

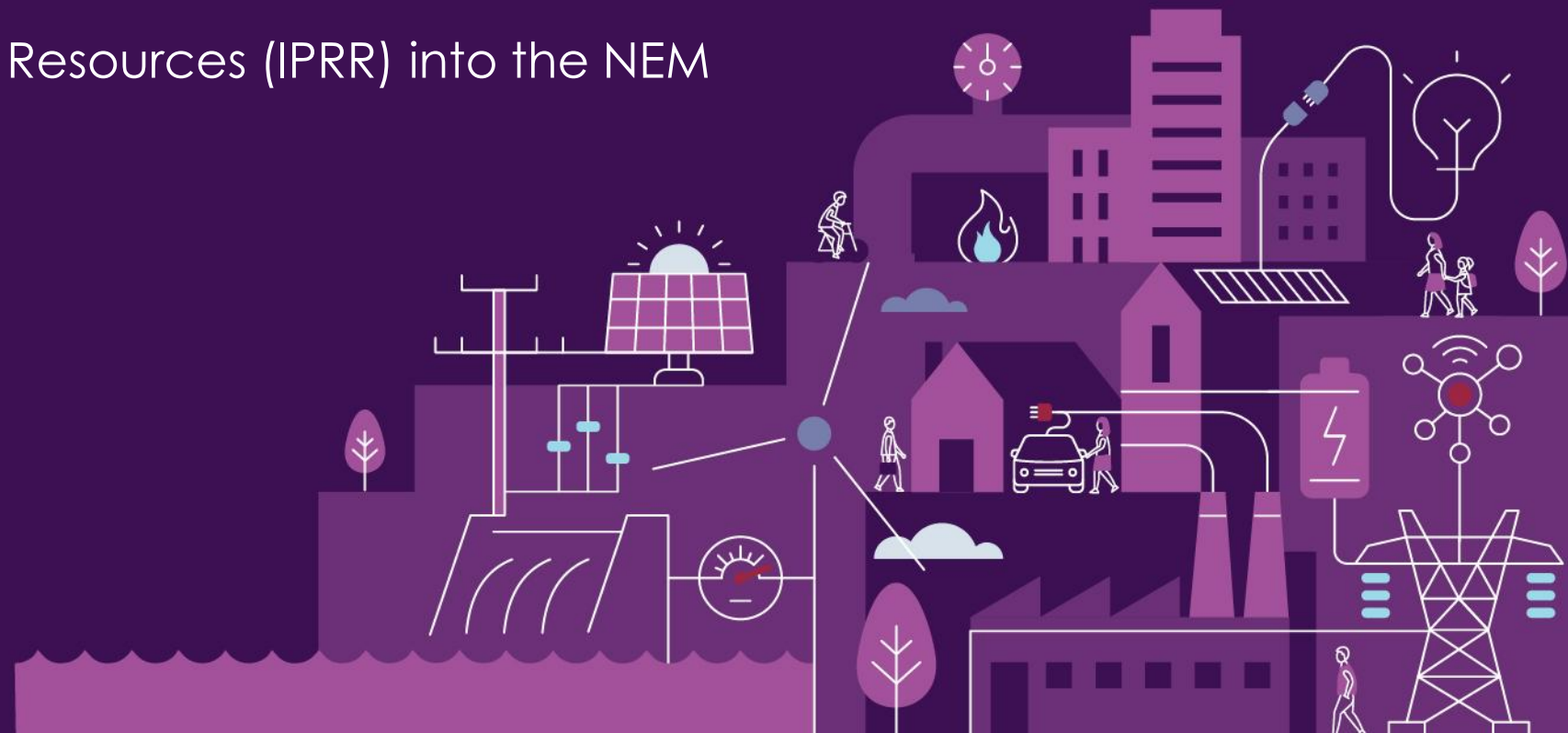
Stakeholder Information Session



Voluntarily Scheduled Resources Guidelines | Final

Integrating Price Responsive Resources (IPRR) into the NEM

4 December 2025



1. Welcome

Jen Marin (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.

