2025 Forecasting and Planning Reports

2025 Inputs, Assumptions and Scenarios Report (IASR)
2025 Electricity Network Options Report
2025 Gas Infrastructure Options Report

Publication webinar

12 August 2025

This webinar will be recorded and published online

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

Today's agenda

Time (AEST)	Item	Speaker
10:30 am	Agenda & welcome	**Angela Heck**, Principal Stakeholder Advisor
10:35 am	Introduction	**Merryn York**, Executive General Manager - System Design
10:40 am	2025 Inputs, Assumptions and Scenarios Report 2025 Electricity Network Options Report	**Daniel Collins**, Manager - Sector Coupling **Samantha Christie**, Manager - Strategic Planning
11:25 am	Q&A	*Facilitated by Angela Heck*
12:00 pm	2025 Gas Infrastructure Options Report	**Andrew Turley,** Group Manager - Forecasting **Rachael Saw**, Specialist - Market Operability
12:10 pm	Q&A	*Facilitated by Angela Heck*
12:25 pm	Next steps	**Angela Heck**
12:30 pm	Webinar close	

How to interact today

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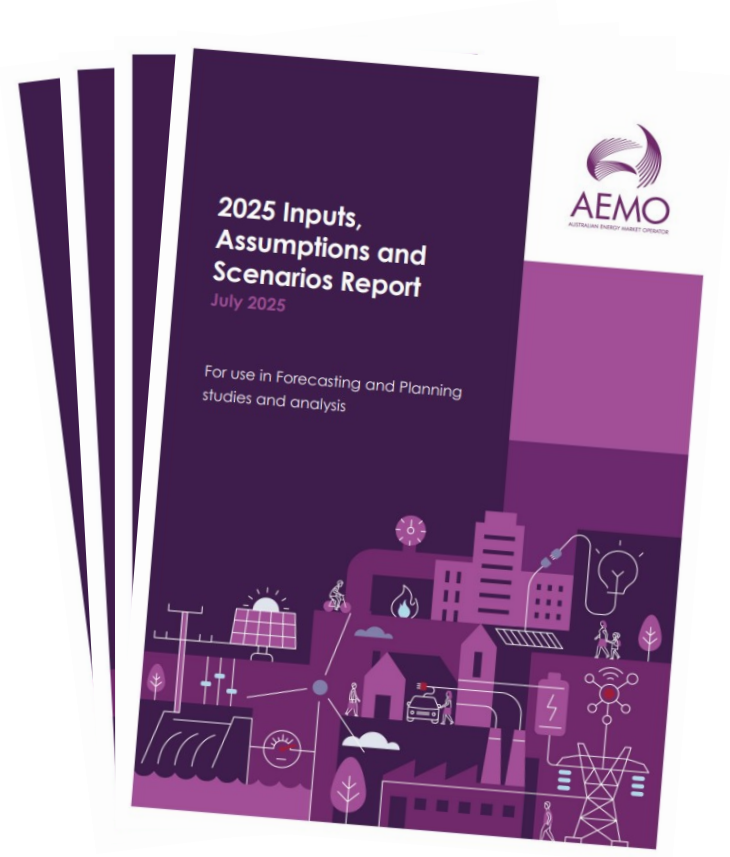
- Ask questions using Slido www.sli.do #AEMO
- Join with your name, no need to log in
- Opportunity to upvote questions you would like answered
- Provide feedback through our post-webinar survey

Today's objectives – report insights

- *2025 Inputs, Assumptions and Scenarios Report* (IASR)
- *2025 Electricity Network Options Report*
- *2025 Gas Infrastructure Options Report*
- Ask questions using Slido – for Q&A sessions after the presentations



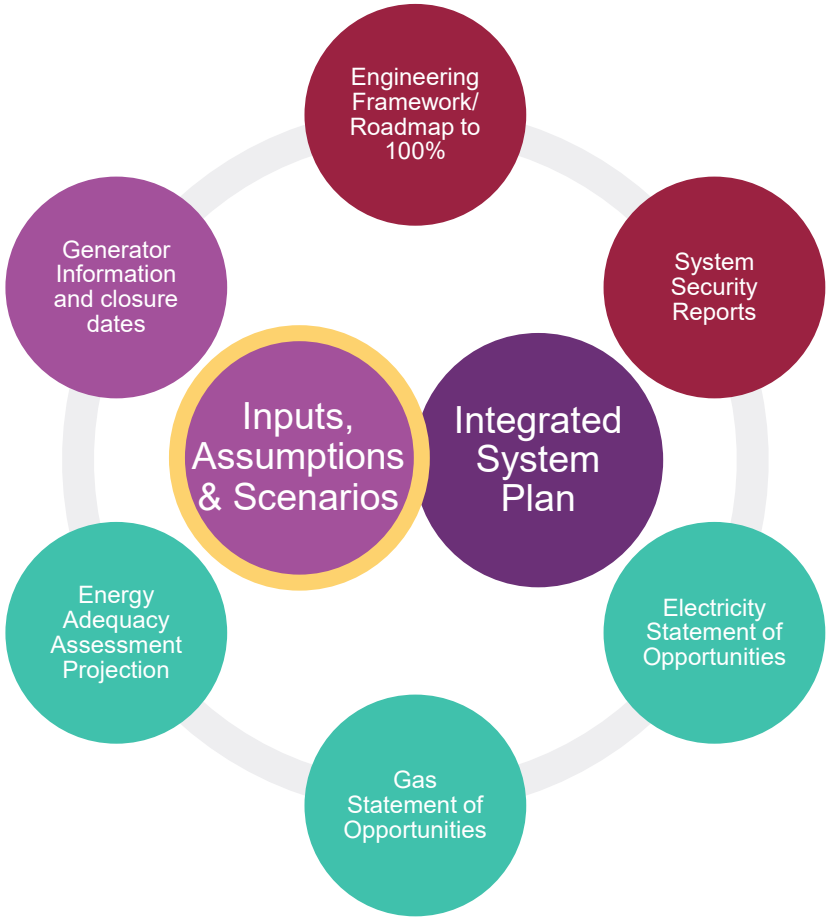
Read the reports and supporting material

