2025 Inputs, Assumptions and Scenarios Report

December 2025

Addendum

For use in Forecasting and Planning studies and analysis

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.

Important notice

Purpose

AEMO publishes this Addendum to the 2025 Inputs, Assumptions and Scenarios Report (2025 IASR) pursuant to National Electricity Rules (NER) 5.22.9(c)(1). This report includes key information and context for the inputs and assumptions used in AEMO's Forecasting and Planning publications for the National Electricity Market (NEM).

Disclaimer

AEMO has made reasonable efforts to ensure the quality of the information in this publication but cannot guarantee that information, forecasts and assumptions are accurate, complete or appropriate for your circumstances.

Modelling work performed as part of preparing this publication inherently requires assumptions about future behaviours and market interactions, which may result in forecasts that deviate from future conditions. There will usually be differences between estimated and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material.

This publication does not include all of the information that an investor, participant or potential participant in the NEM might require, and does not amount to a recommendation of any investment.

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Copyright

Version control

Version	Release date	Changes
1	10/12/2025	

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1 Introduction

AEMO is required by the National Electricity Rules (NER) to publish the *Inputs, Assumptions and Scenarios Report* (IASR)[1] to be used to prepare the *Integrated System Plan* (ISP)[2].

The Australian Energy Regulator (AER) is required to publish a report on the transparency of the IASR, including whether AEMO has adequately explained how it has derived key inputs and assumptions, whether and how key inputs and assumptions have changed since the previous ISP, and whether key inputs and assumptions are based on verifiable sources, or that AEMO has provided stakeholders with adequate opportunity to propose alternative inputs and assumptions where verifiable sources are not readily available[3]. The AER report is referred to in this document as the 'Transparency Review'. If the Transparency Review identifies issues with the IASR, AEMO must provide further explanatory information in an addendum to the relevant IASR and consult on these issues in the Draft ISP[4].

Accordingly, this Addendum to the 2025 IASR provides further explanation in response to issues highlighted in the AER's Transparency Review[5] published in August 2025.

The AER assessed that the transparency of the 2025 IASR was improved on previous versions, noting the quality of the inputs and their explanations, and the extensive opportunities for stakeholder engagement

The AER stated in its 2025 Transparency Review:

> We consider the 2025 IASR has set out the basis for key inputs, assumptions and scenarios to be used in the draft and final 2026 ISP. The majority of AEMO's chosen inputs and assumptions have been adequately explained, and are based on verifiable sources or have been the subject of adequate stakeholder consultation. AEMO has demonstrated how it has incorporated stakeholder feedback. In addition, we consider that explanations of inputs, assumptions and concepts throughout the IASR are generally of a high standard.

Furthermore, the AER acknowledged significant improvements in the accessibility and quality of key explanations in the IASR compared to previous similar reports and the extensive and tailored consultation undertaken by AEMO throughout its development of the 2025 IASR. The AER noted that these elements had created a high general level of transparency for the inputs and assumptions in the 2025 IASR.

The AER noted that some areas of the IASR warranted additional information and explanation to improve transparency. Sections 2-8 of this document provide additional explanation on each of the issues noted in the Transparency Review:

- policies affecting consumer demand (addressed in Section 2),

[1] At https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-iasr.

[2] NER 5.22.8.

[3] NER 5.22.9(a).

[4] NER 5.22.9(c).

[5] AER. *Transparency review report – Inputs Assumptions and Scenarios Report for the Integrated System Plan*, at https://www.aer.gov.au/publications/reports/performance/transparency-review-aemo-2025-inputs-assumptions-and-scenarios-report.

- data centre forecasts (addressed in Section 3),
- off-grid hydrogen production (addressed in Section 4),
- biomethane forecasts (addressed in Section 5),
- community battery forecasts (addressed in Section 6),
- electricity price elasticity (addressed in Section 7), and
- hydrogen pipeline cost assumptions (addressed in Section 8).

1.1 Invitation for written submissions

The Addendum to the 2025 IASR must be consulted on with the Draft 2026 ISP. Stakeholders are invited to provide a written submission on any aspect of this addendum. Ideally, separate submissions should be made for the Addendum to the 2025 IASR and the Draft 2026 ISP. However, if stakeholders make a combined submission on both publications, submissions should clearly identify content as it relates to each publication.

Submissions should be sent in PDF format to ISP@aemo.com.au by 6.00 pm (AEST) on Friday, 13 February 2026. Additional information on 2026 ISP engagement opportunities is available on AEMO's website[6].

[6] AEMO. *2026 ISP Stakeholder Engagement*, at https://www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2026-integrated-system-plan-isp/opportunities-for-engagement.