Read our
RAP

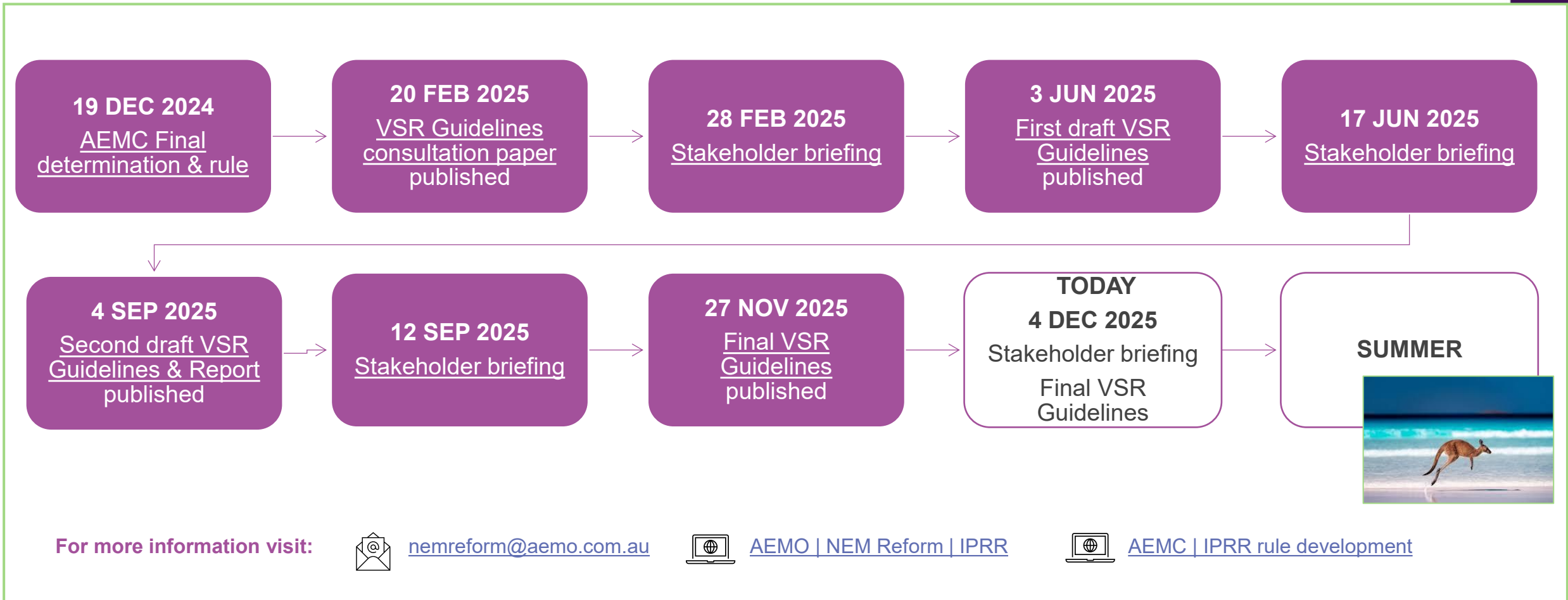


General Housekeeping

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. Please also raise your hand to ask a question, keeping in mind we only have one hour today.
4. We will share the slides with you via email after this meeting.
5. In attending this meeting, you are expected to: 
 - Contribute constructively.
 - Be respectful, both on the call and in the chat.

Participants are asked to familiarise themselves with AEMO's [Competition Law Meeting Protocol](#) as outlined in Appendix A and at AEMO's website.

VSR Guidelines: Timeline



For more information visit:



nemreform@aemo.com.au



[AEMO | NEM Reform | IPRR](#)



[AEMC | IPRR rule development](#)

Agenda

#	Time (AEDT)	Topic	Presenter/s
1	1:00-1:05 PM	Welcome	Jen Marin (AEMO)
2	1:05-1:10 PM	Session objectives	Jen Marin (AEMO)
3	1:10-2:20 PM	Voluntarily Scheduled Resources (VSR) Final Guidelines - Deep dive <ul style="list-style-type: none">• Key elements of the changes in the VSR Final Guidelines including:<ul style="list-style-type: none">○ Final VSR dispatch and energy model approach, key changes and IPRR Implementation rule changes	Istvan Szabo & Louise Bardwell (AEMO)
4	2:20-2:25 PM	Next steps and how to get involved	Emily Brodie (AEMO)
	2:30 PM	Close	

Prereading:

- [AEMO's Voluntarily Scheduled Resources Guidelines Final](#)
- [AEMOs Voluntarily Scheduled Report Final](#)

Documentation:

- [AEMO's v1.0 IPRR High Level Implementation Assessment](#)
- [AEMO's IPRR Project Webpage: Integrating Price Responsive Resources into the NEM \(IPRR\)](#)



"Please note that this meeting will be recorded by AEMO and may be accessed and used by AEMO for the purpose of notetaking. By attending the meeting, you consent to AEMO recording the meeting and using the record for this purpose. No other recording of the meeting is permitted"

Appendix A AEMO Competition Law meeting protocol

Appendix B Glossary

Appendix C Additional Matters

2. Session objectives

Jen Marin (AEMO)

Objectives of today's session



Provide a 'deep dive' into the differences between the second draft and the final Voluntarily Scheduled Resources guidelines



Invite stakeholder questions and the opportunity to seek clarity Voluntarily Scheduled Resources Guidelines



Share next steps, how to get involved and details of planned stakeholder readiness for the VSR Incentive Mechanism

3. Voluntarily Scheduled Resources (VSR) Final Guidelines

Istvan Szabo/Louise Bardwell (AEMO)

VSR Final Guidelines: Topics for discussion

- **The final report** clarifies topics relevant to IPRR implementation that have impacted requirements in the final VSR Guidelines.
- These include:
 - The VSR dispatch model and VSR energy model, and
 - Several other clarifications
- AEMO has finalised matters consulted on in the first and second draft, including device-level information requirements, aggregated telemetry requirements, and data and information sharing.

