



<b>Project:</b>	<b>Climate-related Financial Disclosures</b>	<b>Meeting:</b>	AASB 26 June 2024 (M205)
<b>Topic:</b>	<b>Climate scenario analysis (SMCs 10 and 11)</b>	<b>Agenda Item:</b>	4.1
		<b>Date:</b>	11 June 2024
<b>Contact(s):</b>	Patricia Au <a href="mailto:pau@asb.gov.au">pau@asb.gov.au</a> Charis Halliday <a href="mailto:challiday@asb.gov.au">challiday@asb.gov.au</a>	<b>Project Priority:</b>	High
		<b>Decision-Making:</b>	High
		<b>Project Status:</b>	Consider ED feedback

## Objectives of this paper

- 1 In respect to the proposed requirement to use climate scenario analysis to assess an entity's climate resilience as set out in paragraphs 22–Aus22.2 of [draft] ASRS 2, the objectives of this paper are for the AASB to:
  - (a) consider the feedback from stakeholders on SMC 10 and 11 of ED SR1; and
  - (b) decide on any changes required to be made to the proposed requirements.

## Abbreviations

- 2 The abbreviations used in this paper are outlined in Appendix A of Agenda Paper 4.0.
- 3 Some stakeholders used abbreviations to describe their preferred climate scenario pathways. [Appendix D](#) of this paper notes the abbreviations of the main pathways mentioned by stakeholders for the Board's reference.

## Executive summary

- 4 Paragraphs 22–Aus22.2 of [draft] ASRS 2 relating to the climate resilience disclosure requirements are reproduced below. The definition of 'climate resilience' set out in Appendix A of IFRS S2 is also reproduced below.

### Climate resilience

- 22 An entity shall disclose information that enables users of general purpose financial reports to understand the resilience of the entity's strategy and business model to climate-related changes, developments and uncertainties, taking into consideration the entity's identified climate-related risks and opportunities. The entity shall use climate-related scenario analysis to assess its climate resilience using an approach that is commensurate with the entity's circumstances (see paragraphs B1–B18). In providing quantitative information, the entity may disclose a single amount or a range. Specifically, the entity shall disclose:

	<p>(a) the entity’s assessment of its climate resilience as at the reporting date, which shall enable users of general purpose financial reports to understand:</p> <p>(i) the implications, if any, of the entity’s assessment for its strategy and business model, including how the entity would need to respond to the effects identified in the climate-related scenario analysis;</p> <p>(ii) the significant areas of uncertainty considered in the entity’s assessment of its climate resilience;</p> <p>(iii) the entity’s capacity to adjust or adapt its strategy and business model to climate change over the short, medium and long term, including:</p> <p>(1) the availability of, and flexibility in, the entity’s existing financial resources to respond to the effects identified in the climate-related scenario analysis, including to address climate-related risks and to take advantage of climate-related opportunities;</p> <p>(2) the entity’s ability to redeploy, repurpose, upgrade or decommission existing assets; and</p> <p>(3) the effect of the entity’s current and planned investments in climate-related mitigation, adaptation and opportunities for climate resilience; and</p> <p>(b) how and when the climate-related scenario analysis was carried out, including:</p> <p>(i) information about the inputs the entity used, including:</p> <p>(1) which climate-related scenarios the entity used for the analysis and the sources of those scenarios;</p> <p>(2) whether the analysis included a diverse range of climate-related scenarios;</p> <p>(3) whether the climate-related scenarios used for the analysis are associated with climate-related transition risks or climate-related physical risks;</p> <p>(4) whether the entity used, among its scenarios, a climate-related scenario aligned with the <i>latest international agreement on climate change</i>;</p> <p>(5) why the entity decided that its chosen climate-related scenarios are relevant to assessing its resilience to climate-related changes, developments or uncertainties;</p> <p>(6) the time horizons the entity used in the analysis; and</p> <p>(7) what scope of operations the entity used in the analysis (for example, the operating locations and business units used in the analysis);</p> <p>(ii) the key assumptions the entity made in the analysis, including assumptions about:</p> <p>(1) climate-related policies in the jurisdictions in which the entity operates;</p> <p>(2) macroeconomic trends;</p> <p>(3) national- or regional-level variables (for example, local weather patterns, demographics, land use, infrastructure and availability of natural resources);</p> <p>(4) energy usage and mix; and</p> <p>(5) developments in technology; and</p> <p>(iii) the reporting period in which the climate-related scenario analysis was carried out (see paragraph B18).</p>
Aus22.1	Further to paragraph 22, an entity required by the <i>Corporations Act 2001</i> to prepare climate-related financial disclosures shall disclose its climate resilience assessments against at least two relevant possible future states, one of which must be consistent with the most ambitious global temperature goal set out in the <i>Climate Change Act 2022</i> .
Aus22.2	For the purposes of paragraphs 22–Aus22.1, an entity need not disclose the detailed modelling adopted in carrying out its climate-related scenario analysis. An entity is required to disclose the inputs and assumptions used in its climate-related scenario analysis and the related outcomes set out in paragraph 22.
...	

## Appendix A Defined terms

...

**climate resilience** The capacity of an entity to adjust to climate-related changes, developments or uncertainties. Climate resilience involves the capacity to manage **climate-related risks** and benefit from **climate-related opportunities**, including the ability to respond and adapt to **climate-related transition risks** and **climate-related physical risks**. An entity's climate resilience includes both its strategic resilience and its operational resilience to climate-related changes, developments and uncertainties.

- 5 The feedback received on SMCs 10–11 indicated that:
- (a) most stakeholders support adding additional requirements to the baseline of IFRS S2 with respect to climate scenario analysis, on the basis that any additional requirements should not affect an entity's ability to claim compliance with IFRS S2;
  - (b) most stakeholders supported the Board's proposals in paragraph Aus22.1 of [draft] ASRS 2, which requires assessment against a 1.5°C warming outcome;
  - (c) many stakeholders preferred also requiring assessment against a high-warming scenario to ensure that a high-warming world is considered. Some of those stakeholders preferred the Standard to specify the temperature outcome to assess, but there was no consensus among stakeholders on which high-warming outcome to prescribe; and
  - (d) some of those stakeholders described in (b) and (c) who preferred the Standard to prescribe temperature outcome(s) also preferred specifying the scenario pathway, or the time horizon, required for each prescribed temperature outcome.

### *Summary of staff views*

- 6 Since there are diverse views expressed by stakeholders on climate scenario analysis, particularly on the high-warming scenario, staff consider that it may be prudent to adopt the requirements in IFRS S2 without any modifications. IFRS S2 does not prescribe the number of scenarios an entity must assess nor a temperature goal an entity must use in its scenario analysis. However, there may be merits for the Board to consider adding requirements or clarifications in ASRS 2 since most stakeholders support additional requirements to the baseline of IFRS S2 on this topic.
- 7 Accordingly, the paper provides staff analysis to assist Board members in deciding whether to add to the requirements of IFRS S2 with respect to scenario analysis. If the Board decides to add to the baseline of IFRS S2, staff recommend:
- (a) confirming the Board's decision to require assessment against 1.5°C warming outcome, but amending paragraph Aus22.1 of [draft] ASRS 2 to not prescribe a minimum number of scenarios an entity must assess; and
  - (b) requiring assessment against a 3°C or greater warming outcome.
- 8 Staff also recommend omitting paragraph Aus22.2 and editing the last sentence of paragraph B17 of [draft] ASRS 2 to avoid implying an entity is required to use quantitative modelling to comply with the climate resilience disclosure requirements set out in IFRS S2 paragraph 22.

## Structure

- 9 The paper is structured as follows:
- (a) [Section 1](#): Background – The AASB’s decisions when developing ED SR1
  - (b) [Section 2](#): Overview of feedback and stakeholder preferences
  - (c) [Section 3](#): Staff analysis regarding prescribing temperature outcomes
  - (d) [Section 4](#): Staff analysis on other matters raised by stakeholders
  - (e) [Appendix A](#): Other preferences expressed by stakeholders on climate scenario analysis
  - (f) [Appendix B](#): Summary of stakeholder feedback received on SMCs 10 and 11
  - (g) [Appendix C](#): Stakeholder comments requesting additional guidance on climate scenario analysis [for Board members’ information. Staff plan to present analysis of those comments for Board deliberation at a future meeting.]
  - (h) [Appendix D](#): Main climate scenario pathways mentioned by stakeholders [for Board member’s information]

## Section 1: Background – The AASB’s decisions when developing ED SR1

- 10 IFRS S2 requires an entity to use climate scenario analysis to assess its climate resilience, but it does not prescribe the number of scenarios an entity must assess nor a temperature goal an entity must use in its scenario analysis. The ISSB did not specify particular temperature outcomes or scenarios that an entity would be required to assess because it was of the view that relevant scenarios would depend on the entity’s facts and circumstances, including the nature and location of its operations and the physical and transition risks to which it is exposed (paragraphs BC66–BC69 of the Basis for Conclusions for IFRS S2).
- 11 As noted in paragraphs BC51–BC52 of ED SR1, the AASB added paragraph Aus22.1 to [draft] ASRS 2 because it:
- (a) observed that, in its second consultation, Treasury indicated that the Australian Government is considering requiring an entity to disclose its climate resilience assessments against at least two possible future states, one of which must be consistent with the global temperature goal set out in the *Climate Change Act 2022*. Treasury staff informed the AASB that feedback to that consultation indicated that there was overall support for this proposal; and
  - (b) considered that specifying a low-warming scenario consistent with the Climate Change Act, which is aligned with the Paris Agreement, would assist users in assessing an entity’s resilience to transition risk. However, since the Climate Change Act provides a range between 1.5°C and 2°C, some AASB members were concerned that some entities may incur unnecessary costs and effort in determining, and agreeing with their auditors, the temperature goal within that range to use in its climate scenario analysis in order to comply with the requirement. To avoid this issue, the AASB decided to propose requiring climate resilience assessments against the most ambitious global temperature goal set out in the Climate Change Act, which is currently 1.5°C above pre-industrial levels.
- 12 As noted in paragraph BC53 of ED SR1, the AASB contemplated whether to also specify an upper-temperature scenario to enable a more comprehensive assessment of physical risks. The AASB decided not to do so because:
- (a) it concurred with the ISSB’s view described in paragraph 10 above that relevant scenarios for assessing physical risks would depend on the entity’s facts and circumstances, including the nature and location of its operations; and
  - (b) some AASB members were of the view that, in respect to physical risks, the entity’s explanation of why they have chosen a particular scenario to assess against would be more important to users than having an assessment based on a general temperature goal without considering the specific facts and circumstances of the entity.
- 13 Since IFRS S2 does not require an entity to disclose its climate-related scenario analysis outputs (which can be qualitative or quantitative depending on the approach taken), the AASB added paragraph Aus22.2 in [draft] ASRS 2 for clarification. This was to address feedback provided by Treasury staff that some respondents to the Treasury’s second consultation paper expressed concern about the potential volume of disclosure that would result if an entity were to disclose its detailed modelling adopted in carrying out climate-related scenario analysis.

