

# 2025 IASR Scenarios

31<sup>st</sup> July 2024



# Purpose and Agenda

The purpose of this presentation is to *inform* the FRG about AEMO’s open consultation on the **2025 IASR scenarios**.

Today’s agenda includes:

- Scenario consultation process
- Scenarios
  - Purpose and application
  - Scenarios and policy
  - What constitutes good scenarios?
- Recap on 2023 IASR and proposed scenario amendments for 2025 IASR
- Seeking stakeholder feedback and other related upcoming consultations

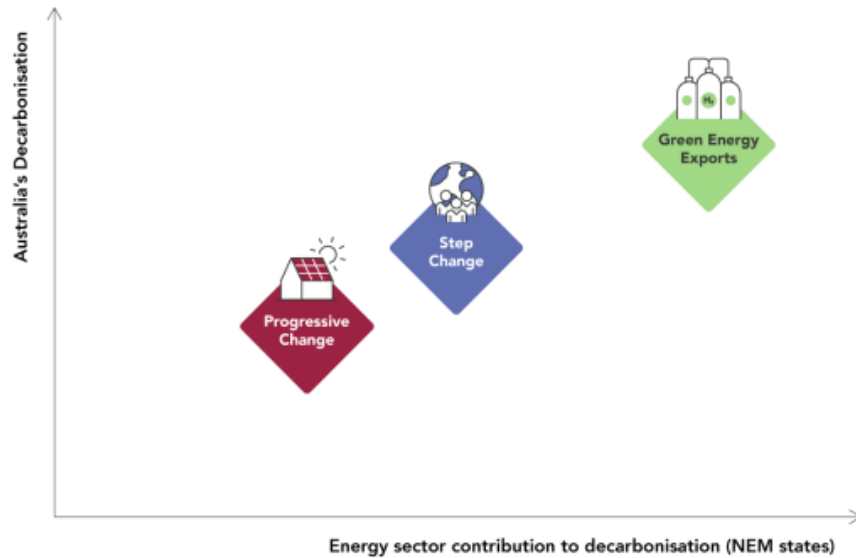
Consultation steps	Dates
2025 IASR Scenarios consultation paper published	17 July 2024
<b>Discussion at Forecasting Reference Group (FRG) meeting</b>	<b>31 July 2024</b>
Submissions due on consultation paper	13 August 2024
Consultation update at FRG meeting	28 August 2024
Draft 2025 IASR published	11 December 2024
Submissions due on draft report	11 February 2025
Final IASR published	31 July 2025

# Scenario consultation process

Consultation steps	Dates
2025 IASR Scenarios consultation paper published	17 July 2024
<b>Discussion at a Forecasting Reference Group meeting</b>	<b>31 July 2024</b>
Submissions due on consultation paper	13 August 2024
Consultation update at a Forecasting Reference Group meeting	28 August 2024
Draft 2025 IASR published	11 December 2024
Submissions due on draft report	11 February 2025
Final IASR published	31 July 2025

# Scenarios – purpose and application

Figure 1 2023 IASR scenarios



AEMO uses a scenario planning approach to examine a range of possible and plausible ‘futures’ when planning for the future needs of the energy system.

## Which future should scenarios represent?

The goal of scenario development is not to determine which future will occur, but to develop a discrete set of scenarios that embody and communicate key uncertainties.

Scenarios need not be normative (describe preferred futures), and do not tend to explore specific solutions (such as high adoption of a particular technology); the impact of specific uncertainties may be explored through sensitivity analysis.

The scenarios include consideration of regulatory, commercial and consumer decisions on the pace and breadth of the energy transition, and the scenario narratives respect domestic and international influences, such as population growth, consumer investments, sector coupling, and emerging green energy opportunities.

# Scenarios and policy

As required under the National Electricity Rules (NER), for the ISP's purposes, all scenarios in the scenario collection apply relevant policies that meet public policy criteria, including international commitments (such as to the Paris Agreement) and legislated policies that are quantifiable within AEMO's modelling scopes. AEMO will outline the public policies that meet these criteria, and guidance for their eligibility, as it develops the 2025 IASR.

