

Integrating price responsive resources

Technical working group
Meeting 1 – Introduction


21 February 2024

AEMC

Agenda

1 Acknowledgment of country, competition protocols, member introductions	3.00 – 3.25pm (25 mins)
2 Purpose and role of the TWG	3.25 – 3.40pm (15 mins)
3 Background and context to the rule change	3.40 – 3.50pm (10 mins)
4 Break	4.00 – 4.10pm (10 mins)
5 Timeline for rule change and other intersecting processes	4.10 – 4.20pm (10mins)
6 Overview of upcoming TWG meetings	4.20 – 4.40pm (30 mins)
7 Wrap up	4.40 – 4.50pm (10 mins)

ACKNOWLEDGEMENT OF COUNTRY



The AEMC acknowledges and shows respect for the traditional custodians of the many different lands across Australia on which we all live and work. We pay respect to all Elders past and present and the continuing connection of Aboriginal and Torres Strait Islander peoples to Country. The AEMC office is located on the land traditionally owned by the Gadigal people of the Eora nation.

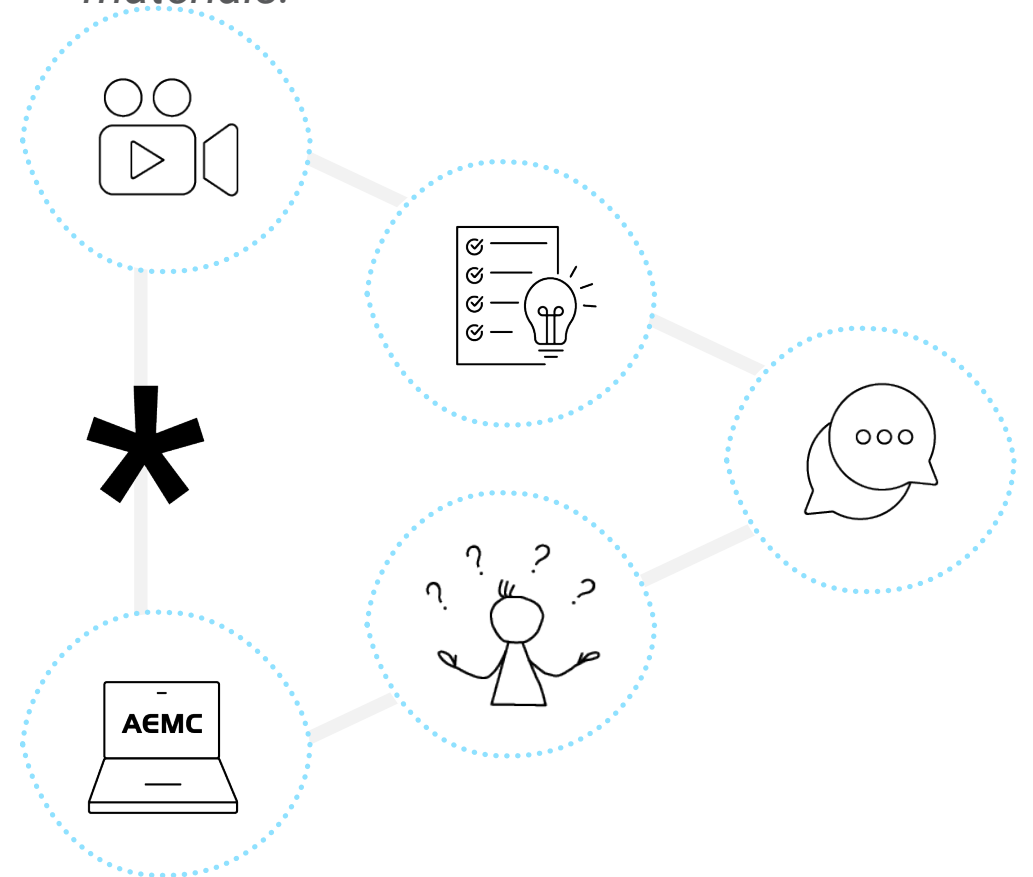
CONSENT TO USE OF PERSONAL INFORMATION



By participating in this workshop, **you give your consent** to our collection, use and disclosure of the personal information you provide to us during this workshop (like your name) for the purpose of completing our consultation and publishing our draft and final determinations and reports on this rule change or review.

Please read our [privacy policy](#) for more information.

We aren't recording this workshop. We will be conducting it under Chatham house rules. We will be publishing summary minutes and our written materials.



COMPETITION PROTOCOL

KEY PRINCIPLES



The AEMC is committed to complying with all applicable laws, including the ***Competition and Consumer Act 2010*** (CCA), during this forum. Breaching the CCA can lead to serious penalties for individuals involved in any breach (including large financial penalties and imprisonment for key individuals involved). This protocol governs the way in which discussions will proceed at this forum, and each attendee agrees to adhere to this protocol in order to comply with the CCA.

Each attendee must make an independent and unilateral decision about their commercial positions and approach in relation to the matters under discussion in this forum.

Attendees must not discuss, or reach or give effect to any agreement or understanding which relates to:

- **pricing** for the products and/or services that any attendee supplies or will supply, or the terms on which those products and/or services will be supplied (including discounts, rebates, price methodologies etc)
- **targeting (or not targeting) customers** of a particular kind, or in particular areas
- **tender processes** and whether (or how) they will participate
- any decision by attendees:
 - about the purchase or supply of any products or services that other attendees also buy or sell
 - to not engage with persons or the terms upon which they will engage with such persons (i.e. boycotting); or
 - to deny any person's access to any products, services or inputs they require
- **sharing competitively sensitive information** such as non-publicly available pricing or strategic information including details of customers, suppliers (or the terms on which they do business), volumes, future capacity etc
- **breaching confidentiality obligations** that each attendee owes to third parties.