Introduction

Merryn York

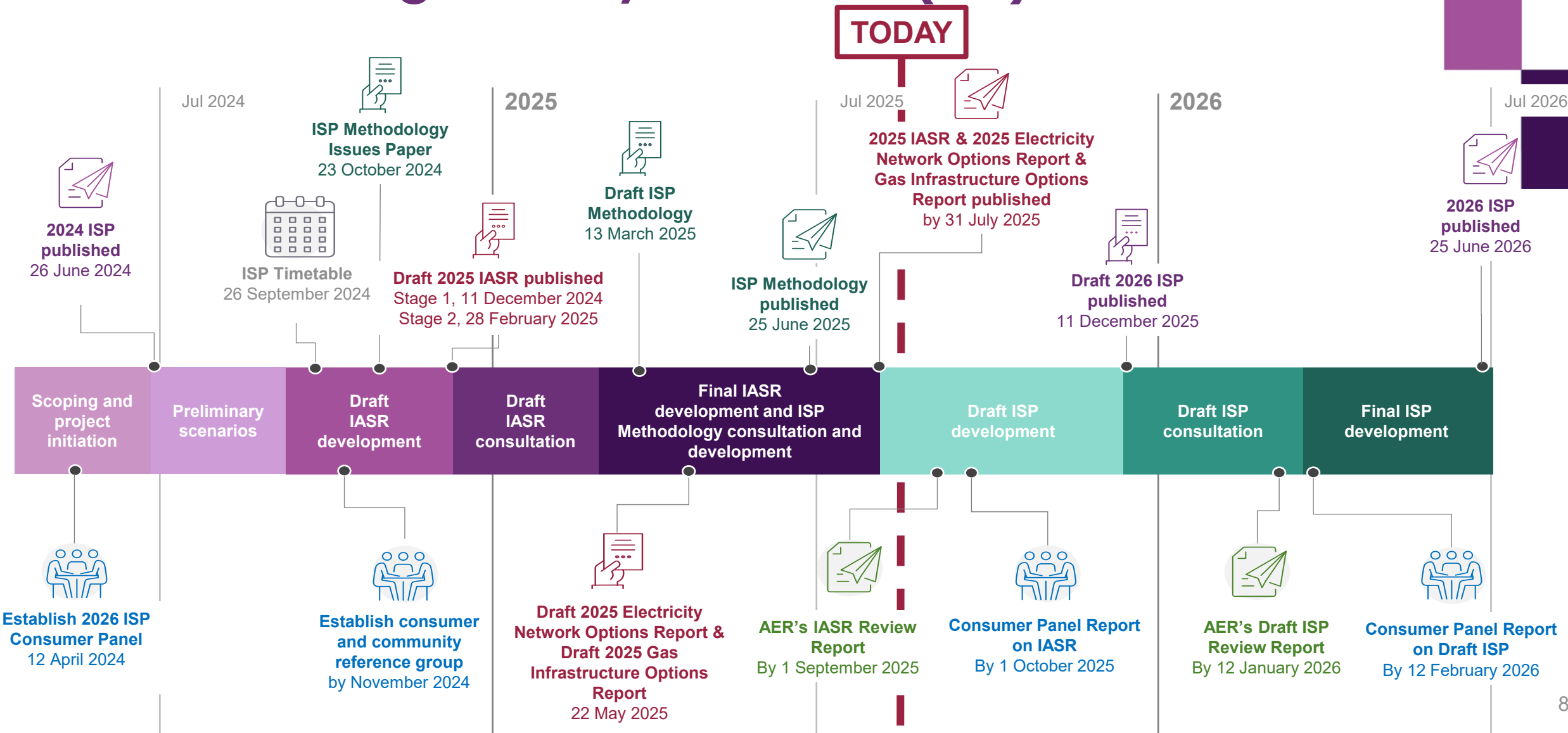
Executive General Manager System Design

AEMO's NEM planning and forecasting publications



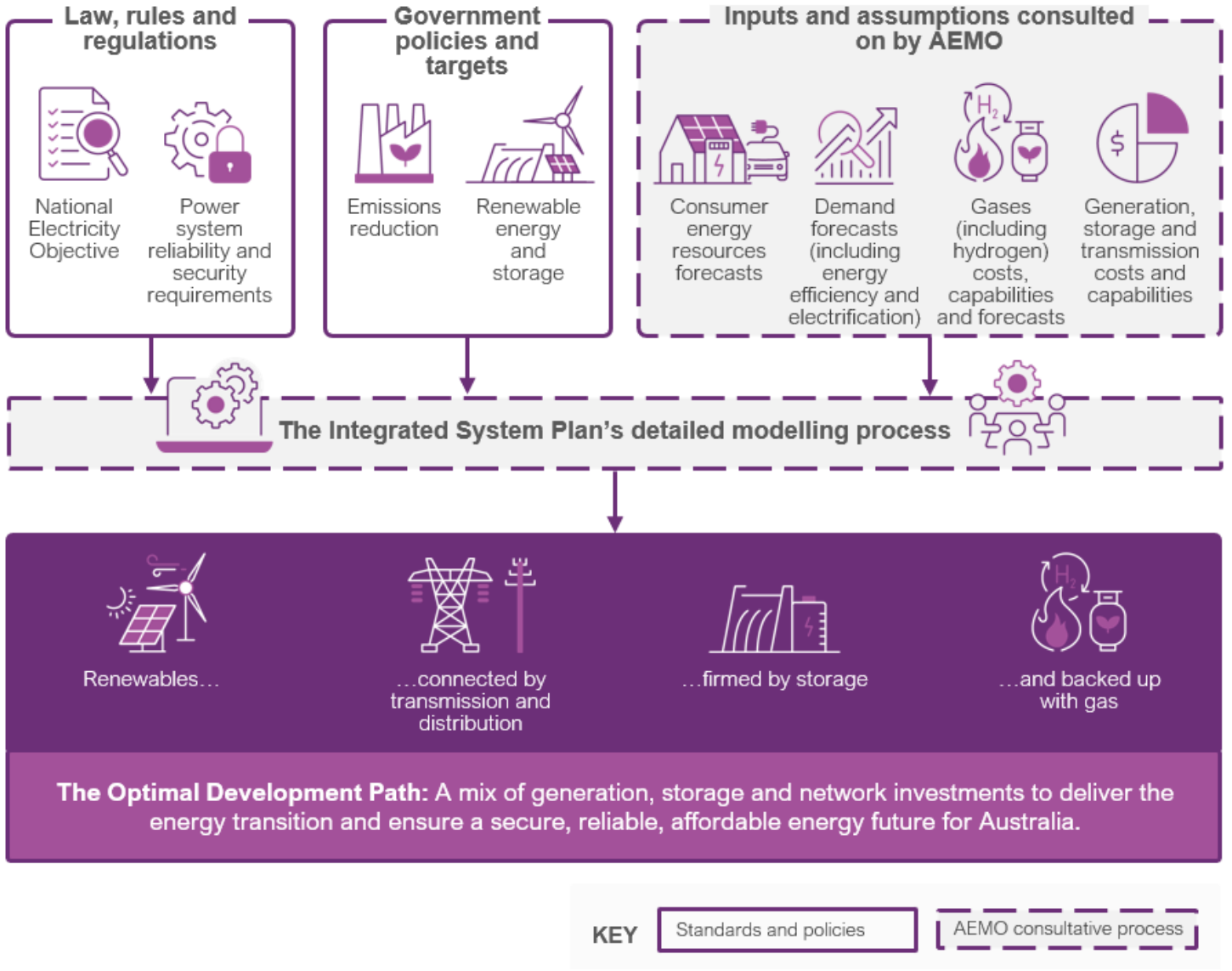
Security Reliability Data Infrastructure

AEMO is almost halfway through the timetable for the 2026 Integrated System Plan (ISP)



Final 2026 ISP published June 2026

- With these key inputs now finalised, AEMO will commence modelling with the best available information to inform the Draft 2026 Integrated System Plan.
- Takes standards, policies and consulted-on inputs and assumptions to model the optimal development path.

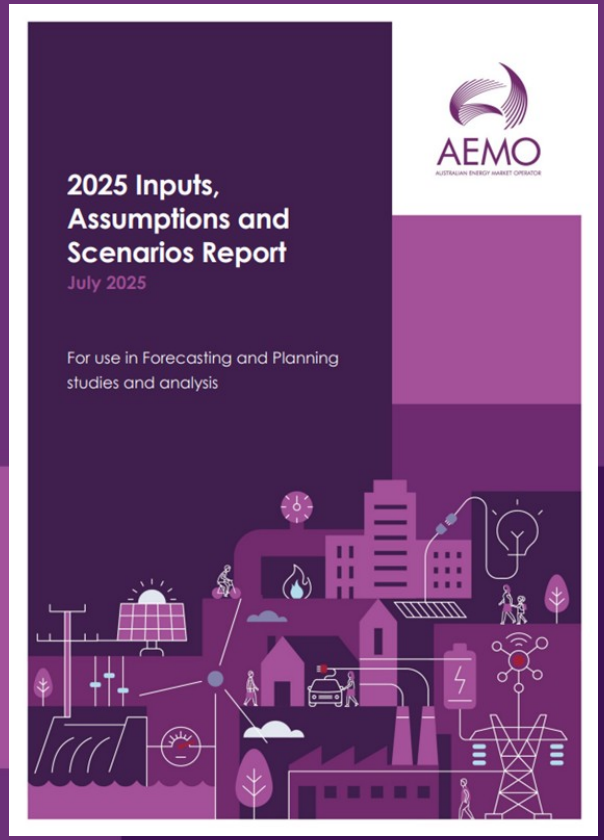


2025 IASR

The IASR details the scenarios and associated inputs and assumptions applied in AEMO's 2025-26 forecasting and planning activities, including the 2026 ISP.

Three core scenarios are retained, with two names updated to better reflect their distinguishing drivers: Slower Growth, Step Change, and Accelerated Transition.

Daniel Collins, Manager Sector Coupling



IASR scenarios and policy assessment

Intro to IASR through scenarios

What are scenarios?

AEMO develops a range of inputs and assumptions from various sources to support its forecasting and planning. These form the basis of the scenarios outlined in the IASR.

AEMO plans for the energy system's future needs by using a scenario planning approach which examines a range of possible and plausible 'futures'.
Scenario planning is considered best practice in this type of modelling to identify and manage risks when planning in highly uncertain environments, particularly through disruptive transitions. Inputs and assumptions are aligned with the purpose of the scenario, while varying key assumptions or parameters across the scenario set.

Scenarios describe and analyse future worlds that could materially affect the energy sector.
Each scenario describes the global and domestic environment in which the energy transition occurs using a broad range of parameters. Scenarios do not describe ISP outcomes; they enable robust analysis of the future needs of the power system considering the uncertainties facing the energy transition.

Scenarios are developed in close consultation with a range of stakeholders, and to meet government energy and emissions targets between now and 2050.
The impact of uncertainties may also be explored through sensitivity analysis.

Criteria for scenarios and parameters

Plausible: The potential future described by a scenario narrative could come to pass.

Distinct: Individual scenarios must be distinctive enough to provide value.

Useful: Suited for AEMO's planning and forecasting requirements, such as for the ISP, Gas Statement of Opportunities (GSOO) and Electricity Statement of Opportunities (ESOO).

Internally consistent: The underpinning assumptions in a scenario must form a cohesive picture.

Read the 2025 IASR Overview

Policy inclusion

- Types of policies for inclusion
  - Emissions reduction policies in the AEMC Emissions Targets Statement.
  - Policies sufficiently progressed to meet at least one of the eligibility criteria in the Rules (NER 5.22.3(b)(2))
- Application of policy in the IASR and ISP:
  - To impact consumer demand and inputs, or energy supply infrastructure developments according to AEMO's ISP Methodology.
  - To all scenarios to ensure the ISP cost-benefit analysis appropriately considers the scenario collection in aggregate.

Included policies

- Emission reductions targets
- Renewable energy and storage development
- Offshore wind
- Hydrogen developments
- Transmission support
- Federal and state-based policies that support consumers 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

Scenarios and key changes from Draft to final 2025 IASR

Three scenarios at a glance

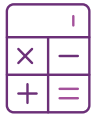
Parameter	Slower Growth	Step change	Accelerated Transition
National decarbonisation targets	At least 43% emissions reduction by 2030, net zero by 2050	At least 43% emissions reduction by 2030, net zero by 2050	At least 43% emissions reduction by 2030, net zero by 2050
Global economic growth and policy coordination	Slower economic growth, lesser coordination	Moderate economic growth, stronger coordination	High economic growth, stronger coordination
Australian economic and demographic drivers	Lower economic growth	Moderate economic growth	Higher economic growth
Electrification	Meeting existing emissions reductions commitments	High electrification	Higher electrification
Emerging commercial and industrial loads	Lower growth	Moderate growth	Higher growth
CER investments (batteries, PVs and EVs)	Lower	High	Higher
Coordination of CER	Low long-term coordination	Moderate long-term coordination	High long-term coordination
Energy efficiency	Moderate	High	Higher
Hydrogen use and availability	Low production for domestic use, no exports	Moderate-low production for domestic use, no exports	Moderate production for domestic industries and green commodities, no exports
Former name	*Progressive Change*	*Step Change*	*Green Energy Industries*

Key changes

Accelerated Transition, reflects the Green Energy Industries variant described in the Draft 2025 IASR with **moderate production for domestic industries and green commodities, with no export hydrogen.**

GenCost: General easing of inflationary pressures across technologies in recent past; but cost escalation factors that represent tightening supply chain for the installation cost components are now reflected in the projection.

Consumer Energy Resources: Forecasts rebased with latest historical installation data from the Clean Energy Regulator, and battery forecast updated to incorporate recently announced battery subsidies.