Sections of the final VSR Guidelines

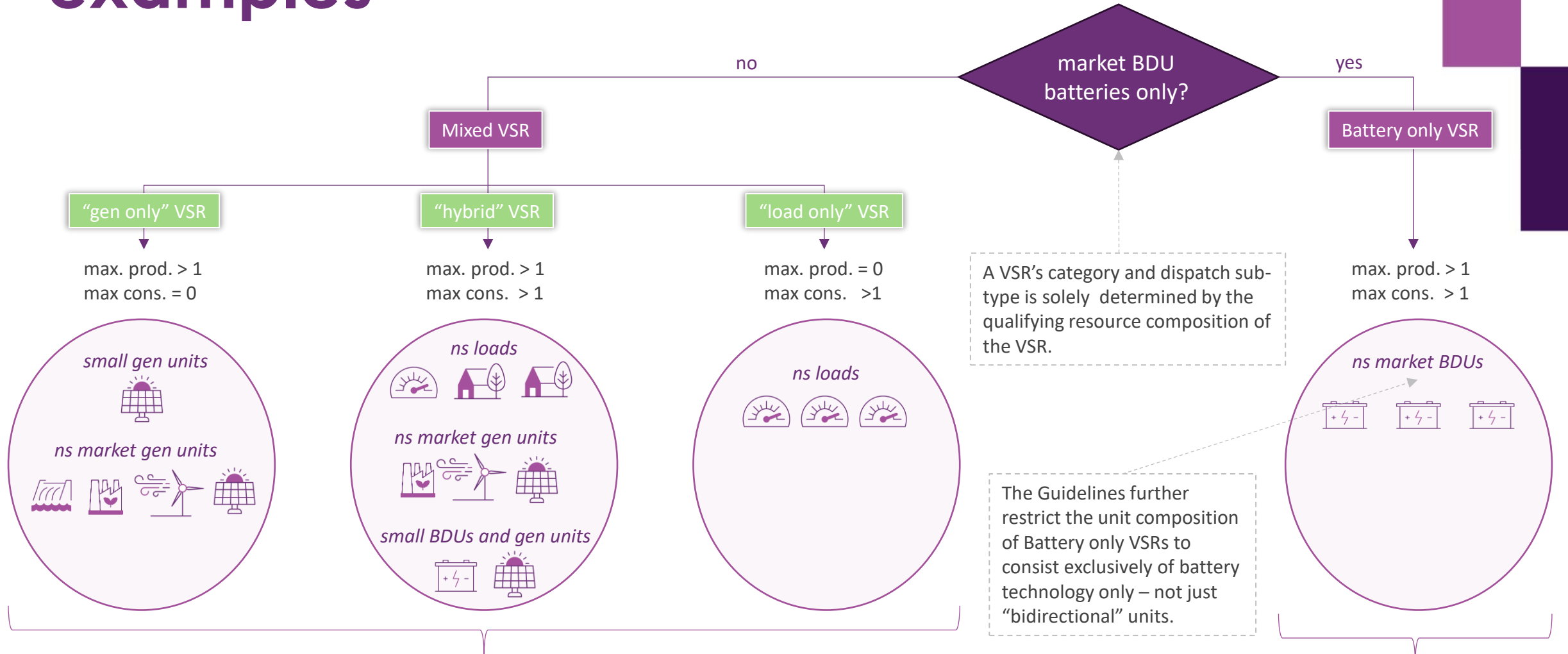
1. VSR nomination
2. Portfolio management
3. Determining zones and loss factors
4. Capability assessment
5. Deactivation and temporary hibernation
6. Bidding and dispatch
7. Conformance
8. Metering
9. Data and information sharing

Section one: Dispatch and energy model

Overview: Dispatch and energy model

- A simplified, more flexible model loosely based the BDU model
- Alignment with the bidding and energy model
- Transitioning between categories

VSR categorisation principles & examples



A VSR's category and dispatch sub-type is solely determined by the qualifying resource composition of the VSR.

The Guidelines further restrict the unit composition of Battery only VSRs to consist exclusively of battery technology only – not just “bidirectional” units.

Dispatch type: **BIDIRECTIONAL**
 Dispatch sub-type: **VSR**
 Guidelines reference: **Mixed VSR**

Dispatch type: **BIDIRECTIONAL**
 Dispatch sub-type: **VSRBATTERY**
 Guidelines reference: **Battery only VSR**

Dispatch, bidding and energy model

Guidelines reference	Dispatch type	Dispatch Sub-type	Bidding model	Qualifying resource	State of Charge (SOC)	Daily Energy Constraints (DEC)	Energy Limits (EL)
Mixed VSR	BIDIRECTIONAL (prev. GENERATOR)	VSR	scheduled BDU* max. prod. cap. ≥ 1 max. cons. cap. = 0	no initial or subsequent restriction on nomination	VSRP <u>can't</u> provide	VSRP can provide AEMO publishes used in model	VSRP <u>can't</u> provide
Mixed VSR	BIDIRECTIONAL (prev. LOAD)	VSR	scheduled BDU* max. prod. cap. = 0 max. cons. cap. ≥ 1	no initial or subsequent restriction on nomination	VSRP <u>can't</u> provide	VSRP can provide AEMO publishes used in model	VSRP <u>can't</u> provide
Mixed VSR	BIDIRECTIONAL (remains mixed technology, ds. type remains the same)	VSR	scheduled BDU** max. prod. cap. ≥ 1 max. cons. cap. ≥ 1	no initial or subsequent restriction on nomination	VSRP can provide AEMO publishes <u>not</u> used in model****	VSRP temporarily <u>can't</u> provide****	VSRP <u>can</u> provide AEMO publishes <u>not</u> used in model****
Battery only VSR	BIDIRECTIONAL (remains reserved for ns. market BDUs only, ds type remains the same)	VSRBATTERY	scheduled BDU*** max. prod. cap. ≥ 1 max. cons. cap. ≥ 1	initial and subsequent nomination is temporarily restricted for VSRs consisting of non-scheduled market BDUs that are batteries	VSRP can provide AEMO publishes used in model	VSRP <u>can't</u> provide	VSRP can provide AEMO publishes used in model

* The bidding model for these VSRs is a heavily modified version of the scheduled BDU model, where EL and SOC provision are not included, but DEC can be. Bids must be in line with max prod./cons. values of Schedule 3.1. information.