COMPETITION PROTOCOL

COMMUNICATION AND
MEETING GUIDELINES

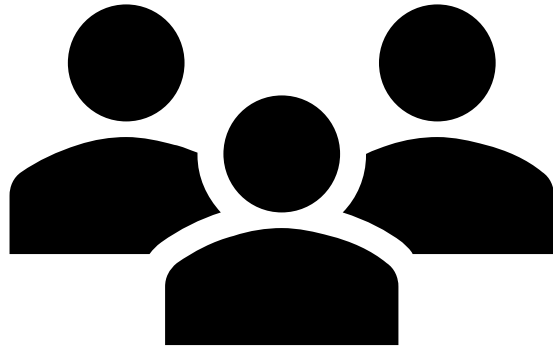


Attendees must ensure that all communications (including emails and verbal discussions) adhere to the ***Key Principles***.

This forum will be conducted in accordance with the following rules:

- The agenda for this forum does not include anything that could contravene the Key Principles set out in this protocol.
- We will read and minute the below *competition health warning*:
 - Attendees at this forum must not enter into any discussion, activity or conduct that may infringe, on their part or on the part of other attendees, any applicable competition laws. For example, attendees must not discuss, communicate or exchange any commercially sensitive information, including information relating to prices, marketing and advertising strategy, costs and revenues, terms and conditions with third parties, terms of supply or access.
 - Participating in this forum is subject to you having read and understood the protocol including the Key Principles.
- We will keep accurate minutes of the forum, including details of attendees.
- If something comes up during the forum that could risk contravening any competition laws, attendees should:
 - Object immediately and ask for the discussion to be stopped.
 - Ensure the minutes record that the discussion was objected to and stopped.
 - Raise concerns about anything that occurred in the forum with their respective legal counsel immediately afterwards.
- All attendees understand that any competitively sensitive matters must be subject to legal review before any commitment/agreement can be given.
- Any decision about whether, and on what terms, to engage with customers and suppliers is an independent and unilateral decision of each attendee.

AEMC project team



EGM	Andrew Lewis
Project sponsor	Ben Davis
Project leader	Rachel Thomas
Project team	
Dispatch lead	Harry Gibbs
Visibility lead	Sam Markham
Incentives lead	Rachel Thomas
Market expert	Craig Oakeshott
Graduate	Jac Price
Project lawyers	Lily Mitchell and Ben Bronneberg

Members

Market Bodies:

- AEMO
- AER

Name	Company
Mark Majzoub	AggX
Glen Summers	AGL
Caitlin Sears	ARENA
Con Hristodoulidis (Matthew Kaspura)	CEC
Wei Lim	CS Energy
Sanket Wankhede	EA
Claire Richards	Enel X
Christina Green	Energy QLD
Dor Son Tan (DST)	Energy Networks Australia
Sam Lynch	Krakenflex
Craig Memery	PIAC
Alex Price	Powerlink
Constantine Noutso	Red Energy
Ben Pryor	Shell Energy
Ben Wilson	Simply Energy
Emma Fagan (Kenneth Hee)	Tesla
Dani Alexander / Abi Prakash	UNSW Energy Institute

Member introductions



What is your connection to this rule change?

Purpose and aim of the technical working group



The TWG will assist the AEMC in developing the draft determination for integrating price-responsive resources into the NEM rule change (IPRR).

The TWG will provide an additional source of information and analysis to assist the Commission.

Role of TWG members

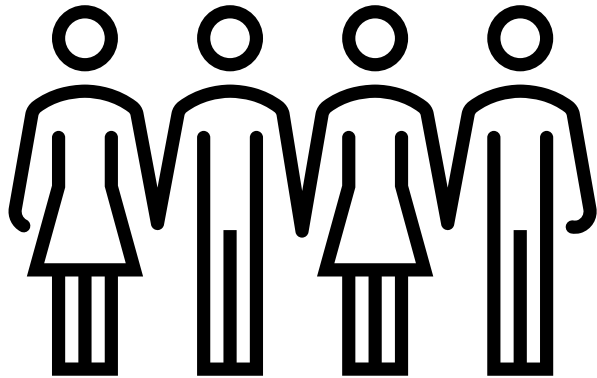


The TWG is not a decision-making body and does not replace the AEMC Commissioners in their decision-making role for this rule change. Instead, the TWG will provide insights to shape the design of solution(s).

TWG members are expected to follow the following principles:

1. be personally accountable to provide informed and evidence-based input;
2. uphold Chatham House rules;
3. engage in collaboration and constructive conflict; and
4. provide input within scope of the rule change and topics provided by the AEMC.

AEMC team role

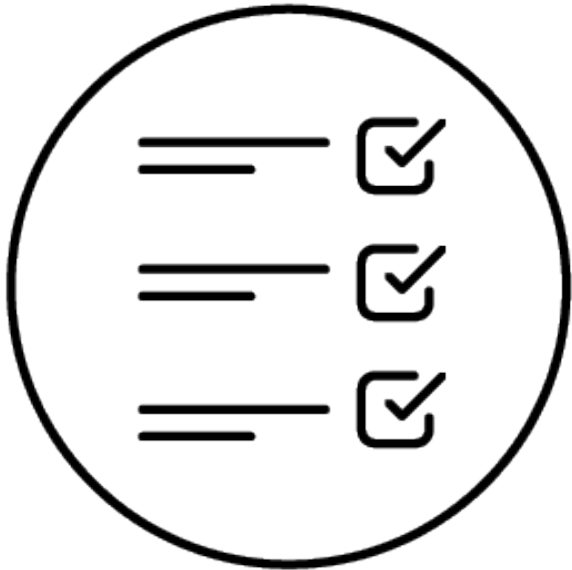


AEMC team will support the operation of the TWG by:

- setting the agenda and topics
- providing materials in advance for reading, and
- facilitating discussion and debate.