## Section 2: Overview of feedback and stakeholder preferences

### 2.1 Overview of stakeholder feedback

- 14 SMC 10 asked stakeholders: “Do you agree with the proposal in [draft] ASRS 2 paragraph Aus22.1? Please provide reasons to support your view.”
- 15 SMC 11 asked stakeholders: “Do you agree with the AASB’s view that it should not specify the upper-temperature scenario that an entity must use in its climate-related scenario analysis? Please provide reasons to support your view.”
- 16 Of the 289 survey responses received, 71 and 74 respondents provided a response to SMC 10 and SMC 11 respectively. The survey responses, which specify whether a respondent agreed, disagreed, or partially agreed with the Board’s proposals, have been provided separately for the Board’s reference. The following table provides an overview of the responses received on SMCs 10 and 11 (rounded to the nearest %).

	Agree	Partially agree	Disagree
Out of the 71 survey responses that commented on SMC 10	57%	28%	15%
Out of the 74 survey responses that commented on SMC 11	51%	26%	23%

- 17 Because SMC 10 has two aspects, staff applied judgement in categorising stakeholder feedback into each aspect. For the purpose of this paper, staff referred to the two aspects as SMC 10(a) and SMC 10(b):
- (a) SMC 10(a): Do you agree with requiring an entity to assess climate resilience against at least two scenarios?
- (b) SMC 10(b): Do you agree with requiring an entity to assess climate resilience against a 1.5°C scenario?
- 18 Of the 117 comment letters received, 71, 74 and 69 respondents provided a response to SMCs 10(a), 10(b) and 11 respectively. The following table provides an overview of the responses received in the 117 comment letters as categorised by staff (rounded to the nearest %).<sup>1</sup>

	Agree	Partially agree	Disagree	No clear view
Out of the 71 comment letters that commented on SMC 10(a)	44%	14%	24%	18%
Out of the 74 comment letters that commented on SMC 10(b)	55%	14%	19%	12%
Out of the 69 comment letters that commented on SMC 11	49%	4%	32%	14%

<sup>1</sup> In some comment letters, the respondents did not clearly mention whether they agree, disagree or partially agree with all aspects of the proposal. In such cases, staff applied judgement to categorise the overall comments expressed in the letters. However, regardless of how staff categorised the feedback, the reasons provided by the respondents for supporting their position were considered as a part of the staff analysis. An overview of stakeholder feedback expressed in the comment letters was presented to the Board at the 6–7 June 2024 (M204) meeting (see Agenda Paper 5.9 for that meeting in supplementary materials).

## 2.2 Summary of stakeholders' preferences

- 19 In analysing stakeholder feedback, staff noticed that many respondents, including those who did not express a clear view on whether they agree or disagree with the ED proposals, explained their preferences for using climate scenario analysis.
- 20 Staff have categorised stakeholders' **main** preferences broadly into five combinations (five views), as described in the following table (other preferences not categorised in these five views are summarised in [Appendix A](#) for the Board's information).

View	Minimum number of scenarios to assess	Prefer specifying a low-warming scenario?	Prefer specifying a high-warming scenario?	Number of respondents <sup>2</sup>
View 1 – align with IFRS S2	No minimum number	No	No	7
View 2 – as proposed in ED SR1	Two	Yes, 1.5°C	No	71
View 3		No	No	3
View 4		Yes	Yes	18
View 5	Three	Yes	Yes	10

- 21 The following table lists the respondents under each view as categorised by staff, and their preferences (where relevant).

View	Respondents and their preferences (where relevant) <sup>3</sup>
View 1	<b>Comment letters [5]:</b> 7, 26, 66, 98, 113 <b>Survey respondents [2]:</b> 30, 251
View 2	<b>Comment letters [34]:</b> 1, 3, 10, 11, 12*, 15, 32, 34*, 37, 38, 40, 53*, 56*, 59, 64, 65*, 67, 68, 69, 71, 73, 74, 75*, 82, 83, 86, 87, 89, 92, 93, 94, 95, 97, 101 <b>Survey respondents [37]:</b> 1, 3*, 4*, 5, 14, 19, 20#, 21#, 22#, 23, 25, 28, 82, 91, 101, 107, 115, 116, 118, 128, 129, 132, 168, 190*, 195, 199, 203, 205, 223, 230, 233, 244, 255, 260, 264, 279, 280 <i>* These respondents qualified their support to the AASB's proposal because they prefer the Standard to require an entity to assess a high-warming outcome to assess physical risk (but not to prescribe a specific high-warming scenario).</i> <i># These respondents commented that entities with an overseas parent should be given the flexibility to use the parent entity's reports to satisfy the scenario analysis requirements.</i>

2 Because not all respondents have clearly expressed a preference regarding climate scenario analysis, the total number of respondents in the 5<sup>th</sup> column of the table does not correspond to the numbers in the survey responses or the staff's overview of the comment letters in the tables in paragraphs 16 and 18. In particular, many survey respondents disagreed or only agreed in principle to the Board's proposals without explanation or without specifying their preference.

3 [Appendix D](#) of this paper notes the main pathways mentioned by stakeholders for the Board's reference.

View 3	<p><b>Comment letters [3]:</b></p> <p>Comment letter 9 – entities should be permitted to select their own appropriate scenario.</p> <p>Comment letter 21 – concerned about the long-term feasibility of aligning with a 1.5°C scenario.</p> <p>Comment letter: 27 – suggest requiring an entity to adhere to modelled pathways in IPCC reports or those developed by the International Energy Agency (IEA).</p>
View 4	<p><b>Comment letters [9]:</b></p> <p>Comment letter 13 – prefer requiring 1.5°C and a scenario for no transition at 4°C or align with current global policy settings.</p> <p>Comment letter 47 – prefer 2°C and suggest specifying a high-warming scenario.</p> <p>Comment letter 49 – prefer 1.5°C and a 2–3°C rise scenario.</p> <p>Comment letters 50, 54 and 104 – prefer 1.5°C and suggest specifying a high-warming scenario.</p> <p>Comment letter 61 – prefer 1.5°C and a 4.0°C or RCP8.5 aligned scenario.</p> <p>Comment letter 79 – prefer specifying a low-warming and a high-warming scenario and permit voluntary assessment against a third scenario.</p> <p>Comment letter 105 – prefer 1.5°C and a 3°C scenario set out in the Network for Greening the Financial System (NGFS) or equivalent.</p> <p><b>Survey respondents [9]:</b></p> <p>Survey respondent 9 – prefer requiring an entity to assess physical risk using a 4°C or higher scenario.</p> <p>Survey respondent 266 – prefer either mandating or strongly recommending a scenario above 2°C, which is in line with current policies of the world.</p> <p>Survey respondents: 112<sup>^</sup>, 172<sup>^</sup>, 211, 216<sup>^</sup>, 217, 253, 282</p> <p><i><sup>^</sup> These respondents prefer the AASB to specify a high-warming scenario to assist users in comparing entities' outcomes.</i></p>
View 5	<p><b>Comment letters [9]:</b></p> <p>Comment letters 6, 42, 77 and 88 – prefer New Zealand’s approach, that is, 1.5°C, 3°C or greater, and another scenario.</p> <p>Comment letter 20 – prefer SSP1-2.6, a scenario aligned at least to SSP5-7.5, and another scenario.</p> <p>Comment letter 41 – prefer SSP1-1.9, SSP2-4.5, and SSP3-7.0.</p> <p>Comment letter 103 – prefer a ‘measured, orderly transition’ scenario (consistent with meeting the 1.5°C temperature goal), a ‘sudden, disorderly transition’ scenario, and a ‘no transition’ scenario (i.e. a minimum threshold for an upper-temperature scenario at 4°C).</p> <p>Comment letters 109 – prefer 1.5°C, 3°C or greater, and a scenario the entity deemed appropriate to use as a base case.</p> <p>Comment letter 110 – prefer an ambitious best-case scenario, hot-house scenario, and a scenario that is material to the entity.</p>



**Survey respondent [1]:**

Survey respondent 75 – prefer a ‘measured orderly transition 1.5°C scenario’, a ‘sudden disorderly transition’ scenario, and a ‘no transition’ scenario.

- 22 As noted in [Section 2.1](#), the tables in paragraphs 20–21 and [Appendix A](#), mixed views were expressed by stakeholders on SMCs 10 and 11. [Appendix B](#) includes a summary of stakeholders’ main reasons for their preferences relating to:
- (a) the minimum number of scenarios to assess;
  - (b) prescribing a low-warming scenario; and
  - (c) prescribing a high-warming scenario.
- 23 Most roundtable participants supported the ED proposals. Some participants preferred also specifying that climate resilience assessment should include assessing a high-warming scenario. However, mixed views were expressed regarding whether the AASB should prescribe a specific high-warming outcome/scenario and which warming outcome/scenario to prescribe. An overview of roundtable discussions has been provided separately for the Board’s reference.
- 24 Some stakeholders provided comments requesting the AASB consider providing additional guidance on climate scenario analysis or to clarify the requirements. [Appendix C](#) summarises those comments for the Board’s information. Staff plan to present analysis of those comments for Board deliberation at a future meeting.