2 Policies affecting consumer demand

AER Transparency Review

The AER's Transparency Review noted the following:

> Section 3.1.8 of the 2025 IASR contains a list of policies that are identified as able to affect consumer demand. A brief description of the policy and its intent is included for many of these policies.
>
> However, it is unclear how these policies are used as inputs or assumptions for demand forecasts or ISP modelling. We note that Table 8 in the 2023 IASR included additional contextual information about the impact a policy has on specific inputs, for example a home battery subsidy scheme increasing forecast uptake of residential batteries by a specified amount.
>
> We expect AEMO to outline how these included policies result in inputs or assumptions for ISP modelling, or which inputs and assumptions in the IASR are based on these policies.

AEMO's response

Consistent with requirements under the NER[7], AEMO considers a range of eligible policies in developing the ISP, applying the approach set out in the 2025 IASR, Section 3.1[8]. Those eligible policies can affect the availability and mix of generation, network and storage infrastructure, or they can affect consumer demand.

A range of policies are considered which impact consumer demand, outlined in Section 3.1.8 of the 2025 IASR[9]. They include policies affecting consumer energy resources (CER), energy efficiency, electrification, hydrogen and biogas substitution. AEMO incorporates these policies when applying its Forecasting Approach – either by directly incorporating in forecast components that AEMO's forecasting models develop, or by incorporating in forecast components that are developed in collaboration with expert consultants as appropriate. For example, for the 2025 IASR AEMO engaged the CSIRO and Green Energy Markets (GEM) to support the development of its CER forecast, and policies affecting potential development of CER were incorporated into the consultants CER uptake forecast, including the effect on operational expectations of CER devices.

Table 1 below outlines the specific inputs and estimated impacts of each policy affecting consumer demand. Note that in some cases assumed impacts of policies have been extrapolated beyond the life of the policy. This assumes that the policy has either removed barriers to improvements, or similar policies with similar objectives are introduced in their place.

[7] NER 5.22.3(b)

[8] See 2025 IASR, Section 3.1: https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/2025-inputs-assumptions-and-scenarios-report.pdf?rev=c1a7cf3781b849759f3f8ac901776ab9&sc_lang=en.

[9] See 2025 IASR, Section 3.1.8: https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/2025-inputs-assumptions-and-scenarios-report.pdf?rev=c1a7cf3781b849759f3f8ac901776ab9&sc_lang=en.

Table 1 AEMO incorporation of policies affecting consumer demand

Policy	Description of how this policy is applied
Small-scale Renewable Energy Scheme (SRES)	Discount on residential and commercial total PV installation cost of around $346/kilowatt (kW)[A] in 2025 (27% of total PV installation costs). Progressively declines to zero by end of 2030 and varies slightly by region. The discount leads to a modest acceleration in residential and commercial solar PV uptake in the short-term.
Victoria Solar Rebate	Discount on residential PV cost of $170/kW in 2025 (13% of total PV installation costs), ending by end of 2028 (calendar year). The discount leads to a modest acceleration in residential solar PV uptake in the short-term.
Large-scale Renewable Energy Target (LRET)	Discount on PV non-scheduled generation (PVNSG) of $88/kW in 2025 (7% of total PVNSG installation costs), progressively declining to zero by end of 2030. Varies slightly by region. The discount leads to a modest acceleration in PVNSG uptake in the short term.
Australian Carbon Credit Units (ACCU) Scheme	Discount on PVNSG of $95/kW in 2025 (8% of total PVNSG installation costs), progressively declining to zero by end of 2036. Varies by region. The discount leads to a modest acceleration in PVNSG uptake for first 10 years of forecast.
Cheaper Home Batteries Program (CHBP)	The Cheaper Home Batteries Program was announced too late to be explicitly included in the consultants' draft forecasts of battery uptake. The draft battery forecasts did not require a material increase in order to account for the CHBP, as the scenarios broadly considered that there would market, customer or other supporting factors incentivising battery uptake across the scenarios, albeit without as rapid an impact on the forecast uptake that CHBP is introducing. Accordingly, the final IASR forecasts were modified by increasing the early years of the forecast uptake to reflect the CHBP, increasing battery uptake in all scenarios from FYE 2026. The most significant adjustment to incorporate the CHBP led to an additional 1 million battery installations between 2025 and 2030 in the Accelerated Transition scenario, 850,000 batteries in Step Change and 250,000 in Slower Growth.
New Vehicle Efficiency Standard (NVES)	Combinations of internal combustion, hybrid, plug-in hybrid electric vehicle (PHEV) and battery electric vehicle (BEV) vehicles were determined to meet the passenger and light commercial vehicle efficiency standards consistent with the NVES. Several state sales targets outlined in the AEMC Emissions Targets Statement[10] were also considered, and these targets may exceed the sales rate of the NVES itself. Nonetheless, the NVES is expected to be the principal driver of EV sales in the period 2025-2029. Beyond 2030, the model assumes that both global developments and national EV sales will continue to increase each scenario's EV sales shares, consistent with consumer investments in each scenario narratives.
National Construction Code (NCC) 2022 and NCC 2025	The National Construction Code is improving minimum building performance standards for new builds and renovations, improving building energy efficiency throughout the forecast period. AEMO has applied alternative assumptions to reflect variations in achieving various building star ratings, aligned to the scenarios and the intent of the Code. This progressive improvement in building efficiency is applied according to the following minimum performance assumptions for residential sector new builds: *Step Change*: • 7 star – FY2024 in New South Wales, Victoria, Queensland, South Australia, and Western Australia; FY2027 in Tasmania and Northern Territory. • 7.5 star – FY2031 in New South Wales, Victoria, Queensland, and Western Australia; FY2036 in South Australia, Tasmania, and Northern Territory. • 8 star – FY2036 in New South Wales, Victoria, Queensland, and Western Australia; FY2041 in South Australia and Tasmania; FY2046 in Northern Territory. • 8.5 star – FY2041 in New South Wales, Victoria, Queensland, and Western Australia; FY2051 in South Australia and Tasmania. • 9 star – FY2051 in New South Wales, Victoria, Queensland, and Western Australia. *Slower Growth*: • 7 star – FY2024 in New South Wales, Victoria, Queensland, South Australia, and Western Australia; FY2027 in Tasmania and FY2028 in Northern Territory. • 7.5 star – FY2036 in New South Wales, Victoria, Queensland, and Western Australia; FY2041 in South Australia, Tasmania, and Northern Territory. • 8 star – FY2041 in New South Wales, Victoria, Queensland, and Western Australia; FY2046 in South Australia and Tasmania. *Accelerated Transition*: • 7 star – FY2024 in New South Wales, Victoria, Queensland, South Australia, and Western Australia; FY2027 in Tasmania and Northern Territory.

