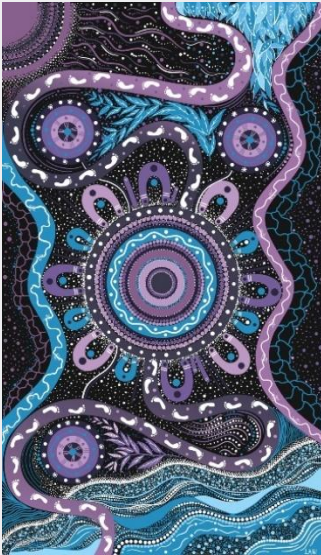


A market visibility framework for price responsive resources

September 2026

Consultation paper on draft policy
framework





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.

AEMO is proud to have launched its Innovate [Reconciliation Action Plan](#) (RAP) in June 2026. Pictured left and featuring on the cover of the Innovate RAP is Wiradjuri artist Lani Balzan's 'Journey of unity: AEMO's Reconciliation Path', a visual representation of 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

The purpose of this publication is to provide stakeholders with an overview and opportunity to provide feedback on AEMO's proposed market visibility framework for price responsive resources, developed in response to recommendations put forward to and agreed in-principle by Energy Ministers (excluding Queensland) in December 2025 as part of the National Electricity Market (NEM) Wholesale Market Review.

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Table 1 Abbreviations

Acronym	Definition	Acronym	Definition
AEMC	Australian Energy Market Commission	IPRR	Integrating Price Responsive Resources into the NEM
AEMO	Australian Energy Market Operator	IRG	Industry Reference Group
AER	Australian Energy Regulator	ISP	<i>Integrated System Plan</i>
API	Application programming interface	LIL	Large industrial load
ARENA	Australian Renewable Energy Agency	LOR	Lack of reserve
AEST	Australian Eastern Standard Time	MSATS	Market Settlement and Transfer Solution
B2B	Business-to-business	MSL	Minimum system load
BDU	Bidirectional unit	MVF	Market Visibility Framework
C&I	Commercial and industrial	MW	Megawatt/s
CCRG	Consumer and Community Reference Group	MWh	Megawatt hour/s
CER	Consumer energy resources	NEL	National Electricity Law
CIS	Capacity Investment Scheme	NEM	National Electricity Market
DCCEEW	Department of Climate Change, Energy, the Environment and Water	NER	National Electricity Rules
DER	Distributed energy resources	NPV	Net present value
DI	Dispatch interval	OEM	Original equipment manufacturer
DNSP	Distribution network service provider	OIV	Operational Integration and Visibility of Large Inverter-Based Loads
DSO	Distribution system operator	PDF	Portable Document Format
DSPI	Demand Side Participation Information	PRR	Price responsive resource
DSPIP	Demand Side Participation Information Portal	PRRs	Price responsive resources
EMMS	Electricity Market Management System	RERT	Reliability and Emergency Reserve Trader
FCAS	Frequency control ancillary services	RRP	Regional Reference Price
FRMP	Financially Responsible Market Participant	SCADA	Supervisory control and data acquisition
FTP	File transfer protocol	ST PASA	Short Term Projected Assessment of System Adequacy
GW	Gigawatt/s	TWh	Terawatt hour/s
GWh	Gigawatt hour/s	VPP	Virtual power plant
IASR	<i>Inputs, Assumptions and Scenarios Report</i>	WDRM	Wholesale Demand Response Mechanism

Executive summary

Energy Ministers have tasked AEMO with developing a mandatory framework for the visibility and participation of price responsive resources (PRR). This consultation paper presents AEMO's draft Market Visibility Framework (MVF). AEMO is seeking stakeholder feedback on the draft framework through this public consultation prior to finalising recommendations to Energy Ministers in December 2026.

The MVF responds to a growing visibility challenge in the National Electricity Market (NEM). Increasing volumes of flexible consumer energy resources (CER), commercial and industrial (C&I) demand response, large flexible loads and other unscheduled resources can respond to wholesale market conditions outside central dispatch. This flexibility can benefit consumers and the power system. However, where material responses are coordinated, coincident and not visible to AEMO or market participants in advance, they can increase forecast error, weaken pre-dispatch signals and dispatch outcomes, raise costs for essential system services or reserves, and reduce the efficiency of operational decisions.

AEMO is seeking to establish a proportionate framework that improves forecast accuracy and market visibility while preserving consumer participation and delivering consumer value. The draft framework aims to be evidence-based, targeted and adaptable. It is comprised of two core components: (1) visibility modes; and (2) a staged implementation pathway, which recognises that the visibility challenge is still emerging, that resource classes differ materially in how they are coordinated and controlled, and that parallel reforms may affect the nature of any future obligations.

AEMO developed the draft framework through iterative engagement with the MVF Stakeholder Advisory Group¹, design workshops, and targeted discussions with industry, consumer representatives, market bodies and government observers. Stakeholder feedback has strongly shaped the framework, particularly the need for tailored design, staged implementation, alignment with related reforms, materiality-based obligations, maximum use of existing data, and flexibility to evolve as technologies, participation models and market impacts develop.

Proposed visibility and participation modes

The draft framework introduces a continuum of visibility and participation modes. The modes describe the tools available to AEMO, rather than a mandatory sequence through which all resources must progress. The applicable mode would depend primarily on the resource size and the extent of coordination, with specific data obligations determined by the characteristics of each resource.

The four proposed modes are:

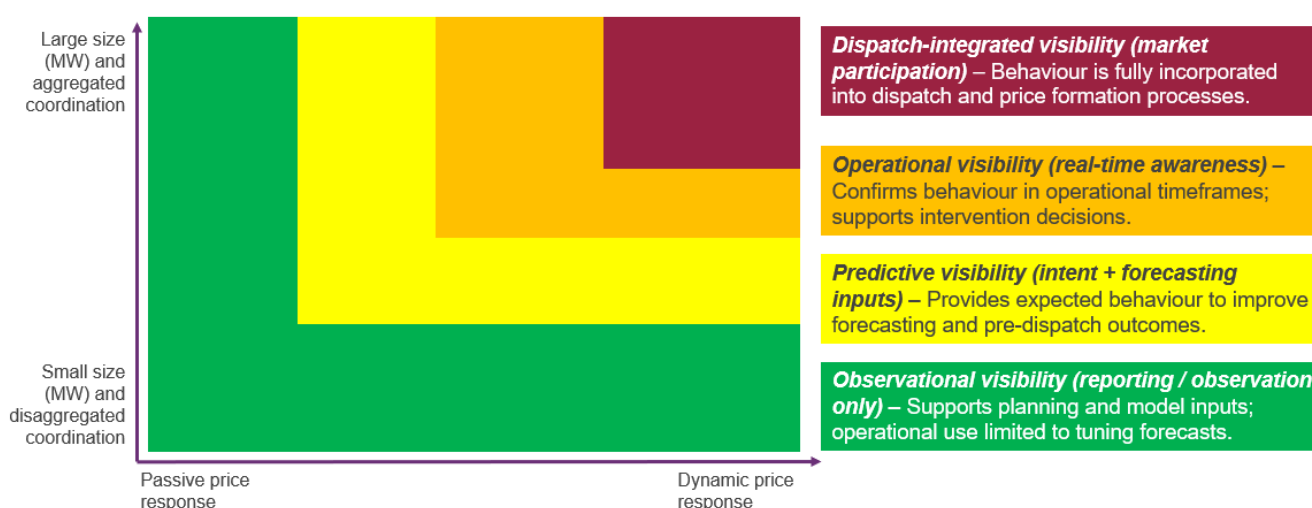
- **Mode 1 – Observational visibility:** uses existing and enhanced standing or historical data to improve AEMO's statistical understanding of aggregate price responsive behaviour. This mode is intended for behaviour that is low-impact, uncoordinated, or sufficiently predictable to be managed through existing operational forecasting capability, as opposed to resource-specific obligations.

¹ AEMO established the MVF Stakeholder Advisory Group in May 2026 to support the design of a mandatory framework for price responsive resource visibility in the NEM. The role of the advisory group is to support to AEMO co-design the framework, including strategic advice and testing of AEMO's proposed design and implementation approach. Further details, including meeting papers, are at <https://www.aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/mvf-stakeholder-advisory-group>.

- **Mode 2 – Predictive visibility:** provides forward-looking information about expected price responsive behaviour where resources or portfolios are coordinated and material (> 30 megawatts [MW]). Information may include quantities, availability, price responsive quantities, bid-based information, baseline-relative quantities, or other structured intent information, subject to testing.
- **Mode 3 – Operational visibility:** provides near real-time or operational information where resources are sufficiently large (for example, > 100 MW), flexible, or operationally significant that AEMO and network operators need improved situational awareness to support real-time operational decisions and system security.
- **Mode 4 – Dispatch-integrated visibility:** marks the point at which visibility alone may no longer be sufficient, and resources may need to participate through existing or future scheduling, dispatch or registration mechanisms.

The figure below illustrates this continuum. The framework does not propose applying all modes from commencement. Instead, it would establish the regulatory tools needed to activate visibility obligations if, and when, evidence shows they are necessary and proportionate.

Figure 1 Visibility and participation modes



Price responsive pre-dispatch sensitivity

AEMO proposes to develop a separate price responsive pre-dispatch sensitivity as a practical way to provide better information to the market while managing the circularity problem that can arise when forecasts incorporate price responsive behaviour. Under this approach, AEMO's base pre-dispatch run would remain the central price signal against which participants can plan their response. The sensitivity would then show how outcomes could change if observed or submitted price responsive behaviour occurs at material scale.

The sensitivity would not be published initially. Instead, it would provide additional decision-useful information to AEMO about potential impacts on demand, prices, reserves and operational conditions. Phase 1 of the MVF implementation pathway (set out below) would test whether the sensitivity improves market information, whether submitted information is sufficiently accurate to use, how information should be derated where accuracy is uncertain, and how the sensitivity can be published in Phase 2 without compromising price signals.

Proposed implementation pathway

AEMO proposes a staged implementation pathway so that obligations are informed by evidence about market impact, information quality, implementation cost and consumer benefit. Under the implementation pathway, a stage gate assessment would apply prior to obligations being activated as set out in **Figure 2** below, with the detailed requirements developed and validated during the preceding phase. This approach would support regulatory and technical readiness by testing which visibility information is practical, improves forecast accuracy and can be integrated into operational processes before mandatory obligations are activated. For consumers, the value proposition is to avoid committing to costs before benefits are sufficiently clear, while ensuring the framework is ready to operate if the need emerges.

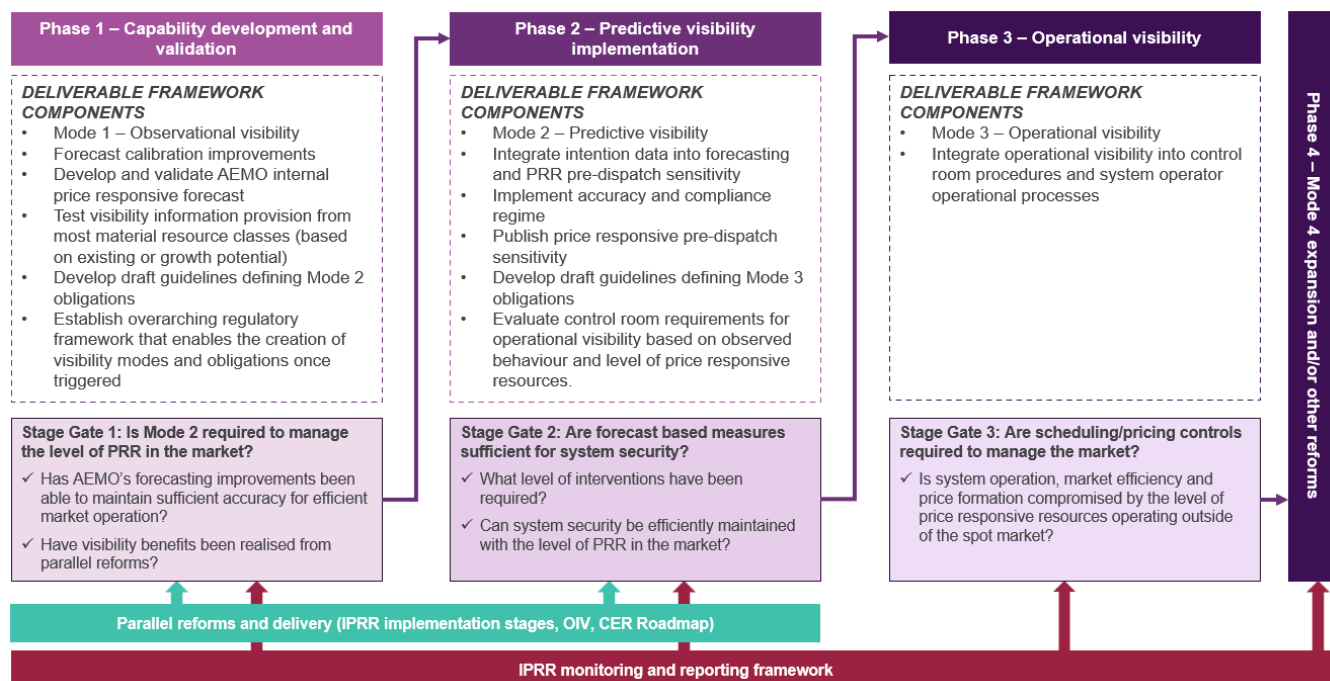
Phase 1 – Capability development and validation would focus on building forecasting capability, testing visibility information provision, and preparing the regulatory instruments needed to give effect to visibility mode obligations. AEMO would first seek to maximise the value of existing data sources and improve its ability to identify, forecast and understand price responsive behaviour using current systems, market processes and participant data channels. This includes assessing the extent to which forecasting improvements and AEMO’s statistical analysis of historical data can provide the required level of forecast accuracy for price responsive resources. During this phase, AEMO would develop and test the price responsive pre-dispatch sensitivity, trial aspects of Modes 2 and 3 with priority resource classes, test practical information provision arrangements, and develop draft implementation guidelines.

Phase 2 – Deployment of predictive visibility obligations would commence only once AEMO has demonstrated that visibility information can be integrated into operational processes and is likely to deliver measurable benefits for forecasting, dispatch and market efficiency. Any activation of Mode 2 obligations would be informed by monitoring the market impacts of price responsive resources, stakeholder feedback, consultation on implementation guidelines, and an assessment of whether consumer benefits are likely to exceed costs.

Phase 3 – Operational visibility would commence once additional operational visibility obligations are needed as price responsive resources grow, become more coordinated and have greater potential to affect real-time system operation. This phase would consider whether earlier phases, existing operational processes and parallel reforms, such as the Operational Integration and Visibility of Large Inverter-Based Loads (OIV) rule change proposal being considered by the Australian Energy Market Commission (AEMC), have addressed the relevant visibility need or whether residual operational risks remain.

For the purposes of illustrating the implementation pathway as a concept, **Figure 2** below depicts the deliverable framework components and stage gates sequentially. AEMO notes that depending on observed market and system impacts, Phases 2 and 3 may need to be activated at the same time. Accordingly, in practice, there may be some concurrence in deliverable framework components and stage gates across Phases 1 and 2 in practice. Within each phase, there may also be staging of obligations for different resources classes, rather than activating obligations across all resources at the same time. For example, Phase 3 could commence first with large inverter-based loads prior to obligations for CER aggregations.

Throughout the implementation pathway, AEMO would continue monitoring the individual and aggregate impact of PRRs under its Integrating Price Responsive Resources into the NEM (IPRR) monitoring and reporting functions. If monitoring or operational experience shows that unscheduled price responsive behaviour is materially affecting forecasting, dispatch, price formation, reserves or operational decisions, the MVF would provide a clear pathway to activate, refine or scale obligations through evidence-based stage gates and consultation.

Figure 2 Implementation pathway

Consumer benefits and proportionality

Improved visibility is expected to benefit consumers where it enables AEMO and market participants to make better forecasting, dispatch, pricing and operational decisions. Potential benefits include more accurate pre-dispatch signals, more efficient price formation, more efficient use of generation and essential system services, reduced reserve or intervention costs, and better long-term planning signals.

However, AEMO considers the size of those benefits and whether they outweigh the cost of the visibility measures will depend on the extent to which visibility information has been tested across different resource types and demonstrated to improve forecast accuracy and subsequent decision making by market participants and AEMO. Benefits depend on the accuracy and timeliness of information, whether that information improves forecast performance, the resource classes involved, implementation and ongoing costs, and market conditions at the time. The same quantity of price responsive capacity can have very different consumer impacts depending on whether the system is well supplied or tight, whether a region is constrained, whether frequency control ancillary services (FCAS) requirements are elevated, and whether many resources respond at the same time.