** Mixed VSRs with both prod. and cons. Schedule 3.1. values will use a less modified scheduled BDU bidding model with optional SOC and EL provision.

*** Battery only VSRs will fully utilise the scheduled BDU bidding model.

**** AEMO will initiate industry consultation on determining an appropriate methodology of an energy model for hybrid/mixed aggregations.

Switching between categories

- All VSRs will be BIDIRECTIONAL dispatch type
- **Battery only VSRs** and **Mixed VSRs** are established as official categories in the Guidelines
- These categories directly align with dispatch sub-types:
 - Battery only VSR: "VSRBATTERY"
 - Mixed VSR: "VSR"
- This presentation differentiates between unofficial sub-categories of a Mixed VSR:
 - "generation only" → DEC, no SOC/EL
 - "load only" → DEC, no SOC/EL
 - "hybrid" → SOC/EL, no DEC
- VSRPs can change VSRs freely within the Mixed VSR category
- Changing from Mixed VSR to Battery only is allowed under certain conditions.
- Changing from Battery only to Mixed VSR remains restricted

Movement and change within the Mixed VSR category

initial Mixed VSR	new Mixed VSR	method of change
"gen only"	"hybrid"	<ol style="list-style-type: none"> 1. nominate cons. capable qualifying resources 2. submit >1 MW Schedule 3.1 for consumption 3. adjust bids to remove DEC 4. optionally start providing SOC & energy limits
"hybrid"	"generation only"	<ol style="list-style-type: none"> 1. remove all cons. capable qualifying resources 2. submit 0 MW Schedule 3.1 for consumption 3. adjust bids to add DEC
"hybrid"	"load only"	<ol style="list-style-type: none"> 1. remove all gen. capable qualifying resources 2. submit 0 MW Schedule 3.1 for generation 3. adjust bids to add DEC
"load only"	"hybrid"	<ol style="list-style-type: none"> 1. nominate gen. capable qualifying resources 2. submit >1 MW Schedule 3.1 for generation 3. adjust bids to remove DEC 4. optionally start providing SOC & energy limits

Movement and change between the Mixed VSR and Battery only categories

initial category	new category	method of change
Mixed VSR	Battery only VSR	Allowed under certain conditions. <ol style="list-style-type: none"> 1. all non-market BDU resources are removed or churn away. 2. adjust Schedule 3.1 info and provide max & min SOC, import & efficiency factors.
Battery only VSR	Mixed VSR	This transition (while keeping the same DUID) is temporary not allowed.

Section two: Other changes as part of finalisation of IPRR implementation and changes related to stakeholder feedback

Overview: Changes related to stakeholder feedback

- Requirements related to hibernated VSRs
- Collection of information at nomination
- Denomination of qualifying resources from a VSR
- Aggregated telemetry requirements for VSRs
- Final VSR Zone Mapping Tool and maintenance
- Voluntary sharing of pre-dispatch information
- Sharing of device information for qualifying resources in a VSR

Requirements related to hibernated VSRs

RERT

- Only qualifying resources in hibernated VSRs can participate in unscheduled resource RERT reserve contracts.
- VSRP must ensure VSR is hibernated before entering into RERT contract.
- Qualifying resources in VSR cannot be part of RERT contract at time of nomination (lifecycle cannot start as hibernated).

Aggregated telemetry

- Provision of SCADA from a hibernated resource is not a requirement.
- If the VSRP elects to provide SCADA, the same quality standards that apply to providing aggregated telemetry remain applicable.

Bidding

- Condition of hibernation - VSRPs must update their availability in bids for trading days during the hibernation period, or AEMO will amend bids on behalf of the VSRP.
- Should be zero availability for Energy and Regulation FCAS (if applicable) and collapsed trapezium values for Contingency FCAS)

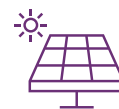
Nomination information collection

- AEMO has confirmed it will collect device-level information at nomination only for **devices that are behaving price-responsively**.
- AEMO acknowledges this may not include DPV, depending on the VSRP and what is under control.
- Also included requirement to collect nameplate rating for the qualifying resource for production or consumption or both, and the maximum dispatchable capacity for the qualifying resource for production or consumption or both

Information to collect includes:

Qualifying resource level

- NMI the device is linked to
- Type of device: linked to primary and secondary fuel and technology types, with new 'mixed' category for e.g. residential VPPs
- Capacity of the device: in kW, kW: AC mandatory for all devices, DC optional for solar PV
- Maximum energy storage of the device, if applicable: in kWh



Solar
6.5 kW (DC)



Solar inverter
5 kW (AC)



Battery
7.6 kW (AC)



EV Charger
7 kW (AC)



Controlled Load
4 kW (AC)

