairs;
changes to operating cash flow from changes in upstream costs;
impairment charges due to assets exposed to transition risks; and
changes to total expected losses due to physical risks.
changes to the carrying amount of assets due to exposure to physical and transition risks;
changes to the expected portfolio value given climate-related risks and opportunities; and
changes in liability and equity due to increases or decreases in assets (e.g., due to low-carbon capital investments or to sale or write-offs of stranded assets).

2.6.2 Anticipated impacts: Disclosure 14(c)



Disclosure 14(c): *if the entity is unable to disclose quantitative information for paragraph 14 (b), an explanation of why that is the case*

Primary users are likely to seek financial bottom-line information which facilitates a ready comparison between different investment propositions. However, where quantitative financial impact data cannot be reliably sourced, primary users will see the value in alternate forms of information, providing they feel confident regarding the rigour and transparency of the entity's efforts to provide it.

An entity should provide a brief description of the process it has followed in attempting to quantify the financial effects of the anticipated climate-related impacts it faces. There are undoubtedly ambiguities and complexities to navigate in doing so, as many of the anticipated climate-related impacts facing the entity will directly or indirectly effect factors such as market values, energy costs or operational efficiency, which are extremely difficult to put a precise figure to – particularly in a forward facing, future context. Explaining what was considered, why its quantification is challenging, and how these challenges might be overcome in future, may assist primary users in evaluating these disclosures.

Publisher	Year	Source	Pages
ISSB	2022	Exposure draft: [Draft] IFRS S2 Climate-related Disclosures[3]	**p.37**

[3] Note that this is an exposure draft. This content may change in the final standard. Links may change.

2.5. Transition plans: Disclosure 10(e)

Disclosure 10(e): *a description of how it will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future state (see 15 (a) – (c))*

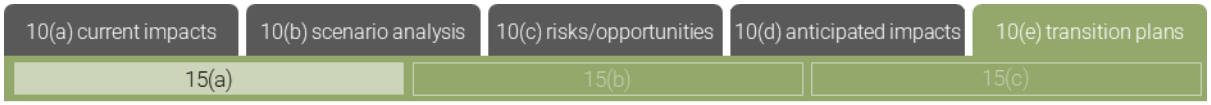
This disclosure provides an opportunity for an entity to communicate to primary users how it intends to transform itself to contribute to the emergence of a low-emissions, climate-resilient economy. How well the entity communicates its intentions in this regard may influence the confidence of primary users in allocating capital.

The entity should describe how it will position itself to thrive in a world which is attempting to rapidly reduce its emissions and adapt to the unavoidable consequences of climate change which will result from GHG emissions already in the atmosphere. This transition will pose significant challenges for most entities. Acknowledging these challenges, while setting out a coherent case for how they could be overcome, would likely reassure primary users that their investments are resilient to climate-related risk.

The information provided in response to disclosures 15(a) – (c) forms the basis of disclosure 10(e). Preparers must add any additional information describing how it will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future state which they believe will be material to a primary user.

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.39-44**

2.7.1 Transition plans: Disclosure 15(a)



Disclosure 15(a): *description of its current business model and strategy*

Primary users will want to understand in general, high-level terms what the entity's business model and strategy is. This contextualises the more complex disclosures to follow that illustrate *how* climate change will impact the entity's business model and strategy, allowing primary users to make better informed judgements regarding those statements. TCFD guidance refers to an entity describing the impact on its *businesses, strategy, and financial planning*, but in the context of New Zealand entities describing the impact on *business model and strategy* will likely be of greater value to primary users.

The disclosure should be a brief description that summarises the entity's business model and strategy in as concise a way as possible. This may include a simple diagram of the entity's business model and a short paragraph describing the key components of its strategy. An entity should avoid cross-referencing to an existing source document unless it is concise and to the point.

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the TCFD	**p.18**
EU	2019	Guidelines on reporting climate-related information	**p.12-14**

2.7.1 Transition plans: Disclosure 15(b)

Disclosure 15(b): *the transition plan aspects of its strategy, including how its business model and strategy might change to address its climate-related risks and opportunities*

With the climate crisis now a mainstream topic of concern, expectations that entities will inform their stakeholders about the role they will play in reducing the level of climate-related risks facing present and future generations have risen considerably. For investors, this expectation is expressed as a demand for credible transition plans among those they invest in.

Primary users of this disclosure will therefore seek to understand how an entity's statements in regard to their transition toward a low-emissions, climate resilient future state are consistent with the entity's core business model and strategy, and that it's stated aspirations are backed by concrete actions.

This disclosure also provides primary users with information about the options available to an entity in response to the climate-related risks and opportunities it has identified as having a material impact on its business model and strategy. Primary users will be looking for information indicating optimal flexibility in the face of uncertain future change, represented by the strategy and business model options that the entity envisions as feasible to pursue as circumstances demand.

Transition plans

A transition plan is an aspect of an entity's overall strategy that sets out how the entity will position itself as the global and domestic economy transitions towards a low-emissions, climate resilient state.

The development of transition plans is a rapidly evolving field, with new insights informing new standards, expectations, benchmarks, and guidance from groups such as the TCFD, the International Sustainability Standards Board (ISSB), UK Transition Plan Taskforce (TPT), Glasgow Financial Alliance for Net Zero (GFANZ), Climate Action 100+, Investor Group on Climate Change (IGCC), and in New Zealand, the Climate Leaders Coalition (CLC). An entity can leverage these sources of information and guidance on transition planning in completing disclosure 15(b).

KEY GUIDANCE	
1 Listed issuers	• IGCC investor expectations • CLC Member statement guidance • TCFD guidance on Metrics, Targets and Transition Plans
2 Banks, insurers, credit unions and building societies	• GFANZ guidance for financial institutions • CLC Member statement guidance • TCFD guidance on Metrics, Targets and Transition Plans

Earlier thinking on transition planning has tended to envision transition as solely an emissions reduction issue, a framing which excludes or minimizes the role of physical risk, adaptation, and resilience in the transformation the entity is planning to undergo. This would in turn compel entities to create an additional, separate adaptation plan, creating additional resourcing and administrative overheads for entities, while introducing the risk that two potentially disconnected or even mutually exclusive plans are developed.

To overcome these issues, and to align with the more recent understanding of the idea of the transition, we have included both an entity's emissions reduction and climate-resilience aspirations within our definition of transition planning. Under NZ CS 1, a 'transition plan' is defined as: *"An aspect of an entity's overall strategy that describes an entity's targets and actions for its transition towards a low-emissions, climate-resilient state."* Preparers should note that this definition broadens the scope of what a transition plan should cover, removing the need for an entity to develop an adaptation plan.

Content that primary users will likely expect under this framing of transition plans will include:

Category	Illustrative content (adapted from GFANZ, IGCC and CLC)
Foundations – objectives and targets	• Its overall position on climate (aspirations with respect to emissions reduction, resilience enhancement, climate leadership, etc.) • Its support for a just transition to a low emissions, climate resilient global and domestic economy • In relation to emissions reduction targets, the expectation is that these are aligned with a 1.5°C emissions reduction pathways, national and sectoral emissions reduction pathways and cover interim targets.
Implementation	• Emissions reduction and adaptation action identification, prioritisation, and decision points • Business model and strategy, including innovation and options for change • Products and services, including innovation and options for change • Integration of transition planning with budget, capital allocation and long-term financial planning processes
Engagement	• Engagement with value chain, industry peers and public sector stakeholders • For financial institutions, engagement with portfolio companies
Metrics & Targets	• Metrics and targets to assess and monitor progress towards net-zero, climate resilience objectives
Governance	• Development of transformational skills and culture • Roles, responsibilities, support for implementation and remuneration

An important component of transition planning is the extent to which an entity's **business model and strategy** might change to enable the achievement of its transition targets and objectives. The entity should describe any options to enhance the resilience of its business model and strategy it sees as feasible to implement, over what timescale, and where possible, under which conditions it will make choices between them.

CREs also need to consider and disclose the extent to which transition plan aspects of its strategy are aligned with its financial planning processes, including for capital deployment and funding.

This disclosure may draw on elements of the transition plan, drawing specific attention to how the entity intends to leverage the plans to optimise its business model and strategy in response to climate-related risks and opportunities.

First-time adoption relief is available for this disclosure (see **NZ CS 2**).

The XRB staff are drafting targeted guidance to support transition planning by entities.

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.39-44**
UK TPT	2022	A Sector-Neutral Framework for private sector transition plans: Call for Evidence	**p.10-22**
GFANZ	2022	Recommendations and Guidance: Financial Institution Net-zero Transition Plans	**p.19-101**
CA100+	2021	Climate Action 100+ Net Zero Company Benchmark v1.1	**p.1-6**
IGCC	2022	Corporate climate transition plans: a guide to investor expectations	**p.6-16**
CLC	2022	Statement of Ambition Information for Sustainability Practitioners	**p.12-13**

2.7.1 Transition plans: Disclosure 15(c)

Disclosure 15(c): *the extent to which transition plan aspects of its strategy are aligned with its financial planning processes, including for capital deployment and funding*

Primary users will want information that illustrates the extent to which an entity's statements regarding transition planning are backed by clear linkages to financial planning, capital deployment and future funding. Given ongoing concerns regarding greenwashing in the corporate and financial sectors, an entity which is unable to demonstrate alignment between its transition planning and its core financial plans may risk having its transition plan statements disregarded by primary users.

Preparers should disclose what linkages, if any, exist between their transition plans and their core financial planning processes. Any information supporting commitments in capital deployment or funding should be made explicit.

First-time adoption relief is available for this disclosure (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets, and Transition Plans	**p.40-43**

3. Risk Management

The objective of the risk management disclosures is to enable 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.

In a 2019 survey, the TCFD found that 75% of companies viewed the Risk Management recommendation as 'somewhat or very difficult to implement', with several indicating they did not yet have any process in place for identifying, assessing, or managing climate-related risks (TCFD 2019, p.56-57). The perception that climate-related risk management is complex and unknown territory is widespread but shouldn't be a barrier to an entity getting underway, as the process of establishing sound climate-related risk management is relatively straightforward.