For this reason, AEMO proposes to build evidence before activating detailed obligations. Phase 1 would test what information can be provided, whether it can be validated, and whether it can be translated into forecast accuracy improvements and consumer value. Later obligations would only be activated where AEMO's monitoring and reporting and consultation indicate that additional visibility is necessary, proportionate and likely to deliver net consumer benefits.

Submissions – Closing date and information

Stakeholders are invited to submit written responses on all aspects of the draft Market Visibility Framework outlined in this Consultation Paper by 5.00 pm (Australian Eastern Saving Time [AEST]) on 13 October 2026 to

marketreform@aemo.com.au. This includes the specific framework attributes identified in targeted questions throughout Consultation Paper.

Feedback will inform refinement of the framework and AEMO's final recommendations to Energy Ministers by December 2026. Stakeholder feedback on the draft Market Visibility Framework and the matters raised throughout this paper.

Consultation questions

1. Are there any reforms stakeholders see as being key dependencies or antecedents for the Market Visibility Framework? Are there reforms/initiatives that should be informed by the Market Visibility Framework and information it collects? For example, should the Market Visibility Framework support the development of DSO capabilities, or should DSO functions be developed and their effects observed before committing to visibility obligations under the MVF?
2. Do you consider that the proposed visibility modes are appropriately defined to capture the different types, materiality and operational characteristics of price responsive resources? In your response, please identify any aspects of the mode definitions that should be clarified, expanded or refined to ensure the framework is practical, proportionate and capable of providing decision-useful visibility information.
3. How can thresholds and coordination be defined with respect to size and coordination to ensure the intended resources are captured in a manner that is objective, consistent and equitable?
4. What would be an appropriate threshold to commence with to capture resources of a material size? Should MW thresholds initially be higher to capture only the most material resources and aggregations, before progressively lowering the threshold if adverse market impacts continue to be observed?
5. Should MVF obligations be assigned by reference to the relevant resource or aggregation, with the responsible party identified according to the nature of that resource (for example, the site operator, aggregator, retailer or financially responsible Market Participant, as specified in AEMO guidelines)? Or should the framework instead impose a broader obligation on registered participants to provide information about resources they control, coordinate or are financially responsible for, similar to the current Demand Side Participation Information arrangements? In your response, please comment on which approach would better support accurate, timely and practical information provision while maintaining clear accountability.
6. Would a separate price responsive sensitivity in pre-dispatch provide better information to support participant decision-making without compromising the price signals against which participants are planning their response? Are there alternative approaches to managing the circularity problem while still providing better information to the market that AEMO should consider?
7. Do you support the proposed staged implementation approach, including the use of monitoring, trials and implementation guidelines before mandatory visibility obligations are activated? How should this approach be accounted for in the NER versus guidelines?
8. If the publication of guidelines activates obligations under the MVF, which party should decide when guidelines are published and how should this role be accounted for in the Rules?

9. If MVF obligations do not include conformance requirements equivalent to those applying to scheduled resources, do stakeholders consider that most resource types should still be able to translate their intended behaviour into bid based information for forecasting and pre-dispatch purposes?
10. Can the content and format of DSPI submission be improved and cadence increased (to quarterly) to provide more useful and up to date information on price responsive resources? How material are the compliance costs associated with this? Can wholesale price responsiveness could be flagged through an alternative channel such as MSATS to support AEMO improve the identification, calibration or forecasting of price responsive behaviour? Can wholesale price responsiveness be flagged through an alternative channel such as MSATS to support to AEMO improve the identification, calibration or forecasting of price responsive behaviour?
11. Are there any resource types and retailer relationships where it is not feasible for regulatory obligations to be assigned to the FRMP or registered service provider? In your response, please provide specific examples.
12. How can thresholds be applied to obligated parties in a way to mitigate the risk of portfolio structuring and gaming below MW thresholds? Can less onerous obligations help mitigate this risk? For example, in relation to > 5 MW battery portfolios, should obligations commence first in Mode 2 before further consideration is given to requiring scheduling through market mechanisms?
13. What process can be used to provide market participants and consumers with confidence that the visibility obligations' benefits outweigh the costs and deliver value to consumers? Is there an alternative approach to assessing costs and benefits to that outlined in this paper that AEMO should consider?

1 Introduction

1.1 Purpose

In December 2025, Energy Ministers tasked AEMO to develop, in consultation with industry and consumer representatives, a mandatory framework for the visibility and dispatch participation of price responsive resources (PRRs), referred to in this paper as the Market Visibility Framework (MVF). The framework is to define fit-for-purpose visibility modes and how they would be adopted into operational forecasting, establish thresholds for mandatory participation, and provide advice on consumer benefits and implementation pathways.

This Consultation Paper consolidates the high-level design considerations for the framework and seeks stakeholder feedback on its proposed design. AEMO is seeking views on targeted design questions to help refine the framework and inform its final recommendations to Energy Ministers. Stakeholder feedback will be critical to ensuring the framework is fit for purpose, proportionate and effective in supporting the evolving needs of the energy system.

AEMO invites stakeholder submissions on this Consultation Paper, including the consultation questions set out in the paper and summarised in the Executive Summary. Submissions should be provided electronically, in PDF or Word format, by 5:00pm AEST 13 October 2026 to marketreform@aemo.com.au.

Submissions will be published in accordance with AEMO's Consultation submission guidelines², except for material identified as confidential. Please clearly identify any confidential material that you do not wish to be published.

Respondents should note that confidential material that cannot be shared and validated with other stakeholders may be given less weight in AEMO's decision-making than published material.

What are price responsive resources?

Resources can respond to different signals over different timeframes, including static time-of-use retail and network tariffs, dynamic distribution network signals or contractual arrangements, and wholesale prices, including actual and pre-dispatch prices. For this consultation paper, ***price responsive resources are taken to be resources that respond dynamically to wholesale prices, with responses varying across events and market conditions, and are therefore insufficiently predictable and capable of influencing or undermining wholesale price outcomes.***

AEMO considers resources that respond to relatively static tariffs to be sufficiently predictable in its forecasting models and therefore not to require additional measures under the MVF. Similarly, resources responding to dynamic network signals are expected to be visible and forecastable by distribution system operators and are not currently proposed to require additional measures under the MVF.

² AEMO, 2025, AEMO Consultation submission guidelines, at <https://www.aemo.com.au/consultations>.

1.2 Problem statement and strategic objective

Problem statement

The increasing number and size of unscheduled PRRs for which the market and AEMO have limited visibility is expected to compromise:

1. market efficiency, by affecting the price formation process in pre-dispatch, the efficiency of price clearing and dispatch, and the efficiency of operational decisions and interventions by AEMO, and
2. secure system operation, due to unanticipated and rapid swings in the supply/demand balance and the challenges associated with managing these swings in operator control rooms when the causes are unknown.

These effects on market efficiency and system operation will materialise for consumers as costs from over dispatch of energy, elevated wholesale clearing prices, additional FCAS, larger than necessary Reliability and Emergency Reserve Trader (RERT) costs, and inefficient market intervention and operational decisions.

Strategic objective

The Market Visibility Framework seeks to improve the visibility of unscheduled PRRs to the market through proportionate obligations that improve the efficient and secure operation of the market to provide value to consumers and promote the National Electricity Objective.

1.2.1 More flexible resources are operating outside central dispatch

The emergence of unscheduled PRRs is creating a growing challenge for efficient operation of the National Electricity Market (NEM). Historically, price responsiveness was largely confined to a relatively small number of commercial and industrial (C&I) customers with relatively predictable and small demand response arrangements and to broad controlled load programs such as hot water. However, the NEM is increasingly characterised by flexible resources, including large C&I customers, and large numbers of consumer energy resources (CER) – such as batteries, electric vehicles and flexible loads – that can respond in a more dynamic manner to wholesale spot prices in real time. However, these responsive resources largely remain outside of central dispatch and scheduling processes.

Growth of responsive consumer energy resources

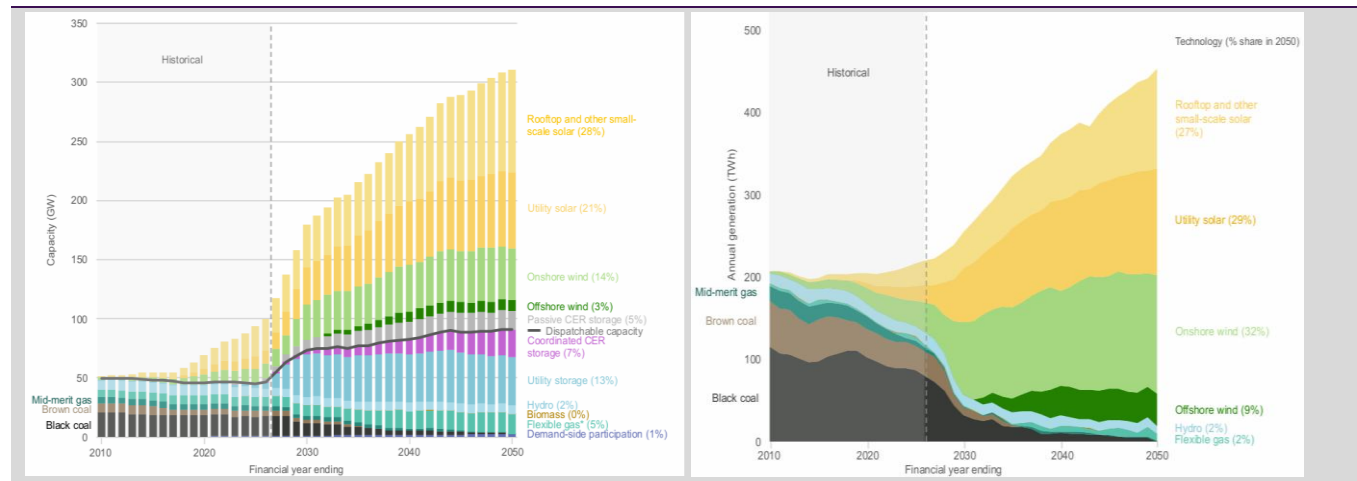
In the residential sector, between July 2025 and July 2026 alone, 12.4 gigawatt hours (GWh) of battery capacity was installed under the Commonwealth Government's Cheaper Home Batteries Program³. In response to this recent growth, the Final 2026 *Integrated System Plan* (ISP) incorporates updated forecasts for CER storage, with investment in embedded storage by 2050 forecast to increase from 27 gigawatts (GW) to 35 GW⁴. This increased uptake is expected to support a growing role for coordinated consumer storage in the power system.

³ Clean Energy Regulator, *Small-scale installation postcode data*, at <https://cer.gov.au/markets/reports-and-data/small-scale-installation-postcode-data>.

⁴ Forecast updates were made relative to AEMO's Final 2025 *Inputs, Assumptions and Scenarios Report* (IASR).

Under the ISP's *Step Change* scenario, small-scale batteries would grow from 5 GW/12 GWh in April 2026 to 12 GW/33 GWh in 2030, and then 35 GW/78 GWh in 2050. By 2050, around two-thirds of the dwellings with solar are forecast to have supporting batteries, and just over half of those batteries would be coordinated as part of a virtual power plant (VPP)⁵.

Figure 3 Installed capacity and annual energy generation, NEM (2026-27 to 2049-50, 2026 Final ISP Step Change)



TWh: terawatt hours.

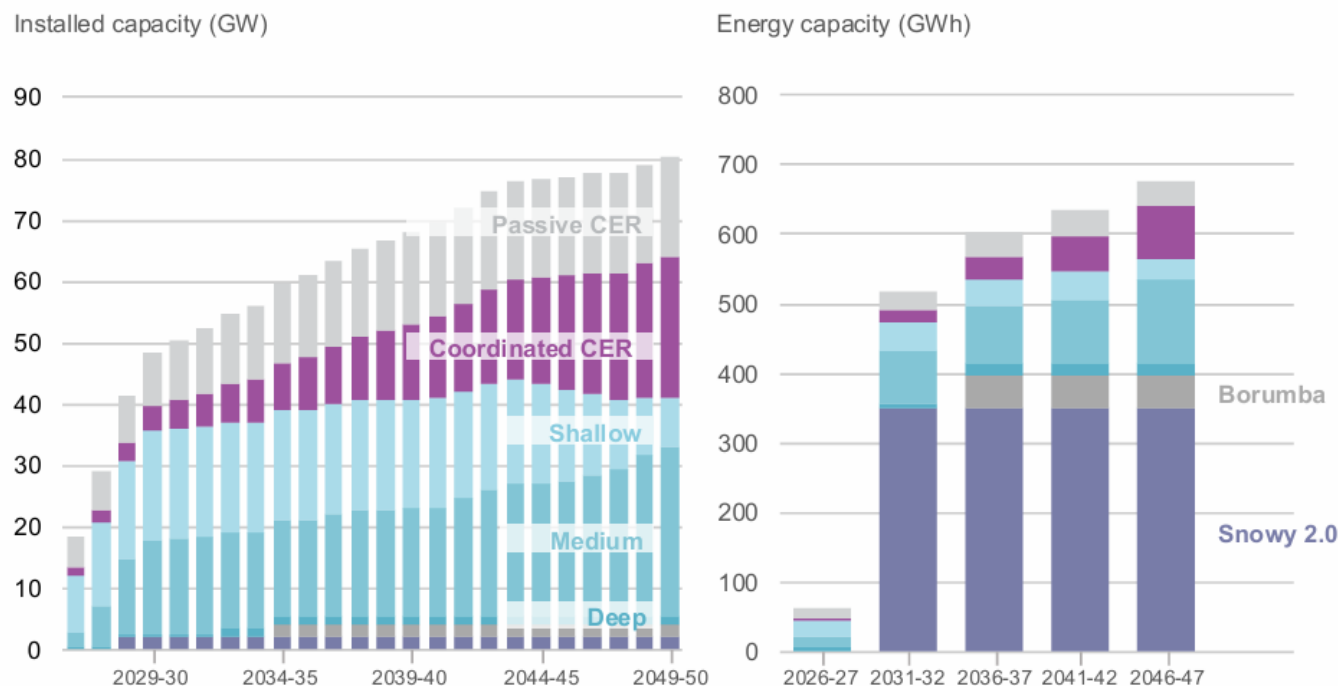
While a portion of this growth is expected to occur through passive consumer resources, an increasing share is projected to be delivered through coordinated CER capable of responding to market and operational signals⁶. Coordinated resources can include both an aggregation of resources that are centrally controlled, and also resources that are being optimised for an individual consumer using an optimisation protocol that is common across a fleet, which can result in the fleet being coordinated in effect. The ISP also projects growth across shallow, medium and deep storage⁷ resources, reflecting an increasingly diverse and flexible storage fleet.

Collectively, these trends indicate that a growing proportion of system capability will be delivered by distributed and potentially price responsive resources, increasing the importance of visibility arrangements that support accurate forecasting, efficient dispatch and effective power system operation.

⁵ AEMO, 2026 (ISP, see page 41, at <https://www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2026-integrated-system-plan-isp>).

⁶ Refer to 'coordinated CER storage' in **Error! Reference source not found.**

⁷ *Shallow storage*: Storage capable of dispatching electricity for less than four hours, typically batteries. *Medium storage*: Storage capable of dispatching electricity for four to twelve hours, including batteries, pumped hydro and other emerging technologies. *Deep storage*: Storage capable of dispatching electricity for more than twelve hours, used to firm renewable energy over extended periods.

Figure 4 Projected storage installed capacity and energy capacity, NEM (2026-27 to 2049-50, Step Change)

Changing characteristics of C&I demand

C&I facilities are also becoming more flexible and operationally diverse. Large loads may alter consumption in response to wholesale prices, contractual demand-response arrangements, production requirements, behind-the-meter generation or storage, and other operational constraints. Responses may range from relatively regular patterns that can be reflected in AEMO's operational demand forecasts to infrequent but material changes during periods of high prices, tight system conditions or heightened operational risk.

For example, alumina smelters can currently provide 1 GW of demand response, with significant further flexibility anticipated as the alumina refining process is electrified and competition for energy intensifies⁸. These types of resources have historically participated through mechanisms such as RERT, with other forms of C&I participating through the Wholesale Demand Response Mechanism (WDRM) or providing demand response for market participants.

As C&I capability grows and becomes more dynamic, visibility of intended response will become increasingly important to support accurate forecasting, efficient dispatch and informed operational decision-making.