We note that the TWG will be inputting and discussing potential design choices before the AEMC Commission makes decisions. Therefore, TWG members won't receive fully polished or finished work. You will also be receiving the team's views, not the Commission's.

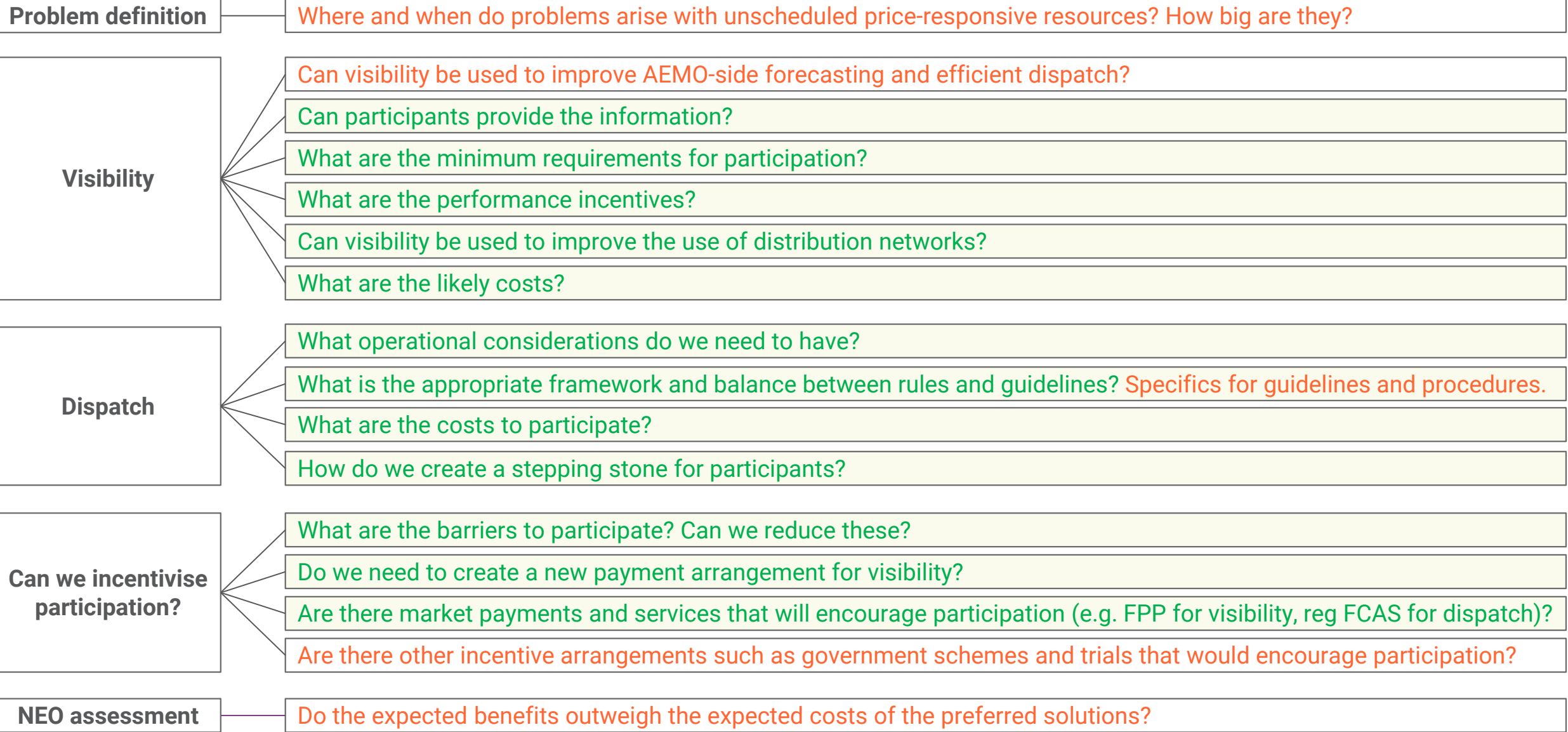
Scope of TWG – assist with designing solutions

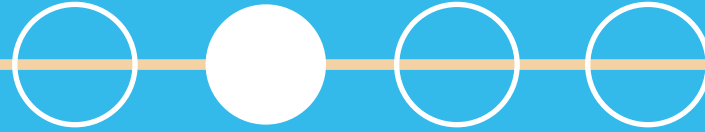


- Visibility options:
 - AEMO visibility option identified in the rule change proposal
 - Alternative visibility approach set out in Creative Energy Consulting report
 - Improving standing data
- Dispatch mode, focus on the model proposed by AEMO.
- Incentives for participation in these mechanisms.

Full issues tree with TWG scope / out of scope

Out of Scope
In Scope





Background and context to the rule change

Price responsive resources can include commercial, industrial and aggregated consumer energy resources that do, or could respond, to price signals. These resources represent a growing proportion of resources in the NEM. The wholesale electricity market would provide consumers with electricity at a lower cost if it integrated these resources more effectively.

