Climate-related financial disclosures

Mandatory TCFD requirements – Disclosure tool

January 2022

Executive summary

For December 2021 year ends the Listing Rules require premium listed companies to set out where their reporting is or is not **consistent with** the TCFD framework, and the tool below is intended to help companies with this. It explains:

- Which aspects of the TCFD framework companies **must** report on under the Listing Rules; and
- Where companies should use their **judgement** to report in the most appropriate and proportionate way in their particular circumstances.

Governance and risk management are the foundations of the TCFD framework so that companies are able to describe their climate-related risks and opportunities and the impact of these on their business and strategy.

In some cases companies might decide that the risks or opportunities are not significant enough to justify, for example, extensive analysis based on climate change scenarios or the creation of specific metrics or targets. In such cases companies would need to set out the basis for this judgement based on their governance and risk management disclosures and, if they do so, their reporting **would be consistent** with the TCFD framework.

In other cases companies might need more time to carry out scenario analysis or design metrics and targets, having identified through their governance and risk management arrangements that this is appropriate. Their reporting **would not yet be consistent** with all of the relevant aspects of the TCFD framework, and they should recognise this 'departure' in their disclosures in a way that it is similar to the 'comply-or-explain' reporting mechanism that applies in connection with the UK Corporate Governance Code.

In both cases it is possible that these companies would be subject to questions about their approach from shareholders and other stakeholders.

The TCFD framework is extensive and includes recommendations and guidance on a number of levels, from the Recommendations and Recommended Disclosures through to the Annex and a range of other publications. The tool also explains how these are to be taken into account as companies prepare their reporting under the Listing Rules, subject to the case-by-case judgements discussed above.

Introduction to this tool

For periods beginning on or after 1 January 2021, companies with a premium listing on the London Stock Exchange (including those that are incorporated outside the UK, but excluding those that are closed-ended investment companies subject to Listing Rule 15) are subject to a new Listing Rule (LR 9.8.6(8)) that requires them to include a statement in their annual financial report setting out: ‘whether the listed company has included in its annual financial report climate-related financial disclosures consistent with the TCFD Recommendations and Recommended Disclosures’. Subject to certain conditions, a company can give reasons for not doing so (or not yet doing so) and can also provide the relevant information outside the annual financial report. This tool is intended to help companies report under the new Listing Rule.

For periods beginning on or after 1 January 2022 a similar requirement will apply to companies with a standard listing of equity (including GDRs representing equity). Closed-ended investment companies subject to Listing Rule 15 are again excluded.

Judgement and a proportionate approach

It is often a matter of judgement as to whether a disclosure is ‘consistent’ with the TCFD framework, and this tool summarises the framework in a way that is intended to help make those judgements. The need for judgement to be applied is also recognised in the FCA’s guidance on the new Listing Rule.

A listed company should carry out its own assessment to ascertain the appropriate level of detail to be included in its climate-related financial disclosures, taking into account factors such as:

- ‘the level of its exposure to climate-related risks and opportunities; and
- the scope and objectives of its climate-related strategy, noting that these factors may relate to the nature, size and complexity of the listed company’s business.’

LR9.8.6D G

The basis for applying judgement in this way is strong governance and robust risk management, which together should lead to an appropriate strategic response to any climate change risks and opportunities that are identified. This is also reflected in the FCA’s guidance on the new Listing Rule, which states that it:

‘...would expect that a listed company should ordinarily be able to make disclosures consistent with:

- the recommendation and recommended disclosures on governance in the TCFD Recommendations and Recommended Disclosures;
- the recommendation and recommended disclosures on risk management in the TCFD Recommendations and Recommended Disclosures; and
- recommended disclosures (a) and (b) set out under the recommendation on strategy in the TCFD Recommendations and Recommended Disclosures…’

LR9.8.6E G

Introduction to this tool (cont'd)

In effect, therefore, the governance and risk management pillars of the TCFD framework are mandatory under the Listing Rules, as is the need for a basic strategic response to the risks and opportunities identified. It may then be that an organisation decides that further responses are appropriate and that it needs to establish metrics and targets to track progress against the strategic response. Where this is the case but the relevant arrangements are not yet in place this would not be fully consistent with the strategy and metrics and targets pillars of the framework and the TCFD disclosures should recognise this in a way that it is similar to the 'comply-or-explain' reporting mechanism that applies in connection with the UK Corporate Governance Code. Where, however, based on its governance and risk management processes an organisation judges that an aspect of the strategy or metrics and targets pillar is not appropriate and discloses this judgement well, it has applied the relevant parts of the TCFD framework. In both cases it remains possible that these companies would be subject to questions about their approach from shareholders and other stakeholders. See the decision tree in **Figure 1** for further guidance on this aspects of reporting.

Is a separate 'compliance statement' necessary to meet the Listing Rules requirement?

The language used in LR 9.8.6(8) implies that the statement rule refers to is separate from the TCFD disclosures themselves but in our view it could also be integrated with those disclosures rather than taking the form of a separate compliance statement. The latter approach would also reduce the potential for duplication of information within the annual report. The key is that the overall disclosure should make it clear where an organisation sees itself as having made disclosures that are or are not fully consistent with the TCFD framework.

