#### Stakeholder Briefing Session Voluntarily Scheduled Resources Guidelines



Integrating Price Responsive Resources (IPRR) into the NEM reform 👺

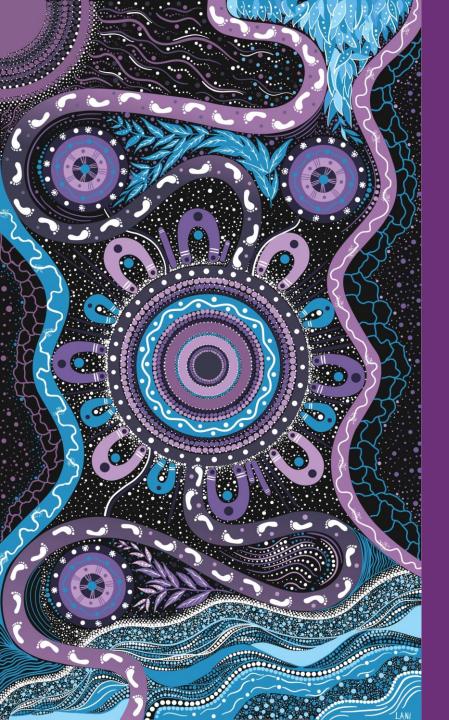
17 June 2025





# 1. Welcome

Jen Marin (née) Hardman (AEMO)





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

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

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

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



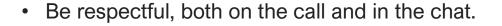




1. Please mute your microphone.



- 2. We look forward to your feedback and questions. Use the 'Chat' function to ask any questions or comments throughout the session.
  - · AEMO SMEs are on the call, who will attempt to respond in the chat.
- 3. Key questions or comments will be addressed verbally in dedicated Q&A sections.
- 4. In attending this meeting, you are expected to:
  - · Contribute constructively.

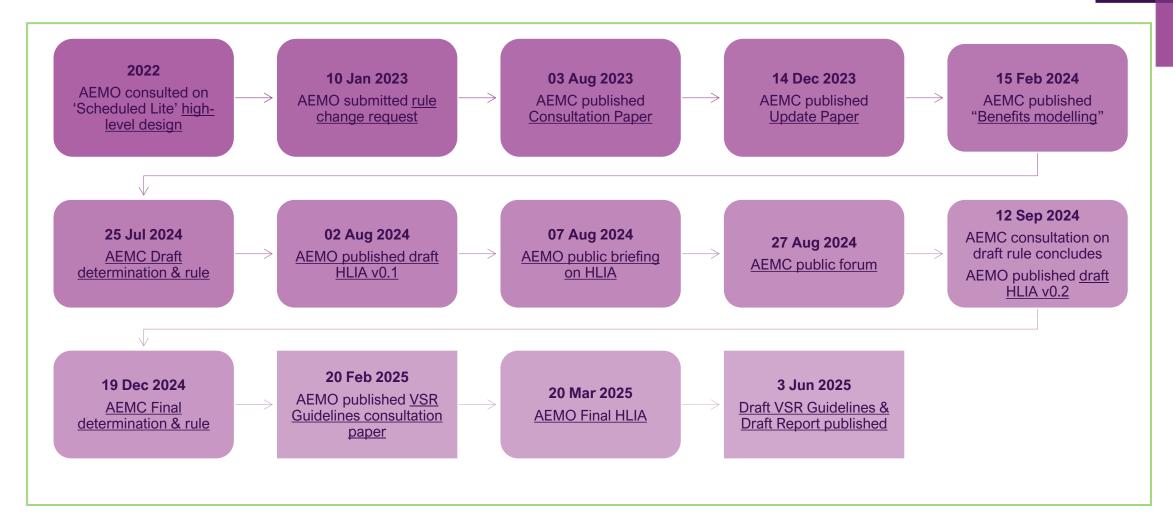




Participants are asked to familiarise themselves with AEMO's <u>Competition Law Meeting Protocol</u> as outlined in Appendix A and at AEMO's website.

#### IPRR reform to date















#	TIME (AEDT)	TOPIC	PRESENTERS
1	3:00-3:05 PM	Welcome	Jen Marin (née Hardman) (AEMO)
2	3:05-3:10 PM	Context and session objective	Jen Marin (AEMO)
3	3:10-4:00 PM	<ul> <li>Voluntarily Scheduled Resources (VSR) Draft Guidelines - Deep dive</li> <li>Key elements of the VSR Draft Guidelines, including:         <ul> <li>Stakeholder feedback to consultation paper</li> <li>Changes from consultation paper</li> <li>New considerations for stakeholder feedback</li> </ul> </li> </ul>	Istvan Szabo/ Louise Bardwell (AEMO)
4	4:00-4:05 PM	Next Steps	Jen Marin (AEMO)
5	4:05-4:25 PM	Q&A	Jen Marin (AEMO)
	4:30 PM	Close	

#### Prereading:

- AEMC Final Rule: Integrating Price Responsive Resources into the NEM (IPRR)
- AEMO's v1.0 IPRR High Level Implementation Assessment
- AEMO's Voluntary Scheduled Resources Guidelines Consultation Paper
- <u>AEMO's IPRR Project Webpage: Integrating Price Responsive Resources into the NEM (IPRR)</u>

Appendix A AEMO Competition Law - meeting protocol

Appendix B Glossary

Appendix C Additional Matters





# 2. Context & session objective

Jen Marin (née) Hardman (AEMO)







1.