- (b) In determining *power system needs*, as it relates to a *NEM participating jurisdiction*, *AEMO* may consider a current environmental or energy policy of that *participating jurisdiction* where that policy has been sufficiently developed to enable *AEMO* to identify the impacts of it on the *power system* and at least one of the following is satisfied:
- (1) a commitment has been made in an international agreement to implement that policy;
  - (2) that policy has been enacted in legislation;
  - (3) there is a *regulatory obligation* in relation to that policy;
  - (4) there is material funding allocated to that policy in a budget of the relevant *participating jurisdiction*; or
  - (5) the *MCE* has advised *AEMO* to incorporate the policy.

# What constitutes good scenarios?

## Scenario principles

- **Internally consistent** – the underpinning assumptions in a scenario must form a cohesive picture in relation to each other
- **Plausible** – the potential future described by a scenario narrative could come to pass.
  - Rather than applying a minimum ‘likelihood’ threshold for each individual parameter, plausibility considers the likelihood and significance of the impact of the uncertainties on planning outcomes, and the degree of stakeholder interest.
- **Distinctive** – individual scenarios must be distinctive enough to provide value to AEMO and stakeholders.
- **Broad** – the scenarios explore a diverse range of possible futures that could be achieved over the planning horizon.
- **Useful** – particularly for AEMO’s ISP planning requirements, the scenarios explore the risks of over and under-investment.

# Recap on 2023 IASR scenarios



**Progressive Change** – meets Australia’s current Paris Agreement commitment of 43% emissions reduction by 2030 and net zero emissions by 2050. This scenario has more challenging economic conditions, higher relative technology costs and more supply chain challenges relative to other scenarios.



**Step Change** – achieves a scale of energy transformation that supports Australia’s contribution to limiting global temperature rise to below 2°C by 2100 compared to pre-industrial levels. The electricity sector plays a significant role in decarbonisation and the scenario assumes the broader economy utilises the electricity sector’s low emissions footprint to decarbonise through electrification. The electricity sector’s contribution may be compatible with a 1.5°C abatement level, if stronger actions are taken by other sectors of Australia’s economy simultaneous with the electricity sector’s transition. Consumers provide a strong foundation for the transformation, with rapid and significant continued investments in coordinated consumer energy resources (CER), including electrification of the transportation sector.



**Green Energy Exports** – reflects very strong decarbonisation activities domestically and globally aimed at limiting temperature increase to 1.5°C by 2100, resulting in rapid transformation of Australia’s energy sectors, including a strong use of electrification, green hydrogen and biomethane. The electricity sector plays a very significant role in decarbonisation.

# Proposed scenarios amendments for the 2025 IASR

AEMO proposes to	The proposed scenario collection therefore recognises
<p><b>Broadly retain the scenario narratives for the Progressive Change and Step Change scenarios</b>, with some minor amendments</p>	<p><b>The Progressive Change scenario remains characterised by a slow rate of transformation, featuring more challenging conditions</b> that necessitate decarbonisation efforts being deferred to their latest practical point to achieve the intent of relevant policies</p>
	<p><b>Step Change remains characterised by a level of energy transition that is consistent with policy</b> including Australia’s commitments to international climate obligations.</p>
<p><b>Adjust the Green Energy Exports scenario narrative to increase focus on the domestic opportunities</b> created by a rapid energy transition, including emerging opportunities in green industry developments such as minerals processing, manufacturing and other emerging industrial developments.</p>	<p><b>Green Energy Exports continues to reflect a high growth case</b>, where economic and technological opportunities support a rapid and significant scale of energy system transformation.</p>



