

DER Market Integration Consultative Forum

18 November 2021



We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging.

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 regarding proposed reforms or other initiatives, all participants agree to adhere to the CCA at all times and to comply with this Protocol. Participants must arrange for their representatives to be briefed on competition law risks and obligations.

Participants in AEMO discussions **must**:

- Ensure that discussions are limited to the matters contemplated by the agenda for the discussion
- Make independent and unilateral decisions about their commercial positions and approach in relation to the matters under discussion with AEMO
- Immediately and clearly raise an objection with AEMO or the Chair of the meeting if a matter is discussed that the participant is concerned may give rise to competition law risks or a breach of this Protocol

Participants in AEMO meetings **must not** discuss or agree on the following topics:

- Which customers they will supply or market to
- The price or other terms at which Participants will supply
- Bids or tenders, including the nature of a bid that a Participant intends to make or whether the Participant will participate in the bid
- Which suppliers Participants will acquire from (or the price or other terms on which they acquire goods or services)
- Refusing to supply a person or company access to any products, services or inputs they require

Under no circumstances must Participants share Competitively Sensitive Information. Competitively Sensitive Information means confidential information relating to a Participant which if disclosed to a competitor could affect its current or future commercial strategies, such as pricing information, customer terms and conditions, supply terms and conditions, sales, marketing or procurement strategies, product development, margins, costs, capacity or production planning.

Today's meeting

Time	Item	Speaker
11:00 – 11:05	Welcome and introductions	Amanda van der Sluys [AEMO]
11:05 – 11:35	Access, pricing and incentive arrangements for DER	Jashan Singh Ed Chan Anthony Bell [AEMC]
11:35 – 11:45	Project EDGE – Aggregator Onboarding information overview	Nick Regan [AEMO]
11:45 – 12:00	Scheduled Lite – Visibility Deep Dive overview	Trent Morrow Liam McManus [AEMO]
12:00 – 12:10	Q&A	All
12:10 – 12:15	Future Meetings & Close	Amanda van der Sluys [AEMO]



Access, pricing and incentive arrangements for DER

Jashan Singh, Ed Chan & Anthony Bell
[AEMC]

