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Submission - 2025 IASR Scenarios Consultation Paper

Australasian Centre for Corporate Responsibility

Attn:
Australian Energy Market Operator (AEMO)

Submitted via email to: forecasting.planning@aemo.com.au

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On behalf of the Australasian Centre for Corporate Responsibility

Introduction

The Australasian Centre for Corporate Responsibility (ACCR) is pleased to participate in the 2025 Inputs Assumptions and Scenarios Report (IASR) Scenarios Consultation Paper submission.

ACCR is a philanthropically-funded, not-for-profit, research and shareholder advocacy organisation, focused on the investment risks and opportunities brought about by the global energy transition. We closely monitor how climate-related risks are being managed by a selection of heavy-emitting companies, and we enable institutional investors to engage effectively with these companies.

The 2025 IASR plays a critical role in shaping Australia's energy future by setting the foundation for scenario planning that guides investment, policy decisions and emissions reduction strategies. These scenarios are used in executing AEMO's electricity and gas statutory functions in the National Electricity Market (NEM), including the Electricity Statement of Opportunities (ESOO), Gas Statement of Opportunities (GSOO) and Integrated System Plan (ISP). Scenarios outlined in AEMO's 2025 IASR will also affect the decarbonisation strategy and pathway of stakeholders in the NEM, including the ASX-listed companies ACCR engages with.

The urgency required to address climate change and meet international commitments means it is essential that AEMO uses the most current and scientifically accurate data to inform its scenarios. The remaining carbon budget (RCB) is a fundamental element in this process because it directly influences the required pace and scale of the emissions reductions the 2025 IASR will stipulate. Recent research indicates the RCB is smaller than previously estimated, which has significant implications for Australia's emissions reduction targets and the NEM's future. To ensure the 2025 IASR aligns with global climate goals and accurately reflects the latest scientific understanding, it is crucial for AEMO to update its scenarios with these new findings and adopt more stringent Paris-aligned pathways.

Recommendations

1. AEMO should use the most current methodologies (e.g. Forster et al. [2023] and Lamboll et al. [2023]) to quantify the global remaining carbon budgets (RCBs) in its scenarios, to inform the basis for the required emissions reductions from here onwards.
2. ACCR also urges AEMO to align its interpretation of Paris alignment with that of the scientific community. The scientific community does not view a 1.8°C scenario (67% likelihood) as Paris-aligned.

Response to the 2025 IASR Consultation Paper

ACCR is responding to the following consultation question suggested by AEMO in the Consultation Paper:

- Since the 2023 IASR publication, what changes (such as environment, social, policy) do you consider most impact scenario development for the 2025 IASR scenarios?

Since the 2023 IASR publication, several key changes have emerged that are crucial for scenario development in the 2025 IASR. These include updated scientific research that indicates a smaller RCB, an increased global and domestic focus on achieving Paris-aligned climate targets, evolving energy policies that emphasise rapid decarbonisation, and heightened social expectations for transparency and accountability in climate action.

However, in the Consultation Paper, AEMO is not proposing any changes to the scenario parameters related to global and domestic temperature settings and outcomes, or to its alignment with the International Energy Agency's (IEA) World Energy Outlook (WEO) scenarios. Notably, AEMO continues to reference the IPCC's Fifth Assessment Report (2014) and the IEA's 2021 WEO scenarios in the consultation paper.[1] Neither resource reflects the most current and scientifically accurate data and understanding.

AEMO should use the most current methodologies (e.g. Forster et al. [2023] and Lamboll et al., [2023]) to quantify the global RCBs in its scenarios, to inform the basis for the required emissions reductions from here onwards.
AEMO currently uses the RCB from the 2022 IPCC Working Group III report.[2] However, since its publication, research by Forster et al. (2023) and Lamboll et al. (2023) has independently shown that the 1.5°C RCB is materially smaller than what was published in the Working Group III report.[3] [4] These findings were also taken into account by e.g. Friedlingstein et al (2023) in their 2023 Global Carbon Budget update.[5]

In the IPCC Working Group III report, the 1.5°C RCB to limit global warming to 1.5°C with a 50% likelihood was shown to be 500Gt of CO_2 for the period after 2020.[6] Model updates, and better quantification of the impact of non-CO_2 emissions on the RCB, imply the budget (calculated from 2020 onwards) is significantly less than the 500Gt of CO_2 used in the multi-sectoral modelling report which forms the foundation for AEMO's scenarios.[7]

For example, Lamboll et al. (2023) show that the updated 1.5°C RCB for limiting warming to 1.5°C with a 50% likelihood at the start of 2023 is 247Gt of CO_2. Using the default method that was used in the IPCC Working Group III report, the RCB would be 314Gt of CO_2. This means the RCB for Australia is smaller than assumed in the multi-sector modelling report and AEMO's scenarios. (Australia's RCB was based on 'fair share' principles consistent with the modified contraction and convergence approach.) This in turn implies that the carbon budgets used for the NEM are smaller than the carbon budgets AEMO now assumes in its scenarios.

ACCR also urges AEMO to align its interpretation of Paris alignment with that of the scientific community.
Scenarios should reflect the spirit of the Paris Agreement. While the Paris Agreement does not stipulate what Paris-aligned

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[1] AEMO, 2024, 2025 IASR Scenarios Consultation Paper, p12, footnote B, https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/consultation-paper.pdf?la=en

[2] AEMO, 2023, 2023 Inputs, Assumptions and Scenarios Report, p41, https://aemo.com.au/-/media/files/major-publications/isp/2023/2023-inputs-assumptions-and-scenarios-report.pdf

[3] Lamboll, R.D. et al., 2023, Assessing the size and uncertainty of the remaining carbon budgets, https://www.nature.com/articles/s41558-023-01848-5

[4] Forster, P.M. et al., 2023, Indicators of Global Climate Change 2022: annual update of large-scale indicators of the state of the climate system and human influence, https://essd.copernicus.org/articles/15/2295/2023/

[5] Friedlingstein, P. et al., 2023, Global Carbon Budget 2023, https://essd.copernicus.org/articles/15/5301/2023/

[6] IPCC, 2022: Summary for Policymakers, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf; In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Table TS.3 and chapter 3, table 3.2, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter03.pdf

[7] Reedman, L. et al., 2022, Multi-sector energy modelling 2022: Methodology and results Final report, https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2022/2023-inputs-assumptions-and-scenarios-consultation/supporting-materials-for-2023/csiro-climateworks-centre-2022-multisector-modelling-report.pdf

scenarios should entail, the scientific community has communicated what a Paris-aligned scenario should look like.[8] Holding temperatures to well below 2°C should be interpreted as limiting warming to 2°C with a 90% likelihood. This also means overshoot should be limited to 0.1°C above 1.5°C. Hence, scenarios that exhibit peak temperatures above 1.6°C cannot be considered Paris-aligned because the likelihood of staying below 2°C is less than 90%. This means AEMO's Step Change scenario would not be viewed by the scientific community as a Paris-aligned scenario because it only limits warming to 1.8°C (67% likelihood) – limiting warming to 2°C with less than 90% likelihood.

[8] Schleussner, C.-F. et al., 2022, An emission pathway classification reflecting the Paris Agreement climate objectives, https://www.nature.com/articles/s43247-022-00467-w