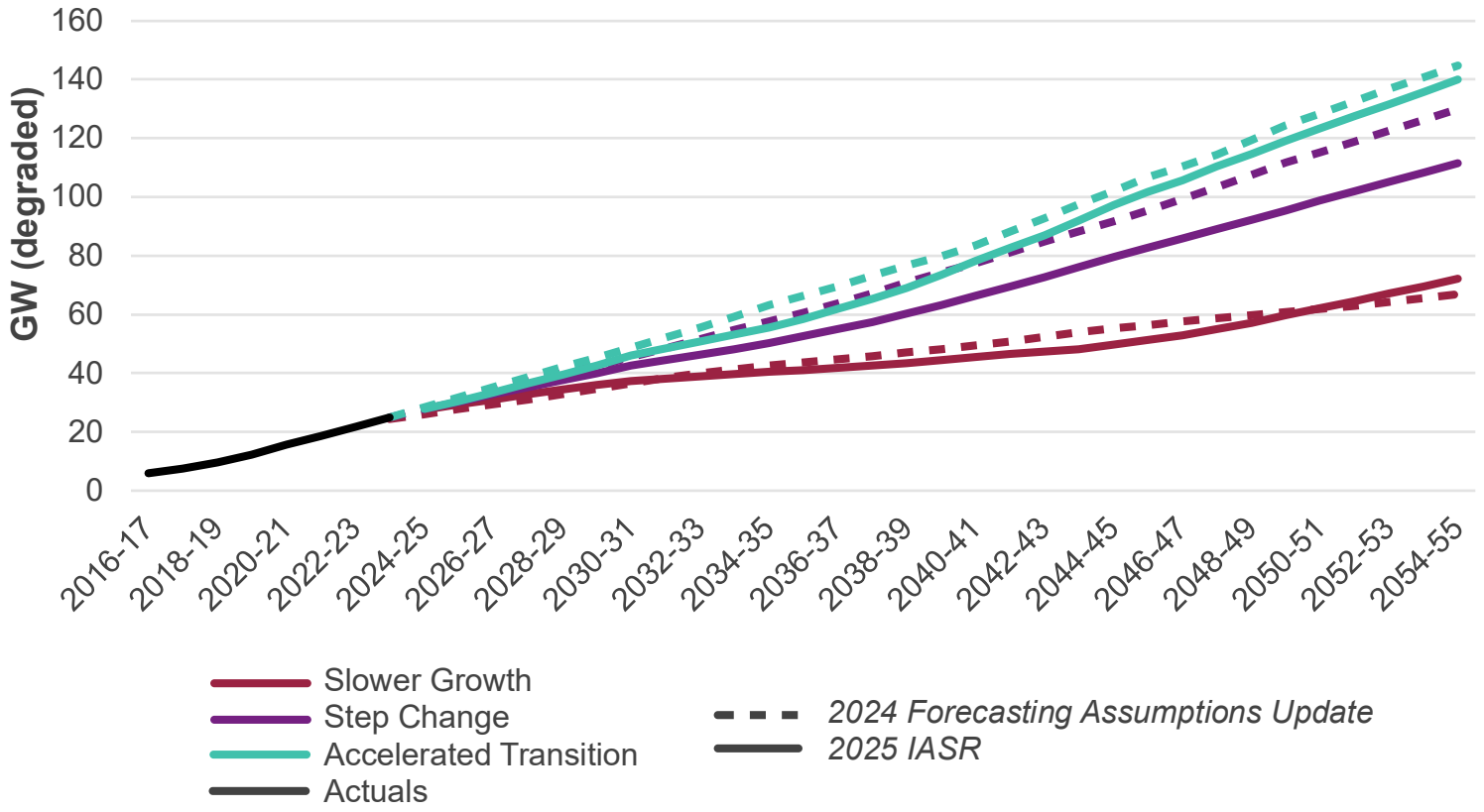


Data centres and prospective industrial loads: Forecasts reflect updated methodology that now more broadly considers the rapid growth of these loads, using NSP data, industrial surveys and economic factors.

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



IASR Figure 23: Actual and forecast distributed PV installed capacity (NEM and WEM), 2016-17 to 2054-55 (GW degraded)

Changes relative to Draft 2025 IASR:

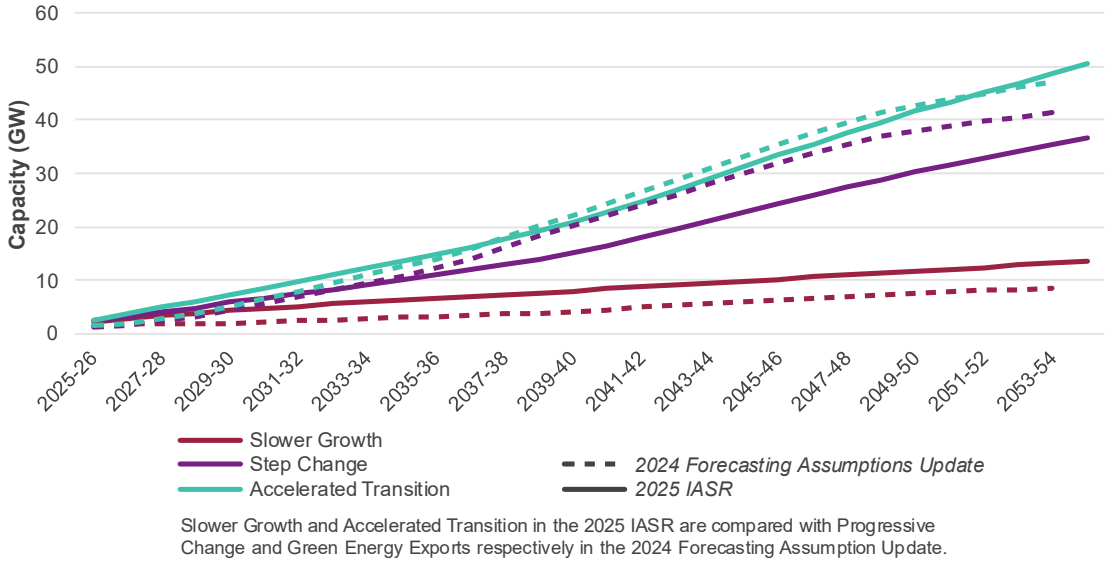
- Forecasts rebased with latest historical installation data from the Clean Energy Regulator (as of end of March 2025).
- No further changes in DPV forecasts as draft versions were deemed suitable, after considering the breadth of stakeholder submissions during consultation process.

CSIRO and GEM reports: see Appendix A3 (Table 47) of 2025 IASR

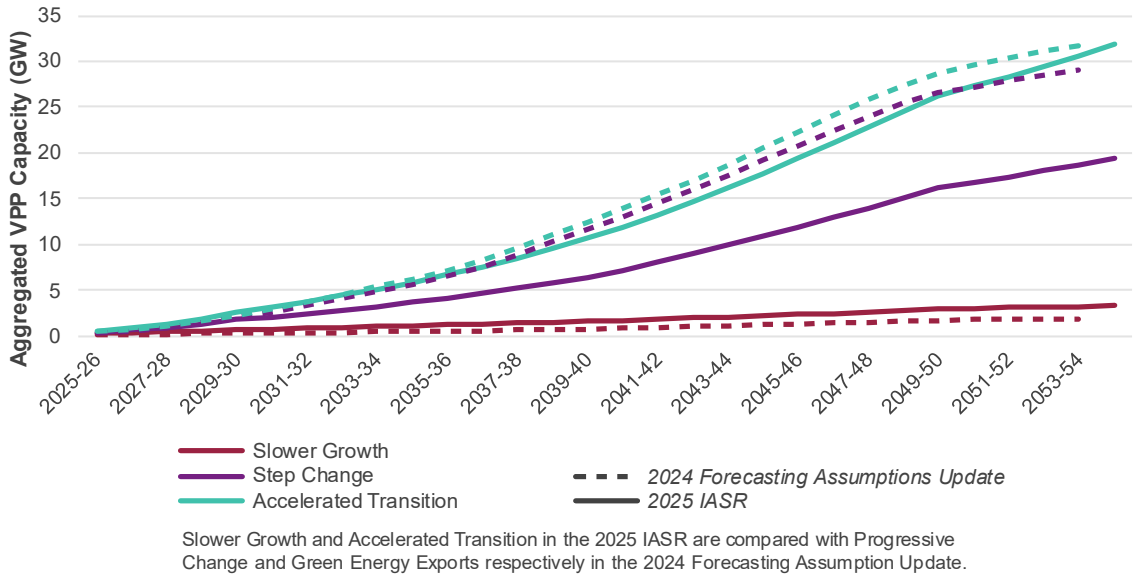
2025 IASR outcomes – Batteries/VPP

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
Outlook shows estimated impact of government subsidies



IASR Figure 25: Distributed battery capacity forecast for the NEM+WEM (GW), including coordinated and uncoordinated batteries



IASR Figure 27: 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.
- Since the Draft 2025 IASR the battery outlook has been lifted in the short and medium term to reflect the impact of the Cheaper Home Batteries Program and the WA Residential Battery Scheme

- Assumed levels of VPP participation are similar to previous levels for *Slower Growth* and lower for *Step Change* and *Accelerated Transition* 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.
- VPP participation rates have not changed since the Draft 2025 IASR

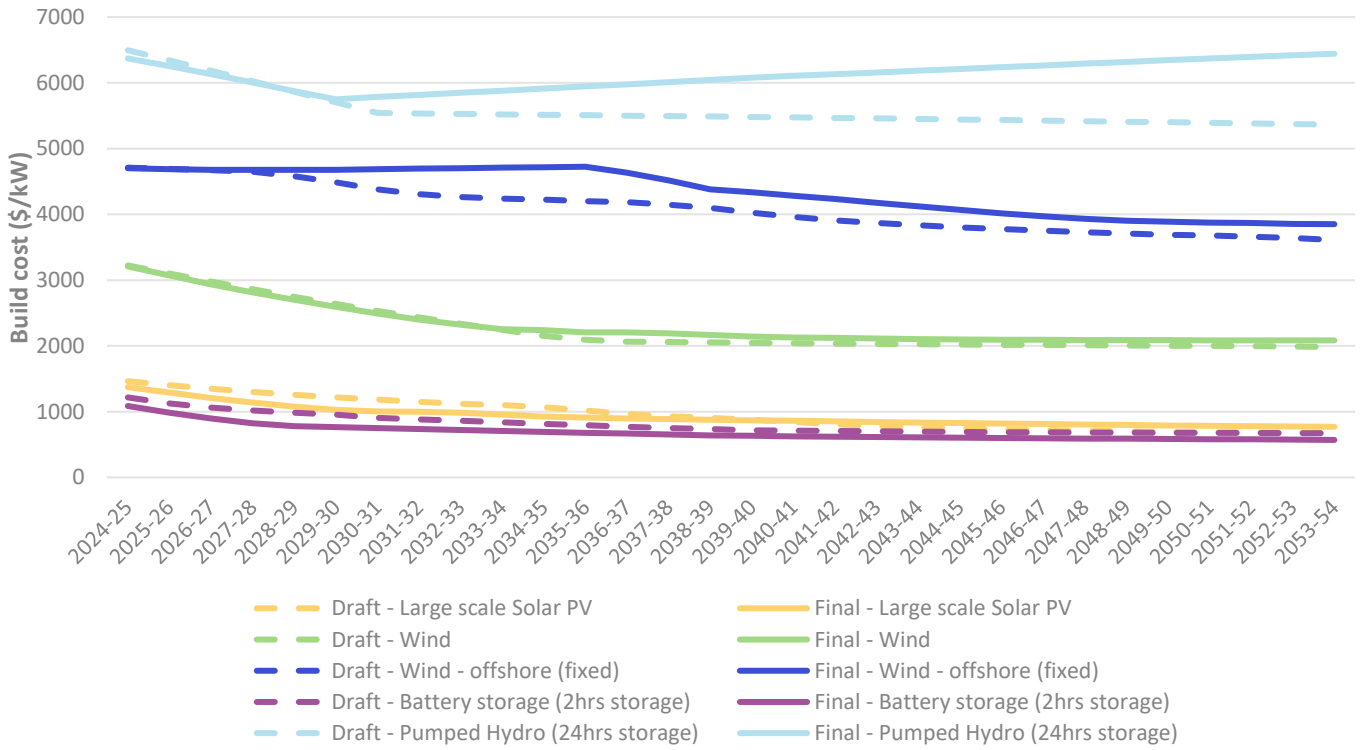
CSIRO and GEM reports: see https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-iasr