1.2.2 Problems materialise when there is coordination, coincidence and lack of visibility

The visibility challenge associated with unscheduled PRR is expected to become more significant as these resources grow in scale, become more coordinated, and respond more dynamically to wholesale market conditions. Price responsiveness does not, of itself, create an operational or market efficiency problem. In many cases, small, dispersed or predictable responses can be reflected in operational forecasting or managed through existing market processes. The concern arises where price

⁸ Rennie Advisory, 2026, *Smelting Point (Australia's Critical Window for Energy Market Reform during the Energy Transition)*, at <https://aluminium.org.au/news/smelting-point-australias-critical-window-for-energy-market-reform-during-the-energy-transition/>.

responsive behaviour becomes material to market or operational outcomes but is not sufficiently visible to AEMO or market participants ahead of time.

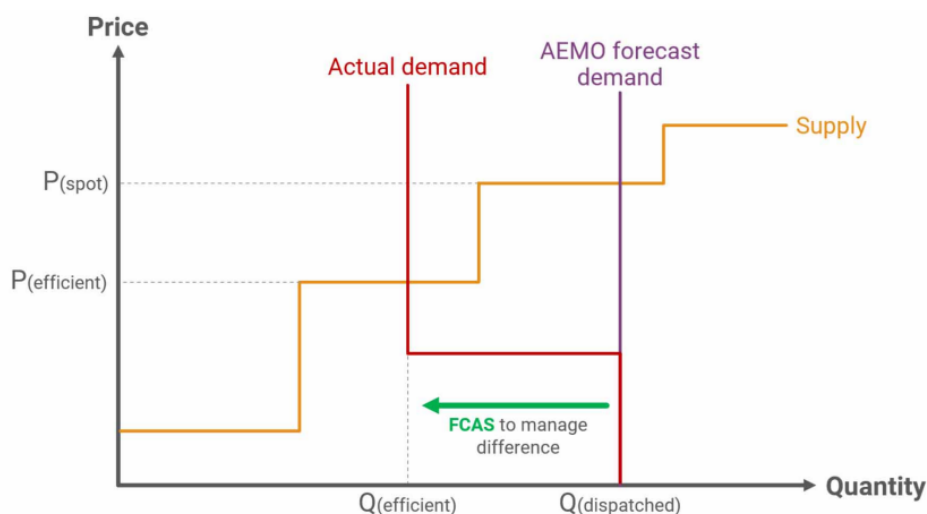
This issue is most likely to arise where three conditions occur together. First, where resources are coordinated to such an extent that they become material in size and response, either through direct control by an aggregator, retailer or other service provider, or through common optimisation approaches that result in similar behaviour across many individual devices or sites. Second, responses may be coincident across different portfolios, resource classes or regions, particularly during high-price or operationally challenging periods. Third, responses may occur at the same time as other sources of forecast error, including rooftop solar variability, weather-driven demand changes, outages or network constraints.

When these conditions align, the aggregate response can materially affect the supply-demand balance even where individual resources are small or dispersed. Without sufficient visibility of intended behaviour, it can be difficult to distinguish price responsive behaviour from other drivers of forecast error, or to determine how that behaviour should be reflected in pre-dispatch, dispatch, reserve assessments and operational decisions. This can reduce the accuracy of market signals and increase the risk that dispatch and operational decisions are made with an incomplete view of expected demand and resource availability.

These effects can ultimately increase costs for consumers. Forecast error can contribute to inefficient dispatch, less efficient commitment or decommitment decisions by market participants, higher wholesale prices, additional requirements for essential system services, larger or more frequent reserve procurement, and avoidable operational interventions. The consumer benefits of improved visibility therefore depends on whether additional information enables AEMO and market participants to make better decisions, and whether those benefits outweigh the costs of collecting, providing and using that information.

This is consistent with the issues identified by the NEM Review and the AEMC's *Integrating Price Responsive Resources into the NEM* (IPRR) final rule determination. Both processes recognised that increasing volumes of unscheduled PRRs may affect market and system outcomes while remaining outside the scheduling arrangements that support efficient dispatch and price formation. **Figure 5** below, which was included in both reports, illustrates how forecast error associated with unscheduled price responsive behaviour can lead to inefficient dispatch outcomes.

Figure 5 Illustration of market inefficiencies from forecast inaccuracy



Source: AEMC, 2024, *Integrating price-responsive resources into the NEM Final Determination*, at <https://www.aemc.gov.au/rule-changes/integrating-price-responsive-resources-nem>.

1.2.3 The circularity problem

Price responsiveness is not new or inherently problematic. Scheduled participants routinely adjust their positions in response to pre-dispatch prices, and the market accommodates this through bids, rebids and central dispatch. For unscheduled price responsiveness, the issue is more specific: where material, coordinated PRR is not visible in a form that can be cleared against the price signal, AEMO and participants may have an incomplete view of the demand curve relevant to pre-dispatch and operational decision-making.

Circularity is most acute where forecasts are expressed only as fixed quantities. If AEMO forecasts a reduction in demand that is conditional on a high price, including that reduction in the forecast may lower the expected price and weaken or remove the incentive for the response to occur. This creates uncertainty about whether the forecast response should be included, excluded or discounted.

The issue is reduced where information is provided as a price-quantity relationship rather than a fixed quantity forecast. A price-quantity pair identifies the response expected at a given price and is, in effect, a demand curve. Clearing against the curve allows the market to identify a consistent price and quantity, rather than assuming a fixed response that may no longer occur once the price changes.

However, price-quantity information will not fully resolve the circularity issue unless it is incorporated into the bid stack or otherwise treated as a dispatch-integrated input. This may not be appropriate at the outset, given uncertainty about the level of response that will materialise and the absence of strict real-time conformance obligations for visibility-only resources. A proportionate framework should therefore seek to collect accurate quantity and price information to improve pre-dispatch sensitivities, forecasting and participant decision-making, while allowing closer dispatch integration to evolve where information is sufficiently accurate, material and operationally reliable.

1.2.4 What an effective framework needs to achieve

The issues described above show why additional visibility is needed as unscheduled price responsive behaviour increasingly affects forecasting, price formation, dispatch and operational decision-making. Current arrangements provide limited visibility of some resources that may become material when coordinated across portfolios, occur at the same time as other price responsive behaviour, or coincide with other sources of forecast error such as rooftop solar variability.

The Market Visibility Framework is intended to close this gap by establishing proportionate arrangements for determining when additional information is needed, what information would be decision-useful, and how it should be incorporated into market and operational processes. This would allow obligations to be targeted to circumstances where improved visibility is likely to benefit consumers, while avoiding unnecessary requirements for resources whose behaviour is small, predictable or already captured through existing forecasting and related reforms.

The objective is to establish a proportionate Market Visibility Framework that preserves consumer participation and value while supporting accurate price signals, efficient dispatch and improved operational awareness. A fit-for-purpose framework should support:

- more accurate pre-dispatch signals, helping price responsive resources and energy-limited plant plan and manage capacity over daily time horizons, with benefits for those resources and broader market efficiency through improved price formation,

- more efficient dispatch outcomes for all market participants, including more efficient clearing prices, dispatched generation and use of FCAS,
- better operational decisions by AEMO and market participants, including improved plant management and reduced shared costs from avoidable interventions such as the RERT,
- less price volatility from unscheduled price responsive behaviour, compared with a no-visibility baseline, supporting more efficient pricing in financial markets, and
- greater certainty about demand-side participation, supporting more efficient long-term planning outcomes, including avoided or deferred network and utility-scale investment.

2 What has AEMO been tasked with doing?

2.1 NEM Wholesale Market Settings Review background

In November 2024, the Australian Government announced a review of the NEM wholesale market settings (NEM Review). The Terms of Reference tasked an independent expert panel (the Panel), supported by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW), with providing recommendations on how best to shape the future of the NEM to ensure it promotes investment in firmed, renewable generation and storage capacity following the conclusion of Capacity Investment Scheme (CIS) tenders in 2027.

The Panel published its final report on 16 December 2025. In December 2025, Energy Ministers (except Queensland) agreed in principle to the core recommendations, which included the implementation of a mandatory framework for the visibility and participation in dispatch of PRR. The framework is to be established through a Ministerial Rule, including any necessary changes to the National Electricity Law (NEL) or National Electricity Rules (NER, Rules).

Energy Ministers tasked AEMO, in consultation with industry and consumer representatives, to develop a framework that:⁹

- defines fit-for-purpose visibility modes and their adoption into operational forecasting,
- establishes thresholds for mandatory participation, and
- provides advice on consumer benefits and implementation pathways.

AEMO is required to provide recommendations to Ministers by December 2026, noting the NEM Review's recommendation that the framework enable full implementation by 2030.

2.2 Recommended framework parameters

The NEM Review Panel determined the absence of a fit-for-purpose visibility mode is a structural gap in the current market design. To address this, the Panel's recommended visibility modes would seek to provide the system operator with advance notice of expected demand reductions without imposing five-minute forecasting or dispatch obligations.

The Panel supported a tiered visibility approach that:¹⁰

- recognises diversity in business models, operating cycles and flexibility,
- avoids imposing obligations that could undermine innovation,

⁹ See Recommendation 2A, Independent Review Panel (2025), *National Electricity Market wholesale market settings review final report*, available at <https://www.dcceew.gov.au/energy/markets/nem-wms-review>

¹⁰ Independent Review Panel (2025), *National Electricity Market wholesale market settings review final report*, see page 99, available at <https://www.dcceew.gov.au/energy/markets/nem-wms-review>

- enables AEMO to access relevant operational data (for example, typical demand profiles, expected curtailment capacity) without imposing real-time participation requirements, and
- focuses on achieving practical improvements in market transparency and forecasting accuracy.

Through its investigation and engagement with stakeholders, the Panel developed the following parameters and initial thresholds which are to inform the development of the framework¹¹.

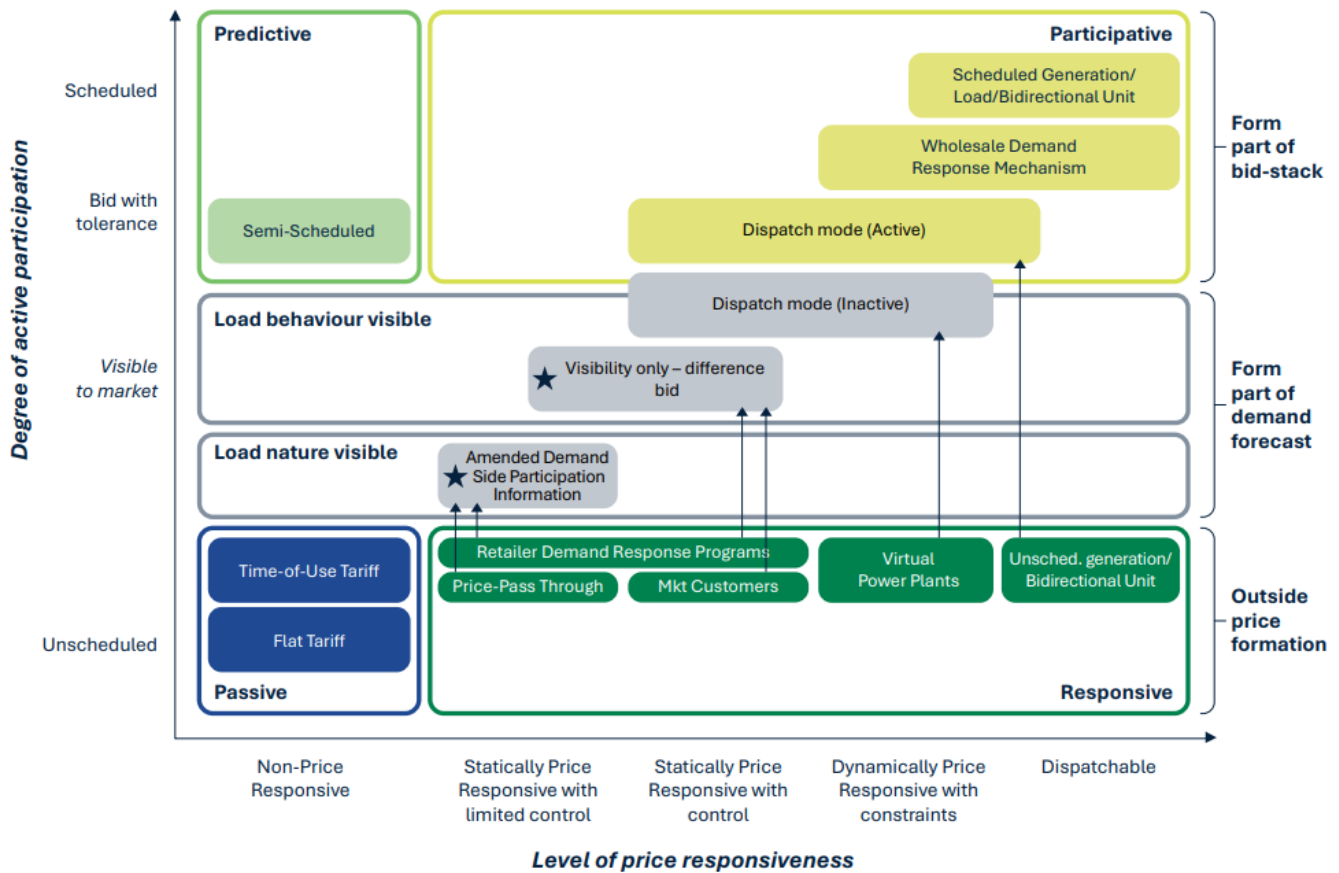
Table 2 Price responsive resources parameters and initial thresholds recommended by Review Panel

Category	Definition	Characteristics	Participation requirement
1. Portfolio aggregations of small-scale storage	Portfolio aggregations of small-scale storage (without co-located load) that in aggregate exceed the NER's bidirectional unit (BDU) registration threshold (>5 MW).	Dynamically price responsive, capable of providing accurate 5-minute load forecasts and remote control enabled demand response.	Must either: • Participate in IPRR dispatch mode (active); or • Participate as bidirectional units.
2. CER portfolio aggregations	CER portfolio aggregations with remote automated control and an aggregated capacity exceeding the NER's scheduled generation registration threshold (>30 MW).	Dynamically price responsive, capable of providing reasonably accurate 5-minute forecasts.	Must participate in IPRR dispatch mode (inactive). Aggregations below the threshold must provide regular information to AEMO identifying all loads subject to such arrangements.
3. Large industrial and commercial loads	Large industrial and commercial loads with aggregated capacity of price responsive load across their portfolio that exceeds the NER's scheduled generation registration threshold (>30 MW), including those operating under price contingent demand response contracts.	Generally, statically responsive, facing barriers to participating in central dispatch or meeting compliance obligations of available mechanisms.	Must either: • Provide load-intention data to AEMO via a dedicated visibility-only difference-bid mode; or Participate through the WDRM.
4. Retailer linked small loads	Retailers offering pool-price pass-through arrangements or price-contingent demand response contracts, where the aggregated capacity of price responsive load is below the scheduled generation registration threshold (<30 MW).	Varied ability to respond to price, not well suited to meet dispatch and compliance obligations of available mechanisms.	Must provide regular information to AEMO identifying all loads subject to such arrangements.

The effect of these measures is intended to take resources that affect price formation but are currently outside of dispatch and make them visible to the market, as illustrated in the figure below.

¹¹ Independent Review Panel (2025), *National Electricity Market wholesale market settings review final report*, see Table 2 on page 102, at <https://www.dccew.gov.au/energy/markets/nem-wms-review>.

Figure 6 NEM Review Panel's intention to make hidden price responsive resources visible and participative



Source: Independent Review Panel (2025), National Electricity Market wholesale market settings review final report, page 98, at <https://www.dccew.gov.au/energy/markets/nem-wms-review>.

2.3 Developing a market visibility framework

In response to Ministers' request for a fit-for-purpose framework, including advice on consumer benefits and implementation pathways, AEMO is undertaking a first-principles design process. This process considered the findings of the NEM Review and the AEMC's assessment of proposed visibility modes under the IPRR rule change, including the work of the AEMC Technical Working Group on visibility modes, incentives and implementation considerations.

AEMO applied the design principles highlighted in **Figure 7** to guide development of the framework.

Figure 7 AEMO framework design principles

- 
1. Consumer value: Visibility information should deliver direct and tangible consumer benefits, with costs proportionate to those benefits.
- 
2. Minimum data: The framework should only require the minimum viable data to improve forecast accuracy and maximise the use of existing data to the greatest extent possible.
- 
3. Materiality: Materiality and market impact should determine whether obligations apply and what form they take.
- 
4. Data compliance: The framework should preserve data privacy and confidentiality, complement parallel reforms, and avoid duplication or inconsistency.
- 
5. Adaptable: The framework should be adaptable to changes in market conditions, technology capability and policy settings.
- 
6. Competition and equity: The framework should enable innovation and competition, while ensuring consistency across substitutable resource types.