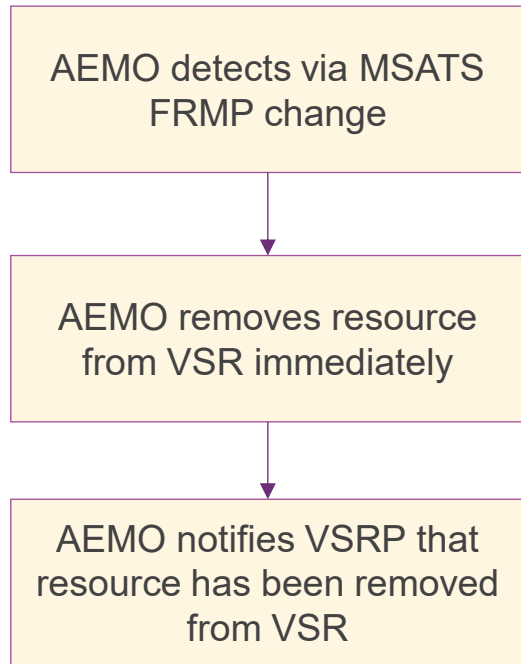
VSR level

- *Battery only VSR* - min and max SoC: MWh
- *Battery only VSR* - storage import and export efficiency factor: calculated as weighted average factors for the units in VSR
- NER Schedule 3.1 bid validation data

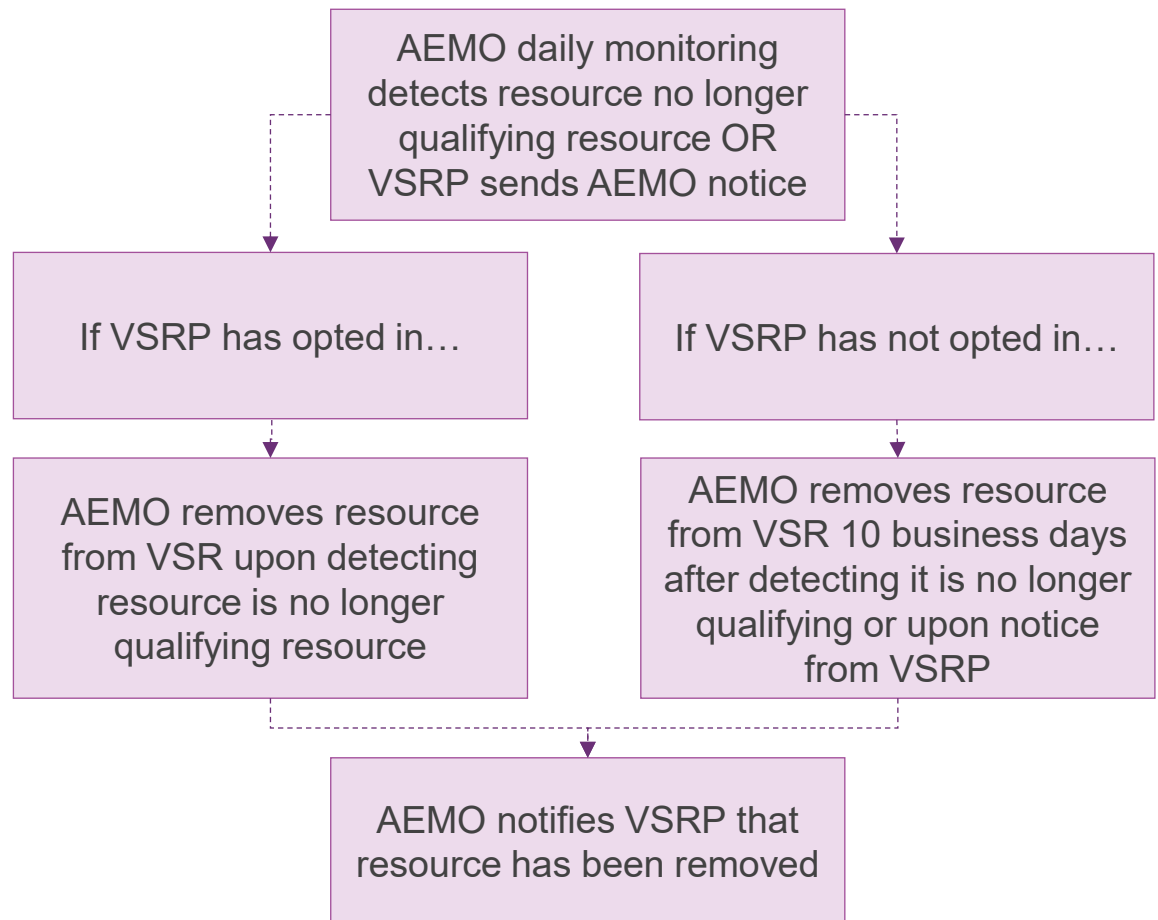
Denomination of qualifying resources

- AEMO has finalised its process for implementation of NER clause 3.10A.1(m):

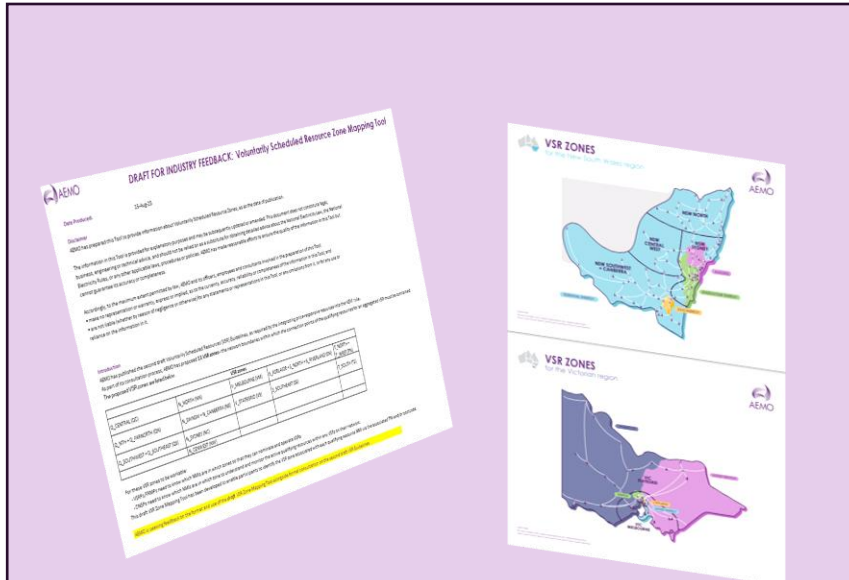
VSRP no longer FRMP for qualifying resource



