

Draft 2026 Forecasting Assumptions Update

December 2025

Draft report for consultation

For use in the 2026 National Electricity Market Reliability
Forecast





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 Draft 2026 Forecasting Assumptions Update pursuant to National Electricity Rules (NER) 4A.B.1(e) and in accordance with the Australian Energy Regulator's Forecasting Best Practice Guidelines. This report includes information on updated assumptions to apply in the Reliability Forecast (or other publications, as named in this report, for the National Electricity Market (NEM). This publication is generally based on information available to AEMO as 31 October 2025 unless otherwise indicated.

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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.

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Version control

Version	Release date	Changes
1.0	23/12/2025	Initial release

Executive summary

AEMO delivers a range of forecasting and planning publications for the National Electricity Market (NEM), including the 2026 *Electricity Statement of Opportunities* (ESOO), which is informed by this *Forecasting Assumptions Update* (Assumptions Update).

Key inputs and assumptions for the *Integrated System Plan* (ISP) are published at least biennially as part of the *Inputs, Assumptions and Scenarios Report* (IASR). This Assumptions Update does not update the 2025 IASR for the purposes of the ISP.

This report uses the latest information available to propose and consult stakeholders on updated assumptions specifically relevant to near-term demand forecasting for the 2026 ESoo for the NEM and Western Australia's Wholesale Electricity Market (WEM). It also includes updates from CSIRO's annual draft GenCost publication to allow for consultation on proposed updates in technology cost trajectories and technical assumptions that may be applied in broader modelling exercises by AEMO and by industry.

When finalised, this report will provide the basis for updated assumptions for the 2026 ESoo, which will complement other dynamic updates in market data and associated forecasts relevant to the development of the 2026 ESoo. For these additional dynamic updates, AEMO uses relevant stakeholder forums such as the Forecasting Reference Group (FRG), to provide an opportunity for stakeholder engagement and transparency prior to adoption in the 2026 ESoo.

Notice of consultation: Invitation for written submissions

Consultation on these updated inputs and assumptions follows the single stage consultation process in accordance with Appendix B of the Australian Energy Regulator's (AER's) *Forecasting Best Practice Guidelines*.

Stakeholders are invited to provide a written submission to the questions outlined in this Draft Assumptions Update, and on any other matter related to the updated assumptions. Submissions need not address every question posed and are not limited to the specific consultation questions contained in each chapter.

Submissions should be emailed to forecasting.planning@aemo.com.au and are required by 2 February 2026. AEMO is not obliged to consider any submissions received after the closing date. AEMO requests that, where possible, submissions should provide evidence that support any views or claims that are put forward.

The 2026 forecasting scenarios

As outlined in the 2025 IASR, AEMO uses a scenario planning approach to its forecasting and planning functions, including the ESoo. The current planning scenarios represent three distinct, plausible and internally consistent futures that explore future conditions affecting the NEM and Australia's east coast gas system. The scenarios include key energy sector inputs such as the growth in demand for electricity, and decentralisation as business and household consumers progressively transition to managing their own energy.

For the 2026 ESoo, AEMO will continue to apply the scenarios published in the 2025 IASR. The scenarios are *Step Change*, *Slower Growth* and *Accelerated Transition*.

All the scenarios consider various energy policies that:

- are listed in the Australian Energy Market Commission’s (AEMC’s) *Emissions Targets Statement*, and/or
- are (or are anticipated to be) sufficiently progressed to meet the requirements within the National Electricity Rules (NER) for consideration in the ISP.

AEMO’s approach to policy inclusion is described in the 2025 IASR¹.

Table 1 below acknowledges policy developments since the 2025 IASR and notes where they may influence the 2026 ESOO.

Table 1 New policies implemented or considered since the 2025 IASR

Policy	Brief description	Status	Key influence on 2026 ESOO
Australian Government 2035 emissions reduction target	On 18 September 2025, the Australian Government announced Australia’s 2035 emissions target to reduce emissions by 62-70% below 2005 levels by 2035.	Policy included in the AEMC’s Emissions Targets Statement	Multi-sectoral modelling
Cheaper Home Batteries Program	Australian households, businesses and community organisations can now get a discount of around 30% on the upfront cost of installing small-scale battery systems (5 to 100 kilowatt hours [kWh]).	Program underway. ^A	Consumer energy resources (CER) forecasts, including virtual power plant (VPP) participation rate forecast

A. In December 2025, the Australian Government announced expanded funding and changes to the amount of support that will be provided for different system sizes; the effect of these changes on both uptake and battery size will be unclear until they impact customers, from May 2026.

Summary of updated assumptions

This Draft Assumptions Update, and its Draft 2026 Forecasting Assumptions Update Workbook, incorporate updated forecast components using the latest inputs and assumptions, with particular focus on inputs of relevance to AEMO’s 2026 reliability forecasts within the 2026 ESOO. In particular, this Assumptions Update focuses on consumer energy resources (CER), which includes distributed photovoltaics (PV), distributed battery storage, participation in virtual power plants (VPPs), and electric vehicles (EVs).

Of the CER components, the consumer battery market presents a component that has a high degree of uncertainty, given the high level of policy stimuli and the corresponding level of active investment that may represent a changing trend, or merely an early embrace from early adopters. Whether the current fast pace of battery installation growth is sustained is difficult to predict, as is the level of impact that these devices will be expected to have on demand.

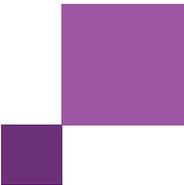
AEMO proposes to apply a mixture of forecasting sources to capture this uncertainty in the scenarios that AEMO applies to its forecasting and planning activities, and to include sensitivity analysis to explore upside potential on installations. For reliability forecasting purposes in the ESOO, this proposed approach will ensure reliability contributions from these devices are relatively conservative, recognising that the continued uptake and effective integration of these devices is uncertain and therefore are not able to appropriately meet either the committed or anticipated planning criteria applied in the ESOO.

The Draft Assumptions Update also updates generation technology costs and technical parameters (as incorporated in the GenCost 2025-26 Consultation Draft, led by CSIRO²).

Table 3 in Section 1.5 has links to reports with detailed information supporting the topics covered.

¹ See 2025 IASR, Section 3.1 page 26: 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.

² See <https://www.csiro.au/en/news/All/News/2025/December/Consultation-opens-on-the-draft-GenCost-2025-2026-Report>.



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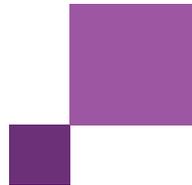


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1 Introduction

AEMO produces several publications that use inputs, assumptions and scenarios that are produced at least biennially in the IASR. These publications include the ESOO for the NEM and WEM, *Integrated System Plan (ISP)* for the NEM, and the *Gas Statement of Opportunities (GSOO)* for the East Coast Gas Market and Western Australia's domestic gas market. These publications complement each other, providing adequacy assessments of the electricity and gas systems, as well as optimal developments needed within the power system to provide energy consumers a path to a transformed reliable, low cost, net zero emissions. The scenarios and their forecasts meet government targets, policies and other commitments.

This Draft 2026 *Forecasting Assumptions Update (Draft Assumptions Update)* examines proposed updates to key assumptions affecting consumers' energy needs from the power system, and complements the 2025 IASR. It uses updated information that is proposed to inform the 2026 ESOO for the NEM and WEM. Note that the Draft Assumptions Update is not intended to update assumptions for the 2026 ISP and 2026 GSOO.

AEMO provides this Draft Assumptions Update to enable stakeholder engagement on these proposed updated assumptions, prior to implementation in the 2026 ESOO, providing transparency and insight on emerging and continuing trends affecting key components of the current and future power system.

The information in this report is supported by the Draft 2026 Forecasting Assumptions Update Workbook³, which provides more granular detail for the inputs and assumptions that are proposed to change in the 2026 NEM ESOO, since the 2025 IASR.

All dollar values provided in this report are in real July 2025 Australian dollars unless stated otherwise.

1.1 2025 IASR scenarios

This Draft Assumptions Update inherits the scenarios defined in the 2025 IASR, which are:

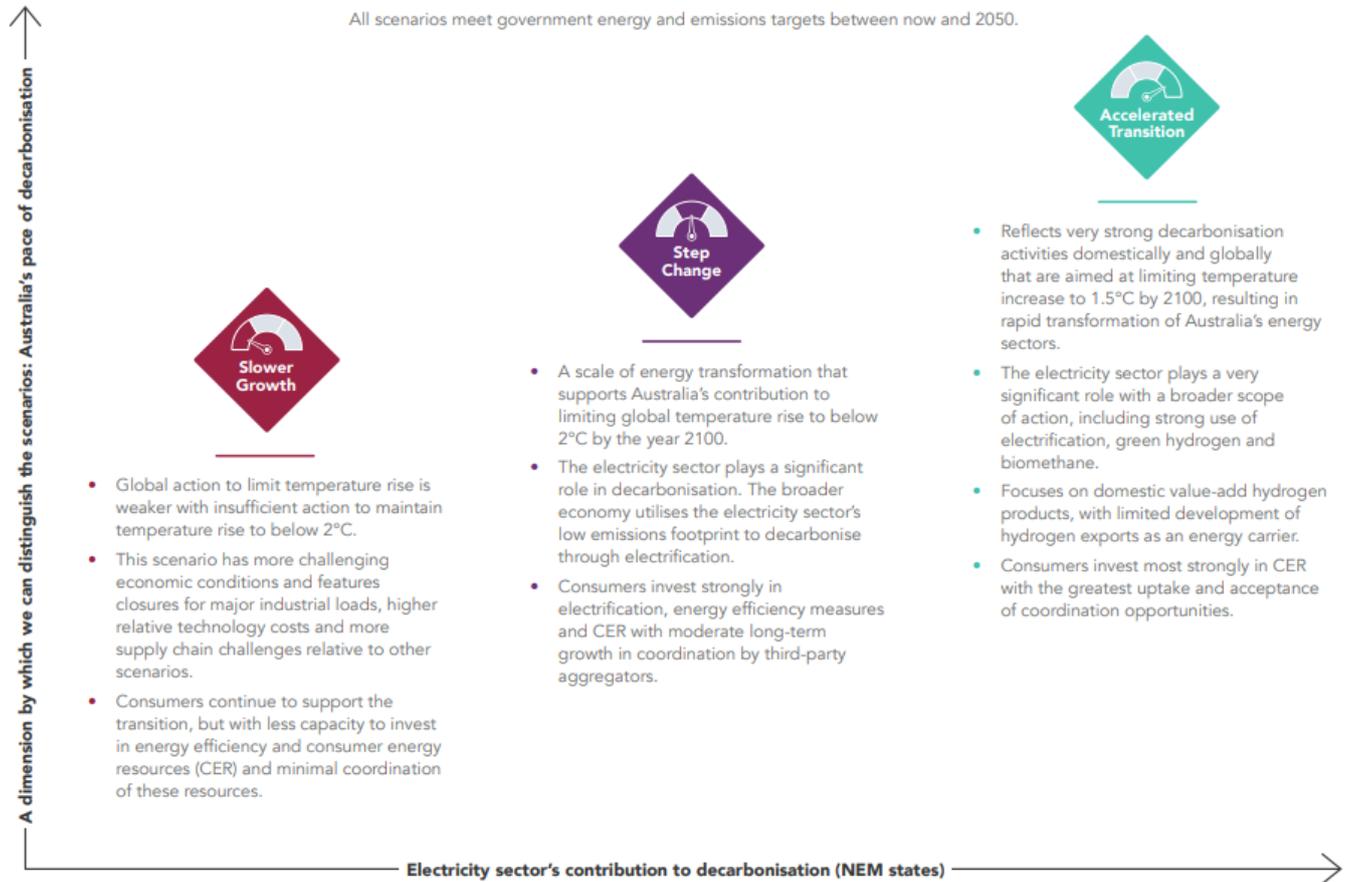
- **Step Change** – achieves the objectives of Australia's government policies in transitioning the energy system, and reflects a scale of global and domestic action that limits global temperature rise to below 2°C compared to pre-industrial levels. Similar to the 2023 *Step Change* scenario, consumers continue to embrace opportunities to support the transition through continued investment in CER, energy efficiency and electrification, or other investments that can contribute to reducing emissions. While consumers' own energy assets (that is, investments in rooftop solar, batteries and EVs) are a key part of the transition, consumers are more tentative to share control and coordinate the operation of their energy devices through a third party than previously assumed in the 2023 IASR's *Step Change*. In this scenario, Australia's economy grows similar to historical trends, while emerging trends in artificial intelligence and other data-heavy applications encourage growth in data centres in Australia.
- **Slower Growth** – achieves the objectives of Australia's government policies in transitioning the energy system, and reflects domestic action to contribute to lesser global ambition to extend specific commitments to limit temperature rise. It is a future that is challenged by less economic growth and greater challenges than other scenarios, and AEMO has reflected on stakeholder concerns that the previous *Progressive Change* name did not reasonably convey this key

³ See <https://www.aemo.com.au/consultations/current-and-closed-consultations/draft-2026-forecasting-assumptions-update>.

distinction relative to other scenarios. The new *Slower Growth* name provides increased clarity that while Australia's economy continues to grow in the long term, it has slower growth and lesser continued action beyond current commitments. Amidst weaker domestic and international economic conditions, Australia's energy-intensive industry and businesses are at greater operating risk, and a material proportion of the business sector closes in this scenario in the short-to-medium term. Energy efficiency, CER and electrification investments naturally lower due to the weaker economic circumstances, and consumers lower their enthusiasm for offering their assets to third-party coordination.

- **Accelerated Transition** – achieves the objectives of Australia's government policies in transitioning the energy system, and provides an 'upside alternative' that explores the possible drivers for rapid emissions reduction domestically and globally. The scenario refines the 2023 *Green Energy Exports* scenario – it continues to feature a rapid transformation of Australia's energy sectors greater than that required by current domestic and global decarbonisation commitments, to limit temperature rise to 1.5°C above pre-industrial levels. This acceleration in the energy transition is fundamental to the scenario, and the scenario's new name captures this key driver more clearly than previous names that described a specific solution. The acceleration in investments across the economy is supported by positive economic conditions domestically and internationally, increasing the local population through migration and assuming a faster growing economy than other scenarios. With these conditions, consumers' own investments in CER, energy efficiency and electrification, and emerging opportunities in green commodity development, all provide key contributions to consumers' energy demand. Compared to the 2023 *Green Energy Exports* scenario, the role for hydrogen production is significantly lower, reflecting current uncertainties affecting commercial investment and supportive policy.

Figure 1 2025-26 scenarios overview



1.2 Forecast components and engagement opportunities

Table 2 below lists the forecasting components relevant to the 2026 ESOO and their stakeholder engagement opportunities. In addition to this Draft Assumptions Update consultation, AEMO will use the FRG⁴ for additional engagement opportunities; if any other engagement activities are scheduled, these will be identified in the Draft Forecasting Assumptions Update consultation page⁵.

The FRG is an open, monthly forum with AEMO and industry forecasting specialists and other interested stakeholders used to validate assumptions, share expertise and insights on key trends influencing demand or supply of energy, and provide opportunities for stakeholders to provide feedback on AEMO's preliminary or emerging forecasting activities. In addition, and on occasion, the FRG provides an opportunity for AEMO to share new approaches to addressing the challenges of forecasting a rapidly changing energy industry. Stakeholder engagement in this forum provides the opportunity for AEMO to receive valued feedback.

⁴ More information on this forum is at <https://www.aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg>. Visit this page to register for updates.

⁵ At <https://www.aemo.com.au/consultations/current-and-closed-consultations/draft-2026-forecasting-assumptions-update>.

Table 2 Forecasting components relevant for the 2026 ESOO and their engagement opportunities

Forecasting component	Engagement opportunity	When
Consumer energy resources (CER), consisting of: <ul style="list-style-type: none"> • Rooftop and other small scale solar • Consumer batteries • EVs 	This Draft Assumptions Update , but with preliminary engagement also with the FRG in October 2025	February 2026 (this consultation window)
Economics and population forecasts	FRG engagement	April 2026
Large industrial loads	By survey, with FRG engagement on aggregated insights	April 2026
Electrification	No update to 2025 IASR expected; insufficient cause for material change	N/A
Demand-side participation	FRG engagement	May 2026
Energy efficiency	No update to 2025 IASR expected; insufficient cause for material change.	N/A
Industrial load outage rates^A	FRG engagement	TBC
Generator outage projections	FRG engagement	June 2026

Note: Dates and topics may change.

A. Industrial outage rates are subject to finalisation of the AEMO 2025 Forecast Improvement Plan.

1.3 Alignment with update cycles for key inputs

AEMO uses the following input and assumption classifications to distinguish between values near final and those not yet updated through a forecasting update cycle:

- **Interim** – an input that has not been updated since the previous IASR but is intended to be updated before the release of the final *Forecasting Assumptions Update*.
- **Draft** – an input that is considered final unless AEMO receives sufficient evidence to change it as part of the consultation.
- **Current view** – an input or assumption which is regularly updated in a standardised and objective process to reflect the most up-to-date observations: for example, metered demand data, the continued development of new generation projects that are included within AEMO’s Generation Information data set, or environmental and energy policies that meet the NER requirements for inclusion in the ISP and/or are included in the AEMC’s Emissions Targets Statement.