To support its assessment and design of an initial straw-person for the framework, AEMO identified 10 key building blocks, as shown in **Figure 8** below. These building blocks provide a structured way to develop the framework by breaking the design task into its core components, including the resources to be captured, the purpose of visibility information, the type and timing of data required, the mechanism for providing that information, and the assurance and accountability arrangements needed to make it useful.

This enabled AEMO to compare options consistently across different resource classes, test trade-offs, identify dependencies with parallel reforms, and progressively refine the framework from broad design principles into practical visibility and participation modes.

Figure 8 Framework building blocks

1 Resource responsiveness classification	Defines what resources are in scope and how they are categorised and grouped to assign visibility objectives and obligations that are based on capability rather than asset type.	6 Thresholds & temporal application	Sets the conditions under which obligations apply (e.g. by size, materiality or system conditions), allowing options to target resources that materially impact market/system outcomes.
2 Visibility purpose & decision-use	Specifies the operational and/or market decision the visibility is intended to support, ensuring each option is anchored to a clear use case rather than collecting data without purpose.	7 Participation channel	Determines how obligated parties provide visibility (e.g. use of existing data, reporting, visibility-only mode, dispatch participation) and system needs (e.g. DSO/DOEs) are applied.
3 Data type	Outlines the minimum set of data (e.g. standing data, intent, telemetry) required to meet the visibility objective, allowing each option to scale requirements in line with benefits	8 Assurance: Conformance & data accuracy monitoring	Defines how the accuracy and quality of provided data is monitored, incentivised and enforced.
4 Data granularity, cadence & latency	Determines how detailed, how often, and how quickly data must be provided, enabling options to balance operational usefulness with proportionality and cost.	9 Accountability: Obligated parties	Identifies which entity is responsible for compliance and data provision, ensuring each framework / option is enforceable and aligned with coordination of the underlying behaviour.
5 Data provision & exchange mechanism	Defines how data is submitted and exchanged (e.g. portal, API, telemetry feeds), shaping the practicality and implementability of the frameworks design	10 Governance & change control	Codification of roles and responsibilities and how the framework evolves, including oversight and update mechanisms, to ensure its design is clear but adaptable if necessary.

3 What parallel reforms impact the MVF design?

AEMO's engagement with stakeholders through the development of this draft framework has highlighted the importance of coordinating the development of the Market Visibility Framework with broader reform landscape. AEMO has considered related reforms that may improve visibility, shape implementation or affect how information is collected and used. The framework should build on these arrangements where appropriate, avoid duplication, and ensure any visibility obligations are complementary, proportionate and practical. The table below summarises the key parallel reforms and their relevance to the MVF design.

Table 3 Parallel reforms and initiatives relevant to MVF design

Reform	Brief description	Relevance to MVF design
Integrating Price Responsive Resources into the NEM	Introduces voluntary dispatch arrangements, incentives, and monitoring for price responsive resources to improve their integration into scheduling, dispatch and market information processes.	Provides the closest existing mechanism for testing how bid, intent and telemetry information from PRRs can be submitted, validated and integrated into AEMO systems. The staged IPRR implementation and monitoring framework will be an important evidence base for determining which visibility obligations are practical, how information should be used in forecasting and pre-dispatch, and when dispatch-integrated participation may be more appropriate than visibility-only obligations under the MVF.
National CER Roadmap	A national reform program to support the safe, efficient and coordinated integration of consumer energy resources, including work on distribution system operator (DSO) roles, CER data sharing and transmission-distribution coordination.	May provide complementary capabilities for CER visibility, forecasting, data governance and coordination between distribution and transmission operations. The MVF should align with these arrangements so that CER-related information is collected once where possible, shared through appropriate channels, and used consistently by AEMO, networks and market participants. The framework should also retain flexibility to address residual wholesale price-response risks where CER behaviour is not otherwise visible through reforms under the Roadmap. There is optionality in the MVF design to consider if and how the MVF provides visibility information to DSOs to support their functions, or if forecasting improvements delivered by DSOs mitigate the need for further visibility obligations for CER.
Operational Integration and Visibility (OIV) of Large Inverter-Based Loads	AEMO's proposed rule change to improve monitoring, communication, advance notice and operational visibility for large inverter-based loads such as data centres and other electricity-intensive facilities.	Could address a significant class of large flexible loads through telemetry, communication, advance notice and operational visibility requirements. If made, the OIV rule change may reduce the need for separate MVF obligations for large inverter-based loads, or form the primary pathway for operational visibility (mode 3) for those resources. The MVF should therefore focus on how OIV information can be used for market and operational purposes, and on any residual gaps for other large or price responsive load classes.

Reform	Brief description	Relevance to MVF design
Security of Critical Infrastructure reforms	Strengthens critical infrastructure risk management, incident reporting, governance and assurance arrangements, including for energy sector assets and associated information systems.	Informs the governance, security and resilience requirements for any MVF data and systems, particularly where visibility information is used in reliability, security or market operation functions. MVF design will need to consider data access, confidentiality, cyber security, assurance and incident response arrangements so that additional visibility improves operational outcomes without creating unmanaged information security or critical infrastructure risks.

Consultation questions

1. *Are there any reforms stakeholders see as being key dependencies or antecedents for the Market Visibility Framework? Are there reforms/initiatives that should be informed by the Market Visibility Framework and information it collects? For example, should the Market Visibility Framework support the development of DSO capabilities, or should DSO functions be developed and their effects observed before committing to visibility obligations under the MVF?*

4 How AEMO has worked with stakeholders to develop the draft framework

4.1 Engagement approach

Energy Ministers tasked AEMO with developing the Market Visibility Framework in consultation with industry and consumer representatives. In response, AEMO established a structured engagement and co-design program to support development of the framework. The objective of the program has been to ensure the framework is informed by operational experience, consumer perspectives, implementation considerations and technical expertise from across the energy sector.

The engagement program has been designed as a multi-stage process, allowing stakeholders to progressively shape the development of the framework from the identification of the problem through to testing potential solutions and implementation approaches.

The process commenced with publication of the **Market Visibility Framework Approach Paper**¹² in May 2026. The purpose of the Approach Paper was to:

- test the nature and scale of the visibility challenge,
- seek early stakeholder perspectives on the problem the framework is seeking to address,
- identify key design principles and considerations,
- understand stakeholder views on implementation risks, consumer impacts and practical constraints, and
- inform development of potential framework options for further testing and consultation.

Building on the approach detailed in the Approach Paper, AEMO established the **MVF Stakeholder Advisory Group** and conducted a series of workshops and targeted engagement activities between May and July 2026¹³. These activities focused on testing emerging concepts, exploring alternative framework designs, identifying trade-offs and implementation challenges, and understanding areas of agreement and divergence amongst stakeholders.

AEMO has sought to progressively develop and refine the framework through stakeholder input, using consultation findings to challenge assumptions, test design options and identify areas requiring further consideration. The draft framework presented in this consultation paper reflects this iterative process and is intended to support broader stakeholder feedback before AEMO finalises its recommendations to Energy Ministers.

¹² AEMO, 2026, *Approach to policy framework development*, at <https://www.aemo.com.au/consultations/current-and-closed-consultations/market-visibility-framework-consultation>.

¹³ Meeting papers and minutes are at <https://www.aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/mvf-stakeholder-advisory-group>.

4.2 Feedback on the approach paper

AEMO published the Market Visibility Framework Approach Paper in May 2026 to seek early stakeholder views on the nature of the visibility challenge, the proposed approach to framework development, and the key issues that should inform future design work.

AEMO received two submissions to the approach paper,¹⁴ in which stakeholders generally supported AEMO's proposed objective of improving visibility of price responsive resources but emphasised the importance of developing a framework that is fit-for-purpose, proportionate and practical to implement.

The feedback received through the Approach Paper consultation formed the foundation for the subsequent co-design process undertaken with the MVF Stakeholder Advisory Group.

4.3 MVF Stakeholder Advisory Group

In May 2026, AEMO established the MVF Stakeholder Advisory Group to support AEMO co-design the framework, including strategic advice and testing of AEMO's proposed design and implementation approach. Given the broad range of stakeholders potentially impacted by the framework, AEMO established a group comprising market participants, consumer representatives, service providers and policy experts to test emerging concepts throughout framework development.

The Advisory Group's terms of reference are to:

- review and provide feedback on key design elements, reform options, and proposed frameworks,
- identify and advise on policy trade-offs and design considerations, practical implementation challenges and risks, and impacts on different stakeholder groups,
- provide input on engagement approaches and industry readiness, and
- support AEMO in developing a balanced framework suitable for Ministerial consideration.

The Advisory Group consists of 14 members appointed by AEMO with representation from market participants (gen-tailers, aggregators and larger energy users), consumer representatives appointed from AEMO's Consumer and Community Reference Group (CCRG) and industry experts and service providers with relevant technical or policy expertise. Additional representatives from government (DCCEEW) and market bodies (AEMC, the Australian Energy Regulator [AER], and the Australian Renewable Energy Agency [ARENA]) also participate as observers. Industry members were appointed based on their relevant expertise in CER integration, demand response, and management of large loads, as well as their experience engaging on relevant and interrelated reforms. Consumer representatives were appointed through an expression of interest process conducted with AEMO's CCRG. Stakeholders can access meeting papers and minutes on AEMO's website¹⁵. The Advisory Group was not tasked with reaching consensus positions. Rather, it was intended to provide a forum to identify trade-offs, risks, implementation considerations and areas where stakeholder views diverged.

¹⁴ Submissions at <https://www.aemo.com.au/consultations/current-and-closed-consultations/market-visibility-framework-consultation>.

¹⁵ At <https://www.aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/mvf-stakeholder-advisory-group>.

AEMO chaired a series of design workshops between May and July 2026, which considered AEMO defined building blocks outlined in Section 2 that would underpin possible framework designs and tested options for how these building blocks could apply to different types of price responsive resources.

4.4 Bilateral engagement

In addition to the above, throughout the initial design period, AEMO has held over 20 bilateral discussions and targeted engagement activities with market participants, consumer representatives, industry associations, market bodies and with other stakeholder forums, such as the NEM Wholesale Market Settings Review Industry Reference Group (IRG). These sessions have provided AEMO with additional opportunities to test, inform, and refine design concepts, with the draft framework presented in this consultation paper reflecting both stakeholder feedback received to date and areas where further consultation is sought.

4.5 What AEMO heard and how it shaped the framework

Through the design process, many key themes emerged regarding the challenges with developing visibility modes and obligations. Advisory Group and stakeholder feedback emphasised that price responsive resources vary significantly in how they are coordinated, their capability to integrate with AEMO systems, and the extent to which their behaviour can be predicted or controlled. Stakeholders also noted the uncertainty created by a rapidly evolving market, technology and policy landscape.

The Advisory Group's main points of feedback are summarised as follows:

- **Tailored design:** a one size fits all approach will not be effective given the different modes of control and capabilities to integrate with AEMO systems, particularly between C&I and CER – the framework will need tailored solutions in terms of what information is provided and who is required to provide it to ensure obligations are proportionate and do not unduly restrict product offerings to consumers.
- **Iterative implementation to validate value:** the framework should build evidence through operational experience before detailed obligations are activated, so requirements can be targeted to resources and information types that demonstrably improve forecasting, price formation or operational outcomes.
- **Complement parallel reforms:** the framework should align with related reforms and avoid duplicating obligations where those reforms already provide equivalent visibility, data-sharing or operational capabilities.
- **Focus on materiality:** materiality, at both the aggregate market and individual resource level, should be a key deciding factor, noting the framework design is challenged by seeking to manage an issue that has not yet manifested in the market and is not yet as significant as other forecast variables such as weather impacts on variable renewable generation.
- **Maximise use of existing data:** incremental improvements using existing data available today can support improvements in visibility and/or forecast accuracy, which can support both the overarching objective and any staged implementation approach.

- **Adaptive and future-focused design:** the MVF should provide clear long-term direction and a broad policy framework to manage the impact of price responsive resources, rather than point in time regulation to remain adaptable to evolving technologies, participation models and market conditions.

The table below highlights how those key themes emerging from discussions with the Advisory Group have directly informed the development of the draft framework.

Table 4 Summary of Advisory Group feedback and how it is reflected in draft framework

Advisory Group feedback	How feedback is reflected in the draft framework
Tailored design	Development of four visibility modes, recognising that different resource classes require different information, obligations and implementation approaches.
Iterative implementation to validate value	Introduction of the phased implementation pathway, including trials, monitoring, stage-gates and consultation before mandatory obligations are activated.
Complement parallel reforms	Strong alignment with IPRR, the National CER Roadmap, OIV rule change proposal and other related reforms, with obligations intended to complement rather than duplicate existing frameworks.
Focus on materiality	Use of thresholds, visibility modes and evidence-based activation criteria to ensure obligations are proportionate to impact.
Maximise use of existing data	Observational Visibility (Mode 1) and Phase 1 activities prioritise improvements using existing data and forecasting capability before introducing new obligations.
Adaptive and future-focused design	Introduction of progressive visibility modes and review mechanisms that allow visibility requirements to evolve as technologies, participation models and market impacts develop.

4.6 Matters for further consultation

While the Advisory Group and stakeholder feedback helped shape the framework presented in this paper, several design questions remain open and are the subject of this consultation. This paper includes consultation questions throughout on which AEMO is seeking feedback from stakeholders.

5 What is the draft framework?

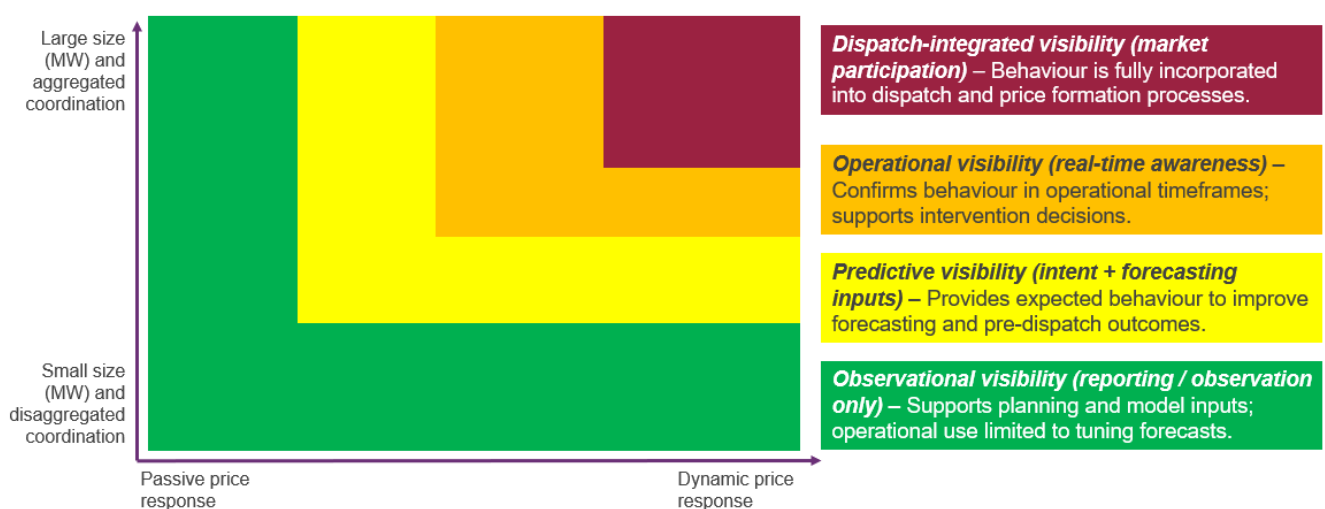
AEMO has developed the following draft Market Visibility Framework to seek feedback from stakeholders. The draft framework is comprised of two components:

1. **Visibility and participation modes**, which define the kinds of information that may be collected from unscheduled PRRs and how that information could be used in forecasting, pre-dispatch, operational visibility or dispatch-integrated participation.
2. **Implementation pathway**, which explains how the modes would be tested, activated and scaled through evidence-based stage gates.