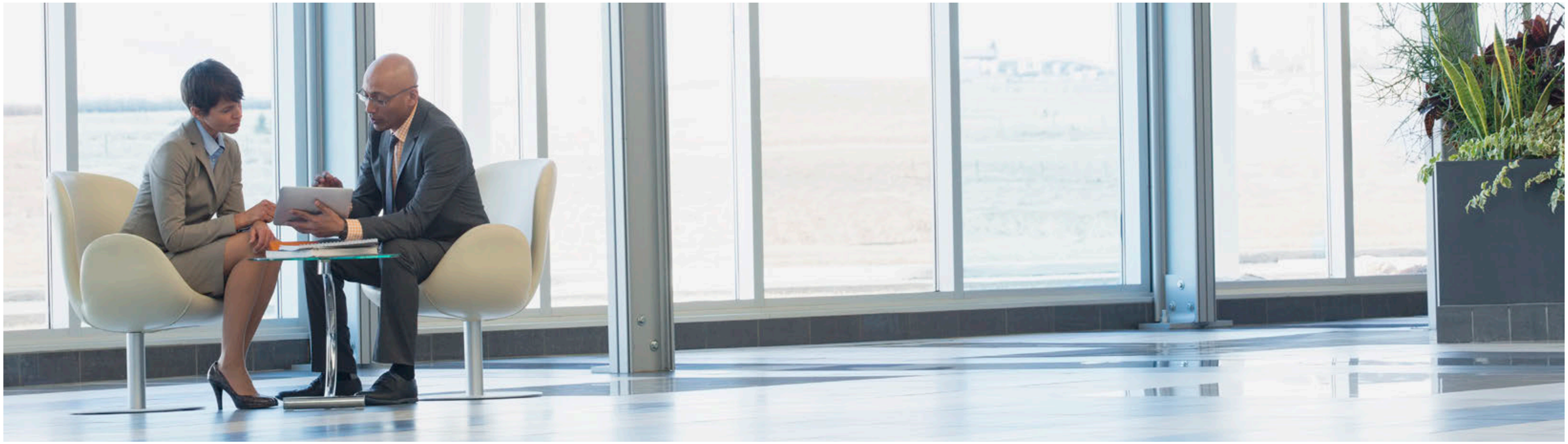
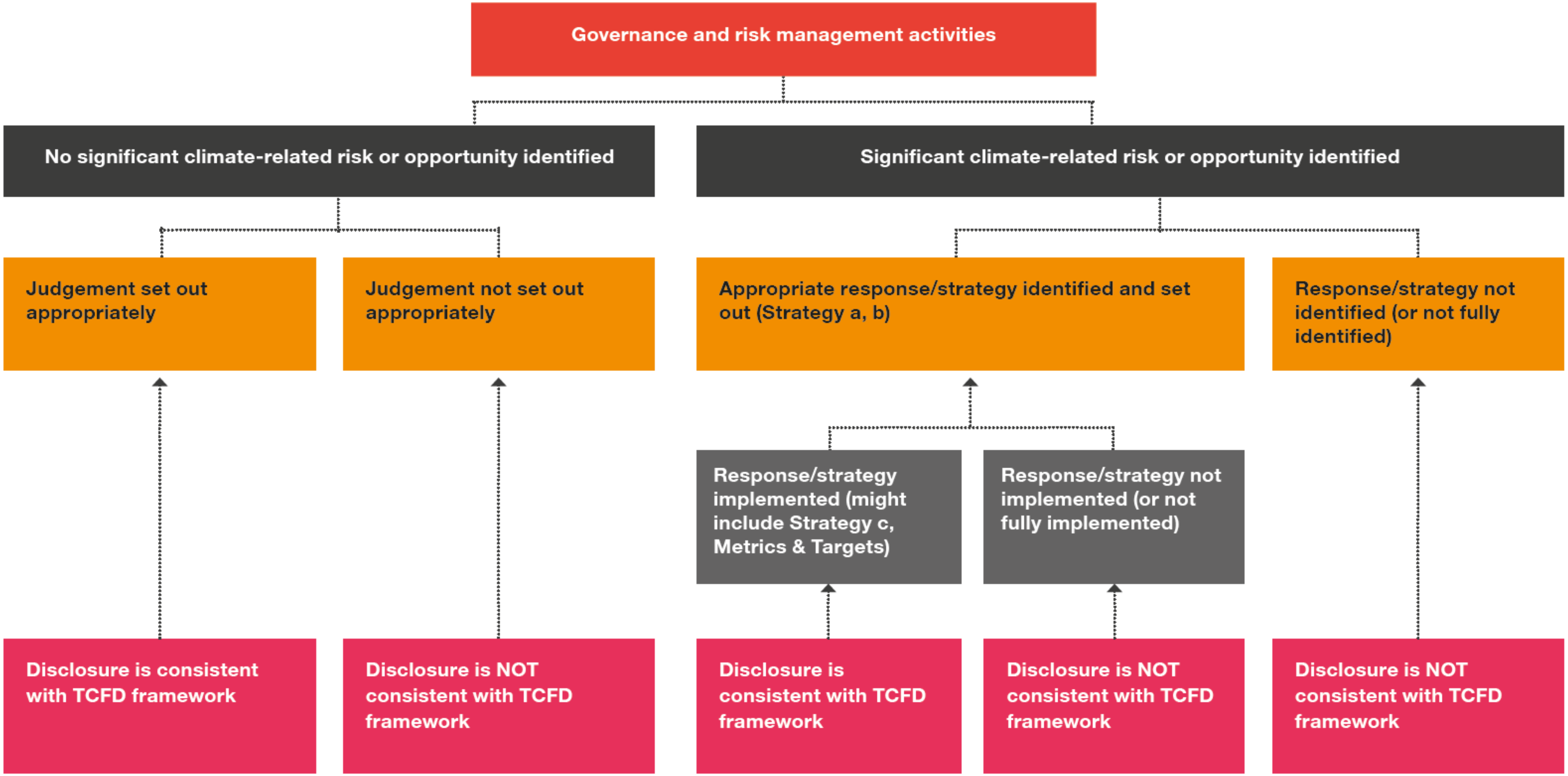


Figure 1 Decision tree on whether disclosures are consistent with the TCFD framework



If applying the TCFD framework becomes mandatory, as the FCA intends, companies will no longer have the option for their disclosures not to be consistent with it. They would still be able to apply judgement in the ways explained above, however.