Provide a 'deep dive' of the draft Voluntarily Scheduled Resources guidelines



2.

An opportunity to share key changes from the consultation paper and seek clarification



3.

Invite stakeholder feedback on the draft VSR Guidelines

## Context: Assumed knowledge of IPRR



- Today is all about the draft VSR Guidelines
- The content we cover today will focus on key areas included in the Guidelines
- The session today is **not** intended to be a replacement for a read of the draft VSR Guidelines.

#### **VSR GUIDELINES: 2025 INDUSTRY ENGAGEMENT TIMELINE**

Thu 20 Feb
Consultation
paper
published



Thu 20 Mar

Feedback period on consultation paper closed



Thu 17 Jun

TODAY Stakeholder Briefing Session



Thu 4 Sep Final VSR Guidelines

published

Fri 28 Feb

VSR Guidelines industry forum



Tue 3 Jun

Draft VSR

guidelines

published



Wed 9 Jul

Feedback period on draft VSR Guidelines closes



# 3. Voluntarily ScheduledResources (VSR) Draft Guidelines- Deep dive

Istvan Szabo/Louise Bardwell (AEMO)

#### AEMC made IPRR rule on 19 Dec 2024



#### Three components, each with new supporting document

#### 1. Dispatch mode

- Problem: Small distributed resources cannot participate in central dispatch easily.
- Solution: New VOLUNTARY

   "Dispatch mode" to integrate presently unscheduled price-responsive energy resources into NEM scheduling processes.

TODAY'S FOCUS

→ VSR GUIDELINES

Establishes the technical and operational characteristics of VSRs.

#### 2. Incentive framework

- **Problem:** Being scheduled does not always provide the scheduled participant with benefits.
- Solution: New time-limited incentive mechanism (tenders) to encourage participation in dispatch mode. Up to \$50m, with potential top ups from external bodies.

#### → VSR INCENTIVE PROCEDURE

Specifies a range of matters to support operation of the VSR incentive mechanism including "participation payments".

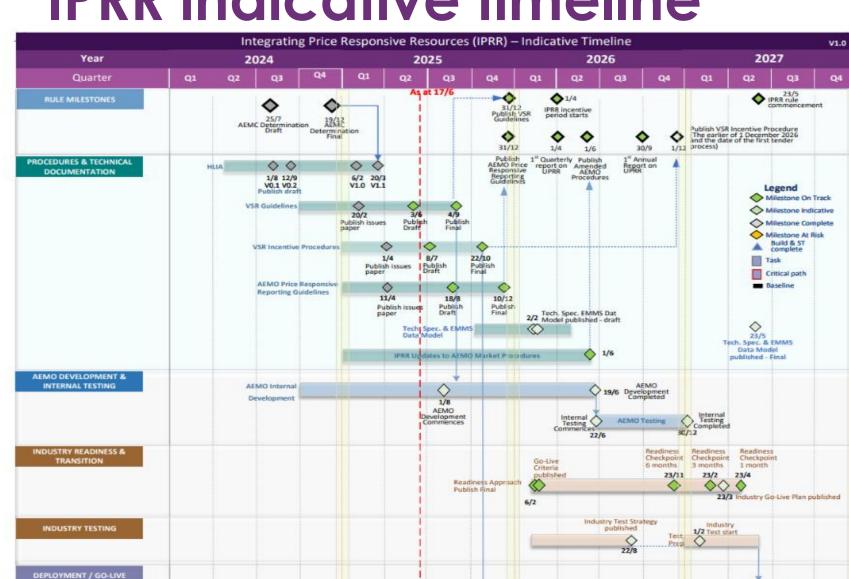
# 3. AEMO monitoring & reporting framework

- Problem: Price sensitivity is not currently used by AEMO as an input for demand forecasting.
- Solution: New framework to understand and manage the impact of unscheduled priceresponsive energy resources on operational demand forecasting processes and market outcomes.

#### → AEMO PRICE RESPONSIVE REPORTING GUIDELINES

How AEMO will meet its annual and quarterly reporting obligations.

## IPRR indicative timeline



VSR INCENTIVE MECHANSM

Go-Live 23 May 2027

June 17, 2025

Tender Tender Announced Open Closes







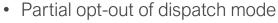
Participation modes recognise that some VSRs can only participate in dispatch for specific periods e.g. where a VSR:

- May not have continuous operational capabilities
- May operate seasonally.



#### DEACTIVATED VSR...

... during which time the VSR only partially participates in central dispatch



- Participants submit bids but do not need to conform to dispatch instructions
- Applies to every qualifying resource in the VSR
- Criteria and process for to be set in the VSR guidelines.



#### HIBERNATED VSR

For at least 30 days and no more than 18 months during which the VSR will not participate in central dispatch

- Full opt-out of dispatch mode without deregistration
- Applies to every qualifying resource in the VSR
- The previous classification for that qualifying resource applies e.g. non-scheduled generating unit, non-scheduled bidirectional unit, non-scheduled load.
- Criteria and process to be set in the VSR guidelines.





- IPRR rule provides the <u>framework</u> for dispatch mode.
- VSR Guidelines operationalise dispatch mode by establishing:
  - → Detailed technical and operating parameters for VSRs
  - → Other requirements for VSRPs, DNSPs, metering service providers, AEMO. NER 3.10A.3 specifies a number of elements the Guidelines must contain, including:

Requirements for nominating qualifying resources into VSRs	Requirements and process for aggregation of VSRs	Framework for testing the capabilities of qualifying resources
Types of data to be submitted	Dispatch conformance criteria	Zonal aggregation requirements
Telemetry & communications requirements	Acceptable types of metering installations	Deactivation and temporary     hibernation requirements
Thresholds for participation	DNSP and (where relevant) TNSP data sharing requirements	Any other information AEMO considers reasonably necessary.