5.1 Visibility and participation modes

The draft framework introduces three modes of visibility – **observational**, **predictive**, and **operational** – that address different forecasting, market and operational needs. A fourth mode – **dispatch-integrated** – signals the boundary of the visibility framework and where PRRs may need to participate in the market through existing mechanisms. The visibility modes form a continuum of increasing integration, with each mode and the associated obligations additive to the preceding mode. They do not prescribe a mandatory sequence through which a resource must progress. Instead, they describe the visibility tools available to AEMO, with the implementation pathway outlined in Section 5.2 determining when and how those tools may be activated. The applicable mode would be determined by the decisions the information is intended to support, the materiality and predictability of the behaviour, the information already available, and whether the expected benefits justify the costs. The figure below provides an illustration of this continuum and its stratification into the different visibility modes.

Figure 9 Visibility and participation modes



5.1.1 Overview of different visibility modes

The first mode is **observational visibility (green zone)**. It applies where price responsive behaviour is of a small scale, predictable or uncoordinated, and can be managed through aggregate modelling rather than resource-specific obligations. This mode relies primarily on information already available to AEMO and supports further development of forecasting capabilities, so statistically significant behaviour can be identified and incorporated into AEMO's operational forecasting systems, and processes including Short Term Projected Assessment of System Adequacy (ST PASA), pre-dispatch and five-minute forecasts used to set dispatch targets.

Data requirements are limited to aggregated, anonymised portfolio data (by region, tariff type, resource type), derived primarily from existing datasets and targeted sampling. Reporting obligations are periodic and low-burden, and no operational or dispatch-related obligations are imposed. This mode recognises that for a large proportion of demand, detailed visibility (either of intentions or real time behaviour) is neither necessary nor efficient. Where resources are large and dynamically responsive (i.e. responding to price signals in pre-dispatch/dispatch timeframes and responses depend on a range of variables such as market conditions, portfolio management and load requirements) such that their behaviour is not sufficiently predictable and their impact, in aggregate, can materially compromise market efficiency and/or secure system operation, visibility obligations under Modes 2 and 3 would apply.

The second mode is **predictive visibility (yellow zone)**. It applies as resources become more coordinated, responsive or aggregated, and where forward-looking information is needed to improve operational forecasts and pre-dispatch outcomes. Participants would provide information in relevant operational timeframes, from seven days ahead through to dispatch depending on the resource type and applicable obligations. AEMO would validate the accuracy of this information and apply derating where needed so it remains credible and improves forecast performance over time.

A key feature of this mode is the introduction of explicit performance monitoring, whereby forecast accuracy is measured against observed behaviour using defined statistical metrics. While Mode 2 does not impose strict conformance obligations equivalent to those for scheduled resources, it introduces credible accountability mechanisms. Persistent divergence between forecast and actual response indicates that the resource is either more material or less predictable than initially assessed. AEMO will evaluate accuracy of information to determine how and to what extent it is integrated into forecasts.

Where accuracy thresholds are breached over a sustained period, this may trigger reassessment of the appropriate visibility requirements. Accuracy thresholds can also commence low as the market develops capability, with higher accuracy obligations introduced over time. This ensures that predictive visibility remains decision-useful, avoids the creation of non-credible information signals within AEMO's forecasting processes and any obligations are cost effective and deliver net benefits to consumers.

The third mode is **operational visibility (orange zone)**. It applies where resources are sufficiently significant in scale, responsiveness or operational impact that AEMO and network operators require not just operational intentions for forecasting purposes, but also near real-time information to support dispatch decisions, control room situational awareness and power system security. This may include telemetry, availability, operational status and, where appropriate, controls such as ramp-rate requirements to manage system security risks.

Operational visibility forms the natural interface with emerging participation frameworks, particularly IPRR. While MVF does not prescribe market participation, it establishes the conditions under which participation becomes operationally feasible and necessary.

The fourth mode is **dispatch-integrated visibility (red zone)**. It represents the dispatch-participation boundary at which visibility alone is no longer sufficient to manage market or system impacts. Where resources are sufficiently large, continuously responsive or material in aggregate, they may need to participate through existing market mechanisms, such as the WDRM, Voluntary Scheduled Resource arrangements, Scheduled Load or Bi-Directional Unit participation.

To support these modes, in particular modes two and three, AEMO proposes to develop a separate price responsive pre-dispatch sensitivity (see Section 5.1.3) as a practical way to provide better information to the market while managing the circularity problem described in Section 1.2.3.

5.1.2 Framework building blocks

This section sets out the building blocks that define how each visibility and participation mode would operate in practice. The building blocks provide a common structure for comparing the four modes, including the resources they are intended to capture, the purpose of the information collected, the type and timing of data required, the mechanism for providing that information, and the applicable accountability and assurance arrangements.

The tables below should be read as draft design parameters and a target state rather than final obligations applicable from commencement of the framework. They are intended to support stakeholder feedback on whether the proposed modes are practical, proportionate and capable of delivering decision-useful information to meet the broader MVF objective.

Mode 1 – Observational visibility

Building block	Mode 1
1. Resource responsiveness classification	Applies to low-impact or uncoordinated price responsive behaviour that is best understood through aggregate statistical analysis rather than resource-specific obligations. This may include small individual participants, uncoordinated CER, time-of-use or static tariff responses, and other cohorts where behaviour can be observed and forecast at an aggregate level.
2. Visibility purpose & decision use	The purpose of this mode is to improve AEMO's statistical understanding of aggregate price responsive behaviour so it can be reflected in forecasting and planning processes where appropriate. Behaviour that is statistically substantial and not already captured in AEMO's base forecast may be included in a price responsive forecast or pre-dispatch sensitivity once AEMO has validated the relevant data and forecasting value.
3. Data type	Uses existing and enhanced standing or historical datasets, including metering data, DER Register, Market Settlement and Transfer Solution (MSATS), Demand Side Participation Information Portal (DSPIP), retail tariff information, aggregation status, cohort trends and targeted sampling where additional calibration is needed.
4. Data granularity, cadence & latency	Periodic and aggregate reporting, with cadence determined by the data source and forecasting value. This may include annual, quarterly or monthly updates.
5. Data provision & exchange mechanism	Existing AEMO and participant data channels would be used first. Supplementary information requests would only be made where existing data is insufficient to calibrate or validate forecasting models.
6. Thresholds & temporal application	Applies where AEMO identifies statistically significant aggregate behaviour that is relevant to forecasting or planning outcomes.
7. Participation channel	No new participation pathway is required.
8. Assurance and accuracy monitoring	Informational validation only. AEMO would monitor aggregate forecast accuracy and data quality, but no resource-specific conformance obligations would apply.
9. Accountability: obligated parties	Existing parties responsible for relevant data provision, including under DSPIP and MSATS arrangements.

Building block	Mode 1
10. Governance & change control	Existing information gathering and provision obligations under the NER, with AEMO's IPRR monitoring and reporting functions providing transparency on forecast accuracy.

Mode 2 – Predictive visibility

Building block	Mode 2
1. Resource responsiveness classification	Applies to coordinated, semi-coordinated or otherwise material resources or portfolios whose expected behaviour can influence pre-dispatch outcomes, price formation or operational forecasts. This may include CER aggregations, virtual power plants and commercial or industrial demand response arrangements (excluding those already participating in market mechanisms under Mode 4). <i>A rules or regulatory instrument-based definition could capture resources where a person other than the consumer can, in response to actual or forecast prices, directly or indirectly determine, direct, control or materially influence the operating behaviour of energy resources located at more than one connection point. This may occur through:</i> <i>(i) a common optimisation or coordination process; or</i> <i>(ii) decisions made having regard to the aggregate operation or commercial outcome of those energy resources, or other resources for which the person is financially responsible.</i>
2. Visibility purpose & decision use	The purpose of this mode is to provide forward-looking information about expected resource behaviour so AEMO can improve the accuracy of pre-dispatch signals (see Section 5.1.3), ST PASA assumptions and longer-term forecasting assumptions. Once the information has been validated, or appropriately derated where uncertainty remains, it may inform a price responsive pre-dispatch sensitivity. AEMO may also use high-confidence information to calibrate five-minute forecasts where this improves forecast accuracy and operational decision-making.
3. Data type	Data requirements may vary by resource type and capability. In principle, resources in this mode would provide structured forward-looking information such as quantities, availability and resource composition. Where appropriate, this could take the form of bid-based information, price responsive quantities, or differences relative to an agreed baseline. AEMO intends to use Phase 1 of the implementation pathway to test which data types are practical, accurate and useful, while retaining flexibility so final requirements align with the characteristics of each resource class and can be integrated effectively into AEMO's forecasts.
4. Data granularity, cadence & latency	Information would be provided across relevant pre-dispatch timeframes, with updates required where material changes in expected behaviour occur. Obligated parties would also be required to review and update information after AEMO issues relevant market notices (i.e. LOR and MSL).
5. Data provision & exchange mechanism	Information would be provided through existing or adapted AEMO submission channels where practicable, such as EMMS Web Portal, the NEM Dispatch Bidding API, Participant File Server or FTP, B2B hub, or through standardised templates where a simpler approach is fit for purpose.
6. Thresholds & temporal application	Would apply to resources or portfolios with 30 MW or more of nameplate responsive capacity within a NEM region. A rules or regulatory instrument-based test should focus on resources that have demonstrated price responsive behaviour, rather than resources that are merely technically capable of responding. For example, the test could capture a resource that: <i>(a) is capable, under normal operating conditions, of varying net consumption or net export in response to spot prices (in dispatch or pre-dispatch) by at least 30 MW; and</i> <i>(b) in the previous financial year, exhibited an average verified price response of at least 30 MW, calculated by averaging the three largest changes in net consumption or net export for each relevant response event.</i>
7. Participation channel	Mandatory obligations could be given effect through an unscheduled resource classification, similar in concept to the scheduled load classification. Obligations would be limited to providing the information required under Building Block 3 – Data type, rather than imposing full scheduling or dispatch participation requirements.
8. Assurance and accuracy monitoring	AEMO would monitor submitted intent against observed behaviour after the event. Information provided under the framework would not be subject to the same conformance standard as scheduled resources. Instead, AEMO would assess accuracy to determine how, and to what extent, the information should be

Building block	Mode 2
	incorporated into a price responsive pre-dispatch sensitivity. Accuracy requirements could commence low, then be increased over time as capability improves. Persistent poor-quality, inaccurate or misleading information may trigger review, escalation or other compliance responses.
9. Accountability: obligated parties	The obligated party would depend on the underlying resource or aggregation, although this would generally be the Financially Responsible Market Participant (FRMP) or registered service provider. The framework should retain flexibility to designate the party best placed to provide accurate, timely and usable information. See 6.2 for further discussion.
10. Governance & change control	Regulatory head of power contains overarching obligation to provide visibility information, with detailed obligations set out and triggered by AEMO guidelines. Section 5.2 below provides further detail on proposed staged implementation.

Mode 3 – Operational visibility

Building block	Mode 3
1. Resource responsiveness classification	Applies to highly flexible, coordinated or controllable resources whose behaviour may materially affect real-time operational outcomes, power system security or the need for operational interventions. This may include data centres, large industrial loads and other resources with significant and rapidly variable demand or export capability.
2. Visibility purpose & decision use	The purpose of this mode is to provide AEMO, network operators and control room personnel with timely operational information so they can understand actual resource behaviour, maintain situational awareness and make informed real-time operational decisions.
3. Data type	Data requirements would depend on the resource type, level of flexibility and whether equivalent operational visibility is already available through another framework. In addition to intended behavioural data, relevant information may include telemetry such as SCADA or SCADA Lite, operational status, available response capability, availability, constraint information, outage notifications, ramp-rate controls and material changes in operational capability. If required, these obligations can leverage existing technical requirements for 200 kilowatts (kW) – 5 MW distributed energy resources (DER), which once scaled across the fleet can provide for near real-time telemetry.
4. Data granularity, cadence & latency	Real-time or near real-time information, aligned with the operational decision or system security need the information is intended to support.
5. Data provision & exchange mechanism	Information would be provided through operational data channels that can integrate with AEMO systems, such as supervisory control and data acquisition (SCADA), SCADA Lite, telemetry application programming interfaces (APIs) or automated operational data exchanges.
6. Thresholds & temporal application	Applies the same coordination and materiality tests as Mode 2, but with a higher threshold of, for example, 100 MW or more of responsive capacity. The threshold is intended to capture resources whose scale and flexibility may create real-time operational visibility needs and would be developed further through Phases 1 and 2 considering outcomes from the AEMC's Final Determination on Access Standards Package 2 ^A and AEMO's OIV rule change request. ^B
7. Participation channel	Mandatory obligations could be given effect through an unscheduled resource classification, similar in concept to the scheduled load classification. Obligations would be limited to providing the operational data required under Building Block 3 – Data type, rather than requiring full scheduling or dispatch participation.
8. Assurance and accuracy monitoring	AEMO would apply availability and data-quality requirements appropriate to the operational use of the information. Telemetry performance and operational usefulness would be monitored, with missing, inaccurate or poor-quality information triggering operational review and, where appropriate, compliance or escalation processes.
9. Accountability: obligated parties	The obligated party would depend on the underlying resource or aggregation, although this would generally be the FRMP or registered service provider. The framework should retain flexibility to designate the party best placed to provide accurate, timely and usable information. See 6.2 for further detail.

Building block	Mode 3
10. Governance & change control	Regulatory head of power contains overarching obligation to provide visibility information, with detailed obligations set out and triggered by AEMO guidelines. Section 5.2 below provides further detail on proposed staged implementation.

A. Details of rule change process at <https://www.aemc.gov.au/rule-changes/improving-nem-access-standards-package-2>.

B. Details of rule change process at <https://www.aemc.gov.au/rule-changes/operational-integration-and-visibility-large-inverter-based-loads>.

Mode 4 – Dispatch integrated visibility

Building block	Mode 4
1. Resource responsiveness classification	Applies where visibility alone is no longer sufficient to manage material market or operational impacts. This may include resources that are capable of being scheduled, such as batteries without co-located load, or aggregations whose combined market impact materially affects the efficient and secure operation of the NEM.
2. Visibility purpose & decision use	The purpose of this mode is to integrate material resources into dispatch so their expected and actual behaviour is reflected through market participation, dispatch targets and price formation. This provides the highest level of visibility by aligning resource operation with existing scheduling, dispatch and conformance arrangements.
3. Data type	Information would be provided in the form required by the applicable market participation pathway, including bids, availability information and any other data required for scheduling, dispatch and settlement.
4. Data granularity, cadence & latency	Granularity, cadence and latency would be determined by the relevant participation pathway and associated scheduling, dispatch, telemetry and settlement requirements.
5. Data provision & exchange mechanism	Information would be provided through the existing or adapted AEMO systems used for the relevant participation pathway, such as EMMS Web Portal, the NEM Dispatch Bidding API, Participant File Server or FTP, and other approved operational or market data channels.
6. Thresholds & temporal application	Application to resource classes would depend on AEMO's assessment of aggregate market impact under its IPRR monitoring and reporting obligations, including whether unscheduled price responsive behaviour is materially affecting forecast accuracy, efficient dispatch, price formation or operational outcomes. This mode could apply to coordinated small-scale storage without co-located load where the aggregate coordinated capacity exceeds the NER bidirectional unit registration threshold of more than 5 MW.
7. Participation channel	Mandatory obligations would be given effect through the relevant market participation pathway, rather than through a visibility-only obligation. This may include participation through an existing or future scheduling, dispatch or registration mechanism.
8. Assurance and accuracy monitoring	Resources would be subject to the assurance, compliance and conformance arrangements that apply under the relevant market participation pathway, including scheduled or dispatch-integrated performance obligations where applicable.
9. Accountability: obligated parties	Accountability would sit with the registered or designated party responsible under the applicable participation pathway, which may include the plant owner, operator, aggregator, or financially responsible Market Participant depending on the resource and registration model.
10. Governance & change control	IPRR monitoring and reporting framework provides a framework to monitor the market-level cumulative impact of PRRs. AEMO's reporting will provide the basis for where obligations for scheduling or static price controls are required for the continued efficient and secure operation of the market. Section 5.2 Implementation Pathway below provides further detail on proposed staged implementation.

