This event will be recorded and the recording published on AEMO's website

Draft 2025 Inputs, Assumptions and Scenarios Report (IASR)

Stage 1 Pre-submission webinar

23 January 2025

We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country, and hope that our work can benefit both people and Country.

'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan

AEMO Group is proud to have launched its first Reconciliation Action Plan in May 2024. 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation – a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Read our RAP

How to interact today

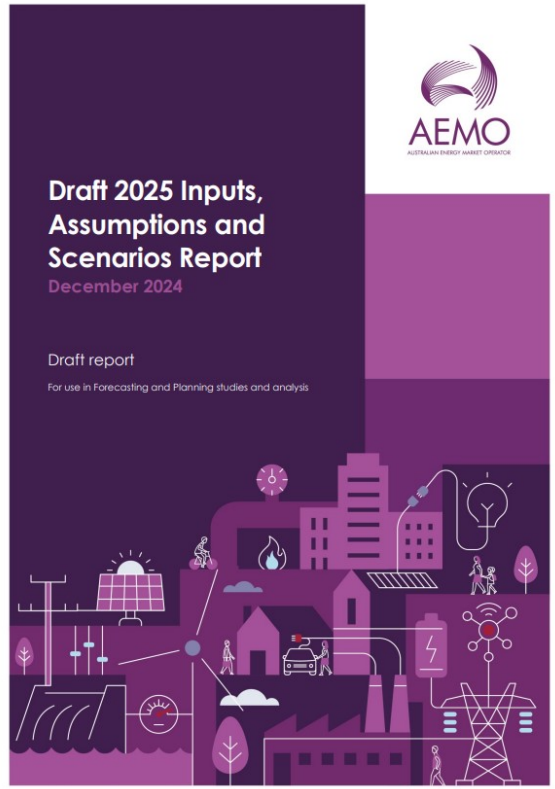
www.sli.do
#AEMO

- Ask questions using Slido www.sli.do #AEMO
- Written replies may be provided through Slido if appropriate
- AEMO will not provide responses to unanswered questions

Today's objectives

Present a brief overview of the IASR process and discuss matters that will support stakeholder submissions for Stage 1 of the Draft 2025 IASR

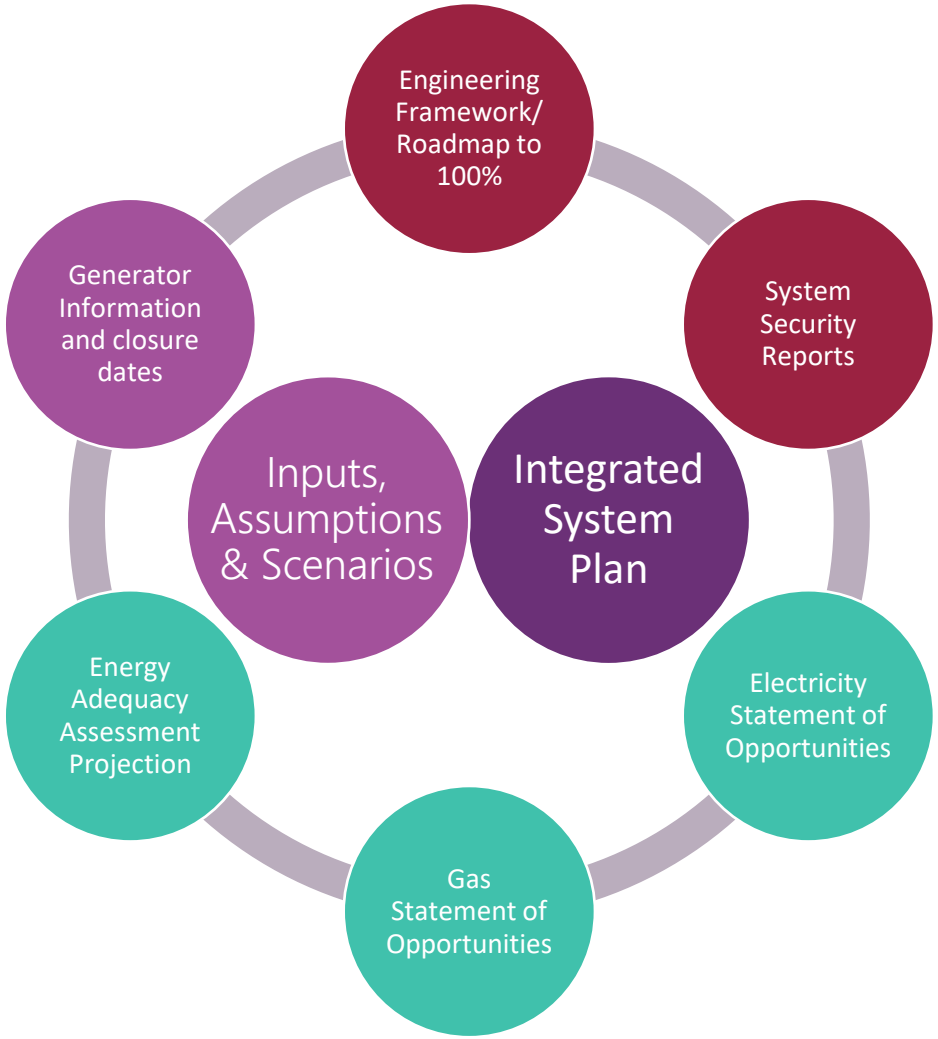
Ask questions using Slido - they will be answered in a Q&A session after the presentation