### Section 3: Staff analysis regarding prescribing temperature outcomes

- 25 Based on the feedback received as noted in [Section 2.2](#), [Appendix A](#) and [Appendix B](#) of the paper, staff observed that in respect to the requirement to use scenario analysis in assessing climate resilience:
- (a) only a few respondents prefer ASRS 2 to adopt the requirements in IFRS S2 without modifications. Most stakeholders who responded to this topic support additional requirements to the baseline of IFRS S2 with respect to climate scenario analysis, **on the basis that any additional requirements should not affect an entity's ability to comply with IFRS S2**;
  - (b) most stakeholders supported the Board's proposals in paragraph Aus22.1 of [draft] ASRS 2, which requires assessment against a 1.5°C warming outcome;<sup>4</sup>
  - (c) as described in the table in paragraph 21 above, many stakeholders preferred also requiring assessment against a high-warming scenario to ensure that a high-warming world is considered. Some of those stakeholders preferred the Standard to specify the temperature outcome to assess, but there was no consensus among stakeholders on which high-warming outcome to specify; and
  - (d) some of those stakeholders described in (b) and (c) who preferred the Standard to prescribe temperature outcome(s) also preferred specifying the scenario pathway, or the time horizon, required for each prescribed temperature outcome.
- 26 Since there are diverse views expressed by stakeholders on climate scenario analysis, particularly on the high-warming scenario, staff consider that it may be prudent for ASRS 2 to adopt the requirements in IFRS S2 without any modifications. IFRS S2 does not prescribe the number of scenarios an entity must assess nor a temperature goal an entity must use in its scenario analysis. However, staff observed that there may be merits for the Board to consider adding requirements or clarifications in ASRS 2. This is because:
- (a) the Board proposed in ED SR1 to add requirements to the baseline of IFRS S2 to which supporting feedback was received from most stakeholders;
  - (b) many stakeholders prefer the Standard to specify that both a 1.5°C-aligned scenario (or a low-warming scenario) and a high-warming scenario are required to assess climate resilience; and
  - (c) other standard setters such as EFRAG and the XRB have specified in their respective Standards that climate resilience should be assessed against a 1.5°C-aligned scenario and a high-warming scenario.<sup>5</sup>
- 27 This Section is designed to assist Board members' consideration of whether to include in ASRS 2 additional requirements to those in IFRS S2. This Section is structured as follows:
- (a) [Section 3.1](#): Would prescribing temperature outcomes and/or scenario pathways affect an entity's ability to comply with IFRS S2?
  - (b) [Section 3.2](#): What are the advantages and disadvantages of prescribing temperature outcomes?

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<sup>4</sup> All respondents who hold View 2 and most respondents who hold Views 4 and 5 as described in [Section 2.2](#).

<sup>5</sup> Paragraphs 20(b)(i) and 20(c)(i) of ESRS E1 [Climate Change](#) (see page 76) and Paragraph 13 of Aotearoa New Zealand Climate Standard 1 [Climate-related Disclosures](#) (NZ CS 1).

- (c) [Question 1 to Board members](#): Should the AASB prescribe temperature outcomes in ASRS 2?
- (d) [Section 3.3](#): Which temperature outcomes should the AASB prescribe? (if the Board decides in Question 1 to prescribe temperature outcomes)
  - (i) [Section 3.3.1](#): Low-warming outcome
  - (ii) [Section 3.3.2](#): High-warming outcome
  - (iii) [Section 3.3.3](#): Minimum number of scenarios to assess.

### 3.1 **Would prescribing temperature outcomes and/or scenario pathways affect an entity's ability to comply with IFRS S2?**

28 As mentioned above, most stakeholders supported requiring assessment against 1.5°C warming outcome and some also preferred specifying a high-warming outcome to assess climate resilience. However, a few stakeholders expressed concerns that prescribing specific temperature outcomes and/or scenario pathways in ASRS 2 would:

- (a) be a departure from the baseline of IFRS S2; and/or
- (b) reduce the proportionality measure introduced by the ISSB (because IFRS S2 paragraphs B1–B18 requires an entity to use climate-related scenario analysis to assess its climate resilience using an approach that is **commensurate with the entity's circumstances**, considering the **skills, capabilities and resources available** for the climate-related scenario analysis at the time of carrying out its analysis and to consider all reasonable and supportable information that is available at the reporting date **without undue cost or effort**).

#### ***What is the ISSB's view on prescribing temperature outcomes?***

29 As noted in paragraphs BC66–BC67 of the ISSB's Basis for Conclusions for IFRS S2, the ISSB decided not to specify the scenarios that an entity would be required to use in its scenario analysis. This is because:

- (a) the **relevant scenarios would depend on the entity's facts and circumstances**, including the nature and location of its operations and the physical and transition risks to which it is exposed;
- (b) specifying which scenarios an entity should use would not be practical, might quickly become outdated and could lead to the disclosure of information that does not reflect the entity's specific circumstances or management's view of what is plausible.

30 In paragraph BC67 of the ISSB's Basis for Conclusions for IFRS S2, it was also stated that the ISSB decided that **the scenarios selected by an entity must be relevant to its circumstances in order to provide useful information to users of GPFS**.

31 The ISSB explained in paragraph BC56 of the Basis for Conclusions for IFRS S2 that "... A resilience assessment is management's assessment of a **range of plausible but uncertain climate outcomes**, the implications for the entity's business model and strategy and its capacity to adapt or respond."

#### ***Staff analysis***

32 Staff observed that prescribing specific 'temperature outcomes' is different from prescribing a specific 'scenario' or 'pathway'. The latter implies mandating that a certain, existing, fully developed end-to-end scenario needs to be considered.

- 33 There are many different scenario pathways that could be selected or developed to meet any given temperature outcome. In accordance with IFRS S2 paragraph 22, and as explained in IFRS S2's paragraph BC67—to assess climate resilience using an approach **relevant to the entity's circumstances**—an entity should be permitted/required to select or develop scenarios using pathways that are most relevant to their own facts and circumstances. Since it would be unlikely that one scenario pathway would be suitable for all entities, prescribing specific scenario pathways in ASRS 2 would potentially affect an entity's ability to comply with IFRS S2.
- 34 However, prescribing temperature outcomes in ASRS 2 should not affect an entity's ability to comply with IFRS S2. This is because:
- (a) the most ambitious and least ambitious temperature outcomes would be relevant for all entities to consider to ensure the full breadth of outcomes is explored;
  - (b) it would be consistent with the ISSB's view noted in paragraph BC56 of the Basis for Conclusions for IFRS S2 that resilience assessment is assessment of a **range of plausible but uncertain climate outcomes**;
  - (c) entities will still need to 'select scenarios relevant to its circumstances' (albeit aligning with any prescribed temperature outcomes) and would be permitted to assess against additional outcomes when deemed necessary to provide relevant information to users about their climate resilience; and
  - (d) it would not reduce the proportionality measure introduced by the ISSB because an entity is still required to select an approach to climate scenario analysis commensurate with its circumstances.

### **Staff conclusion**

- 35 Staff consider that:
- (a) prescribing temperature outcomes in ASRS 2 would be an addition to, but not a departure from, the baseline of IFRS S2. Prescribing temperature outcomes in ASRS 2 would not prevent an entity that complies with ASRS 2 from complying with IFRS S2 with respect to climate resilience disclosures; however,
  - (b) specifying a scenario or a pathway in ASRS 2 could potentially affect an entity's ability to comply with IFRS S2. If the prescribed scenario is not suitable for the entity's specific circumstances, such entities may need to undertake additional analyses to comply with IFRS S2.

### **3.2 What are the advantages and disadvantages of prescribing temperature outcomes?**

- 36 Many stakeholders who requested the AASB to prescribe temperature outcomes and/or the underlying scenario pathways were of the view that doing so would promote comparability of entities' climate resilience disclosures.
- 37 Staff are of the view that entities' climate resilience disclosures can be 'comparable' only to the extent that users would be able to have confidence that entities have a consistent understanding of climate-related risks and opportunities and related uncertainties and their readiness in managing those risks and opportunities, including comparing:
- (a) management's assessment of its climate resilience or lack thereof and therefore the degree to which the entity sees a 'case for change' to its business model and strategy;

- (b) whether it considers the actions being taken in response to the results of the scenario analysis are commensurate with that ‘case for change’;
  - (c) the fact that challenging and relevant climate-related scenarios have been considered, which in turn demonstrates capability in relation to strategy and foresight;
  - (d) the related climate-related risks and opportunities and related uncertainties; and
  - (e) the range of key assumptions used in undertaking climate resilience assessments.
- 38 Staff consider that any information about the output of climate scenario analysis is very difficult to compare, even if using the same temperature outcome and pathways. This is because each entity will have a different combination of assets and geographies to consider, and a different interpretation of the implications that such scenarios (in combination with its own exposure to climate-related risks and opportunities) present.
- 39 Notwithstanding that there may only be indirect comparability benefits for users, staff consider that prescribing temperature outcomes (but not prescribing specific scenario pathways) may have the following advantages. Prescribing temperature outcomes in ASRS 2 may:
- (a) promote more consistent use of scenario assumptions while still allowing for ‘customisation’ by those entities;
  - (b) encourage entities to consider a wider range of plausible warming outcomes that are relevant for decision-makers in understanding the potential change to the business model and strategy and informing ongoing risk management and transition planning;
  - (c) assist with countering the perception that no one can understand each other precisely because of the use of different temperature outcomes; and
  - (d) give comfort to entities that the temperature outcomes they are assessing are consistent with other entities, allaying fears of ‘not doing the right thing’.
- 40 Two perceived disadvantages that staff identified, if temperature outcomes are prescribed in the Standard, are:
- (a) some entities may treat scenario analysis as a compliance exercise and assess only the prescribed temperature outcomes without considering users’ needs and the entity’s exposure to climate-related risk and opportunities. Staff consider that this issue could be addressed by clearly stating in the Standard that the temperature outcomes are the minimum requirements, and an entity must apply judgement in determining the number of scenarios and the related pathways necessary to meet the objective of IFRS S2 paragraph 22—to disclose information that enables users of general purpose financial reports to understand the resilience of the entity’s strategy and business model to climate-related changes, developments and uncertainties; and
  - (b) there may not be domestic data available for a given temperature outcome. This can be addressed by reminding readers that in accordance with ASRS 2 where there is no quantitative data available (such as the output of a regional Australian climate model or a domestic or sectoral transition pathway), entities are permitted to develop their own narrative components and/or make their own assumptions. This is permitted under the application guidance set out in IFRS S2 paragraphs B1–B18.
- 41 **Staff conclusion:** Based on the above analysis, staff consider that the advantages of prescribing temperature outcomes in ASRS 2 may outweigh the disadvantages of doing so.