Among several forms of guidance available to an entity to help navigate that transition, the CFRF (2020, p.3) set out how entities can move through the practical implementation of climate-related risk management over six key steps (Table 9). These take the entity through the fundamentals of climate risk assessment and integration processes, acknowledging that for many it will be new territory. But it may nevertheless have a familiar feel to it, as the processes, disciplines and approaches involved are common to the management of other forms of risk.

Table 9: The CFRF set out six core steps to address climate related risks (adapted from CFRF 2020, p.3).

STEP	KEY ACTIONS
1 Establish risk governance	• Establish Board (or highest-level governance body) oversight • Delegate roles within Senior management
2 Determine risk appetite	• Consider business strategy in relation to type of risks faced and establish first pass assessment of climate risk appetite • Engage with Board to probe findings • Develop a qualitative risk statement, and establish clear climate-related risk metrics to communicate risk appetite
3 Find and use data/tools	• Explore internal data sources • Assess external data providers • Develop non-traditional data and tool familiarity, via academia, impact modelling, tools for management under uncertainty
4 Assess risks	• Assess physical and transition climate-related risks affecting the entity via direct and indirect channels • Account for potential impacts via economy and financial system
5 Integrate under ERM framework	• Integrate climate risk within ERM, either as a standalone risk, cross-cutting risk, or combination of both • Develop a risk taxonomy/categorisation
6 Training and culture	• Why - Relate risk to strategy • Who – Ensure roles are appropriately distributed across entity • What – horizon scanning, monitoring, training, and development across entity

There are also useful crossovers between some of the tools and methods which are used in support of strategy disclosures and those that contribute to the identification and analysis of climate-related risk.

Adopting a coherent, integrated approach to their use is therefore advisable and may streamline the resourcing and cost involved in improving climate-related risk management processes and procedures, and the climate resilience of the entity as a whole. Prime among these potential cross-over tools is scenario analysis. The TCFD's six-step scenario analysis process can contribute valuable functions, insights, and outputs supporting the implementation of climate-related risk management processes (Table 10Error! Reference source not found.). The objective of the risk management disclosures is to enable 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.

Table 10: Mapping the six step TCFD scenario analysis process against the steps set out in Table 9 that the CFRF have highlighted as supporting the implementation of risk management processes to address climate-related risk.

SCENARIO STEP	POTENTIAL CONTRIBUTION TO CLIMATE-RELATED RISK MANAGEMENT					
1. Engage stakeholders and assess the external environment	1	2	3	4	5	6
2. Set the focal question and scope	1	2				
3. Identify driving forces and critical uncertainties	5	6				
4. Select outcomes and pathways	2	3				
5. Draft narratives and quantify	3	4	6			
6. Apply scenario insights in strategic management	1	2	3	4	5	6

While each entity will have different challenges to overcome in moving toward risk management processes capable of accommodating climate-related risks, the disclosures set out under NZ CS 1 will provide ample opportunity to illustrate a positive direction of travel. It may also be useful for entities to have regard for the CFRF observation that "a common approach is to perform a materiality assessment and initially focus on a small set of risks with scope and sophistication increasing over time." (CFRF 2020, p.3)

Before reading further, preparers should engage with the TCFD's primary guidance resources on Risk Management. These provide readers with an awareness of the unique characteristics of climate-related risks, an introduction to the various tools and approaches available to help identify and assess climate related risks, and insight into what is involved in integrating those risks within broader risk management frameworks. Our guidance to follow either explicitly refers to this material or will be more readily contextualised where preparers have a prior understanding of the fundamentals of climate-related risk management that the TCFD material provides.

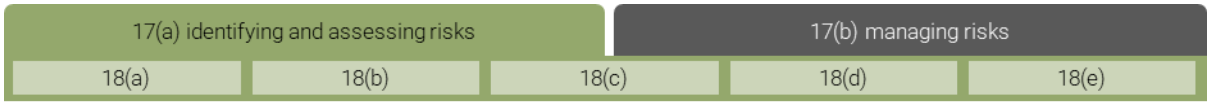
Publisher	Year	Source	Pages
TCFD	2019	Taskforce on Climate-related Financial Disclosures: Status report	**p.56-57**
CFRF	2020	Climate Financial Risk Forum Guide – Risk Management Chapter	**p.3**
TCFD	2020	Guidance on risk management integration and disclosure	**p.1-46**
TCFD	2021	Implementing the Recommendations of the TCFD	**p.20**

Navigating the Risk Management disclosures

There are two overarching disclosures in the Risk Management section of NZ CS 1. One, 17(a), contains sub-disclosures.

The disclosures are structured as follows:

3.1 Identifying and assessing risks (p.38):



Disclosure 17(a): a description of its processes for identifying, assessing, and managing climate-related risks (see 18(a) – (e))

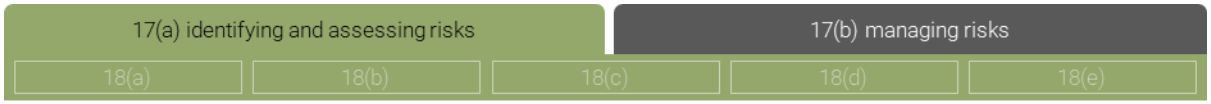
- **Disclosure 18(a):** the tools and methods used to identify, and to assess the scope, size, and impact of, its identified climate-related risks
- **Disclosure 18(b):** the short-term, medium-term, and long-term time horizons considered, including specifying the duration of each of these time horizons
- **Disclosure 18(c):** whether any parts of the value chain are excluded
- **Disclosure 18(d):** the frequency of assessment, and
- **Disclosure 18(e):** how it prioritises climate-related risks relative to other types of risks

3.2 Managing risks (p.44):

Disclosure 17(b): a description of how its processes for identifying, assessing, and managing climate-related risks are integrated into its overall risk management processes

Guidance specific to each disclosure is provided in the following section.

3.1. Identifying and assessing risks: Disclosure 17(a)



Disclosure 17(a): *a description of its processes for identifying, assessing, and managing climate-related risks (see 18(a) – (e))*

The uncertainty surrounding climate-related risks can make their assessment and prioritisation using standard risk management 'likelihood x consequence' approaches difficult for primary users to evaluate. Calculating the likelihood of complex, interdependent climate-related risks is problematic in many cases, prompting primary users to instead seek information about the *processes* underpinning risk prioritisation on the part of preparers, in order that appropriate judgements can be reached about the risks identified.

If a primary user believes the entity's climate-related risk identification, analysis and management processes are robust then disclosures which speak to the resilience to climate-related risk of the entity's strategy and business model will likely resonate to a much greater degree.

Additionally, factors that preparers' may find of relevance in their process of risk assessment and prioritisation might include (adapted from TCFD, 2020, p.15; COSO/WBCSD, 2018, p.51):

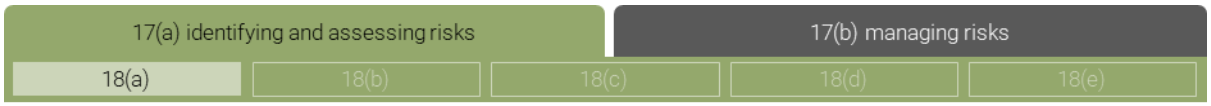
- the velocity or speed of onset of the risk
- the persistence (or duration) of the risk's effect on the entity over time
- the complexity of the risk in terms of its scope, interdependencies, and potential for exhibiting tipping-point or non-linear characteristics
- the preparedness of the entity to cope with the risk via its access to timely risk information, knowledge of the nature of the risk and its effects, and the structural controls in place to warn of its occurrence
- the adaptability of the entity in responding to the risk with sufficient resilience to maintain core structures, functions, and a capacity to produce value
- the recovery time the entity would endure post the realisation of the risk.

Entities should disclose how these (or other relevant) criteria have been applied in their climate-related risk assessment and prioritisation processes.

The information provided in response to disclosures 18(a) – (e) forms the basis of disclosure 17(a). Preparers must add any additional information describing the entity's processes for identifying, assessing, and managing climate-related risks that they believe will be material to a primary user.

Publisher	Year	Source	Pages
TCFD	2020	Guidance on risk management integration and disclosure	**p.1-5**
TCFD	2021	Implementing the Recommendations of the TCFD	**p.20**
COSO/ WBCSD	2018	Enterprise Risk Management Applying enterprise risk management to environmental, social and governance-related risks	**p.49-51**

3.3.1 Identifying and assessing risks: Disclosure 18(a)



Disclosure 18(a): *the tools and methods used to identify, and to assess the scope, size, and impact its identified climate-related risks*

This disclosure gives primary users a means of evaluating the merits of an entity's subsequent statements regarding their understanding, prioritisation, and integration of climate-related risks into wider risk management and strategic planning processes.

The tools and methods entities use are a significant contributing factor in determining whether they identify and assess climate-related risks robustly. Subsequent risk management disclosures illustrate further aspects of how comprehensively a given tool or method has been applied by an entity.

The TCFD provide an overview of risk identification and assessment tools (adapted in Table 11). These provide preparers with a range of tools and methods which will enable them to address the unique characteristics of climate-related risks (TCFD 2020, p.5), which include:

- Divergence in potential climate change impacts based on scale, location and activity affected
- Temporal horizons which are unlike any other in traditional business planning and investment processes
- Novelty and uncertainty, due to historically unprecedent rates and scales of change in climatic variables
- Non-linear dynamics and threshold behaviour of climate-influenced systems, involving sudden changes as systems move from one partial equilibrium state to another
- Complex interdependencies between biophysical and socioeconomic systems with feedback effects which are frequently difficult to predict.

The CFRF also provide a database of climate risk data providers tools and methodologies, while the United Nations Environment Program Finance Initiative (UNEP FI) provided a comprehensive guide to climate-related financial risk assessment methodologies in 2021, followed up by a supplement offering implementation case study insights in 2022.