Price-responsive resources



These resources can operate in a manner that impacts the wholesale market, but the operation is non-visible to the market operator and the market. These resources can be controlled by the customer's retailer or by a specialist aggregator, either at a single site or across multiple sites. Currently there is no opportunity for these resources to bid into the wholesale market, meaning that prices and dispatch costs may be higher than necessary. These resources can access the contingency FCAS and network services markets, which can provide a level of visibility for the market and network operators respectively.

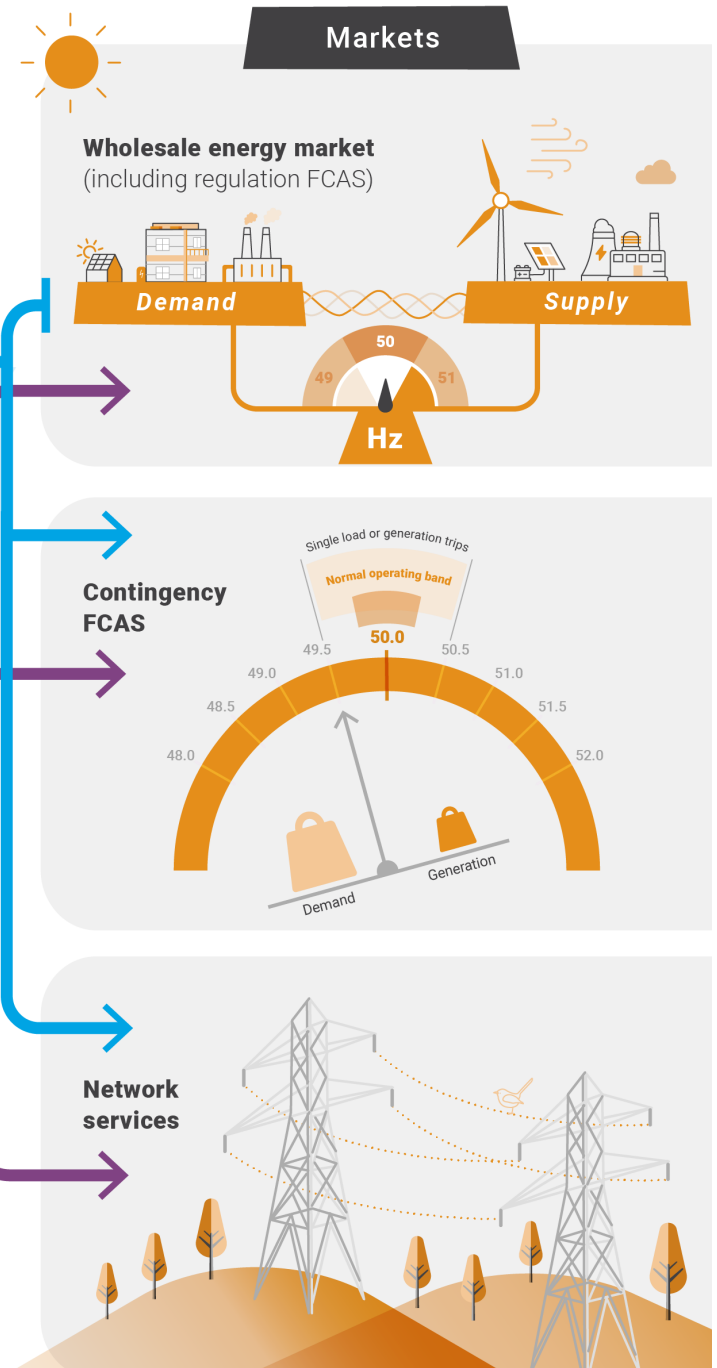
Existing market mechanisms: scheduled load and wholesale demand response

Existing mechanisms have had limited participation to date and may not be suitable for all price-responsive resources.

Scheduled loads bid in how much electricity they will consume at different price points. Wholesale demand response participants bid in their reduction in consumption relative to a baseline. This means that their intentions are effectively incorporated into the wholesale electricity market.

Existing non-market mechanism: RERT

RERT enables out of market resources to be contracted by AEMO where there is a forecast breach in the reliability standard. This response is coordinated by the market operator and can be factored into the operation of the market. While not the focus of this rule change, better integration of price responsive resources may encourage out of market participants to move into the market.



Price-responsive resources are used to provide some market and non-market services