[10] See https://www.aemc.gov.au/regulation/targets-statement-emissions.

Policy	Description of how this policy is applied
	• 7.5 star – FY2031 in Tasmania; FY2036 in Northern Territory. • 8 star – FY2031 in New South Wales, Victoria, Queensland, and Western Australia; FY2036 in South Australia. • 8.5 star – FY2041 in New South Wales, Victoria, Queensland, and Western Australia; FY2051 in South Australia and Tasmania. • 9 star – FY2051 in New South Wales, Victoria, Queensland, and Western Australia. National Construction Code 2025 is assumed to apply from May 2025 for commercial sector in *Step Change*, with six-yearly stringency reviews thereafter, but no improvements assumed after mid-2040s due to saturation effects. By 2058, gross average reference building energy intensities fall to 56% of 2024 commercial building equivalents. *Accelerated Transition* 2058 energy intensity improves to 46% of 2024 equivalents with more frequent reviews, and is 66% for *Slower Growth*, with less frequent reviews.
Minimum energy performance standards (MEPS)	For existing residential buildings in *Step Change*: MEPS for rental properties take effect from FY2030. Initial standards require 5% of rental stock upgrades each year delivering 5% energy savings to these properties. Higher standards apply from FY2040, requiring 7.5% of rental stock upgrades and 7.5% energy savings. Higher standards apply from FY2050, with another 7.5% of stock upgraded and 10% energy savings. For existing residential buildings in *Slower Growth*: MEPS for rental properties take effect from FY2040. Initial standards require 5% of rental stock upgrades each year delivering 7% energy savings to these properties. Higher standards apply from FY2050, with another 5% of rental stock upgraded and 9.5% energy savings. For existing residential buildings in *Accelerated Transition*: MEPS for rental properties take effect from FY2030. Initial standards require 5% of rental stock upgrades each year delivering 5.5% energy savings to these properties. Higher standards apply from FY2040, requiring 10% of rental stock upgrades and 8% energy savings. Higher standards apply from FY2050, with another 10% of stock upgraded and 10.5% energy savings.
Commercial Buildings Disclosure (CBD)	The CBD Program involves mandatory rating of office buildings and areas using the six-star National Australian Built Environment Rating Scheme (NABERS). CBD is assumed to continue for *Step Change*, with the CBD Expansion Map leading to floor area rated by the program increasing by 1.25% per year and energy consumption of the rated floor area assumed to reduce by an additional 0.6% per year relative to the historical reduction rate. These improvements are applied to the total rated floor area. Saturation effects (the same building rated multiple times) ensure that a non-rated building is only moved to the rated building cohort, with improved energy efficiency, once (the 0.6% per year reduction is not applied each time a building is re-rated). *Slower Growth* involves 1% annual growth in rated floor area and energy consumption of the rated floor area is assumed to reduce by an additional 0.4% per year relative to the historical reduction rate. *Accelerated Transition* involves 1.5% annual growth in rated floor area and energy consumption of the rated floor area is assumed to reduce by an additional 0.8% per year relative to the historical reduction rate.
National Australian Built Environment Rating Scheme (NABERS)	NABERS is voluntary and is assumed to involve an additional 0.1% energy efficiency savings per year over and above energy efficiency savings calculated for CBD, across all scenarios. For *Step Change*, there is also 1.25% growth in annual floor area rated that is not associated with buildings that are captured by the CBD program, and energy consumption of the rated floor area is assumed to reduce by an average of 0.47% per year relative to autonomous energy efficiency improvement, varying by sector. The growth in rated floor area assumption is 1% for *Slower Growth* and 1.5% for *Accelerated Transition,* and the reduced energy consumption is 10% less than *Step Change* for *Slower Growth* and 10% greater than *Step Change* for *Accelerated Transition*.
Greenhouse and Energy Minimum Standards (GEMS)	*Step Change*: expanded scope of measures, higher stringencies and more frequent updating, lead to moderate increase in impact. By 2030, energy savings (in energy units) are assumed to be 2 times greater than they were in 2023 and 4.5 times greater by 2058. *Slower Growth*: by 2030 energy savings are assumed to be 1.7 times larger than they were in 2023 and to remain at or slightly below this level over the period to 2058. *Accelerated Transition*: by 2030, energy savings (relative to FY2015) are assumed to be 2.3 times larger (in energy units) than they were in FY2023 and 5.4 times larger by 2058. The RES share of total GEMS savings is assumed to decline slowly over time, in line with past trends, for all scenarios.
New South Wales Energy Savings Scheme (ESS) (New South Wales only)	*Step Change*: New South Wales ESS targets lifted by 0.1% per year, from 13.0% by FY2030 to 15.8% by 2058. *Slower Growth:* ESS targets remain at 2025 levels (13%) until 2058. *Accelerated Transition*: ESS targets lifted by 0.2% per year, from 13% by FY2030 to 18.6% by 2058
Victorian Energy Upgrades (VEU) (VIC only)	*Step Change:* annual VEU targets lifted from 7.3 million certificates in 2025 to 8 million by 2045, when program ceases (note: emission intensity assumed frozen at 2027 levels to avoid exponential increase in surrender obligations). *Slower Growth:* VEU targets remain at 2025 levels until 2045, when program ceases. *Accelerated Transition:* VEU annual targets lifted from 7.3 million certificates in 2025 to 9.1 million by 2045, when program ceases.