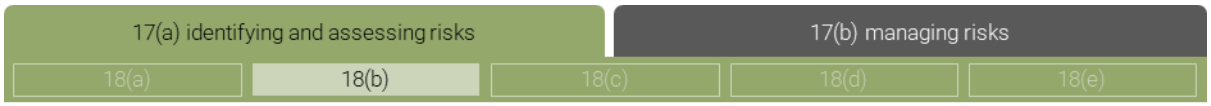
Publisher	Year	Source	Pages
TCFD	2020	Guidance on risk management integration and disclosure	**p.12-17**, **43-45, 5**
UNEP-FI	2021	The Climate Risk Landscape: A comprehensive overview of climate risk assessment methodologies	

Table 11: An overview of tools and methods of climate risk identification, analysis, and response (Adapted from TCFD 2020, p.43-44). Scenario analysis is often highlighted as a key risk identification tool and is a useful means of encouraging structured exploratory thinking on how risks might emerge, evolve, and intersect. Where data are limited and uncertainty unavoidable, scenario analysis may be one of the only tools available to help entities to think through the implications of risk in a structured manner.

Tools/ methods	Description	Application	Risk process:		
			Identify	Assess	Respond
Scenario analysis	A process for identifying and assessing potential implications of a range of plausible future states under conditions of uncertainty	Explore and develop an understanding of how climate-related risks and opportunities might plausibly impact an entity over time	✓	✓	✓
Stakeholder Engagement	A means of obtaining input for decision making from those parties who may be affected by the decision or have knowledge that may inform the decision	Seek insight from a range of stakeholders within and outside a company (e.g., management executives, suppliers) who can provide feedback on changing conditions and potential impacts associated with climate-related risks	✓	✓	✗
Delphi Method	Structured communication method for eliciting information and opinions from experts	Conduct interviews or collect expert input from business leaders, actuaries, insurers, meteorologists, oceanographers, climate, and atmospheric scientists	✓	✓	✗
Economic Scenario Generator	Models that simulate possible future states of economies and financial markets based on risk factors to identify unexpected but plausible outcomes	Test valuation models under a broad range of possible economic and financial conditions (e.g., considering climate change and socioeconomic factors)	✓	✓	✗
Forecasting	An approach for predicting the impact of a future event based on past and present data	Use historical data and lookback studies to understand previous climate-related impacts to inform estimates of potential future impacts, changing key parameters (e.g., frequency, duration, intensity) within plausible ranges	✓	✗	✗
Hazard Maps	Location-level information on the extent or severity of perils using assumptions on the frequency, severity, and location parameters of primary events and dependencies with secondary perils	Present peril event scenarios based on current and potential future states considering the impact from climate change, which will result in different frequency and severity of events affecting certain locations	✓	✓	✗

Tools/ methods (cont.)	Description	Application	Risk process: Identify	Assess	Respond
Probabilistic Modelling	*General models.* Systems modelling involving probabilistic inputs, processes, and outputs	Numerical weather and climate predictions that allow a representation of uncertainties, a reduction of systematic biases, and improved representation of long-term climate variability	✓	✗	✗
	Catastrophe Models. Probabilistic models based on deep understanding of the physical parameters that define a natural hazard (e.g., wind speeds) and characteristics of the exposures (e.g., location)	Estimate potential losses from natural catastrophes	✓	✓	✓
Sensitivity Analysis	Statistical analysis that examines the change in a desired output relative to a change in input parameters	Analyse a company's sensitivity to changing climate-related conditions (e.g., carbon or commodity prices or demand)	✓	✗	✗
Simulation	Use of models to imitate a situation many times to estimate the likelihood of various possible outcomes (e.g., Monte Carlo method)	Assess the likelihood or propensity of different climate-related scenario pathways accommodating multiple variables and parameters	✓	✗	✗
Horizon Scanning	Systematic and proactive approach to risk identification based on available information	Identifying various climate-related risk types across different spatial and temporal scales	✓	✗	✗

3.3.2 Identifying and assessing risks: Disclosure 18(b)



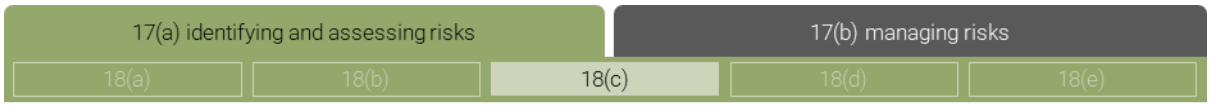
Disclosure 18(b): *the short-term, medium-term, and long-term time horizons considered, including specifying the duration of each of these time horizons*

The issue that primary users are seeking insight on from this disclosure is how the complex, frequently long-term risks of climate change are being integrated within an entity's wider risk management frameworks. Climate-related risks which are manifest over timescales exceeding business-as-usual risk management processes (i.e., beyond 5-10 years) may be of particular concern for primary users, unless an entity can illustrate how longer-term factors will enter their risk calculus to inform risk-reduction decisions taken in the short to medium term.

Entities will already have nominated the timeframes they view as appropriate for the analysis of climate-related risks (and opportunities) under disclosure 13(a). Taking a coherent approach to the handling of time-horizons for these analyses is advisable, as continuity between the timeframes nominated in disclosures 13(a) and 17(b) will facilitate the integration of the entity's risk identification and management within strategic planning processes.

Publisher	Year	Source	Pages
TCFD	2020	Guidance on risk management integration and disclosure	**p.12**

3.3.3 Identifying and assessing risks: Disclosure 18(c)



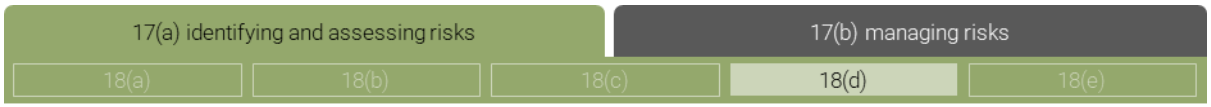
Disclosure 18(c): *whether any parts of the value chain are excluded*

A comprehensive approach to the identification and assessment of risk includes all stages of the value chain. For example, primary users may be concerned about the future marketing potential of emissions-intensive products, or an entity's reliance on a key production component sourced from a distant supply chain partner vulnerable to sea level rise and coastal inundation.

An entity should describe whether any value chain stages are excluded by the climate-related risk identification and assessment process. Climate-related risks and opportunities relate to activities, interactions, and relationships and to the use of resources along an entity's value chain. These may include investments that an entity has in other entities, for example, associates and joint ventures. Where necessary, entities could provide a rationale for why a given value chain component has been excluded. The WBCSD provide an example of how risk may be identified and assessed across the entire value chain, illustrated via reference to the Building and Materials sector (other sectoral examples have been developed under the WBCSD's TCFD preparer forum).

Publisher	Year	Source	Pages
TCFD	2020	Guidance on risk management integration and disclosure	**p.39-42**
WBCSD	2021	Construction and Building Materials TCFD Preparer Forum Communicating collective and individual climate-related challenges and action	**p.16-26**

3.3.4 Identifying and assessing risks: Disclosure 18(d)



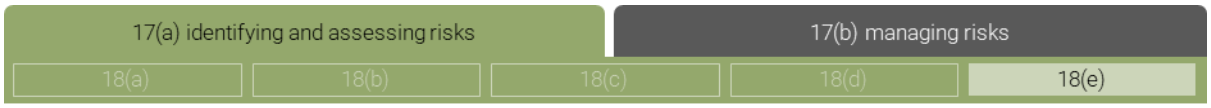
Disclosure 18(d): *the frequency of assessment*

The TCFD describes processes for the integration of climate-related risk in entity risk management processes as iterative (TCFD 2020, p.8), requiring review and revision on a regular frequency to maintain relevance and currency. Primary users want to know how entities have interpreted this in the context of their own risk management processes.

An entity should disclose the frequency at which their climate-related risk assessment process is undertaken.

Publisher	Year	Source	Pages
TCFD	2020	Guidance on risk management integration and disclosure	**p.8-12**

3.3.5 Identifying and assessing risks: Disclosure 18(e)



Disclosure 18(e): *how it prioritises climate-related risks relative to other types of risks*

Primary users are looking for insight into the relative prioritisation of climate related risks by the entity in its wider risk consideration. There are likely to be some sectors and entities in the economy which face climate-related risk exposure more than others, and primary users will likely want to see climate-related risk prioritisation differentiated accordingly.

An entity should disclose the method or approach it takes to prioritising climate-related risks relative to other types of risks. The TCFD (2020, p.7) identify four principles which an entity may find useful in this context.

Publisher	Year	Source	Pages
TCFD	2020	Guidance on risk management integration and disclosure	**p.7**

3.2. Managing risks: Disclosure 17(b)

17(a) identifying and assessing risks | 17(b) managing risks

Disclosure 17(b): *a description of how its processes for identifying, assessing, and managing climate-related risks are integrated into its overall risk management processes*

The climate-related risk processes of disclosure 17(b) are typically implemented via an entity's existing Enterprise Risk Management (ERM) framework. The CFRF set out five practice expectations for entities seeking to operationalise their climate-related risk governance objectives (Table 12), which entities may choose to refer to when integrating climate-related risk into their ERM.

Table 12: Five recommendations put forward by the CFRF for entities operationalising their climate-related risk governance objectives via their enterprise risk management framework (adapted from CFRF 2020, p.8-9).

CFRF recommendations: Risk frameworks	
1	Climate-related risk should be treated as a cross-cutting issue that directly or indirectly affects most of the entity's other risks. The interdependencies between climate-related risks and the entity's non-climate risks should be analysed and understood by the entity.
2	The entity should use appropriate tools to identify and assess both physical and transition risks (see Table 11), calling on external expertise where necessary if internal capacities to employ tools or interpret findings is currently lacking.
3	The entity's existing risk frameworks and policies should be updated to include climate-related risks
4	A uniform risk taxonomy and categories (appropriate to the operations and activities of the entity) should be developed to allow the concertation of risk to be monitored
5	Climate-related risk management information should be integrated with existing risk reporting channels to the Board or highest-level governance body

Established ERM frameworks (for example, COSO ERM, ISO31000) provide useful guidance on the selection and use of risk control measures. Entity's incorporating these frameworks should refer to them when disclosing their risk control decision process. Entities relying on an alternative approach to risk control decision making should provide a brief description of their process.

In completing disclosure 17(b), an entity should simply describe how climate-related risk identification, assessment and management is integrated within its existing processes and practices.