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; but cost escalation factors that represent tightening supply chain over the long term for the installation cost components are now reflected in the projection

Build cost trajectories between Draft 2025 IASR vs 2025 IASR for *Step Change* (Global NZE post 2050) scenario



Wind generation: 6% cost increase since 2024 GenCost; up from 2% from the Draft 2025 IASR's

Solar farms: 8% cost reduction since 2024 GenCost; similar to the Draft 2025 IASR's

2-hour large-scale battery: 20% cost reduction since 2024 GenCost; similar to the Draft 2025 IASR's

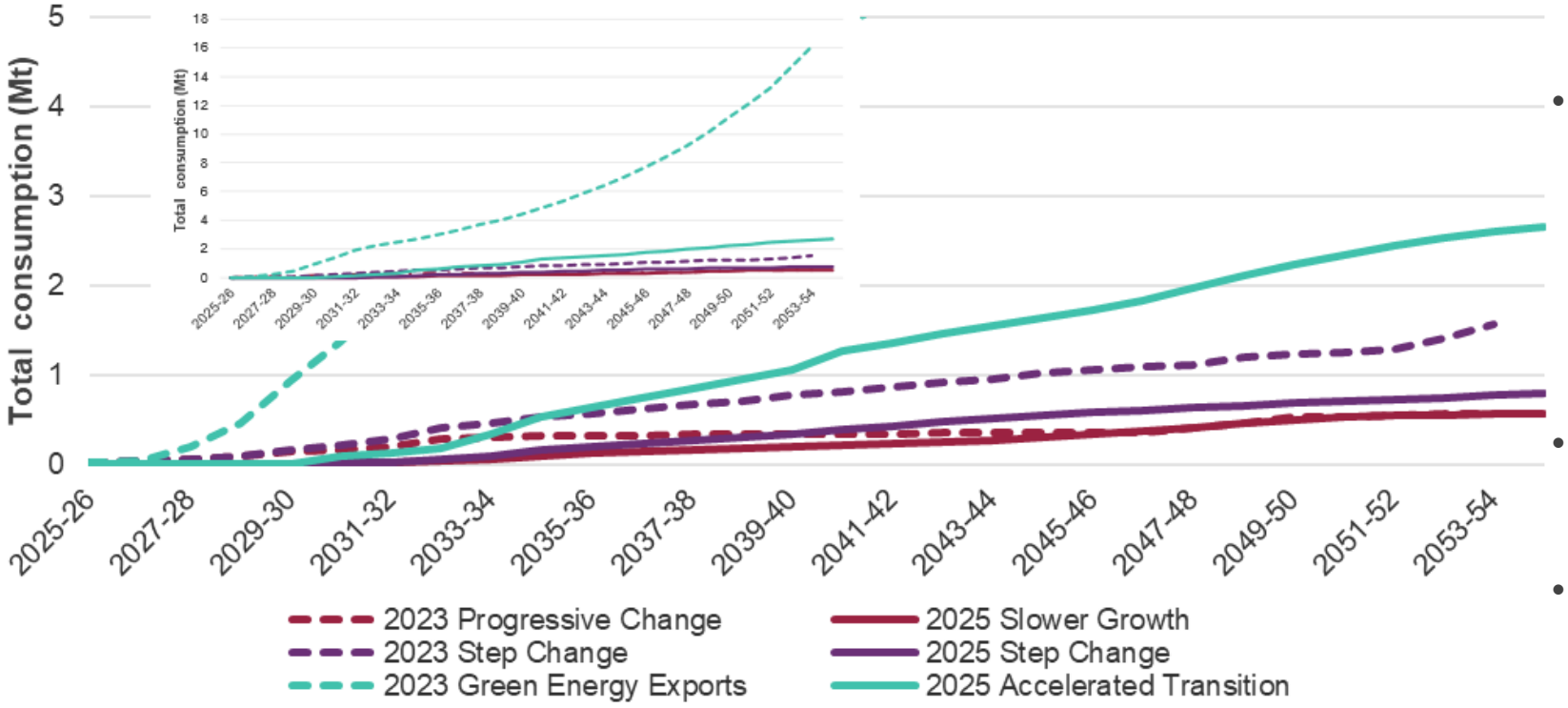
Onshore wind and solar are still most cost-effective for new builds.

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

CSIRO GenCost: see https://www.csiro.au/en/research/technology-space/energy/GenCost

Hydrogen forecasts reflect stakeholder feedback and the multi-sectoral modelling

Total NEM REZ-based hydrogen consumption (2023 scenario scale in the inset)

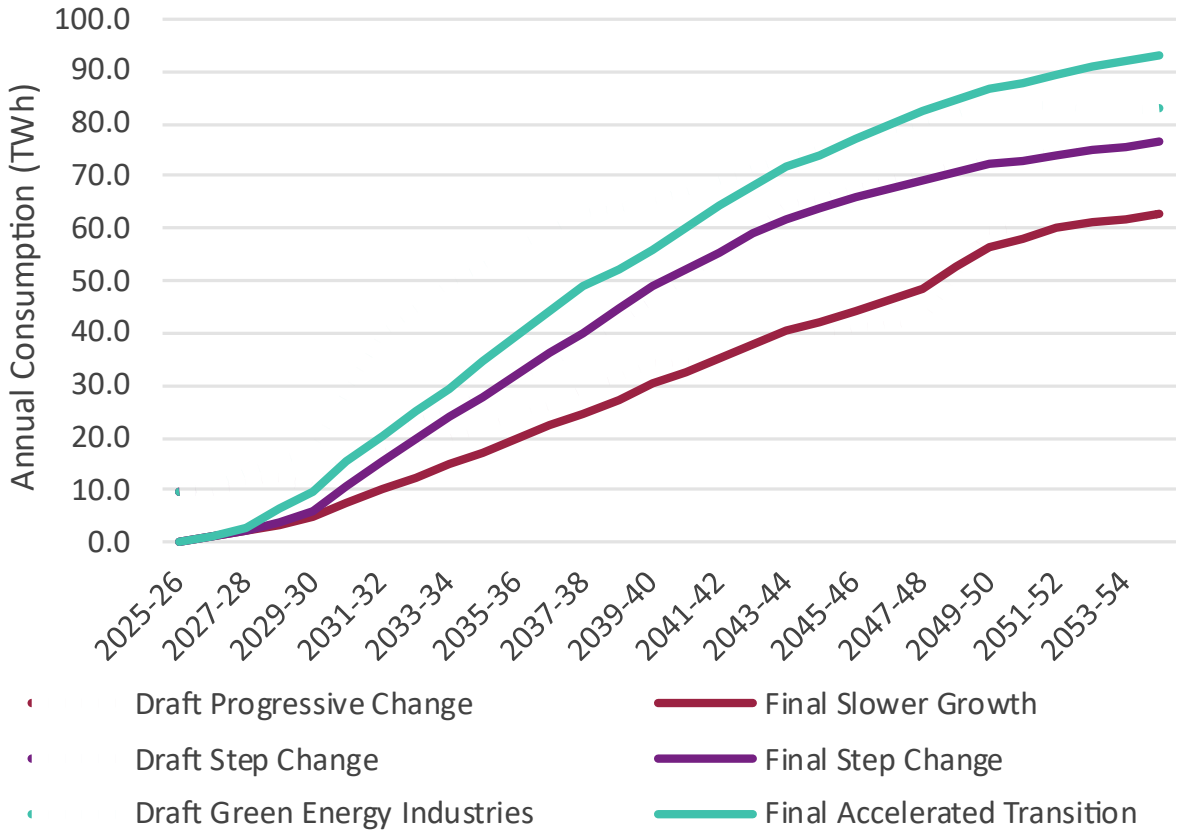


Note: The 2025 scenarios contains no export hydrogen volumes.

Updates from Draft IASR:

- Implementation of the final multi-sectoral modelling outcomes.
- Introduction of the “REZ-based” hydrogen production concept which defines the scope covered by the ISP. This is a subset of the total hydrogen forecast produced by the multi-sectoral modelling.
- Revision of committed projects (SA’s Hydrogen Jobs Plan removed).
- Multiple stakeholder feedback items implemented, as detailed in the final 2025 IASR and its consultation summary report.