Policy	Description of how this policy is applied
	A discount on PVNSG is also added of $278/kW in 2025 (22% of total PVNSG installation costs), progressively declining to zero by 2036. This discount cannot be combined with LGCs. The discount leads to a modest acceleration of PVNSG uptake in the short term. This discount was not applied to the residential PV sector because Victoria has a separate PV rebate specific to it, which is higher than VEECs and mutually exclusive.
South Australia Retailer Energy Productivity Scheme (REPS) (South Australia only)	For the *Step Change* scenario, REPS targets are lifted from 3.75 million GJ in 2025 to 5.75 million GJ by 2030 but is not continued past this date. In practice, the program is likely to be reviewed ahead of 2030 and may be reframed for the post-2030 period. *Slower Growth*: REPS targets frozen at 2025 levels and programme ceases 2030. *Accelerated Transition*: REPS targets lifted from 3.75 million GJ in 2025 to 6.75 million GJ by 2030, but the program is not continued past this date.
Household Energy Upgrades Fund (HEUF)	*Step Change:* 0.4% uptake of efficiency upgrades in class 1ai (houses), 0.38% uptake in class 1aii (townhouses) & 0.36% uptake in class 2 (apartments). *Slower Growth:* 0.32% uptake of efficiency upgrades in class 1ai, 0.3% uptake in class 1aii & 0.29% uptake in class 2. *Accelerated Transition:* 0.51% uptake of efficiency upgrades in class 1ai, 0.48% uptake in class 1aii & 0.46% uptake in class 2.
New South Wales Hydrogen Strategy Renewable Fuels Scheme	The New South Wales Hydrogen Strategy [E] includes the Renewable Fuels Scheme, established in the *Electricity Supply Act 1995* [F], which targets increasing production of renewable hydrogen up to 8 petajoules (PJ) per annum by 2030 [G]. The effect of the currently legislated Renewable Fuels Scheme is uncertain, given the opportunity for liable entities to pay a penalty rather than to surrender renewable fuel certificates to meet their obligations under the scheme. As such, the scheme has not been required to be achieved in AEMO's scenario forecasts for hydrogen.
New gas connections policies [C]	Victoria's Gas Substitution Roadmap phases out new gas connections for new dwellings, apartment buildings, and residential subdivisions requiring planning permits from 1 January 2024. In CSIRO's Multi-sectoral Modelling for the 2025 IASR, all new residential buildings in Victoria from 2025 are assumed to be fully electrified. The Australian Capital Territory's policy on new gas connections [D] aims to phase out fossil fuel gas by 2045 by electrifying Canberra. In CSIRO's Multi-sectoral Modelling for the 2025 IASR, all new residential buildings from 2025 and all buildings from 2045 in the ACT are assumed to be fully electrified. CSIRO's modelling does not account for a lag between legislation and planning approvals.