- 42 Based on the analysis in paragraphs 28–41, staff consider that the Board can proceed with one of the following options in finalising ASRS 2 with respect to the requirement to use climate scenario analysis to assess climate resilience:
- (a) Option 1: To incorporate the requirements in IFRS S2 without modifications;<sup>6</sup> or
  - (b) Option 2: To proceed to prescribe the temperature outcomes an entity would be required to assess against in complying with the climate resilience disclosure requirements set out in IFRS S2 paragraph 22 (but not to prescribe specific scenarios or pathways in ASRS 2).
- 43 If the Board decides to proceed with Option 1, i.e. not to prescribe temperature outcomes in ASRS 2, [Section 3.3](#) will not be discussed at the meeting on 26 June 2024. Staff drafted [Section 3.3](#) to facilitate discussion should the Board proceed with Option 2.

#### Question for Board members

Q1: Do Board members want to proceed with Option 1, Option 2 or another approach?

### 3.3 Which temperature outcomes should the AASB prescribe?

#### 3.3.1 Low-warming scenario

- 44 As noted in [Section 2.2](#), [Appendix A](#) and [Appendix B](#) of the paper most stakeholders support the proposal in ED SR1 to assess against 1.5°C warming outcome, but a few stakeholders have concerns with that proposal because using a 1.5°C-aligned scenario may not result in relevant information for users. Those stakeholders are of the view that a 1.5°C-aligned scenario might not be a plausible scenario since there is scientific evidence indicating that in the near term global warming is likely to exceed 1.5°C.<sup>7</sup>

#### Staff analysis

- 45 Staff observed that ED SR1 did not explain the meaning of ‘assessing against the most ambitious global temperature goal set out in the *Climate Change Act 2022*’ proposed in paragraph Aus22.1 of [draft] ASRS 2.
- 46 A ‘1.5°C warming outcome’ as described in the Paris Agreement is a future that involves a global change in average surface temperatures of no more than 1.5°C by 2100, compared to pre-industrial levels. Another often unwritten assumption is that there is no or limited ‘temperature overshoot’<sup>8</sup>. The scenario time horizon may be shorter than 2100, e.g. 2030 or 2050, but the pathway to the chosen end point of the scenario needs to be consistent with restricting the relevant increase in global average temperatures at 2100 compared to pre-industrial levels.
- 47 In respect to the concern from a few stakeholders mentioned in paragraph 44, even if the average surface temperature passes 1.5°C in the very near term, it does not necessarily mean that limiting the average surface temperature to 1.5°C by 2100 is not plausible. Whether or not a global 1.5°C warming outcome remains plausible is a matter of expert judgment based on forward-looking analysis

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6 Subject to consideration of the matters discussed in [Section 4](#) of this paper.

7 For example, comment letter: 26 and survey respondent: 130

8 ‘Temperature overshoot’ is defined in *IPCC, 2018: Annex I: Glossary* [Matthews, J.B.R. (ed.)] as “the temporary exceedance of a specified level of global warming, such as 1.5°C. Overshoot implies a peak followed by a decline in global warming, achieved through anthropogenic removal of CO<sub>2</sub> exceeding remaining CO<sub>2</sub> emissions globally”. (see page 559)

(including consideration of climate science and the speed of global GHG emission reductions), and not based only on information about the current state or domestic progress on GHG emission reductions in Australia.

- 48 Staff consider that the purpose of exploring a 1.5°C warming outcome is to explore high transition risks while also illustrating the benefits of a relatively benign physical risk environment. The fact that GHG emissions are not currently on track to limiting global warming to 1.5°C in the near term also indicates a 1.5°C-aligned scenario should be explored because it would represent a relatively immediate change needed in the global trajectory of GHG emissions.
- 49 If the Board decides to proceed with Option 2 in Question 1, staff recommend the Board confirm its decision in ED SR1 to require an entity to assess climate resilience against 1.5°C warming outcome. This is because:
- (a) even if 1.5°C warming outcome was deemed to be no longer plausible, that global temperature goal remains consistent with the Australian Government’s commitment to the Paris Agreement;
  - (b) staff are not aware of a more appropriate low-warming temperature outcome to prescribe in the Standard than 1.5°C warming outcome since there are no other global temperature goals being discussed by the Australian Government or other parties to the Paris Agreement;
  - (c) requiring a 1.5°C-aligned scenario would provide comfort to users that entities have considered the full spectrum of transition risks and opportunities;
  - (d) most stakeholders who responded to SMC 10 supported requiring assessment against 1.5°C warming outcome; and
  - (e) requiring a 1.5°C-aligned scenario is consistent with the requirements set out in NZ CS 1 and ESRS E1.<sup>9</sup>

#### Question for Board members

Q2: Subject to the Board’s decision in Q1, do Board members agree with the staff recommendation to confirm its decision in ED SR1 to require an entity to assess climate resilience against 1.5°C warming outcome? If not, what alternative approaches would Board members suggest?

[**Note:** The drafting of paragraph Aus22.1 of [draft] ASRS 2 did not specify 1.5°C warming outcome, instead, it referred to the most ambitious global temperature goal set out in the *Climate Change Act 2022*. Staff will consider the drafting of paragraph Aus22.1 and, if required, present alternative drafting for Board deliberation at a future meeting.]

### 3.3.2 High-warming scenario

- 50 As noted in [Section 2.2](#), [Appendix A](#) and [Appendix B](#) of the paper, some stakeholders prefer the Standard to specify a high-warming outcome to promote consistency and comparability, but there was no consensus among stakeholders on which high-warming outcome to specify.
- 51 Staff consider that it would be inappropriate to prescribe a specific high-warming outcome in ASRS 2 because:

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<sup>9</sup> See paragraph 13 of NZ CS 1 Aotearoa New Zealand Climate Standard 1 [Climate-related Disclosures](#) and paragraph 20(c)(i) of ESRS E1 [Climate Change](#) (see page 76)

- (a) as previously considered by the AASB (as noted in paragraph 12 of this paper), assessing physical risks would depend on the entity's facts and circumstances, including the nature and location of its operations, and an entity's explanation of why they have chosen a particular scenario to assess would be more important to users than having an assessment based on a general temperature goal without considering the specific facts and circumstances of the entity; and
- (b) stakeholders responding to ED SR1 have expressed different views on which high-warming outcome they consider most appropriate to assess. Therefore, prescribing a specific high-warming outcome may lead to some entities undertaking additional scenario analyses to provide relevant information for users if the prescribed warming outcome is inconsistent with the entity's views.

52 To address the stakeholders' request noted in paragraph 50, staff consider that it would be appropriate to specify the minimum temperature threshold of the high-warming scenario (e.g. 3°C or greater). This would avoid any argument that 1.5°C or 2°C might be considered by some as 'high physical risk' scenarios, and provide some consistency with the way a high physical risk scenario is being captured while retaining flexibility for an entity to determine the most appropriate high-warming scenario to assess.

53 In respect to which minimum temperature threshold to prescribe, staff observed that some stakeholders recommend a scenario aligned with IPCC SSP5-8.5 which corresponds to around a 4.4°C warming outcome and is consistent with the guidance in ESRS E1.<sup>10</sup> However, some other stakeholders prefer aligning with the requirements in paragraph 13 of NZ CS 1 which requires a 3°C or greater warming outcome.

54 Staff also considered whether it would be appropriate to simply state 'high physical risk', 'high warming' or 'high-temperature outcome' without specifying the minimum temperature threshold. Staff considered that those terms may be open to interpretation and may cause confusion. Specifying a minimum temperature threshold would provide better clarity and mirror the approach to the 1.5°C warming outcome.

55 If the Board decides to proceed with Option 2 in Question 1, staff recommend specifying in ASRS 2 that an entity is required to assess resilience against a 3°C or greater warming outcome. This approach would:

- (a) provide flexibility for an entity to apply scenarios they consider most appropriate, including a scenario aligned with IPCC SSP5-8.5 or a 4°C or greater scenario;
- (b) be consistent with the approach in NZ CS 1; and
- (c) not affect the interoperability of ESRS E1.

**Question for Board members**

Q3: Subject to the Board's decision in Q1, do Board members agree with the staff recommendation to specify in ASRS 2 that an entity is required to assess resilience against a 3°C or greater warming outcome? If not, what alternative approaches would Board members suggest?

<sup>10</sup> Paragraph AR11 of ESRS E1 mentioned the following examples of high emissions climate scenarios an entity may consider in assessing physical risks: IPCC SSP5-8.5 and NGFS's "Hot house world" or "Too little, too late".



### 3.3.3 Minimum number of scenarios to assess

- 56 In ED SR1, as noted in paragraph Aus22.1 of [draft] ASRS 2, the Board proposed requiring an entity to assess against at least two relevant possible future states. Most stakeholders supported that proposal but some stakeholders prefer the Standard to require assessments against at least three relevant possible future states.
- 57 If the Board agrees with the staff recommendations to require a 1.5°C-aligned scenario and a 3°C or greater scenario, it indirectly indicates that an entity would be required to assess at least against those two prescribed temperature outcomes.
- 58 Additionally, staff consider that it may not be appropriate to specify the minimum number of scenarios an entity must assess in ASRS 2. This is because:
- (a) specifying a minimum number of scenarios to assess might inadvertently lead to some entities treating scenario analysis as a compliance exercise and assessing only the prescribed scenarios without considering what would be plausible outcomes; and
  - (b) consistent with IFRS S2, the Standard should encourage an entity to apply judgement in determining the number of scenarios needed to meet the objective of the climate resilience disclosure requirements set out in IFRS S2 paragraph 22—to disclose information that enables users of general purpose financial reports to understand the resilience of the entity’s strategy and business model to climate-related changes, developments and uncertainties.
- 59 Accordingly, staff recommend the Board to amend paragraph Aus22.1 of [draft] ASRS 2 to not specify a minimum number of scenarios an entity must assess.

