This section provides background to the Strategy pillar and outlines the disclosure requirements of TCFD. It provides guidance for fund managers on the implementation of the Strategy pillar, including the practical application of climate risk and opportunity processes. It also includes information on transition plans. It offers guidance on developing and implementing a climate change action plan for fund managers starting out on their climate change journey, and for those more advanced. A background to climate scenarios and how they are used is included along with an explanation of scenario analysis. Also it outlines a step-by-step process to help fund managers conduct scenario analysis.

The guidance notes, tools and templates relevant to this section include:

- **Climate change memorandum for investment committee**
- **Climate change transition plan**

Key Messages

- Climate risks and opportunities are likely to have both positive and negative impacts on the value of a fund over time.
- Fund managers must evaluate long-term trends and the impact of material climate related risks and opportunities on their investment strategy, existing portfolio, and for new transactions.
- Climate change-related scenario analysis is an important component of the Strategy pillar, for strategic guidance, to evaluate potential future climate change risks and opportunities, and to inform how resilient a fund manager's strategy is to these risks and opportunities.
- Fund managers that have made long-term GHG emissions reduction commitments and are aligning to a below 2˚C world should describe their plans for transitioning to a low-carbon economy in a formal transition plan.

1 Background and TCFD requirements

The Strategy pillar of the TCFD guidance recommends organisations:

1. Identify a range of climate risks and opportunities over the short, medium and long term.

2. Describe the potential impacts of those risks and opportunities on the strategy.

3. Assess the organisation's resilience to them, taking into consideration different climate-related scenarios.

4. Integrate climate change risks and opportunities into the business strategy, including incorporating them into financial planning and analysis.

Climate change-related scenario analysis is an important component of the Strategy pillar, used for strategic guidance, to evaluate potential future climate change risks and opportunities, and inform how resilient a firm's strategy is to these risks and opportunities.

The TCFD guidance on disclosures relating to the Strategy pillar is as follows [19]:

View table

2 Guidance actions

For fund managers, there is some overlap between the TCFD's Strategy and Risk Management pillars. The Strategy pillar focuses on what processes are used, and calls for reporting on the impacts of climate risk on investment strategies and products. The Risk Management pillar focuses on how these processes are applied (namely the methodologies used).

The following broad steps can help integrate climate change into the strategy of a fund manager:

1. The **first step** involves determining the most important climate change risks and opportunities over the short, medium and long-term, and developing an understanding of the potential impacts of those risks and opportunities on the strategy. For more

mature fund managers, scenario analysis should help in defining the resilience of the strategy. Given the importance of scenario analysis, a separate section on what scenario analysis is and the steps needed to complete it, is detailed in TCFD Structure and Core Elements.

2. Once an understanding of the importance of climate change – and how it would impact the strategy – has been determined, the **second step** is to develop a set of strategic actions to integrate climate change into the fund manager's processes.

These steps are outlined in more detail below.

2.1 Step 1: Identify climate risks and opportunities

2.1.1 Introduction

One of the most important takeaways from the TCFD recommendations for fund managers is the need to start the journey of identifying the key risks and opportunities over different time frames, and to have a well-articulated process with a clear link to decision-making at the board and/or committee level.

Climate risks and opportunities are likely to have both positive and negative impacts on the value of a fund over time. Fund managers should ensure they have evaluated long-term trends and the impact of material climate-related risks and opportunities on their investment strategy. This evaluation should consider a range of different scenarios, including the transition to a low-carbon economy. Examples of how some asset owners are linking climate-related risks and opportunities to investment strategy are below.

Table 6: Examples of integrating climate change into business strategy

Organisation	Example
Ninety One	Product evolution is one of the three pillars around which Ninety One integrates climate change into its strategy. Ninety One is developing several products linked to sustainability and the energy transition. Its Global Environment Strategy is focused on investment opportunities linked to decarbonisation. In its Global Sustainable Equity Strategy, net zero alignment forms a part of its bottom-up assessment when selecting portfolio companies.