Bringing the decision to life – Mini case study examples

1

Emerging risk with limited response planned

Company A identified an emerging risk relating to climate change in last year's annual report and is reporting against the TCFD framework for the first time this year. Based on its risk management process, management did not judge that climate scenario analysis was necessary to understand the nature of the risk identified and agreed this with the board ESG committee.

Provided that it discloses the nature of the risk or risks and the judgements taken clearly, Company A can report that its disclosures are consistent with the TCFD framework because its risk management procedures have identified and fully responded to the risk or risks.

2

Material Scope 3 emissions not yet quantified

Company B has previously focused on its Scope 1 & 2 GHG emissions but management and the board are aware that its business also generates material Scope 3 emissions which have not yet been fully quantified.

The TCFD framework (Metrics & Targets, Recommended Disclosure a) calls for Scope 3 emissions to be disclosed 'if appropriate' so Company B should now recognise that its disclosures are not fully consistent with the TCFD framework.

3

Net zero plan not yet fully implemented

Company C is part of an industry-wide net zero initiative and reports on this in its TCFD disclosures but it has not yet finalised a number of targets relating to its own transition plan.

Company C will be able to describe the industry initiative and the actions it has taken but it should also recognise that its disclosures are not fully consistent with the TCFD framework.

(Note that for periods beginning on or after 1 January 2022 the Listing Rules include guidance to the effect that a listed company that is headquartered in, or operates in, a country that has made a commitment to a net zero economy, such as the UK, is encouraged to assess the extent to which it has considered that commitment in developing and disclosing its transition plan.)

The role of the different elements of the TCFD framework

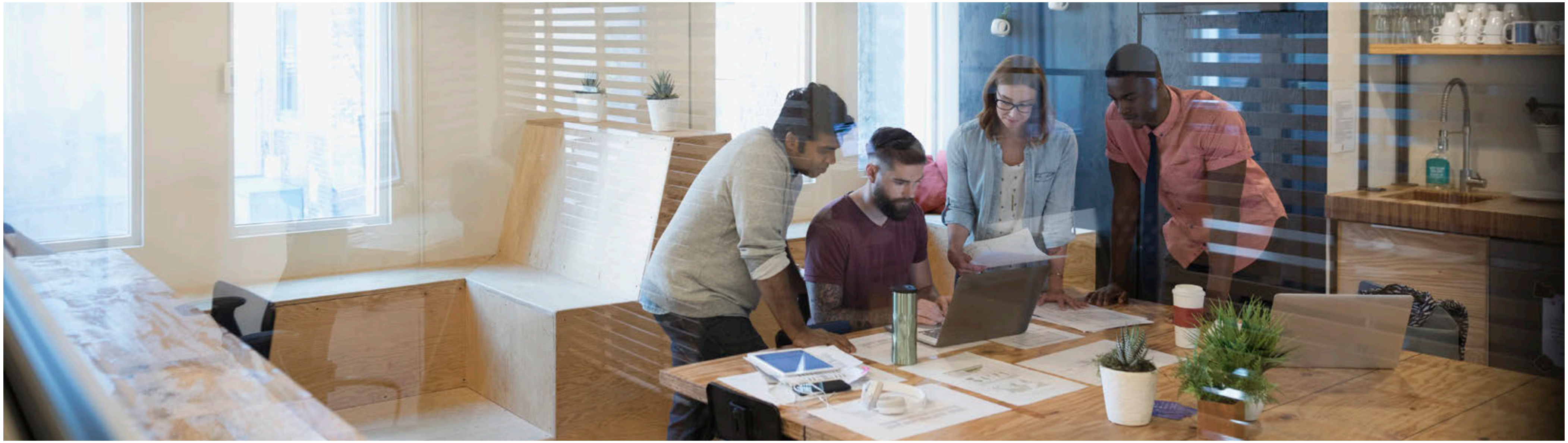
The Listing Rules refer directly to a number of different elements of the TCFD framework in addition to the Recommendations and Recommended Disclosures. LR 9.8.6B for instance states that:

'For the purposes of LR 9.8.6R(8), in determining whether climate-related financial disclosures are consistent with the TCFD Recommendations and Recommended Disclosures, a listed company should undertake a detailed assessment of those disclosures which takes into account: ... Section C of the TCFD Annex entitled 'Guidance for All Sectors'.'
LR9.8.6B G

The language used here is 'should' undertake a detailed assessment which takes into account the TCFD Annex, suggesting that the content of the Annex is an integral and expected part of the basis for the disclosures, so should be included where relevant.

In LR 9.8.6C G the Listing Rule states that 'the FCA considers' that a number of other publications forming part of the TCFD framework 'are relevant', including the TCFD Technical Supplement on the Use of Scenario Analysis, the TCFD Guidance on Risk Management Integration and Disclosure and the TCFD Guidance on Scenario Analysis for Non-Financial Companies and the TCFD Guidance on Metrics, Targets and Transition Plans[1]. The language here suggests that these do not have the same status as the Annex. These pieces of guidance are, however, still referred to specifically in the Listing Rule (when for instance the FRC Guidance associated with the UK Corporate Governance Code is not) so they are likely to be relevant to the quality of an organisation's response to the TCFD framework. See Figure 2 for how the levels of recommendation and guidance within the TCFD framework interact with the Listing Rules.