Regarding the incorporation of limited forecasting components in this Draft Assumptions Update, some forecasting components rely on inputs that are at fixed points in time (such as market participant surveys of demand-side participation and forced outage rates) or have been scheduled to benefit from the latest viewpoints (such as economic forecasts). For this reason, AEMO plans to engage on the remaining forecast components at more opportune times, as detailed in **Table 2** above.

All other inputs, as reported in the 2025 IASR, are considered ‘draft’ for the purpose of this consultation; that is, they will not be updated prior to preparing the 2026 ESOO reliability forecasts unless AEMO receives sufficient evidence to change them as part of this consultation. In the rare situation where interim values have been used in this Draft Assumptions Update, they have been clearly identified.

1.4 Consultation process

The publication of this Draft 2026 *Forecasting Assumptions Update* commences the process of formal consultation on several of the inputs appropriate for the reliability forecasts in the 2026 NEM and WEM ESOOs, and stakeholders are invited to submit written feedback on these proposed updated assumptions for AEMO's consideration prior to applying the assumptions in upcoming planning and forecasting activities, particularly the 2026 NEM and WEM ESOOs.

Stakeholders are invited to provide input through a written submission in response to the questions outlined in this report. Submissions should be sent via email to forecasting.planning@aemo.com.au and are required to be submitted by 2 February 2026.

Stakeholders should identify any parts of their submissions that they wish to remain confidential, and explain why the information provided is confidential. AEMO may still publish that information if it is otherwise authorised to do so, for example if the information is found to be available in the public domain, but will advise the stakeholder before doing so in such circumstances.

AEMO requests that stakeholders consult AEMO's consultation submission guidelines⁶ before preparing their submission.

Following the completion of the consultation, AEMO will publish a summary of the matters raised across the submissions and outline how feedback is addressed. AEMO will also publish a final version of the *Forecasting Assumptions Update* ahead of, or with, the publication of the 2026 ESOO.

A more comprehensive consultation to update the biennial IASR will commence in 2026, with a Draft 2027 IASR expected to be published in December 2026.

1.5 Supporting material

In addition to the Draft 2026 Forecasting Assumptions Update Workbook, **Table 3** documents additional information related to AEMO's inputs and assumptions.

Table 3 Additional information and data sources

Organisation	Document/source	Link
GHD	<i>2025 Energy Technology Cost and Technical Parameter Review</i>	https://www.aemo.com.au/consultations/current-and-closed-consultations/draft-2026-forecasting-assumptions-update
CSIRO	<i>GenCost 2025-26 Consultation Draft</i>	
CSIRO	<i>Electric vehicle projections 2025</i>	
CSIRO	<i>Small-scale solar PV and battery projections 2025-26</i>	
AEMO	<i>2025 Distributed PV and Batteries/VPP Forecast Report</i>	
Green Energy Markets	<i>Projections for distributed energy resources – solar PV and stationary energy battery systems (2025)</i>	

⁶ See <https://www.aemo.com.au/Consultations> to download AEMO's consultation submission guidelines.

2 Updated assumptions

2.1 Consumer energy resources (CER)

Input classification	Draft
Input vintage	November 2025
Source	<ul style="list-style-type: none"> • AEMO (2025 IASR CER forecasts, Section 3.3.7) • AEMO (2025 Distributed PV and Batteries/VPP Forecast report) • CSIRO (Small-scale Solar PV and Battery Projections 2025-26 report) • Green Energy Markets (Projections for Distributed Energy Resources – Solar PV and Stationary Energy Battery Systems report) • updated market data from the Clean Energy Regulator
Updates since 2025 IASR	Updated by new forecasts, November 2025

CER includes consumer-owned devices that can generate or store electricity as individual units and which may have the ‘smarts’ to actively manage energy import and export. CER can also refer to other resources that enable greater demand flexibility.

The forecasts are comprised of components including rooftop and other small-scale solar (which includes PV non-scheduled generation, known as PVNSG), battery storage, and EVs.

AEMO acknowledges that while rooftop solar is a maturing, existing technology, the ability to forecast the decisions that individual consumers and businesses are making to invest in these devices is difficult, with changing incentives, exposure to energy price changes, influence of economic confidence or uncertainty, integration and coordination opportunities, technological advancements and the co-development influence of other consumer investment options (including EVs, energy efficiency investments, and non-energy investments such as housing, education and travel). These influences continue to provide uncertainty for rooftop solar uptake, and greater uncertainty exists with other CER devices, including EVs and consumer batteries that still represent emerging technologies.

As a result, AEMO has engaged consultants CSIRO and Green Energy Markets to inform the forecasting, as well as developing an AEMO CER forecasting approach⁷ with the intent to increase transparency, accuracy and responsiveness to continued change. The forecasts presented in this section have been influenced by each of the consultant forecasts, alongside AEMO’s internal forecasting capability, across scenarios.

In this Draft Assumptions Update, AEMO proposes to apply the forecasts from AEMO’s forecasting approach and from CSIRO in the combination that best maintains the scenario spread that is described by the scenario narratives. AEMO considers that the following combination most appropriately reflects the spread of potential consumer outcomes, such that:

- **distributed PV** forecasts use *Step Change* and *Accelerated Transition* from AEMO’s CER forecasting approach; and *Slower Growth* uses CSIRO’s forecasts,

⁷ AEMO’s CER forecasting uplift was described at AEMO’s FRG on 22 October 2025. The initiative applies a consumer adoption modelling approach and seeks to enhance transparency and forecast accuracy through an integrated modelling process led by AEMO and informed by expert consultants. See <https://aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg>.

- **distributed battery and VPP forecasts** use *Accelerated Transition* from AEMO's CER forecasting approach, exploring a future where the recent high rates of consumer battery adoption persist; and *Slower Growth* forecast uses CSIRO's forecasts projecting a slower rate of consumer adoption. For *Step Change*:
 - the *Step Change* scenario uses the 2025 IASR forecasts, rebased to account for recent installations (but no change in the consumer adoption trend);
 - an alternative *Step Change* forecast, from AEMO's CER forecasting approach, is proposed to be used as a sensitivity, exploring the potential continued high uptake and growth in battery sizes, and
- **EV forecasts** use all scenarios from CSIRO's forecast for the 2025 IASR, rebased to reflect the most recent vehicle sales insights.

2.1.1 Distributed PV

This section includes forecasts for rooftop PV (defined as residential plus commercial systems up to 100 kilowatts [kW]) and PVNSG (larger PV systems between 100 kilowatts and 30 megawatts [MW]), which together make up total distributed PV at the end of the section.

Rooftop PV and PVNSG current installed capacity estimates are from the Clean Energy Regulator, with AEMO adjustments applied to account for system replacements and additions⁸. The draft forecasts presented will be rebased to reflect the latest actual installation data before the 2026 ESOO is finalised.

In forecasting, 'actuals' is commonly thought of as unambiguous historical data. However, in complex environments with emerging definitions and data gathering processes, actuals are often estimated figures. AEMO's references to PV installation actuals, as seen below in **Figure 2**, are of that nature. In support of the most recent forecasts, PV actuals were reviewed, identifying that the dataset included new information on system additions and replacements. This identification led AEMO to restate the estimated PV actuals to be lower than previously identified, subtracting estimated system replacements from the total count of new systems. Some figures in this report therefore include a discontinuity between newly stated historical actuals, and historical forecasts; prior forecasts may still include data reflecting originally estimated actuals.

Rooftop PV

The rooftop PV forecasts include inputs from the 2024-25 GenCost⁹, retail price trends, and PV installation size based on Clean Energy Regulator data. The GenCost report forecasts a continued slow decline in the cost of rooftop PV systems. AEMO anticipates ongoing increase in the average PV system size, although with lesser growth of average system size in the medium term to recognise that dwellings have limited rooftop area on which to install panels.

Considering the factors above, growth in rooftop PV capacity is projected to continue to increase at a similar pace as in recent years, with medium to long term uncertainty captured by the scenario spread (**Figure 2** and **Figure 3**). Across scenarios, the rate of uptake starts to slow down in the late 2040s, as the PV market (that is, PV-suitable dwellings and some

⁸ The postcode level data published online by the Clean Energy Regulator (<https://cer.gov.au/markets/reports-and-data/small-scale-installation-postcode-data#postcode-data-files>) includes system replacements and additions. However, neither of those categories add to the total count of operative rooftop PV systems in a given date, and consideration of system replacements also requires discounting the capacity of the original systems that were removed. This adjustment is estimated by AEMO using installation level data with additional information, obtained directly from the Clean Energy Regulator.

⁹ See <https://doi.org/10.25919/yfbi-4k58>.

commercial buildings) becomes increasingly saturated. The scenario specific saturation levels depend on a range of variables, starting from economic forecasts of housing growth, and including scenario specific parameter settings.

Relative to the 2025 IASR, this Draft Assumptions Update shows an increased uptake of rooftop PV in *Accelerated Transition* across the forecast period, an increased uptake in *Step Change* in the medium term, and a slightly reduced long-term uptake for *Slower Growth*. The increases in *Accelerated Transition* and *Step Change* are largely driven by increased PV system sizes along with improved calibration of the consumer response to changes in payback, and more explicit inclusion of market size effects. The long-term reduction in *Slower Growth* is largely the result of the increased PV costs. Beyond the medium term, uptake slows in *Accelerated Transition* and *Step Change* as some challenges exist for remaining potential installations, such as sub-optimal shading, limited roof space, higher installation costs relative to capacity to pay, or where the owner may accrue less benefits (such as landlords).

Figure 2 Actual and projected rooftop PV installed capacity for the NEM, 2015-16 to 2055-56 (gigawatts [GW] degraded)

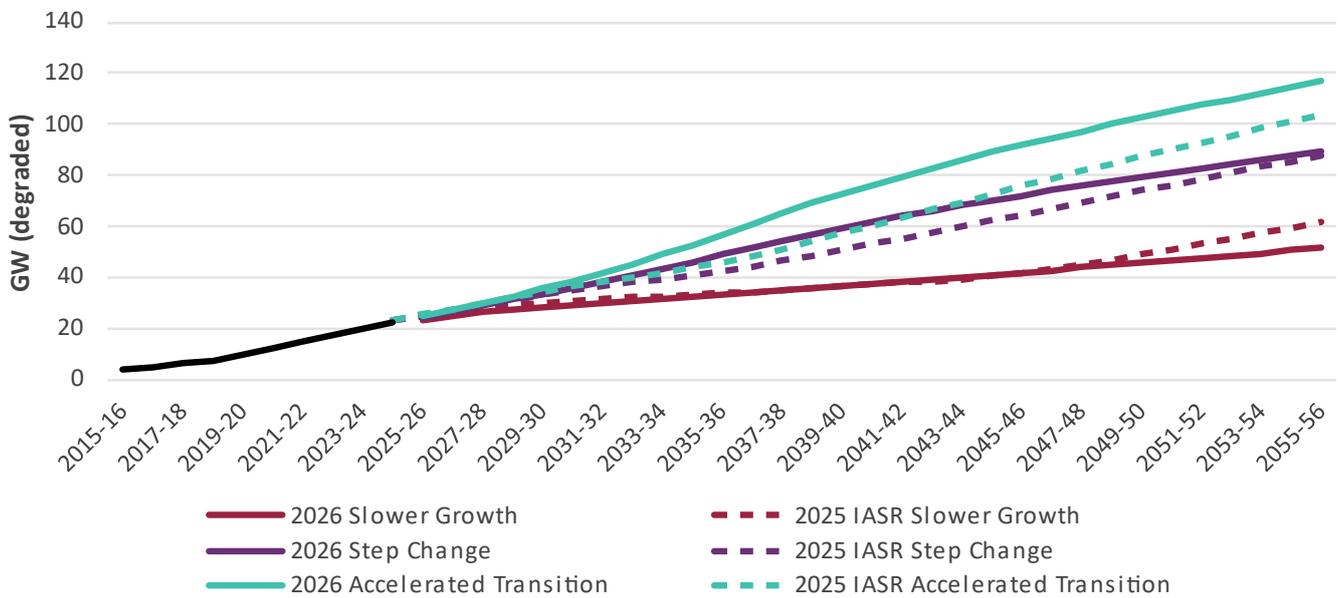
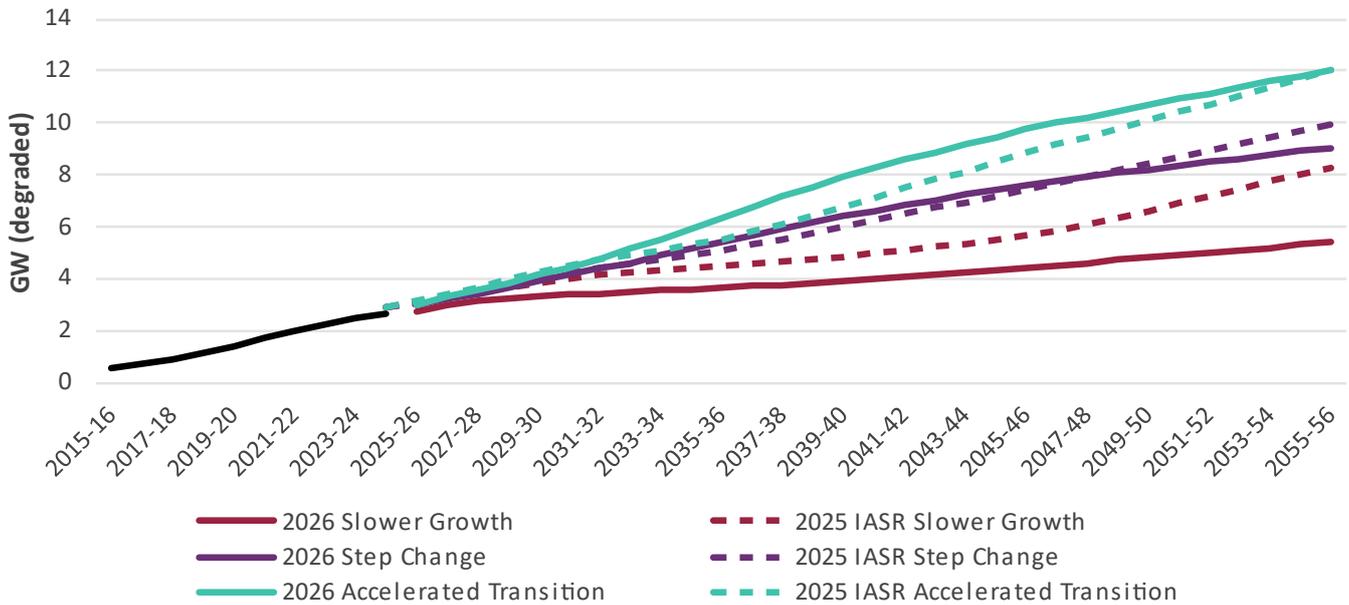


Figure 3 Actual and projected rooftop PV installed capacity for the WEM, 2015-16 to 2055-56 (GW degraded)



PVNSG

The PVNSG forecast (systems between 100 kW and 30 MW that are either rooftop or ground-mounted, installed by larger energy consumers or by market developers) in **Figure 4** and **Figure 5** shows ongoing growth, reflecting actuals data, and anticipated decreases in system costs¹⁰. However, the forecasts for *Accelerated Transition* and *Step Change* in the NEM also show long term saturation as financial attractiveness declines due to lower mid-day energy costs as solar becomes increasingly abundant.

Relative to the 2025 IASR forecasts, the short-term PVNSG outlook for the NEM increases, particularly as new actuals data works against the likelihood of low outcomes. In the medium- to long-term forecasts, uptake slows and shows degrees of saturation across scenarios. For the WEM, the forecasts are higher across the full period of the forecast, reflecting growth in the actual installations as well as improvements to the model calibration.

¹⁰ See details in https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/Draft-2026-FAU/AEMO-2025-Distributed-PV-and-Batteries-VPP-Forecast-report.