Publisher	Year	Source	Pages
TCFD	2020	Guidance on risk management integration and disclosure	**p.7, 15-16, 38**
COSO/ WBCSD	2018	Enterprise Risk Management Applying enterprise risk management to environmental, social and governance-related risks	**p.49-51,** 47 - 66
CFRF	2020	Climate Financial Risk Forum Guide – Risk Management Chapter	**p.8-9**

4. Metrics and Targets

The objective of the Metrics and Targets disclosures is to enable primary users to understand how an entity measures and manages its climate-related risks and opportunities. Metrics and targets also provide a basis upon which primary users can compare entities within a sector or industry.

Climate-metrics should inform, and be informed by, an entity's governance, strategy and risk management processes and create a feedback loop over time in the same way that other key performance indicators and key risk indicators are used to inform business management processes.

Climate-related metrics, and any associated narratives, should be integrated with an entity's other disclosures to provide a coherent set of information on the entity's climate-related risks and opportunities and current and anticipated financial impacts.

Climate related metrics are related to disclosures in the governance, strategy, and risk management sections.

Governance: Climate-related metrics enable an entity's governance body and management to direct the entity more effectively by measuring and describing the impacts of climate-related risks and opportunities on the entity — disclosures 6(b) and 6(c). Metrics are also essential for informing primary users about how management tracks and manages climate-related risks and opportunities. Climate-related metrics, such as remuneration, can show how directors and managers are incentivised to achieve climate-related objectives.

Strategy: Climate-related metrics are vital to measuring and describing the impact of climate-related risks and opportunities on an entity. These include current climate-related impacts – disclosure 10(a) — and the description of how it will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future state — disclosure 10(e). Metrics also help an entity to monitor the effectiveness of the implementation of its strategy.

Risk Management: Climate-related metrics support the measurement of risk exposures and levels as part of an entity's broader risk management processes. Metrics can be incorporated into the processes for identifying, assessing and managing climate-related risks –disclosure 17(a) and how these are incorporated into its overall risk management processes – disclosure 17(b).

Metrics in the context of climate-related risks and opportunities

Metrics should be:

- decision useful
- clear and understandable
- reliable, verifiable and objective
- consistent over time

The TCFD note that it is helpful for preparers to disclose metrics consistently from year to year to facilitate comparative and trend analysis and to clearly identify the time horizon over which climate-

related metrics are measured. Metrics are most effective when the same item is reported across all time periods as shown in Figure 4.

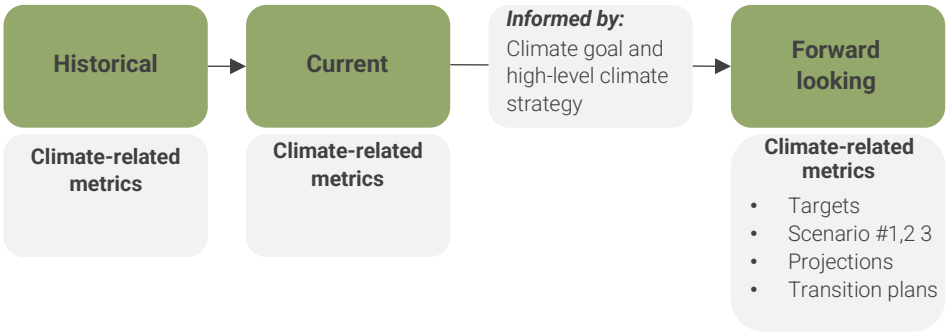


Figure 4: Time horizons for climate-related metrics (adapted from TCFD Metrics and Targets Guidance 2021, p.12)

Metrics can be presented as point estimates or ranges. Some may work well as figures or tables.

To support comparative analysis, metrics should be presented with results for the previous reporting period(s) where appropriate (see **NZ CS 3** Comparatives). A comparative analysis is useful where it:

- analyses the main trends evident from a comparison of entities results from the previous to the current reporting period;
- cross-refers to targets, baselines and other criteria used for analysing performance; and
- explains significant changes in results from one period to another.

The type of comparative analysis that is encouraged includes, where appropriate, a description of and explanation for:

- Any significant changes to performance, impacts, or unexpected results against targets due to:
  - Changes in the entity's strategy, policies and governance
  - Changes in the methodology or KPIs used for calculating results
  - Changes due to acquisitions, divestments, organic growth or decline, efficiency or process improvements, alterations to processes for collecting data, practices in satellite operations, missing data etc.
  - Changes in operating contexts, business relationships, or the entity's activities
- The extent to which forward-looking disclosures made in previous reporting periods have been borne out, including how and why the performance of the organisation is short of, meets or exceeds previously made forward-looking disclosures.

Primary users are also increasingly expecting to see metrics and targets used in the context of the transition plan, to set emissions reduction targets and then also to set other targets and use metrics to monitor progress. The general rule is that any metrics and targets used in the transition plan should also be disclosed under this section. Any metrics and targets disclosed under this section, however, do not need to be disclosed as part of the transition plan unless they are genuinely being used by the entity in that way. The minimum expectation from primary users is that transition plans include emissions reductions targets aligned with a 1.5 degrees emissions pathway.

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**11-13**

Navigating the Metrics and Targets disclosures

There are four overarching disclosures in the Metrics and Targets section of NZ CS 1. Two, 20(a) and 20(d), contain sub-disclosures. Disclosures 21(a) and 22(e) contain nested sub-disclosures. The disclosures are structured as follows:

4.1 Cross-industry metrics (p.49):

Disclosure 20(a): the cross-industry metrics, which are relevant to entities regardless of industry and business model (see 21(a) – (h)

- **Disclosure 21(a):** greenhouse gas (GHG) emissions: gross emissions in metric tonnes of carbon dioxide equivalent (CO_2^e) classified as: (see 23(a) – (c)): (i) Scope 1, (ii) Scope 2, (iii) Scope 3.
    - **Disclosure 23(a):** a statement describing the recognised standard or standards that the entity's GHG emissions have been measured in accordance with
    - **Disclosure 23(b):** the consolidation approach for emissions: whether equity share, financial control, or operational control
    - **Disclosure 23(c):** a summary of specific exclusions of sources, facilities and/or operations
- **Disclosure 21(b):** GHG emissions intensity
- **Disclosure 21(c):** transition risks: amount or percentage of assets or business activities vulnerable to transition risks
- **Disclosure 21(d):** physical risks: amount or percentage of assets or business activities vulnerable to physical risks
- **Disclosure 21(e):** climate-related opportunities: amount or percentage of assets, or business activities aligned with climate-related opportunities
- **Disclosure 21(f):** capital deployment: amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities
- **Disclosure 21(g):** internal emissions price: price per metric tonne of CO_2^e used internally by an entity
- **Disclosure 21(h):** remuneration: management remuneration linked to climate-related risks and opportunities in the current period, expressed as a percentage, weighting, description or amount (see also paragraph 7(d)).

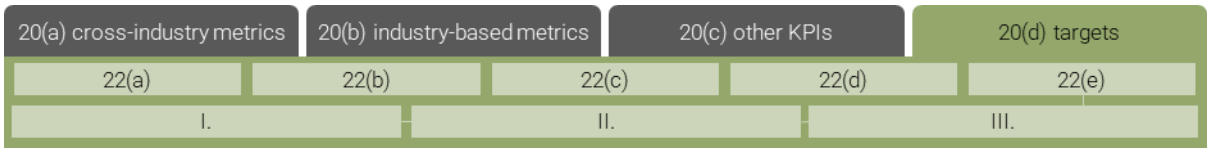
4.2 Industry-based metrics (p.61):

Disclosure 20(b): industry-based metrics relevant to its industry or business model used to measure and manage climate-related risks and opportunities

4.3 Other key performance indicators (p.63):

Disclosure 20(c): any other key performance indicators used to measure and manage climate-related risks and opportunities

4.4 Targets (p.63):

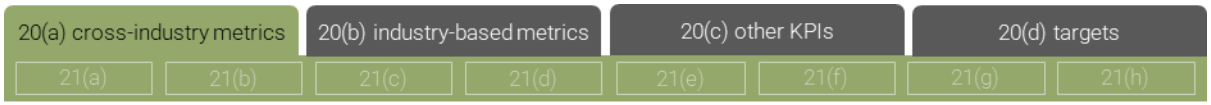


Disclosure 20(d): the targets used to manage climate-related risks and opportunities and performance against those targets (see 22(a) – (e))

- **Disclosure 22(a):** the time frame over which the target applies
- **Disclosure 22(b):** the associated interim targets
- **Disclosure 22(c):** the base year from which progress is measured
- **Disclosure 22(d):** a description of performance against targets
- **Disclosure 22(e):** For each GHG emission target:
    - **Disclosure 22(e) I.:** internal emissions price: price per metric tonne of CO_2^e used internally by an entity
    - **Disclosure 22(e) II.:** internal emissions price: price per metric tonne of CO_2^e used internally by an entity
    - **Disclosure 22(e) III.:** internal emissions price: price per metric tonne of CO_2^e used internally by an entity

Guidance specific to each disclosure is provided in the following section.

4.1. Cross-industry metrics: Disclosure 20(a)



Disclosure 20(a): *the cross-industry metrics, which are relevant to entities regardless of industry and business model (see 21(a) – (h)*

These metric categories are widely requested by primary users and provide key inputs for estimating financial impacts of climate change on entities.

An entity should consider using industry-specific metrics to satisfy cross-industry metric categories where possible.

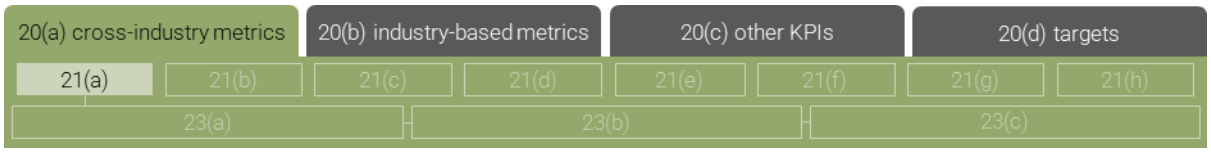
These metrics can be presented as point estimates or ranges. Some may work well as figures or tables.