The TCFD framework also contains guidance that relates to particular sectors and industries, including financial services organisations. Companies should take account of the aspects of the guidance that are relevant to them alongside the general guidance that is the focus of this tool.



[1] Guidance only applicable for periods beginning on or after 1 January 2022.

The format of the tool

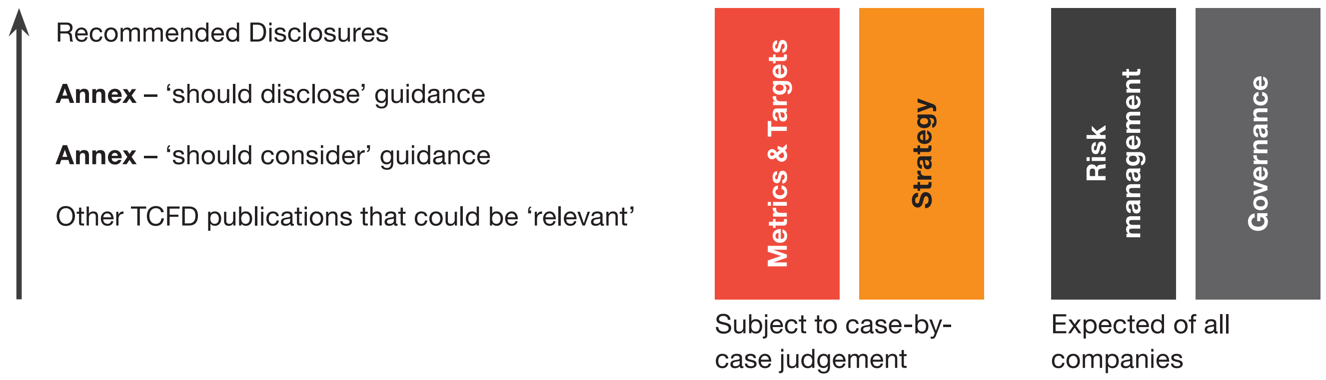
The tables below therefore set out the various elements of the overall TCFD framework, from the Recommendations and Recommended Disclosures through to the Annex and the reporting-related guidance in the other publications. Consistent with the comments above, all of the elements can be relevant to the quality of an organisation's TCFD reporting and should therefore be considered in the relevant circumstances, but the various columns reflect the hierarchy of levels as follows:

- **Recommended disclosures** – Reporting should include these, other than where the governance and risk management processes determine that they are not relevant.
- **Additional guidance on the recommended disclosures, based on the Annex** – The Annex states that these disclosures 'should' be provided, so they have a status similar to the Recommended Disclosures.
- **Other disclosures suggested in the Annex** – The Annex states that these disclosures 'should be considered', so they are subject to further judgement about when they will add to the quality of an organisation's disclosures.

Note that the content of some of the tables and lists included in the Annex have been included as Appendices in this tool.

- **Guidance from other TCFD publications** – The FCA states that it considers these to be relevant when deciding whether disclosures are consistent with the framework but without suggesting that they 'should' or 'should be considered'. Again, it will be a matter of judgement as to when they will be relevant to the quality of an organisation's reporting. Generally these other pieces of guidance focus on process and procedure rather than disclosure but in some cases (as with the Annex) content on reporting from the tables and lists in the guidance has been included in the Appendices to this tool.
- **Other points to consider** – PwC commentary on things to consider when pulling together, or reviewing, TCFD disclosures based on our experience of reviewing FTSE 350 disclosures and awareness of expectations of companies from key stakeholders such as regulators and investors.

Figure 2 How the levels of recommendation and guidance within the TCFD framework interact with the Listing Rules.



The role of statutory auditors

The TCFD disclosures are not directly covered by the statutory audit. The primary focus of that process is the extent of any impact of climate change on the audited financial statements (which the assessment process set out under the TCFD framework can of course help to identify).

Statutory auditors will, however, consider the TCFD disclosures as part of their duty to read the other information provided with the financial statements and are likely to report to those charged with governance any observations they have, following the framework set out above.

Providing information outside the annual financial report

Listing Rule LR 9.8.6R(8)(b) permits listed companies to include some or all of their TCFD disclosures in a document other than the annual financial report, although the TCFD itself encourages reporting to be in the annual financial report.

When it has made use of another document a listed company should set out:

- The recommendations and/or recommended disclosures for which it has included disclosures in that other document;
- A description of that document and where it can be found; and
- The reasons for including the relevant disclosures in that document and not in the annual financial report.

LR9.8.6R(8)(b)

Where a company is incorporated in the UK its judgements in this respect should also be guided by the Companies Act 2006. In particular, section 414C of the Companies Act establishes criteria for information that must be included in the strategic report section of the annual report and paragraph 5.1 of the FRC ‘Guidance on the strategic report’ confirms that ‘information is material if its omission or misrepresentation could reasonably be expected to influence the economic decisions shareholders take on the basis of the annual report as a whole’. If, therefore, climate-related information is material to shareholders it should be included in the annual report of a UK-incorporated company.

Governance – Recommendation: Disclose the company's governance around climate-related risks and opportunities.