Organisation	Example
Invesco	Invesco Real Estate has performed scenario analysis on its investments, assessing the level of physical risks associated with a higher than 3°C average temperature rise. This has allowed it to develop a threshold evaluation and risk mitigation strategies for its portfolio, through which exposed assets have more detailed assessments performed. Invesco has also created bespoke, low-carbon solutions where requested by investors. This fund achieved a decarbonisation portfolio with a carbon intensity 30 per cent below benchmark.
Westpac Group	Westpac has incorporated climate change into its strategy through its climate action plan. With a focus on supporting customers to transition, in 2021 Westpac reported $1.9 billion in climate-related lending, started dedicated ESG training throughout its organisations, and reported being the largest lender to greenfield renewable energy projects in Australia for the previous five years.

- 2.1.2 Key Considerations

  Fund managers should consider the following practical applications of climate risk and opportunity processes:

  1. Organisational levels and processes
  2. TCFD framework and terminology
  3. Timeframes
  4. Level of maturity
  5. Iterative process
  6. Guides and tools

  Each of these is outlined below.

  1. Organisational levels and processes Fund managers should focus on material climate-related risks and opportunities at three levels (see section 2.3 of Risk Management for more information on materiality):

- **The investment mandate/strategy** Fund managers should understand whether their investment mandate or fund strategies are exposed to material climate risks or can leverage potential opportunities and if so, over what timeframes.*For example, sector and geographical analysis can be used as part of this process to identify particular industries projected to be materially impacted by climate change, such as the transition away from fossil fuels and the uptake of electric vehicles. This helps to influence long-term strategy in targeting or avoiding certain sectors (for example, new green industries benefiting from government subsidies and growing consumer sentiment versus fossil-fuel based industries).*

- **Investment and transaction processes** Fund managers should determine whether there are material climate risks or opportunities that are a red flag, or require specific conditions to be included in a new transaction. Fund managers also need to evaluate how new transactions align to the fund's climate change strategy.*Example 1: The outcome of a climate risk assessment at due diligence for an agricultural company may determine that a more detailed assessment and identification of alternative water supplies is needed to address rising temperatures and the existing and growing risk of drought.Example 2: A fund manager may have set a net zero goal as part of its climate strategy. During the due diligence of a new investee, the fund manager will evaluate what the GHG footprint of the new investee is and how this will change the overall fund GHG footprint. Further, the fund manager will determine whether there is potential for GHG reduction and what management's commitment is to aligning to the fund manager's net zero goal.*

- **The current portfolio** Fund managers should determine whether there are any material climate risks or opportunities in the current portfolio that may create or erode value on exit and require intervention. Consideration should also be given to how fund managers address and communicate potential climate-related risks and opportunities at exit.*For example, an assessment would consider which portfolio companies are more exposed and less prepared to physical climate impacts, and which portfolio companies have a large carbon footprint and require support to reduce it.*

2. TCFD framework and terminology

- Climate risks and opportunities should be categorised into the TCFD framework

terminology of physical and transition risk and the five categories of opportunities. Further detail and examples of these are outlined in Section 3 of TCFD Structure and Core Elements Other examples of climate-related risks and opportunities and their potential financial impacts can be found in Tables A1.1 and A1.2 in the TCFD implementation guidance, (pages 75-76).

3. Timeframes

- Fund managers should define what they consider to be the relevant short, medium, and long-term time horizons and describe the risks and opportunities over those timelines. The time horizon of private equity investments can be shorter than the time horizon of certain climate change impacts, which may only materialise beyond the holding period. However, fund managers should take a longer-term view when considering climate risks as they could impact the valuation of the business at time of exit. While every fund manager can have a different approach to this, a short-term view would consider the holding period, whereas a medium-term view should typically extend to beyond the holding period. Given the increased expectation to set net zero targets by 2050 the long-term timeframe should consider the period up to 2050.

4. Level of maturity

- The extent to which climate risks and opportunities are identified and assessed is dependent on the maturity level of the fund manager and how material the climate-related risks and opportunities are. Examples of the factors that influence a fund manager's maturity are outlined in TCFD Maturity Matrix Tool.

5. Iterative process

- Determining how climate change risks and opportunities may impact a fund manager's portfolio companies, investment strategy, and long-term financial planning, is an ongoing process. Fund managers will continue to perform assessments to refine and update their registers of climate risks and opportunities over time. This may include, for example, the risk assessment results becoming more quantitative as the fund manager evolves in maturity.