Figure 4 Actual and projected PVNSG capacity for the NEM, 2015-16 to 2055-56 (GW degraded)

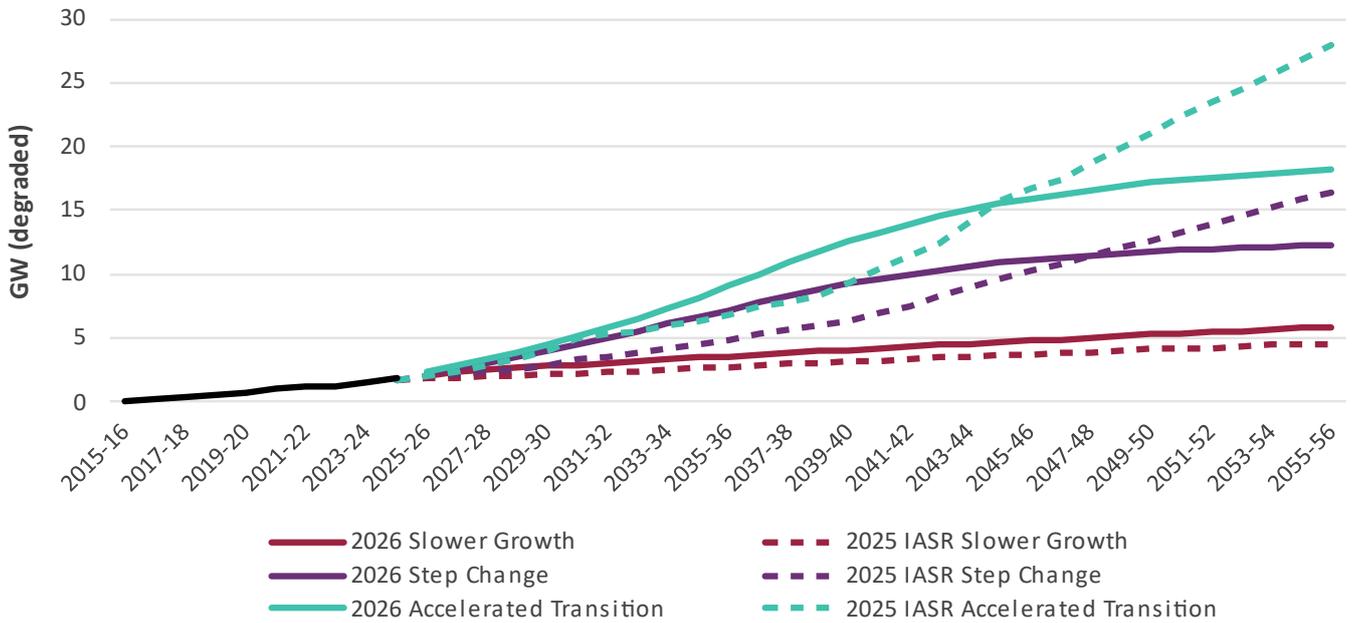
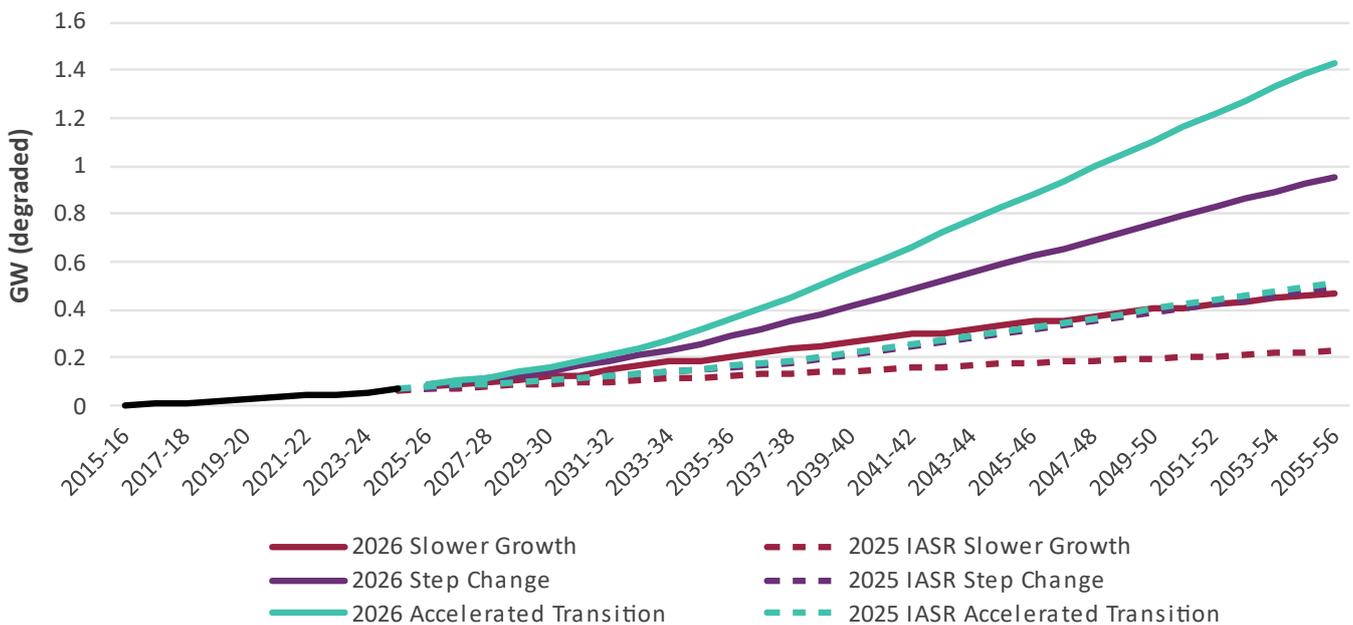


Figure 5 Actual and projected PVNSG capacity for the WEM, 2015-16 to 2055-56 (GW degraded)



Distributed PV – totals

Figure 6 and **Figure 7** below aggregate rooftop PV and PVNSG, which together make up the total distributed PV forecast. The forecast predominantly reflects the dynamics of the rooftop PV which is approximately 90% of the total capacity.

Figure 6 Actual and projected distributed PV installed capacity for the NEM, 2015-16 to 2055-56 (GW degraded)

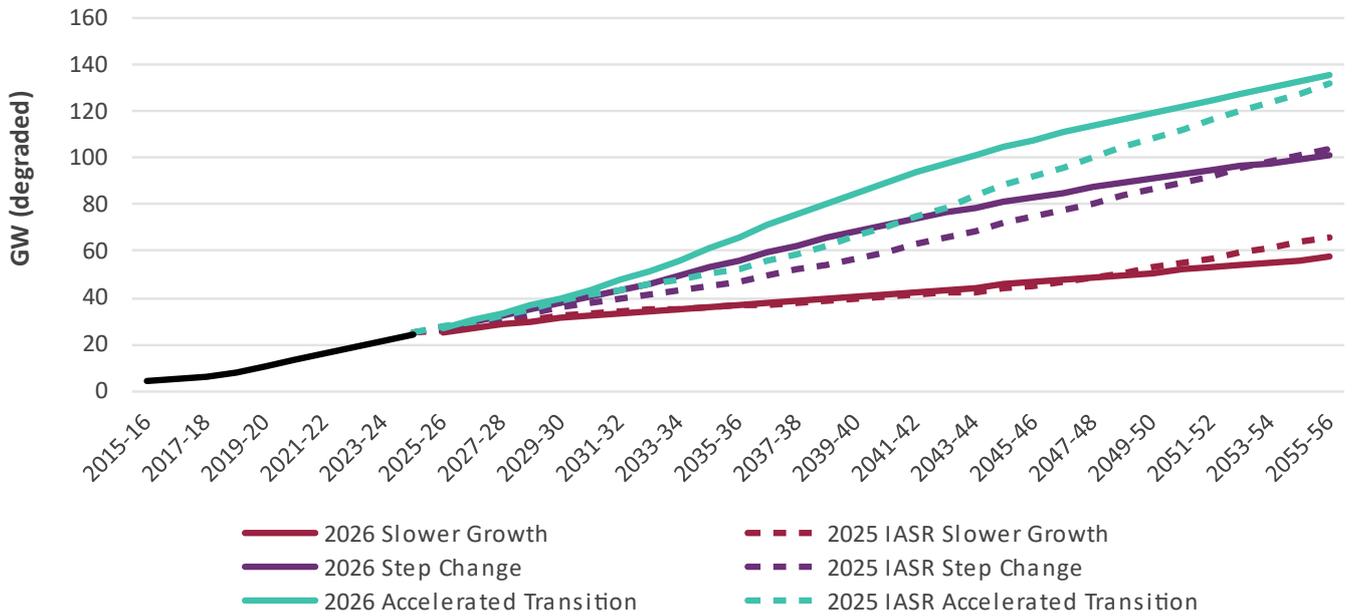
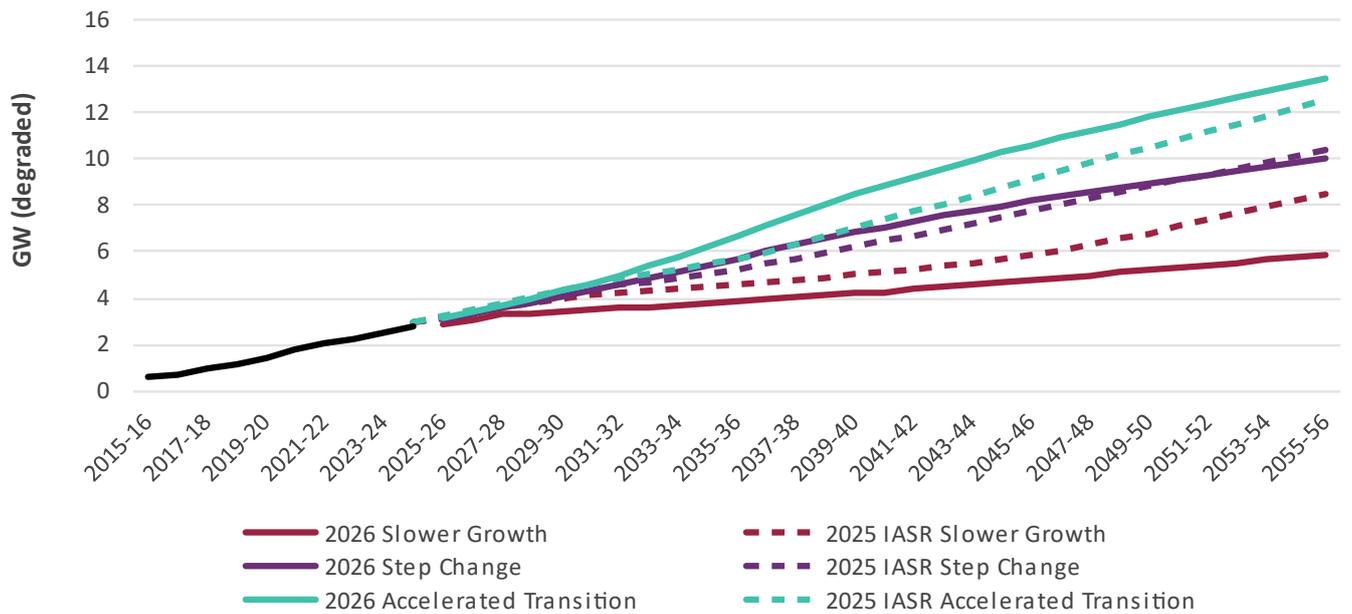


Figure 7 Actual and projected distributed PV installed capacity for the WEM, 2015-16 to 2055-56 (GW degraded)



Matters for consultation

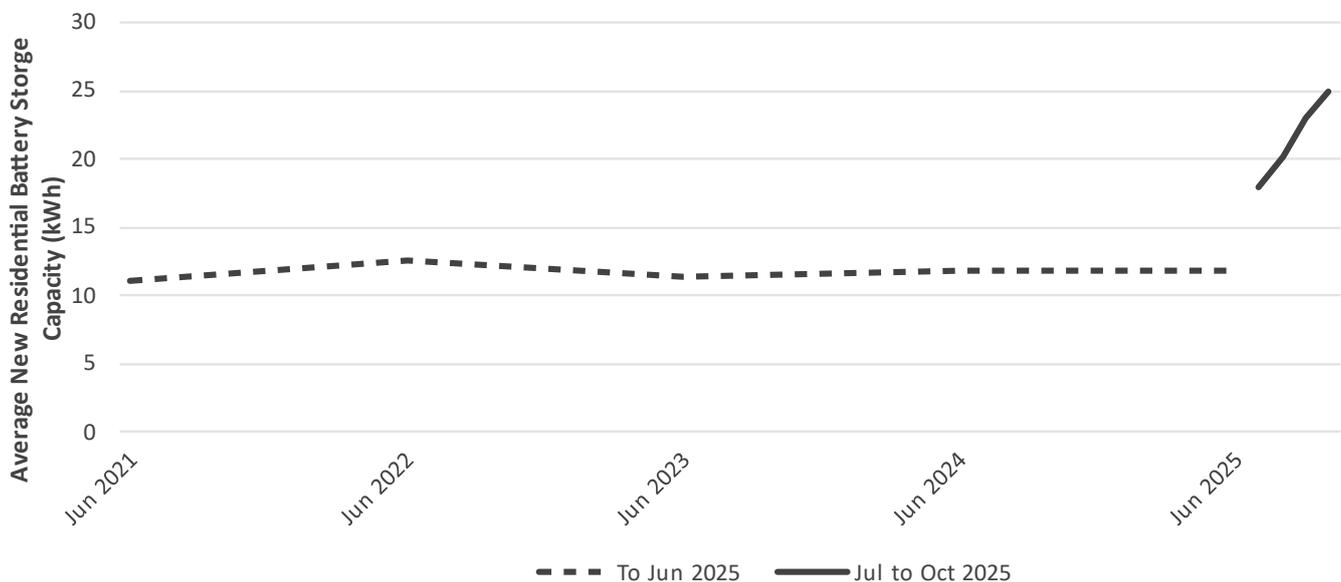
- Are the changes in distributed PV forecasts presented here considered appropriate, both in terms of level and shape of the trajectories?

2.1.2 Distributed batteries

Distributed battery installations have accelerated considerably in recent months, driven primarily by two policies:

- The introduction of the Cheaper Home Batteries Program¹¹ (CHBP), delivering significant subsidies to consumers installing residential or small commercial battery systems. While the program commenced in July 2026, and was therefore considered in the 2025 IASR forecasts based on expected adoption of the program, since then, the initial strong uptake reveals a substantial short-term appetite, in addition to an increase in battery sizes installed (see **Figure 8**).
- The WA Residential Battery Scheme¹², which includes a subsidy that is additional to the CHBP and requires consumers to sign up to a VPP for a minimum of two years.

Figure 8 Average new residential battery size, showing annual data to Jun 2025, and monthly data from July to October 2025 (kWh)



There is considerable uncertainty around whether these strong rates of consumer adoption will be sustained and how subsidy levels, structure, and their impacts on consumer adoption may change through to the scheduled program completion of the CHBP in 2030. In December 2025, for example, the Australian Government announced expanded funding and changes to the amount of support that will be provided for different system sizes; the effect of these changes on both uptake and battery size will be unclear until they impact customers, from May 2026.

For the ESOOs, the *Step Change* scenario is typically applied as the central estimate for calculating the reliability assessment, which may trigger reliability instrument requests under the Retailer Reliability Obligation framework. For utility-scale supply investments, AEMO’s reliability methodologies apply committed and/or anticipated planning criteria¹³ in reliability assessments; this proposed approach for consumer batteries aims to provide a similar treatment while ensuring

¹¹ See <https://www.dcceew.gov.au/energy/programs/cheaper-home-batteries>.

¹² See <https://www.wa.gov.au/organisation/energy-policy-wa/wa-residential-battery-scheme>.

¹³ See *ESOO and Reliability Forecast Methodology*, at https://www.aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/nem_esoo/2025/esoo-and-reliability-forecast-methodology.pdf.

insights on the potential reliability and investment impacts are also available in the accompanying. This approach captures the uncertainty inherent in this sector while still retaining prudent assumptions to ensure adequate protections for consumers from the RRO framework. The settings for battery uptake are proposed as:

- *Accelerated Transition* to apply AEMO's CER forecasting approach, exploring the potential that recent high rates of consumer adoption and shift in consumer preference for high capacity batteries persist.
- *Step Change* to apply the previous 2025 IASR forecasts rebased to account for recent installations (but no change in the consumer adoption or battery size trends).
 - An alternative *Step Change* sensitivity is provided to explore the potential that the recent rate of consumer adoption is sustained, leveraging AEMO's uplifted CER forecasting approach.
- *Slower Growth* to apply CSIRO's forecasts projecting a slower rate of consumer adoption.

Accelerated Transition and the alternative *Step Change* sensitivity take into account:

- an anticipated reduction in battery capital costs, consistent with the trends of the previous GenCost publication (2024-25)¹⁴ adjusted to account for the increased average system size,
- an increase in the adoption rate of distributed batteries, consistent with the recently observed high uptake from consumers in response to the increased subsidies that are improving the investment payback, and
- increased battery sizes chosen by consumers as evident from the Clean Energy Regulator data covering the period July to October 2025, shown above in **Figure 8**.

Accelerated Transition and the alternative *Step Change* sensitivity incorporate the early data from the Clean Energy Regulator since the recent policies came into effect, with approximately 100,000 battery installations in the four months from July through October 2025 resulting in around 1 gigawatt (GW) of additional capacity. This is significantly greater than the total distributed battery capacity installed in 12 months of FY2024-25, of around 72,000 batteries and 450 MW. The scenarios differ in their response to changes in payback as the subsidy declines over the five years.