Recommended Disclosures	Additional guidance on the recommended disclosures, based on the Annex	Other disclosures suggested in the Annex	Other points to consider	Assessment
a. Describe the board's oversight of climate-related risks and opportunities.		In describing the board's oversight of climate-related issues, Organisations should consider including a discussion of the following: • processes and frequency by which the board and/or board committees (e.g. audit, risk, or other committees) are informed about climate-related issues; • whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the Organisation's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures; and • how the board monitors and oversees progress against goals and targets for addressing climate-related issues.	• Is there appropriate expertise in relation to climate change on the board and/or available to it? • Where board committees are involved is their role clear? • Is there good communication between any relevant committees and between those committees and the board?	Do the disclosures fully reflect the role of the board in overseeing climate-related risks and opportunities? Yes ☐ No ☐ Partial ☐
b. Describe management's role in assessing and managing climate-related risks and opportunities.		In describing management's role related to the assessment and management of climate-related issues, Organisations should consider including the following information: • whether the Organisation has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues; • a description of the associated organisational structure(s); • processes by which management is informed about climate-related issues; and • how management (through specific positions and/or management committees) monitors climate-related issues.	• Is management's role in relation to climate-related risks and opportunities sufficiently distinguished from its role in wider risk management?	Do the disclosures fully reflect the role of management in assessing and managing climate-related issues? Yes ☐ No ☐ Partial ☐

Strategy – Recommendation: Disclose the actual and potential impacts of climate-related risks and opportunities on the company's businesses, strategy, and financial planning where such information is material.

Recommended Disclosures	Additional guidance on the recommended disclosures, based on the Annex	Other disclosures suggested in the Annex	Other points to consider	Assessment
a. Describe the climate-related risks and opportunities the Organisation has identified over the short, medium and long term.	Organisations should provide the following information: • A description of what they consider to be the relevant short-, medium-, and long term time horizons, taking into consideration the useful life of the Organisation's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms; • A description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the Organisation; and • A description of the process(es) used to determine which risks and opportunities could have a material financial impact on the Organisation. For examples of physical and transitional risks and opportunities, please see **Appendix 1.**	• Organisations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate in describing climate-related issues.	• Are other forward-looking disclosures in the annual report (including the viability statement) consistent with the information given on climate-related risks and opportunities?	Do the disclosures make clear the extent to which the impact of climate-related risk and opportunities is regarded as material? Yes ☐ No ☐ Partial ☐ Where appropriate do the disclosures set out the climate-related risks and opportunities in a clear way? Yes ☐ No ☐ Partial ☐

Recommended Disclosures	Additional guidance on the recommended disclosures, based on the Annex	Other disclosures suggested in the Annex	Other points to consider	Assessment
b. Describe the impact of climate-related risks and opportunities on the Organisation's businesses, strategy, and financial planning.	• Organisations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning. • Organisations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritised. • Organisations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time. • Organisations should describe the impact of climate-related issues on their financial performance (e.g. revenues, costs) and financial position (e.g. assets, liabilities). If climate-related scenarios were used to inform the Organisation's strategy and financial planning, such scenarios should be described. • Organisations that have made GHG emissions reduction commitments, or have agreed to meet investor expectations regarding GHG emissions reductions should describe their plans for transitioning to a low-carbon economy, which could include GHG emissions targets and specific activities intended to reduce GHG emissions in their operations and value chain or to otherwise support the transition.	Organisations should consider including the impact on their businesses, strategy, and financial planning in the following areas: • Products and services • Supply chain and/or value chain • Adaptation and mitigation activities • Investment in research and development • Operations (including types of operations and location of facilities) • Acquisitions or divestments • Access to capital	• Do the disclosures in the front half and in the financial statements present a consistent view of the impact of climate-related risks and opportunities?	Do the disclosures fully describe the impact of climate-related risks and opportunities on the Organisation's businesses, strategy, and financial planning? Yes ☐ No ☐ Partial ☐
c. Describe the resilience of the Organisation's strategy, taking into consideration different climate-related scenario, including a 2°C or lower scenario.	• Organisations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a low-carbon economy consistent with a 2°C or lower scenario and, where relevant to the Organisation, scenarios consistent with increased physical climate-related risks.	Organisations should consider discussing: • Where they believe their strategies may be affected by climate-related risks and opportunities e.g. emissions, technology mix over time, and product mix over time; • How their strategies might change to address such potential risks and opportunities; and • The potential impact of climate-related issues on financial performance (e.g. revenues, costs) and financial position (e.g. assets, liabilities).	• Are the judgements that have been made around the use of and (where appropriate) inputs to scenario testing made clear either in connection with strategy or with risk management? • Are other disclosures in the annual report that include scenario testing (including the viability statement) consistent with the information given on climate-related scenarios?	Do the disclosures properly reflect the Organisation's approach to climate-related scenario analysis? Yes ☐ No ☐ Partial ☐

Risk Management – Recommendation: Disclose how the company identifies, assesses, and manages climate-related risks.