6. Guides and tools

- A range of industry guides and tools for investors are available to assist fund managers in the process of climate risk identification and assessment. These include publicly and commercially available transition and physical risk tools. See Section 7 on Risk Management and the **List of physical and transition risk assessment tools** for additional detail.

Once the fund manager has developed an understanding of the material physical and transition risks, it should undertake a process to understand their impact on current portfolio companies, future investments and the investment strategy. The TCFD recommend scenario analysis as one of the approaches to determine how identified climate change risks and opportunities would manifest over different scenarios. See TCFD Structure and Core Elements for further detail.

- 2.2 Step 2: Develop strategic actions

Developing a climate change strategy should involve the fund manager integrating climate change-related considerations into its existing structures and processes. A set of clear actions should be developed over a defined timeline that are aligned to its policy commitments and strategy, and which provide structure and direction for implementation. Both the extent to which climate change is considered a material issue and the maturity of the fund manager will play an important role in the actions to be developed and implemented. The fund manager should use the maturity matrix to determine their current position on the maturity curve and to help determine their level of ambition. This will help guide the level of action required.

Table 8 provides examples of actions for fund managers starting out on their climate change journey, as well as potential actions for more mature fund managers. These actions should be considered in conjunction with those outlined in Table 5 in the Governance section. Links to other parts of the Toolkit and respective templates to support these actions are in Table 7.

Transition plans

One of the important components of the Strategy pillar of TCFD is a transition plan. Fund managers that have made long-term GHG emissions reduction commitments or

operate in jurisdictions that have made such commitments and are aligning to a below 2˚C world should describe their plans for transitioning to a low-carbon economy. As the fund's maturity level increases, this should include GHG emissions targets and specific activities intended to reduce GHG emissions in their operations and value chain. A transition plan that provides detail on these actions is therefore an important aspect of a fund manager's overall business strategy.

Key characteristics of an effective transition plan [30]:

- Aligned with the broader investment strategy and strategy for addressing climate change.
- Anchored in quantitative metrics and designed around achieving specific climate change-related targets, with performance regularly tracked against these targets.
- Consistent with broader economy or sector-wide science-based pathways to a low-carbon economy.
- Subject to effective climate-related governance processes.
- Actionable, specific initiatives for executing the plan, linked to milestones and timelines.
- Containing sufficient detail to show its credibility, especially current limitations and uncertainties.
- Periodically reviewed and updated.
- Reported to stakeholders, including progress.

For more detailed guidance, please see the **Climate change transition plan.**

Table 7: Developing a strategy for identifying, managing and reporting climate-related risks and opportunities

Table 7

3 Climate change scenarios and scenario analysis

A core aim of the TCFD is for organisations to improve their understanding of future climate change-related risks and opportunities, and to develop response strategies. The use of scenario analysis is one of the TCFD's key recommendations to achieve this.

This section provides background of how climate scenarios are used, briefly explains the theoretical basis of scenario analysis, and then outlines a step-by-step process for fund managers to conduct scenario analysis.

Internal uses

- To test the resilience of the investment strategy to different possible futures.
- To understand how a fund manager could align itself to a certain goal, such as to a 1.5 °C pathway, to inform business decisions.
- To conduct sensitivity analysis to changing conditions over time.
- To understand the business case for strategic and investment decisions, including opportunities for products and services in a low-carbon and climate-resilient economy.
- To improve understanding of future risks and opportunities and support integration of climate risks into existing risk management frameworks.
- To engage meaningfully with portfolio companies to improve action on climate change.

External uses

- To meet investor needs and conversations on strategy and portfolio resilience.
- To enable engagement with, and communication to, stakeholders on how the fund and individual portfolio companies can evolve over time.

- To meet investor and other stakeholder TCFD disclosure requirements.
- To meet regulatory requirements in jurisdictions where TCFD disclosure is becoming mandatory. (Adapted from Demystifying Climate Transition Scenarios [31])

- 3.2 What is a scenario and what are climate scenarios?

  This sub-section explains the interrelationship between scenarios and climate scenarios, and introduces some of the most important concepts of climate scenarios. It has been adapted from Demystifying Climate Scenarios [31], How 'Shared Socioeconomic Pathways' explore future Climate Change [32], and Climate Change 2021: The Physical Science Basis [33].