# Maximising participation while preserving system security

#### The NER places obligations on AEMO to:

- "facilitate ease of participation in central dispatch for VSR" (3.10A.3(d)(2))
- apply restrictions on VSRs in central dispatch "only to the extent reasonably necessary for AEMO to manage power system security and reliability" (3.10A.3(d)(3))

As already stated in the consultation paper, and recognised through the draft, AEMO agrees with the intent of these provisions.

In developing the VSR Guidelines, AEMO intends to pursue an approach that seeks to maximise VSR growth and participation, within the bounds necessary to allow the secure and reliable operation of the power system.



# Managing system security risks as VSRs grow

At the commencement of the IPRR reform, the small number/capacity of VSRs will mean the risks to system security are relatively low. However, the risks will increase as the number and capacity of VSRs grows.

In recognition of this, the framework includes a review of the Guidelines after three years to ensure settings remain appropriate as the market develops.





- Consultation paper considered 13 proposed sections for the VSR Guidelines
- In the Draft Guidelines, AEMO has reduced this to 11 sections (settlement and prudential management information not required under Rules, so rather included in Draft Report)
- Will focus on highlighted sections, as minimal changes from consultation paper in sections 6-8
- We have structured today's discussion around matters that:
  - 1. May relate to a range of stakeholders\*
  - 2. Will relate mostly to VSRPs

## Proposed sections of the Draft VSR Guidelines

- 1. VSR nomination\*
- 2. Portfolio management
- 3. Determining zones and loss factors\*
- 4. Capability assessment
- 5. Deactivation and temporary hibernation
- 6. Bidding
- 7. NEMDE processes
- 8. <u>Dispatch</u>
- 9. Conformance
- 10. Metering
- 11. Data and information sharing\*

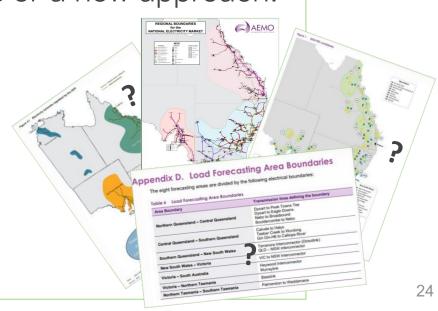


# Matters that may relate to a range of stakeholders (including DNSPs and VSRPs)

### What is a VSR zone?



- Refers to the network boundaries, on the network, within which the connection points of the qualifying resources for an aggregated VSR must be contained.
- A key factor for enabling participation in, implementing, and operating dispatch mode.
- Could be based on existing NEM zonal classifications or a new approach.
- Factors to consider and balance:
  - Size and ease of participation
  - Support effective management of the power system
  - Effective integration into the load forecasting process
  - Minimisation of changes in VSR zones







- IPRR is about facilitating direct access to the wholesale market (bidding, dispatch, scheduling etc.), not a framework for DER/CER to provide local network services to DNSPs, which they can do via separate agreements with DNSPs
- Focused on managing transmission system congestion, by incorporating VSRs into AEMO's transmission level constraints processes
- As such, all requirements on VSRs are at the aggregate DUID-level, including:
  - o Bid quantity and targets
  - Aggregated telemetry requirements
  - Dispatch conformance framework
- VSR zones therefore must be set to manage transmission-level congestion

# AEMO's proposal in draft guidelines



- Using congestion-based VSR zones means:
  - Congestion would be managed correctly and accurately using constraint equations
  - AEMO can avoid time consuming and resource-intensive changes to its systems to incorporate VSRs into constraint equations/modelling
  - Starting with NEM regions and then switching to congestion-based zones would require updating of every constraint equation and updating models
  - In comparison, NEM regions do not accurately reflect the correct limitation in the network for the areas where congestion presents
- AEMO's view is that using congestion modelling zones as VSR zones would best support managing power system needs (security, reliability, congestion and stability), but note that their size could compromise VSR development in the early years
- Other NEM zonal classifications would not be appropriate as the basis of VSR zones, including distribution network areas
  - Using ISP sub-regions, load forecasting areas or distribution network areas would not support power system management
  - Size and ease of VSR participation would likely be affected by the smaller size of some distribution networks areas, particularly in Victoria
  - o REZs don't provide sufficient geographic coverage to be considered as VSR zones

For congestion-based VSR zones to be workable, AEMO will as part of the IPRR implementation ensure mapping between NMIs, TNIs and VSR zones can occur in its systems to allow:

- VSRPs/FRMPs to know the zone NMIs (in a VSR) are in to know which zone to register in
- DNSPs to know the zone NMIs (in a VSR) are in to understand and monitor the active components in their network

#### VSR zones & distribution network areas

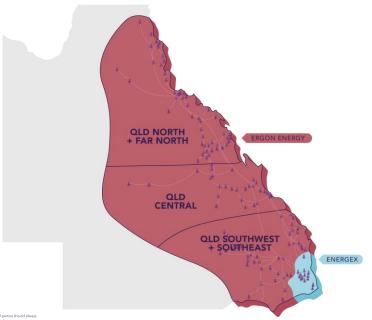


 AEMO proposed 13 congestion-based VSR zones in its consultation paper. AEMO now considers that it can amalgamate two of the South Australia zones, for a total of 12 VSR zones









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#### VSR zones & distribution network areas















AEMO © 2023

This map is intended to be a high-level representation only, interested parties should a consult with their relevant network service provider for more accurate information.