ACCESS, PRICING AND INCENTIVE ARRANGEMENTS FOR DISTRIBUTED ENERGY RESOURCES

OVERVIEW OF FINAL RULE AND DETERMINATION


AEMO DER MICF
18 NOVEMBER 2021

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FINAL RULE DETERMINATION

THE KEY ELEMENTS

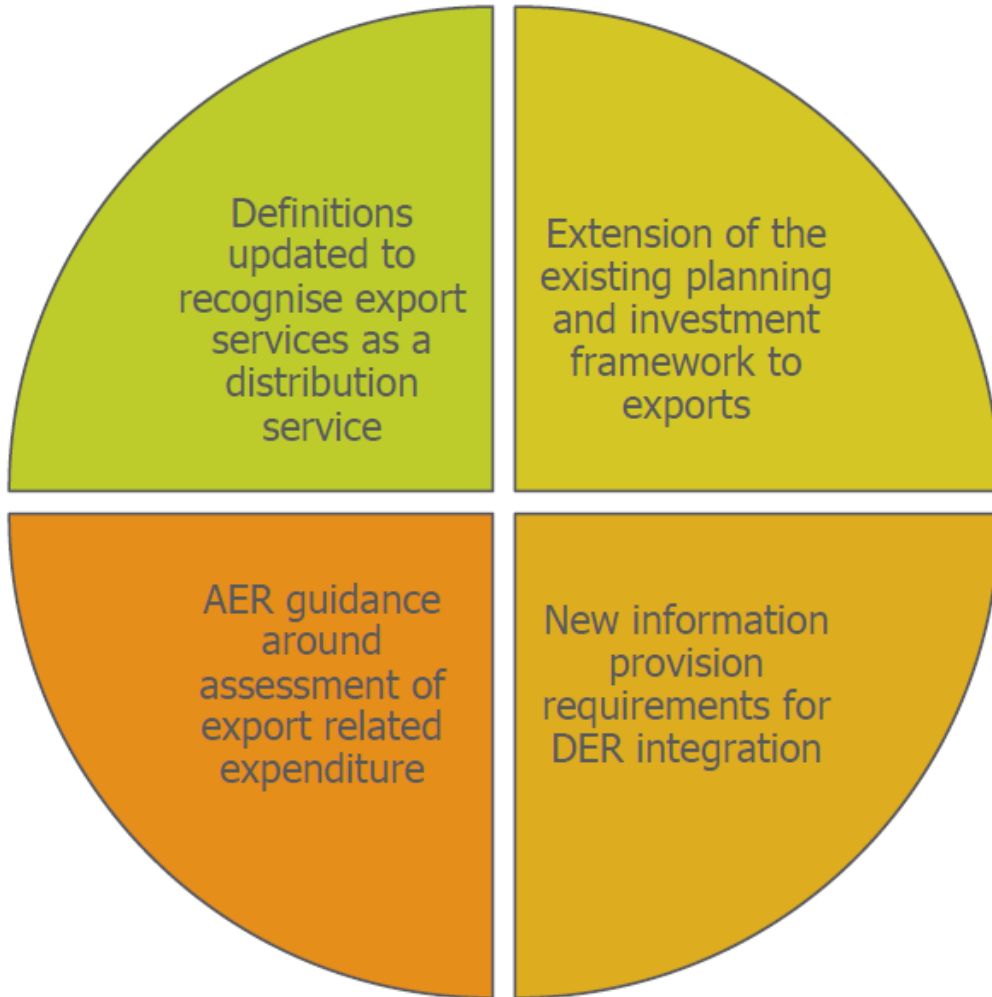


Key elements of our final rule

- Recognising the provision of export services provides by the DNSPs
- Require the development of service performance incentives and set arrangements for service levels
- Enable networks businesses to develop two-way pricing on both consumption and export services
- Provide flexibility and enable options to suit individual networks (or their state's and territory's) circumstances



Recognising the provision of export services: what does it mean?



Changes made to clarify the regulatory treatment of export services

Export service performance



Developing performance standards

- AER to review extending service performance incentives (STPIS) to exports within 18 months
- Service levels to be defined through the incentive scheme



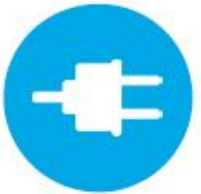
Restrictions on static zero export limits

- DNSPs cannot offer static zero export limits to customers seeking to connect unless requested, or an exception in the AER's connection charge guideline applies



Reporting on export performance

- AER to monitor export service performance annually



Value of customer exports

- AER to develop framework and calculate the customer export curtailment values (CECVs)
-



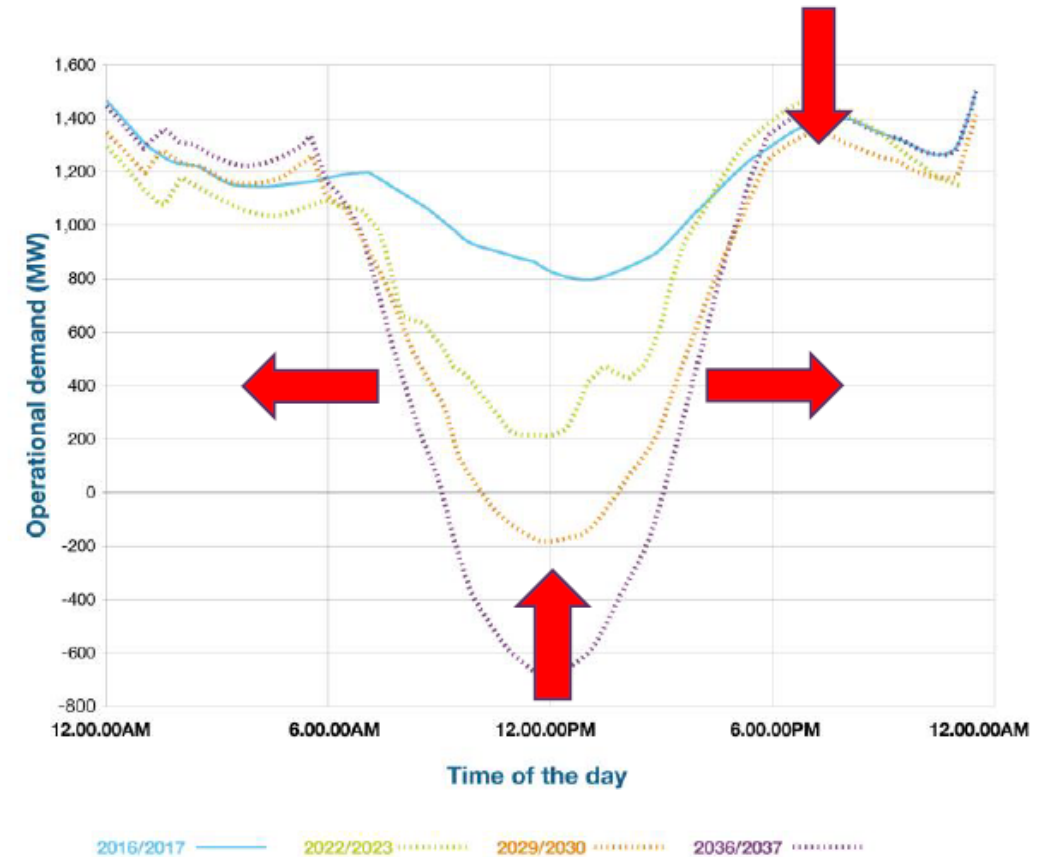
Enabling two-way pricing for consumption and exports