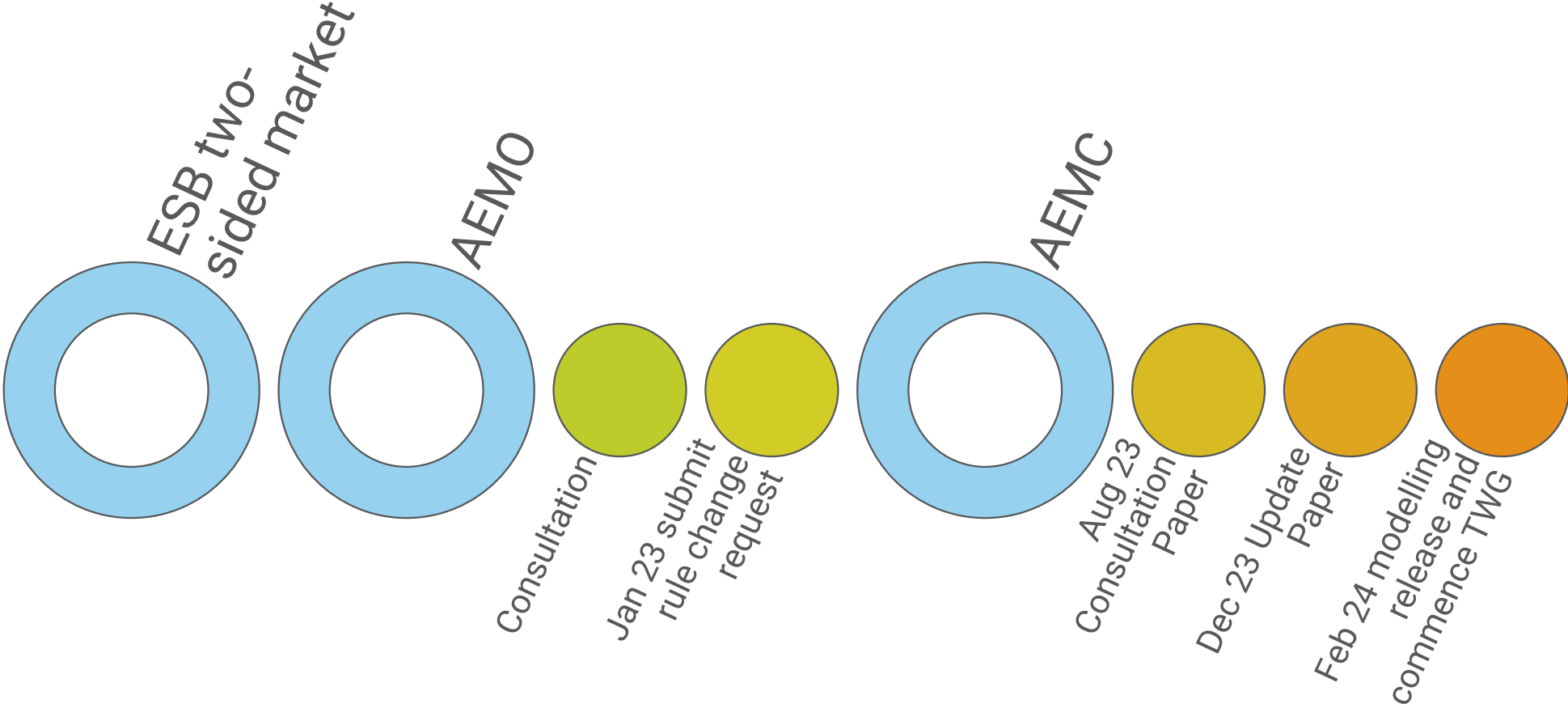
But aren't scheduled in the wholesale market or generally visible to the market or AEMO

Context – problem definition

Integrating price-responsive resources into the market would have a number of benefits:

- **dispatch costs in the NEM** – knowing when these resources will be used to reduce demand (particularly at higher cost times) improves demand forecasting and reduces the cost of resources that AEMO dispatches to meet demand
- **energy prices in the NEM** – by better matching supply and demand, the price of energy would be more efficient, likely reducing price volatility
- **cost of security of supply in the NEM** – by reducing the need for additional, potentially more expensive generation reserves to balance the market, system security will be achieved at lower cost
- **reliability of supply in the NEM** – the ability to schedule these available resources could improve planning and the use of lower-cost lower-emission generation and lower intervention costs
- **operation of distribution and transmission networks** – longer-term accurate forecasts would improve network investments and planning, reducing network costs to consumers.