- VSR zones cannot change for the first three years
  - NER 11.180.5
- A review of VSRs zones can occur via:
  - VSR Guidelines review, to take place by May 2030
  - Subsequent reviews using the NER 8.9 'Rules consultation procedures'
- If AEMO and industry are considering changes to VSR zones, AEMO will
  provide guidance for VSRPs and other stakeholders on the processes and
  timing for implementing these changes, including a minimum lead time before
  changes would take effect.
- AEMO has increased its minimum lead time in the draft Guidelines to 12 months

### Nomination: Minimum threshold for VSRs



VSR minimum size is a key parameter for dispatch mode participation.

- We need to get the balance right, noting:
  - o The smaller the minimum size, the easier it is to form a VSR.
  - o The administrative and operational challenges arising from a larger number of smaller VSRs.
  - o Interaction between minimum size and the selection of VSR zones
- Factors to consider include:
  - How VSR capacities and numbers could change over time
  - WDR, where WDRUs have a 'max responsive component' minimum of 1 MW, aligned with the 1 MW bid threshold.
  - Contingency FCAS, where SRUs need to be a minimum capacity of 1 MW to provide, aligned with the 1 MW bid threshold.
  - o Existing standing exemption from registration, which is set at 5 MW.
- To balance the smaller size of zones AEMO has reduced the minimum threshold for a VSR to 1 MW for production or consumption or both in the draft guidelines
  - o This is tied to requirement to meet minimum 1 MW bid threshold (production or consumption)

# Nomination: data requirements



- This is <u>not</u> about resource-level information in operational time-frames: only at nomination (both initial and subsequent updates due to portfolio changes)
- The trade-offs are visibility & forecast accuracy vs barrier to entry
  - visibility & forecast accuracy:
    - demand forecasts must be able to differentiate between scheduled and non-scheduled capacity
    - example: rooftop solar PV, currently subtracted from demand
    - issue 1: <u>if VSR is made up of different technologies and system sizes</u>, without resource-level information, difficult to determine the effect on demand forecasts
    - issue 2: if dispatched in VSR, then included on both supply side and subtracted from demand?
    - issue 3: difficult to diagnose response to major power system disturbances or emergency backstop signals
  - barrier to entry:
    - although VSRPs will highly likely have this information already when building a VSR portfolio, providing information and always keeping it up-to-date (NMI churn) can be burdensome
    - providing aggregate values by fuel source and technology type might be even more burdensome due to addition step of calculating portfolio totals
    - any other issues?
- why reliance on other sources and methods can be problematic:
  - not all sites are included in the DER register
  - not all information is up-to-date in the DER register
  - no straightforward process available for VSRPs/FRMPs to update DER register information due to data privacy

What are stakeholders' views on collecting qualifying resource level information at nomination?

+4 MW supply and

-4 MW demand

4 MW rooftop PV in ASEFS\* forecast

4 MW rooftop PV

in a mixed VSR



= double demand or supply

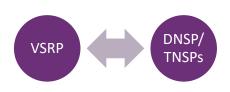
#### proposed resource level information:

- capacity
- if multiple DER, separate capacity
- resource type
- maximum storage



## Data & information sharing

IPRR rule requires AEMO to establish the following data and information sharing processes in the VSR Guidelines.



Industry and AEMO considering how data sharing may align with other current reform initiatives, including:

- MITE program
- CER Data Exchange



- Particularly interested in supporting DNSPs to appropriately:
  - Manage and estimate the individual market connection point responses for a VSR in their network.
  - Manage DOE calculations.

AEMO proposes that NSPs, will have access to the following:

- NMIs in their network that are within a VSR DUID
- VSR zone within which a NMI is located
- VSR participation status
- VSR ramp rates
- Post-market dispatch bid and target information
- Visibility, alongside VSRPs and AEMO, of five-minute revenue metering data
- Telemetered aggregate MW data updated every 5 minutes (as is currently publicly available for all scheduled DUIDs)

# Data & information sharing – positions in draft guidelines



- AEMO retained that dispatch information, including bids and targets, will be shared post-market with DNSPs and TNSPs
- Some submissions noted that NMI-level vs. DUID-level pre-dispatch information is required by DNSPs. AEMO expects that NMI-level dispatch forecasts that VSRPs may be able to provide outside of the rule framework, such as voluntarily to NSPs, could be inaccurate as:
  - These may be managed in real-time across the VSR, with flexibility within the VSR's capacity used to address variability and meet targets meaning that NMI dispatch may change dynamically
  - Sharing of NMI-level dispatch information was not part of the final rule and therefore there is no conformance framework in place to assess the accuracy of provided NMI-level data in the case where VSRPs provide this information to DNSPs
- AEMO will include embedded network managers to data sharing processes in the Draft Guidelines, where a qualifying resource is an on-child NMI in a VSR

AEMO is open to considering data sharing arrangements, voluntary or otherwise, that can address NMI-level data needs of DNSPs with portfolio-level requirements outlined in the IPRR rule change for VSRP