The information provided in response to disclosures 21(a) – (h) forms the basis of disclosure 20(a). Preparers must add any additional information describing their use of cross-industry metrics, which are relevant to entities regardless of industry and business model, that they believe to be material to a primary user.

Preparers should refer to the materiality section in [draft] **NZ CS 3** General Requirements paragraphs 27 to 38 when considering whether disclosures for cross-industry metrics are material.

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**14-28**

4.3.1 Cross-industry metrics: Disclosure 21(a)



Disclosure 21(a): *greenhouse gas (GHG) emissions: gross emissions in metric tonnes of carbon dioxide equivalent (CO_2^e) classified as: (see 23(a) – (c)):*

(i) Scope 1,
(ii) Scope 2,
(iii) Scope 3.

This disclosure provides primary users with information to understand where an entity has the greatest exposure to and, therefore greatest risk from, greenhouse gas emissions in its value chain.

Scope 3 emissions usually represent the largest source of emissions for entities and present the most significant opportunities to influence GHG reductions and achieve a variety of GHG-related entity objectives.

Developing a full corporate GHG emissions inventory – incorporating Scope 1, Scope 2, and Scope 3 emissions – enables an entity to understand its full emissions impact across the value chain and focus efforts where it can have the greatest impact.

An entity must report its gross Scope 1, 2 and 3 emissions. This means before any trades, credits or removals are applied. This includes accounting for Scope 2 emissions using the location-based methodology and reporting any removals separately.

The location-based methodology is a method to quantify Scope 2 GHG emissions based on average energy generation emission factors for defined geographic locations, including local, subnational, or national boundaries. In the New Zealand context this means applying grid-average emissions to your Scope 2 electricity consumption.

Scope 3 emissions are value chain emissions, and both include upstream and downstream sources (Figure 5). The GHG Protocol uses the following categories for scope 3 emissions:

- purchased goods and services
- capital goods
- fuel- and energy-related activities
- upstream transportation and distribution
- waste generated in operations
- business travel
- employee commuting
- upstream leased assets
- downstream transportation and distribution
- processing of sold products
- end-of-life treatment of sold products
- downstream leased assets
- franchises; and investments

ISO have four categories that equate to Scope 3 emissions, the sub-categories for these are identified in Annex B of ISO 14064-1:2018. These sub-categories align closely with the GHG Protocol categories identified above. Table 13 illustrates this alignment.

If an entity is using the market-based methodology for setting GHG emission reductions targets, the entity may also report market-based emissions for Scope 2.

If an entity has removals or applies offsets, it may also report this information. The Ministry for the Environment (2022) defines removals as 'withdrawal of a GHG from the atmosphere by GHG sinks.' In general terms an entity would report removals when they occur from sources owned or controlled by the entity (Scope 1) and offsets when they occur elsewhere.

This disclosure (and associated disclosures 23(a) – (c)) will be subject to assurance for reporting periods that end on or after 27 October 2024. Appendix C of the GHG Protocol's Corporate Value Chain (Scope 3) Standard provides an outline of a data management plan which can help entities prepare for an assurance engagement. Entities may wish to review reporting requirements for the GHG Protocol Corporate, GHG Protocol Value Chain (Scope 3) and/or ISO 14064-1:2018 standards for guidance as to what might be required for internal record keeping and assurance purposes. A GHG inventory report is not required under this standard although an entity may choose to prepare one and make this publicly available.

Both the GHG Protocol Corporate Standard and the GHG Protocol Value Chain (Scope 3) Standard should be used by an entity to calculate its full value chain emissions.

Alternatively, an entity may wish to use ISO 14064-1:2018 which also includes a requirement to disclose value chain emissions. Note that ISO refers to direct and indirect emissions rather than Scope 1, 2 and 3. Draft NZ CS 1 requires an entity to use scope 1, 2 and 3 when disclosing its GHG emissions.

The Ministry for the Environment provides a suite of documents on measuring and reporting an entity's greenhouse gas emissions. Included in this suite are New Zealand specific emission factors and some advice on where you might locate additional emission factors if required. This suite also contains guidance on measuring and reporting your emissions. This guidance does not cover all scope 3 categories. Preparers should also note that this is guidance not a standard and so does not meet the requirements of NZ CS 1 disclosure 23(a) as a recognised standard.

Specialised guidance:

- Financial entities measuring and disclosing emissions financed by loans and investments are referred to the PCAF Standard.
- The GHG Protocol has additional information (Appendix F) for categorising GHG emissions associated with leased assets.
- Commercial real estate entities might find the guide to Scope 3 reporting published by The Green Building Council in the UK helpful.

- Service sector entities might find the GHG Protocol appendix Hot Climate, Cool Commerce. A service sector guide to greenhouse gas management useful.
- The Airport Carbon Accreditation programme has guidance on Scope 3 emissions sources for airports.
- The GHG Protocol Scope 2 Guidance standardises how entities measure emissions from purchased or acquired electricity, steam, heat and cooling (called scope 2 emissions). This guidance includes:
    - Requirements for accounting for emissions from energy contracts and instruments (such as renewable energy credits) in GHG inventories
    - Eight Scope 2 quality criteria that all contractual instruments must meet to be a reliable data source for the scope 2 market-based method

The GHG Protocol Corporate Standard Chapter 7 covers managing inventory quality and The GHG Protocol Corporate Value Chain (Scope 3) Standard Appendix B covers Uncertainty in Scope 3 emissions. ISO 14064-1:2018 section 8.3 covers Assessing Uncertainty. The GHG Protocol has additional guidance and tools for assessing uncertainty on its website.

Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for disclosure 21(a)(iii) covering Scope 3 GHG emissions (see **NZ CS 2**).

The XRB Board strongly encourages entities to start measuring their Scope 3 GHG emissions immediately. Beginning the measurement process will put entities in good stead for disclosing these emissions as part of their second year of reporting. As discussed above, for most entities, Scope 3 emissions are where their most significant emissions risks and opportunities lie. Obtaining a clear picture of the scale and scope of these emissions sources will greatly assist entities to understand their climate-related risks and opportunities and assist with transition planning.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source
GHG Protocol	2015	Corporate Standard
GHG Protocol	2013	Value Chain (Scope 3 standard)
ISO	2018	ISO 14064-1:2018. Greenhouse gases — Part 1
PCAF	2021	The Global GHG Accounting and Reporting Standard for the Financial Industry
MFE	2022	Emissions factors workbook (direct download)
GHG Protocol	2013	Scope 3 Calculation Guidance
GHG Protocol	2020	Scope 2 Guidance
MFE	2022	Measuring and reporting greenhouse gas emissions: guide for organisations
GHG Protocol	2006	Hot Climate, Cool Commerce. A service sector guide to GHG management
UK GBC	2019	Guide to Scope 3 Reporting in Commercial Real Estate
Airport Carbon Accreditation	2020	Technical documents
Initiative climate international	2022	Greenhouse gas accounting and reporting for the private equity sector
GHG Protocol	2003	Measurement and Estimation Uncertainty of GHG Emissions; Download guidance; Download worksheet (direct download)
GHG Protocol	2011	Scope 3 Uncertainty Calculation Tool; Download guidance; Download worksheet (direct download)

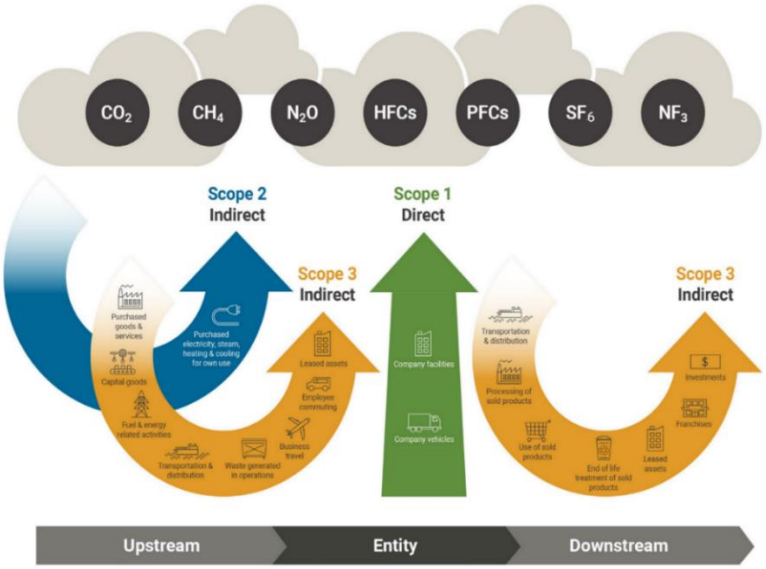
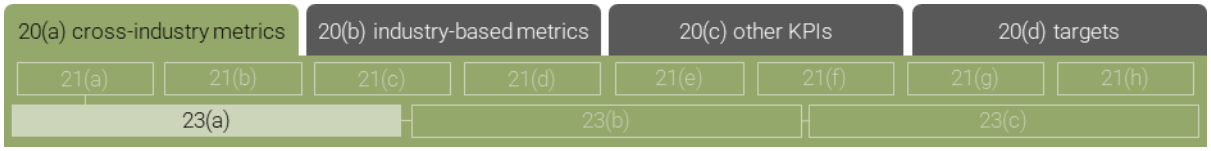


Figure 5: Overview of GHG Protocol scopes and emissions across the value chain (adapted from GHG Protocol)

Table 13: Comparison GHG Protocol scopes and categories with ISO categories and sub-categories

GHG Protocol Scope	ISO Inventory Category	ISO example sub-category (Annex B)	GHG Protocol
1	Direct GHG emissions	• Stationary combustion • Mobile combustion • Process • Fugitive • Land use, land use change, and forestry (LULUCF)	• Stationary combustion • Mobile combustion • Process • Fugitive • Land use, land use change, and forestry (LULUCF)
1	Direct GHG removals	• Process • Land use, land use change, and forestry (LULUCF)	• Process • Land use, land use change, and forestry (LULUCF)
2	Indirect GHG emissions from imported energy	• Electricity • Energy	• Electricity • Energy
3	Indirect GHG emissions from transportation	• Upstream transport and distribution for goods • Downstream transport and distribution for goods • Client and visitor transport • Business travel	4. Upstream transportation and distribution 9. Downstream transportation and distribution 7. Employee commuting 6. Business travel 3. Fuel- and energy-related
3	Indirect GHG emissions from products used by the organisation	• Purchased goods • Capital goods • Waste disposal (liquid and solid) • Equipment leased by reporting organisation • Services not described above	1. Purchased goods and services 2. Capital goods 7. Waste generated in operations 8. Upstream leased assets 1. Purchased goods and services
3	Indirect GHG emissions associated with use of products from the organisation	• Use stage of product • Downstream leased assets • End of life stage of product • Investments	11. Use of sold product 13. Downstream leased assets 7. End-of-life treatment of sold product 15. Investments 10. Processing of sold product
3	Indirect GHG emissions from other sources		14. Franchises

4.3.1(a) Cross-industry metrics: Disclosure 23(a)



Disclosure 23(a): *a statement describing the recognised standard or standards that the entity's GHG emissions have been measured in accordance with*

Primary users will expect GHG emissions to be measured in accordance with a recognised standard. A concise statement setting out the standards, frameworks and methodologies which the entity has used to prepare its GHG emissions report will serve this purpose. For example, 'Our emissions disclosures have been prepared in accordance with the Greenhouse Gas Protocol's Corporate and Scope 3 (Value Chain) Standards. We complied with the PCAF Financed Emissions Standard for our scope 3 financed emissions.'