As shown in **Figure 9** through **Figure 12**, the above points lead to a significantly higher uptake in the *Accelerated Transition* and *Step Change* alternative sensitivity for batteries than the *Step Change* rebased 2025 IASR forecast, and the larger battery sizes contribute to significantly higher capacity (GW) and storage capacity (gigawatt hours [GWh]). *Slower Growth* shows more rapid uptake in the early years of the forecast, driven by the CHBP and WA Residential Battery Scheme, but flattens due to longer payback times in the long term.

¹⁴ See <https://doi.org/10.25919/yfbi-4k58>.

Figure 9 Projected distributed battery forecast for the NEM (GW)



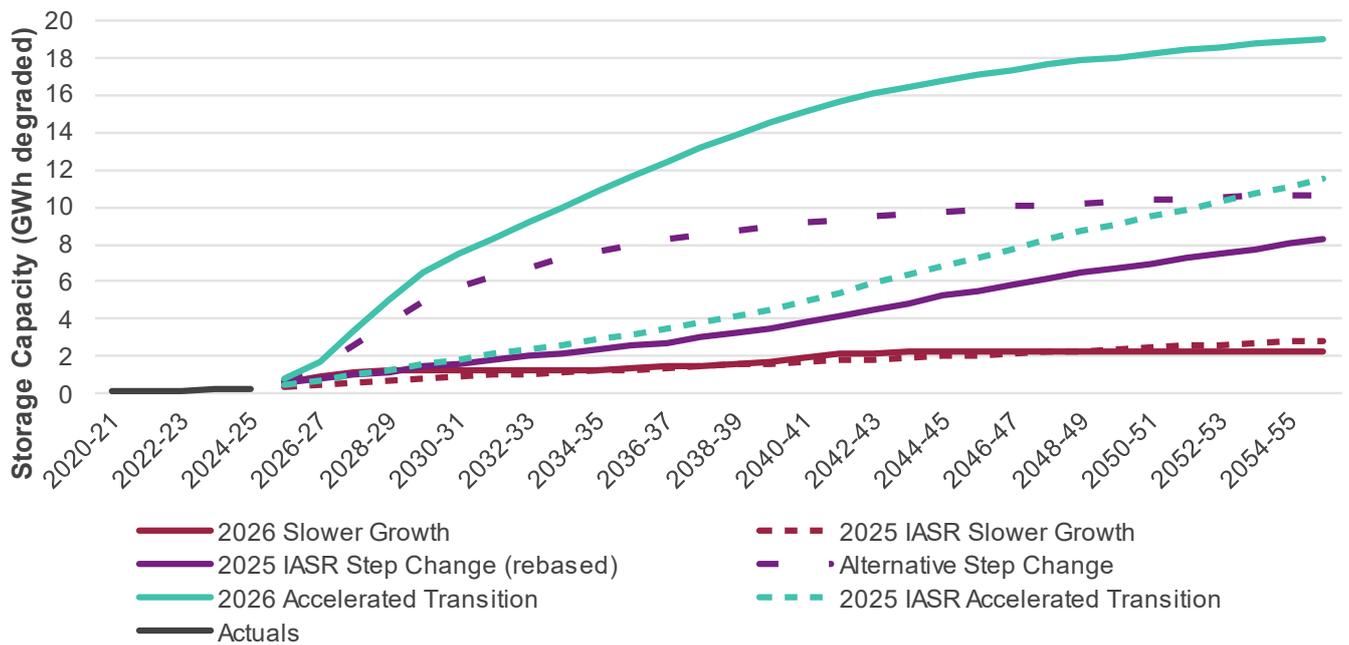
Figure 10 Projected distributed battery forecast for the NEM (GWh degraded)



Figure 11 Projected distributed battery forecast for the WEM (GW)



Figure 12 Projected distributed battery forecast for the WEM (GWh degraded)



For regional forecasts, refer to the accompanying Draft 2026 Updated Assumptions Book.

AEMO recognises that the development of vehicle-to-home (V2H) and vehicle-to-grid (V2G) technology, allowing EV batteries to discharge into the home or grid, may impact the uptake of stationary batteries. The scale and even direction of this impact is highly uncertain. Stationary batteries can allow consumers to store excess solar during the day which may then be used to help charge an EV overnight, implying a positive synergy between EV adoption and stationary batteries. Conversely, some consumers may adopt V2H/V2G technology allowing them to use their EV battery in place of a stationary

system. As both the EV and stationary battery markets are still considered to be rapidly evolving, AEMO has not explicitly included these interactions in either the battery or EV forecasts (see Section 2.1.3).

Matters for consultation

- Do stakeholders support the proposed approach to continue to apply battery uptake trends projected for the 2025 IASR, adjusted to acknowledge sales outcomes to date from the CHBP and WA Residential Battery Scheme in the 2026 ESOOs?
- Do stakeholders support the potential inclusion of sensitivity analysis that extends recent sales, reflecting the assumed effect of the subsidy programs, to examine insights regarding potential reliability improvements in the ESOOs? By applying this as a sensitivity on *Step Change*, the ESOO formal reliability assessments would adopt battery uptake trends observed over a longer history, potentially lowering the reliability contribution from consumer batteries.
- Are the battery outlooks plausible given the emerging popularity of EVs, or is there evidence to support a view that EV growth helps or hinders investment in home batteries?

Virtual power plants (VPPs)

CER can become ‘coordinated CER’ with technologies that enable them to respond to market signals. This is done by bundling CER through a retailer or an independent service, to form a ‘virtual power plant’ or VPP. This contrasts with household battery installations that are operated passively in response to household supply (for example, from rooftop PV) and consumption, or directly by consumers to manage their own energy needs.

The scale of CER coordination influences the scale of network and utility-scale investments needed to maintain reliability and security and broader investment needs. There are currently around 17 VPP providers operating in the NEM and WEM. These providers offer a range of products and services, precluding a comprehensive definition of a VPP. For CER modelling purposes, AEMO uses “VPP” to refer only to battery systems where consumers voluntarily share control with a central aggregator. Other types of controllable assets (such as controlled hot water) are modelled separately; see AEMO’s forecasts for demand-side participation.

While there are significant differences across regions, AEMO estimates the current overall level of VPP participation is around 13% in the NEM, meaning 13% of battery owners are engaged in a VPP¹⁵. AEMO’s forecasts of VPP participation rates are based on:

- consistency with the scenario narratives (high VPP participation in *Accelerated Transition*, low in *Slower Growth*), and
- the estimated impact of government subsidies, specifically, the CHBP, the WA Residential Battery Scheme and the New South Wales Peak Demand Reduction Scheme (PDRS).
 - The Western Australian scheme requires consumers to join a VPP for a minimum of two years to access a rebate on a home battery system. It is available to the first 95,000 batteries, estimated to be reached by 2027, and is additional to the CHBP.

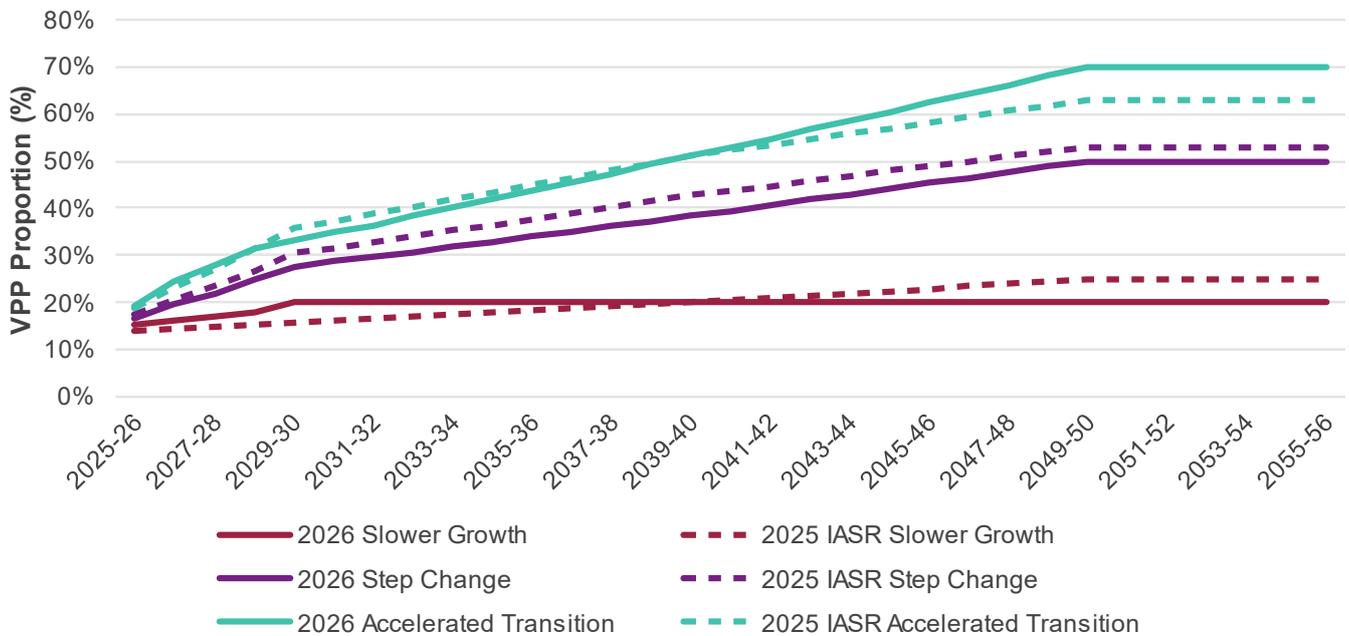
¹⁵ SunWiz Annual Battery Market Report 2025.

- The New South Wales PDRS provides a direct subsidy payment to consumers who sign up to an approved VPP.
- The CHBP also requires that batteries receiving the rebate be VPP-capable, which supports the VPP market and raises consumer awareness.

The VPP forecast shown in **Figure 13** reflects the assumed VPP participation rates over time. The VPP participation rates show little difference to the 2025 IASR, with a wider spread between the scenarios reflecting the high uncertainty in this area of battery operation. In *Slower Growth*, the flattening after the short-term rise to 2030 is caused by the assumption that high participation in VPPs driven by the WA Residential Battery Scheme transitions to long-term scenario-driven levels after the minimum two-year participation requirement is met. The VPP capacity (GW) and storage capacity (GWh, degraded) shown in **Figure 14** through **Figure 17** reflect the assumed VPP participation rate multiplied by the capacity and storage capacity of the corresponding battery forecasts.

For regional forecasts, refer to the accompanying Draft 2026 Updated Assumptions Book.

Figure 13 Projected VPP participation rate for NEM and WEM



Note: The above figure represents the average participation for all jurisdictions; for regional participation assumptions, see the accompanying Draft 2026 Updated Assumptions Book.

Figure 14 VPP capacity for the NEM (GW)

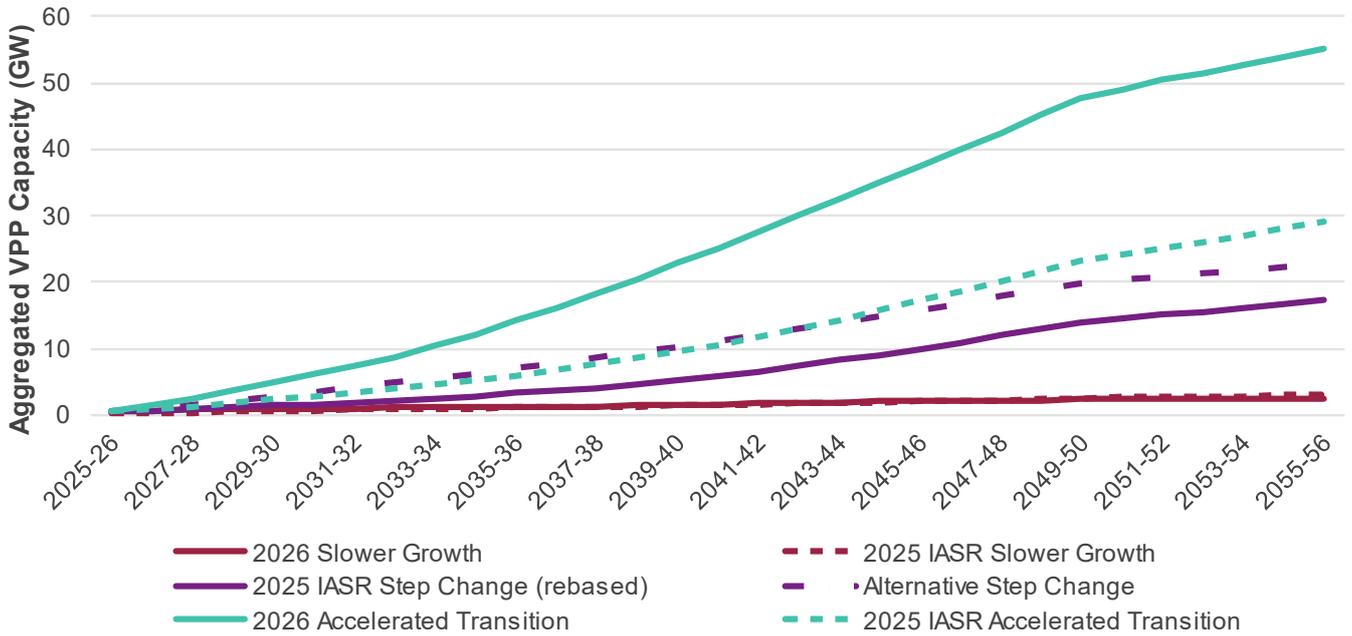


Figure 15 VPP storage capacity for the NEM (GWh, degraded)

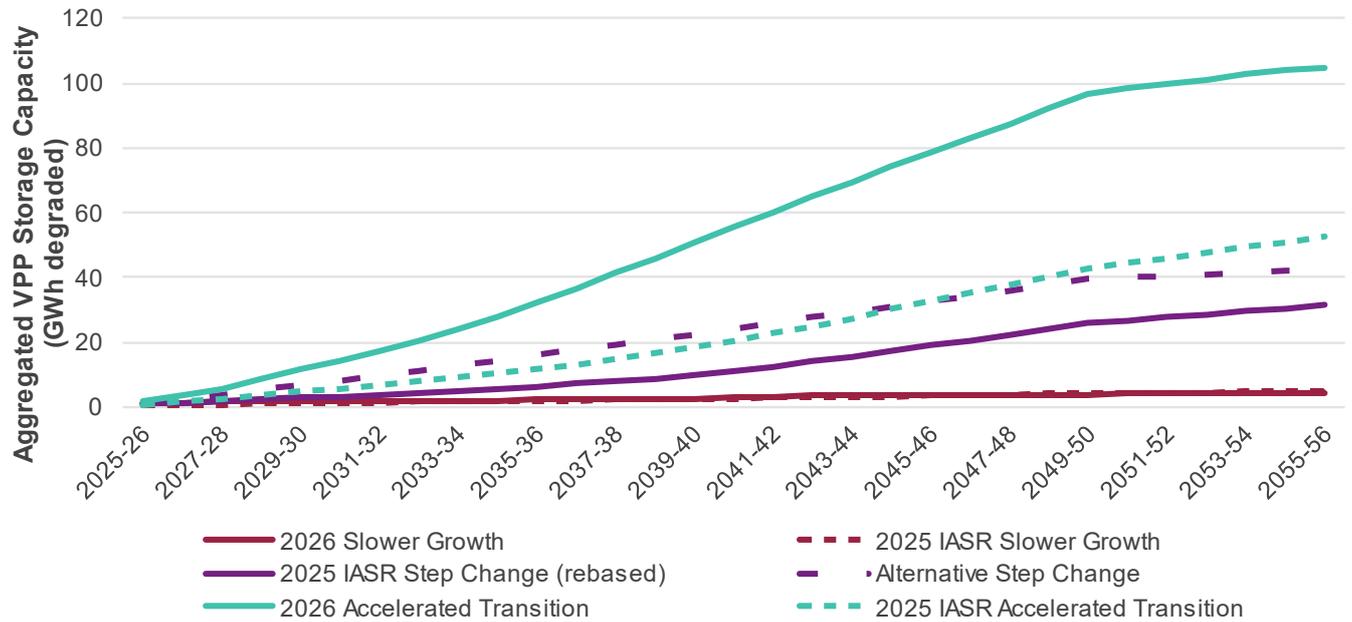


Figure 16 VPP capacity for the WEM (GW)