Electrification assumptions from multi-sectoral modelling revised

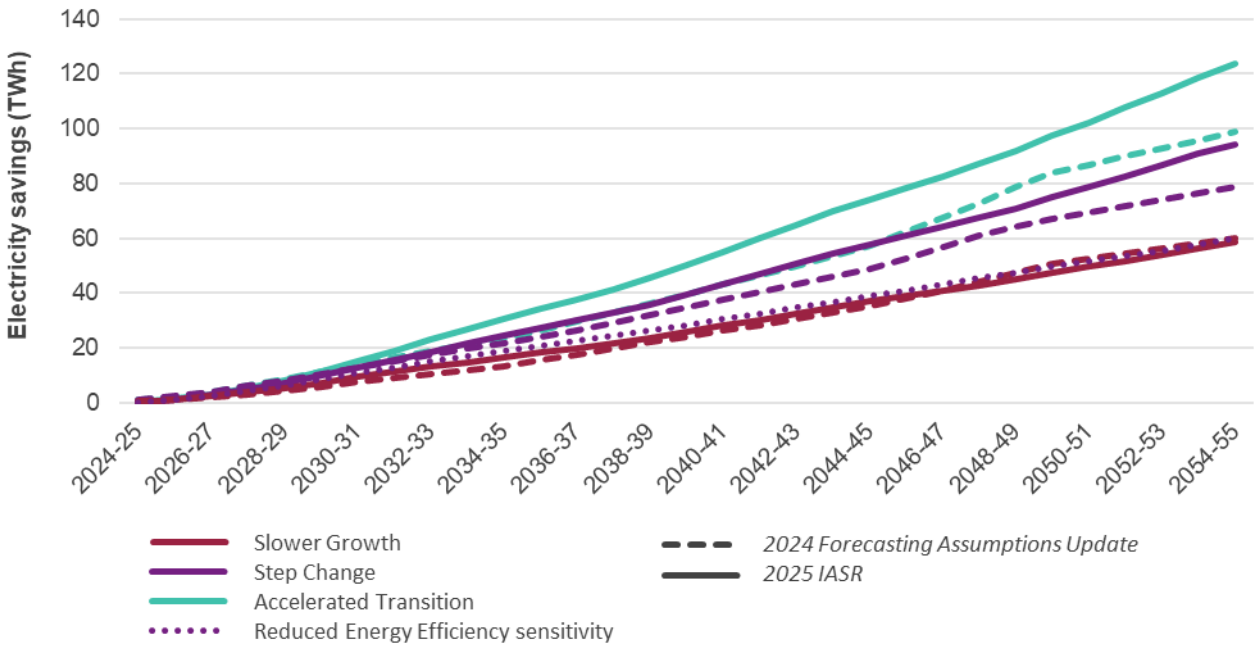


Updates from Draft IASR

- Electrification assumptions for some industrial sectors updated
  - Revised maximum permitted electrification.
  - Constraints applied to prevent electrification (and fuel-switching) from being introduced infeasibly early.
- Forecasts now start at 0 TWh in the base year (2024-25) after modelling corrections and post-modelling calibration.

Energy efficiency residential savings marginally lower

IASR Figure 50: Residential and business electricity energy efficiency savings, NEM, 2024-25 to 2054-55 (TWh)



Note: Business energy efficiency savings shown here are for the business mass market sector, capturing small industrial loads and commercial customers. Large industrial load energy efficiency savings are not included in these results.

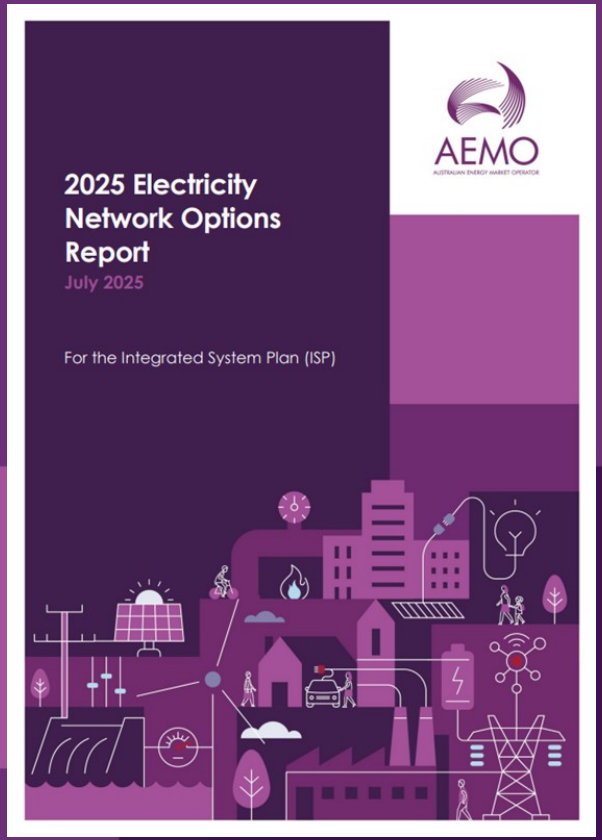
Update from Draft IASR

- Minor correction to the Victorian Energy Upgrades (VEU) program forecast, leading to marginally lower residential savings in the longer term.

2025 Electricity Network Options Report

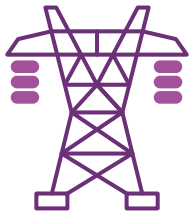
The report outlines the range of transmission network options and distribution network investment opportunities to be assessed in the 2026 ISP, designed to provide consumers with access to secure, reliable and affordable electricity.

Samantha Christie, Manager Strategic Planning



Key changes from draft to final 2025 Electricity Network Options Report

- Inclusion of the **latest cost estimates from transmission network service providers and jurisdictional bodies** for projects identified as actionable in the 2024 ISP, and for select other transmission project options.



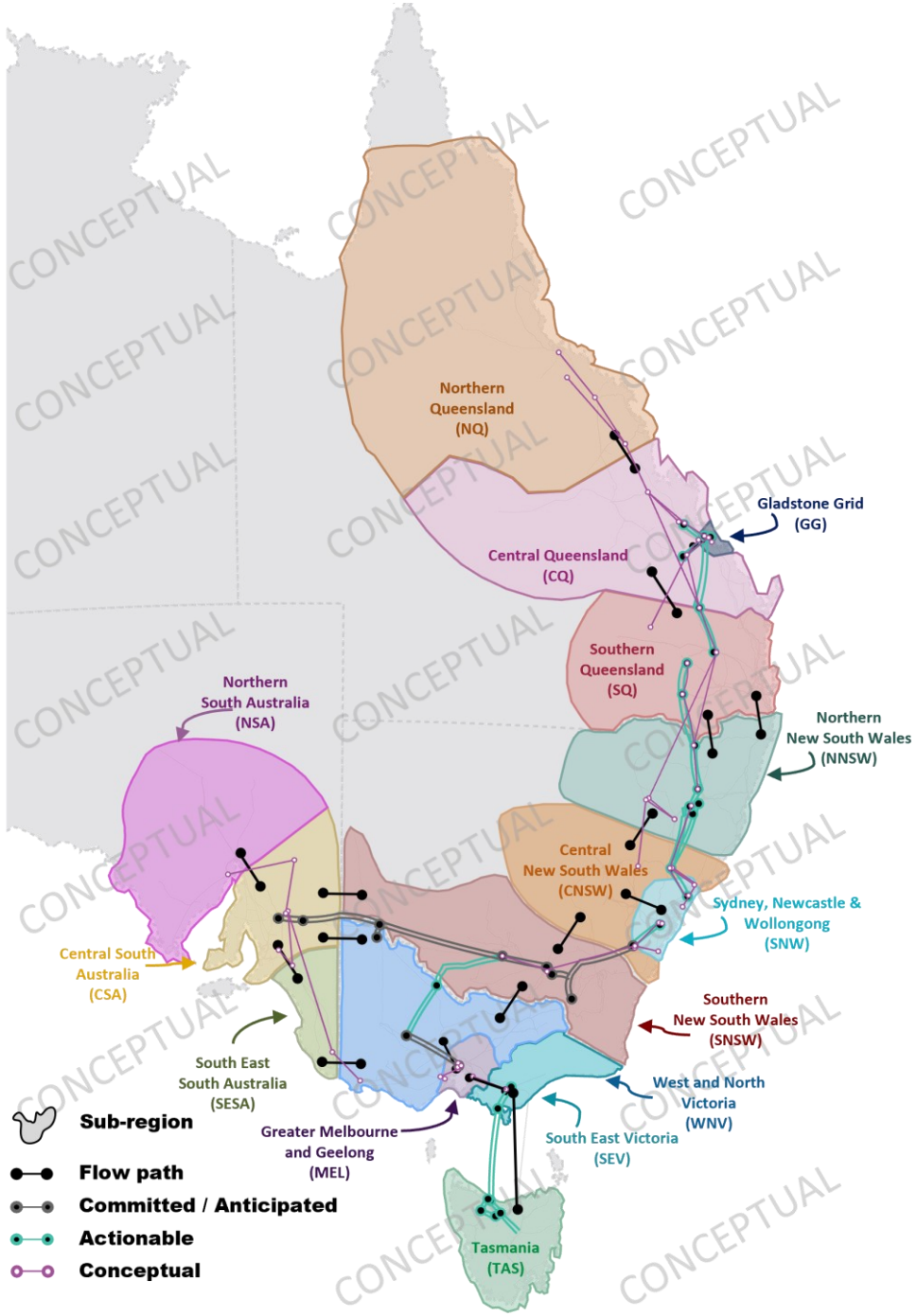
- Alignment with the **latest plans from transmission network service providers and jurisdictional bodies, and incorporating stakeholder feedback**, for transmission network options.

- New inclusion of **distribution network augmentations to facilitate utility-scale generation and storage** in New South Wales.

Flow path augmentation options

Purpose of flow paths

- Transport significant amounts of electricity across the backbone of the network.