  Scenarios are descriptions of hypothetical, plausible futures that help companies to answer the question: *"What would be the potential implications for our strategy if the future described in a scenario came to pass?"*

  Scenarios are typically described in narrative form, and although scenario analysis does not predict the future, it supports strategic decision making by illuminating the drivers of change. Understanding scenarios can therefore help managers to take greater control of their situation.

  Climate scenarios are projections of future GHG emissions used to assess future vulnerability to climate change. Different scenarios demonstrate a range of pathways and possible emission trajectories over the remainder of the century, and the impact these could have on global temperature increases compared to pre-industrial levels [34]. Additionally, the global response to climate change, such as the level of cooperation and technology sharing, financial support, and policy responses, can be used to inform the global rate of decarbonisation, which will impact how physical and transition risks manifest.

  The range of possible climate scenarios that could be realised is infinite, and the timing and magnitude of climate impacts is uncertain [35]. However, guidance from several climate bodies gives structure to scenario selection [35]. Most commonly, the process for scenario development uses guidance from the IPCC.

The IPCC is considered one of the primary sources of climate change models and inputs for scenario analysis. Its Fifth Assessment Report (AR5) described the Representative Concentration Pathways (RCP) and in the Sixth Assessment Report (AR6), the IPCC integrated the Shared Socioeconomic Pathways (SSP) climate scenarios [36] (see Figure 11). RCPs and SSPs are critical inputs into climate models, outlining different potential GHG emission pathways and macro socio-economic assumptions respectively:

- SSPs explore different pathways of how society, demographics and the economy could change over the next century. Pathways include 'SSP1: Sustainability' where the world transitions to a more inclusive, sustainable future, whereas 'SSP3: Regional rivalry' is dominated by nationalism and a focus on domestic issues. These pathways are inputs into climate models to explore how societal choices impact emissions pathways.

- RCPs are GHG emissions pathways that describe different futures based on the volume of GHGs emitted. Each RCP is aligned with a specific temperature outcome. For example, RCP2.6 is considered consistent with a temperature rise of below 2°C.

RCPs and SSPs should be combined in climate scenario models, to understand how different temperature outcomes and socioeconomic futures could occur under certain conditions.

Figure 11: SSP scenario temperature pathways [19]

View Figure 11

- 3.3 How can scenario analysis be applied for fund managers?

Although the impacts from climate change are being felt already, the most significant effects are only likely to emerge over the medium to long-term and their precise timing and magnitude remains uncertain. This uncertainty presents a challenge for fund managers. Therefore, scenario analysis is a strategic planning tool to help a fund manager better understand these challenges.

Scenario analysis allows fund managers to identify and estimate potential climate-

related risks and opportunities under hypothetical, plausible futures. It also helps influence responses as different climate scenarios unfold. Examples include assessing the risk of investment strategies of different products and capital allocation to specific sectors. Scenario analysis can also be used across the investment cycle to gain greater visibility on climate risks during due diligence, hold periods, in exit models, and for long-term alignment at the corporate, fund, and portfolio company level [35].

Scenario analysis typically considers both transition and physical risk in scenarios:

Transition-focused scenarios look at the reputational, technology, market, and policy and legal changes required to reach a certain pathway, and the associated risks and opportunities. These scenarios can add to analysis of the impacts which may arise from a transition to a low-carbon economy. There are various reference scenarios available to perform these evaluations, although they usually include both physical and transition aspects (such as the SSP scenarios).

Physical-risk scenarios are focused on the physical impacts due to climate change (acute and chronic) such as extreme weather events and increasing average temperatures over time. Physical impacts are typically evaluated by making use of different RCP reference scenarios, as discussed above.

In general, transition risks tend to increase the more stringent the emissions or temperature target. Conversely, physical risks tend to increase or tend to be increased with higher emissions and temperature outcomes, as outlined below.

Figure 12: The relationship between temperature increase and climate change-related risks

View Figure 12

This is the reason for choosing a range of scenario outcomes at both low and high temperatures and emissions.