#### Question for Board members

Q4: Do Board members agree with the staff recommendation to not specify a minimum number of scenarios an entity must assess? If not, what alternative approaches would Board members suggest?

## Section 4: Staff analysis on other matters raised by stakeholders

- 60 During discussions with stakeholders, staff observed that:
- (a) a few stakeholders requested the Board to specify that a 1.5°C-aligned scenario (or any specified low-warming outcome) be applied to assess only transition risk and not physical risk;
  - (b) the last sentence of IFRS S2 paragraph B17 and paragraph Aus22.2 of [draft] ASRS 2 (quoted in paragraph 4 of this paper) may imply that an entity is required to use quantitative modelling to comply with the climate resilience disclosure requirements set out in IFRS S2 paragraph 22; and
  - (c) there was concern about the cost and effort, relative to the benefits, of requiring an entity to undertake climate resilience assessment on an annual basis.
- 61 The matters are discussed in turn in this section.

#### 4.1 Should the low-warming outcome be limited to assessing transition risk?

- 62 A few stakeholders requested the Board to specify that the 1.5°C-aligned scenario requirement proposed in ED SR1 be applied to assess only transition risk and not physical risk.<sup>11</sup> This is because they are of the view that:
- (a) there is currently no publicly available downscaled climate data for Australia to support the undertaking of a physical risk assessment to a 1.5°C-aligned scenario;
  - (b) the degree of ‘locked-in’ climate change means that any difference in physical risk exposure only occurs towards the end of the century. Between now and 2040 physical risk is only projected to get worse and is therefore going to be similar in all scenarios. Therefore, assessing a low-warming scenario such as a 1.5°C-aligned scenario is unlikely to provide relevant information for users about the entity’s resilience against physical risk; and
  - (c) how paragraph 22 of IFRS S2 is drafted seems to suggest that an entity wishing to apply the 1.5°C warming scenario to assess only transition risk would need to justify why they had not applied the scenario to physical risk. However, it is unclear what would be an acceptable justification since the two risks are inextricably linked because an entity considers both the socio-economic and physical characteristics of the future state when developing a climate scenario narrative.
- 63 Staff agree with stakeholders that in a 1.5°C-aligned scenario physical risk only diverges post 2040 or 2050. However, it should not be assumed that physical risk in a 1.5°C-aligned scenario should be ignored in all cases because decision-makers of some entities may find this information useful. For example, if a decision-maker is dealing with a fishing business that is suffering from depleted fish stocks (leading to reduced revenue and other regulatory issues such as negotiating areas available to fish) due to physical impacts of climate change in 2035, then the physical impacts of a 1.5°C-aligned scenario would be relevant to the decision makers.
- 64 In respect to the stakeholder comment noted in paragraph 62(c), subparagraphs (3) and (5) of IFRS S2 paragraph 22(b)(i) [quoted in paragraph 4 of this paper] state that an entity shall disclose how and when climate-related scenario analysis was carried out, including information about “whether the climate-related scenarios used for the analysis are associated with climate-related transition risks or climate-related physical risks” and “why the entity decided that its chosen climate-related scenarios are relevant to assessing its resilience to climate-related changes, developments or uncertainties.” Staff consider that it would meet the disclosure requirements of IFRS S2 if an entity disclosed that a given climate scenario was used to consider just physical or transition risk, or both physical and transition risk.
- 65 Staff recommend clarifying the requirements of the baseline of IFRS S2 in the Basis for Conclusions to ASRS 2 that an entity would meet the disclosure requirements of IFRS S2 if an entity disclosed that a given climate scenario was used to consider just physical or transition risk, or both physical and transition risk.

#### Question for Board members

Q5: Do Board members agree with the staff recommendation described in paragraph 65?

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11 For example, comment letter: 49

## 4.2 Quantitative modelling

- 66 IFRS S2 paragraphs B1–B18 provide application guidance (which was drawn on documents published by TCFD) on the requirements set out in IFRS S2 paragraph 22, including:
- (a) requiring an entity to use climate-related scenario analysis to assess its climate resilience using an approach that is **commensurate with the entity’s circumstances**, considering its exposure to climate-related risks and opportunities and the **skills, capabilities and resources available** for the climate-related scenario analysis at the time of carrying out its analysis (IFRS S2 paragraph B2);
  - (b) requiring an entity to determine an approach to climate-related scenario analysis that enables it to consider all reasonable and supportable information that is available at the reporting date **without undue cost or effort** (IFRS S2 paragraph B8). The inputs used in scenario analysis may:
    - (i) include information about past events, current conditions and forecasts of future conditions (IFRS S2 paragraph B9);
    - (ii) be **qualitative or quantitative** information obtained from an external source or **developed internally** (IFRS S2 paragraph B11); and
    - (iii) include one or more climate-related scenarios, including international and regional scenarios, that are **publicly and freely available from authoritative sources** (IFRS S2 paragraph B12).
- 67 IFRS S2 paragraph B15 also states that quantitative information will often enable an entity to carry out a more robust assessment of its climate resilience; however, **qualitative information (including scenario narratives), either alone or combined with quantitative data**, can also provide a reasonable and supportable basis for the entity’s resilience assessment.
- 68 However, the last sentence of IFRS S2 paragraph B17 (as shown in blue shaded text below) appears to conflict with the other application guidance summarised in paragraphs 66–67 above. IFRS S2 paragraph B17 states:
- “An entity might use a simpler approach to climate-related scenario analysis, such as qualitative scenario narratives, if such an approach is appropriate to the entity’s circumstances. For example, if an entity does not currently have the skills, capabilities or resources to carry out quantitative climate-related scenario analysis but has a high degree of exposure to climate-related risk, the entity might initially use a simpler approach to climate-related scenario analysis, but would build its capabilities through experience and, therefore, would apply a more advanced quantitative approach to climate-related scenario analysis over time. An entity with a high degree of exposure to climate-related risks and opportunities, and with access to the necessary skills, capabilities or resources, **is required to apply a more advanced quantitative approach to climate-related scenario analysis.**” [emphasis shown in bold text]
- 69 Staff observed that when reading the last sentence of IFRS S2 paragraph B17 alone, it could be interpreted that an entity with a high degree of exposure to climate-related risks and opportunities and with access to the necessary skills, capabilities or resources is required to undertake quantitative modelling in complying with the requirements set out in IFRS S2 paragraph 22. This interpretation conflicts with the guidance in IFRS S2 paragraph B15 that “qualitative information (including scenario narratives), either alone or combined with quantitative data, can also provide a reasonable and supportable basis for the entity’s resilience assessment”. Staff observed that some stakeholders are

of the view that a quantitative approach to scenario analysis is not necessarily more ‘technically sophisticated’ and that a primarily qualitative approach may be more technically sophisticated.<sup>12</sup>

- 70 Since the nature of paragraph B17 of IFRS S2 is not to prescribe specific requirements but to provide an example (as stipulated in the second sentence of paragraph B17), staff consider the last sentence of paragraph B17 could be edited to avoid confusion. For example, it can be edited as follows: “~~An~~ Conversely, an entity with a high degree of exposure to climate-related risks and opportunities, and with access to the necessary skills, capabilities or resources, ~~is required to~~ would apply a more advanced quantitative approach to climate-related scenario analysis”.
- 71 Additionally, staff observed that how paragraph Aus22.2 of [draft] ASRS 2 is drafted may also imply that an entity is required to use quantitative modelling to comply with the climate resilience disclosure requirements set out in IFRS S2 paragraph 22. Paragraph Aus22.2 of [draft] ASRS 2 states:
- “For the purposes of paragraphs 22–Aus22.1, an entity need not disclose the detailed modelling adopted in carrying out its climate-related scenario analysis. An entity is required to disclose the inputs and assumptions used in its climate-related scenario analysis and the related outcomes set out on paragraph 22.”
- 72 As noted in paragraph 13 of the paper, the AASB added paragraph Aus22.2 in [draft] ASRS 2 to clarify that an entity is not required to disclose its climate-related scenario analysis outputs. The ISSB noted in paragraph BC59 of the Basis for Conclusions for IFRS S2 that “... the ISSB emphasised that an entity is not required to disclose the results of its scenario analysis, but is instead required to disclose its interpretation of those results”, however, this point was not made clear in the body of IFRS S2. On reflection, staff consider that such clarification could be made in the Basis for Conclusions for ASRS 2 rather than in the body of the Standard.
- 73 Staff recommend:
- (a) editing the last sentence of paragraph B17 of ASRS 2 and omitting paragraph Aus22.2 from ASRS 2 to avoid implying an entity is required to use quantitative modelling to comply with the climate resilience disclosure requirements set out in IFRS S2 paragraph 22; and
  - (b) clarifying in the Basis for Conclusions for ASRS 2 that an entity is not required to disclose the results of its scenario analysis, but is required to disclose its interpretation of those results.

#### **Question for Board members**

Q6: Do Board members agree with the staff recommendation noted in paragraph 73? If not, what alternative approaches would Board members suggest?

### **4.3 Annual resilience assessment**

- 74 IFRS S2 paragraph B18 states:

“Although paragraph 22 requires an entity to disclose information about its climate resilience at each reporting date, the entity might carry out its climate-related scenario analysis in line with its strategic planning cycle, including a multi-year strategic planning cycle (for example, every three to five years). Therefore, in some reporting periods the entity’s disclosures in accordance with paragraph 22(b) could remain unchanged from the previous reporting period if the entity does not conduct a scenario

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12 For example, comment letter: 18.

analysis annually. The entity shall—at a minimum—update its climate-related scenario analysis in line with its strategic planning cycle. However, an assessment of the entity’s resilience is required to be carried out annually to reflect updated insight into the implications of climate uncertainty for the entity’s business model and strategy. As such, an entity’s disclosure in accordance with paragraph 22(a)—that is, the results of the entity’s resilience assessment—shall be updated at each reporting period.”