Recommended Disclosures	Additional guidance on the recommended disclosures, based on the Annex	Other disclosures suggested in the Annex	Other points to consider	Assessment
a. Describe the Organisation's processes for identifying and assessing climate-related risks.	• Organisations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how Organisations determine the relative significance of climate-related risks in relation to other risks. • Organisations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g. limits on emissions) as well as other relevant factors considered.	Organisations should also consider disclosing the following: • Processes for assessing the potential size and scope of identified climate-related risks; and • Definitions of risk terminology used or references to existing risk classification frameworks used.	• Are the processes related to climate change sufficiently clearly distinguished from wider risk management?	Do the disclosures set out the risk management processes in a clear way? Yes ☐ No ☐ Partial ☐ Do the disclosures provided make it clear how the risk management processes form an appropriate basis for the Organisation's other climate-related disclosures and judgements? Yes ☐ No ☐ Partial ☐
b. Describe the Organisation's processes for managing climate-related risks.	• Organisations should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. • Organisations should describe their processes for prioritising climate-related risks, including how materiality determinations are made within their Organisations. • In describing their processes for managing climate-related risks, Organisations should address the risks in **Appendix 1**, as appropriate.			
c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the Organisation's overall risk management.	Organisations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.		• Is it clear how the processes for identifying, assessing and managing climate-related risks are integrated with wider risk management, even where the two are disclosed separately?	Do the disclosures make clear the extent to which climate-related risks are integrated with overall risk management? Yes ☐ No ☐ Partial ☐

Metrics and Targets – Recommendation: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures	Additional guidance on the recommended disclosures, based on the Annex	Other disclosures suggested in the Annex	Other points to consider	Assessment
a. Disclose the metrics used by the Organisation to assess climate related risks and opportunities in line with its strategy and risk management process.	• Organisations should provide the key metrics used to measure and manage climate-related risks and opportunities, as described in **Appendix 1**, as well as metrics consistent with the cross-industry, climate-related metric categories described in **Appendix 2**. • Where relevant, Organisations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a low-carbon economy. • Metrics should be provided for historical periods to allow for trend analysis.	• Organisations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable. • Where climate-related issues are material, Organisations should consider describing whether and how related performance metrics are incorporated into remuneration policies. • Where appropriate, Organisations should consider providing forward-looking metrics for the cross-industry, climate-related metric categories described in **Appendix 2**, consistent with their business or strategic planning time horizons. In addition, where not apparent, Organisations should provide a description of the methodologies used to calculate or estimate climate-related metrics including the scope of application, data sources, critical factors or parameters, assumptions, and limitations of the methodology.	• Are other disclosures in the annual report relating to performance indicators consistent with the information given on climate-related metrics and targets?	Do the disclosures make clear the extent to which information on metrics and targets used to assess and manage climate-related risks and opportunities is regarded as material? Yes ☐ No ☐ Partial ☐ Where appropriate are relevant metrics disclosed in a clear way? Yes ☐ No ☐ Partial ☐

Recommended Disclosures	Additional guidance on the recommended disclosures, based on the Annex	Other disclosures suggested in the Annex	Other points to consider	Assessment
b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	• Organisations should provide their Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, and, if appropriate, Scope 3 GHG emissions and the related risks. • GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across Organisations and jurisdictions. • GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. • In addition, where not apparent, Organisations should provide a description of the methodologies used to calculate or estimate the metrics.	All Organisations should consider disclosing Scope 3 GHG emissions. As appropriate, Organisations should consider providing related, generally accepted industry-specific GHG efficiency ratios.	• Is it clear how Scope 3 emissions have been dealt with in the disclosures and why? • Is the basis for emissions reporting under SECR consistent with the TCFD disclosures? If not, are any differences in scope (for instance based on exemptions from disclosure permitted for the purposes of SECR) explained?	Are Scope 1, 2 and 3 emissions appropriately disclosed? Yes ☐ No ☐ Partial ☐
c. Describe the targets used by the Organisation to manage climate-related risks and opportunities and performance against targets.	• Organisations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc. consistent with the cross-industry, climate-related metric categories in **Appendix 2**. • Organisations disclosing medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available. • Where not apparent, Organisations should provide a description of the methodologies used to calculate targets and measures.	In describing their targets, Organisations should consider including the following: • Whether the target is absolute or intensity based; • Time frames over which the target applies; • Base year from which progress is measured; and • Key performance indicators used to assess progress against targets.	• Are any targets that are disclosed clearly related to the Organisation's transition plan? • Is it clear how climate change is considered in the approach to executive pay?	Where appropriate are relevant targets disclosed in a clear way? Yes ☐ No ☐ Partial ☐

Appendix 1

Examples of Climate-Related Risks and Potential Financial Impacts – taken from the TCFD Annex [Table A1.1]

Type	Climate-related risks	Potential financial impacts
Transitional	**Policy and legal** • Increased pricing of GHG emissions. • Enhanced emissions-reporting obligations. • Mandates on and regulation of existing products and services. • Exposure to litigation.	• Increased operating costs (e.g. higher compliance costs, increased insurance premiums). • Write-offs, asset impairment, and early retirement of existing assets due to policy changes. • Increased costs and/or reduced demand for products and services resulting from fines and judgments.
	Technology • Substitution of existing products and services with lower emissions options. • Unsuccessful investment in new technologies. • Costs to transition to lower emissions technology.	• Write-offs and early retirement of existing assets. • Reduced demand for products and services. • Research and development (R&D) expenditures in new and alternative technologies. • Capital investments in technology development. • Costs to adopt/deploy new practices and processes.
	Market • Changing customer behaviour. • Uncertainty in market signals. • Increased cost of raw materials.	• Reduced demand for goods and services due to shift in consumer preferences. • Increased production costs due to changing input prices (e.g. energy, water) and output requirements (e.g. waste treatment). • Abrupt and unexpected shifts in energy costs. • Change in revenue mix and sources, resulting in decreased revenues. • Re-pricing of assets (e.g. fossil fuel reserves, land valuations, securities valuations).
	Reputation • Shifts in consumer preferences. • Stigmatisation of sector. • Increased stakeholder concern or negative stakeholder feedback.	• Reduced revenue from decreased demand for goods/services. • Reduced revenue from decreased production capacity (e.g. delayed planning approvals, supply chain interruptions). • Reduced revenue from negative impacts on workforce management and planning (e.g. employee attraction and retention). • Reduction in capital availability.
Physical	**Acute** – Increased severity of extreme weather events such as cyclones and floods.	• Reduced revenue from decreased production capacity (e.g. transport difficulties, supply chain interruptions).
	Chronic – Changes in precipitation patterns and extreme variability in weather patterns, rising mean temperatures and rising sea levels.	• Reduced revenue from decreased production capacity (e.g. transport difficulties, supply chain interruptions). • Write-offs and early retirement of existing assets (e.g. damage to property and assets in 'high-risk' locations). • Increased operating costs (e.g. inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants). • Increased capital costs (e.g. damage to facilities). • Reduced revenues from lower sales/output. • Increased insurance premiums and potential for reduced availability of insurance on assets in 'high-risk' locations.