Performing climate change scenario analysis does not require developing bespoke scenarios. A pragmatic solution for those new to climate change scenario analysis is to use scenarios developed by third parties such as the Network for Greening the Financial System (NGFS). The NGFS scenario portal provides six scenarios at different physical and transition risk levels and outputs can be recorded in online datasets. Figure 13 shows the NGFS scenarios which are expanded on in the text box below.

Figure 13: NGFS reference scenarios

View Figure 13

3.4 Scenario Analysis process

This section shows the steps (summarised in Figure 14) recommended for conducting scenario analysis, with additional detail on each step. Users of this guidance should also consult the TCFD website which has further guidance on performing scenario analysis, including online courses.

It is important to note that several approaches to scenario analysis can be followed. No single approach will fit all fund managers. The depth of scenario analysis will depend on the maturity of the fund manager and the regulation it is subject to. For those starting out on their climate journey, the initial analysis should be qualitative, but increasing levels of quantitative analysis should also be incorporated as maturity develops.

Fund managers should conduct scenario analysis every two to three years, aiming to increase the level of maturity of the analysis performed over time.

Figure 14: Scenario analysis process summary

View Figure 14

- Step 1: Get buy-in
  It is important that executive sponsorship from a board-level individual or equivalent is obtained before initiating the scenario analysis process. The results of the exercise should be used to influence business and investment strategy, and capital decisions, emphasising the need to have appropriate governance structures in place.

  The executive sponsor is the champion for the scenario analysis process. They not only promote the process but also address any roadblocks, overcome an resistance within the organisation and encourage constructive engagement in the process.

- Step 2: Establish the team

Establishing a multi-disciplinary team with representation across the organisation is an important step when conducting scenario analysis. Examples of team members to include are:

- E&S/ESG
- Investment teams
- Risk
- Marketing
- Finance
- Portfolio company representation

Team members should possess multi-disciplinary expertise across the fund manager's value chain, portfolio companies, and functions, and understand different aspects of its business model, operations, organisational structure, mission, and strategy. Team members should understand scenarios, their purpose, and characteristics. They should be able to apply historical, political, economic, social, and technological trends to scenario development. Finally, the team should be able to draw upon specialists within the organisation or from the outside when necessary, and have a creative, imaginative, open-minded, and forward-looking mindset [37].

- Step 3: Determine focal question / problem statement

Identifying a focal area or issue, such as a decision or question critical to the future of the fund manager, is an important step. Scenario analysis needs clear and focused questioning on the strategy decisions and actions to which the scenario analysis is meant to contribute [37]. Determining the focal question and problem statement is also a vital aspect in defining the boundaries of the scenario analysis. This includes whether scenario analysis should be performed at the portfolio company or fund level, or both. For instance, a fund manager might start with broad questions such as:

"How might our identified climate-related risks and opportunities plausibly affect our investment strategy and/or current portfolio, and over what time horizon?" [38]

As more information becomes available – after the driver and risk assessment processes have been completed in the next steps – these broad questions can be further refined to focus on the relevant decisions and uncertainties around the climate-related risks and opportunity of most concern.

The following supplemental questions may help [37]:

- *What potential developments about climate-related risk and opportunities related to our organisation need to be probed? This may include developments such as new technologies, new global agreements, implementation of new legislation, and more.*
- *What variables should be considered to assist decision-making around strategy options? These may include the observed change in climate and climate-related events, the level of investment in mitigation, and more.*
- *What climate-related forces and developments have the greatest ability to shape our future performance? What is their likely timing and potential impact? These may include a push from society to invest in mitigation changing investment spending, regulatory change requiring enhanced reporting on climate performance, and more.*

- Step 4: Assess context, identify drivers and material risks

In this step, fund managers should seek to understand the climate context for the fund and its portfolio companies. A driver analysis is performed to understand the main climate change-related drivers (physical and transition) impacting the fund manager and the sectors in which it invests. The purpose of this qualitative analysis is to determine which drivers should form the basis of the scenario analysis.

Several key drivers have been identified as relevant to climate change, and aligned to the TCFD risk classification. These are broadly categorised into reputation, technology, market, policy & legal, and physical, as shown in Figure 15 [39]. Not all companies will be equally affected by each driver, and an important component of scenario analysis is to determine which drivers to focus on.