- 75 Some stakeholders commented that the cost and effort of requiring an entity to undertake climate resilience assessment on an annual basis may outweigh the benefits of the requirement. They are of the view that:
- (a) if the scenarios that have been considered are being updated on a slower cycle as permitted in IFRS S2 paragraph B18—in line with strategic planning (e.g. every three to five years)—it is unclear where the ‘updated insight’ would derive from or what benefit would come from ‘interpreting’ those scenarios annually;
  - (b) it is uncertain whether an annually updated climate resilience disclosure would lead to more useful information for users compared with providing updated climate resilience only in the periods aligning with the entity’s strategic planning cycle. Some stakeholders consider that in the periods in between cycles, it may be appropriate to simply cross-reference to the latest climate resilience disclosures made rather than requiring an entity to disclose annual resilience disclosures; and
  - (c) such ‘annual update’ requirements might become a compliance exercise rather than providing useful information to users.
- 76 Staff consider that there is insufficient information obtained from stakeholders regarding the cost versus benefits of annual climate resilience assessment to justify modifying the requirements set out in IFRS S2 paragraph B18. Staff consider that this matter could be considered as part of the post-implementation review of the Standard.

**Question for Board members**

Q7: In respect to the annual climate resilience assessment requirement, do Board members agree with the staff view that there is insufficient information to justify modifying the requirements set out in IFRS S2 paragraph B18?

## Appendix A: Other preferences expressed by stakeholders

- A1 Some stakeholders expressed other preferences that are not categorised in the five views described in [Section 2.2](#). Their main comments have been summarised in paragraphs A2–A17 below.
- A2 Comment letter 4 – prefer specifying standardised scenarios for entities to assess against.
- A3 Comment letter 12 – support the ED proposal but recommend also requiring assessment against a scenario that presents significant high physical risk (without prescribing the temperature outcome). For example, ‘too little, too late’ scenario from the Network for Greening the Financial System (NGFS).
- A4 Comment letter 16 – prefer using one common scenario to promote comparability. However, subsidiaries of foreign entities might need to produce three or more scenarios for reporting to the parent entity.
- A5 Comment letter 25 – suggest setting definitive requirements and parameters to be used for climate scenario analysis.
- A6 Comment letter 26 – commented that prescribing a minimum of two scenarios would reduce the proportionality measure introduced by the ISSB, and a 1.5°C scenario might not provide relevant information for users.
- A7 Comment letter 43 – prefer requiring 1.5°C and 2°C rise scenarios as a minimum and optional reporting on 3°C and 4°C rise scenarios to inform longer term planning. Scenarios should be defined in the Standard for 1.5°, 2°, 3°, and 4° to facilitate generation of quality information, consistency with accepted methodologies and to allow for comparison.
- A8 Comment letter 44 – agree with establishing a common baseline for comparability, but prefer a non-prescriptive approach. Suggest mandating fewer scenarios for Group 3 entities and providing non-mandatory guidance on climate scenario analysis.
- A9 Comment letter 51 – suggest providing flexibility for entities to report against a ‘well below 2°C scenario’ with optional additional scenarios to enable entities currently applying TCFD to utilise their existing scenario analyses.
- A10 Comment letter 55 – prefer requiring 1.5°C and specifying the other scenario needs to be specific to the entity’s facts and circumstances to align with IFRS S2.
- A11 Comment letter 70 – suggest specifying a 1.5°C scenario might not be appropriate for assessing physical risk and a high-warming scenario is limited to assessing physical risk.
- A12 Comment letter 100 – suggest providing guidance on the models to be used and simply requirements for smaller entities. Global temperatures are on track to increase by 2.5–2.9 °C by the end of the century based on ratified Nationally Determined Commitments (NDCs) globally.
- A13 Comment letter 107 – commented that 1.5°C is unlikely to provide useful information. Suggest providing guidance to specify that using RCP8.5 scenario is unlikely to provide relevant information.
- A14 Comment letter 108 – suggest setting out the parameters that entities should follow in undertaking scenario analysis and requiring entities to disclose which warming outcome scenarios are being evaluated.
- A15 Comment letter 115 – suggest mandating a single climate scenario for not-for-profit entities.
- A16 Survey respondent 13 – commented that they support the application of at least three different scenarios to be assessed, which should include a 1.5°C scenario and additional scenarios be determined by the entity.
- A17 Survey respondent 130 – disagree with requiring assessment against a 1.5°C scenario because the current emissions will exceed 1.5°C warming.

## Appendix B: Summary of stakeholder feedback received on SMCs 10 and 11

### Stakeholders' comments relating to the minimum number of scenarios to assess

#### *Supporting comments regarding requiring assessment against at least two future states*

- B1 As noted in the table in paragraph 20, most stakeholders who responded to SMCs 10 and 11 support the Board's proposal to require assessments against a minimum of two relevant possible future states.
- B2 Most of those respondents either did not provide a reason for their support or agreed with the Board's rationale outlined in ED SR1. A few stakeholders provided a reason for their support. They commented that requiring assessments against a minimum of two relevant possible future states would:
- (a) not preclude an entity from complying with IFRS S2<sup>13</sup> and add jurisdictional clarification to IFRS S2;<sup>14</sup>
  - (b) lead to an entity selecting both a low-warming and a high-warming scenario because selecting two low-warming scenarios would likely be subject to scrutiny for not providing adequate disclosure about risks under warmer scenarios;<sup>15</sup>
  - (c) reduce ambiguity and reduce unnecessary effort in determining the interpretation of the climate scenario analysis requirements;<sup>16</sup> and
  - (d) voluntary reporting of more than two scenarios is permitted.<sup>17</sup>
- B3 A few stakeholders qualified their support to the AASB's proposal because they prefer the Standard to require an entity to assess a high-warming scenario to assess physical risk (in addition to prescribing the low-warming scenario).<sup>18</sup>
- B4 One respondent commented that all reporting entities should be required to report their risks and opportunities associated with a 1.5° temperature rise and a 2° temperature rise as a minimum. This allows like-for-like comparison and is consistent with the approach employed by the TCFD, which is informed by several years' reporting experience.<sup>19</sup>

#### *Opposing comments – prefer not prescribing a minimum number of scenarios (i.e. to align with IFRS S2)*

- B5 Some stakeholders commented that requiring assessments against a minimum of two relevant possible future states would:
- (a) increase the cost and effort required to undertake climate resilience assessments particularly for Group 2 and Group 3 entities and entities in the not-for-profit (NFP) sector;<sup>20</sup>

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13 For example, comment letter: 40

14 For example, comment letter: 55

15 For example, comment letter: 9

16 For example, comment letter: 37

17 For example, comment letter: 100

18 For example, comment letters: 12, 34, 53, 36, 65, 75 and survey respondents: 3, 4, 190

19 Comment letter: 43

20 For example, comment letters: 1, 83, 155

- (b) reduce the flexibility of the proportionality measure introduced by the ISSB by requiring “an approach that is commensurate with the entity’s circumstances”;<sup>21</sup> and
- (c) potentially place disproportionate burden on preparers and increasing the cost of compliance because there is limited high-quality physical risk data available for many Australian geographic locations.<sup>22</sup>

***Opposing comments – prefer prescribing a minimum of three scenarios***

B6 Some stakeholders prefer the AASB to prescribe a minimum of three scenarios. Their main reasons are summarised below.

- (a) The marginal cost of exploring additional scenarios is minimal.<sup>23</sup>
- (b) If only two scenarios are used, there might be a risk that entities would default to a ‘good and bad’ scenarios without considering the plausibility of the scenario.<sup>24</sup>
- (c) Specify the number and temperature range of scenarios to ensure quality and comparable disclosures. The assessment of climate risks should be done across plausible scenarios that may be encountered in the coming years. Only mandating a low-warming scenario means that companies may focus only on transition risk or underestimate the potential exposure to physical risks.<sup>25</sup>
- (d) Investors expect to see a wider range of scenarios, including an orderly transition to 1.5°C, an abrupt or delayed transition (1.5°C to 2°C), current policies (3+°C) and high case (4+°C) scenario, as well as disclosure of rationale for bespoke scenarios. Of these, the lower and upper ends are particularly important to assess resilience. The delayed disorderly scenario vs an orderly transition also helps entities assess risks and opportunities in an environment with sudden policy shifts, which seek to reduce emissions on steeper trajectories and can cause increased transition risk.<sup>26</sup>
- (e) Suggest adopting New Zealand’s approach to allow comparability and also to recognise that annual mean global temperatures are already at, or close to, the lower limit.<sup>27</sup>

B7 In contrast, one stakeholder specifically commented that they do not support requiring a minimum of three scenarios because it will significantly increase the compliance burden, particularly on Group 2 and Group 3 entities. Not mandating such a requirement will continue to allow voluntary disclosure against a third scenario.<sup>28</sup>

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21 For example, comment letter: 26

22 For example, comment letter: 26

23 For example, comment letter: 6

24 For example, comment letter: 6

25 For example, comment letter: 20

26 For example, comment letter: 77

27 For example, comment letter: 42

28 For example, comment letter: 82



## Stakeholders' comments relating to low-warming scenario

### Supporting comments regarding requiring a 1.5°C warming outcome

- B8 Most respondents agreed with the Board's proposal to require an entity to assess climate resilience using a scenario aligning with a 1.5°C warming outcome. The main reasons for their support are summarised below.
- (a) The proposal would not preclude an entity from complying with IFRS S2<sup>29</sup> and would enhance comparability of climate resilience assessments between entities.<sup>30</sup>
  - (b) The proposal would provide a clear, ambitious benchmark for entities to assess and disclose their climate resilience, aiding investors in evaluating climate-related risks and opportunities.<sup>31</sup>
  - (c) By aligning a climate scenario with the global temperature goal in the *Climate Change Act 2022*,<sup>32</sup> Australian entities will be assessing the resilience of their strategies and business models to an objective that future Government policies and regulations might be designed to meet. That is, aligning with a 1.5°C warming outcome represents a common transition risk (and/or opportunity) that Australian entities will face. Aligning with a 1.5°C warming outcome is consistent with the Paris Agreement.<sup>33</sup>
  - (d) Consistent with TCFD recommendations, assessing 1.5°C warming outcome is the best-known and most widely used scenario produced by the International Energy Agency (IEA) in the annual release of the *World Energy Outlook*.<sup>34</sup>
  - (e) Aligning with a 1.5°C warming outcome is the common benchmark and is critical for accurately assessing and addressing transition risks. Therefore, even though it is likely that there will be overshooting 1.5°C warming, aligning to this outcome would still provide a relevant benchmark.<sup>35</sup>
  - (f) Limiting warming to 1.5°C is vital to preserving a safe and prosperous planet. Therefore, it is best practice to use a scenario aligned with a 1.5°C warming outcome to assess transition risk as part of mandatory financial climate-related risk disclosure. The use of a 1.5°C-aligned scenario is also in line with Glasgow Financial Alliance for Net Zero (GFANZ) and other international expectations.<sup>36</sup>