Consultation questions

2. *Do you consider that the proposed visibility modes are appropriately defined to capture the different types, materiality and operational characteristics of price responsive resources? In your response, please identify any aspects of the mode definitions that should be clarified, expanded or refined to ensure the framework is practical, proportionate and capable of providing decision-useful visibility information.*
3. *How can thresholds and coordination be defined with respect to size and coordination to ensure the intended resources are captured in a manner that is objective, consistent and equitable?*
4. *What would be an appropriate threshold to commence with to capture resources of a material size? Should MW thresholds initially be higher to capture only the most material resources and aggregations, before progressively lowering the threshold if adverse market impacts continue to be observed?*
5. *Should MVF obligations be assigned by reference to the relevant resource or aggregation, with the responsible party identified according to the nature of that resource (for example, the site operator, aggregator, retailer or financially responsible Market Participant, as specified in AEMO guidelines)? Or should the framework instead impose a broader obligation on registered participants to provide information about resources they control, coordinate or are financially responsible for, similar to the current Demand Side Participation Information arrangements? In your response, please comment on which approach would better support accurate, timely and practical information provision while maintaining clear accountability.*

5.1.3 Price responsive pre-dispatch sensitivity

AEMO proposes to develop a separate price responsive pre-dispatch sensitivity as a practical way to provide better information to the market while managing the circularity problem described in Section 1.2.3. Under this approach, AEMO's base pre-dispatch run would continue to provide the central price signal against which participants can plan their response, while the sensitivity would show how outcomes could change if observed or submitted price responsive behaviour occurs at material scale.

The sensitivity would not be used initially to set dispatch prices or replace the base pre-dispatch signal. Instead, it would provide additional decision-useful information to AEMO and market participants about the potential impact of price responsive behaviour on demand, prices, reserves and operational conditions. This would help participants understand the possible consequences of collective price response without automatically suppressing the price signal that may be needed to deliver that response.

Subject to stakeholder feedback, AEMO would develop and test the sensitivity during Stage 1 of the proposed implementation pathway outlined in Section 5.2 below. To do so, AEMO would seek to use existing data, voluntary information provision and trial data from candidate resource classes. Testing would focus on: whether the sensitivity improves market information; whether submitted information is sufficiently accurate to use; how information should be derated where accuracy is uncertain; and how the sensitivity can be published in a way that supports participant decision-making without undermining price signals.

Over time, if confidence in and accuracy of the sensitivity grows to performance levels equivalent to scheduled resources, it could progress to forming the basis for price clearing and dispatch.

Consultation questions

6. *Would a separate price responsive sensitivity in pre-dispatch provide better information to support participant decision-making without compromising the price signals against which participants are planning their response? Are there alternative approaches to managing the circularity problem while still providing better information to the market that AEMO should consider?*

5.2 Implementation pathway

The first component of the framework defines the visibility and participation modes that would be available to AEMO. The implementation pathway then determines when those modes would be tested, activated or scaled. This distinction is central to AEMO's proposal: the framework would establish enduring regulatory tools, while detailed obligations would only be activated where evidence shows they are necessary, proportionate and likely to deliver consumer benefits.

5.2.1 Why AEMO is proposing a phased implementation pathway

AEMO proposes a phased implementation pathway as the need for, and design of, visibility obligations depend on evidence about market impact, information quality, implementation cost and consumer benefits. The framework needs to be capable of responding to emerging risks from material price responsive resource behaviour, but should not impose detailed obligations before AEMO and stakeholders have tested whether the information can be provided, validated and used effectively in operational timeframes in a manner that improves market efficiency and operational decision-making and delivers value for consumers.

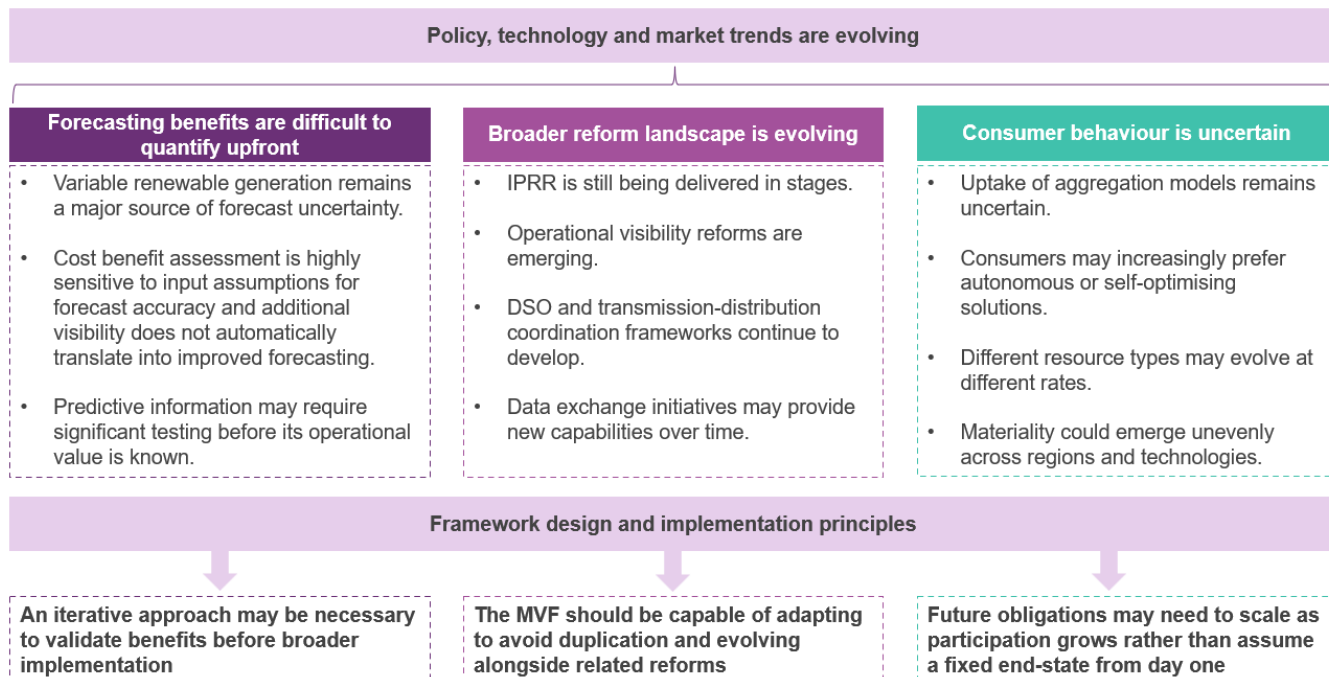
The pathway is therefore intended to build evidence before mandatory obligations are activated. In particular, it would allow AEMO to test whether additional visibility information materially improves forecast accuracy, dispatch efficiency, price formation, or operational awareness, and whether those benefits are likely to exceed the costs imposed on participants and consumers.

A phased pathway also recognises the uncertainty in the evolving market, technology and policy landscape. The scale, coordination and responsiveness of PRRs has evolved and will continue to evolve quickly as technologies and operations mature. At the same time, parallel reforms such as IPRR, the National CER Roadmap and OIV may deliver visibility or operational capabilities that affect the case for additional market visibility obligations. A staged approach allows the framework to remain proportionate, avoid duplication, and adjust as evidence emerges.

This does not mean the framework would be slow to respond. If monitoring or operational experience shows that unscheduled price responsive behaviour is materially affecting forecasting, dispatch, price formation or operational decisions, the framework would provide a clear pathway to activate, scale or refine obligations through evidence-based stage gates and consultation.

The figure below illustrates the key uncertainties the framework must be able to accommodate, and how those uncertainties translate into design principles for a phased implementation pathway.

Figure 10 Uncertainties and implications for implementation



5.2.2 What does a phased implementation pathway look like

Phase 1 – Capability development and validation

Phase 1 would focus on building the evidence base and operational capability needed to support any future visibility obligations. AEMO would first seek to maximise the value of existing data sources by improving its ability to identify, forecast and understand price responsive behaviour using information already available through current systems, market processes and participant data channels. During this phase, AEMO would enhance forecasting methodologies, develop and test price responsive pre-dispatch sensitivities, and evaluate what visibility measures can be translated into better forecasting, dispatch and operational outcomes, as well as identify which data types are most useful for decision-making.

Testing: In parallel, AEMO would seek to test aspects of Modes 2 and 3 (Predictive & Operational Visibility) in partnership with market participants for resource classes that are expected to have the greatest near-term or potential impact on market outcomes. This would involve testing information provision from key resource types, for example:

1. large C&I load that provides unscheduled demand response services,
2. large flexible C&I load that manages exposure to wholesale prices,
3. fleet of individually optimised resources that are de-facto coordinated from using common optimisation protocols, and
4. aggregated fleet of resources that are centrally dispatched by an aggregator.

In relation to fleet aggregations, Project Edge provided substantial insight with regards to the integration of distributed energy resources into the NEM, releasing its final report in 2023 which outlined a pathway for capability development and market integration¹⁶. Phase 1 would build on the learnings from Project Edge, helping AEMO and participants test practical

¹⁶ Project Edge Final Report, 2023, at <https://www.aemo.com.au/initiatives/major-programs/nem-distributed-energy-resources-der-program/der-demonstrations/project-edge>.

data provision arrangements at scale, across a broader range of resource types, and regions (or zones), as well as test operability with core AEMO forecasting systems together with broader interoperability and data exchange needs. This would inform the development of implementation guidelines ahead of any mandatory obligations applying, addressing detailed design issues such as data format (bid/quantity requirements), data cadence, accuracy thresholds and capability-based scaling pathways across obligations. These guidelines would be subject to mandatory public consultation requirements.

The expected outputs from Phase 1 are early forecasting improvements, tested data channels, draft implementation guidelines, and a stronger evidence base to determine whether future obligations are necessary, proportionate and likely to deliver consumer benefits.

Phase 2 – Deployment of predictive visibility obligations

Phase 2 would commence only once AEMO has demonstrated that visibility information can be effectively integrated into operational processes and is likely to deliver measurable benefits to forecasting, dispatch and market efficiency. By this stage, relevant parallel reforms should also be sufficiently mature for AEMO to assess whether market visibility framework obligations remain necessary and how they should interact with and complement those reforms.

AEMO would make this assessment in consultation with stakeholders, informed by monitoring under the IPRR framework, operational experience from Phase 1 trials, stakeholder feedback, and an assessment of whether additional visibility information is likely to deliver net consumer benefits. Before any mandatory Mode 2 obligations take effect, AEMO would consult publicly on the proposed implementation guideline.

The stage gate assessment would consider whether there is evidence of material or emerging market impact from unscheduled PRR, including forecast error, inefficient pre-dispatch outcomes, price volatility, reserve management impacts, intervention risks or other operational consequences that are not adequately addressed through existing forecasting improvements or parallel reforms. AEMO would also assess whether the proposed information has been tested, can be provided at a reasonable cost, can be integrated into AEMO systems, and is likely to improve forecast accuracy or market decision-making.

AEMO would publish evidence relied on to support activation, the proposed resource classes and thresholds, information requirements, expected implementation timeframes, and any transitional arrangements. Stakeholders would have an opportunity to comment on whether the proposed obligations are necessary, proportionate and practically implementable. AEMO would also consider whether obligations should be capable of being refined, paused or deactivated if monitoring shows that the information is not delivering the expected benefits or that market conditions have materially changed.

AEMO's preliminary view is that, if Mode 2 is activated, obligations should apply consistently to resources meeting the threshold requirements at the point of activation, rather than commencing at higher thresholds and progressively expanding to smaller resources over time. This recognises that the underlying challenge may arise from the aggregate effect of many price responsive resources operating together. However, AEMO is seeking stakeholder feedback on whether an alternative approach should apply, under which Mode 2 initially captures only the most material resources or aggregations through a higher threshold, with the threshold progressively lowered if adverse market impacts continue to be observed.



Phase 3 – Operational visibility and framework refinement

Phase 3 would focus on determining whether additional operational visibility measures are required as price responsive resources continue to grow, become more coordinated, and have greater potential to affect real-time system operation. The purpose of this phase is not to impose operational visibility obligations automatically, but to assess whether the information available through earlier phases, existing operational processes and parallel reforms is sufficient for AEMO and network operators to maintain situational awareness, manage operational risks and support efficient market outcomes.

By this stage, AEMO would expect to have a clearer evidence base from Phase 1 trials, Phase 2 predictive visibility obligations, IPRR monitoring and reporting, and operational experience with the price responsive pre-dispatch sensitivity, including the appropriate telemetry requirements, thresholds, information granularity and implementation arrangements. AEMO expects the design parameters set out in this draft framework for Mode 3 may evolve or be applied flexibly as technology capability, aggregation models, forecasting techniques and operational requirements develop.

A key consideration would be how Phase 3 interacts with complementary reforms. In particular, the OIV rule change if made is expected to improve visibility of large flexible loads and other emerging large resource classes. Phase 3 would therefore assess whether the OIV rule change, together with other reforms, has addressed the relevant visibility need or whether further Mode 3 obligations are required to manage residual operational risks.

If additional Mode 3 obligations are required, AEMO would determine their scope through consultation and guideline development. The design parameters for Mode 3 are therefore expected to remain adaptable. As technology capability, aggregation models, forecasting techniques and operational requirements evolve, AEMO may need to refine the form, granularity and timing of operational visibility information. This would allow the framework to remain proportionate and targeted, while ensuring AEMO has access to the information needed where price responsive behaviour presents a material operational risk. Exemptions could also apply where equivalent operational visibility is already provided for by existing network connection arrangements.

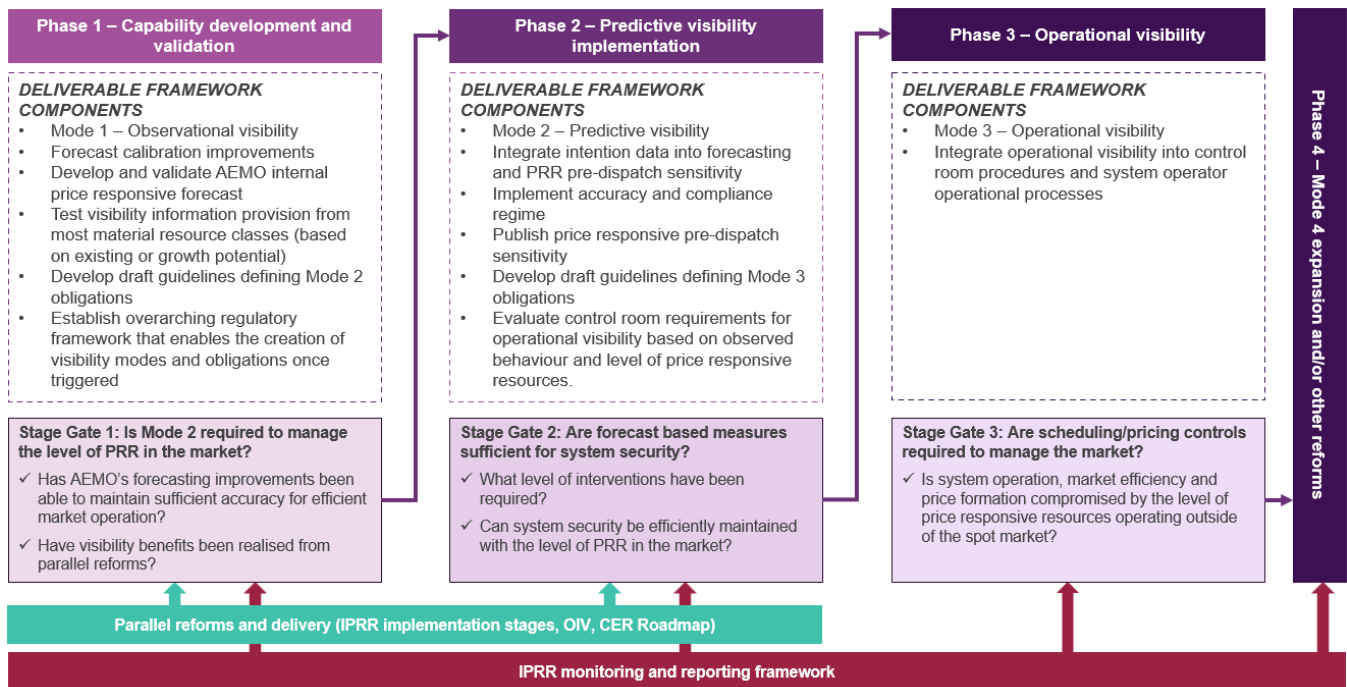
Ongoing monitoring for major market impacts

AEMO will conduct ongoing monitoring and reporting in accordance with its new IPRR functions¹⁷ throughout the implementation pathway to assess both the individual and aggregate impacts of price responsive resources. This monitoring would inform future decisions on whether particular resource classes should progress to additional or different visibility requirements, including dispatch-integrated participation arrangements, or whether alternative mechanisms are required to improve predictability and maintain efficient market outcomes. Such decisions would be informed by observed evidence, stakeholder consultation and assessment of consumer benefits.