A. This and all following dollar figures are in 2025-dollar value.
B. See Section 4.3 SPR, 2025 *Energy Efficiency Forecasts Final Report*: https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/strategy-policy-research-2025-energy-efficiency-report.pdf.
C. See Multi-sectoral modelling 2024: https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/csiro-2024-multi-sectoral-modelling-report.pdf.
D. See Powering Canberra: Our Pathway to Electrification ACT Government Position Paper: https://www.climatechoices.act.gov.au/__data/assets/pdf_file/0009/2052477/Powering-Canberra-Our-Pathway-to-Electrification-ACT-Government-Position-Paper.pdf.
E. See https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/energy-security-safeguard/renewable-fuel-scheme#:~:text=The%20Renewable%20Fuel%20Scheme%20was%20established%20under%20the,will%20commence%20in%202024%20and%20run%20until%202044.
F. See https://legislation.nsw.gov.au/view/whole/html/inforce/current/act-1995-094.
G. See Electricity Supply (General) Regulation 2014 (NSW), at https://legislation.nsw.gov.au/view/whole/html/inforce/current/sl-2014-0523.

3 Data centre forecasts

AER Transparency Review

The AER's Transparency Review noted the following:

> AEMO's forecasts of data centre energy consumption was published in the final IASR, figure 48. These forecasts are materially different to the inputs consulted on in the draft IASR. AEMO also published a consultant report with the final IASR that sets out how these forecasts were developed.
>
> The method applied by the consultant refines the methodology that was consulted on for the 2024–25 update to the Electricity Demand Forecasting Methodology, such that the forecasts differ materially from what may have been expected prior to the release of these forecasts. We consider that AEMO has not adequately explained how these data were derived, such that the forecasts could materially change without changing the description in the IASR. We also consider stakeholders have not been given adequate opportunity to propose alternative forecasts based on the data and some specific material elements of the consultant's report, such as the decision to apply an unweighted average between the trace for known projects included according to the ISP Methodology, and the projection based on economic development.
>
> We expect AEMO to further explain how the data centre demand forecasts were derived and consult on the forecasts before using them in the draft 2026 ISP.

AEMO's response

The AER points out that the methodology had been consulted on during the *Electricity Demand Forecasting Methodology*. This included:

- an issues paper seeking stakeholder input on the data centre methodology, and
- the Draft *Electricity Demand Forecasting Methodology*, as part of the second stage consultation.

Following these consultations, AEMO refined the data centre forecasts to reflect stakeholder feedback. Key refinements included adjusting the scenario inclusion criteria to provide a bespoke application for data centres, reflecting the significant uncertainty and scale of proposed projects, but also their rapid development to connection.

To support the IASR and *Electricity Statement of Opportunities* (ESOO) consultation requirements, AEMO also leveraged consultation opportunities with the Forecasting Reference Group (FRG) meetings. These sessions provided opportunities to share more timely and detailed information than was possible through the Draft IASR consultation process. This approach was particularly relevant for the data centre forecasts, given the rapid evolution of the sector.

AEMO consulted on the draft 2025 data centre forecasts at the 30 April 2025, 28 May 2025 and 25 June 2025 FRG meetings[11]. Stakeholders had the opportunity to ask questions during these FRGs to both AEMO, and AEMO's consultant,

[11] Refer to 2025 FRG meeting pack 1 (Presentations 2 and 3) and FRG meeting pack 3 (Presentation 1) at https://www.aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg.

Oxford Economics Australia (OEA), and submit written feedback. OEA responded to the feedback, and this was incorporated in the 2025 IASR Consultation Summary Report published in July 2025.

The AER noted that the methodology that was consulted on for the 2024-25 *Electricity Demand Forecasting Methodology* was subsequently refined. Due to the divergence between the survey-based forecasts and the techno-economic forecasts, and in response to feedback received as part of the FRGs, a blended approach was adopted by the consultants. This revised methodology was presented at the 28 May 2025 FRG meeting, receiving a single stakeholder submission in support of the revision.

It was AEMO's assessment at the time that the level of consultation was adequate given the significant engagement on the topic by stakeholders as part of the three FRG sessions.

4 Off-grid hydrogen production

AER Transparency Review

The AER's Transparency Review noted the following:

> The section of the IASR presenting electricity demand for hydrogen production has been significantly revised and updated and generally provides good explanation of how these inputs and assumptions are derived and how this approach has changed since the 2024 ISP.
>
> However, the explanation of which off-grid hydrogen production is included in demand forecasts does not sufficiently explain how AEMO derived the amount of hydrogen production that will be modelled as not sourcing electricity from the grid.
>
> Table 15 presents assumptions that [40%][12] of hypothetical production in Queensland and South Australia are REZ (renewable energy zone) based. The report further states that the portion outside a REZ is assumed to be off-grid and not included in demand.
>
> We expect AEMO to provide further explanation of how it derived the proportion of hydrogen production that is REZ based, its assumption that all non-REZ hydrogen production is off-grid, and what this means for the proportion of hydrogen production that is assumed to be grid-connected.