Read the report and supporting material

Introduction – context and timing of the IASR

AEMO's NEM planning and forecasting publications



Security

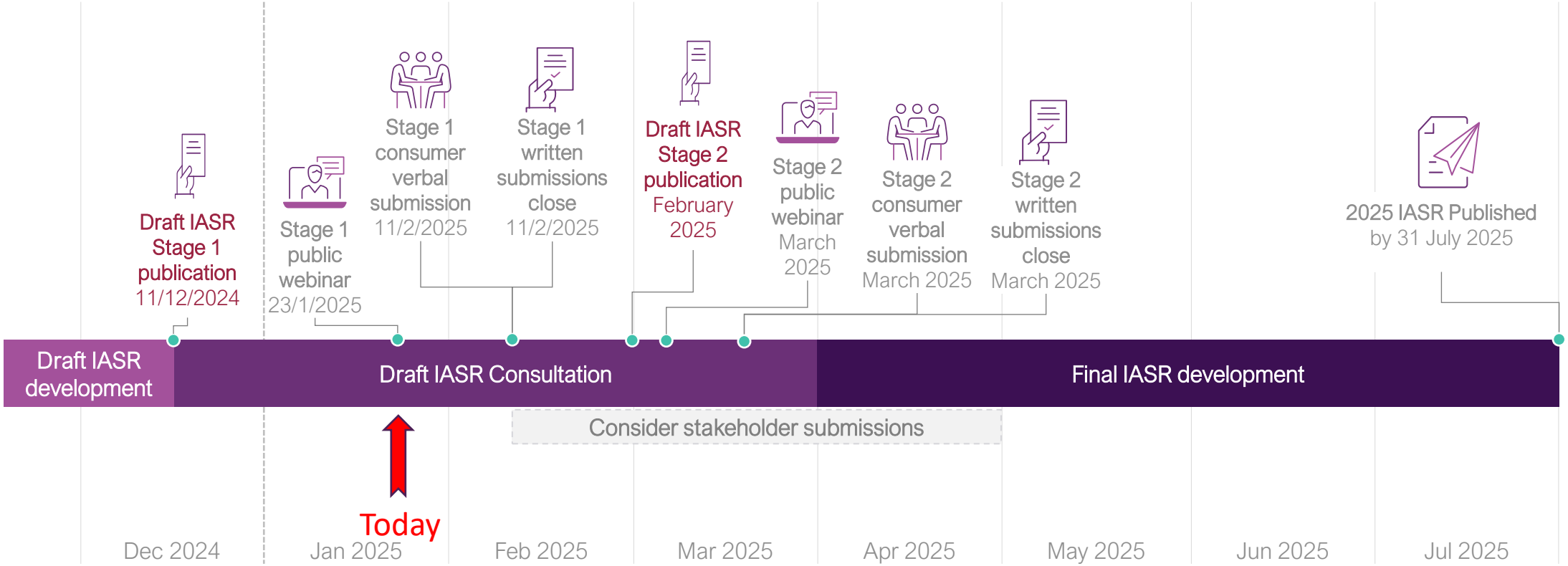
Reliability

Data

Infrastructure

Draft IASR – two-stage approach

- AEMO is releasing the Draft 2025 IASR in two stages for consultation due to the expanded scope of ISP considerations arising from the recent AEMC rule changes.
- Engaging with stakeholders is essential for the effective implementation of inputs and assumptions in AEMO publications.



IASR scenarios and policy assessment

Scenario overview

Pace of decarbonisation

Energy sector contribution to decarbonisation (NEM states)

- Meets Australia's current policy commitments to support and drive the transition to a net zero economy.
- This scenario has more challenging economic conditions and features closures for energy-intensive industry, higher relative technology costs and more supply chain challenges relative to other scenarios.

- A scale of energy transformation that supports Australia's contribution to limiting global temperature rise to below 2°C and, in some circumstances, 1.5 °C by the year 2100.
- The electricity sector plays a significant role in decarbonisation. The broader economy utilises the electricity sector's low emissions footprint to decarbonise through electrification.
- Consumers provide rapid and significant investments in coordinated consumer energy resources (CER), including electrification of the transportation sector.

- Reflects very strong decarbonisation activities domestically and globally that are 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.
- AEMO is seeking stakeholder feedback on two variants of this scenario: Green Energy Exports and Green Energy Industries. See the Draft IASR for details.

Three scenarios at a glance

A look at how AEMO's three scenarios differ across selected parameters

Parameter	Progressive change	Step change	Green energy
National decarbonisation target	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
Global economic growth and policy coordination	Slower economic growth, lesser coordination	Moderate economic growth, stronger coordination	High economic growth, stronger coordination
Australian economic and demographic drivers	Lower growth featuring tough economic conditions that lead to closures	Moderate growth	Higher growth
Electrification	Meeting existing emissions reductions commitments	High electrification	Higher electrification