# Matters that relate specifically to VSRPs



## Portfolio management and NMI churn

- Supported by AEMO's PMS uplift
- VSRPs will be responsible for the establishment and maintenance of VSR aggregations and portfolios, including:
  - o Nomination and revoking the nomination of a voluntarily scheduled resource
  - Addition and removal of qualifying resources
  - Voluntarily scheduled resource configurations
  - Regular updates to standing data, including the backstop capability status of a voluntarily scheduled resource
- In AEMO's interpretation of NER 3.10A.1(m)(i) and (ii):
  - AEMO considers that rather than requiring VSRPs to notify AEMO immediately if they cease to be the FRMP for a qualifying resource in a VSR, AEMO could rather revoke the nomination of the relevant qualifying resource as a VSR
  - o Given the timeframe under NER 3.10A.1(m)(ii) is as soon as reasonably practicable with a 10 business day deadline, there may also be the opportunity for AEMO to automatically revoke the nomination of a qualifying resource that ceases to be a qualifying resource after the 10 business day deadline

Do stakeholders
agree with AEMO's
proposal to
automatically revoke
the nomination of a
qualifying resource
from a VSR if the
VSRP ceases to be
the FRMP for that
qualifying resource?





- The full list of proposed notice periods for VSR participation mode switching is in the draft guidelines Table 8
- Notice period necessary to ensure that internal systems and AEMO's demand forecasts appropriately reflect the change. This change then manifests itself to the market in the form of demand forecasts and appropriately calculated reserve level forecasts
- AEMO does not consider that intra-day mode switching for VSRs is required, noting alternative options to intra-day mode switching that can cater to these concerns like use of a fixed loading profile.

NOTICE	NOTICE PERIOD CONSULTATION PAPER	NOTICE PERIOD DRAFT GUIDELINES
Deactivation notice	7 trading days	5 trading days
Reactivation notice (VSR inactive < 12 months) Reactivation	No notice period.  NA	Must be submitted before 12:30pm on the business day prior to trading day of reactivation 7 trading days
notice (VSR inactive > 12 months)		
Hibernation notice	7 trading days	7 trading days
Resumption notice	7 trading days	7 trading days

# Capability assessment



# At nomination: initial screening of qualifying resources and a VSR AEMO will check qualifying resources meet requirements including:

- Not already registered by another VSRP, DRSP for demand response or in a RERT reserve contract
- Metering requirements
- Endorsement from VSRP that VSR meets its connection agreement

#### AEMO will check VSR:

- Bid validation data
- Minimum size is above threshold
- Technology composition

#### After nomination: capability re-assessments

AEMO has proposed that capability reassessments would be triggered by the following incidences:

- Significant portfolio changes to a VSR, including
  - Major changes to the overall nameplate or combined nameplate rating of the VSR
  - The churn of a significant number of NMIs within the VSR
- A VSRP submitting a resumption notice or reactivation notice after being inactive for greater than 12 months

#### At nomination: technical capability assessment

Subset of assessment undertaken during the registration of a new bidirectional unit, tailored to the unique voluntarily scheduled resource unit type.

 Includes checking VSR can bid, receive dispatch target, provide aggregated telemetry data

#### After nomination: aggregated telemetry check

AEMO will check periodically the accuracy of the aggregated telemetry data it receives for a VSR against aggregated revenue metering data for the qualifying resource(s) within the VSR



# Aggregated telemetry requirements for VSRs/VSRPs

#### Under the IPRR final rule:

- VSRPs are not required to provide NMI-level bid or telemetry data
- Requirements only on VSRPs to provide aggregate (DUID-level) VSR data.
  - AEMO is not mandating telemetry requirements for each qualifying resource, but a fair and accurate representation of the aggregation (DUID)
  - VSRP at discretion and responsible for benefit, risk and cost assessment related to how they calculate aggregated telemetry data and the level of maturity they invest in.
  - o E.g. could use:
    - Sampling
    - Detailed metering
    - ☐ Automated outputs (e.g. if price goes x, portfolio does y)
    - ☐ Forecasts (if VSRP comfortable to take on that risk)

	Minimum update frequency	
VSRs < 5 MW	<ul> <li>Two data snapshots required for each five-minute trading interval (TI) where T marks the boundary/end of the current TI:</li> <li>One in the middle, T-150s (2 minutes and 30 seconds into the TI)</li> <li>One at the end, T-5s (5 seconds before the end of the TI)</li> <li>OR</li> <li>60 seconds</li> </ul>	
VSRs > 5 MW	4 seconds (Power System Data Communications Standard)	

AEMO would like to understand whether the two data snapshots approach per TI would reduce barriers to entry for small VSRS, or providing telemetry every 60 seconds would be the industry's preferred option



# Metering requirements for VSR

- All meters must meet requirements of NER Chapter 7
- The metering installation at a VSR connection point must have remote acquisition and must produce and store bidirectional trading interval energy data (i.e. five minute interval data)
  - All modern smart metering installations should be capable of recording and storing energy data in five-minute intervals
  - Remote acquisition, as defined in the NER, refers to the acquisition of interval metering data from a telecommunications network connecting to a metering installation
- AEMO notes that a customer with a smart meter may be required by the VSRP to have an additional SCADA system to enable operational metering, which includes the ability to allow the equipment to make autonomous decisions and to provide a high speed power read.
  - This is compared to a smart meter's core revenue metering function, focussed on providing high accuracy energy data, but with collection of information from the metering installation only on a daily or weekly basis
  - Responsibility/role of VSRP to determine NMI-level telemetry requirements and systems they may require