Figure 15: Climate change drivers

View Figure 15

The results of the driver analysis should identify a set of material climate change-related risks (and opportunities). The TCFD recommends organisations determine materiality for climate-related issues in a manner consistent with how they determine the materiality of other risks. For additional detail on materiality, see Section 7.2.3.

While the TCFD is not prescriptive, scenario analysis should ideally be performed at the portfolio company, fund level, and fund manager level [9]. However, pragmatic initial steps can be taken to first assess the materiality of climate-related risks and opportunities, and this may be appropriate to identify different portfolio companies and funds for which different levels of analysis may be required [9]. For example, with a fund heavily weighted towards investments more likely to be impacted by climate change (such as energy or mining), the potential impacts over different scenarios is likely to be greater, and therefore more analysis may be warranted.

Specific guidance is provided by the TCFD Implementation Considerations for Private Equity [9]:

- Fund managers to first perform scenario analysis at the fund level (which can be aggregated up to the portfolio level as required).
- Analysis of a fund can initially be based on a sectoral and geographical approach. This may be easier than modelling individual portfolio companies.
- Where a fund's climate change exposure is particularly driven by a small number of portfolio companies, fund managers may consider performing a deep dive at a specific portfolio company level. This could identify any nuances or adaptation plans that could influence the fund which would not otherwise be captured through sector modelling only.

For example [9]:

- *A fund has 30 portfolio companies, with a large weighting to the Oil & Gas industry.*

- *Sectoral analysis is conducted for the Oil & Gas sector, and the potential impact on the fund is calculated.*
- *Of the Oil & Gas portfolio companies, a large proportion of the fund's value is attributable to a single entity. Further analysis is conducted on the entity, taking into account specific exposures and adaptation plans. If the single entity is projected to perform as would the average sector participant, no change to the sectoral analysis would result from the previous step. Where the entity is expected to perform differently to the average, it is factored into the potential impact on the fund.*

- Step 5: Develop and test scenarios

Fund managers should then develop scenarios for use in the scenario analysis process. TCFD guidance does not prescribe the number of scenarios a firm should consider, and fund managers can decide which scenarios to use. However, fund managers performing scenario analysis for the first time should use two to three distinct scenarios, and it is a requirement that at least one scenario be a Paris-aligned/below 2°C scenario. We also recommend that a high physical risks scenario (such as a scenario with greater physical change) be included in the analysis, such as one based on the NGFS Nationally Determined Contributions (NDCs) or Current Policies scenarios.

As mentioned, the NGFS is a good starting point for fund managers. The NGFS Scenario Explorer, hosted by the International Institute for Applied Systems Analysis (IIASA), is an open-source web-based interface for transition scenarios, providing visualisations and displays of timeseries data. Users can select regions, industries and scenarios to test their own hypotheses, and dive deeper into the technical side of scenario analysis. The Climate Impact Explorer hosted by Climate Analytics, is another open-source tool providing intuitive visualisations and displaying physical scenario time series data. It is built on NGFS scenarios, but also includes scenarios from Climate Action Tracker and the RCPs used by the IPCC. It shows how the severity of climate change impacts will increase over time in continents, countries and provinces at different levels of warming, starting with 1.5°C, the limit in the Paris Agreement. It also gives users access to the underlying data.

Case study example

Below is an example input from a physical risk scenario analysis exercise. In this example, the organisation identified three manufacturing sites that were the greatest contributors to its revenue and which had historically been impacted by weather events. Two scenarios were considered for the physical risk exercise: a 'delayed transition' scenario aligned to SSP4.5, and a 'high physical risk' scenario, aligned to SSP 8.5. The scenarios were evaluated up to 2050 and aligned to the predicted lifespan of the assets. A scenario linked to achieving the Paris goals (i.e., low physical risk) was not included as it was assumed the physical impacts would not be significantly worse than current impacts. For this example, the organisation used publicly-available tools including the Climate Change Knowledge Portal to generate the results and develop an understanding of future physical impacts.

Figure 16: Example outcomes of climate change scenario analysis for physical impacts

View Figure 16

Following the development of the scenarios and scenario narratives, the quality of the scenarios should be tested using the criteria outlined in Table 8.