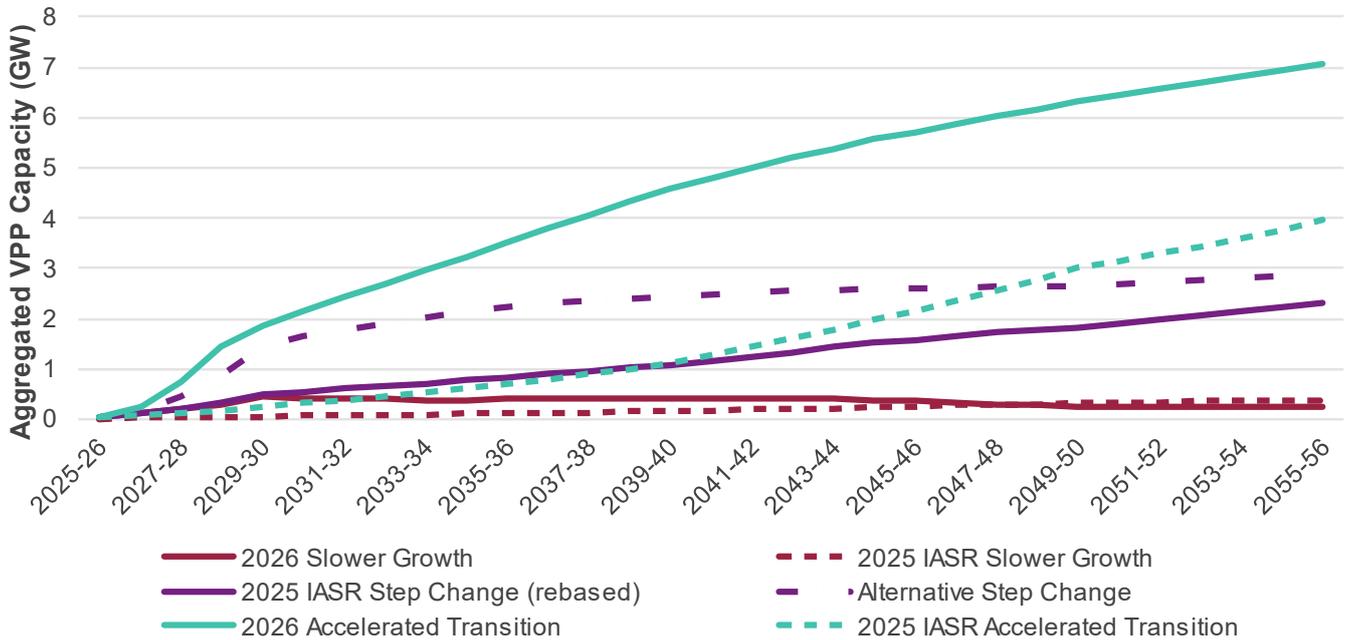
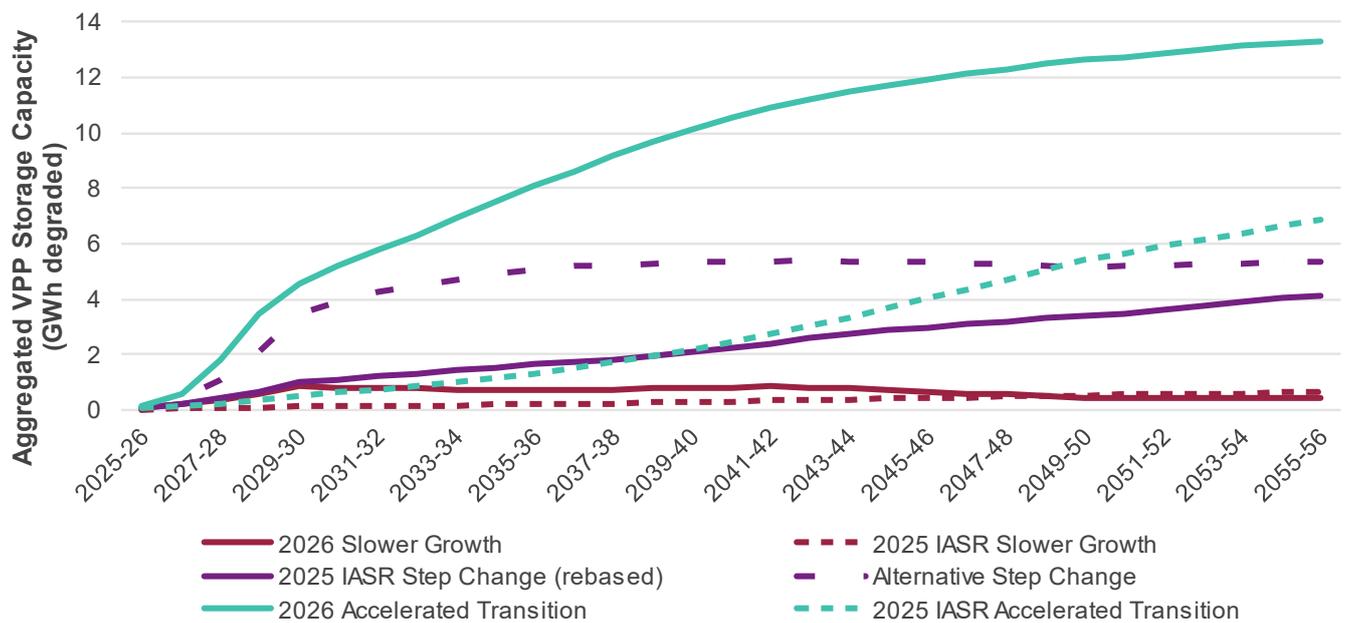


Figure 17 VPP storage capacity for the WEM (GWh, degraded)



While PV and battery uptake forecasts reflect considered capital intensive decisions by consumers, it should be noted that consumer VPP uptake decisions are typically separate from the capital purchase decision, so consumers might opt into VPP arrangements quickly based on recommendations or advertising, and also may leave VPPs relatively easily, subject to any contractual arrangements. As noted above, the assumed VPP participation rates are informed by the scenario narratives. They implicitly assume that there will be sufficient incentives in place to encourage consumers to take up and retain participation in VPPs.

Matters for consultation

- Do the proposed VPP forecasts sufficiently reflect a spread of outcomes, considering the potential for a range of consumer acceptance, and the emerging nature of the market for VPP?
- Are the *Step Change* VPP participation rates (%) shown in Figure 13 reasonable?

2.1.3 Electric vehicles

Input classification	Draft
Input vintage	Reforecast since the 2025 IASR
Source	CSIRO
Updates since 2023 IASR	EV model rebased with updated EV sales

The impact and benefits of EV use to the electricity grid continue to be of relevance to AEMO’s forecasting and planning publications. This section describes updates to uptake of various types of EVs, their aggregate electricity use, and the mix and shape of the EV charging profiles.

Annual electricity consumption figures include the NEM and the WEM, and the term ‘EVs’ is used as the collective term for battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs).

EV adoption continues to grow as more consumers embrace electrified transport options to provide economic and environmental benefits compared to internal combustion alternatives. Consumer electric charging behaviours will play a key role in power system outcomes as they shift from petrol and diesel fuelled vehicles. Consumer participation in schemes that allow coordination of charging will be valuable to reduce the impact of EVs on power system needs.

To support the Draft Assumptions Update, CSIRO carried out detailed modelling of EVs in the Australian transport sector. The 2025 IASR incorporated several policies including the New Vehicle Efficiency Standard (NVES)¹⁶ and Fringe Benefits Tax exemption¹⁷ and other state incentives included in the AEMC Emissions Targets Statement¹⁸ for Victoria, Queensland and South Australia. In addition, this Draft Assumptions Update considers an adjustment to the Queensland policy drivers affecting QFleet¹⁹ consistent with the QFleet Vehicle Emissions Reduction Strategy 2025-2030²⁰.

The Draft Assumptions Update refines the EV forecasts since the 2025 IASR using:

- the latest actual vehicle sales figures (until September 2025) which show growth for BEVs and PHEVs,
- new data on electricity kilometres for PHEV based on real world driving,
- trial charging data to refine the percentage of EV charging at home, while public charger data suggests more kerbside charging overnight, and
- updated fuel efficiency assumptions for vehicle types including hybrids and articulated trucks.

¹⁶ See <https://www.legislation.gov.au/C2024A00034/asmade/text>. This was considered in the 2024 *Forecasting Assumptions Update* and the 2025 IASR.

¹⁷ See <https://www.ato.gov.au/businesses-and-organisations/hiring-and-paying-your-workers/fringe-benefits-tax/types-of-fringe-benefits/fbt-on-cars-other-vehicles-parking-and-tolls/electric-cars-exemption>.

¹⁸ See <https://www.aemc.gov.au/regulation/targets-statement-emissions> (September 2025).

¹⁹ See <https://www.forgov.qld.gov.au/agency-to-agency-services/qfleet-vehicles/qfleet/about-qfleet>.

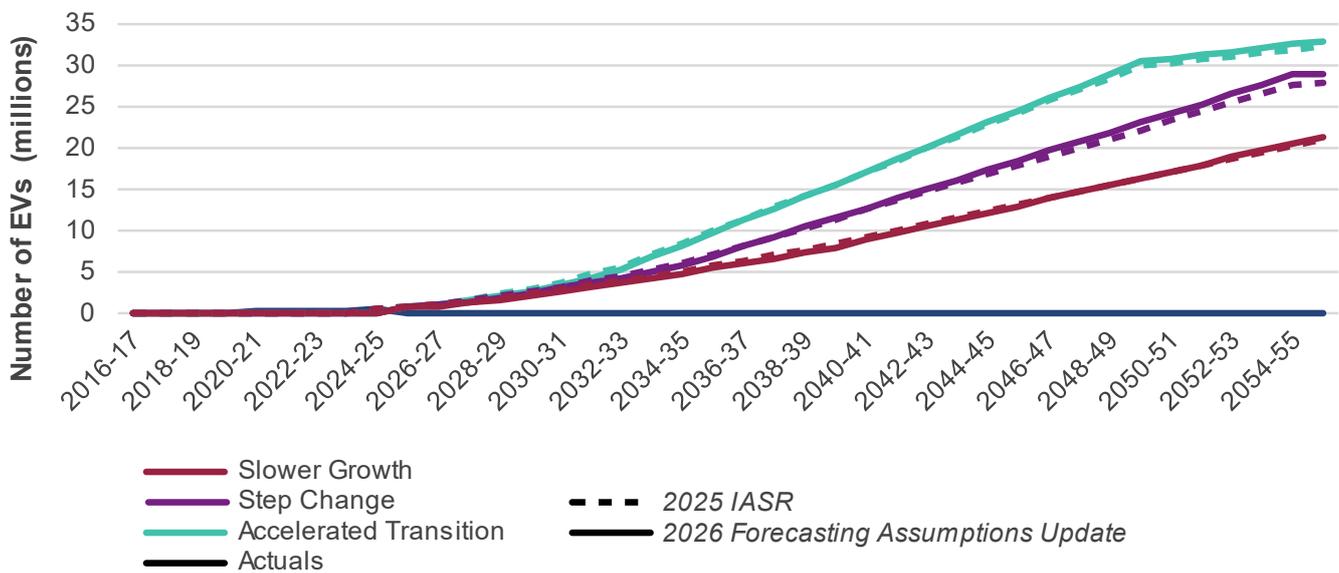
²⁰ See https://www.forgov.qld.gov.au/_data/assets/pdf_file/0033/594339/qfleet-vehicle-emissions-reduction-strategy-2025-230-web-version.pdf.

CSIRO’s model reflects the NVES and state targets as dominant drivers of uptake, which extends the historical modelling focus on vehicle purchase and operational costs.

Figure 18 shows the EV fleet size projections in the NEM and WEM by scenario. Vehicle numbers are similar to the 2025 IASR for all scenarios, varying most significantly in 2027-28 with EVs 8-10% lower, as it is increasingly recognised that hybrids are a likely contributor to meeting the NVES targets in that timeframe.

EV fleet numbers are projected to reach between 16 million and 30 million (66% to 95% of the whole fleet) by 2050 across the scenarios, with the *Accelerated Transition* scenario reaching market saturation by 2050, meaning EVs have almost fully replaced the internal combustion engine (ICE) fleet.

Figure 18 Actual and projected BEV and PHEV fleet size (NEM and WEM) by scenario, 2016-17 to 2055-56



The EV forecast is calibrated to three key points – the 2025 EV sales share projection, the 2029-30 sales rate required to meet the NVES target, and an endpoint (between 2035 and 2050, depending on the scenario) where EVs dominate the fleet. The EV forecast is disaggregated by spatial, technological, and vehicle type factors. To obtain the sales share in 2029-30, the following plausible shares of electric and non-electric vehicle types are assigned to meet the NVES target period:

- *Slower Growth* assumes greater penetration of hybrids and fewer EVs in this scenario.
- *Step Change* and *Accelerated Transition* assume fewer hybrids and greater BEV uptake, with vehicle owners embracing a strong opportunity to contribute to emissions reduction.

Figure 19 shows the actual and projected mix of car²¹ sales and fleet share of residential and light commercial vehicles, per vehicle technology type.

Only a small share of new ICE sales (0.1%) is expected to persist after the mid-2030s due to specific use cases such as remote driving, heavy-duty towing, long-distance travel or vehicular preferences (such as sports vehicles or four-wheel drives). However, ICE vehicles will remain a part of the fleet for much longer (falling below 10% only after 2052) while

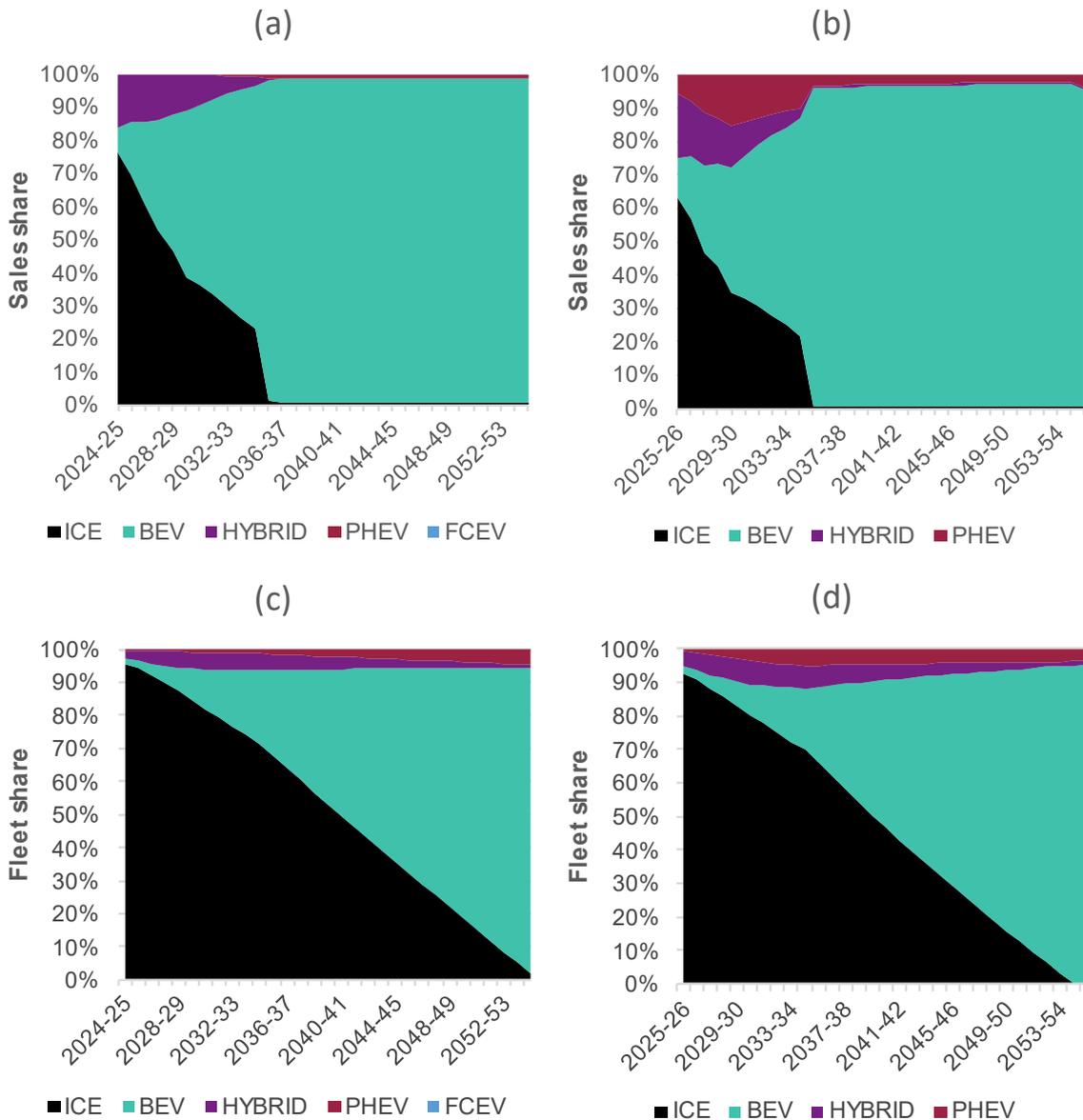
²¹ Cars refer to all motorcycles, passenger vehicles and light commercial vehicles, and excludes buses and trucks (rigid and articulated).

owners maintain their vehicles and second-hand markets remain. The projected fleet share is the combined result of growth in EV sales share and a corresponding decline in ICE. Declining fuelling and maintenance service availability is assumed to eventually reduce the commercial value of ICE ownership, encouraging scrapping across all scenarios at varying timeframes. While AEMO removed fuel cell EV (FCEV) cars in the *Slower Growth* and *Step Change* scenarios, FCEV trucks remain as a feature of the forecasts with a very low penetration.