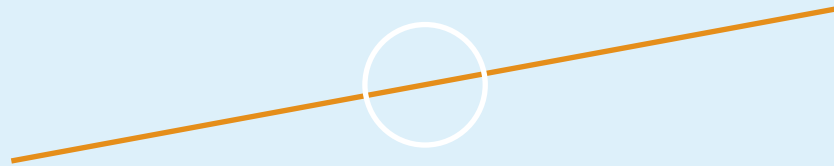
Timeline to date



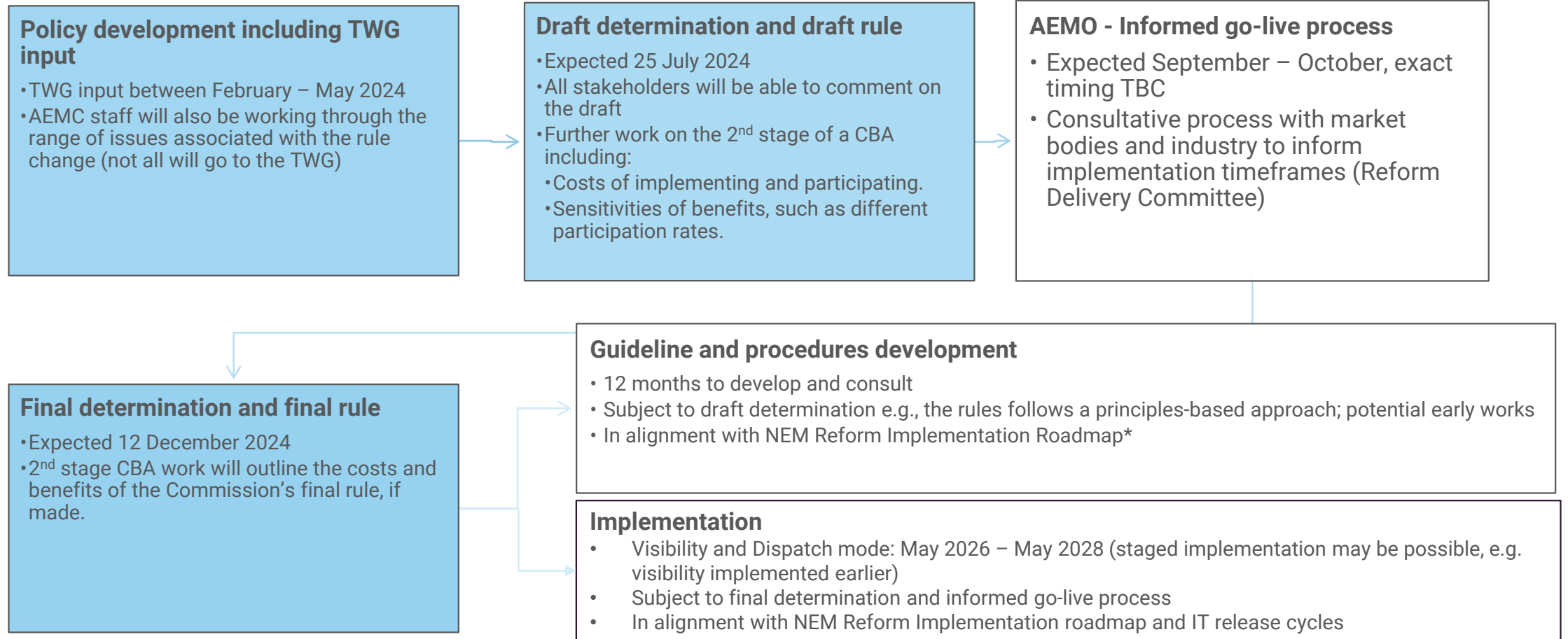
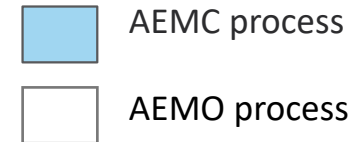
Questions?



**Quick
break**

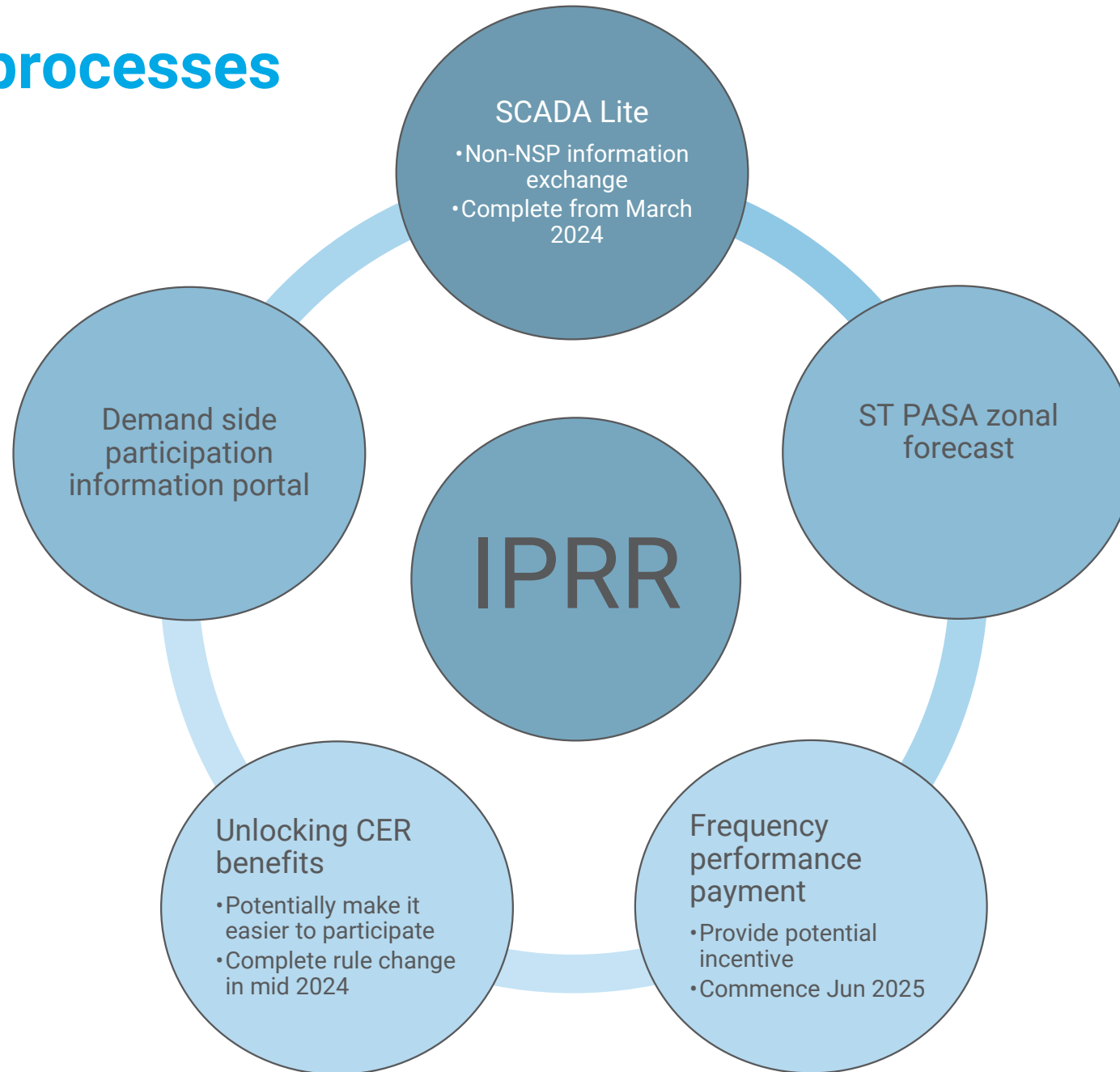


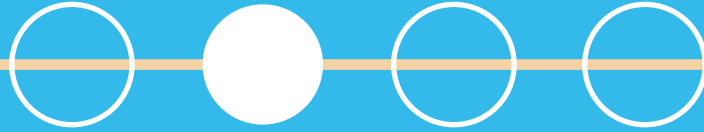
Potential process from here, if rule made