Table 8: Criteria for assessing scenario quality [39]

Criteria	Guidance
Time horizon	The scenario should have a well-defined time horizon, sufficiently far in the future for the scenario analysis process to provide value. Typical time horizons considered include up to 2030, 2040 or 2050. As most fund managers have investment cycles that are considerably shorter than these time scales, the modelling should also be performed at a time horizon where the output is aligned to the use case for the fund manager [9].
Focal question	The scenario should have a well-formulated focal question that the process seeks to answer, the outcome of which will impact the organisation's decision-making going forward.
Driving forces	The underlying drivers of change related to the focal question are clearly identified.

Criteria	Guidance
Scenario logic	The scenarios are logically constructed, with a clear relationship between the identified drivers and corresponding changes.
Pathways	There is a clear pathway between the current state and the various scenario endpoints.
Uncertainties	The uncertainties related to the scenario are documented and described.
Storyline	A clear and well-constructed scenario narrative that integrates the underlying driving forces, the resulting changes, and the relationships between scenario elements.
Plausibility	The scenarios are credible and plausible given the existing starting point, pathway and end points.
Distinctive/diverse	There is sufficient diversity in the scenarios to explore a range of possible pathways and outcomes.
Consistent	The scenario logic is applied consistently, and doesn't change between scenarios.
Relevant	The scenarios provide insights and are relevant to the organisation performing the analysis.
Challenging	The scenarios push beyond business-as-usual, and challenge the status quo assumption of the organisation.

- Step 6: Evaluate impacts

This step focuses on evaluating how the scenarios affect the identified climate change risks and opportunities, and how these impacts translate to organisation-level impacts. Typically, initial rounds of scenario analysis are highly qualitative and focus more on identifying material issues and areas of concern. As the maturity of the fund manager increases, the scenario analysis process can shift from qualitative to quantitative, with a specific focus on understanding the potential financial impacts of various scenarios.

For a qualitative impact assessment, a simple heatmap can be drawn up, indicating how significant the climate change risks associated with each impact are likely to be. An example of an initial qualitative impact evaluation and heatmap is outlined below.

Case study example

Below is an example input from a high-level transition risk scenario exercise. In this example, the organisation had operating sites across the world. Three scenarios were

considered for the transition risk exercise: an ‘organised transition’ scenario, a ‘delayed transition’ scenario, and a ‘high physical risk’ scenario. These scenarios were developed primarily from the NGFS scenarios, but were also complemented by information from the IEA scenarios and additional sector-specific research.

A qualitative heatmap was developed for the four material transition risk drivers. The number and colour of the symbols in each category show the magnitude of the impact, as well as whether impacts would be positive (+) or negative (-) for the organisation.

Figure 17: Example qualitative scenario analysis outcome for transition impacts

View Figure 17

Once the process has matured and institutional capacity has been built, quantitative analysis can be introduced. This can consider for example: gross domestic product (GDP) growth impacts of target markets, cost implications of carbon pricing, technology replacement costs, and so on. These impacts on the fund manager should be quantified as far as possible, with particular reference to:

- Gains or losses in revenue or profit
- Loss of asset value or potential stranded assets
- Increased operating costs through increased cost of labour, materials, or carbon pricing
- Impacts on availability and cost of capital and financing

Step 7: Evaluate investment strategy

In the final step, the existing business and investment strategy of the fund manager should be evaluated in the context of the developed reference scenarios. Specifically, the robustness and resilience of the business strategy to the different scenarios should be evaluated, and areas of weakness identified.

It is also beneficial to incorporate the scenario analysis process into existing risk and investment processes. For example, potential investments could be tested against the

various scenarios in the due diligence phase to evaluate the climate resilience of the investment.

Signpost metrics should also be developed as part of the final steps of the process. Signpost metrics are significant, easily-tracked indicators which indicate how closely reality is mirroring the different scenarios. This information can be used to understand which scenario's circumstances most closely match real-world developments, and how the organisation's business strategy should be adjusted. Examples of signpost metrics include:

- IPCC reporting on actual levels of climate change being experienced (e.g. AR6 [33])
- Carbon prices
- Outcomes from the annual Congress of Parties (such as the Glasgow Climate Pact and the Least Developed Countries Fund)
- Country-level Nationally Determined Contribution (NDC) updates