The Draft Assumptions Update provides an amended outlook for EV fleet size compared to the previous forecast from the 2025 IASR, due to:

- Relevant state policy targets – AEMO’s forecasts consider the impact of relevant EV policies and targets across jurisdictions. The only change to EV targets in the AEMC Targets Statement since the publication of the IASR was Queensland’s QFleet Vehicle Emissions Reduction Strategy 2025-2030 (targeting a 10% reduction in tailpipe emissions by 2030).
- Updated sales data – although EVs are now approximately 12% of the sales share, the trend for the second and third quarters of 2025 indicated that significant growth in new sales in PHEVs (48%) and BEVs (41%) compared to little to no growth in hybrids (5%) and ICE vehicles (0%). Stronger growth in PHEVs is projected into the 2030s as PHEVs are currently less costly than many BEV alternatives and offer greater flexibility to some customers, providing improved heavy-duty features such as towing, off-road and remote travel capabilities compared with many BEVs.

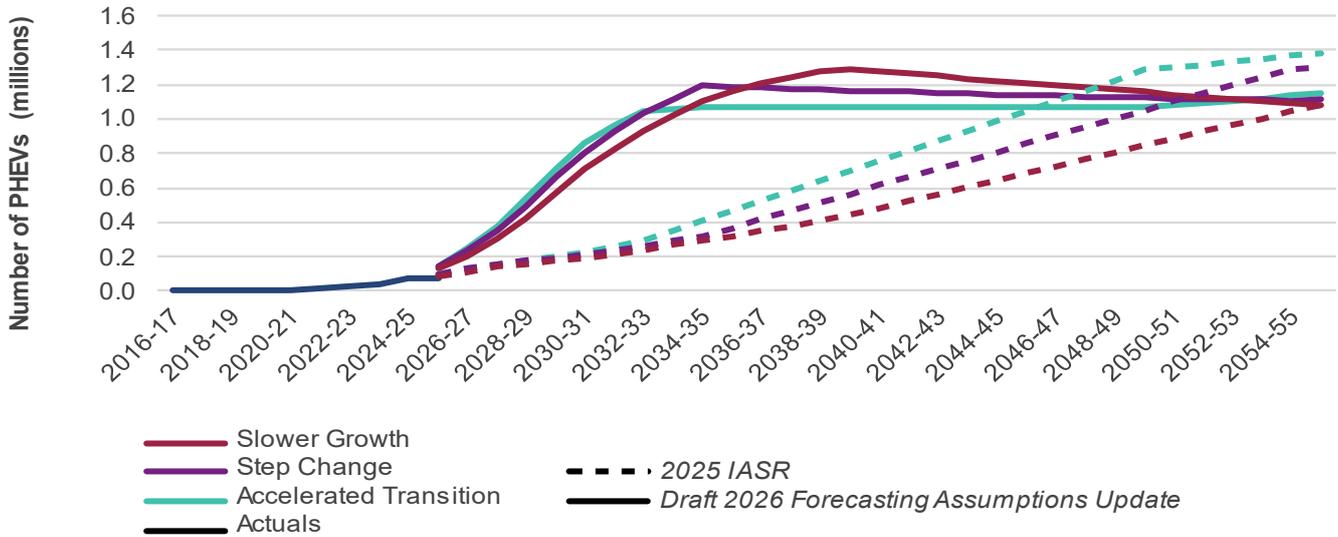
Figure 19 Projected sales share and fleet share by vehicle technology type for Step Change (NEM and WEM), comparing: (a) 2025 IASR sales, (b) Draft 2026 Forecasting Assumptions Update sales, (c) 2025 IASR fleet, and (d) Draft 2026 Forecasting Assumptions Update fleet



BEV costs are assumed to continue to fall, while maintenance requirements of the dual-engine design of PHEVs increases operating costs relative to BEVs. PHEVs are therefore expected to maintain a niche market share over the longer term.

A larger fleet of PHEVs will impact electricity consumption and charging behaviours. However, the recent sales results are not expected to materially change long-term projections that favour BEV adoption, driven by declining battery costs and manufacturer commitments through NVES. **Figure 20** shows projected PHEV sales numbers across the outlook period, with a significantly higher share of PHEVs projected in 2030.

Figure 20 Projected PHEV fleet size (NEM and WEM) by scenario, 2016-17 to 2055-56



Electricity consumption to support the use of EVs

EV users are expected to adopt a wide range of charging behaviours that will likely change over time as electrified transport becomes common, and infrastructure, charging technologies and tariffs adapt to this emerging sector. Individual users may switch between different charging methods day to day, depending on the convenience of each option given their personal circumstances, and the incentives that encourage them. AEMO’s EV electricity consumption forecast allows for:

- the availability, popularity, and technical characteristics of home, business and public charging facilities,
- an evolving vehicle mix (including motorcycles, passenger and commercial vehicles of different sizes, trucks and buses), and
- varying travelling distances.

This section presents annual electricity consumption forecasts, as well as normalised vehicle charging profiles that represent the average vehicle across the population considering all these factors, rather any individual consumer behaviour. CSIRO uses several assumptions in its EV projections, including those outlined in **Table 4** below.

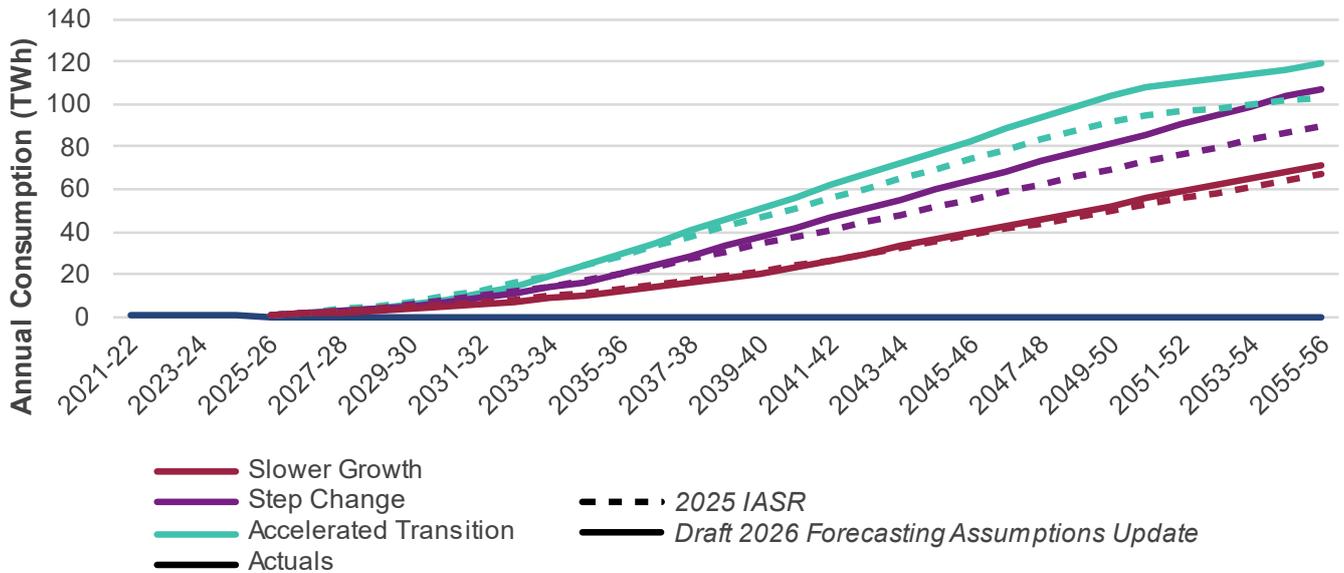
Table 4 Assumed driving distance and efficiency, electric vehicles

Vehicle type	Driving distance, km/year	Efficiency, kWh/km
RES_BIKE	1,900	0.10
RES_SMALL	11,100	0.16
RES_MEDIUM	11,100	0.18
RES_LARGE	11,100	0.23
COM_LCV_SMALL	15,300	0.16
COM_LCV_MEDIUM	15,300	0.18
COM_LCV_LARGE	15,300	0.23
COM_RGD_TRUCK	21,100	0.94
COM_ART_TRUCK	78,300	1.81
COM_BUS	24,600	1.08

Source: CSIRO Assumptions Workbook.

Figure 21 shows projected electricity consumption from EVs, compared to the 2025 IASR, showing a similar forecast of annual consumption until the 2040s, when consumption is projected to grow more quickly than the previous forecast. The rise in electricity consumption in the later years relative to the previous forecast is due to a small increase in the number of articulated electric trucks and a higher electricity consumption rate per kilometre. Due to their large power requirements, these changes have an outsized impact on the overall electricity consumption from EVs.

Figure 21 Projected BEV and PHEV electricity consumption (NEM and WEM) by scenario, 2021-22 to 2055-56 (terawatt hours [TWh])



EV charging profiles

AEMO uses several static and dynamic vehicle charging profiles that are reviewed and updated annually:

- Static charging refers to charging profiles that are unaffected by electricity prices and grid conditions, typically seen with wall sockets and dedicated high power chargers available at homes, car parks, shopping centers or workplaces.
- Dynamic charging adjusts based on weather, grid demand or a vehicle’s battery state. Dynamic charging may be encouraged by cheaper tariffs to compensate users for potential loss of flexibility. Although typical home chargers can be used for dynamic charging with manual adjustments, dynamic charging is expected to be more commonly achieved through smart L2 chargers (unidirectional) or V2G chargers (bidirectional), which use advanced algorithms to optimise charging sessions.

The different charging types are described in **Table 5**, relating tariffs and charger types to charging behaviour and hence the time-specific load on the power system.

Table 5 EV charging profiles and description

Type	Charging profile name	Description
Static	Unscheduled	Unscheduled home charging that occurs on a flat tariff, typically using home chargers <i>An EV owner adopting this charge profile typically charges their vehicle when returning home each evening, with some additional workplace or carpark charging. This simple charging preference has little regard to electricity costs.</i>
	Off-peak and solar	Traditional time of use (TOU) tariff without day incentives, other than use of home solar <i>An EV owner adopting this charge profile typically has high overnight charging predominantly at home, but after the household's peak evening loads. Some charging occurs in the day, if convenient, to benefit from the user's own PV generation.</i>
	TOU Grid solar	Newly emerging TOU tariff which includes middle of the day charging incentives with reduced day-time pricing such that all customers (both those with and without PV systems) are incentivised to use electricity during daytime hours. <i>An EV owner adopting this charge profile typically takes advantage of daytime charging opportunities at home, or away from home, absorbing low-cost solar production.</i>
	Public	Public L2 and fast charge <i>An EV owner adopting this charge profile typically charges rapidly while stopped at public charging facilities, on highways, at carparks, or workplaces with dedicated facilities. Given these activities typically occur during daytime hours, this profile has a daytime bias. AEMO expanded this category to include charging that occurs near drivers' homes, typically overnight, due to stakeholder feedback to the Draft 2025 IASR.</i>
Dynamic	TOU Dynamic	TOU tariff, but dynamically priced to reflect solar energy availability day to day, and within each day. <i>This profile does not include energy flows from the EV battery to the home or grid.</i>
	V2G/V2H	The EV owner opts into a dynamic charging scheme that allows use of the vehicle as a battery, storing energy which can be called on by a retailer or aggregator to supply back into the grid (V2G) or home (V2H).

Evolution in the mix of EV charging types

The popularity of charging types will evolve over time, varying across scenarios, vehicle types and NEM regions. AEMO has refined the outlook on future charging type popularity, incorporating new data and insights on how different charging types interact with varying levels of technology improvements, infrastructure availability, tariff availability and relative cost-effectiveness under different scenarios. Trial charging data has been used to assess the percentage of EV charging at home, while public charger data has been used to inform that profile.

Workplace and public charging are projected to be lower in the near term as demand exceeds supply. It is expected to grow to meet demand for EVs which cannot be easily charged at or near the home, however there is uncertainty in the rate at which public charging infrastructure will develop.

Coordination of EV charging will become increasingly important as the EV fleet size grows. This is assumed to be supported by higher powered charging over time, notably for in-home charging.

TOU charging that incentivises daytime charging is projected to be largely limited to passenger vehicles. CSIRO considers that light commercial vehicles, buses and trucks are less suited to daytime charging as that is when they are typically in use.

Key updates to the outlook for future charging behaviours include:

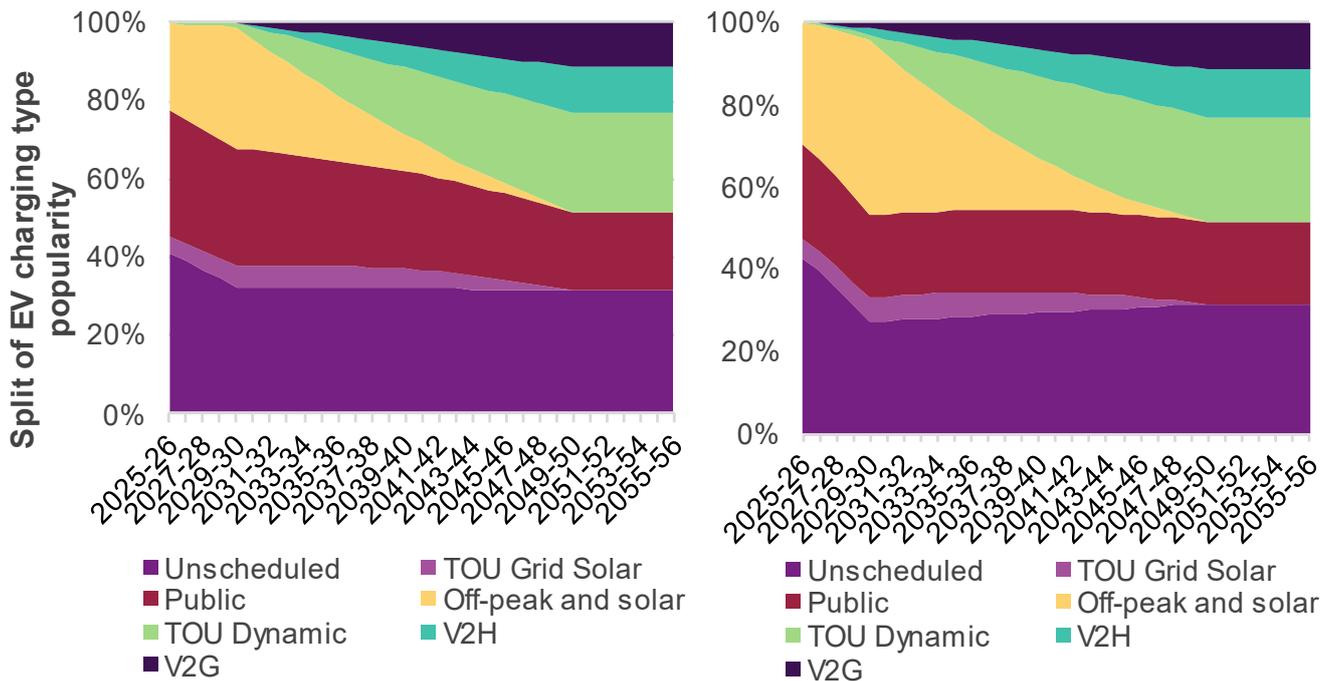
- Public charging share has been reduced consistent with verifiable trial data. It has been further reduced to 2030 due to the higher share of PHEVs which need less public charging due to their smaller battery. The public charging share in 2050 remains constant.
- Consumers on the TOU Grid solar profile are increasingly expected to take advantage of cheap daytime solar, with emerging practices cementing this as a preferred option for consumers where they can fit it into their lifestyle.

The shares of Unscheduled, V2H and V2G charging types are similar to the 2025 IASR. While there will be periods (such as overnight), when most vehicles are parked and able to connect to charging infrastructure and where availability may approach 100%, at other times vehicle availability may be significantly lower (such as during peak traffic periods). In the 2025 IASR, the available energy (MWh) of vehicles to charge/discharge was derated to account for average vehicle availability (55%)²². Additionally, it was assumed that 50% of the battery depth was reserved to restrict the coordinated discharge of the battery, so that the driver could retain the vehicle for its primary purpose: transportation, meaning V2G systems could not empty a battery below half its driving range.

