

Working Paper 2021/07 Appendix 1

# Climate-scenario bibliography

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## **Appendix 1: Climate-scenario bibliography**

As at 18 August 2021.

This becomes Appendix 1 of *Working Paper 2021/07 – Scoping the use of the term ‘climate scenarios’ and other climate-related terms in Aotearoa New Zealand and international literature*.

*Working Paper 2021/07* forms part of the Institute’s ongoing background research for our *Project ClimateChangeNZ* and in particular *Report 18: Climate Change Strategy for Aotearoa New Zealand*.

**1. [OECD - Global Scenarios 2035 Exploring Implications for the Future of Global Collaboration and the OECD](#)**

This report ‘uses a strategic foresight approach to inform reflection on how best to prepare the OECD to meet the needs of a highly unpredictable future. It was developed by the OECD’s Strategic Foresight Unit to demonstrate how navigating the future of global collaboration and the Organisation’s role within it will require ongoing exploration and dialogue about what may be possible, and desirable, in the future.’

**2. [Shell – Shell scenarios Sky Meeting the Goals of the Paris Agreement](#)**

This is ‘an ambitious scenario to hold the increase in the global average temperature to well below 2°C’. It is a well thought out and executed scenario developed by one of the largest petroleum companies in the world.

**3. [CIFOR – Climate scenarios: What we need to know and how to generate them](#)**

This report ‘provides some overviews on the roles of climate scenarios in adaptation planning and what should be considered in using and generating climate scenarios, in a frequently ask questions style. Specifically, this book tries to answer questions commonly addressed by non-climatologists when they want to address climate scenario in adaptation plans.’

**4. [NIWA - Climate change scenarios for New Zealand](#)**

This webpage offers a range of material regarding climate change scenarios from an Aotearoa New Zealand based perspective. The material is based on the RCP scenarios (similar to our TCFD exercise) from the IPCC’s 5<sup>th</sup> Assessment report.

**5. [McGuinness Institute - Four Possible Futures for New Zealand in 2058](#)**

This report uses the issues of climate change and genetic modification to explore four scenarios based on whether or not the world manages itself well and whether or not Aotearoa New Zealand manages itself well. These four scenarios illustrate why small countries have such a vested interest in international affairs.

**6. [McGuinness Institute – TCFD exercise](#)**

This exercise was developed by the Institute to use during the TCFD workshops we ran in 2019. The detailed exploration of Core Element 2 (Strategy) was supported by this exercise, where attendees explored a variety of scenarios based on climate change models of representative concentration pathways (RCPs) for 2.6, 6.0 and 8.5. In the second part of the exercise, attendees practiced testing existing climate change and business strategies of Aotearoa New Zealand organisations against each of the scenarios and then making corresponding TCFD disclosures.

**7. [TCFD – Technical Support: The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities](#)**

This report assists ‘organisations in using climate-related scenario analysis to support the development of disclosures consistent with the Recommendations of the Task Force on Climate-related Financial Disclosures’

**8. [Network for Greening the Financial System \(NGFS\) - Guide to climate scenario analysis for central banks and supervisors](#)**

This guide ‘provides practical advice on using scenario analysis to assess climate risks to the economy and financial system. It is based on the initial experiences of NGFS members and observers, and also aims to progress discussion on the methodologies used. While mainly aimed at central banks and supervisors, many aspects of the Guide might also prove informative to the wider community’.

**9. [United Nations Principles of Responsible Investment - Climate scenario analysis](#)**

This webpage contains a list of climate scenario tools that ‘make it easier for investors to implement a key recommendation of the TCFD – scenario planning’.

**10. [IPCC - AR6 Climate Change 2021: The Physical Science Basis](#)**

This report ‘addresses the most up-to-date physical understanding of the climate system and climate change, bringing together the latest advances in climate science, and combining multiple lines of evidence from paleoclimate, observations, process understanding, and global and regional climate simulations’.

**11. [Anderson, B., \(et al\) - Modelled response of debris-covered and lake-calving glaciers to climate change, Kā Tiritiri o te Moana/Southern Alps, New Zealand](#)**

This paper uses a glacier model, and future climate scenarios from 6 different climate models to investigate how glaciers might change in the future in the Aoraki/Mt. Cook region (where ~54% of New Zealand glacier ice is). RCP 2.6 suggests that by 2099, 50% of ice will be lost relative to 2005. RCP 8.5 suggests that by 2099, 92% of ice will be lost relative to 2005.

**12. [UK Climate Resilience Programme – Products of the UK-SSPS Project](#)**

This webpage gives an overview of the various products of the UK-SSPS project. Including: UK-SSP narratives & systems diagrams, semi-quantitative trends, quantified projections, interface for exploring and accessing UK-SSP products, and other relevant publications.

**13. [Frame, B., \(et al\) - Adapting global shared socio-economic pathways for national and local scenarios](#)**

This report explains how ‘socio-economic scenarios enable us to understand the extent to which global-, national- and local-scale societal developments can influence the nature and severity of climate change risks and response options’.

**14. [Cradock-Henry, N., \(et al\) - Dynamic adaptive pathways in downscaled climate change scenarios](#)**

This report observes how parallel scenario process enables characterization of climate-related risks and response options to climate change under different socio-economic futures and development prospects. The authors discuss ‘the need for a stronger recognition of such national-scale characteristics to make climate change scenarios more relevant at the national and local scale, and propose ways to enrich the scenario architecture with locally relevant details that enhance salience, legitimacy, and credibility for stakeholders’.

**15. [Te tai pari o Aotearoa – Future sea level rise around New Zealand’s dynamic coastline](#)**

The article was written for a ‘general’ audience and offers an example of the type of information we aim to produce for all of the coastline around Aotearoa.



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