7.1 SCENARIO ANALYSIS

Introduction to scenario analysis

Important notice
This unit is part of a package of learning materials designed to support understanding of foundational concepts relating to climate-related financial disclosures. These learning materials do not constitute application or regulatory guidance for the preparation of climate-related financial disclosures and are not intended to represent legal or professional advice. We encourage you to seek your own professional advice to find out how the *Corporations Act 2001* (Corporations Act) and other relevant laws may apply to you and your circumstances, as it is your responsibility to determine your obligations and comply with them.

Key topics

- Scenario analysis
- The rationale for conducting scenario analysis
- Benefits that can flow from scenario analysis

Relevance for climate-related disclosure

In this unit, you will be introduced to the basics of scenario analysis. Understanding scenario analysis can support you in assessing potential climate-related risks and opportunities over the short, medium and long term as part of your climate-related financial disclosures.

Overview

Climate-related scenario analysis is a method for exploring the climate-related risks and opportunities facing an entity and analysing its climate resilience. It involves considering plausible pictures of the future, developed using available climate models and other information about what the future might look like.

Scenario analysis can be used to both explore the potential impacts of climate change itself, as well as risks and opportunities for an entity that may arise through efforts to transition to a lower-carbon and climate-resilient future.

Scenario analysis is forward-looking and involves identifying and assessing a potential range of outcomes of future events based on estimates and predictions under conditions of uncertainty. There are also some potential limitations to scenario analysis, including data quality, resourcing demands and complexity in translating climate data into actionable insights.

Scenario analysis and why it is helpful

A scenario outlines a possible pathway of development that leads to a specific outcome. While scenarios are hypothetical, they are not forecasts. They do not aim to provide a complete picture of the future; they focus on key aspects of a potential future and highlight the critical factors that could influence future developments[1].

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Scenario analysis is a tool designed to strengthen strategic thinking. One of its defining features is that scenarios should challenge conventional assumptions about the future. In an uncertain world, they help explore alternative possibilities that may disrupt 'business as usual' thinking.

Climate-related scenarios are built on different assumptions about global greenhouse gas emissions (such as different mixes of fuel types used over time and different rates of phasing out emissions) and consider socio-economic factors such as different rates of population growth, technology pathways and land-use changes (for example the Shared Socio-economic Pathways).

Understanding future climate-related risks and opportunities and their potential impacts can be challenging.

First, there is a level of uncertainty about what the future will look like. While we can be certain that the Earth's climate will continue to change and that climate-related physical risks will likely increase, the extent of these changes depends on how quickly global greenhouse gas emissions are reduced. Moreover, even with today's increasingly advanced climate models, any projection of our climate future involves some level of uncertainty, so considering a range of possible outcomes helps manage this complexity.

Similarly, the risks and opportunities presented by the transition to a lower-carbon, climate-resilient economy for entities will be shaped in part by factors outside their control, including the pace of societal change and availability of new technologies.

Second, entities are faced with a vast array of publicly available information and data on climate risks, covering different hazards, timeframes and spatial resolutions. To identify their own risks and opportunities, entities need to be able to explore the future as it relates to their circumstances.

This is where climate-related scenario analysis comes in. It is a method for exploring the impacts and opportunities of climate change by developing plausible pictures of the future. Entities may consider using multiple scenarios to enhance their understanding of climate-related risks and opportunities, manage uncertainty and better inform their decision-making.

For example, Australia's National Climate Risk Assessment (published in September 2025) uses three different global warming scenarios over three future timeframes.

Scenario analysis in practice

Climate-related scenario analysis can range from qualitative methods that use 'off the shelf' scenarios, to complex quantitative exercises involving bespoke scenarios and multiple data sets.

Climate resilience is the capacity of an entity to adjust to climate-related changes, developments or uncertainties. It includes responding to both climate-related risks and opportunities and covers an entity's strategic and operational resilience. Scenario analysis can be used by an entity to assess its climate resilience, through testing and understanding the implications of climate change for its strategy and business model, and its financial and operational capacity to adjust or adapt over the short, medium and long term.

The following two hypothetical examples help to further explain the concept of climate-related scenario analysis and the benefits that accrue through undertaking scenario analysis. While there can be benefits from scenario analysis, it does require time and resources.

Example 1: A property developer

Property developers make long-term investments in physical assets. These may be exposed to climate-related physical risks including flooding, bushfires, extreme rainfall and sea level rise, which may affect insurance costs and availability, and the value of assets over time.

Developers may also face new building codes and changes to land zoning designed to increase climate resilience. The shift to a lower-carbon economy may also present both transition risks and opportunities, such as if clients want to reduce the amount of embodied carbon in construction materials (embodied carbon encompasses the greenhouse gas emissions associated with the entire lifecycle of a building, including the materials and processes used from construction through to refurbishment or rebuild and eventual deconstruction).

An entity involved in property development may use scenario analysis to explore the range of climate-related physical risks it might face, as well as how it may adapt to potential new regulations and to transition risks and opportunities. The scenario analysis may reveal risks that the developer might address and highlights opportunities it might take advantage of.

The developer could use the outputs of the scenario analysis to help prepare actions to mitigate the risks and build on the opportunities. This includes, for example, integrating climate resilience measures into new builds.

What benefits could accrue to the property developer through undertaking scenario analysis?		
Short term	*Medium term*	*Long term*
Improved risk awareness and strategic planning by identifying the most immediate climate-related vulnerabilities for the property developer (e.g. sites at highest risk of flooding or bushfires)	Improved operational efficiencies by integrating resilience measures early (e.g. avoiding costly retrofits)	Enhanced reputation and brand strength by maintaining or enhancing property values by ensuring resilience to physical climate risks

Example 2: An engineering supply company

An engineering supply company provides support services to the mining industry. It faces climate-related risks that include potential supply chain disruptions from a variety of climate-related impacts like floods or extreme weather that damage facilities, interrupt transport and affect supplier and customer operations.

Through scenario analysis, the engineering supply company explores its exposure to climate-related physical and transition risks and opportunities and shapes its risk planning accordingly. The company identifies suppliers in climate-vulnerable regions and explores alternative sources and develops business continuity plans to minimise disruptions. The company reviews insurance and financial exposure, and invests in activities that build resilience such as working with suppliers to develop joint strategies to enhance supply chain reliance.

What benefits could accrue to the entity through undertaking scenario analysis?		
Short term	*Medium term*	*Long term*
Improved risk awareness and strategic planning by identifying the most immediate climate-related vulnerabilities for the engineering supply company (e.g. floods or extreme weather that damage facilities, interrupt transport and affect supplier and customer operations)	Improved operational efficiencies by integrating resilience measures early to minimise potential supply chain disruptions	Enhanced reputation and brand strength through investing in activities that build resilience and developing joint strategies to enhance supply chain reliance

Key takeaways

- Climate-related scenario analysis is a method for exploring the climate-related risks and opportunities facing an entity and analysing its climate resilience.
- Scenario analysis can provide significant benefits to entities, including strengthened strategic decision-making and management of uncertainty.
- There are also some potential limitations to scenario analysis, including data quality, resourcing demands and complexity in translating climate data into actionable insights.

Sources

[1] Task Force on Climate-related Financial Disclosures (2017) *Technical Supplement - The Use of Scenario Analysis in Disclosure of Climate-related Risks and Opportunities* (PDF 2.5 MB)