For this updated forecast, the average vehicle availability derating (55%) is also applied to the V2G capacity (MW). This extended application of the availability factor ensures that battery capacity (MW and MWh) are treated consistently, reflecting the assumed availability of connected vehicles to participate in charging or discharging coordination. Additionally, PHEVs and motorcycles have been excluded from V2G due to limited usable battery capacity. More details are provided in the Draft 2026 Forecasting Assumptions Update Workbook.

Figure 22 shows the mix of charging types assumed for 2025 IASR (left) and this 2026 Draft Assumptions Update (right) for medium residential vehicles in New South Wales in the *Step Change* scenario.

Figure 22 Split of charging types for medium residential vehicles (NSW): 2025 IASR (left) and 2026 Draft Forecasting Assumptions Update (right) for Step Change scenario



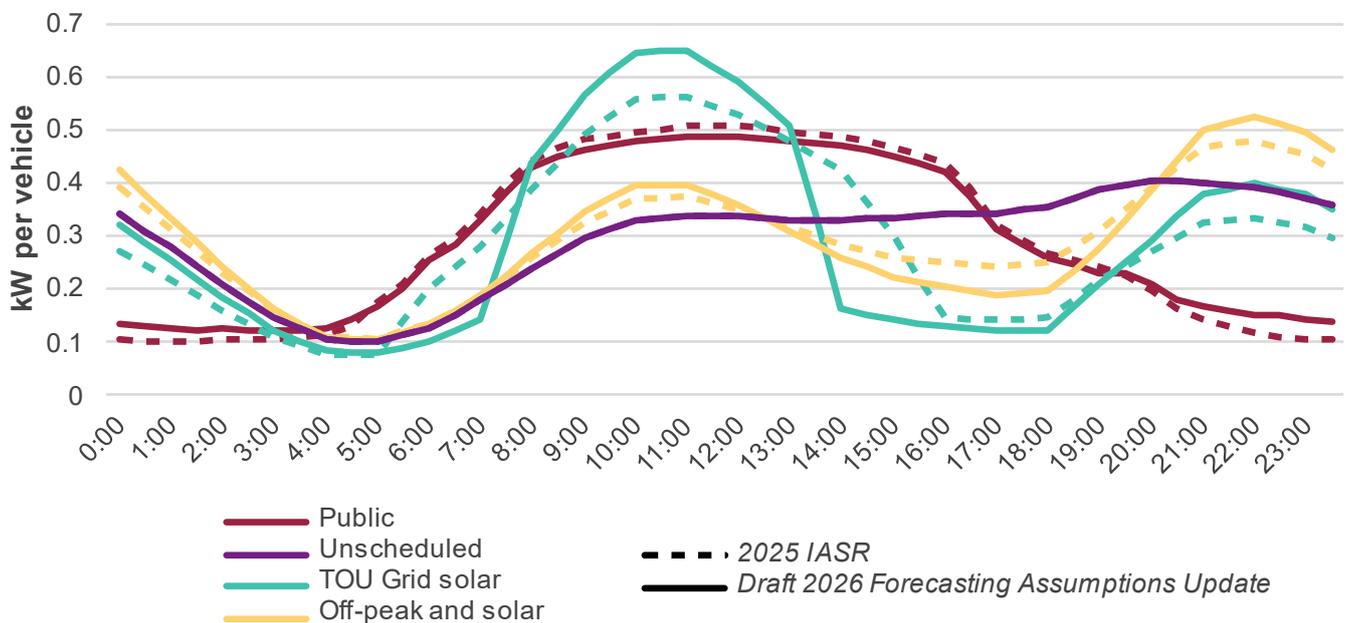
²² CSIRO assumption based on analysis of traffic data.

EV charging profile shape

Multiple trials (Energex and Ergon Energy Network²³, AGL²⁴, Jemena²⁵, Origin Energy²⁶, and the University of Queensland/Electric Vehicle Council of Australia²⁷) have provided EV charging load shapes and are used as sources for AEMO’s half-hourly charging profiles for each charging type. These profiles vary over NEM regions, vehicle type, time (months, years), and day types (weekdays/weekends), independent of the popularity of the profile.

The forecasts for the Draft Assumptions Update rely exclusively on Australian charging data trends to inform the revised load profiles. As seen in **Figure 23** below, AEMO’s revised TOU profiles have higher charging demand during daylight hours based on consideration of local charging profiles.

Figure 23 Static after-diversity charging profiles of different EV charging types for medium residential vehicles (New South Wales) in 2030 (kW per vehicle)



Note: The unscheduled charging profile is unchanged between the 2025 and 2026 charging profiles.

The charging profiles of different types of EVs are similar to the 2025 IASR. The key change is that customers adopting TOU Grid solar charging profile (and to a lesser extent, Off Peak and solar) will increasingly recognise and make use of opportunities to charge cheaply around midday when solar energy is abundant and cheap. Ongoing growth in the uptake of network TOU tariffs, and their increasing cost-reflectiveness, adds to this momentum.

AEMO will continue to monitor developments as relevant pricing data becomes publicly available.

²³ Energex and Ergon Energy Network 2023, at https://www.energex.com.au/_data/assets/pdf_file/0008/1096496/EV-SmartCharge-Queensland-Insights-Report.pdf.

²⁴ AGL Electric Vehicle Orchestration Trial 2023, at <https://arena.gov.au/assets/2023/08/20230703-AGL-Electric-Vehicle-Orchestration-Trial-Final-Report.pdf>.

²⁵ Jemena Dynamic Electric Vehicle Charging Trial Project 2023, at <https://arena.gov.au/assets/2023/04/jemena-ev-grid-trial-knowledge-sharing-report.pdf>.

²⁶ Origin EV Smart Charging Trial 2021, 2022, at <https://arena.gov.au/assets/2022/05/origin-energy-electric-vehicles-smart-charging-trial-lessons-learn-2.pdf>.

²⁷ See *Driving and charging an EV in Australia: A real-world analysis 2022*, at https://australasiantransportresearchforum.org.au/wp-content/uploads/2022/05/ATRF2022_Resubmission_80.pdf.

AEMO's static charging profiles are detailed in the 2025 IASR EV Workbook²⁸. Dynamic charging profiles are optimised within AEMO's supply modelling assessments, such as the ISP, reflecting the availability of electricity supply. The unscheduled charging profile is unchanged from the 2025 IASR.

The Draft 2026 Forecasting Assumptions Update EV workbook²⁹ provides more details of the EV forecast.

Matters for consultation

- Do the proposed EV forecasts continue to reflect an appropriate spread of outcomes, considering the maturing nature of the market for EVs?
- Is the application of an availability factor for V2G (set at 55%) appropriate? If not, what level should be considered?

2.2 Generators and transmission

AEMO uses a range of data to describe the existing generators in its models. Some of this data is updated through established processes and documented methodologies as outlined in **Table 6** below.

As part of the 2025 Forecast Improvement Plan process³⁰, AEMO is proposing to update the *ESOO and Reliability Forecast Methodology* to include planned outages alongside unplanned outages in the ES00 reliability forecasts. Stakeholder submissions for the 2025 Forecast Improvement Plan are sought to February 2026, enabling consideration of feedback prior to potentially applying in the 2026 ES00. AEMO proposes to start data collection activities from April 2026. This will enable consideration of planned outages that occurred over the 2025-26 summer.

²⁸ See https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/aemo-2025-iasr-ev-workbook.xlsx.

²⁹ See <https://www.aemo.com.au/consultations/current-and-closed-consultations/draft-2026-forecasting-assumptions-update>.

³⁰ For further information, see <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/forecasting-accuracy-reporting>.

Table 6 Status and update process for key inputs and assumptions for generation and transmission

Input	Current status	Forward plan for updating inputs and assumptions
Generation Information data	Current view	<p>Updated quarterly based on AEMO's Generation Information survey and is published on AEMO's Generation Information website^A.</p> <p>This data is collected and published in accordance with the Generation Information Guidelines^A. It provides detailed information about the status and characteristics of existing and future generation and storage projects, including project development status, capacity details, seasonal availability, commercial use dates, as well as closure dates.</p> <p>In accordance with AEMO's <i>ESOO and Reliability Forecast Methodology</i>^C new generators classified as 'Committed' and 'Committed*' will have commercial use dates applied consistent with delays observed for recently commissioned projects. These delays will be calculated before the 2026 ES00.</p> <p>The data that will be applied to the 2026 ES00 will be the July 2026 Generation Information release.</p>
Transmission Augmentation Information data	Current view	<p>Updated as required based on information advised by relevant Transmission Network Service Providers and is published on AEMO's Transmission Augmentation Information website^B.</p>
Scheduled generator unplanned outage rates	Interim view	<p>The interim view will be updated based on historical and forward-looking unplanned outage rates to be provided by survey of registered participants in accordance with AEMO's <i>ESOO and Reliability Forecast Methodology</i>.</p> <p>The data will be collected in April 2026 so accounts for generator performance over the 2025-26 summer. Based on the methodology outlined in the <i>ESOO and Reliability Forecast methodology</i>, AEMO will calculate new generator unplanned outage rates for all scheduled production units. The unplanned outage rates are scheduled for FRG consultation in June 2026.</p>
Unplanned outages affecting inter-regional power transfers	Interim view	<p>AEMO will collate and develop projections of inter-regional transmission unplanned outage rates consistent with the <i>ESOO and Reliability Forecast Methodology</i>.</p> <p>The data will be collected in April 2026 and thus accounts for inter-regional transmission flow paths performance over the 2025-26 summer.</p> <p>The unplanned outage rates are scheduled for FRG consultation in June 2026.</p>

A. See <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/generation-information>.

B. See <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/transmission-augmentation-information>.

C. See <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/nem-electricity-statement-of-opportunities-esoo>.

2.3 New entrant costs and technical parameters

AEMO uses a variety of technical and cost parameters in many of its planning studies, including the ISP. AEMO also recognises that many stakeholders, including proponents of regulatory investment tests, leverage these assumptions in considering their own planning activities. While AEMO does not intend to apply the draft values in this section to the 2026 ISP, if material to the outcomes and if updated inputs represent a material change, it may be prudent for AEMO to consider possible sensitivity analyses from this updated data set. Note that the ES00 does not forecast new entrant developments, and therefore new entrant costs are not used in the ES00.

GenCost is an annual collaboration between AEMO and CSIRO to provide updated cost projections for electricity generation, storage and hydrogen technologies. The *GenCost 2025-26 Consultation draft*³¹ is the seventh update to the inaugural report in 2018. It represents Australia's most comprehensive assessment of future electricity generation costs.

A key input to the GenCost method is to provide updated current capital cost estimates. Those for 2024-25 have been provided by GHD in its *2025 Energy Technology Cost and Technical Parameters Review*.

³¹ At <https://www.csiro.au/en/research/technology-space/energy/Electricity-transition/GenCost>.

Both documents are included in the Draft Assumptions Update and are under consultation.

2.3.1 Current capital costs

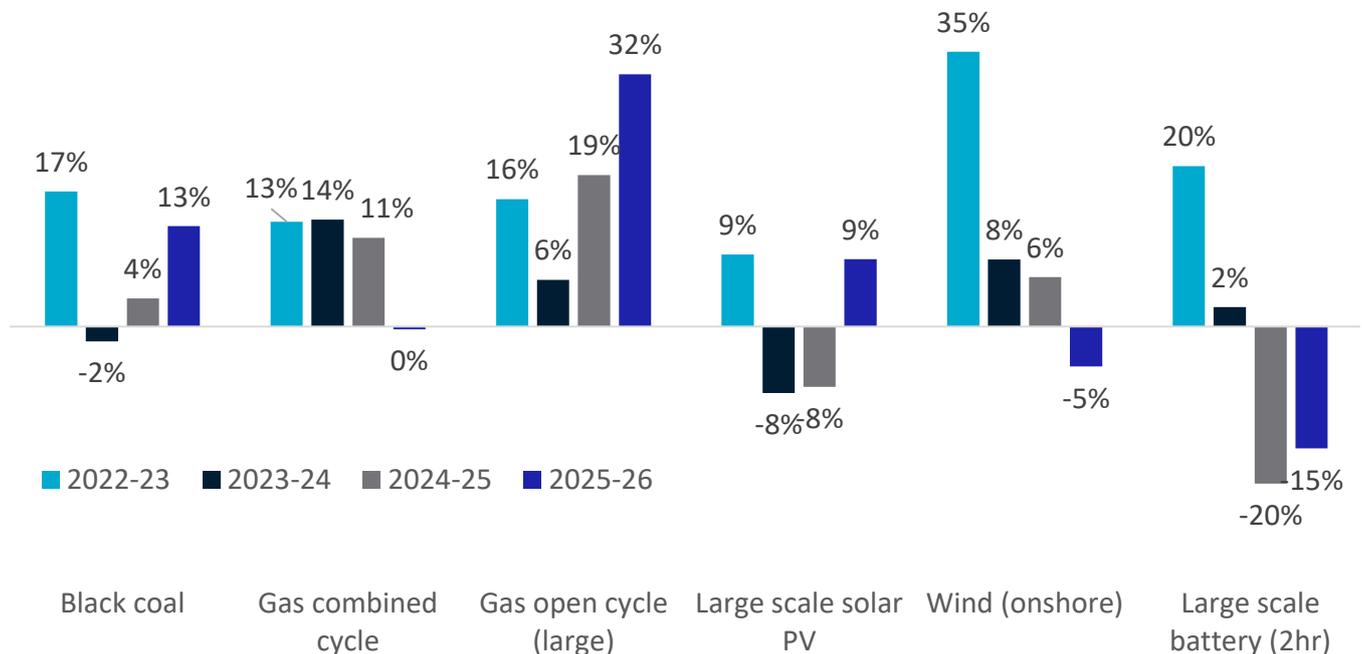
Figure 24 shows year-on-year changes to capital costs of relevant generation technologies since the GenCost 2022-23.

The inflationary pressures since the COVID-19 pandemic, which led to global supply chain constraints impacting the prices of raw materials needed in technology manufacturing and freight costs, have progressively eased but the results remain mixed as technologies have been affected differently.

Notable increases are seen in black coal and gas turbines which reflects general increases in the manufacturing costs due to higher interests for generation capacities and firming technologies. There is also increase in the cost of large-scale solar PV, while decreases in wind, large-scale batteries, and pumped hydro energy systems' costs, with battery costs performing the best in terms of delivering consecutive cost reductions. Onshore wind costs are showing signs of stabilising.

CSIRO uses the updated current capital cost estimates in the GALLM model to produce capital cost forecasts that are a function of global and local technology deployment. GenCost estimates include consideration of global demand for each technology, which relates to, among other things, international climate policy and the renewable and fossil resources available to each region.

Figure 24 Annual year-on-year changes in capital costs of selected technologies since GenCost 2022-23 in real dollar terms



Note: summary figure from *GenCost 2025-26 Consultation draft* report. Other technologies such as offshore wind and pumped hydro are detailed elsewhere in the GenCost report.

2.3.2 Technical and other cost parameters

AEMO engaged GHD to provide updates to the economic and technical parameters related to existing and emerging energy technologies that could be deployed across the NEM. This information is used in forecasting and planning studies such as the development of CSIRO's *GenCost 2025-26 Consultation draft* report. These parameters are updated as part of the

annual GenCost scope of work to reflect the current trends and estimates of costs and performance data of new technologies. The parameters are published in the supporting material from GHD³², which describes in detail the approach, methodology, and outcomes of each technology considered.

Information was gathered on a wide range of energy technologies including generation, storage, and hydrogen production, by considering and estimating a typical new entrant project in the NEM. The complete list of technologies considered is available in the GHD report. AEMO is seeking stakeholder feedback on the information collected for these technologies.

The information collected on these technologies included:

- current costs for existing energy technologies and those with minimal current deployment, either locally or internationally, including:
 - equipment costs,
 - installation costs,
 - fuel connection costs,
 - land and development costs, and
 - carbon capture equipment and installation costs (where applicable),
- operating parameters for existing energy technologies and those with minimal current deployment, either locally or internationally, including (where applicable):
 - typical unit size and auxiliary load,
 - seasonal ratings,
 - heat rate,
 - scope 1 emissions factors,
 - minimum stable load and startup time,
 - maintenance rates and reliability settings,
 - lead time, economic life, and technical life, and
 - storage parameters (including cyclic efficiency and maximum and minimum state of charge),
- costs and operating parameters for emerging technologies, including considerations for potential development locations, development limits, construction lead-times, and estimates of earliest commercial viability dates,
- fixed and variable operation and maintenance cost estimates for all existing and emerging technologies in the NEM (note fuel costs are not included),
- retirement costs including recycling costs, rehabilitation costs, and retirement duration for all existing and emerging generation, storage, and electrolyser technologies in the NEM, and
- costs and technical parameters related specifically to hydrogen-based technologies, such as:

³² See <https://www.aemo.com.au/consultations/current-and-closed-consultations/draft-2026-forecasting-assumptions-update>.

- baseload electricity consumption,
- pipeline costs,
- water consumption,
- wastewater production, and
- conversion efficiency as well as any of the above relevant cost and technical parameters.