Resource no longer qualifying resource



VSR Zones: Final VSR Zone Mapping Tool



The image shows a draft document titled "DRAFT FOR INDUSTRY FEEDBACK: Voluntarily Scheduled Reserve Zone Mapping Tool" and two maps of Victoria titled "VSR ZONES". The maps show different regions of Victoria with various VSR zones highlighted in different colors.

AEMO has published the final VSR Zone Mapping Tool.

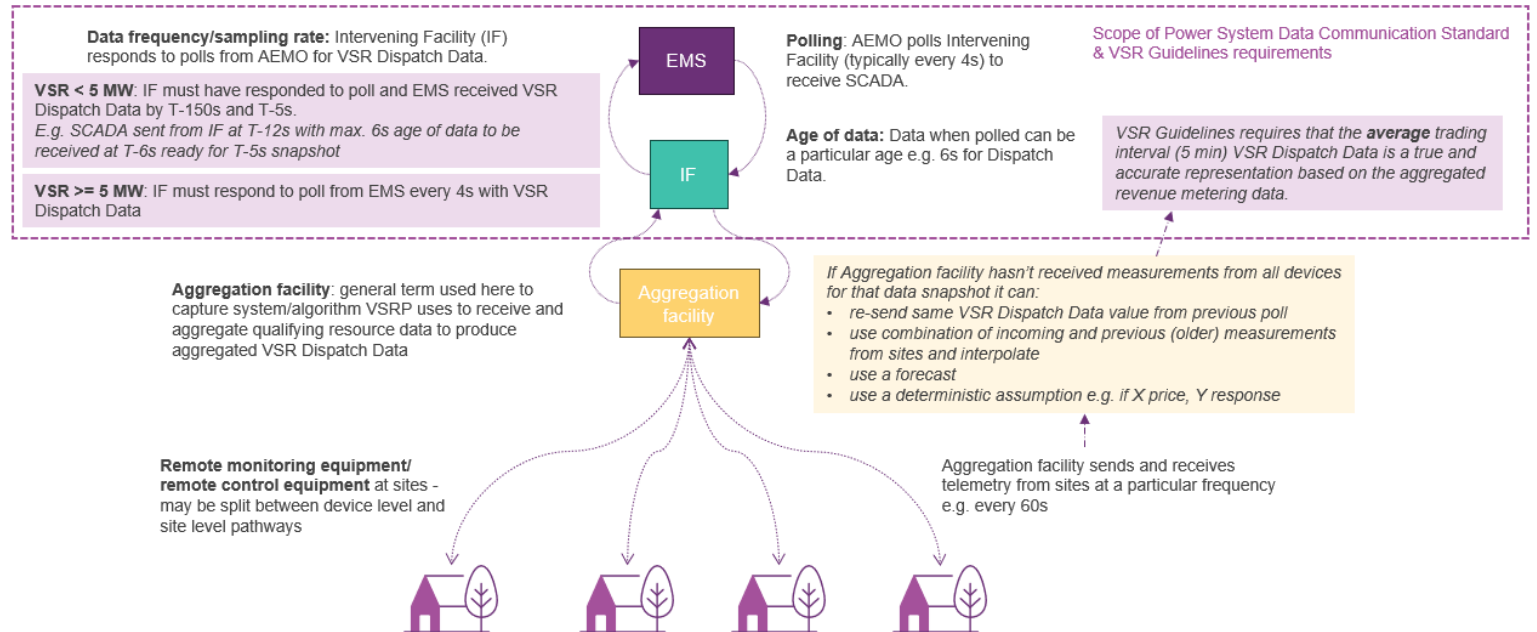
AEMO has published the final VSR zone maps alongside the final Guidelines.

- VSR Zone Mapping Tool allows participants to identify the VSR zone associated with each qualifying resource NMI by mapping via the relevant TNI and, in some required circumstances, postcode.
- AEMO has added 'date_created,' 'date_last_updated,' and 'version' to tool to manage future updates to the tool
- AEMO has aligned updates to tool with creation of a new load TNI.
- AEMO has added a 3-month grace period that VSRPs can apply for to accommodate any zone mapping changes due to TNI changes that affect existing VSRs.
 - Any longer considered risk to power system security.

Aggregated telemetry requirements for VSRs/VSRPs

- For VSRs that use AGC for receiving dispatch instructions, 4s SCADA will have to be provided to AEMO, regardless of the size of the VSR.