Emerging Commercial Loads (such as data centres)	Lower growth	Moderate growth	Higher growth
CER investments (batteries, electric vehicles, rooftop solar)	Lower	High	Higher
Coordination of CER	Low coordination	Moderate coordination	High coordination
Energy efficiency	Moderate	High	Higher
Hydrogen use and availability	Low production for domestic use, no exports	Moderate-low production for domestic use, minimal exports	High production for domestic use, moderate exports in short term, high exports in long term

Policy inclusion

- Types of policies for inclusion
  - Emissions reduction policies that governments have created and provided for inclusion in the AEMC Emissions Targets Statement.
  - Policies that governments have committed to by sufficiently progressing the policy such that it meets at least one of the eligibility criteria in NER 5.22.3(b)(2)

- Application of policy in the IASR and ISP
  - Included policies may impact the evolution of consumer demand and inputs that are included in the IASR, or impact energy supply infrastructure developments that are then modelled in the ISP applying AEMO's ISP Methodology.
  - They are applied in all scenarios to ensure that the cost-benefit analysis conducted in the ISP appropriately considers the scenario collection in aggregate.

Policies that are considered

- Emission reductions targets
- Renewable energy and storage development
- Offshore wind
- Hydrogen developments
- Transmission support
- Federal and state-based policies that support customer's own energy transition, including those that support investment in PV systems, electric vehicles, energy efficiency investments and electrification

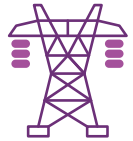
*AEMC emissions target statement: Emissions targets statement under the National Energy Laws – 6 June 2024

Key changes

Key changes

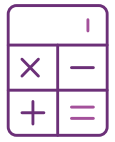
Green Energy scenario: two variants proposed

GenCost: General easing of inflationary pressures



NEM sub-regions: A 15 sub-region structure is proposed

Consumer Energy Resources: distributed PV and battery uptake moderated relative to previous forecast



Data centres: AEMO to forecast as a separate segment as growth is driven by cloud computing and AI

Draft 2025 IASR outcomes – Green Energy variants

Two variants of the Green Energy scenario:

AEMO uses scenarios to represent plausible future 'worlds', driving different supply and demand conditions.