# VSR conformance - change



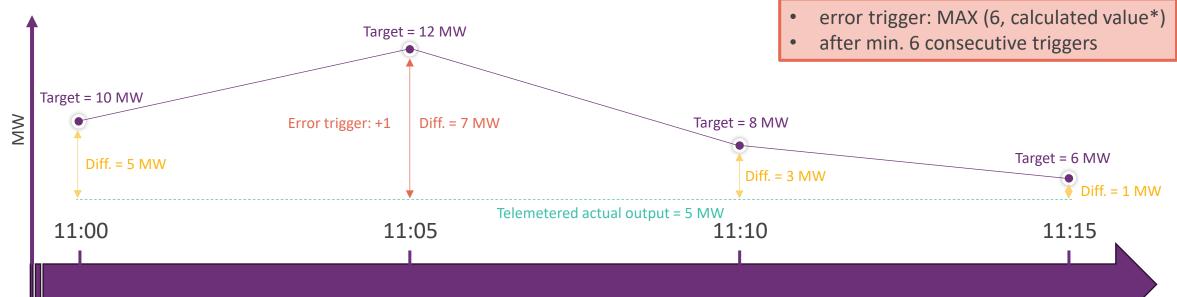
- Conformance remains to be applicable to active VSRs only.
- Change in approach to better balance:
  - · enabling VSR portfolio growth,
  - · considering power system impacts, and
  - simplicity and costs of implementation

KEY ISSUE	IN CONSULTATION PAPER	IN DRAFT GUIDELINES
Error threshold setting	Current constant component (6 MW) is replaced by a dynamically set value, based on VSR size	As pert the current process: the greater of a 6 MW constant and a calculated value based on a percentage of availability and ramp rate.
Performance constraints	Not applied to VSR; ad-hoc manual "intervention" to limit capacity to a maximum in case of repeated non-conformance	Current processes ( <u>Dispatch procedure</u> ) apply. Declared non-conforming after 6 <sup>th</sup> interval
Market notices	Not sent	Sent as per current process, upon declaring non- conformance
Non-conformance process	Not observed; ad-hoc manual "intervention" in case of repeated non-conformance	Current processes (Dispatch procedure) apply



# VSR conformance explanation

- No resource-level conformance obligation for energy and Contingency FCAS.
- Only for VSRs in active mode and for the whole of VSR (not the individual resource).
- Not immediate and is based on aggregate telemetry (error trigger counts, steps, processes in place).
- Consequences of non-conformance for the whole of VSR:
  - · cannot be used as a basis to set the spot price
  - · constrained to dynamic output or other level until non-conformance is rectified
  - market notice published



<sup>\*</sup> Based on total VSR availability and ramp rate.



## 4. Next Steps

Jen Marin (AEMO)

## Next steps



STAGE	DATES	RESPONSIBLE
Final rule determination	Thu 19 Dec 2024	AEMC
Publish final High Level Implementation Assessment (HLIA) for comment	Thu 06 Feb 2025	AEMO
Publish VSR Guidelines consultation paper	Thu 20 Feb 2025	AEMO
Feedback period on HLIA closes	Thu 27 Feb 2025	Industry to provide feedback
Publish final v1.1 HLIA	Thu 20 Mar 2025	AEMO
Feedback period on consultation paper closes	Thu 20 Mar 2025	Industry to provide feedback
Draft report published, including draft Guidelines	Tue 3 June 2025	AEMO
Feedback period on draft report closes	Wed 9 July 2025	Industry to provide feedback
Final report and Guidelines published	Thu 4 Sep 2025	AEMO

## AEMO invites feedback on the matters for consultation and proposed collaboration approach.

- Please provide your feedback via <a href="mailto:nemreform@aemo.com.au">nemreform@aemo.com.au</a>
- Your feedback is essential, and the consultation paper (and this presentation) outlines key areas for industry to consider.
- Feedback will inform the draft report where appropriate.

## Recap: Collaboration approach



To support uptake of IPRR, AEMO seeks to engage industry stakeholders collaboratively in the development of technical and operating parameters for the Integrating Price Responsive Resources reform.

#### Proposed engagement principles:

- Support broad awareness and understanding of IPRR reform
- Support collaborative problem identification
- Complement statutory consultations on new and existing guidelines and procedures for IPRR (e.g. Voluntarily Scheduled Resources Guidelines consultation)
- Leverage existing programs of work and channels for engagement as relevant to optimise stakeholder touch points with AEMO (e.g. NEM Reform Program forums or existing DNSP working groups)

#### Indicative approach based on feedback to date:

#### 1:1s

Audience: Prospective Voluntarily Scheduled Resource providers, Industry bodies
Topics: Understanding and working

through barriers and opportunities

Timing: February start

Combined sessions for information sharing on common issues and consolidated positions:

NEM Reform Program forums (monthly), dedicated forums (as required)

#### Focus Group(s)

<u>Audience</u>: Distribution networks
<u>Topics</u>: Understanding participant
interactions and data sharing
<u>Timing</u>: Late March (TBC) start

AEMO is seeking input into this collaboration approach. Have we missed a key stakeholder group? What are your needs? Do you have a view on what is the appropriate approach and timing for engagement?