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29 For example, comment letter: 40

30 For example, comment letters: 10, 11, 12, 15, 27, 34, 37, 62, 64, 68

31 For example, comment letters: 38, 74, 97

32 A few stakeholders commented that instead of referring to the Climate Change Act, the Standard should refer to the most ambitious global temperature goal set by the Australian Government to ensure entity's climate resilience assessments align with the goals set by the Australian Government even if the Climate Change Act has not been updated timely to reflect Government's changes (for example, comment letter 101)

33 For example, comment letters: 10, 15, 27, 32, 50, 55, 62, 64

34 For example, comment letter: 50

35 For example, comment letters: 94 and 114

36 For example, comment letter: 89

## Opposing comments

- B9 However, some other stakeholders raised concerns about requiring assessment against a 1.5°C warming outcome. Their main comments are summarised below.
- (a) ASRS Standards should seek to align with ISSB Standards to the maximum extent possible and IFRS S2 does not specify a scenario.<sup>37</sup>
  - (b) The [Climate Action Tracker](#) has noted that “Current policies presently in place around the world are projected to result in about 2.7°C warming above pre-industrial levels [by 2100] ... When binding long-term or net-zero targets are included warming would be limited to about 2.1°C above pre-industrial levels.” Accordingly, assessment against a 1.5°C warming outcome might provide an overly optimistic scenario analysis of the climate impacts to assets or operations of an entity. The resulting analysis might not provide useful information for users.<sup>38</sup>
  - (c) Entities should be permitted, as per IFRS S2, to self-assess which low-warming outcome to assess. This will allow an entity to prepare information addressing the needs of users on how an entity is responding to identified material climate-related risks and opportunities, using plausible assumptions.<sup>39</sup>
  - (d) Uncertain about the long-term feasibility of mandating alignment with a specific target indefinitely for disclosing future states in an entity's climate resilience assessment. Any approach adopted in terms of setting minimum baseline scenarios to be reported on should allow for flexibility for periodic updates to ensure adaptability to evolving global temperature goals and evolving climate science over time.<sup>40</sup>
  - (e) The 1.5°C warming scenario is an extreme transition risk scenario, particularly as IPCC AR6 noted “In the near term, global warming is more likely than not to reach 1.5°C even under the very low GHG emission scenario (SSP1-1.9) and **likely or very likely to exceed 1.5°C under higher emissions scenarios.**” [emphasis added] Accordingly, the 1.5°C warming scenario may be useful as a stress testing scenario, but may not provide relevant information to investors compared to using a plausible future scenario. There are potentially less ambitious but more plausible scenarios (e.g. SSP1-RCP2.6) that may provide the user of financial statements with a better sense of the resilience of the entity's strategy and business model to more plausible climate-related changes, developments and uncertainties.<sup>41</sup>
  - (f) Although 1.5°C is in line with the *Climate Change Act 2022*, this scenario is not necessarily used in other jurisdictions. Flexibility is needed for dual-listed and multinational entities required to report at a group level.<sup>42</sup>
  - (g) Entities should be permitted to report against a “well below 2°C scenario”, so that those entities currently applying TCFD would be able to utilise their existing scenario analyses.<sup>43</sup>

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37 For example, comment letter: 7

38 For example, comment letter: 9

39 For example, comment letter: 9

40 For example, comment letter: 9

41 For example, comment letter: 26

42 For example, comment letters: 16, 51

43 For example, comment letter: 51

## Stakeholders' comments relating to high-warming scenario

### *Supporting comments regarding the Board's proposal to not prescribe a high-warming scenario*

- B10 Most stakeholders who commented on this topic support the Board's proposal to not prescribe a high-warming scenario to assess physical risk. Their main reasons for their support are summarised below.
- (a) It will permit an entity to make judgement about the most appropriate scenarios based on the entity's circumstances (such as a plausible transition plan or severity of physical climate risks to an entity's own supply chain) and provide flexibility in adjusting analysis based on the degree of warming that actually eventuates under a high-warming scenario.<sup>44</sup>
  - (b) Enable judgement and flexibility for entities that need to align their reporting with other jurisdictions without the need to assess additional scenarios for Australian reporting.<sup>45</sup>
  - (c) ASRS Standards should seek to align with ISSB Standards to the maximum extent possible and IFRS S2 does not specify a scenario.<sup>46</sup>
  - (d) Entities should have flexibility to be able to run a range of temperature scenarios to understand the physical risks of climate change. This will help entities better understand how they can adapt and build resilience to manage a range of physical impacts and incorporate this into projects, business continuity planning and disaster recovery planning.<sup>47</sup>
  - (e) Entities and industries will likely be impacted by climate change at differing rates. It will be beneficial to allow entities to determine their own internal view as to what scenarios are most important to analyse based on their specific circumstances.<sup>48</sup>
  - (f) Specification of high-warming outcome related effects represents an ambitious target and may not be easily quantifiable and may not lead to consistency in reporting of results, particularly for firms with operations across multiple jurisdictions.<sup>49</sup>
  - (g) Consistent with the AASB's views outlined in ED SR1, the scenarios used by an entity in its climate-related scenario analysis mainly assess climate-related physical risks, and assessing the physical risk is dependent on the entity's facts and circumstances, including the nature and location of its operations.<sup>50</sup>

### *Opposing comments*

- B11 In contrast, some other stakeholders prefer specifying a high-warming outcome or the range required to assess physical risk. Their main comments are summarised below.
- (a) Specifying a specific warming outcome to assess will aid consistency and comparability across entities.<sup>51</sup>

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44 For example, comment letters: 1, 9, 11, 64, 67, 68, 74, 93, 95, 98, 101

45 For example, comment letter: 53, 65

46 For example, comment letter: 7

47 For example, comment letter: 12, 15, 26, 34

48 For example, comment letter: 38, 64, 97

49 For example, comment letter: 69

50 For example, comment letter: 83

51 For example, comment letter: 6

- (b) A clearly specified high-warming scenario would enable greater comparability of climate resilience outcomes across the economy. This would encourage best practice by permitting direct comparison of outcomes and strategies within and across sectors.<sup>52</sup> The value of climate scenario analysis likely to be lost if each entity within the reporting entity's value chain chooses a different scenario which will limit the ability for equitable comparison of future states across a supply chain.<sup>53</sup>
- (c) Specifying a minimum temperature outcome at 3°C or greater is consistent with the purpose of scenario analysis – to explore risks and opportunities and resilience. This would ensure a minimum of physical risks are explored while retaining the AASB's proposal to give flexibility to entities to adjust scenarios to their circumstances.<sup>54</sup>
- (d) Higher warming scenarios provide an indication of more extreme climate impacts and improve the ability to consider and compare the likely impact of more extreme impacts of climate change (at the reporting entity level as well as in aggregate) over the medium and long term.<sup>55</sup>
- (e) Specifying a high-warming scenario consistent with the latest scientific would stress-test entities' resilience against a warmer scenario, both in terms of physical resilience and to the socio-economic conditions which will arising from operating in a high adaptation world.<sup>56</sup>
- (f) The specification of a high-warming scenario is necessary to ensure that the probability of the scenarios analysed by each entity is both consistent and sufficiently likely to occur to warrant disclosure.<sup>57</sup>
- (g) Consider the New Zealand's approach (to prescribe 1.5°C, 3°C or greater, and another scenario) which would provide clarity to companies that a 3°C or greater scenario should form part of the entity's approach to assessing its exposure and resilience to material climate-related impacts. This clarity helps ensure that all entities assess their risks against consistent, scientifically grounded scenarios, which is crucial for accurate and meaningful risk assessment. When companies use a common set of temperature scenarios to assess and report on their climate-related risks, it significantly enhances the comparability of disclosures across entities and sectors.<sup>58</sup>

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52 For example, comment letters: 62, 104

53 For example, comment letter: 50

54 For example, comment letter: 6

55 For example, comment letter: 77

56 For example, comment letter: 49

57 For example, comment letter: 41

58 For example, comment letter: 88

## Appendix C: Stakeholder comments requesting additional guidance on climate scenario analysis

- C1 Some stakeholders provided comments requesting the AASB consider providing additional guidance on climate scenario analysis or to clarify the requirements. Their main comments have been summarised below. Staff plan to present analysis of those comments for Board deliberation at a future meeting.
- C2 Suggest developing guidance to direct entities to assess and report on the temperature increase threshold where their climate-related risks become material for the organisation. For example, coral reef tour companies may determine that their business becomes unviable at a temperature increase of 1.8°C, whereas a mining company may have no material change in risks until global temperature increases reach 2.5°C. The focus should be on the tipping point for the entity rather than a scenario that is randomly selected.<sup>59</sup>
- C3 Recommend the AASB to prioritise the creation of Australian-focused scenarios and provide guidance on which scenarios to assess rather than mandating specific scenarios.<sup>60</sup> Recommend providing best-practice guidance and directing companies to appropriate resources on the purpose and application of climate scenario analysis, including how inherent uncertainties will be accommodated and the acceptable methodologies to use in scenario analysis.<sup>61</sup> AASB should directly reference and/or specify the IPCC's Shared Socioeconomic Pathways (SSPs) as reference scenarios to ensure consistency and comparability of reporting and that the latest scientific modelling is used.<sup>62</sup>
- C4 The significant disparity in production systems within and between agricultural sectors mean that there is no one size fits all mechanism to account for or report on climate actions. Each agricultural sector is at a different point in their development of industry sustainability frameworks. Benchmarking activities, baseline data and reporting metrics are still being developed and field tested for on-farm practicality and achievability. While mechanisms are being developed there is not yet a way to undertake quantitative scenario analysis that would be required by the AASB's proposal. The AASB should consider setting definitive requirements and clear parameters for the scenarios to ensure all reports can be compared 'like for like'.<sup>63</sup>
- C5 The limitation of paragraph Aus22.1 of [draft] ASRS 2 applies only to entities required to apply ASRS Standards by the Corporations Act. This appears to introduce a tiered application of ASRS Standards which is not previously communicated as a desired outcome. The tiering created by paragraph Aus22.1 of [draft] ASRS 2 would not be consistent with the basis of tiered reporting defined in AASB 1053 *Application of Tiers of Australian Accounting Standards*, creating misalignment in application requirements between AAS and ASRS.<sup>64</sup>
- C6 Recommend the AASB clarify climate resilience requirements for superannuation funds.<sup>65</sup>
- C7 Recommend distinguishing scenario testing requirements between financial and non-financial firms. A concern observed from the market through client discussions is the need for clearer guidelines and a