For the purposes of illustrating the implementation pathway as a concept, the figure below depicts the deliverable framework components and stage gates sequentially. AEMO notes that depending on observed market and system impacts, Phases 2 and 3 may need to be activated at the same time. Accordingly, in practice, there may be some concurrence in deliverable framework components and stage gates across Phases 1 and 2 in practice. Within each phase, there may also be staging of obligations for different resources classes, rather than activating obligations across all resources at the same time. For example, Phase 3 could commence first with large inverter-based loads prior to obligations for CER aggregations.

¹⁷ NER 3.10C

Figure 11 Illustration of staged implementation pathway



5.2.3 What design elements are committed to now

AEMO proposes the National Electricity Rules establish the ability for AEMO to obtain visibility information from price responsive resources, while retaining flexibility to determine the detailed application of obligations over time.

Under this approach, the Rules would include the criteria under which visibility obligations may be imposed by AEMO. The Rules would not prescribe detailed thresholds, data requirements, performance metrics, implementation timeframes or resource-specific obligations. Instead, these matters would be set out in AEMO guidelines developed through consultation and informed by operational experience, testing and monitoring.

This approach provides regulatory readiness without requiring detailed obligations to be settled before Phase 1 testing and trials has identified which measures are practical, decision-useful and likely to deliver consumer value.

Importantly, the existence of the framework would not automatically trigger obligations. AEMO proposes that obligations should only become binding once relevant implementation guidelines have been developed and consulted upon. In effect:

- **the Rules** would provide the framework to manage the impact of price responsive resources, including defining the visibility modes and the matters that must or may be included in the guidelines, and
- **detailed guidelines (to be developed)** would determine if, when and how those tools are activated based on observed market outcomes and demonstrated consumer value. Key building blocks that would be addressed through guidelines would include for example the obligated parties, threshold and the type of information that must be provided.

AEMO is seeking stakeholder feedback on whether this proposed allocation between the Rules and implementation guidelines strikes an appropriate balance between regulatory certainty and future flexibility. In particular, stakeholders are invited to comment on which matters should be established in the Rules from the outset, and which matters should remain adaptable through future guideline development.



Consultation questions

7. *Do you support the proposed staged implementation approach, including the use of monitoring, trials and implementation guidelines before mandatory visibility obligations are activated? How should this approach be accounted for in the NER versus guidelines?*
8. *If the publication of guidelines activates obligations under the MVF, which party should decide when guidelines are published and how should this role be accounted for in the Rules?*

6 How could the framework apply to different resource classes?

AEMO has considered how the proposed visibility and participation modes could apply to different classes of PRRs, drawing on feedback from the Stakeholder Advisory Group and AEMO's broader stakeholder engagement through the design process to date. This work highlighted that resource classes differ materially in who coordinates or controls the response, who is best placed to provide information to AEMO, what information can be provided in practice, and how readily that information can be translated into improved forecasts and operational outcomes.

These differences are central to the design of the framework because, in some cases, the entity with the most accurate visibility of intended behaviour may not be a Registered Participant under the NER. The framework therefore needs to balance accuracy, practicality and regulatory accountability, while ensuring that information provided to AEMO is decision-useful for forecasting, pre-dispatch and operational purposes.

6.1 What data obligations will apply

6.1.1 Mode 1

Under Mode 1, data obligations would be limited to using existing and enhanced standing or historical information to support AEMO's aggregate understanding of price responsive behaviour. This may include existing metering, Market Settlement and Transfer Solutions (MSATS) data, Demand Side Participation Information (DSPI), tariff, aggregation and cohort information, supplemented by targeted sampling or additional information requests only where existing data is insufficient to calibrate or validate forecasting models. AEMO is seeking stakeholder feedback on whether:

- the format of DSPI submissions and the portal can be amended to provide more operationally useful standing data on price responsiveness and to improve the ease of compliance, and
- DSPI submissions can be provided at a greater cadence cost effectively or whether wholesale price responsiveness could be flagged through an alternative channel such as MSATS to support AEMO improve the identification, calibration and forecasting of price responsive behaviour.

6.1.2 Mode 2

For Mode 2, AEMO's preliminary view is that bid-based information is likely to provide a useful foundation for Predictive Visibility for many resource classes. Project Edge demonstrated that CER aggregators can build the capability to translate fleet coordination activities into conventional price quantity bid bands¹⁸. These obligations could graduate through different levels of detail, including expected, availability, price responsive quantities or other structured intent information that can be used to improve pre-dispatch, ST PASA and related forecasting processes. However, AEMO considers further testing is required to confirm which information types can be provided in practice, at what cadence and what level of accuracy for

¹⁸ *Project Edge Final Report*, 2023, see Chapter 5 Wholesale Market Integration chapter, at <https://www.aemo.com.au/initiatives/major-programs/nem-distributed-energy-resources-der-program/der-demonstrations/project-edge>.

different resource classes and how these inputs are validated and integrated into AEMO systems to deliver measurable forecasting and market benefits. Phase 1 will build on the learnings from Project Edge to define what obligations should be across resource types, at scale and factoring in AEMO’s forecasting/pre-dispatch systems and interoperability requirements with the distribution system. AEMO welcomes guidance from stakeholders on what other trials and experience can help inform and support this work.

6.1.3 Mode 3

For Mode 3, data obligations would be narrower and more operationally focused. Where resources are sufficiently large, flexible or operationally significant, AEMO may require near real-time or operational information such as telemetry, operational status, available response capability, outage information, constraint information or material changes in capability. These obligations would be designed to support situational awareness and operational timeframe decision-making and would take account of whether equivalent information is already available through connection arrangements, OIV or other related reforms.

Consultation questions

- 9. *If MVF obligations do not include conformance requirements equivalent to those applying to scheduled resources, do stakeholders consider that most resource types should still be able to translate their intended behaviour into bid-based information for forecasting and pre-dispatch purposes?*
- 10. *Can the content and format of DSPI submission be improved and cadence increased (to quarterly) to provide more useful and up to date information on price responsive resources? How material are the compliance costs associated with this? Can wholesale price responsiveness could be flagged through an alternative channel such as MSATS to support AEMO improve the identification, calibration or forecasting of price responsive behaviour? Can wholesale price responsiveness be flagged through an alternative channel such as MSATS to support to AEMO improve the identification, calibration or forecasting of price responsive behaviour?*

6.2 Who is responsible for providing visibility

Table 5 provides an overview of resource classes that could be subject to Mode 2 or higher visibility obligations. It summarises how different resource classes may vary in terms of coordination, responsiveness, predictability and potential obligated parties and how this translates into different options for obligated parties. The assignment of obligations will require balancing who is closest to coordinating the responsive behaviour (and can therefore provide the most accurate information) and who has the capabilities to cost effectively integrate with market systems. The table is not intended to be exhaustive or to determine final obligations. Final application would depend on the resource’s scale, materiality, predictability and outcomes of further testing and consultation.

Figure 12 then provides an illustrative mapping of how different resource classes could align to the visibility modes. The purpose of this mapping is to illustrate how the framework could operate across practical resource types, rather than to assign final obligations. It is intended to identify design questions that need to be resolved through further testing, consultation and guideline development, particularly where control, information access and regulatory accountability could sit with different parties.

Table 5 Illustrative coordination and accountability considerations for resource classes

Resource type	Who controls/coordinates the resource	How is it responding	Obligated party options
1. C&I load – customer is its own FRMP	Plant operator/customer, noting the customer is also the FRMP.	Dynamic response likely where the customer is directly exposed to spot price, subject to underlying plant operational requirements.	FRMP/Consumer
2. C&I load – spot price pass-through arrangement with retailer	Plant operator/customer, with the retailer holding the market relationship.	Dynamic response likely where the customer is exposed to spot price through its retail arrangement, subject to plant operational requirements.	FRMP Consumer
3. C&I load – demand response contract with third party	Control or coordination may sit with the plant operator or the third party, depending on the contract terms and the extent to which the third party can direct or materially influence the response.	Pre-dispatch price signals may provide advance notice to activate contract terms, depending on the notice period required. Actual response may also depend on spot price outcomes and site-specific operational constraints.	Designated controller under contract terms. This could be the FRMP, the registered service provider or the consumer
4. C&I load – demand response incentives	Plant operator/customer.	Voluntary response to non-spot-price incentives, subject to customer participation and operational constraints.	Consumer Retailer/incentive provider, which may be able to provide sufficiently accurate information where it coordinates the response
5. Large inverter-based loads (e.g., Data centres)	Plant operator, noting control arrangements may vary depending on facility ownership, hosting arrangements and contractual rights to manage load.	May vary load for operational, commercial or price responsive reasons, depending on facility capability, contractual arrangements and operational requirements.	Consumer/centre operator Third party with contractual control over data centre load management
6. CER aggregation – common OEM self-optimising resources for different consumers across multiple retailers	OEM or device optimisation platform, depending on the optimisation model, consumer preferences, contractual arrangements and any consumer override rights.	May respond to a range of tariff, price or device-optimisation signals. Behaviour may be sufficiently predictable through AEMO forecasting where optimisation is dispersed, consumer preferences are stable and aggregate response patterns can be observed over time.	OEM/optimisation platform FRMP
7. CER aggregation – common self-optimisation of resources against spot prices within one retailer	Retailer or OEM, depending on whether optimisation is controlled through the retailer portfolio, device platform or both.	Dynamic response to pre-dispatch and dispatch price signals, subject to consumer preferences, device availability and the retailer's portfolio optimisation strategy.	Retailer/FRMP OEM
8. CER aggregation – coordination within retailer portfolio	Retailer, depending on contractual terms of coordination and any consumer override rights.	Dynamic response to pre-dispatch and dispatch price signals, subject to consumer preferences, device availability and the retailer's portfolio optimisation strategy.	Retailer/FRMP Retailer's contracted service provider

Resource type	Who controls/coordinates the resource	How is it responding	Obligated party options
9. CER aggregation – coordination by third party aggregator	Aggregator, depending on contractual terms of coordination and any consumer override rights.	Dynamic response to pre-dispatch and dispatch price signals, subject to contractual arrangements, consumer override rights, device availability and coordination with the retailer or FRMP where relevant.	Aggregator, or another designated party where coordination occurs through a retailer or FRMP relationship
10. Sub-5 MW batteries coordinated within portfolio	Plant operator, aggregator or portfolio coordinator.	Dynamic response to pre-dispatch and dispatch price signals.	1. FRMP 2. Plant operator, aggregator or other coordinating entity, depending on who controls dispatch decisions and who is best placed to provide accurate bid or intent information
11. DNSP-owned batteries with shared commercial operating model	Commercial operator or aggregator, depending on the operating model and network-owner constraints.	Dynamic response to pre-dispatch and dispatch price signals, subject to network requirements and commercial operating arrangements.	1. FRMP 2. Commercial operator or aggregator, depending on the operating model and the entity responsible for market-facing optimisation.

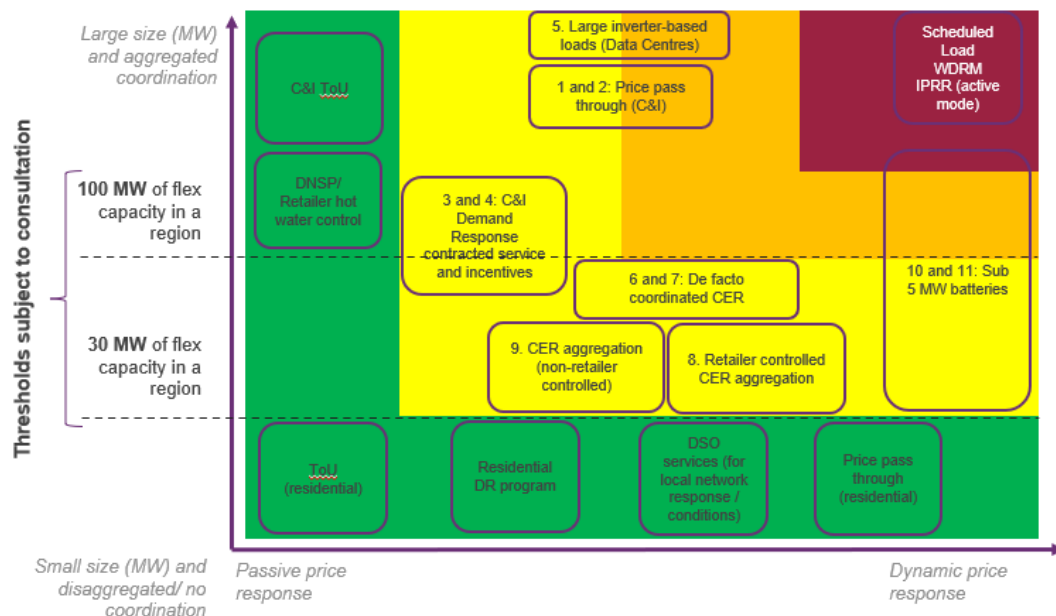
The mapping in **Table 5** illustrates why the framework needs to retain flexibility in how obligations are applied. Some resource classes may be able to provide high-quality forward-looking information from existing market participants, while others may depend on information from parties that are not registered or outside of the NER’s jurisdiction.

As a starting position, AEMO considers that either the FRMP or the service provider registered under the NER should be the obligated party to provide the required visibility information. Where either a third party (excluding distribution system operators) or the consumer has direct control over the resource and its response, AEMO considers the FRMP or service provider should make provisions contractually with them to fulfil visibility obligations.

Coordinated portfolios comprised of sub 5 MW batteries

The NEM Review Panel recommended that portfolio aggregations of small-scale storage (without co-located load) that in aggregate exceed the NER’s bidirectional unit (BDU) registration threshold (>5 MW) be required to participate in scheduled market mechanisms. When considering the application of a threshold for any resource types under the MVF, a relevant consideration is how to align the policy intent with commercial execution. For example, could defining a threshold increase the risk of portfolio restructuring wherein potentially obligated parties could seek to avoid boundary definitions across and within their portfolio exceeding a MW threshold to avoid more onerous obligations, for example, the expansion of <5 MW battery energy storage systems (BESS) operating in the NEM today. To mitigate this risk, one approach is to define obligations with the least onerous requirements to achieve the target market and consumer benefit. For example, small-scale storage portfolios could initially be placed within Mode 2. AEMO is seeking stakeholder feedback on how this portfolio structuring risk could be mitigated and whether stakeholders consider scheduling through market mechanisms for this resource type is appropriate at this time.

Figure 12 Illustrative application of visibility modes to selected resource classes



Note: the mapping of resources is illustrative only. The actual scale of the resource or aggregation would determine what would be the applicable visibility mode.

Consultation questions

11. Are there any resource types and retailer relationships where it is not feasible for regulatory obligations to be assigned to the FRMP or registered service provider? In your response, please provide specific examples.
12. How can thresholds be applied to obligated parties in a way to mitigate the risk of portfolio structuring and gaming below MW thresholds? Can less onerous obligations help mitigate this risk? For example, in relation to > 5 MW battery portfolios, should obligations commence first in Mode 2 before further consideration is given to requiring scheduling through market mechanisms?

7 What are the benefits to consumers?

Improved visibility of price responsive resources is expected to benefit consumers where it enables AEMO, market participants and network operators to make better decisions in operational timeframes. Where material PRR behaviour is not visible ahead of time, AEMO and market participants may make operational decisions based on an incomplete view of the supply-demand balance. Better visibility can reduce this information gap and support more efficient decisions before costs are incurred, thereby:

- improving pre-dispatch and short-term forecasts so participants can make more efficient commitment, bidding, charging, discharging and demand response decisions,
- supporting more efficient dispatch and price formation by reducing avoidable forecast error associated with material unscheduled price responsive behaviour,
- helping AEMO identify when price responsive behaviour is likely to affect reserve requirements, FCAS enablement, intervention decisions or other operational actions,
- enabling more accurate assessment of emerging market impacts over time, so obligations are targeted to resource classes and information types that are likely to deliver consumer value, and
- supporting more efficient long-term planning signals by improving understanding of how flexible demand and distributed resources contribute to reliability, system security and investment needs.

These benefits ultimately accrue to consumers where they reduce avoidable costs or improve the efficiency of market outcomes. For example, more accurate forecasts may reduce inefficient commitment or decommitment of resources, lessen the need for higher-cost reserves or operational interventions, support more efficient use of essential system services, and improve the quality of price signals used by consumers, retailers, aggregators and investors. Better information can also help preserve the value of demand-side participation by allowing flexible resources to respond to price signals without creating unnecessary uncertainty for the broader market.