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.19**

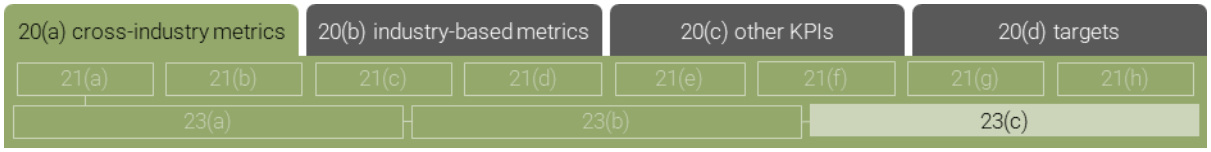
4.3.1(b) Cross-industry metrics: Disclosure 23(b)

Disclosure 23(b): *the consolidation approach for emissions: whether equity share, financial control, or operational control*

Primary users will expect transparency in how GHG emissions are consolidated. A sentence identifying which consolidation approach was used to calculate GHG emissions will serve this purpose.

Publisher	Year	Source	Pages
GHG Protocol	2015	Corporate Standard	**p.16-23**
ISO	2018	ISO 14064-1:2018. Greenhouse gases — Part 1	**p.7-8**

4.3.1(c) Cross-industry metrics: Disclosure 23(c)

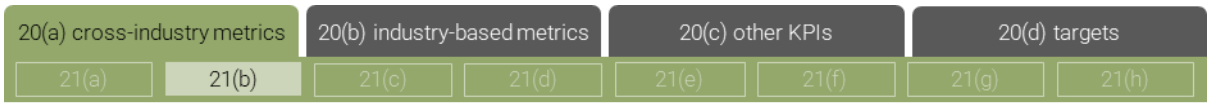


Disclosure 23(c): *a summary of specific exclusions of sources, facilities and/or operations*

Primary users will expect transparency regarding any exclusion of sources of GHG emissions. A concise summary of material exclusions of sources, facilities and/or operations will serve this purpose. An entity should consider providing a short explanation as to why these were excluded and any plans to include them in future.

Publisher	Year	Source	Pages
GHG Protocol	2015	Corporate Standard	**p.63, 40-47**
GHG Protocol	2013	Value Chain (Scope 3 standard)	**p.121, 59-63**
ISO	2018	ISO 14064-1:2018. Greenhouse gases — Part 1	**p.8-9, 15**

4.3.2 Cross-industry metrics: Disclosure 21(b)



Disclosure 21(b): *GHG emissions intensity*

Disclosing GHG emissions intensity information can provide a useful comparison between entities for primary users where the same methodology for calculating the intensity is used.

This is a metric category. An entity should use a metric which is commonly used in its sector or industry.

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

Intensity ratios are often called 'normalised' environmental impact data.

Examples of intensity ratios include:

- tCO_2^e per full time equivalent (FTE)
- tCO_2^e per customer
- tCO_2^e per gross written premium
- tCO_2^e per MWh electricity generated
- tCO_2^e per dollar invested
- tCO_2^e per m^2 floor space
- tCO_2^e per dollar of sales revenue
- Weighted average carbon intensity (WACI) of investment portfolio
- Weighted average carbon intensity (WACI) of insurance premiums
- Physical emissions intensity for each investment portfolio;
- Economic emissions intensity for each investment portfolio

Refer to [draft] **NZ CS 3** for required disclosures for:
- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.16, 61**
TCFD	2021	Implementing the Recommendations of the TCFD – Weighted average carbon intensity	**p.52**

4.3.3 Cross-industry metrics: Disclosure 21(c)

Disclosure 21(c): *transition risks: amount or percentage of assets or business activities vulnerable to transition risks*

Disclosure of the amount or extent of an entity's assets or business activities vulnerable to climate-related transition risks allows primary users to better understand potential financial vulnerability regarding issues such as possible impairment or stranding of assets, effects on the value of assets and liabilities, and changes in demand for products or services.

This is a metric category. An entity should use a metric which is commonly used in its sector or industry.

An entity can be vulnerable to several types of climate-related transition risks:

- policy, regulation and legal risks reflecting changes in policy and litigation action;
- technology risk as emerging technologies impact the competitiveness of certain organisations;
- market risk from changes to supply and demand; and
- reputational risks tied to changing customer or community perceptions.

Example metrics:

- Volume of real estate collaterals highly exposed to transition risk
- Concentration of credit exposure to fossil-fuel-related assets
- Percent of revenue from coal mining
- Percent of business exposure to direct ETS liabilities
- Percent of business exposure to tax penalties for high emitting vehicles

Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.21, 61**

4.3.4 Cross-industry metrics: Disclosure 21(d)

Disclosure 21(d): *physical risks: amount or percentage of assets or business activities vulnerable to physical risks*

Disclosure of the amount or extent of an entity's assets or business activities vulnerable to material climate-related physical risks allows users to better understand potential financial vulnerability regarding such issues as impairment or stranding of assets, effects on the value of assets and liabilities, and cost of business interruptions.

This is a metric category. An entity should use a metric which is commonly used in its sector or industry.

When considering the types of climate-related physical risks that an entity might be vulnerable to, you need to consider both

- Acute risks, such as storms, floods, and wildfires, that are event-driven and
- Chronic risks, such as higher temperatures and sea-level rise, that refer to longer-term shifts in climate patterns.

In determining vulnerability to physical risks, entities should consider their climate-related hazards and exposures to those hazards.

Physical risks will be specific to the geography where the assets or activities are located and their likely exposure or vulnerability to the risk.

For example, certain assets may be most vulnerable to acute risks from storms or wildfires, while others are more at risk from chronic changes in average temperature, sea-level rise, or drought.

Example metrics:

- Number and value of mortgage loans in 100-year flood zones
- Wastewater treatment capacity located in 100-year flood zones
- Revenue associated with water withdrawn and consumed in regions of high or extremely high baseline water stress
- Proportion of property, infrastructure, or other alternative asset portfolios in an area subject to flooding, heat stress, or water stress
- Proportion of real assets exposed to 1:100 or 1:200 climate-related hazards

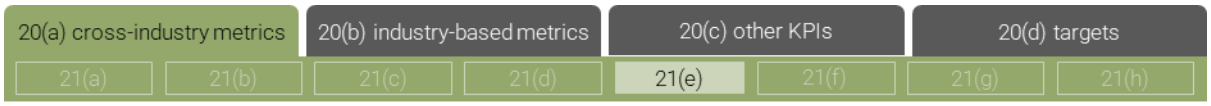
Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.21, 61**

4.3.5 Cross-industry metrics: Disclosure 21(e)



Disclosure 21(e): *climate-related opportunities: amount or percentage of assets, or business activities aligned with climate-related opportunities*

Disclosure of the proportion of revenue, assets, or business activities aligned with climate-related opportunities provides insight into the position of entities relative to their peers and allows users to understand likely transition pathways and potential changes in revenue and profitability over time.

Note that this is a metric category. An entity should use a metric which is commonly used in its sector or industry.

There are several categories of climate-related opportunities that an entity can capture.

Examples include:

- improved resource efficiency from reducing energy, water, and waste
- use of energy sources that emit low or no GHG emissions
- development of new products and services
- access to new markets, and
- improved adaptive capacity and resilience

Example metrics:

- Net premiums written related to energy efficiency and low-emissions technology
- Revenues from products or services that support the transition to a low-emissions economy
- Number of (1) zero-emissions vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold
- Proportion of homes delivered certified to a third-party, multi-attribute green building standard

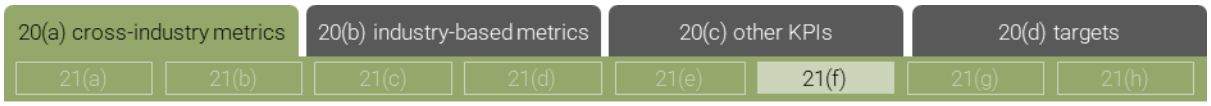
Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.21, 62**

4.3.6 Cross-industry metrics: Disclosure 21(f)



Disclosure 21(f): *capital deployment: amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities*

Deployment of capital in low-emissions technologies, business lines, or products may demonstrate that an entity is investing to make its business model resilient to transition risk or to capture climate-related opportunities.

Note that this is a metric category. An entity should use a metric which is commonly used in its sector or industry.

In addition to having different climate-related risks and opportunities, entities differ in the extent to which they are deploying capital to manage their climate-related risks and increase their climate-related opportunities.

For example, entities that are hardening infrastructure in response to increased incidence of physical risks can signal that short-term debt might increase as the entity upgrades their assets, but long-term costs may be lower.

Capital expenditures, capital investments, or the amount of financing for new technologies, infrastructure, or products can be reported.

It can be helpful for entities to present traditional disclosures alongside climate-related disclosures to allow users to understand the scale of investment in different types of activities. For examples investments in fossil fuels compared to investments in alternative energy sources.