- Networks will have the **option** to develop pricing for export services
 - This rule removes the barrier for networks to develop export tariffs
 - It does not mandate for it to happen
- Clarify that pricing can be 'two-way'
 - Signalling costs and providing rewards
- Temporary increase of threshold for 'in period' tariff trials



Two-way pricing: a useful tool in the toolkit

- Making best use of existing infrastructure
 - Rewarding customers when their actions support the grid
 - Signalling high cost or congestion periods
- Helps to smoothing of 'demand' for network services
 - higher productivity and lower average network costs for all system users
 - new investment may be deferred
- Foundational to future market development



Flexibility to accommodate different circumstances – horses for courses

What our decision enables

- Networks to develop options suitable for their own circumstances – eg, congestion/capacity
- Provides a clear framework for how services should be provided
- All customers to have a say on services to be provided, and how costs should be allocated
- Export pricing only to be introduced if it is in the interest of consumers
- Networks can design tariffs for retailers and intermediaries

What our final rule does not do

- Prescribe specific outcomes
- Require network businesses and the AER to implement export pricing options

Networks will need to explain how they will introduce new pricing options

- In addition to the current tariff structure statement process (TSS), networks must:
 - develop and consult on an **export tariff transition strategy** – outline when and how each DNSP intends to phase-in any proposed export pricing over time
 - include in a **plain language overview** how different aspects of their regulatory and pricing proposals are linked
- AER guideline specific to export pricing – reinforcing the need for continued consultation and collaboration



The final rule includes transition mechanisms for existing solar customer

- No mandatory assignment to export pricing options until 1 July 2025 for existing customers
 - Customers can opt-in
 - Supports tariff trials
- A basic export level must be offered to all exporting customers for a 10-year period



Key project contacts

- Ed Chan, Director
 - ed.chan@aemc.gov.au
- Jashan Singh, Senior Adviser
 - Jashan.singh@aemc.gov.au

APPENDIX

HOW DID THE RULE CHANGE REQUESTS COME ABOUT?