7.1 Why a new point-in-time cost benefit analysis would have limited value

The scale of consumer benefits will depend on the circumstances in which price responsive behaviour occurs. Benefits are likely to be greatest where responses are large, coordinated, coincident with other sources of forecast error, or occur during scarcity conditions, regional constraints, elevated FCAS requirements or periods when market participants are making time-critical operational decisions. In these circumstances, even relatively short-lived forecast errors can have material pricing or operational consequences. Conversely, where responses are small, dispersed, predictable or already captured in existing forecasts, the incremental benefit of imposing new obligations is likely to be limited.

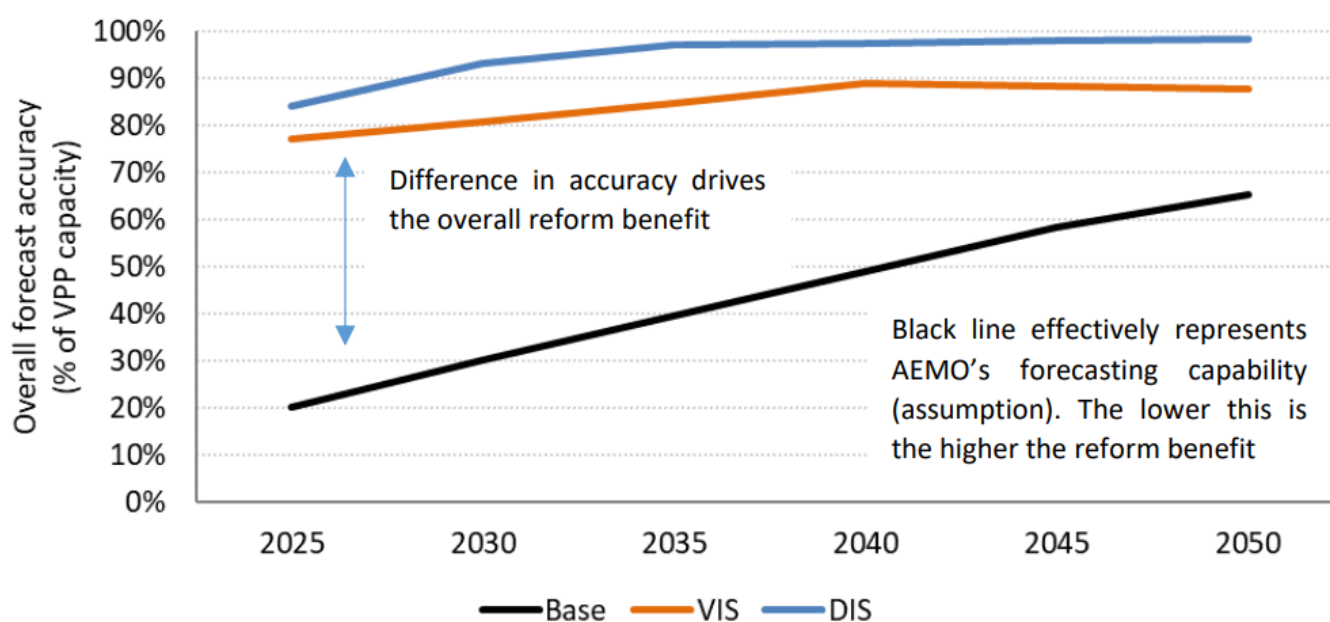
The consumer benefit case for the MVF therefore depends on proportionality. AEMO's proposed framework is not intended to impose visibility obligations for their own sake. It is intended to establish a structured pathway for identifying where additional information is needed, testing whether that information is accurate and decision-useful, and activating

obligations only where the expected benefits to consumers are likely to exceed the costs of providing, validating and using the information.

This does not mean the benefits are uncertain in concept. Better information should improve market and operational decision-making where that information is accurate, timely and capable of being incorporated into AEMO systems. The uncertainty is instead about the size of the incremental benefit from different forms of visibility, the resource classes that can provide the most useful information, and the point at which the benefits of imposing obligations are likely to outweigh the costs.

AEMO notes that the potential benefits of visibility arrangements have previously been considered through the IPRR rule change and the NEM Review. Those assessments indicate that better visibility can deliver material market benefits, particularly where it improves forecast accuracy and reduces inefficient operational outcomes. The AEMC's assessment of improved visibility under the IPRR rule change found substantial benefits can accrue to consumers. These included a net present value (NPV) of \$1.4 billion and \$12.7 billion of wealth transfer to market customers. The key driver of quantified benefits in the assessment was the assumed improvement in forecast accuracy from additional visibility information as illustrated in the figure below.

Figure 13 Overall forecast accuracy assumption



Source: Intelligent Energy Systems, 2024, *Benefit analysis of improved integration of unscheduled price responsive resources into the NEM (ERC0352)*, see page 8, at <https://www.aemc.gov.au/sites/default/files/2024-07/IES%20size%20of%20the%20prize%20benefits%20modelling%20final%20report.pdf>. VIS denotes visibility mode and DIS denotes dispatch mode as considered under the Integrating Price Responsive Resources determination.

This is an appropriate basis for estimating potential benefits, but it is difficult to quantify with confidence before visibility information has been tested in operational systems. At this stage, there is uncertainty about what information different resource classes can practically provide, whether that information will be sufficiently accurate and timely, how it should be incorporated into AEMO's forecasts, and whether it will materially improve forecast performance relative to the base case.

Given this uncertainty, AEMO does not propose undertaking further detailed quantitative modelling of the potential benefits associated with the MVF at this time.

7.2 Why threshold assessments also have limitations

A similar challenge applies to setting fixed thresholds that would determine when price responsive resources become material from a consumer perspective. Thresholds can help illustrate the scale at which coordinated responses may start to affect dispatch efficiency, price formation or operational decisions. However, they cannot reliably identify a single level of responsive capacity at which obligations should apply. Impacts depend on when the response occurs, how concentrated it is by region, the speed of response, whether it is reflected in forecasts, and the broader market conditions at the time.

The same amount of price responsive capacity can therefore have very different effects in different circumstances. A response may have limited impact when the system is well supplied and forecast error is otherwise low, but may materially affect prices, FCAS requirements, reserve management or intervention decisions during scarcity conditions or regional constraints. Impacts may also arise from the aggregate behaviour of many smaller resources responding in similar ways, rather than from any single large participant.

Counterfactual assessment is also difficult because of the circularity issue discussed earlier in this paper. If AEMO had forecast a response and that forecast, and that forecast changed pre-dispatch or dispatch outcomes, the price signal driving the response may also have changed. This makes it difficult to determine what would have occurred under an alternative visibility arrangement, or to convert an observed event into a simple threshold for future obligations.

7.3 AEMO's approach to managing uncertainty and building evidence

AEMO proposes to manage these issues through the staged implementation pathway described in Section 5.2. This approach establishes the regulatory tools needed to respond to emerging risks, while requiring evidence from monitoring and testing before detailed obligations are activated.

Under the IPRR monitoring and reporting framework, AEMO is monitoring the impact of price responsive resources on market outcomes and will publish its inaugural annual report in September 2026¹⁹. This monitoring will provide a stronger basis for identifying emerging impacts, understanding the contribution of price responsive behaviour to forecast error, and assessing whether additional visibility obligations are likely to deliver net consumer benefits. It will also allow AEMO to distinguish price responsive behaviour from other drivers of forecast error, such as weather-driven rooftop solar variability, changes in underlying demand, outages or network constraints.

AEMO intends to use this monitoring, together with practical testing of visibility information, to develop a more reliable basis for assessing materiality over time and for determining whether the benefits to consumers are likely to exceed the costs.

AEMO is also continuing to improve its operational forecasting capability. This includes developing methods to identify statistically significant price responsive behaviour, testing how price responsive pre-dispatch sensitivities could be produced and used, and assessing how new forms of visibility information could be incorporated into dispatch, pre-dispatch, ST PASA and reliability processes. These improvements will help determine which information is decision-useful and which resource classes are best suited to provide it.

¹⁹ See AEMO's monitoring dashboard, at <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/operational-forecasting/unscheduled-price-responsive-resources-monitoring-and-reporting>.

Consultation questions

13. *What process can be used to provide market participants and consumers with confidence that the visibility obligations' benefits outweigh the costs and deliver value to consumers? Is there an alternative approach to assessing costs and benefits to that outlined in this paper that AEMO should consider?*

7.4 Using historical evidence to illustrate potential consumer impacts

Noting the limitations of forward-looking assessments, this section provides historical case studies to help stakeholders understand the potential scale of inefficiencies that can arise when material unscheduled response is not visible or is not accurately reflected in operational forecasts in the dispatch ahead of time. These case studies are not intended to establish definitive causation or to quantify the total consumer benefits of the framework. Rather, it provides practical evidence of the types of dispatch, pricing and operational outcomes that can occur when forecast error is material in periods where the system is tight and prices are elevated. Importantly, they illustrate several key points for understanding how materiality of impacts can be assessed and when benefits can be realised including:

1. There are challenges with attributing pricing outcomes to individual sources of forecasting error in the dispatch timeframe, with other variables such as demand and supply errors and when during the pricing event (that is, if demand is still increasing) it occurs, all contributing to the overall outcome.
2. Forecast errors are rectified quickly, with large demand side variations recalibrated by the next interval, so variations from traditional large demand response are limited mostly to the proceeding dispatch interval.
3. However, inefficient price outcomes during high price events can be sufficiently material even if limited to a small number of intervals if the frequency of events increase over time and greater levels of unscheduled and non-forecast price response from either aggregated CER or C&I occurs.
4. Targeted low-cost information provision for C&I response once the action is committed can help mitigate the likelihood of forecasting error resulting in inefficient price outcomes in the dispatch time horizon.

AEMO considers these case studies support the staged implementation pathway proposed in this paper and the risks the MVF seeks to manage, with ongoing monitoring and practical testing will determine whether those risks are emerging at sufficient scale to justify obligations.

7.4.1 Case Study 1 – 12 June 2025

On 12 June 2025 in Victoria, a reduction in a large industrial load (LIL) coincided with a high-price evening period. From 17:00 to 19:30, the Regional Reference Price (RRP) in Victoria ranged from approximately \$1,100/megawatt hour (MWh) to \$17,500/MWh, during which the individual load reduced its consumption by up to around 45% from the pre-event level.

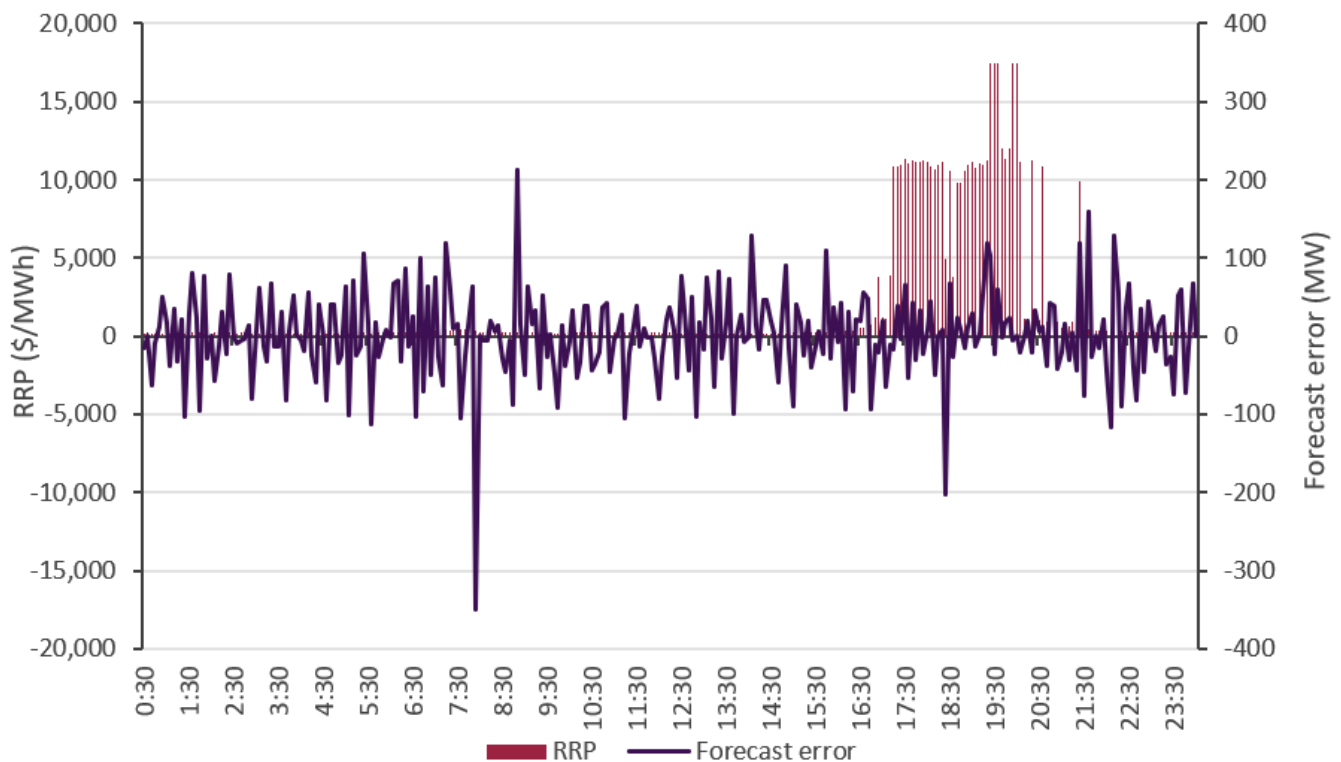
Coinciding with the drop in LIL, the 5-minute forecast error²⁰ increased to around 200 MW in the 1825 hrs dispatch interval (DI), when the RRP was approximately \$4,900/MWh. The regional price then rose to over \$10,000/MWh in the following 1830 hrs interval. By 1835 hrs, however, the forecast error had reduced to around 25 MW and the price fell to

²⁰ This refers to the difference between the actual regional total demand and the five-minute pre-dispatch demand forecast produced 5 minutes before the dispatch interval.

approximately \$3,800/MWh. Between the 1825 hrs and 1835 hrs intervals, the price decreased by around \$1,100/MWh, while regional demand²¹ remained at a similar level of approximately 7,600 MW. While the contribution of individual factors cannot be isolated, the improvement in forecast error, among other factors, suggests that the price could have been lower at 1825 hrs with accurate forecasting of load reduction. Assuming a reduced price of around \$3,800/MWh applied to the 1825 hrs interval, consistent with the 1835 hrs interval, the difference from the actual price would translate to an estimated cost of approximately \$700,000. However, the price clearing in the 1830 hrs interval at \$10,000/MWh with relatively constant demand illustrates how factors other than forecast error can materially influence the pricing outcome for a given interval and that the net effects of forecast error from unscheduled response can either be offset or eclipsed by other factors.

During these intervals, regulation FCAS enablement averaged around 200 MW, compared with the daily average of approximately 100 MW. The higher enablement was primarily driven by an increase in raise regulation and likely reflecting the influence of other system conditions, with the LIL reduction having limited impact.

Figure 14 12 June 2025 (Victoria) – Forecast error from industrial response during high price event



Note: large industrial load is not shown in the chart to preserve confidentiality.

7.4.2 Case Study 2 – 26 June 2025

On 26 June 2025 in New South Wales, a reduction in a large industrial load that was not forecast coincided with a sustained high-price evening peak event. Between 17:30 and 21:00, the individual load reduced by more than 20% from the pre-event level. During the event period, RRP in New South Wales increased to above \$10,000/MWh, with several intervals exceeding

²¹ Refers to the five-minute regional total demand, that is met by local scheduled generation and semi-scheduled generation, and by generation imports to the region, excluding the demand of local scheduled loads, and including WDR.

\$14,000/MWh. Following the reduction in LIL, prices remained elevated but generally stayed below the peak prices observed later in the event.

In the 1730 hrs dispatch interval, the 5-minute forecast error increased to around 230 MW when the New South Wales RRP was approximately \$9,500/MWh. In the next DI (1735 hrs), the forecast error reduced to around 20 MW and the price fell to approximately \$3,800/MWh. Between the two intervals, the price decreased by around \$5,700/MWh, while demand remained broadly unchanged at approximately 11,200 MW. While the contribution of individual factors cannot be isolated, the improvement in forecast error, among other factors, suggests that the price at 1730 hrs could have been lower with accurate forecast of load reduction. Assuming a counterfactual price of around \$3,800/MWh applied to the 1730 hrs interval, this would translate to a cost of approximately \$5.3 million. However, it should be noted that other factors beyond the forecast error could have influenced the price clearing, including supply side variations and re-bidding. FCAS regulation averaged around 50 MW for the day and remained at similar levels during the event.

Figure 15 26 June 2025 (New South Wales) – Forecast error from industrial response during high price event