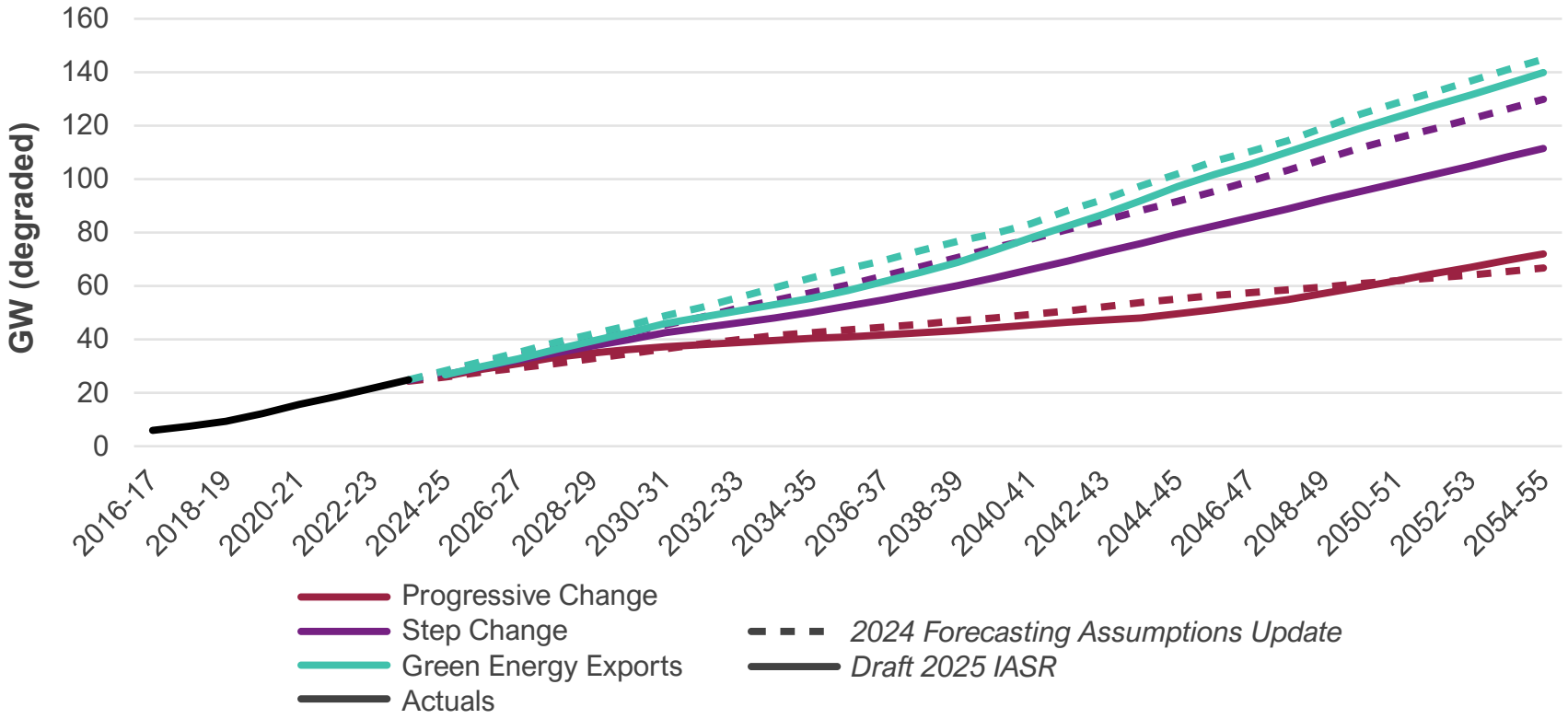
Green Energy Exports – includes development of a hydrogen industry, focusing on value-add hydrogen products such as green iron and steel, for domestic and export. Also includes significant opportunity for hydrogen production and associated manufacturing users to develop products for export, including hydrogen as an energy carrier.