*v3.1 adjusted with the Dec AEMC Update Paper information

Intersecting processes





TWG meetings

TWG timeline

Meeting time	Indicative issue areas for discussion*
Wednesday 21 February 3 – 5pm	TWG1 Introduction to the TWG
Tuesday 27 February 10.30am – 1pm	TWG2: Visibility #1 Visibility option(s) to continue to draft determination
Monday 4 March 2 – 5pm (TBC date change to 7 or 8 March)	TWG3: Dispatch #1 The overarching framework for the rule and participation
Tuesday 12 March 10am – 1pm	TWG4: Incentives Incentives for solutions will be discussed
Wednesday 10 April 2 – 5pm	TWG5: Visibility #2 Contd. Discussion from 27 Feb
Tuesday 16 April 2 – 5pm	TWG6: Dispatch #2 Contd. Discussion from 4 March
Tuesday 7 May 2 – 5 pm	TWG7: Wrap up Outstanding issues

* Note that the areas are indicative and could evolve as the project progresses

TWG2: Visibility #1 (27 February)

Visibility design elements

Indicative agenda:

- Overview of AEMO forecasting including: role of operational forecasting in the NEM, evolving landscape of forecasting, how operational forecasting uses/will use data.
- Overview of the three design options for visibility mode against key design questions:
 - AEMO's proposed visibility mode
 - Alternative Visibility mode (published in December 2023)
 - Improving standing data (DSP information portal and DER asset register)

Input from TWG:

- Which elements of the three different designs are most appropriate or burdensome?
- Can participants provide the information accurately?
 - What timeframes?
 - How far out should FRMPs forecast PRR?
- When and how often should information be provided to AEMO?
- What are the minimum requirements for participation?

Material circulated to TWG wk 19 February

TWG3: Dispatch #1 (4 March)

Dispatch design elements and participation framework

Indicative overview:

- Outline of Dispatch mode's objective; to enable and encourage participation of distributed resources in the central dispatch and support power system operation and market efficiency.
- Summary of proposed design elements including whether each element is proposed to be defined in the rules or through AEMO's guidelines.

Input from TWG:

- Do you agree with AEMO's proposed design elements to integrate price-responsive resources in scheduling?
- Which design elements are required to be specified in the rules?
- Which design elements are best delegated to AEMO through their guidelines and procedures?

Material for the TWG will be circulated wk 26 February

TWG4: Incentives (12 March)

Incentivising participation in solutions

Overview of design challenge:

- The benefits from undertaking this reform accrue to all consumers, not the individual retailers / aggregators that participate. Whereas the retailers / aggregators potentially have costs to participate or additional requirements to comply with.
- How well we can incentivise participation will drive the amount of benefit that can be achieved.
- Dispatch and visibility potentially have some similar, but also different incentive requirements.
- Principles to underpin the design of incentive mechanisms
- Can we incentivise participation with in-market arrangements, such as:
 - frequency performance payments (apply to all solutions),
 - new payments (payment for participation or cost recovery for visibility solutions), and
 - amendments to other obligations and requirements (apply to all solutions).
- Out of market arrangements

Input from TWG:

- Is FPP a material incentive to participate in providing forecast information?
- Would additional changes further entice participation, how and to what?
- For those participating in off-market schemes (e.g. RERT) – what would make participation attractive?

Material for the TWG will be circulated wk 4 March

TWG5: Visibility #2 (10 April)

Details of the visibility design

Indicative Agenda

- The team will have a high-level approach approved by the Commission following feedback from TWG2.
- This will seek feedback on detailed design issues.

Input from TWG:

- Can visibility be used to improve the use of distribution networks?
- What are the potential costs to participate?
- Other detailed design questions TBC

Material for the TWG will be circulated wk 1 April

TWG6: Dispatch #2 (16 April)

Stepping-stones and dispatch conformance requirements

Indicative overview (subject to change based on discussions in the previous TWGs):

- Examine the proposed path for participants to learn the capability of their aggregated portfolio (will depend on the outcomes from visibility TWGs).
- Examine the proposed dispatch conformance requirements.

Input from TWG:

- How best can participants test their capabilities before formally commencing operation in the market?
- How should conformance for aggregated resources be assessed and should this be defined in the Rules or AEMO guidelines?