Example metrics:

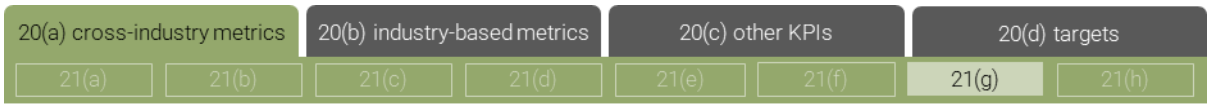
- Percentage of annual revenue invested in R&D of low-emissions products/services
- Investment in climate adaptation measures (e.g., soil health, irrigation, technology)
- Investment in energy efficiency upgrades
- Investment in emissions measurement and management software
- Investment in transition to electric boilers as replacement for coal boilers

Refer to [draft] **NZ CS 3** for required disclosures for:
- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.24, 62**

4.3.7 Cross-industry metrics: Disclosure 21(g)



Disclosure 21(g): *internal emissions price: price per metric tonne of CO_2^e used internally by an entity*

The disclosure of internal emissions prices can help primary users to identify which entities have business models that are vulnerable to future policy responses to climate change, and which are adapting their business models to ensure resilience to transition risks.

Internal emissions prices also provide primary users with an understanding of the reasonableness of an entity's climate-related risk and opportunity assessment and strategy resilience.

Internal emissions pricing is a mechanism by which entities can put a value on their greenhouse gas emissions to facilitate analysis of the current and anticipated impacts of climate-related risks and opportunities.

For instance, non-financial entities may use an internal emissions price to understand the anticipated future costs associated with developing new emissions-related assets. Financial entities may use internal emissions prices to inform their decision making; for example, by considering the impact of a given emissions price on an entity's profitability as part of the investing, lending, or insurance underwriting process.

While internal emissions prices can take a variety of forms and amounts, an increasing number of entities are setting an internal notional or actual price on the amount of greenhouse gases emitted from assets and investment projects so they can see how, where, and when their greenhouse gas emissions could affect their strategy, financial performance, and investment choices. There are two types of internal emissions prices commonly used by entities.

The first type is a shadow price, which is a theoretical cost or notional amount that the entity does not charge but that can be used in assessing the economic implications or trade-offs for such things as risk impacts, new investments, net present value of projects, and the cost—benefit of various initiatives.

The second type is an internal tax or fee, which is an emissions price charged to a business activity, product line, or other business unit based on its greenhouse gas emissions (these internal taxes or fees like intracompany transfer pricing).

There is no definitive source on what an entity's emissions price should be, and there are a variety of ways that the cost of greenhouse gas emissions can be integrated into an entity's practices. An entity may wish to provide an explanation of how it is applying the internal emissions price in decision-making (for example, investment decisions, transfer pricing and scenario analysis);

Example metrics:

- Internal emissions price
- Shadow emissions price, by geography

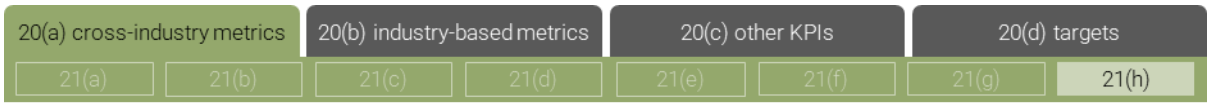
Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.25, 59-60, 62**

4.3.8 Cross-industry metrics: Disclosure 21(h)



Disclosure 21(h): *remuneration: management remuneration linked to climate-related risks and opportunities in the current period, expressed as a percentage, weighting, description or amount (see also paragraph 7(d)).*

This disclosure provides information to primary users regarding management's incentivisation to achieve climate-related KPIs. Incentivising management to meet climate-related targets and policies is a means of fostering ownership of performance, and disclosing such arrangements is a means of communicating that commitment to primary users.

Remuneration policies are important incentives for achieving an entity's goals and objectives and may provide insight on an entity's governance, oversight, and accountability for managing climate-related risks and opportunities.

The ways in which entities link executive compensation to performance on issues related to climate change will be specific to them and their governance structure.

Some entities choose to report the percentage of the executive's pay linked to climate considerations, while others discuss weighting factors or total amount of compensation that could be impacted.

An entity should consider disclosing the link between targets and remuneration policies (if any).

Example metrics:

- Portion of employee's annual discretionary bonus linked to investments in climate-related products
- Weighting of climate targets on long-term incentive scorecards for Executive Directors
- Weighting of performance against operational emissions' targets for remuneration scorecard

Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.25, 63**

4.2. Industry-based metrics: Disclosure 20(b)

Disclosure 20(b): *industry-based metrics relevant to its industry or business model used to measure and manage climate-related risks and opportunities*

An entity should report those industry-based metrics which it uses for management purposes. These might include metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable. Using common metrics within an industry increases comparability across entities for primary users.

An entity should consider, where possible, using an industry-based metric for cross-industry metric categories in disclosures 21 (b), (c), (d), (e) and (f).

For a list of possible industry-specific metrics entities should consider:

- industry-specific metrics proposed by the ISSB in Appendix B of the exposure draft of the climate related disclosures standard. The industry-based requirements are organised according to the Sustainable Industry Classification System® (SICS®) and have been drawn from the SASB Standards.
- sector specific metrics suggested by the TCFD (summarised in Table 14)
- The Global Reporting Initiative is also developing sector standards which may contain metrics an entity would find useful. These standards cover a wider range of topics than climate-related risks and opportunities and also consider the impact on the economy, environment and people rather than the impact on enterprise value creation.

Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages
TCFD	2021	Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures – Supplemental Guidance	**p.24-68**
ISSB	2022	Appendix B—Industry-based disclosure requirements[4]	
GRI		GRI Standards Sector Program	

[4] Note that this is an exposure draft. This content may change in the final standard. Links may change.

Table 14: Summary of potential sector-specific metrics identified by the TCFD

Sector	Potential metrics
Asset managers	• Describe metrics used to assess climate-related risks and opportunities in each product or investment strategy • Provide metrics considered in investment decisions and monitoring • Weighted average carbon intensity for assets under management • Other carbon footprinting metrics that might be useful for decision making • Describe the extent to which their assets under management and products and investment strategies are aligned with a 1.5 degree scenario • Proxy voting and investee engagement policies and procedures
Asset owners	• Describe metrics used to assess climate-related risks and opportunities in each fund or investment strategy • Provide metrics considered in investment decisions and monitoring • Weighted average carbon intensity for each fund or investment strategy • Other carbon footprinting metrics that might be useful for decision making • Describe the extent to which assets they own and their funds and investment strategies are aligned with a 1.5 degree scenario
Banks	• Credit exposure, equity and debt holdings, or trading positions, broken down by: industry, geography, credit quality and average tenor • Amount and percentage of carbon-related assets relative to total assets • Amount of lending and other financing connected with climate-related opportunities • Describe the extent to which their lending and other financial intermediary business activities are aligned with a 1.5 degree scenario
Insurance	• Aggregated risk exposure to weather-related catastrophes of their property business by relevant jurisdiction • Weighted average carbon intensity for insurance premiums • Weighted average carbon intensity or GHG emissions associated with commercial property and speciality lines of business where data and methodologies allow • Describe the extent to which their insurance underwriting activities are aligned with a 1.5-degree scenario
Agriculture, food and forest products	• Total water withdrawn and total water consumed • Percent water withdrawn and consumed in regions with high or extremely high water stress • Emissions from biological processes • Changes in carbon stocks as a result of land use • Land use changes
Energy	• Percent of water withdrawn in regions with high water stress • Gross global scope 1 emissions from 1) combustion, 2) flared hydrocarbons, 3) process emissions, 4) directly vented releases, and 5) fugitive emissions/leaks
Materials and buildings	• Building energy intensity by area • Building water intensity (by occupants or area) • Percent of fresh water withdrawn in regions with high or extremely high water stress • Area of buildings, plants or properties in flood hazard areas
Transport	• Sales weighted average fleet fuel economy • Energy Efficiency Design Index (EEDI) for new ships • Life cycle reporting of GHG emissions of transportation products

4.3. Other key performance indicators: Disclosure 20(c)

Disclosure 20(c): *any other key performance indicators used to measure and manage climate-related risks and opportunities*

This disclosure informs primary users of any additional metrics and key performance indictors which an entity is using to manage their climate-related risks and opportunities.

If an entity is using key performance indicators to measure and manage its climate-related risks and opportunities which are not cross-industry or industry-based metrics, then these should be disclosed.

Refer to [draft] **NZ CS 3** for required disclosures for:

- comparative information, consistency or reporting, and restatement of comparatives
- methodologies, assumptions and estimation uncertainty.

First-time adoption relief is available for comparatives for metrics and analysis of trends (see **NZ CS 2**).

Publisher	Year	Source	Pages

4.4. Targets: Disclosure 20(d)

Disclosure 20(d): *the targets used to manage climate-related risks and opportunities and performance against those targets (see 22(a) – (e))*

Disclosure of targets provides a forward-looking orientation that is essential for primary users to assess the potential for strategies to succeed, and to give them a basis against which to assess future performance.

A climate-related target refers to a specific level, threshold, quantity, or qualitative goal that the entity wishes to meet over a defined time horizon to address its climate-related risks and opportunities. An entity's climate-related targets should inform, and be informed by, its strategy and risk management and be linked to its climate-related metrics.

An entity should consider targets such as those related to GHG emissions, water usage, energy usage, etc., in line with the cross-industry, climate-related metric categories, where relevant, and in line with anticipated regulatory requirements or market constraints or other targets (see for example Table 15). Other targets may include efficiency or financial targets, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue targets for products and services designed for a low-emissions economy.

Some entities select climate-related metrics and then define climate-related targets that allow them to operationalise their high-level climate strategy. Others set targets and then select climate-related metrics to measure and track progress related to their targets.

Targets should be:

- Aligned with an entity's strategy and risk management goals
- Linked to relevant metrics
- Quantified and measurable
- Clearly specified over time
- Understandable and contextualised
- Periodically reviewed and updated
- Reported annually

Disclosures of targets should be supported by contextual, narrative information on items such as scope, underlying data and assumptions, including those around the use of offsets.