Examples of Climate-Related Opportunities and Potential Financial Impacts [Table A1.2]

Type	Climate-related opportunities	Potential financial impacts
Resource efficiency	• Use of more efficient modes of transport. • Use of more efficient production and distribution processes. • Use of recycling. • Move to more efficient buildings. • Reduced water usage and consumption.	• Reduced operating costs (e.g., through efficiency gains and cost reductions). • Increased production capacity, resulting in increased revenues. • Increased value of fixed assets (e.g., highly rated energy efficient buildings). • Benefits to workforce management and planning (e.g., improved health and safety, employee satisfaction) resulting in lower costs.
Energy source	• Use of lower-emission sources of energy. • Use of supportive policy incentives. • Use of new technologies. • Participation in carbon market. • Shift toward decentralised energy generation.	• Reduced operational costs (e.g., through use of lowest cost abatement). • Reduced exposure to future fossil fuel price increases. • Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon. • Returns on investment in low-emission technology. • Increased capital availability (e.g., as more investors favour lower-emissions producers). • Reputational benefits resulting in increased demand for goods/services.
Products and services	• Development and/or expansion of low emission goods and services. • Development of climate adaptation and insurance risk solutions. • Development of new products or services through R&D and innovation. • Ability to diversify business activities. • Shift in consumer preferences.	• Increased revenue through demand for lower emissions products and services. • Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services). • Better competitive position to reflect shifting consumer preferences, resulting in increased revenues.
Markets	• Access to new markets. • Use of public-sector incentives. • Access to new assets and locations needing insurance coverage.	• Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks). • Increased diversification of financial assets (e.g., green bonds and infrastructure).
Resilience	• Participation in renewable energy programs and adoption of energy efficiency measures. • Resource substitutes/diversification.	• Increased market valuation through resilience planning (e.g., infrastructure, land, buildings). • Increased reliability of supply chain and ability to operate under various conditions. • Increased revenue through new products and services related to ensuring resilience.

Appendix 2

Examples of metric categories, unit of measures and metrics taken directly from the Metrics, Targets and Transition Plans 2021 guidance from the TCFD [Table C1].

Target/metric category	Example unit of measure	Example metrics	Example targets
GHG emissions Absolute Scope 1, Scope 2, and Scope 3; emissions intensity.	MT of CO2e.	• Absolute Scope 1, Scope 2, and Scope 3 GHG emissions. • Financed emissions by asset class. • Weighted average carbon intensity. • GHG emissions per MWh of electricity produced. • Gross global Scope 1 GHG emissions covered under emissions-limiting regulations.	• 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.
Transition risks Amount and extent of assets or business activities vulnerable to transition risks.	Amount or percentage.	• Volume of real estate collaterals highly exposed to transition risk. • Concentration of credit exposure to carbon-related assets. • Percent of revenue from coal mining. • Percent of revenue passenger kilometers not covered by Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).	• Reduce percentage of asset value exposed to transition risks by 30% by 2030, relative to a 2019 baseline.
Physical risks Amount and extent of assets or business activities vulnerable to physical risks.	Amount or percentage.	• 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.	• 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 Proportion of revenue, assets, or other business activities aligned with climate-related opportunities.	Amount or percentage.	• Net premiums written related to energy efficiency and low-carbon technology. • Number of (1) zero-emissions vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold. • Revenues from products or services that support the transition to a low-carbon economy. • Proportion of homes delivered certified to a third party, multi-attribute green building standard.	• Increase net installed renewable capacity so that it comprises 85% of total capacity by 2035.

Target/metric category	Example unit of measure	Example metrics	Example targets
Capital deployment Amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities.	Reporting currency.	• Percentage of annual revenue invested in R&D of low-carbon products/services. • Investment in climate adaptation measures (e.g. soil health, irrigation, technology).	• 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 carbon prices Price on each ton of GHG emissions used internally by an organisation.	Price in reporting currency per MT CO2e.	• Internal carbon price. • Shadow carbon price, by geography.	• Increase internal carbon price to $150 by 2030 to reflect potential changes in policy.
Remuneration Proportion of executive management remuneration linked to climate considerations.	Percentage, weighting, description, or amount in reporting currency.	• Portion of employee's annual discretionary bonus linked to investments in climate-related products. • Weighting of climate goals on long-term incentive scorecards for Executive Directors. • Weighting of performance against operational emissions' targets for remuneration scorecard.	• Increase amount of executive management remuneration impacted by climate considerations to 10% by 2025.