Green Energy Industries – includes development of a hydrogen industry, focusing on value-add hydrogen products such as green iron and steel, for domestic and export. **The variant excludes those developments that are expected to support hydrogen exports as an energy carrier, thereby representing a materially smaller hydrogen impact on investment requirements than the Green Energy Exports variant**

Draft 2025 IASR outcomes – Distributed PV

How this forecast is used: AEMO forecasts Distributed PV to capture the contribution from PV systems behind-the-meter on operational demand

Distributed PV uptake moderated relative to 2024 Forecasting Assumptions Update



Draft IASR Figure 8: NEM and WEM distributed PV installed capacity (degraded)

- Forecast for **number of PV systems increases relative to 2024 Forecasting Assumptions Update** due to higher projected prices leading to increased system revenue.
- This is outweighed by a decrease in average PV system size assumption, resulting in **lower PV capacity overall**.
- Average system size forecast to grow more moderately and towards lower limits than previously assumed (particularly in *Step Change* scenario). This considers latest market trends and balances CSIRO and GEM's views.

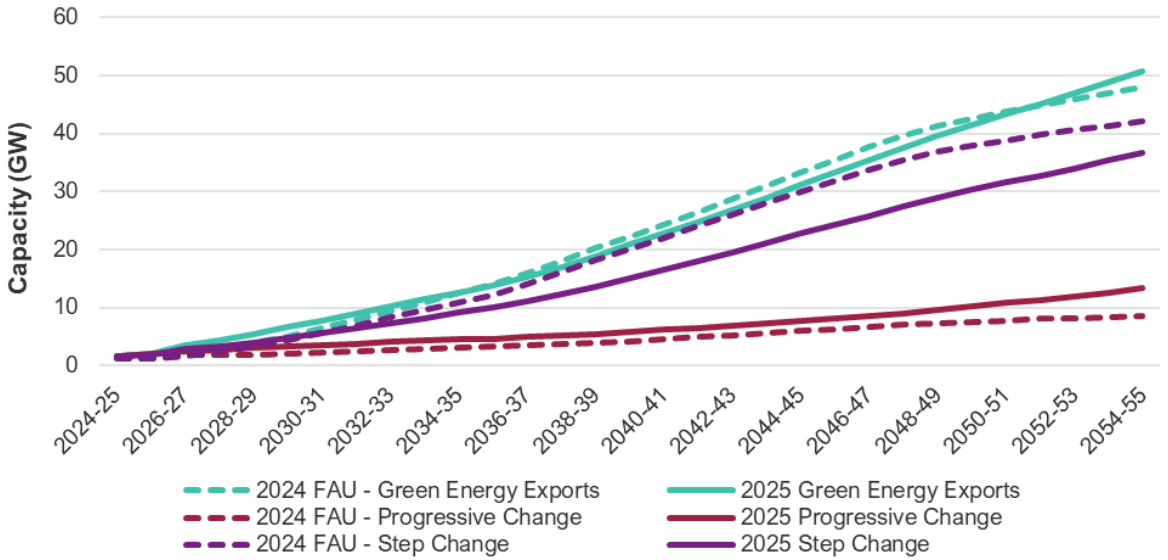
CSIRO and GEM reports: see Appendix A2 (Table 41) of Draft 2025 IASR Stage 1 (https://aemo.com.au/-/media/files/major-publications/isp/2025/draft-2025-inputs-assumptions-and-scenarios-report-stage-1.pdf?la=en)