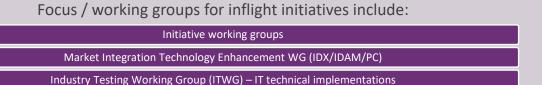
Forums	Forum focus	Cadence	Approach	
Executive Forum	Program overview and status update	3 per Year	Nomination	
Reform Delivery Committee (RDC)	Long term implementation planning perspective	Quarterly	Nomination	
Program Consultative Forum (PCF)	Inflight initiatives status & co-ordination	& Monthly		
Implementation Forum	Implementation of reforms	Monthly	Open	
Electricity Wholesale (EWCF) & Electricity Retail (ERCF) Consulta	Procedures working groups	Monthly	Open	
Industry Testing Working Group	Testing	Monthly	Open	
Working Groups	Inflight	As appropriate	As appropriate	



#### To learn more, please visit:

- AEMO | NEM Reform Program Forums
- AEMO | NEM Reform Program Initiatives
- AEMO | Industry Meetings Calendar
- or contact the program at NEMReform@aemo.com.au.

Subscribe to the NEM Reform Newsletter here







## 5. Q&A

Jen Marin (AEMO)



#### For more information visit



NEMReform@aemo.com.au



AEMO | NEM Reform initiatives | IPRR



# Appendix A – AEMO Competition Law Meeting Protocol

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### **AEMO Competition Law - Meeting Protocol**

AEMO is committed to complying with all applicable laws, including the Competition and Consumer Act 2010 (CCA). In any dealings with AEMO, all participants agree to adhere to the CCA at all times and to comply with appropriate protocols where required to do so.

AEMO has developed meeting protocols to support compliance with the CCA in working groups and other forums with energy stakeholders. Before attending, participants should confirm the application of the appropriate meeting protocol.

Please visit: <a href="https://aemo.com.au/en/consultations/industry-forums-and-working-groups">https://aemo.com.au/en/consultations/industry-forums-and-working-groups</a>



## Appendix B -Glossary

## Glossary



TERM	DEFINITION	TERM	DEFINITION	TERM	DEFINITION
AEMC	Australian Energy Market Commission	ERI	Enhancing reserve information	MITE	Market interface technology enhancement
AEMO	Australian Energy Market Operator	ESB	Energy Security Board	NEM	National electricity market
AER	Australian Energy Regulator	EV	Electric vehicle	NEMDE	National electricity market dispatch engine
API	Application Programming Interface	FCAS	Frequency control ancillary service	NEO	National electricity objective
ARENA	Australian Renewable Energy Agency	FEL	Flexible export limit	NER	National electricity rules
B2B	Business to business	FPP	Frequency performance payments	NMI	National metering identifier
B2M	Business to market	FTA2	Unlocking benefits of CER through flexible trading	NSP	Network service provider
BDU	Bidirectional Unit	FRMP	Financially responsible market participant	PASA	Projected assessment of system adequacy
CER	Consumer Energy Resources	HLIA	High level implementation assessment	PMS	Portfolio management system
COAG	Council of Australian Governments	IESS	Integrating energy storage systems	PoL	Predictability of load
CRMP	Cost recovery market participant	IDAM	Identity access and management	REZ	Renewable Energy Zones
DER	Distributed energy resources	IDX	Industry data exchange	SCADA	Supervisory control and data acquisition
DNSP	Distribution network service provider	IPRR	Integrating price responsive resources	ST PASA	Short Term Projected Assessment of System Adequacy
DOE	Dynamic Operating Envelope	IRP	Integrated resource provider	V2G	Vehicle-to-grid
DRSP	Demand response service provider	ISP	Integrated system plan	VPP	Virtual Power Plants
DSP	Demand side participation	MASS	Market ancillary services specification	VSR	Voluntarily scheduled resource
DUID	Dispatchable unit identifier	MSL	Minimum System Load	VSRP	Voluntarily scheduled resource provider
				WDRM	Wholesale Demand Response Mechanism

- A comprehensive glossary of terms (and measurements) can be found at AEMO's website: <a href="https://aemo.com.au/learn/industry-terminology">https://aemo.com.au/learn/industry-terminology</a>
- For rules terms, see the relevant industry rules on the <u>AEMC website</u> > <u>Energy rules</u>.



## Appendix C – Additional matters

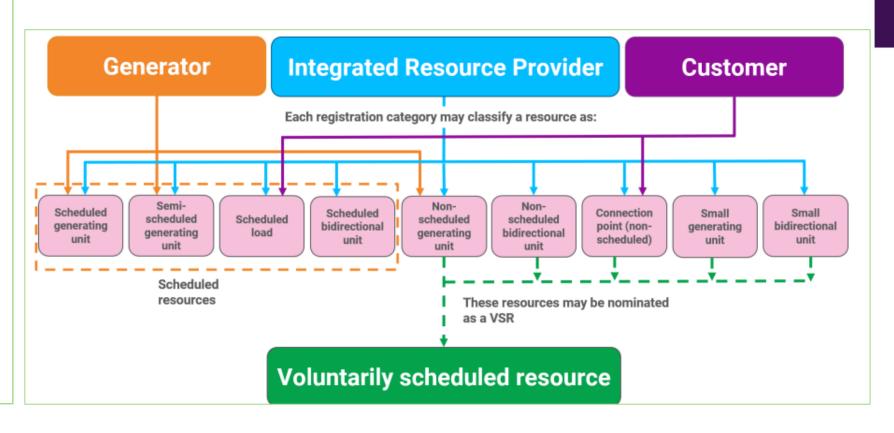
Some additional matters for stakeholders' feedback, noting that the following slides only reflect a subset of the matters under consultation.

PLEASE READ THE VSR GUIDELINES DRAFT REPORT AND DRAFT GUIDELINES FOR THE FULL SCOPE OF CONSULTATION.