Transition plan considerations – extract from the Metrics, Targets and Transition Plans 2021 guidance from the TCFD [Table E1]

TCFD recommended disclosure	Elements to consider
Governance	• **Approval:** The board or appropriate committee of the board approves the transition plan and climate-related targets. • **Oversight:** The board or appropriate committee of the board oversees execution of the transition plan. • **Accountability:** Senior management has responsibility for execution of the transition plan, and the responsible parties have adequate authority and access to resources to ensure effective execution. • **Incentives:** Remuneration and other incentives are aligned with the organisation's climate goals, as described in the transition plan. • **Reporting:** The board or appropriate committee of the board and senior management receive regular status reports. • **Review:** The organisation periodically reviews and updates its plans, activities, metrics, and targets. • **Transparency:** The organisation reports on its transition planning goals and performance to external stakeholders, including financial aspects, performance against targets, and impacts on the organisation's business. • **Assurance:** The organisation's reporting is subject to independent review or third-party assurance.
Strategy	• **Alignment with strategy:** The organisation aligns its transition plan with its overall strategy; and the transition plan describes the following: – **Activities** – how the organisation will achieve targets in defined time horizons. – **Temperature goal** – alignment to a global temperature goal (e.g. 1.5°C), relevant regulatory mandates, and/or sectoral decarbonisation strategies. • **Plan assumptions:** The transition plan describes the organisation's assumptions, particularly around transition pathway uncertainties and implementation challenges. The assumptions should be consistent with those used by the organisation in its financial accounts, capital expenditures, and investment decisions. • **Prioritised opportunities:** The transition plan describes how the organisation intends to maximise its prioritised climate opportunities as the world transitions to a low-carbon economy. • **Action plans:** The transition plan outlines short-term and medium-term tactical and operational plans and describes how related actions address material sources of GHG emissions. The plan includes current and planned initiatives to reduce climate-related risks and increase climate-related opportunities. • **Financial plans:** The transition plan describes the supporting financial plans, budgets, and related financial targets (e.g. amount of capital and other expenditures supporting decarbonisation strategy). • **Scenario analysis:** The organisation tests achievability of the transition plan and associated targets using multiple climate-related scenarios.
Risk management	• **Description of risks:** The transition plan describes the risks that the organisation faces from a transition to a low-carbon economy. • **Plan challenges and uncertainties:** The transition plan describes the assumptions, uncertainties, and challenges the organisation faces in successfully executing its transition plan.
Metrics and targets	• **Metrics:** The transition plan describes metrics the organisation will monitor to track progress against plans and targets, including related operational and financial performance metrics, metrics aligned with the cross-industry, climate-related metric categories, and industry-specific or organisation specific metrics. • **Targets:** The transition plan includes quantitative and qualitative targets based on sound climate science. For GHG emissions targets, the plan indicates the type and scope of GHG emissions included as well as the extent of GHG emissions across territories, timeframes, or activities. • **Methodology:** Metrics and targets in a transition plan are based on widely recognised and transparent methodologies. • **Dates:** The transition plan specifies the dates when targets are intended to be reached and includes targets during the plan's time horizon (e.g. a timetable for the plan's roadmap). • **GHG emissions reductions:** The transition plan addresses the relative contribution of reductions, removals, and offsets for achieving GHG emissions targets.

Appendix 3

Extract from Guidance on Scenario Analysis for Non-Financial Companies

To demonstrate a company's strategic resilience to climate-related risks and its ability to capture climate-related opportunities, a company should disclose publicly, at a minimum, some basic information regarding scenarios, how they impacted the company's strategic planning, and related financial implications. Among the information a company might disclose around the climate-related aspects of its strategy, it might discuss:

Disclosure around Strategy

Companies should consider disclosing:

- The company's strategy with regard to climate-related risks and opportunities and related targets (e.g. key performance indicators, key risk indicators), especially with regard to emissions, technology mix over time, and product mix over time.
- What effects have climate-related scenarios used by the company had on the company's strategy, including financial implications?
- What strategic alternatives/options were considered and chosen based on its scenario analysis?
- What general strategic positioning and specific actions are planned as a result of each option?
- What are the financial implications of those choices, including use of internal carbon prices?
- What changes, if any, the company may be considering to its business model in response to its scenario analysis.
- How resilient does management believe the company's strategy is under various future climate states?
- For instance, how will the company's strategy:
  - Enable the company to survive and flourish in any of the multiple, plausible future environments?
  - Position the company to develop its business(es) in the right areas, considering its business model and the range of climate-related outcomes it may encounter?
  - Overall, is the company well prepared to face the uncertainties of the future as portrayed in the complete set of scenarios?
- Where are the uncertainties regarding the company's strategy?
- How the company is monitoring its strategy for emerging climate-related issues (e.g. signposts, revisiting strategy, contingency)?
- How flexible/adaptable does management consider its chosen strategy in light of the full range of relevant climate-related risks, opportunities, and uncertainties considered in its scenario analysis?

Disclosure around Scenarios

Companies should consider disclosing:

- a brief description of each scenario narrative, time horizon, and endpoints used by the company with a discussion of why the company believes the range of scenarios used covers its plausible risks and uncertainties;
- whether a company's scenarios were developed internally or externally and the methodology used;
- the key forces and drivers taken into consideration in each scenario and why they are important/relevant to the company;
- key inputs and constraints of the scenarios;
- a description of the various pathways in each scenario and the key assumptions underlying pathway development over time in response to the forces and drivers; and
- implications of scenarios for the company's strategy, if at all (e.g. how the scenario translates to changes in the company's markets, such as demand shifts), and operational changes that may be required in that scenario (e.g. changes to energy sources, technology deployment, feedstocks or raw materials, recycling, waste handling).