Ask questions at www.sli.do #AEMO

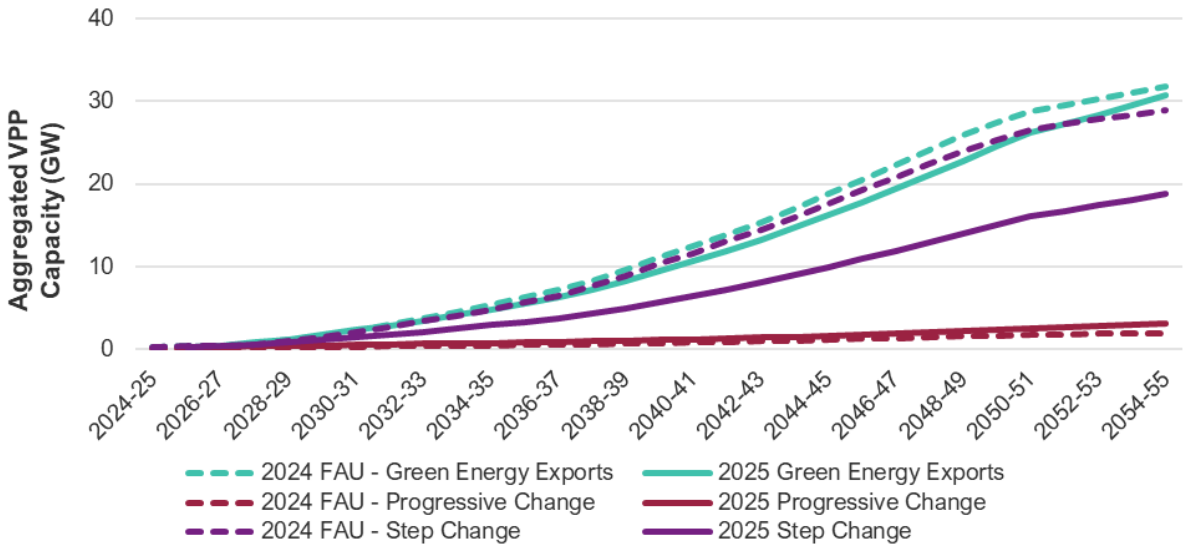
Draft 2025 IASR outcomes – Batteries/VPP

How this forecast is used: AEMO uses battery/VPP forecasts to capture the impacts of these flexible consumer energy resources.

Growth in distributed batteries driven by costs reductions and ongoing PV uptake



Draft IASR Figure 10: Distributed battery capacity forecast for the NEM+WEM (GW), including non-aggregated and aggregated batteries



Draft IASR Figure 11: Aggregated VPP capacity for NEM+WEM (GW)

- Distributed battery uptake grows consistently over the forecast period driven by assumed cost reductions (including significant subsidies) and ongoing PV uptake.

- Assumed levels of VPP participation are similar to previous levels for Progressive Change and Green Energy Exports, but significantly lower in Step Change, in line with the revised scenarios assumptions.
- This lower level in part reflects a view that consumers are reluctant to surrender control of their energy assets.

CSIRO and GEM reports: see https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-iasr