# Proposed scenario parameters (1/2)

Parameter	<i>Progressive Change</i>	<i>Step Change</i>	<i>Green Energy Exports</i>
<b>National decarbonisation target</b>	At least 43% emissions reduction by 2030, Net Zero by 2050	At least 43% emissions reduction by 2030, Net Zero by 2050	At least 43% emissions reduction by 2030, Net Zero by 2050
<b>Global economic growth and policy coordination</b>	Slower economic growth, lesser coordination	Moderate economic growth, stronger coordination	High economic growth, stronger coordination
<b>Australian economic and demographic drivers</b>	Lower	Moderate <b>economic growth, with near-term economic growth impacted by current economic challenges</b>	Higher, <b>with near-term economic growth impacted somewhat by current economic challenges (partly driven by green energy)</b>
<b>Electrification</b>	Electrification is tailored to meet existing emissions reduction commitments, with slower adoption given weaker economic circumstances	High electrification to meet emissions reduction commitments, with pace of adoption reflecting economic conditions	Higher electrification efforts to meet aggressive emissions reduction objectives, with faster pace of adoption
<b>Emerging commercial loads</b>	Emerging sectors such as data centres experience lower growth as weaker economic circumstances limit technology uptake	Emerging sectors such as data centres match opportunities associated with moderate domestic economic drivers	Emerging sectors such as data centres match opportunities associated with higher domestic economic drivers
<b>Industrial Load Closures</b>	Weak economic conditions provide challenging commercial conditions, resulting in load closures across key commercial and industrial facilities	No specific load closures	No specific load closures

# Proposed scenario parameters (2/2)

Parameter	Progressive Change	Step Change	Green Energy Exports
Demand side participation uptake	Lower	Moderate	Higher
Consumer energy resource investments (batteries, PV and EVs)	Lower	High	Higher
<b>Coordination of CER (VPP and V2G)</b>	<b>Lower</b> Low long-term coordination, with gradual acceptance of coordination	<b>High</b> Moderate long-term coordination, with gradual acceptance of coordination	<b>Higher</b> High long-term coordination, with faster acceptance of coordination
Energy efficiency	Lower	Moderate	Higher
Hydrogen use and availability	Low production for domestic use, with no export hydrogen	Moderate-low production for domestic use, with minimal export hydrogen	Faster cost reduction. High production for domestic industries, with high/moderate exports in the short term, and high exports in the longer term
Renewable gas blending in gas distribution network <sup>A</sup>	Up to 10% (hydrogen), with unlimited blending opportunity for biomethane and other renewable gases	Up to 10% (hydrogen), with unlimited blending opportunity for biomethane and other renewable gases	Up to 10% (hydrogen), with unlimited blending opportunity for biomethane and other renewable gases
Supply chain strength influencing demand forecasts	Low	Moderate	High
Global/domestic temperature settings and outcomes <sup>B</sup>	Applies Representative Concentration Pathway (RCP) 4.5 where relevant, consistent with a global temperature rise of ~ 2.6°C by 2100	Applies RCP 2.6 where relevant, consistent with a global temperature rise of ~ 1.8°C by 2100	Applies RCP 1.9 where relevant (~ 1.5°C), consistent with a global temperature rise of ~ 1.4°C by 2100
IEA 2021 World Energy Outlook scenario alignment	Stated Policies Scenario (STEPS)	Sustainable Development Scenario (SDS)	Net Zero Emissions (NZE)

# Seeking stakeholder feedback on the proposed scenarios

## Primary consultation questions:

- Since the 2023 IASR publication, what changes (such as environment, social, policy) do you consider most impact scenario development for the 2025 IASR scenarios?
- Is AEMO's proposal as outlined in previous slides a suitable evolution of each scenario's parameters that will effectively support AEMO's functions in planning the transition?
- What additional changes should be considered?

## Relevant upcoming consultations in 2024

- **ISP Methodology** – the most relevant consultation to provide feedback on the ISP, its purpose and design, including the process of using scenarios to produce the optimal development path (ODP).
- **Electricity demand forecasting methodology** (presentation 2) – the most relevant consultation to provide feedback on the methods for forecasting electricity consumption and demand for each of the scenarios.
- **Draft 2025 IASR** – the most relevant consultation to provide feedback on specific parameter forecasts of the scenarios that have been developed.

### Reminder:

Scenarios submissions due **13 August 2024** to [forecasting.planning@aemo.com.au](mailto:forecasting.planning@aemo.com.au)

# Questions and discussion

Ask your questions to help inform your consultation submission



For more information visit

[aemo.com.au](http://aemo.com.au)