AEMO's response

Given the nascent stage of the green hydrogen industry in Australia, there is a limited number of existing or committed projects which can be used to inform the development or position of some of AEMO's hydrogen-related assumptions. One such assumption is the amount of hydrogen production not sourcing electricity from the grid, and if that assumption will vary with time or by NEM region.

In the Draft 2025 IASR Stage 2, AEMO consulted on assumed "on-grid" electrolysis proportions (Section 3.3.6, see Figure 12), which represented the portion of total hydrogen production, produced via electrolysis, assumed to source their electricity requirements from the grid. The description and methodology used to develop these proportions was discussed on page 70 in the Draft 2025 IASR Stage 2[13].

As discussed in the *2025 IASR Consultation Summary Report*, pages 64 and 66[14], stakeholders expressed a range of views on the assumed "on-grid" proportions and no clear consensus was expressed. In response to the varied stakeholder feedback, AEMO has:

[12] Note that the assumed REZ-based production in Queensland and South Australia is assumed to be 40%, not 60% as cited in the AER Transparency Review report.

[13] See https://www.aemo.com.au/-/media/files/major-publications/isp/2025/stage-2/draft-2025-inputs-assumptions-and-scenarios-report-stage-2.pdf?rev=cf9b295f7e5d43aca407db412d192efd&sc_lang=en.

[14] See https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/2025-iasr-consultation-summary-report.pdf?rev=6dc56931355649d9a4610a540d11154c&sc_lang=en.

1. Provided further clarity on the potential sources of electricity for electrolyser projects encompassed under a broader concept of "REZ-based" hydrogen production, rather than previously only on or off grid. This is presented in pages 71 to 73 of the 2025 IASR with supporting schematics.
2. Clarified that the energy accounting boundary for the ISP (and NEM) hydrogen forecast is "REZ-based hydrogen production", as per Figure 12 of the 2025 IASR[15], stating "Off-grid electrolysers that are not located in a REZ are not included in the ISP hydrogen demand forecast."
3. Presented the assumed REZ-based hydrogen production proportions in Table 15 of the 2025 IASR and noted that "in the absence of sufficient information regarding the volume of 'partially grid-sourced' or 'not-connected, REZ-located' hydrogen, AEMO treats all REZ-based hydrogen production as being 'fully grid-sourced' in the 2026 ISP."

To further clarify the origin of the REZ-based proportion and associated assumptions:

- The assumed 40% REZ-based hydrogen production value for South Australia and Queensland was a simplification of the original "on-grid" proportions, which were informed by analysis conducted by CSIRO of HyResource project data[16] as part of the multi-sectoral modelling. Stakeholders did not form a clear consensus on these proportions and so AEMO simplified the ISP modelling process by moving from a declining proportion to a static proportion, while aiming to preserve the approximate cumulative hydrogen consumption for South Australia and Queensland within the IASR forecast.
- The assumption that all non REZ-based hydrogen production is off grid is a modelling simplification as these electrolysers are more likely to be geographically distant from the existing transmission network and therefore less likely to connect.
- For the purposes of the 2026 ISP, AEMO assumes all REZ-based hydrogen production will be fully grid sourced as this ensures that the developments in each REZ will respect the available VRE resource limits within a given REZ (which must cover both on and off-grid electrolyser demand).

AEMO notes that hydrogen proponents choosing to source their electricity requirements from the grid or from behind the meter generation, or proponents choosing to locate within or outside a REZ, may have significant impacts on power system planning. AEMO considers that given the large uncertainties in hydrogen generally, attempting to provide further detailed assumptions, such as the percentage of on/off-grid hydrogen, would risk providing a false sense of accuracy. Accordingly, AEMO will continue to monitor how hydrogen production may evolve with time and impact power system needs. Future developments will be reflected in AEMO's publications for stakeholder consultation, as appropriate.

[15] See https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/2025-inputs-assumptions-and-scenarios-report.pdf?rev=c1a7cf3781b849759f3f8ac901776ab9&sc_lang=en.

[16] See https://research.csiro.au/hyresource/.

5 Biomethane forecast

AER Transparency Review

The AER's Transparency Review noted the following:

> The growth forecasts for biomethane have changed materially since the 2023 IASR, both in magnitude and shape. While the IASR describes how the forecasts were derived and AEMO has published reference information, the IASR does not directly address how this input has changed since the 2024 ISP. The explanation points to several potential reasons for the differences but does not identify what those differences are or make a clear link to why the magnitude or shape of the forecasts have changed.
>
> We expect AEMO to explain how these forecasts have changed since the 2024 ISP, and the drivers of those changes.