## AEMO

# Dispatch mode high-level design: Qualifying resources

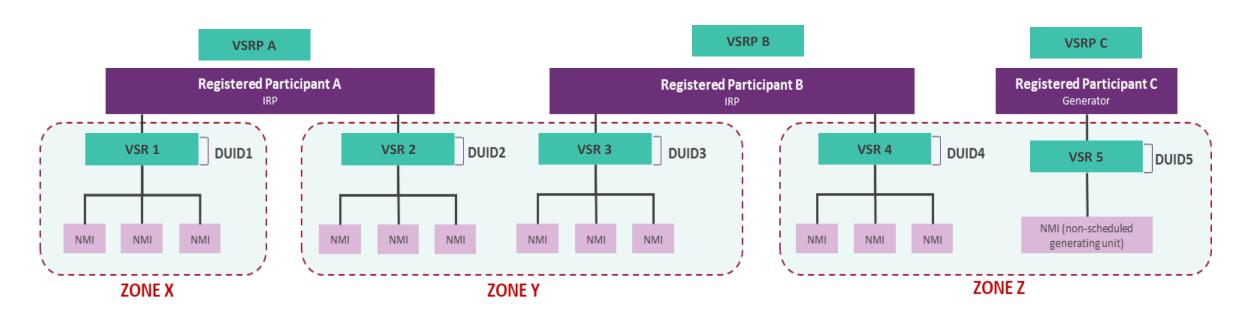
- → VSRs can comprise small to medium sized assets across renewable generation, storage and flexible demand that cannot presently be scheduled.
- → VSRs are coordinated by aggregators known as a voluntarily scheduled resource providers (VSRP), such as a VPP or retailer, on behalf of the consumer
- → VSRP must be the financially responsible market participant (FRMP) for the connection point/s nominated as a VSR.





# Dispatch mode high level design: VSR Zones

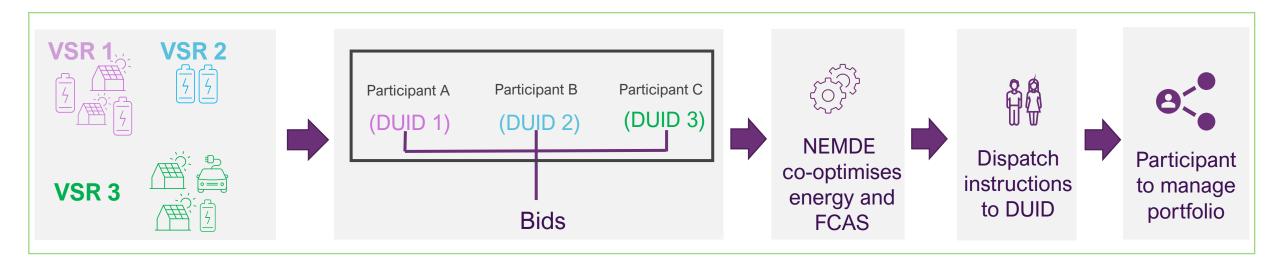
Qualifying resources for an aggregated VSR must be contained within a VSR Zone.







VSRs can be scheduled & dispatched, consistent with existing framework for scheduled resources.







VSRs still required to submit bids when inactive, with AEMO proposing it expects:

- Energy bids are non-zero (to maintain operational visibility for AEMO)
- Regulation FCAS bids are zero to prevent inactive VSR from being enabled. Non-zero Regulation FCAS bids will be rejected by AEMO.
- Contingency FCAS bids may be non-zero for inactive VSR.

Feature	NER clause	Active	Inactive	Hibernated
Submit dispatch bids	3.8.6	Energy ✓ C-FCAS ✓ R-FCAS ✓	Energy ✓ C-FCAS ✓ R-FCAS ✓ - bid unavailable	for all: X
Subject to dispatch bid validation	3.8.8	Energy ✓ C-FCAS ✓ R-FCAS ✓	for all:   (Not required in the final rule but AEMO proposes to still perform validation)	for all: X
Conform to dispatch instructions	3.8.23B	Energy ✓ C-FCAS ✓ R-FCAS ✓	for all: <b>X</b>	for all: X
Bids and rebids must not be false or misleading	3.8.22A	Energy ✓ C-FCAS ✓ R-FCAS ✓	for all: <b>X</b> (AEMO expects however that inactive bids are as representative as possible of intended VSR behaviour)	for all: <b>X</b>
Receive and follow a direction issued by AEMO	4.8.9	Energy ✓ C-FCAS ✓ R-FCAS ✓	for all: <b>X</b>	for all: X
Receive and follow instructions from AEMO at any time	4.9.2	Energy ✓ C-FCAS ✓ R-FCAS ✓	for all: X	for all: <b>X</b>
Dispatch bid compliance	4.9.8	Energy ✓ C-FCAS ✓ R-FCAS ✓	for all: <b>X</b>	for all: X





- VSR energy is settled at individual NMI level using revenue meter data. This is the same approach as BAU i.e. a generator's conformance against dispatch instructions is assessed using aggregated telemetry, but its actual generation is settled against revenue meter data.
- FRMP/VSRP is responsible for:
  - Settlement for each NMI in their portfolio.
  - Rewarding/paying customers within their aggregation this is separate from NEM settlement processes.
- Non-energy cost recovery arrangements for VSRs across the different dispatch modes
  - o Active VSRs in final rule excluded from NECR for RERT and energy directions