Confirmed final aggregated telemetry requirements:



Upcoming:

AEMO plans to develop a separate document that will outline AEMO's policy for performing its aggregated telemetry check for VSRs

Voluntary sharing of pre-dispatch information

- AEMO notes the valid concerns raised by some stakeholders regarding the sharing and use of pre-dispatch information with DNSPs.
- AEMO has retained the option for VSRPs to provide explicit consent for DNSPs to receive pre-dispatch information for a VSR in their distribution network under specific confidentiality obligation, noting this is **voluntary** for VSRPs.
- AEMO retains this voluntary option can provide benefits:
 - To enable DNSPs to develop less conservative DOEs for all customers, regardless of whether they participate in IPRR or not. This is because, in general, the more accurate the hosting capacity calculation, the less conservative the resulting capacity allocation will be.
 - There is no binding AER policy on capacity allocation by DNSPs, so DNSPs may choose if they wish to follow an equal-allocation principle or to reallocate capacity to maximise utilisation of their network's hosting capacity.
 - There are various methods DNSPs may use to gain insights from VSR-level pre-dispatch information.
- Design of the opt-in:
 - AEMO is happy to work with DNSPs to ensure the information contained within the explicit consent is appropriate.
 - AEMO considers most appropriate option is to allow for VSRPs to select the DNSPs for which they choose to share pre-dispatch information with for their particular VSR.

Device information for qualifying resources in a VSR

Information that can be shared today:

Under IPRR Framework

- NSPs receive list of NMIs in VSR – can use this alongside DER Register to ascertain which devices may be acting price responsively

Operation (price responsiveness) of DER in VSRs

Under existing NER clauses

- Difference reports AEMO may prepare to compare NMIs in the DER Register against NMIs in VSRPs
- Data DNSPs capture through their connection agreements

Generation and BDU devices with a connection agreement with the DNSP

Known gaps in information sharing includes:

Devices nominated within are VSR not currently required to be included in the DER Register, e.g. flexible loads

Continued collaboration outside of IPRR

- Collaborating with industry through the **CER Data Exchange** and **National CER Roadmap Data Sharing** workstream to establish data exchange requirements, associated processes and roles and responsibilities.
- AEMO will also continue to work with DNSPs and the broader industry to appropriately cater for both the short-term and longer-term data needs and use cases of DNSPs.

Section three: Update on IPRR implementation rule changes

IPRR implementation rule change requests

- AEMO has identified several matters that it considers require rule change requests so it can effectively implement IPRR
- AEMO consulted on some of these matters in its consultation on the second draft VSR Guidelines and during the VIM Procedures consultation
- Of submissions that commented on rule changes:
 - Several stakeholders agreed with progressing aligning treatment of non-conforming VSRs
- Since second draft guidelines, AEMO has identified two new rule change requests:
 - Define the minimum ramp rate requirements for VSRs
 - Amend the timing of transitional rules for AEMO to update select procedures.
- AEMO is working with the AEMC on the lodging of these rule changes to ensure timing of draft/final determinations aligns with implementation and industry requirements.

Expedited rule change requests: Package 1

- Amend the timing of cost recovery expenses for administering the VIM and participation payments
- Define the minimum ramp rate requirements for VSRs
- Eligibility of VSRs to provide contingency FCAS
- Aligning treatment of non-conforming VSRs with scheduled resources
- Amend the timing of transitional rules for AEMO to update select procedures.

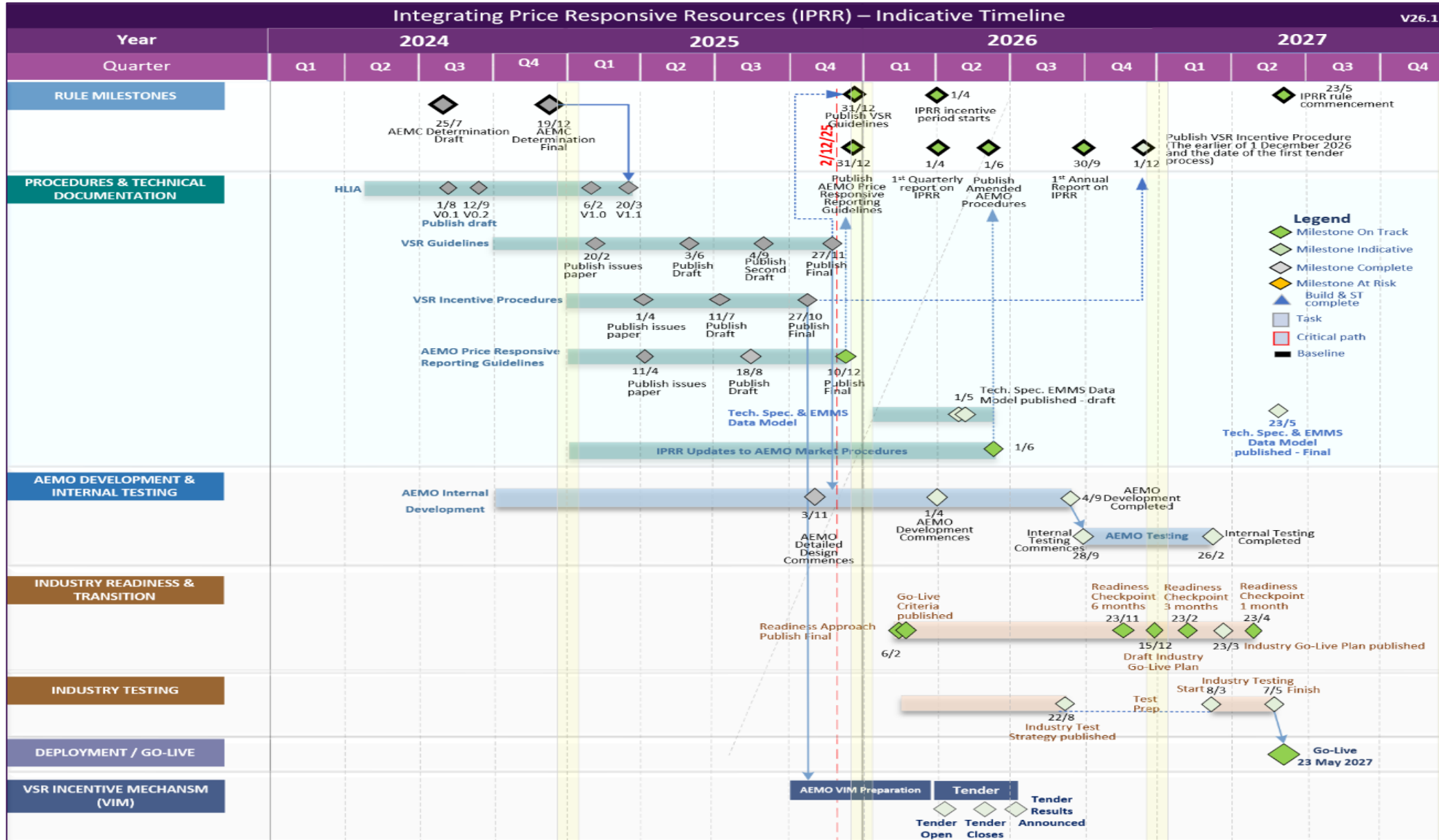
Standard rule change requests: Package 2