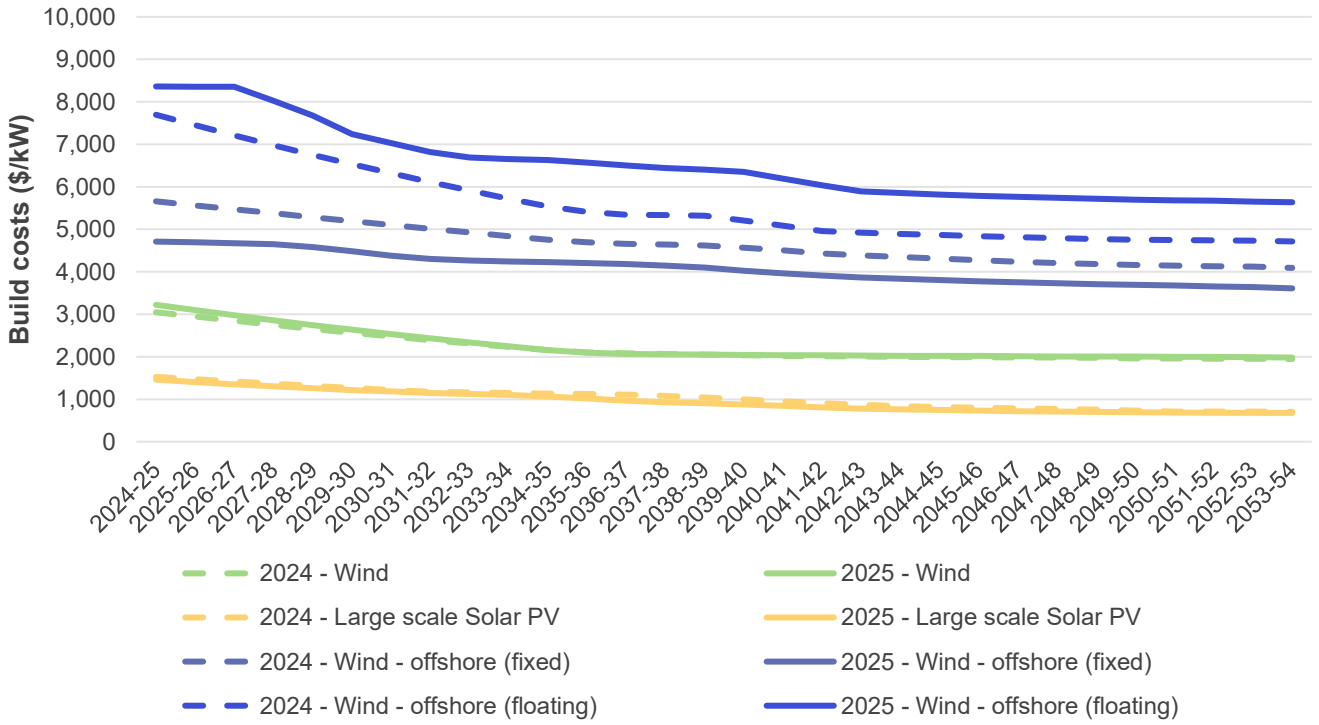
Ask questions at www.sli.do #AEMO

Draft 2025 IASR outcomes – GenCost

How this forecast is used: AEMO uses GenCost capital cost projections to optimise generation developments and other alternatives to minimise total operating and capital investment system costs.

General easing of inflationary pressures across technologies in recent past

Draft 2025 IASR Figure 30: 2024 vs 2025 Global NZE post 2050: build cost trajectories forecasts for wind and large scale solar



- Wind generation: 2% cost increase since previous GenCost
- Solar farms: 8% cost reduction since previous GenCost
- 2-hour large-scale battery: 20% cost reduction since previous GenCost

Onshore wind and solar are still most cost-effective for new builds.

CSIRO notes the change in current costs over the past three years indicates a general easing of inflationary pressures across technologies

Notes:

1. Network augmentations and their costs to support increased amounts of large-scale and consumer energy resources will be consulted-on as part of the 2025 Network Expansion Options Report. The draft is due for release in April 2025.
2. CSIRO GenCost: see https://www.csiro.au/en/research/technology-space/energy/GenCost

Draft 2025 IASR outcomes – NEM sub-regions

How this forecast is used: AEMO uses NEM sub-regions to provide suitable granularity of load diversity, enable regional cost differences and to consider current network capabilities and potential augmentations.

New structure provides greater granularity for optimisations

- AEMO has proposed transitioning from 12 to 15 NEM sub-regions for modelling purposes.
- Proposed changes include:
  - Separating Victoria into 3 sub-regions.
  - Separating Central South Australia sub-region to two – Northern South Australia and Central South Australia.
  - Amending sub-regional boundary of Central to Northern Queensland.
  - Amending sub-regional boundary of South East South Australia to Central South Australia.