Four proponents, three rule change requests

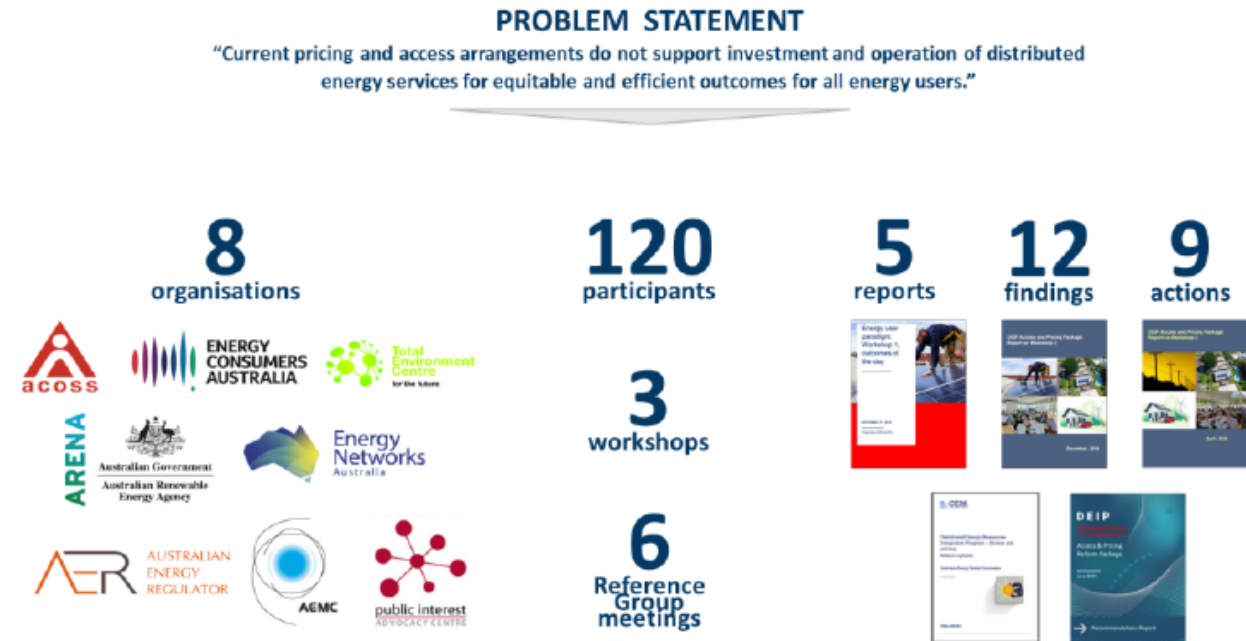


Requests represent the outcome of a collaborative process

- **How?** ARENA's Distributed Energy Resource Integration Program (DEIP)

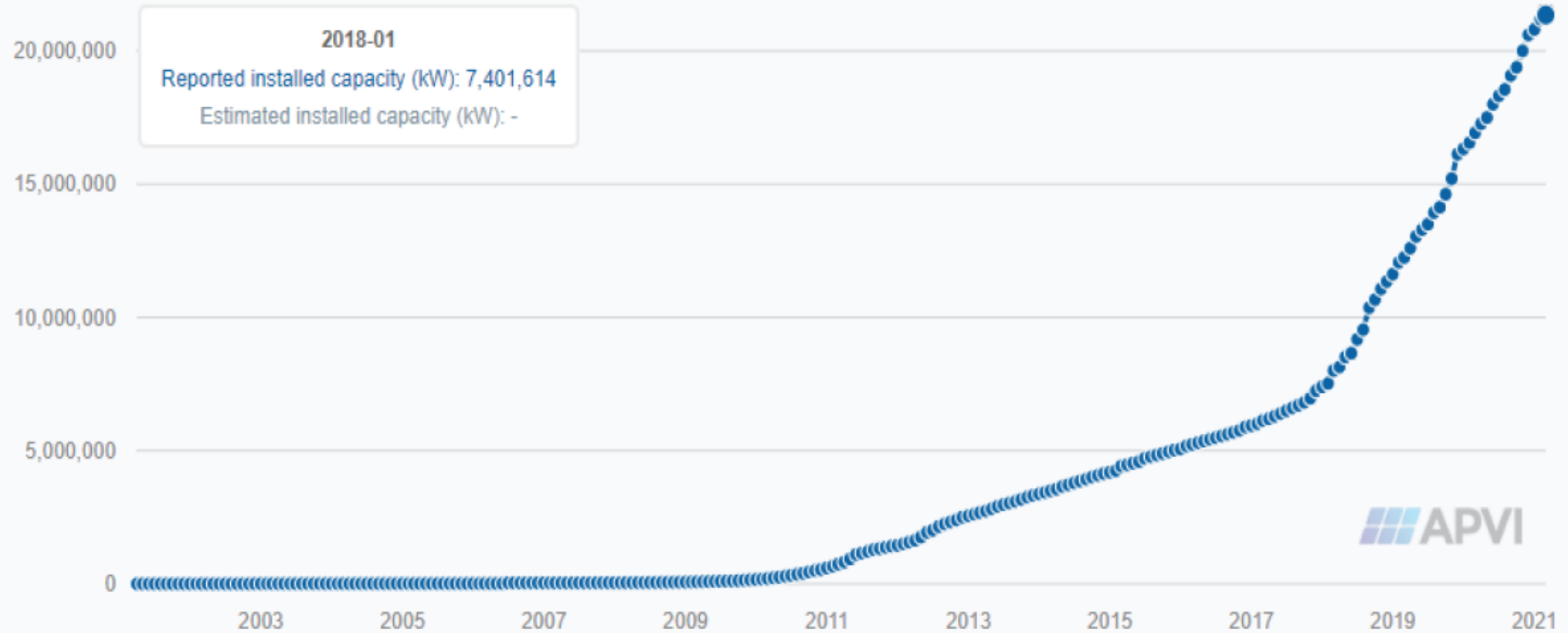
- **What was done?** Broader section of the energy sector came together to:

- Developed consensus on the issues to be addressed
- Developed and tested potential solutions
- Considered transition and implementation



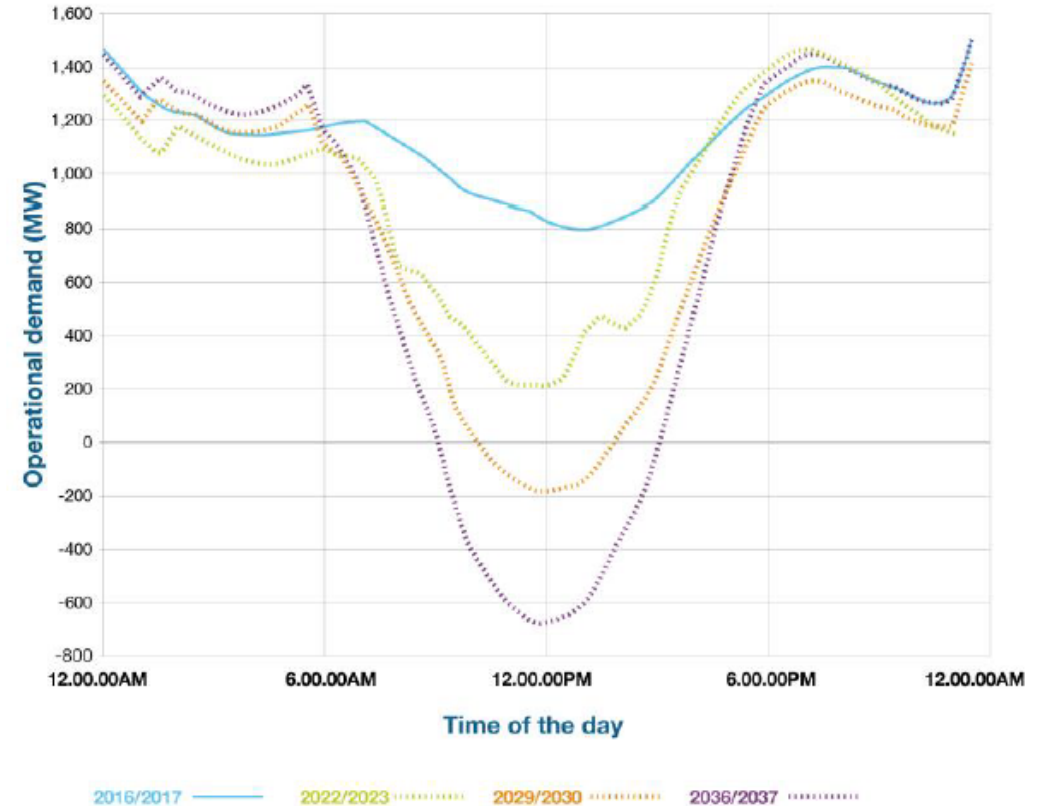
Solar PV providing low cost, renewable energy

Australian PV installations since April 2001: total capacity (kW)