The scope also included consideration for the sites, locations, maximum build capacity, and locational cost factors for potential pumped hydro energy storage in the NEM.

As stated at the start of Section 2.3, these updated capital cost forecasts are not used in the ESOO, as the ESOO does not forecast capital investments, and are expected to have only limited impact on the final 2026 ISP (limited to sensitivity analysis only, if considered sufficiently material to warrant detailed examination). Stakeholder feedback inform the final GenCost 2025-26 report.

2.3.3 Capital cost projections

GenCost estimates include consideration of global demand for each technology which relates to, among other things, international policy and renewable targets. The GenCost scenarios have evolved over time to better reflect the uncertainty in the speed of global emissions reduction, which improves the alignment with AEMO’s scenarios, and consideration of easement of supply chain pressures over time.

GenCost produces build costs for three scenarios (“Global NZE by 2050”, “Global NZE post 2050” and “Current policies”). These scenarios are described in greater detail in CSIRO’s GenCost report, and are then mapped by AEMO to AEMO’s energy planning scenarios, as shown in **Table 7**.

Table 7 Mapping AEMO scenario themes to the GenCost scenarios

AEMO scenario	GenCost scenario	Explanation
<i>Slower Growth</i>	<i>Current Policies</i>	Consistent with current commitments to the Paris Agreement, leading to the lowest global emissions reduction ambition and a 2.5°C warming future.
<i>Step Change</i>	<i>Global NZE post 2050</i>	Consistent with global action to limit temperature rises to less than 2°C, and with industrialised countries targeting net zero emissions by 2050.
<i>Accelerated Transition</i>	<i>Global NZE by 2050</i>	The most ambitious global emissions reduction scenario, consistent with limiting temperature rises to less than 1.5°C.

The figures below present a comparison of the build costs for major technologies (excluding connection costs). They show the GenCost 2024-25 Final report against the *GenCost 2025-26 Consultation draft* data for the *Global NZE post 2050* scenario, based on construction in Greater Melbourne and Geelong (MEL) subregion as defined in the 2025 IASR³³ and excluding connection costs. More detailed cost projections are provided in the CSIRO data tables³⁴. Cost projections for each technology and scenario are available in the accompanying Draft 2026 Forecasting Assumptions Update Workbook³⁵.

³³ At <https://www.aemo.com.au/consultations/current-and-closed-consultations/2025-iasr>.

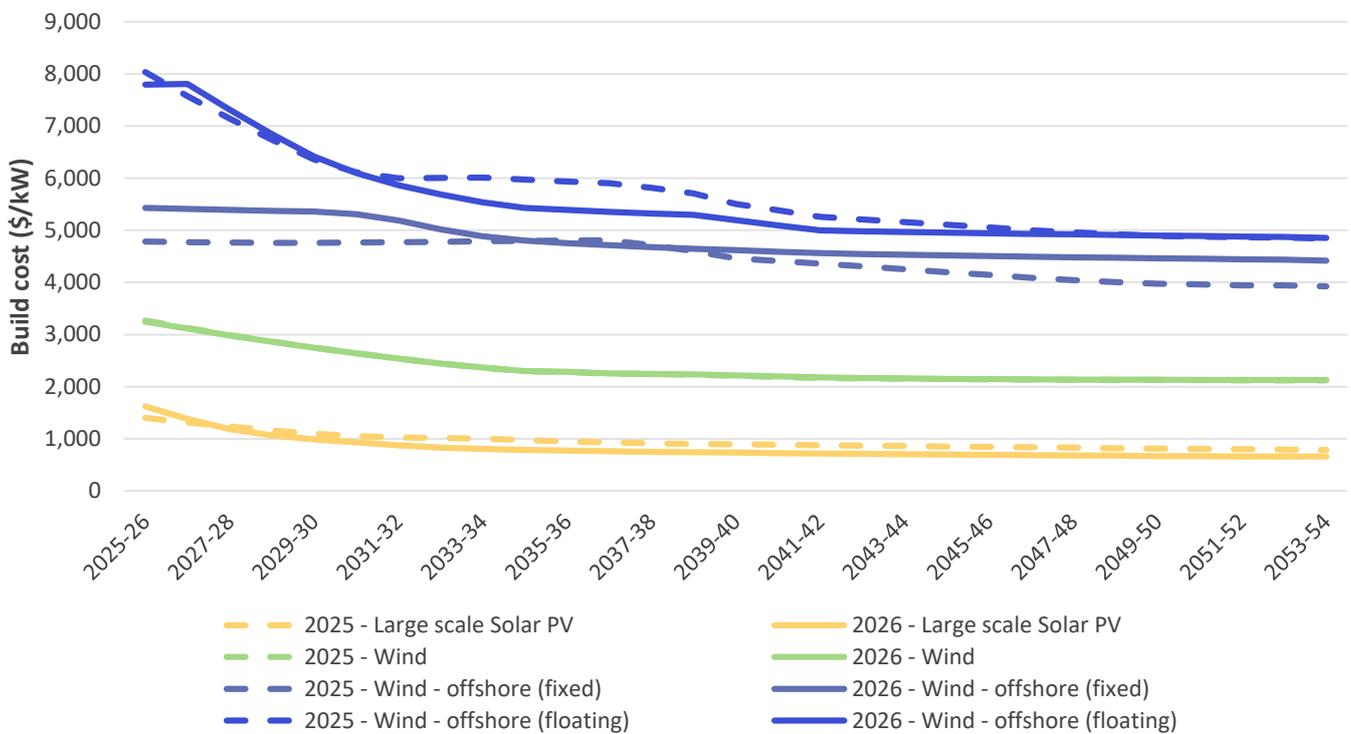
³⁴ See CSIRO GenCost 2023-24 data tables at <https://aemo.com.au/consultations/current-and-closed-consultations/2024-forecasting-assumptions-update-consultation>.

³⁵ At <https://www.aemo.com.au/consultations/current-and-closed-consultations/draft-2026-forecasting-assumptions-update>.

In line with findings in the previous *GenCost*, costs over the period to 2035 are driven by short-term supply pressures which result in higher costs relative to the cost paths determined by the CSIRO’s learning model. As these impacts ease, costs converge closer to previous estimates in the longer term for some technologies.

One notable change is the capital cost for pumped hydro energy storage (PHES) systems reducing from what was assumed in the 2025 IASR. The reason for this change is that the geographical area that could host PHES is expanded from just the renewable energy zones to most of the sub-region – using the latest global atlas from the Australian National University (ANU)³⁶ and excluding areas where there are other limitations that would prohibit development of pumped hydro schemes. More information on the development of these costs is available in the GHD Report³⁷.

Figure 25 GenCost 2024-25 Final report versus GenCost 2025-26 Consultation draft Global NZE post 2050, for wind and solar (\$/kW)



³⁶ See GHD Pumped Hydro Energy Storage Parameter Review at https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/ghd-2025-pumped-hydro-energy-storage-cost-parameter-review.pdf.

³⁷ See https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/Draft-2026-FAU/GHD-2025-Energy-Technology-Cost-and-Technical-Parameter-report.

Figure 26 GenCost 2024-25 Final report versus GenCost 2025-26 Consultation draft Global NZE post 2050, for gas turbines (\$/kW)

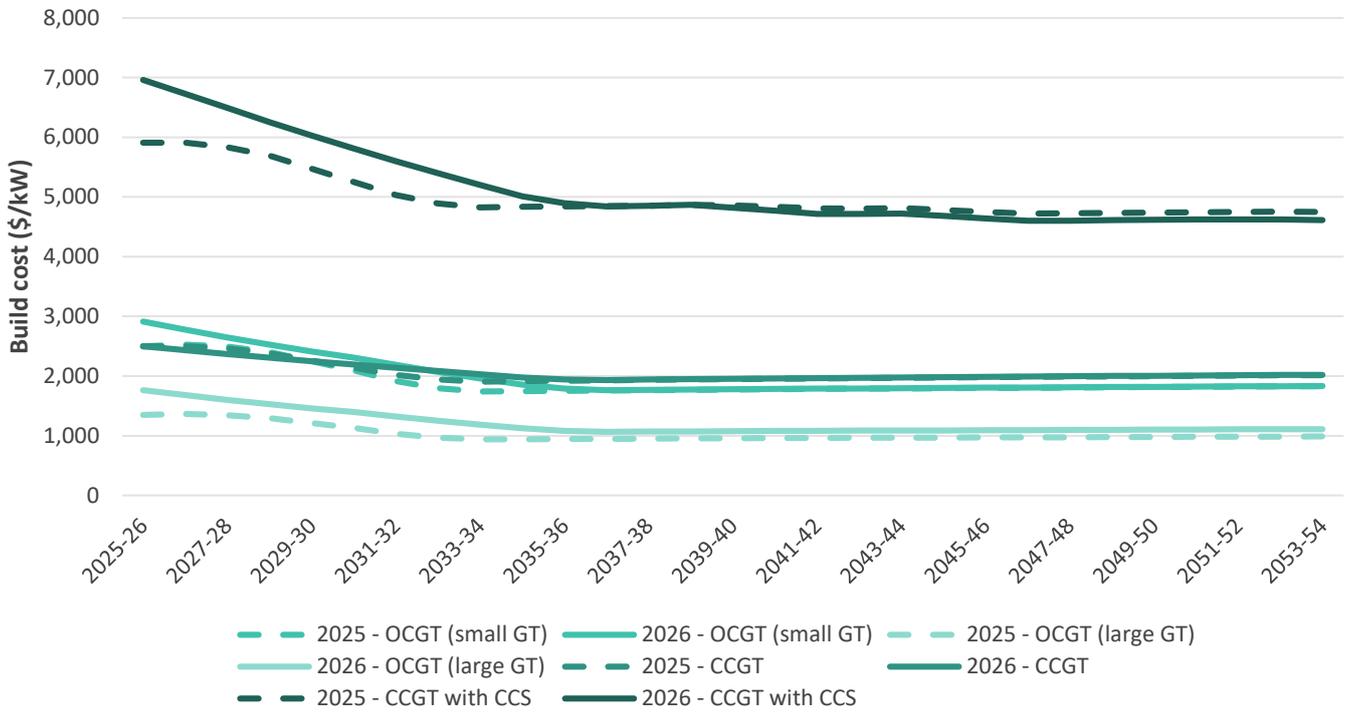


Figure 27 GenCost 2024-25 Final report versus GenCost 2025-26 Consultation draft Global NZE post 2050, for storages (\$/kW)

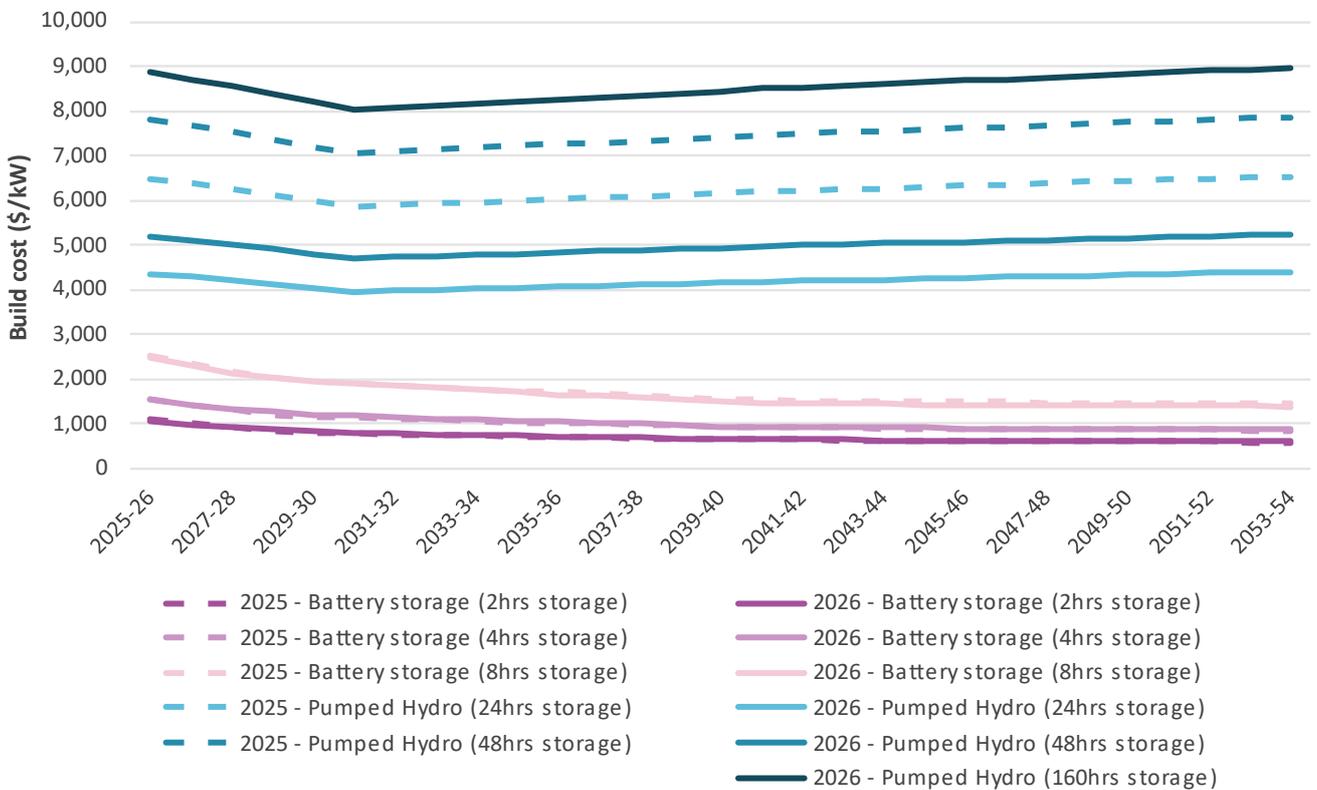
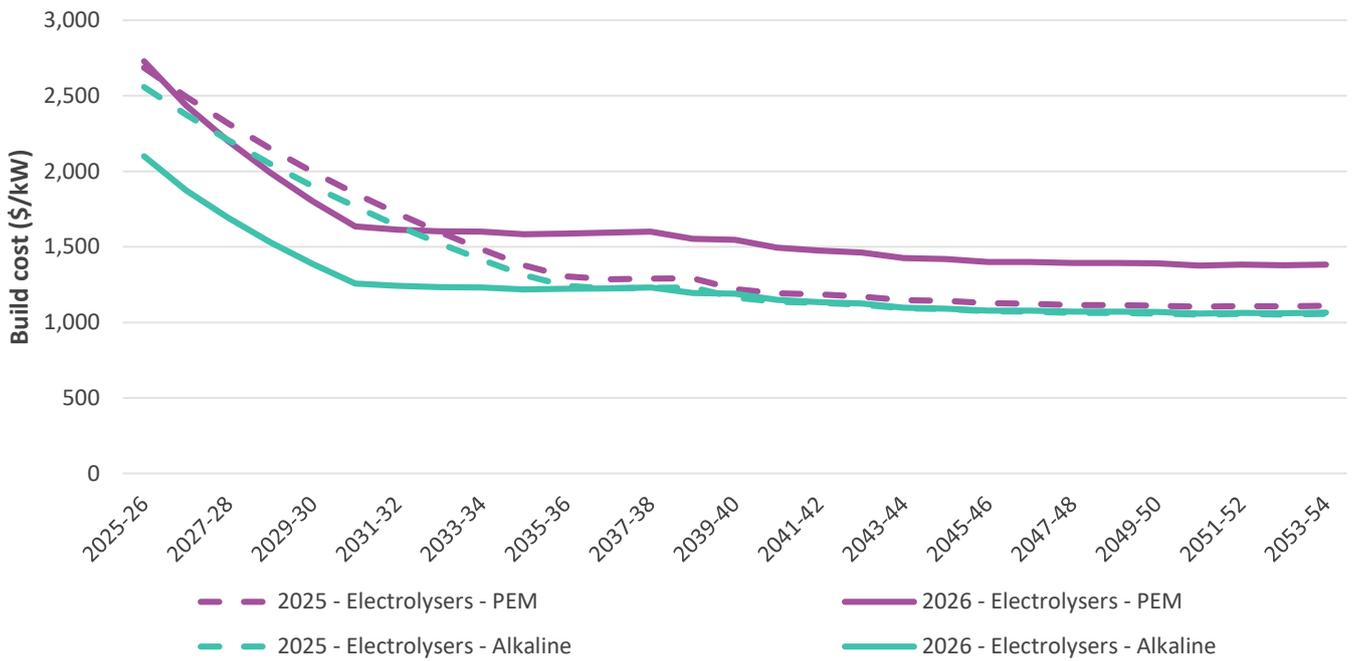


Figure 28 GenCost 2024-25 Final report versus GenCost 2025-26 Consultation draft Global NZE post 2050, for electrolysers (\$/kW)



PEM: Proton Exchange Membrane.