Material for the TWG will be circulated wk 8 April

TWG7: Wrap up session (7 May)

Indicative overview:

- Any remaining issues outstanding from previous TWGs

Prep/questions to TWG:

- Questions will be outlined in material sent, pending the remaining issues

Receive background material and agenda by: wk 29 April

Wrap up

Contact

Ben.davis@aemc.gov.au

Rachel.Thomas@aemc.gov.au 02 8296 7891

Sam.Markham@aemc.gov.au

Harrison.gibbs@aemc.gov.au

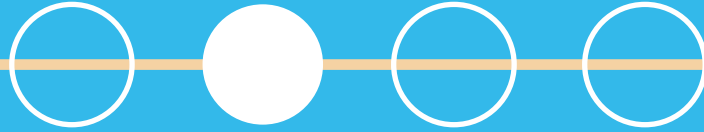
AEMC

www.aemc.gov.au

LEVEL 15, 60 CASTLEREAGH STREET
SYDNEY NSW 2000

+61 2 8296 7800





Appendix

Additional background material

Project name

SCADA Lite

Objective

SCADA Lite will provide a capability for a participant to establish a bi-directional communication path to exchange telemetry data and control signals with AEMO such that they can participate in the wholesale market. Specifically:

- Demand Response Service Providers (DRSP) providing Wholesale Demand Response (WDR).
- Generators or Integrated Resource Providers not able to exchange controls with AEMO via an NSP.

Benefits incl

For participants - Lower barriers to enter the market; or enable the ability to participate where the communication of controls are not supported by the NSP.

Rule change Link Overview

SCADA Lite would enable participation in SL - Dispatch Mode

Timeline



Project name	Frequency Performance Payment (FPP)
Objective	To implement a new FPP arrangement in the NEM which will provide incentives for facilities to support frequency control, rewarding the provision of Primary Frequency Response (PFR) and for the recovery of costs for Regulation FCAS (replacing the existing 'Causer Pays' arrangement)
Benefits incl	Improved valuation and pricing of plant behaviour that impacts on power system frequency
Rule Change Link Overview	To be explored: potential as an incentive to participate
Timeline	<p>The timeline consists of five sequential stages, each represented by a rounded rectangle containing a list of tasks. The stages are connected by curved arrows pointing from left to right. The current stage is highlighted with a star and the text 'We are here'.</p> <ul style="list-style-type: none"> Q4 2023: <ul style="list-style-type: none"> • High – level technical design Jan 2024 (We are here): <ul style="list-style-type: none"> • Industry readiness approach Q2-Q3 2024: <ul style="list-style-type: none"> • Data Model technical specification Dec 2024: <ul style="list-style-type: none"> • Non-Financial Operation commences June 2025: <ul style="list-style-type: none"> • Financial Operation commences

Project name	Demand Side Portal Information Consultation (every four years)
Objective	<p>AEMO consulted on:</p> <ul style="list-style-type: none"> • Demand Side Participation (DSP) Forecasting Methodology: is one of many methodology documents forming part of AEMO’s Forecasting Approach, used in reliability modelling (ESOO/MT PASA) and longer-term planning documents like the Integrated System Plan (ISP) • Demand Side Participation Information (DSPI) Guidelines: governs the process through registered participants provide information that is then used in the DSP Forecasting Methodology
Consultation Outcome	<p>Minimal changes were made to the current DSP process. No significant changes were made to the current DSP programs and categories (with the exception of adding the wholesale demand response mechanism to the DSP Forecasting Methodology, which was not in effect when the previous methodology was drafted).</p>
Rule Change Link Overview	<p>When developing the rule change request, extending the DSP Information Portal obligations was considered to provide additional operational timeframe information. The conclusion was:</p> <ul style="list-style-type: none"> • Current DSP arrangements are a rules-based reporting obligation for relatively static inputs, used to inform planning time horizons. Therefore, considerable changes would be necessary to deliver the granularity of information required • Once the Final Determination is reached, consideration could be given to using the DSP consultation process to inquire whether participants with LSUs need to provide data on the DSP portal or whether they can be excluded from doing so e.g. to avoid double counting
Timeline	<pre> graph LR S1[Stage 1 ➤ Consultation papers published ➤ Four submissions received] --> S2[Stage 2 ➤ Three submissions received] S2 --> F1[Final documents and determination published] style S1 fill:#fff,stroke:#333,stroke-width:1px style S2 fill:#fff,stroke:#333,stroke-width:1px style F1 fill:#fff,stroke:#333,stroke-width:1px style S1_label fill:#333,color:#fff style S2_label fill:#333,color:#fff style F1_label fill:#333,color:#fff S1_label --- S1 S2_label --- S2 F1_label --- F1 </pre> <p>The timeline consists of four stages:</p> <ul style="list-style-type: none"> Sep 2023 (Stage 1): Consultation papers published; Four submissions received. Oct 2023: Draft documents and determination published. Nov 2023 (Stage 2): Three submissions received. Dec 2023: Final documents and determination published. ★ We are here

Zonal aggregation

Project name	STPASA replacement project
Objective	The ST PASA Replacement Project involves a comprehensive review of the Pre-dispatch (PD) and Short Term (ST) PASA methodology, exploring the development of a system that will serve the NEM now, and into the future.
Rule change Link Overview	<p>Part of the Short Term Projected Assessment of System Adequacy (ST PASA) replacement project involves developing a zonal load forecasting process, which is expected to support the full network model.</p> <p>The expectation is that aggregations will be required to align with Load Forecasting Area Boundaries, avoiding the need to disaggregate regional forecasts.</p> <p>Current Load Forecasting Area Boundaries are provided in Appendix D of the Load forecasting procedure and these Load forecasting zones may need to change from time to time.</p> <p>The proposed Zonal aggregation guideline would be consulted on and would include detailed guidance on requirements.</p>

Relevant material

AEMC (August 2023 – to date)

- [Project page](#)
- [15 Feb 2024 benefits modelling](#)
- [14 December update paper](#)
- [Creative Energy Consulting visibility design](#)
- [3 August consultation paper](#)



AEMO (Sept 2021 – January 2023)

- [Project page](#)
- [Rule change request](#)