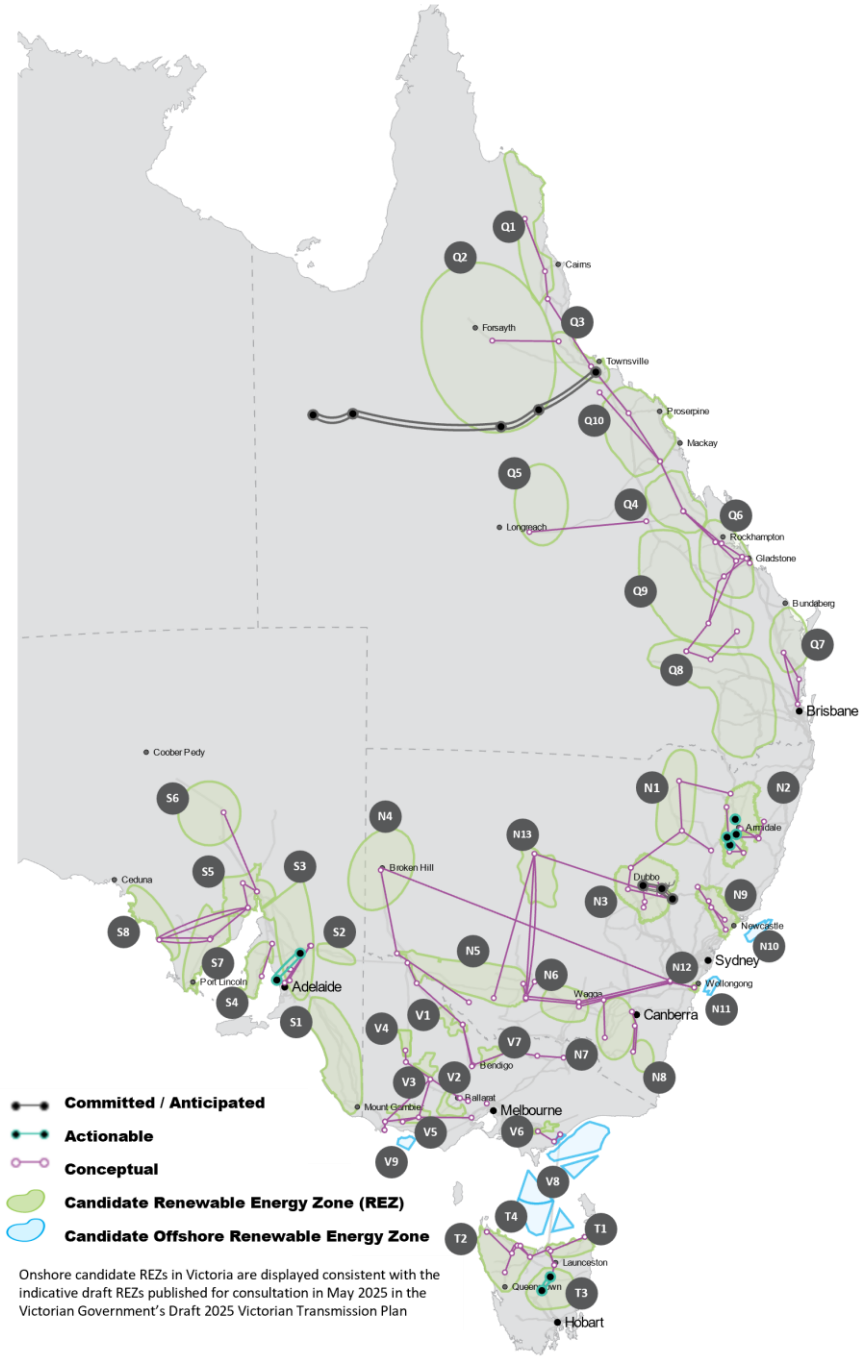


Renewable Energy Zone (REZ) augmentations

Purpose of REZs

Connect renewable generation in areas where clusters of large-scale renewable energy can be developed using economies of scale.

Some of the options are designed to transfer power from more than one REZ through to a big load centre (known as ‘group constraints’).



Queensland
- **Q1** Far North Qld
- **Q2** North Qld Clean Energy Hub
- **Q3** Northern Qld
- **Q4** Isaac
- **Q5** Barcaldine
- **Q6** Fitzroy
- **Q7** Wide Bay
- **Q8** Darling Downs
- **Q9** Banana
- **Q10** Collinsville

New South Wales
- **N1** North West NSW
- **N2** New England
- **N3** Central-West Orana
- **N4** Broken Hill
- **N5** South West NSW
- **N6** Wagga Wagga
- **N7** Tumut
- **N8** Cooma-Monaro
- **N9** Hunter-Central Coast
- **N10** Hunter Coast
- **N11** Illawarra Coast
- **N12** Illawarra
- **N13** South Cobar

Victoria
- **V1** North West VIC
- **V2** Central Highlands VIC
- **V3** Wimmera Grampians
- **V4** Wimmera Southern Mallee
- **V5** South West VIC
- **V6** Gippsland Onshore
- **V7** Central North VIC
- **V8** Gippsland Offshore
- **V9** Southern Ocean

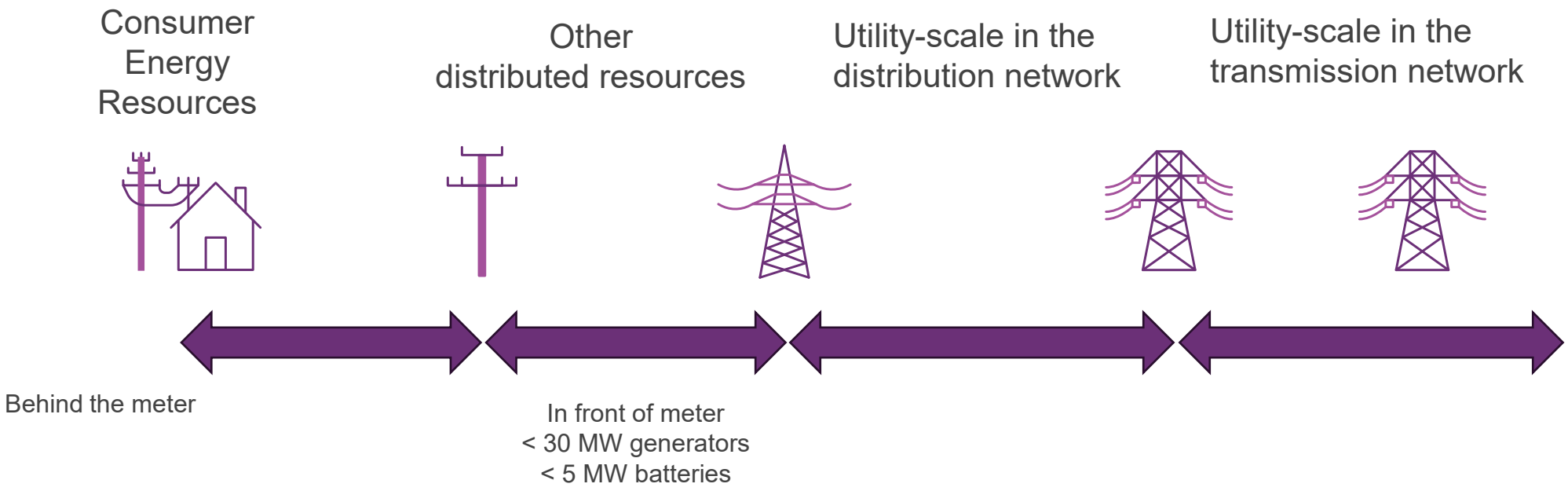
South Australia
- **S1** South East SA
- **S2** Riverland
- **S3** Mid-North SA
- **S4** Yorke Peninsula
- **S5** Northern SA
- **S6** Roxby Downs
- **S7** Eastern Eyre Peninsula
- **S8** Western Eyre Peninsula

Tasmania
- **T1** North East Tasmania
- **T2** North West Tasmania
- **T3** Central Highlands
- **T4** North Tasmania Coast

Transmission cost estimates are markedly increased from equivalent estimates considered as inputs to the 2024 ISP

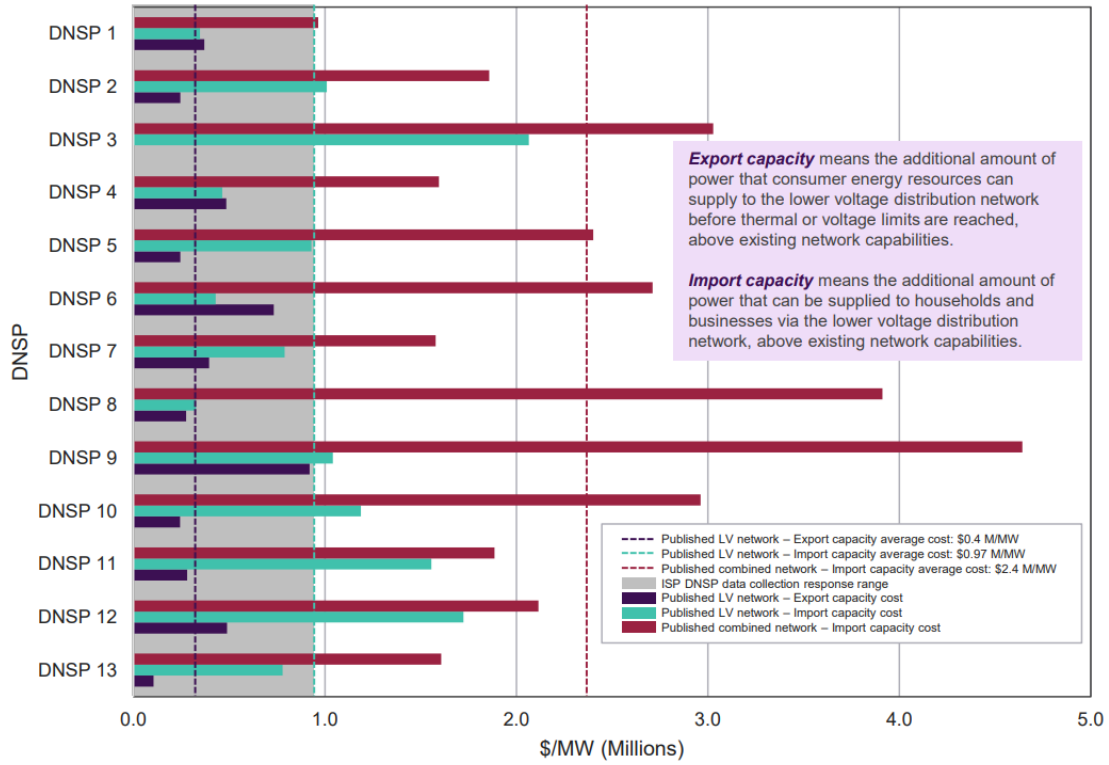
- **Sustained supply chain pressures** on materials, equipment and workforce,
- **Market competition** driven by a high number of concurrent projects under development in the NEM,
- **Project complexity**, including an increased number of projects planned for remote areas,
- **Social licence** and additional community and landholder engagement along proposed transmission line routes,
- **Scope revision** as more detailed project assessments are completed, and
- **Additional contracting costs** to account for risk allocation in engineering, procurement and construction contracts in response to pressures in the current market.

New inclusion of some distribution network augmentation options to facilitate utility-scale generation and storage



Through consultation with distribution networks, three tranches of opportunities were identified facilitating operation of aggregate consumer energy resources

- **Tranche 1 – Use existing capacity**, assuming even CER distribution across networks and up to the first two thirds of existing capacity.
- **Tranche 2 – Voltage management optimisation**, to unlock the final third of existing capacity to enhance network management and/or tighten voltage bandwidth. Cost of $400k/MW of network capacity for most networks.
- **Tranche 3 – Network augmentation**, to upgrade the network including between the low voltage network and the transmission network. Cost of $2.5m/MW of network capacity for most networks.