AEMO's response

After the 2024 ISP publication, AEMO received stakeholder feedback from APGA for the 2025 IASR Scenarios consultation[17] that biomethane costs were 4 to 6 times greater than seen in Australia's Bioenergy Roadmap[18]. APGA recommended[19] that AEMO factor updated biomethane assumptions into its multi-sectoral modelling.

After reviewing APGA's comments and the 2024 ISP biomethane assumptions, AEMO engaged ACIL Allen to provide an updated biomethane forecast with production cost, volume by feedstock type and scenario for the Draft 2025 IASR[20].

ACIL Allen's biomethane forecast was well received by APGA, which noted in its subsequent submission[21] to the Draft 2025 IASR Stage 1 consultation[22] that ACIL Allen's forecast would include anaerobic digestion, rather than just gasification, and this would reflect a more accurate and considerably lower cost gradient for biomethane, and more accurate supply curves.

Subsequently, AEMO provided the updated ACIL Allen biomethane forecast to CSIRO, who used it as an input to CSIRO's multi-sectoral modelling. The multi-sectoral modelling results, including the updated biomethane forecast and uptake, were shown in the 2025 IASR, and complemented by additional information in CSIRO' Multi-Sectoral Modelling report[23].

[17] See 2025 IASR consultation: https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-iasr-scenarios-consultation#:~:text=Work%20began%20in%20July%202024,of%20modelling%20Australia%27s%20energy%20future.

[18] See https://arena.gov.au/knowledge-bank/australias-bioenergy-roadmap-report/.

[19] See APGA submission: https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/submissions/australian-pipelines--gas-association-apga.pdf?rev=3f9bbb2c110b4d54a5a50eec354d1ec5&sc_lang=en.

[20] See ACIL Allen report: https://www.aemo.com.au/-/media/files/major-publications/isp/2025/acil-allen-2024-fuel-price-forecast-report.pdf.

[21] See APGA submission: https://www.aemo.com.au/-/media/files/major-publications/isp/2025/stage-1-submissions/australian-pipelines-and-gas-association.pdf?rev=6ba51c7156bd4b85a12e688404b3109e&sc_lang=en.

[22] See Draft 2025 IASR Stage 1: https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-iasr.

[23] See 2025 IASR page 80-81: https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/2025-inputs-assumptions-and-scenarios-report.pdf?la=en and https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/csiro-2024-multi-sectoral-modelling-report.pdf?rev=5b93f9a194f745b483116cc0e3238b21&sc_lang=en.

6 Community battery forecast

AER Transparency Review

The AER's Transparency Review noted the following:

> Section 3.3.7 of the IASR outlines the forecast of community batteries as part of the 'large commercial' sector of battery forecasts but does not clearly identify where that series is set out in the IASR. We expect AEMO to more clearly identify where the forecasts of community batteries are included, how they have been derived including any identifiable drivers, and provide the data for the series that includes these forecasts.

AEMO's response

Community batteries were included in the large commercial sector of the battery forecasts (which covered all commercial batteries from 50 kilowatts [kW] to 5 megawatts [MW] in capacity) and hence included in the total installed capacity for all batteries showing in the 2025 IASR (Figure 25) and in the Embedded Energy Storage tab of the IASR Workbook[24].

The number and size of community batteries included in the forecast are those identified in the results of the funding rounds of the Community Batteries for Household Solar program[25]. The total number of community batteries included in the forecast was 447 across the NEM and WEM, with a total installed capacity of 39 MW and 101 MWh of storage capacity. The forecasts include additional batteries in the large commercial sector, based on the observed installation rates in that sector, but do not specifically identify community batteries within those additional batteries. The inputs, assumptions and methodologies for the commercial battery forecast are outlined in the individual consultants' reports[26].

[24] See 2025 IASR report and workbook: https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-iasr.

[25] See https://www.dcceew.gov.au/energy/renewable/community-batteries.

[26] See https://www.aemo.com.au/-/media/files/major-publications/isp/2025/csiro-2024-solar-pv-and-battery-projections-report.pdf?rev=e8a158794c6d4327a1eb66ae15d86ca8&sc_lang=en and https://www.aemo.com.au/-/media/files/major-publications/isp/2025/gem-2024-solar-pv-and-battery-projections-report.pdf?rev=86e10bbe927a4239b7aa7c017f1f4125&sc_lang=en.

7 Electricity price elasticity

AER Transparency Review

The AER's Transparency Review noted the following:

> In Section 3.3.14, Table 20 presents the price elasticities of demand for various appliances and sectors. We note these values have changed and reversed trend for the business sector since the 2023 IASR without an explanation or reference.
>
> We expect AEMO to explain how the price elasticity factors were derived and provide the data and reasoning behind the change in price elasticity values for the 2025 IASR.