In addition to the required disclosures an entity may consider disclosing how its target compares with those created in the latest international agreement on climate change and whether the target was derived using a sectoral decarbonisation approach

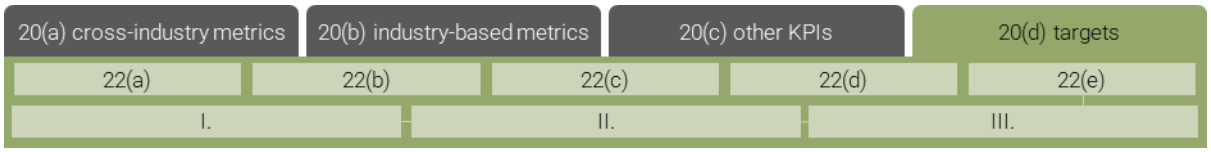
The information provided in response to disclosures 22(a) – (e) forms the basis of disclosure 20(d). Preparers must provide any additional information describing the targets used to manage climate-related risks and opportunities and performance against those targets which they believe to be material to a primary user.

Publisher	Year	Source	Pages
TCFD	2021	Guidance on Metrics, Targets and Transition Plans	**p.30-37**

Table 15: Example targets for cross-industry metrics (adapted from TCFD, 2021).

Cross-industry metric category	Example climate-related metric target
Greenhouse gas emissions: Scope 1, 2 & 3 emissions	• Reduce net Scope 1, Scope 2, and Scope 3 GHG emissions to zero by 2050, with an interim target to cut emissions by 70% relative to a 2015 baseline by 2035
Greenhouse gas emissions intensity	• Reduce GHG emissions intensity of portfolio by 30% by 2035 relative to a 2020 baseline
Transition risks: assets or business activities vulnerable ($ or %)	• Reduce percentage of asset value exposed to transition risks by 30% by 2030, relative to a 2019 baseline
Physical risks: assets or business activities vulnerable ($ or %)	• Reduce percentage of asset value exposed to acute and chronic physical climate-related risks by 50% by 2050 • Ensure at least 60% of flood-exposed assets have risk mitigation in place in line with the 2060 projected 100-year floodplain
Climate-related opportunities: revenue, assets or business activities ($ or %)	• Increase net installed renewable capacity so that it comprises 85% of total capacity by 2035
Capital Deployment: capital expenditure, financing or investment ($)	• Invest at least 25% of annual capital expenditure into electric vehicle manufacturing • Lend at least 10% of portfolio to projects focused primarily on physical climate-related risk mitigation
Internal emissions price: ($ per tCO_2e)	• Increase internal carbon price to $150 by 2030 to reflect potential changes in policy
Remuneration: management remuneration linked (% or weighting or description or $)	• Increase amount of executive management remuneration impacted by climate considerations to 10% by 2025

4.6.1 Targets: Disclosures 22(a) – (h)



An entity must include the following information when describing the targets used to manage climate-related risks and opportunities and performance against those targets:

Disclosure 22:	**Guidance**
a) the time frame over which the target applies;	Defined time horizon by which targets are intended to be achieved. Short-, medium-, and long-term time horizons should be consistent across an entity's targets and, if feasible, consistent with key dates tracked by key national and international organisations, such as the IPCC, or regulators.
b) the associated *interim targets*;	An interim target is a checkpoint between the current period and the target end date in which an entity assesses its progress and makes any adjustments to its plans and targets. Any medium- and long-term targets should have interim targets set at appropriate intervals (e.g., 5–10 years) covering the full medium or long-term target time horizon.
c) the *base year* from which progress is measured; and	Clear definition of baseline time period against which progress will be tracked, with a consistent base year across GHG emissions targets.
d) a description of performance against targets	A concise description of how an entity is performing against each target. This should include where an entity has met/not met its target and the reason.
e) For each GHG emission target	An entity should prioritise GHG emission reductions over offsetting and compensation practices.
I. whether the target is an *absolute target* or *intensity target* ;	An absolute target is defined by a change in absolute emissions over time, for example, reducing CO_2e emissions by 47% below 2020 levels by 2030. An intensity target is a target defined by a change in the ratio of emissions to a metric over time, for example, reduce CO_2e per tonne of product by 50% from 2020 levels by 2030.
II. whether the target is aligned with science, and if so, whether it has been validated by a third party;	An entity should describe which global emissions reduction pathway their GHG emission target is aligned with and if this target has been validated by a third party. The Science Based Targets initiative (SBTi) provides guidance and workbooks to help entities set targets aligned with science. An entity whose targets have been validated by a third party (endorsed by SBTi or another third party) must disclose this.
III. The extent to which the target relies of offsets, whether the offsets are verified or certified, and if so, under which scheme or schemes.	Where entity is relying on the use of offsets to achieve emission reduction targets it must disclose this as it is important to be transparent. It must also disclose the minimum quality or certification thresholds that it is using for these. MFE periodically release guidance on voluntary mitigation (offsetting) claims in New Zealand.

Publisher	Year	Source	Pages
MFE	2022	Interim guidance for voluntary climate change mitigation	
SBTi		Science-based targets initiative sector guidance	

5. Glossary

BEIS	UK Department for Business, Energy and Industrial Strategy
CDSB	Climate Disclosure Standards Board: The CDSB was an international consortium of business and environmental NGOs which developed the framework that formed the basis for the TCFD recommendations. CDSB has now been consolidated into the IFRS Foundation, but its guidelines and good practice resources are still relevant and useful.
CFRF	Climate Financial Risk Forum: The CFRF is jointly chaired by the UK Prudential Regulation Authority and Financial Conduct Authority. It aims to advance the UK financial sector's responses to the financial risks from climate change by supporting the development of climate capacity across UK financial regulators and the financial industry.
COSO	Committee of Sponsoring Organisations of the Treadway Commission
EFRAG	European Financial Reporting Advisory Group: EFRAG is a private association of European stakeholders and national organisations with expertise and interest in the development of accounting and sustainability standards. EFRAG's mission is to serve the European public's interest by developing and promoting European views in the field of corporate reporting and by developing draft EU Sustainability Reporting Standards.
Emissions reduction pathway	The trajectory of emissions reduction taking place in the economy, often characterised by the timing of peak emissions, and the angle of the downward slope of the curve. Emissions reduction pathways with later peak emissions typically involve steeper angles of decline if the most dangerous risks of climate change are to be avoided. For example, an early peak followed by relatively steady emissions reductions is described as an 'orderly' transition pathway, while a later peak and steeper emissions reduction slope is described as a 'disorderly' transition pathway. Emissions pathways which don't keep climate change within 'safe' temperatures involve emissions pathways which do not decline toward net zero emissions, known as a 'hothouse world' pathway, or fail to reach peak emissions in a timeframe that allow net zero emissions to be achieved, known as 'too little too late' emissions pathways. See also NGFS climate scenarios.
Exposure	"The presence of people; livelihoods; species or ecosystems; environmental functions, services, and resources; infrastructure; or economic, social, or cultural assets in places and settings that could be adversely affected" (IPCC, 2022, p.18).
GRI	Global Reporting Initiative: the Global Sustainability Standards Board (GSSB) under the auspices of the GRI develops and issues the GRI Standards.
Hazard	"The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and

	loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources." (IPCC, 2022, p.22). In the context of climate-related risk, the concept of a 'hazard' may be extended to incorporate transition events or trends with a potential to cause loss or damage to livelihoods, service provision, or the achievement of an entity's strategic aims.
IPCC	Intergovernmental Panel on Climate Change: The primary source of global climate data, information and knowledge. The IPCC is the key reference point for all climate-related risk and resilience work undertaken globally,
ISSB	International Sustainability Standards Board: Independent standard-setting board governed and overseen by the IFRS Foundation Trustees. The intention of ISSB is to deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions.
NGFS	Network for Greening the Financial System: A voluntary network of central banks and supervisors which has agreed to develop and share among central banks best practices in environmental and climate risk management.
NZ CS 1	Aotearoa New Zealand Climate Standard 1 –Climate-related Disclosures
NZ CS 2	Aotearoa New Zealand Climate Standard 2 – First-time Adoption of Aotearoa New Zealand Climate Standards
NZ CS 3	Aotearoa New Zealand Climate Standard 3 – General Requirements for Climate-related Disclosures
PRA	UK Prudential Regulation Authority: The Bank of England's prudential regulator, overseeing more than 1,500 banks, building societies, credit unions, insurers, and investment firms.
Resilience	"The capacity of interconnected social, economic and ecological systems to cope with a hazardous event, trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure. Resilience is a positive attribute when it maintains capacity for adaptation, learning and/or transformation" (Arctic Council, 2016, cited in IPCC, 2022, p.37).
Risk receptor	The specific place, person, category or concept through which a vulnerability can be realised. For example, in the case of the climate-related hazard of flooding, a risk receptor may be a single storey dwelling, vulnerable to inundation, located within an exposed flood-plain.
TCFD	Taskforce on Climate-related Financial Disclosure: "The Financial Stability Board created the TCFD to develop recommendations on the types of information that companies should disclose to support investors, lenders, and insurance underwriters in appropriately assessing and pricing a specific set of risks—risks related to climate change" (TCFD, 2022)
Transition	"The process of changing from one state or condition to another in a given period of time. Transition can occur in individuals, firms, cities, regions and nations, and can be based on incremental or transformative change" (IPCC, 2022, p.45). In the context of climate-related risk, transition can refer to the process of reducing emissions and enhancing resilience in the face of uncertain future risk.
UNEP-FI	United Nations Environment Programme – Finance Initiative: "UNEP-FI is a partnership between UNEP and the global financial sector to mobilize private sector finance for sustainable development. UNEP FI works with more than 400 banks,

	insurers, and investors and over 100 supporting institutions – to help create a financial sector that serves people and planet while delivering positive impacts"
Vulnerability	"The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt" (IPCC, 2022, p.47).
WBCSD	World Business Council for Sustainable Development
WEF	World Economic Forum

[i] These include the International Sustainability Standards Board, the European Financial Reporting Advisory Group, the International Standards Organisation, the Network for Greening the Financial System, the United Nations Environment Programme Finance Initiative, United Nations Principles for Responsible Investment, and the Climate Financial Risk Forum.