Questions and comments

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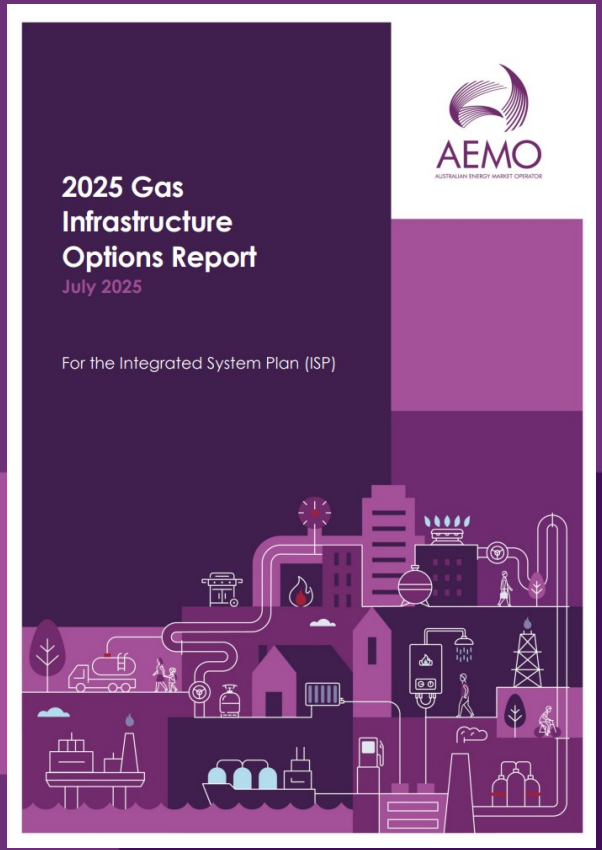
12:25 pm	Next steps	**Angela Heck**
12:30 pm	Webinar close	

2025 Gas Infrastructure Options Report

The report outlines gas infrastructure options and cost components that will inform gas development projections in the 2026 ISP.

Andrew Turley, Group Manager Forecasting

Rachael Saw, Specialist Market Operability



Review of the Integrated System Plan

In April 2024, Australia's Energy Ministers responded to the Federal Government's review of the ISP:

AEMO should expand its consideration of gas market conditions in the 2026 ISP

What **is** the purpose of integration into the ISP:

- Improve information and analysis on gas pricing, capacity and availability in the ISP.
- Strengthen planning for gas-powered electricity generation (GPG).
- Support ISP modelling for the sole purpose of optimising electricity investments.
- Improve consistency of gas information across AEMO's publications.

What is **not** the purpose of gas integration into the ISP

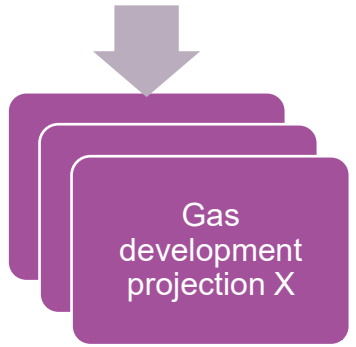
- Co-optimisation of electricity and gas planning.
- Development of a gas Optimal Development Path.
- Determination or signalling which gas developments should be invested in.

2025 Gas Infrastructure Options Report Overview

Gas infrastructure costs for gas integration in the ISP

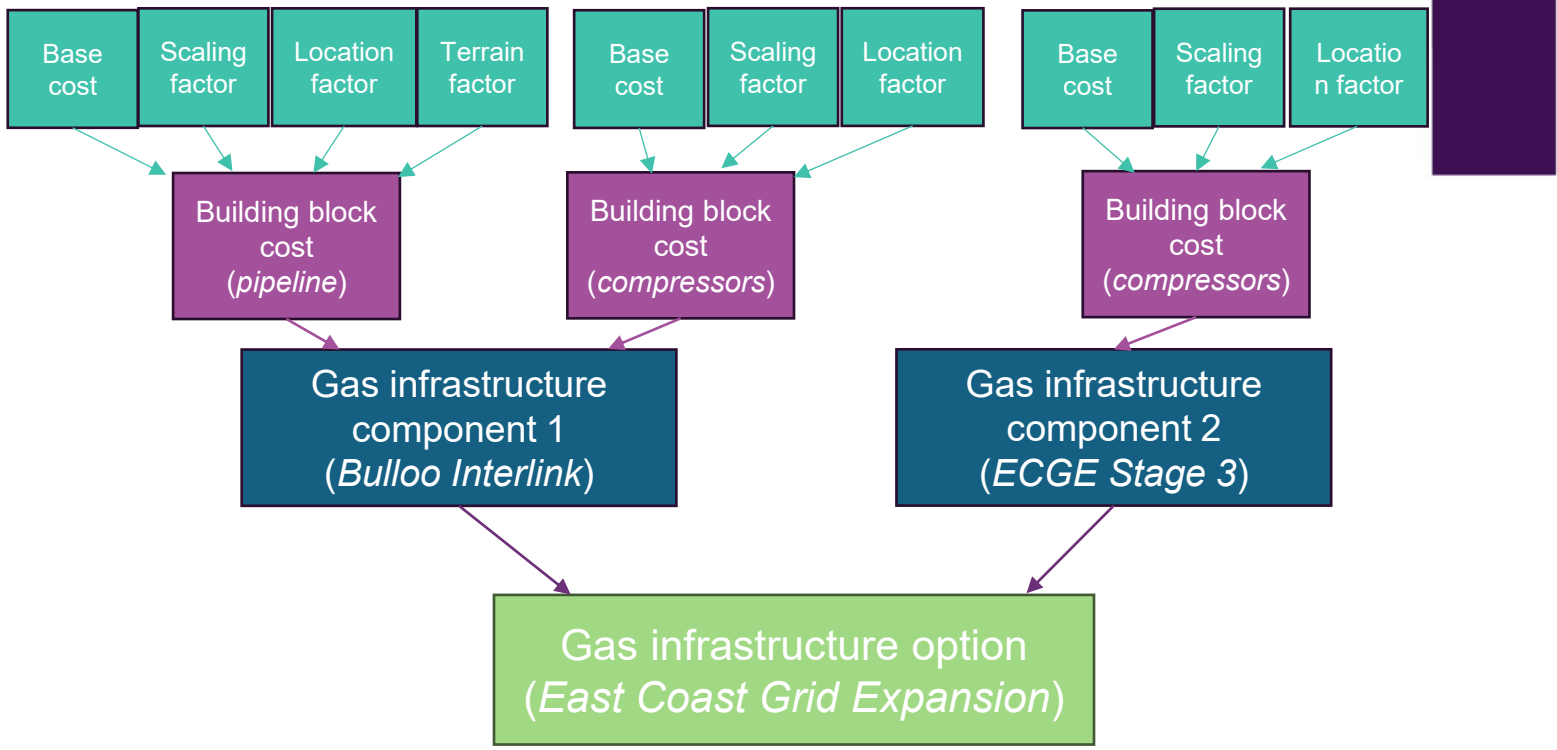
Create list of options:
- GSOO projects
- Other known projects
- Stakeholder consultation
- Generic projects

→ Apply building-block cost estimates to options list → Create a set of costed options → Gas supply development model uses list of options to create least-cost gas development projections



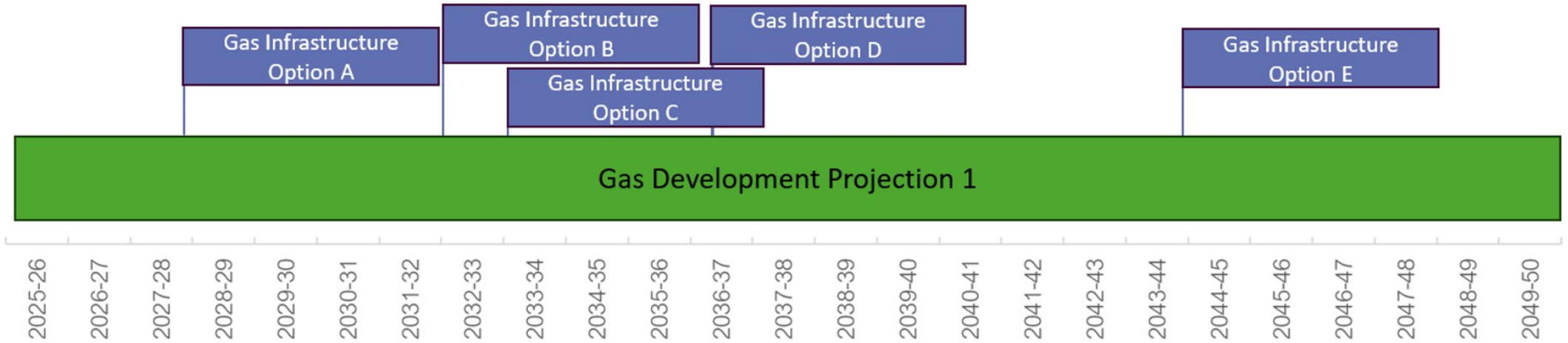
Gas infrastructure option cost estimation for a pipeline example

- Generic cost components applied to each building block of a component.
- The cost of an option is the total cost of all components making up the option.
- Four types of options: pipeline, storage, production and regasification.



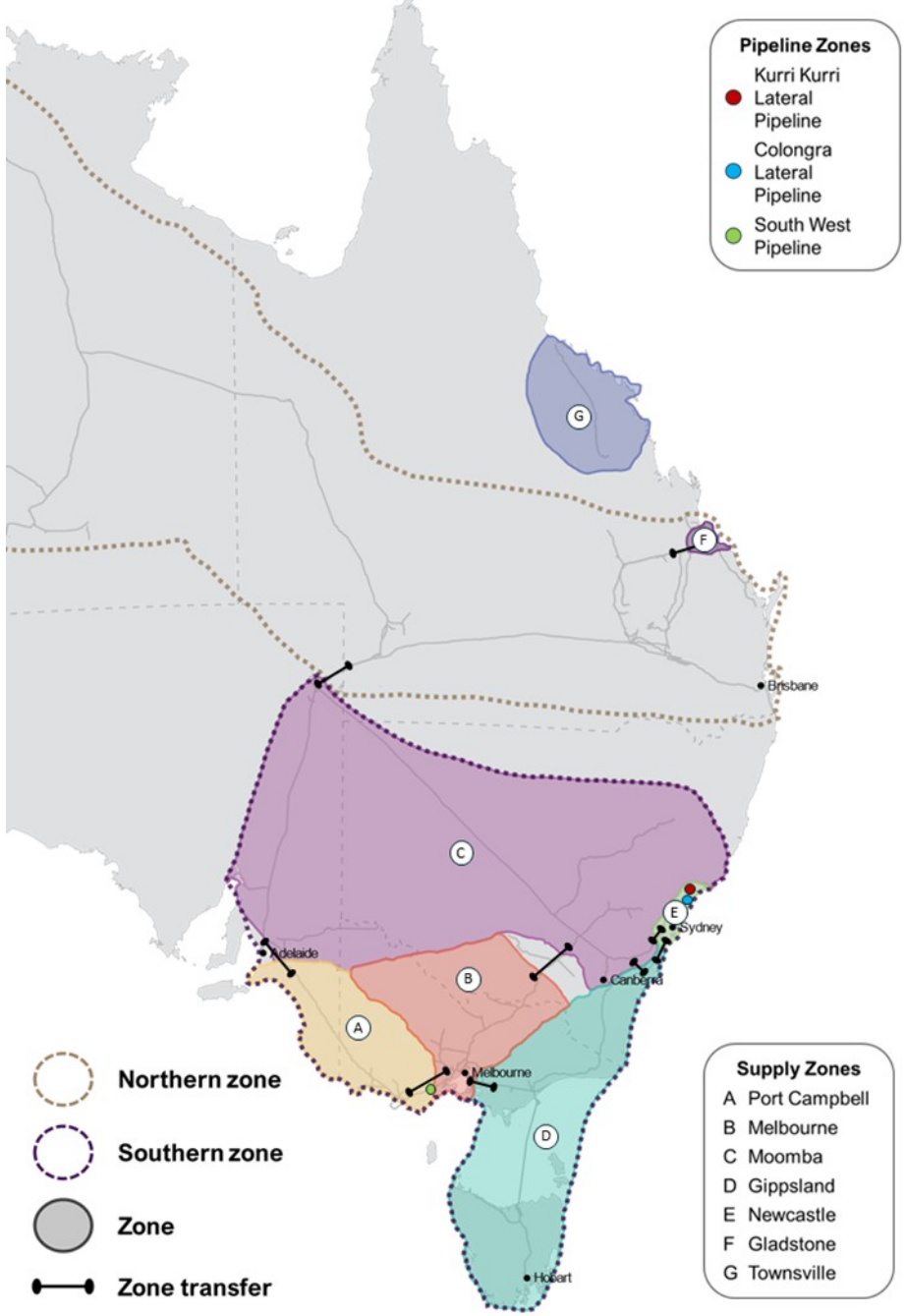
Construction of a conceptual gas development projection