AEMO's response

AEMO notes that recent IASRs have not properly reported the price elasticities of demand for the business sector. AEMO corrected the values in Table 20 of the 2025 IASR republished on 28 August 2025. **Table 2** below shows the correct values and reflects the values that AEMO has applied to the residential and business consumption forecasts, with no change in methodology or applied values since at least 2021.

Table 2 Price elasticities of demand for various appliances and sectors

Scenario	*Slower Growth*	*Step Change*	*Accelerated Transition*
Residential: baseload appliances	0	0	0
Residential: weather-sensitive appliances	-0.10	-0.10	-0.10
Business: all load components	-0.15	-0.10	-0.05

8 Hydrogen pipeline cost assumptions

AER Transparency Review

The AER's Transparency Review noted the following:

> The IASR's assumptions around the timing and cost of creation of hydrogen pipelines are not clear. While the IASR workbook contains cost data for the building out hydrogen pipelines to each REZ in each scenario, it is unclear how these costs were derived and how they will be used. The description of hydrogen infrastructure identifies locations for production and consumption but does not address how the transport costs are modelled. The description of hydrogen cost under fuel switching indicates that multisectoral modelling allowed for pipeline capital costs proportionate to hydrogen production costs, but does not explain how similar costs will be included in the ISP.
>
> We expect AEMO to provide further explanation of how hydrogen infrastructure costs have been derived and how they have changed to account for differences in modelling assumptions since the 2024 ISP.

AEMO's response

An objective of the ISP modelling is to determine the optimal development path (ODP) for the NEM. The cost impact of installing electrolysers, and their associated energy consumption and supporting infrastructure required to meet forecast hydrogen consumption is considered in the determination of the ODP. The scale of impact varies for each scenario, and is combined to determine the ODP, consistent with the cost-benefit analysis methodology defined in the *ISP Methodology*[27].

The 2024 ISP assumed electrolysers would be installed at ports to co-locate hydrogen production with end users, such as hydrogen export demand, and thus require electricity transmission to connect electricity generation in the REZs to the electrolysers at the ports. As described in the *ISP Methodology* (p58-60) and 2025 IASR (p209-211), AEMO now assumes that electrolysers will be installed within REZs, to minimise the cost of energy infrastructure recognising that electricity transmission is typically more costly than pipelines. This simplified assumption was determined with reference to studies[28] that indicate this arrangement is more cost-effective at scale.

Due to this change in the assumed conceptual locations of electrolysers (in REZs rather than at ports), AEMO has estimated the cost of the associated hydrogen transmission pipeline necessary to connect hydrogen production with hydrogen consumption so the cost can be considered in the ISP models when determining preferred hydrogen REZ locations, which is optimised within the ISP capacity outlook models. These hydrogen pipeline costs can be found on the 'Build Cost – Hydrogen pipeline' tab of the 2025 Inputs and Assumptions Workbook, the assumed locations of hydrogen consumption

[27] See https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2026-isp-methodology/isp-methodology-june-2025.pdf?rev=e88a1f1bbeef447ba27692b785069a0a&sc_lang=en

[28] DeSantis et al, 2021, Cost of long-distance energy transmission by different carriers, https://doi.org/10.1016/j.isci.2021.103495; Patonia et al, 2023, Hydrogen pipelines vs. HVDC lines: Should we transfer green molecules or electrons? https://www.oxfordenergy.org/publications/hydrogen-pipelines-vs-hvdc-lines-should-we-transfer-green-molecules-or-electrons/; DCCEEW, 2023, National Hydrogen Infrastructure Assessment, https://www.dcceew.gov.au/energy/publications/national-hydrogen-infrastructure-assessment; Net Zero Australia, 2023, https://www.netzeroaustralia.net.au/final-modelling-results/.

can be found on the 'Hydrogen consumption locations' tab, and the assumed locations of hydrogen consumption can be found on the 'Hydrogen consumption locations' tab[29].

The hydrogen pipeline costs are a function of assumed pipeline length and diameter. The length of the pipeline for a given REZ electrolyser is estimated to be the distance between the hydrogen consumption location for that subregion and the production location within the REZ, assumed to be near a co-located substation. The pipeline diameter (measured in mm) is determined by the given level of future hydrogen demand within a subregion, and also the length of the pipeline. A hydrogen pipeline cost of $3,750/km/mm is then applied to determine the pipeline cost, developed by GHD and published in the *2025 Gas Infrastructure Costs Report*[30] and associated Gas Master Cost database[31]. This was consulted on with stakeholders as part of the 2025 *Gas Infrastructure Options Report* consultation[32].

[29] See https://www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2026-integrated-system-plan-isp/2025-26-inputs-assumptions-and-scenarios.

[30] See https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/2025-Gas-Infrastructure-Options-Report/2025-gas-infrastructure-costs-report.

[31] See https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/2025-gas-infrastructure-options-report/2025-gas-master-cost-database.xlsx.

[32] See https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-gas-infrastructure-options-report-consultation.