Next steps

Upcoming consultation opportunities

Draft 2025 IASR:

- Submissions to the Draft 2025 IASR (Stage 1): 11 February 2025
- Publication of the Draft 2025 IASR (Stage 2): February 2025
- Submissions to the Draft 2025 IASR (Stage 2): March 2025
- 2025 IASR to be finalised in July 2025

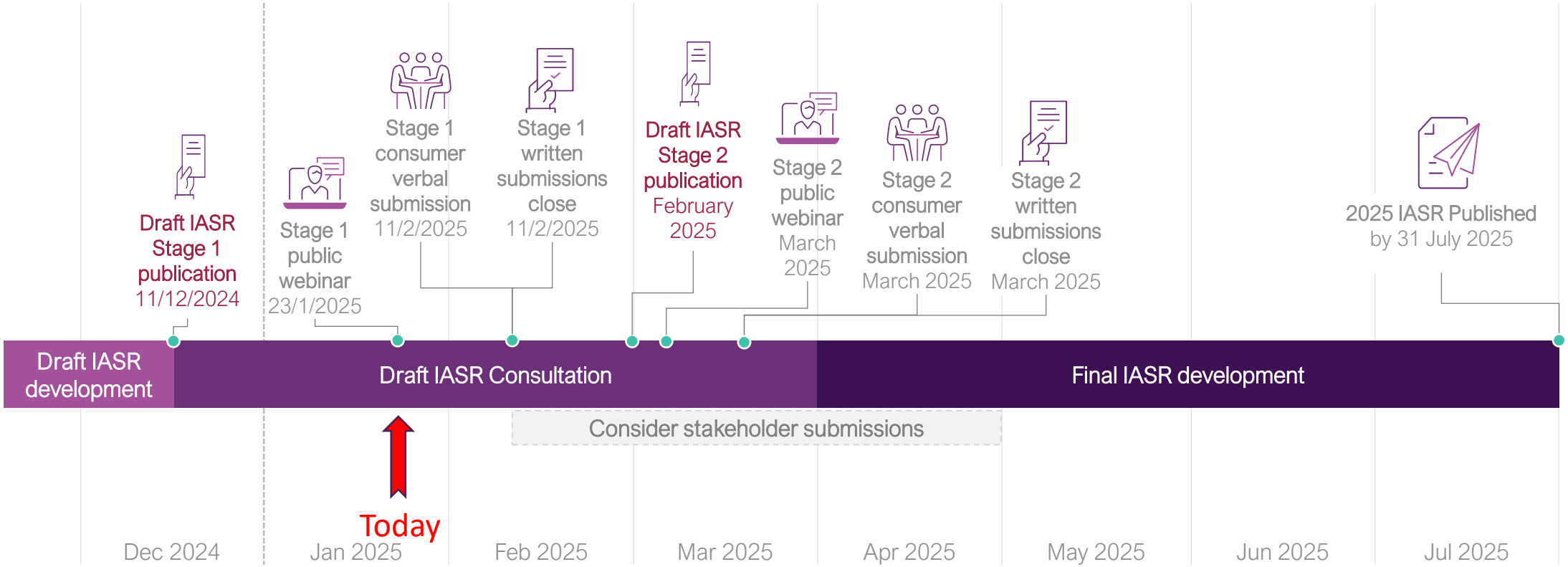
❖ Consumer Advocate verbal submission opportunities will be available for each Stage's submission.

❖ The **Forecasting Reference Group** will provide additional opportunities to stay informed on evolving inputs and assumptions (meets monthly)

Additional consultation opportunities:

- **ISP Methodology**
  - Issues Paper was published in October 2024
  - Draft ISP Methodology will be published in March 2025
  - Webinar and submissions milestones will be identified in the publication.
- **Network Expansion Options Report**
  - Draft report to be published in April 2025
  - Submission milestones and engagement opportunities will be identified in the publication.

2025 IASR status and timeline



Questions and comments

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Sign in with your name

Survey and contact information

Please complete the post event survey for the webinar at: https://nam.dcv.ms/2kWnG9MKIg.

Please submit your Draft 2025 IASR Stage 1 consultation submissions to forecasting.planning@aemo.com.au by 11 February 2025.

For more information visit

aemo.com.au