- The starting point for each projection is the options from each of the 2025 GSOO southern supply solutions - options A, B and C.
- All subsequent options are developed by the gas expansion model as required based on available supply, location, and cost - options D and E.



Gas supply and pipeline zones

- The east cost gas market has been divided into gas supply or pipeline zones which reflect supply, storage and pipeline capacity constraints for all GPG in a given zone.
- The daily gas fuel limit for GPG is calculated as the total supply capacity minus forecast residential, commercial and industrial gas demand.
- All zonal limitations assume residential, commercial and industrial gas demand is met first.



Key changes

Changes made following consultation on the Draft 2025 Gas Infrastructure Options Report

Changes to 2025 Gas Infrastructure Options Report

New content:

- Operating costs for LNG floating storage regasification units.
- Additional gas infrastructure options.
- A mapping table linking GPG to both gas zones and ISP sub-regions.
- A dataset providing an example of the gas fuel limitations.

Changes:

- Updated information for gas infrastructure options.
- Updated gas zone definitions.
- Treatment of sunk costs for Port Kembla Energy Terminal.

Application of gas development projections for fuel limitations in the ISP

Figure 8 Supply and pipeline zones for the East Coast Gas Market

Pipeline Zones
Kurri Kurri Lateral Pipeline
Colongra Lateral Pipeline
South West Pipeline

Northe
Southe
Zone
Zone tr

As an example, t committed and a commercial and daily gas supply 2025 GSOO). By some days; the f the identified sup

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Appendix A3. LNG floating storage regasification unit operational expenditure

A3. LNG floating storage regasification unit operational expenditure

Operating costs for LNG floating storage regasification units (FSRUs) are not available in GHD's *Gas Infrastructure Costs Report* or Gas Master Cost Database, so have been provided in **Table 6**.

Table 6 Costs related to FSRUs

Expenditure component	Cost	Source
Operating expenditure (represented by the charter cost of an FSRU)	Between AUD$120,000 to AUD$180,000 per day.	Informed by APA's submission to the Draft 2025 *Gas Infrastructure Options Report*[8] and independently confirmed as reasonable by GHD.
Capital cost of FSRU (if purchased outright)	Estimated as 50% of total project cost. This increases the estimated initial capital cost of an LNG regasification	Advice from GHD.

Appendix A2. Gas infrastructure options

A2. Gas infrastructure options

Table 5 shows the list of gas infrastructure options that may be used by the gas supply development model to produce gas development projections. AEMO has included component and capacity information that is publicly available or previously published in a GSOO. Where available, AEMO will use project-specific lead times obtained through the GSOO survey process, and will update these if any new information is made available in a timely manner. For all other projects, the lead times provided by GHD for generic projects will be used. Due to confidentiality requirements, AEMO is unable to publish a full list of lead times, gas components or options or associated capacities that will be considered within the gas supply development model.

Table 5 Gas infrastructure options available to the gas supply development model

Option	Components or description	Source	Type	Zone	Capacity	Conditions
Port Kembla Energy Terminal	• Regasification terminal at Port Kembla • Pipeline from Port Kembla to the EGP • EGP reversal stages 1 and 2	GSOO	Regasification terminal and transport	Gippsland	• Regasification terminal: 500 TJ/d, 130 petajoules a year (PJ/y) • EGP reversal 1: 200 TJ/d • EGP reversal 2: 325 TJ/d	
Venice Outer Harbor LNG Project	• Regasification terminal at Outer Harbor • Connection to PCA • PCA reversal	GSOO	Regasification terminal and transport	Southern	• Regasification terminal: 405 TJ/d, 144 PJ/y • PCA reversal: 250 TJ/d	
Viva Energy Gas Terminal	• Regasification terminal at Geelong • Connection to VTS via SWP • Westernport Altona Geelong (WAG) pipeline conversion	GSOO	Regasification terminal and transport	Melbourne	• Regasification terminal: 750 TJ/d, 140 PJ/y • WAG conversion: 120 TJ/d	
Vopak Victoria Energy Terminal	• Regasification terminal in Port Philip Bay • Connection to VTS via SWP	GSOO	Regasification terminal	Melbourne	Regasification terminal: 778 TJ/d, 270 PJ/y	
Newcastle LNG Terminal	• Regasification terminal at Newcastle • Connection to Northern Trunk Main	Previous proposal	Regasification terminal	Newcastle	Regasification terminal: 280 TJ/d, 110 PJ/y	
East Coast Grid Expansion stage 3	• New compression on MSP mainline • Bulloo Interlink pipeline	GSOO	Transport	Moomba	• MSP capacity: 700 TJ/d • SWQP capacity: 605 TJ/d	

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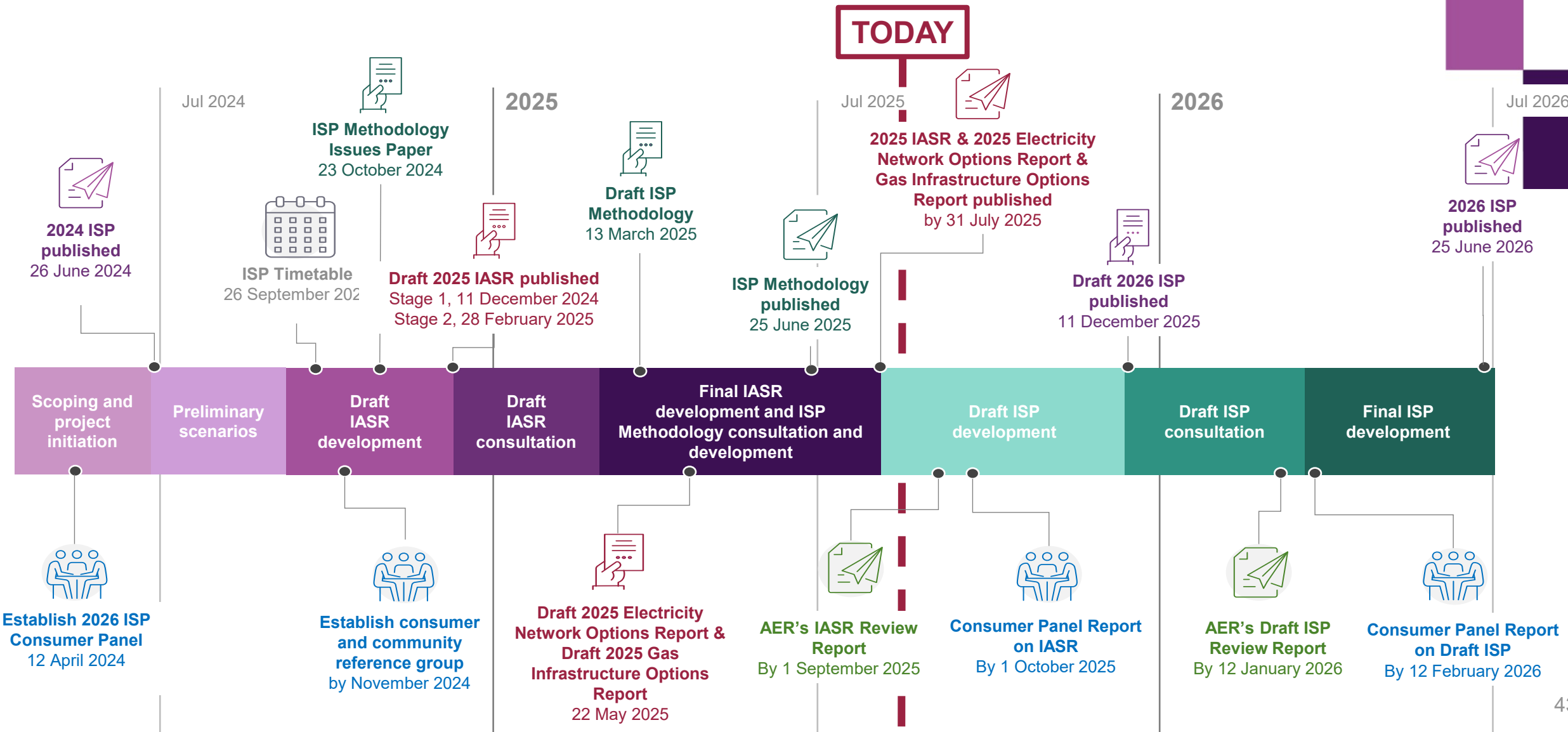
Next steps

2026 ISP development timetable



Stakeholder Survey

- We're almost halfway through the ISP development cycle and following recent stakeholder engagement, AEMO is asking for your feedback on our engagement process.
- The survey will be circulated in the coming weeks.
- Your responses will help shape engagement for the next year over the 2026 ISP development process.

Publication webinar survey: 2025 IASR publication webinar

For more information visit

aemo.com.au