- Eligibility of VSRs for FPP
- VSRs constrained on for network constraints
- Inability for resources required to participate in central dispatch under 3.8.2(e) to hibernate as a VSR.

4. Next Steps

Emily Brodie (AEMO)

IPRR indicative timeline



IPRR next steps

MILESTONE	DATE
Final Price Responsive Reporting Guidelines published	Wed 10 Dec 2025
VSR Incentive Mechanism stakeholder briefing 11am	Tues 16 Dec 2025
Industry readiness approach published	6 Feb 2026
VSR Incentive Mechanism tender opens	TBC Q2 2026
Draft technical specifications published	1 May 2026
Industry test strategy published	24 Aug 2026
Go-live plan published	30 Jan 2027
Readiness checkpoint 3 months	23 Feb 2027
Market testing commences	8 Mar 2027
Readiness checkpoint 1 month	23 Apr 2027
Go-live	23 May 2027

VSR incentive mechanism

AEMO is hosting a VSR Incentive Mechanism Stakeholder Briefing Session on **11am – 12pm, Tuesday 16 December 2025.**


The session is suitable for **intending VSRPs** and will provide:

- A refresher on the IPRR project and progress to date
- A refresher on the VSR Incentive Mechanism and progress to date
- AEMO's early view on industry readiness for the VSR Incentive Mechanism and how to keep informed.

Please register your interest in the session [here](#).

Please note that matters related to the CER Taskforce work program and CER Data Exchange project are out of scope and will not be covered in this session.

How to get involved

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	Open
Implementation Forum	Implementation of reforms	Monthly	Open
Electricity Wholesale (EWCF) & Electricity Retail (ERCF) Consultative Forums	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](#)

Focus / working groups for inflight initiatives include:

- Initiative working groups
- Market Integration Technology Enhancement WG (IDX/IDAM/PC)
- Industry Testing Working Group (ITWG) – IT technical implementations





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: <https://aemo.com.au/en/consultations/industry-forums-and-working-groups>

Appendix B –Glossary

Glossary

TERM	DEFINITION
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
API	Application Programming Interface
ARENA	Australian Renewable Energy Agency
B2B	Business to business
B2M	Business to market
BDU	Bidirectional Unit
CER	Consumer Energy Resources
COAG	Council of Australian Governments
CRMP	Cost recovery market participant
DER	Distributed energy resources
DNSP	Distribution network service provider
DOE	Dynamic Operating Envelope
DRSP	Demand response service provider
DSP	Demand side participation
DUID	Dispatchable unit identifier

TERM	DEFINITION
ERI	Enhancing reserve information
ESB	Energy Security Board
EV	Electric vehicle
FCAS	Frequency control ancillary service
FEL	Flexible export limit
FPP	Frequency performance payments
FTA2	Unlocking benefits of CER through flexible trading
FRMP	Financially responsible market participant
HLIA	High level implementation assessment
IESS	Integrating energy storage systems
IDAM	Identity access and management
IDX	Industry data exchange
IPRR	Integrating price responsive resources
IRP	Integrated resource provider
ISP	Integrated system plan
MASS	Market ancillary services specification
MSL	Minimum System Load

TERM	DEFINITION
MITE	Market interface technology enhancement
NEM	National electricity market
NEMDE	National electricity market dispatch engine
NEO	National electricity objective
NER	National electricity rules
NMI	National metering identifier
NSP	Network service provider
PASA	Projected assessment of system adequacy
PMS	Portfolio management system
PoL	Predictability of load
REZ	Renewable Energy Zones
SCADA	Supervisory control and data acquisition
ST PASA	Short Term Projected Assessment of System Adequacy
V2G	Vehicle-to-grid
VPP	Virtual Power Plants
VSR	Voluntarily scheduled resource
VSRP	Voluntarily scheduled resource provider
WDRM	Wholesale Demand Response Mechanism

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