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59 For example, comment letter: 9

60 For example, comment letters: 10, 21, 44

61 For example, comment letters: 20, 73, 87, 97, 100

62 For example, comment letters: 56, 61

63 Comment letter: 25

64 Comment letter: 26

65 Comment letter: 81

better differentiation in expectations for climate scenario analysis between non-financial corporates and financial services companies.<sup>66</sup>

C8 Consider adding the following text to the Standard:<sup>67</sup>

- (a) add the following text after paragraph 22(a)(iii)(1) of [draft] ASRS 2: “the availability and capabilities of the entity’s existing and future human resources to respond to the effects identified in the climate-related scenario analysis, including to address climate-related risks and to take advantage of climate-related opportunities”;
- (b) add text within paragraph (b)(i)(7) of [draft] ASRS 2 so that it would read as follows: “(7) what scope of operations the entity used in the analysis (for example, the operating locations and business units and the capabilities of the workforce in those locations and business units used in the analysis)”; and
- (c) add text within paragraph 22(b)(ii)(3) of [draft] ASRS 2 so that it would read as follows: “(3) national-or regional-level variables (for example, local weather patterns, demographics, land use, infrastructure and availability of natural and human resources)”

C9 Recommend the Standard to require an entity to prepare a credible transition plan as part of their mandatory climate disclosures. The Treasury’s Consultation Paper [Sustainable Finance Strategy](#) (November 2023) proposes that mandatory disclosure include transition plans and that the ISSB provides the framework for disclosure of transition plans. Credible’ transition plans reinforce the reliability and rigour of climate-related financial disclosures and may significantly lower an entity’s risk of greenwashing and provide a greater level of transparency. The AASB should provide details on what disclosures should be reported relating to the entity’s transition plan. International best practice for transition plans includes the following criteria to ensure they are credible:<sup>68</sup>

- (a) developed according to a comprehensive framework to enable comparability and support stakeholder decision-making;
- (b) show how the entity will achieve science-based decarbonisation targets for their activities; and
- (c) are inclusive of wider impacts on nature and just transition.

C10 Recommend the AASB work with the Australian Government to implement capability-building and training programs focused on clarifying what entities need to do to meet the requirements of ASRS Standards.<sup>69</sup>

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66 Comment letter: 105

67 Comment letter: 14

68 Comment letter: 89

69 Comment letter: 89

## Appendix D: Main climate scenario pathways mentioned by stakeholders

- D1 This Appendix notes the main scenario pathways mentioned by stakeholders for the Board’s reference.
- D2 Most stakeholders refer to the pathways described in:
- (a) IPCC 5<sup>th</sup> assessment report (AR5);
  - (b) IPCC 6<sup>th</sup> assessment report (AR6); and
  - (c) the Network for Greening the Financial System (NGFS).

### Representative Concentration Pathways

- D3 Representative Concentration Pathways (RCPs) are climate change scenarios to project future GHG concentrations. These pathways (or trajectories) describe future greenhouse gas concentrations (not emissions). IPCC AR5 featured four RCPs that examined different possible future GHG emissions, as follows:<sup>70</sup>
- (a) RCP2.6: a ‘very stringent’ pathway, emissions start declining by 2020 and go to zero by 2100;
  - (b) RCP4.5: intermediate scenario, emissions peak around 2040, then decline;
  - (c) RCP6.0: continuous global warming through 2100 making the global temperature rise by about 3–4 °C by 2100; and
  - (d) RCP8.5: emissions continue to rise throughout the 21st century.
- D4 The following table provides an overview of the four possible future GHG emissions described in IPCC AR5.<sup>71</sup>

		2046–2065		2081–2100	
	Scenario	Mean	Likely range <sup>c</sup>	Mean	Likely range <sup>c</sup>
Global Mean Surface Temperature Change (°C) <sup>a</sup>	RCP2.6	1.0	0.4 to 1.6	1.0	0.3 to 1.7
	RCP4.5	1.4	0.9 to 2.0	1.8	1.1 to 2.6
	RCP6.0	1.3	0.8 to 1.8	2.2	1.4 to 3.1
	RCP8.5	2.0	1.4 to 2.6	3.7	2.6 to 4.8

### Shared Socioeconomic Pathways

- D5 Shared Socioeconomic Pathways (SSPs) are climate change scenarios of projected socioeconomic global changes up to 2100 as defined in the IPCC 6<sup>th</sup> Assessment Report (AR6) on climate change in 2021.
- D6 The pathways in IPCC AR6 uses SSP-RCP scenarios based on the SSPs and partly informed by the RCPs scenarios of AR5, as follows:<sup>72</sup>

70 The high-level description of the RCPs was taken from Wikipedia on 29 May 2024.

71 The table is extracted from Table SPM.2 of IPCC’s [Climate Change 2013 The Physical Science Basis, Summary for Policy makers](#) (see page 23).

72 The high-level description of the SSPs was taken from Wikipedia on 29 May 2024.

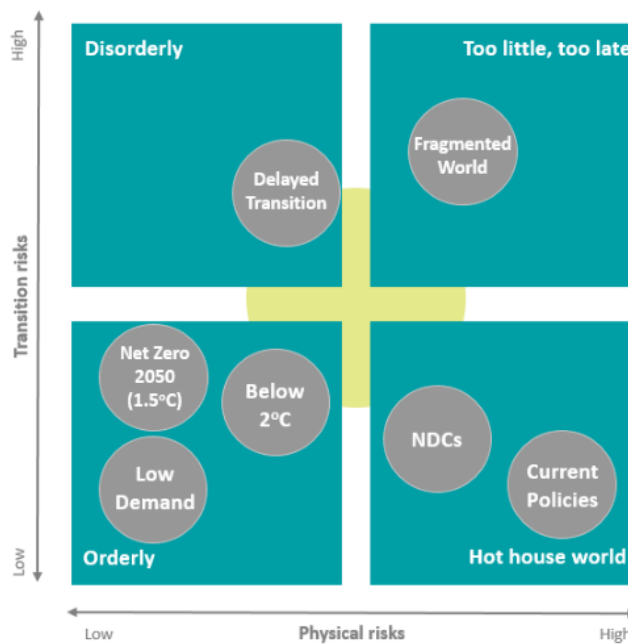
- (a) SSP1-1.9: very low GHG emissions, emissions cut to net zero around 2050;
- (b) SSP1-2.6: low GHG emissions, emissions cut to net zero around 2075;
- (c) SSP2-4.5: intermediate GHG emissions, emissions around current levels until 2050, then falling but not reaching net zero by 2100;
- (d) SSP4-7.0: high GHG emissions, emissions double by 2100; and
- (e) SSP5-8.5: very high GHG emissions, emissions triple by 2075.

D7 The following table provides an overview of the five scenario pathways described in IPCC AR6.<sup>73</sup>

Scenario	Near term, 2021–2040		Mid-term, 2041–2060		Long term, 2081–2100	
	Best estimate (°C)	Very likely range (°C)	Best estimate (°C)	Very likely range (°C)	Best estimate (°C)	Very likely range (°C)
SSP1-1.9	1.5	1.2 to 1.7	1.6	1.2 to 2.0	1.4	1.0 to 1.8
SSP1-2.6	1.5	1.2 to 1.8	1.7	1.3 to 2.2	1.8	1.3 to 2.4
SSP2-4.5	1.5	1.2 to 1.8	2.0	1.6 to 2.5	2.7	2.1 to 3.5
SSP3-7.0	1.5	1.2 to 1.8	2.1	1.7 to 2.6	3.6	2.8 to 4.6
SSP5-8.5	1.6	1.3 to 1.9	2.4	1.9 to 3.0	4.4	3.3 to 5.7

### NGFS climate scenarios

D8 The NGFS designed seven hypothetical scenarios to provide a common and up-to-date reference point for understanding how climate change (physical risk) and climate policy and technology trends (transition risk) could evolve in different futures. The following diagrams provide an overview of the seven scenarios.<sup>74</sup>



73 The table is extracted from Table SPM.1 of IPCC's [Climate Change 2021 The Physical Science Basis, Summary for Policy makers](#) (see page 14).

74 The diagrams are extracted from the [NGFS Climate Scenarios Technical Documentation](#) V4.2 (November 2023).



## Orderly

- **Low Demand** explores the global efforts needed to be able to limit global warming to below 1.5°C by 2050 in an orderly fashion, aligned with the Paris Agreement, driven by lower energy demands. Given the policy delays, this orderly scenario shows that achieving these targets will require even greater ambition in future compared with the previously published 'orderly transition' scenarios.
- **Net Zero 2050** limits global warming to 1.5°C through stringent climate policies and innovation, reaching global net zero CO<sub>2</sub> emissions around 2050. Some jurisdictions such as the US, EU, UK, Canada, Australia, and Japan reach net zero for all GHGs.
- **Below 2°C** Below 2°C gradually increases the stringency of climate policies, giving a 67% chance of limiting global warming to below 2°C. Additionally, countries with net zero targets reach them partially (80% of the target).

## Disorderly

- **Delayed Transition** assumes annual emissions do not decrease until 2030. Strong policies are needed to limit warming to below 2°C. Negative emissions are limited.

## Hot house world

- **Nationally Determined Contributions (NDCs)** includes all pledged targets even if not yet backed up by implemented effective policies.
- **Current Policies** assumes that only currently implemented policies are preserved, leading to high physical risks.

## Too little, too late

- **Fragmented World** assumes a delayed and divergent climate policy response among countries globally, leading to high physical and transition risks. Countries without zero targets follow current policies, while other countries achieve them only partially (80% of the target).