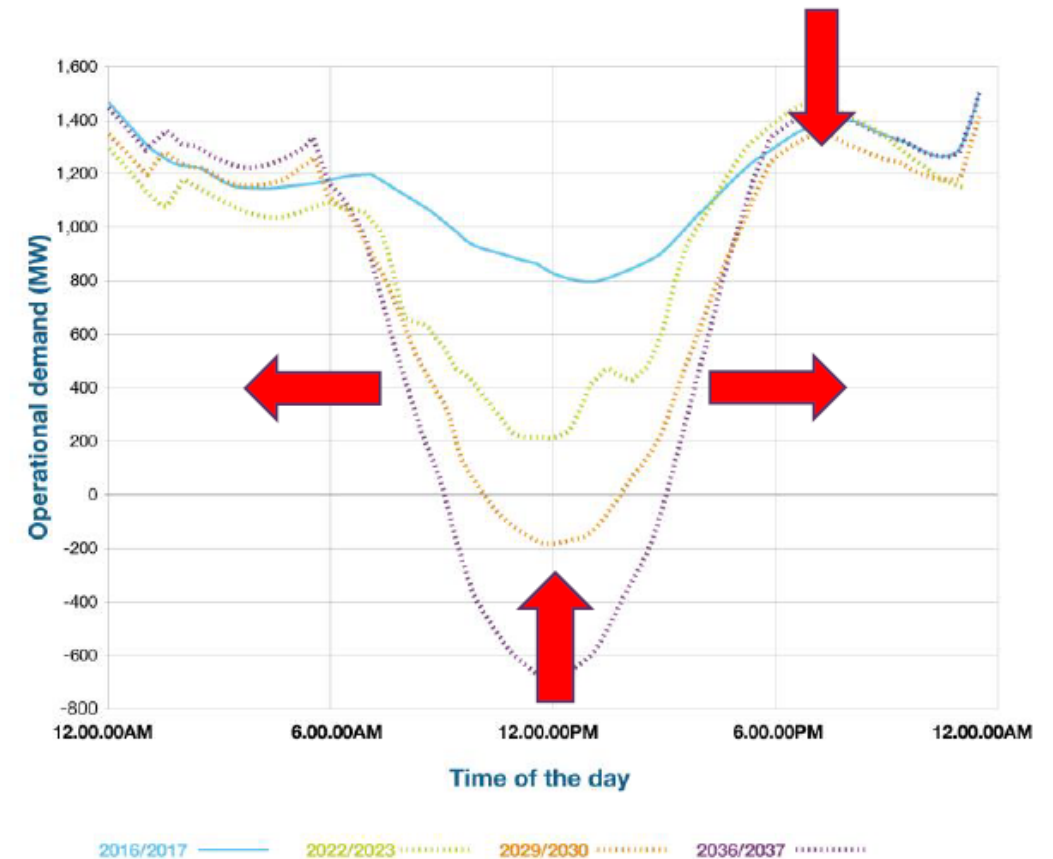
Handbrake on more solar – the challenges we are facing

- No clear rights for customers to export surplus generation
 - First come, first serve
- No clear standards of export service on networks
 - Reducing level of export allowance
 - Increasing instances of curtailment
 - Zero export limits
- Increasingly complex network operation



Our decision aims to support better integration of solar

- Helping to make distributed energy resources an integrated part of the system – for the benefit of everyone
- Enabling more distributed solar to get to the grid (And future technology like battery storage and electric vehicles too!)
- Supporting transition to a lower cost, decarbonised electricity system
 - Solar: using this renewable resource when the system needs it most
 - Network: Making most of what we already have



A package of measures to support more DER for the benefit of **ALL** consumers



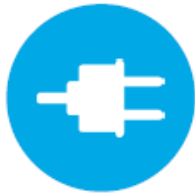
- **Benefits for all users**

More DER can connect, but the cost of supporting them can now be recovered from those who get the benefit



- **Connect and export**

New connecting customers will be much less likely to have static zero export limits



- **Rewarding customers**

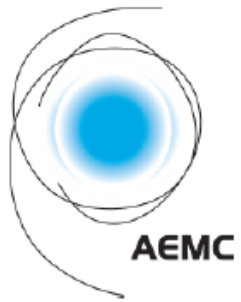
Customers can be rewarded for their actions that help make the grid more efficient



Decentralised energy resources plays an important role in the future grid

Some logistics

- First export tariff options not likely until 1 July 2024 (NSW/ACT/NT/TAS reset)
- Existing customers
 - They don't have to change anything until 1 July 2025
 - They can still export under the basic service option
- Options within options
 - This is not the only tool, or the silver bullet
 - This is intended to work with technical solutions like flexible export limits



Office address

Level 15, 60 Castlereagh Street
Sydney NSW 2000

ABN: 49 236 270 144

Postal address

GPO Box 2603
Sydney NSW 2001

T (02) 8296 7800

Project EDGE – Aggregator Onboarding information

Nick Regan
[AEMO]

- AEMO will provide the following documents:



Project
Overview and
participation
fact sheet



Expression of
interest form



Data
Specification



Energy Web
Participant
information

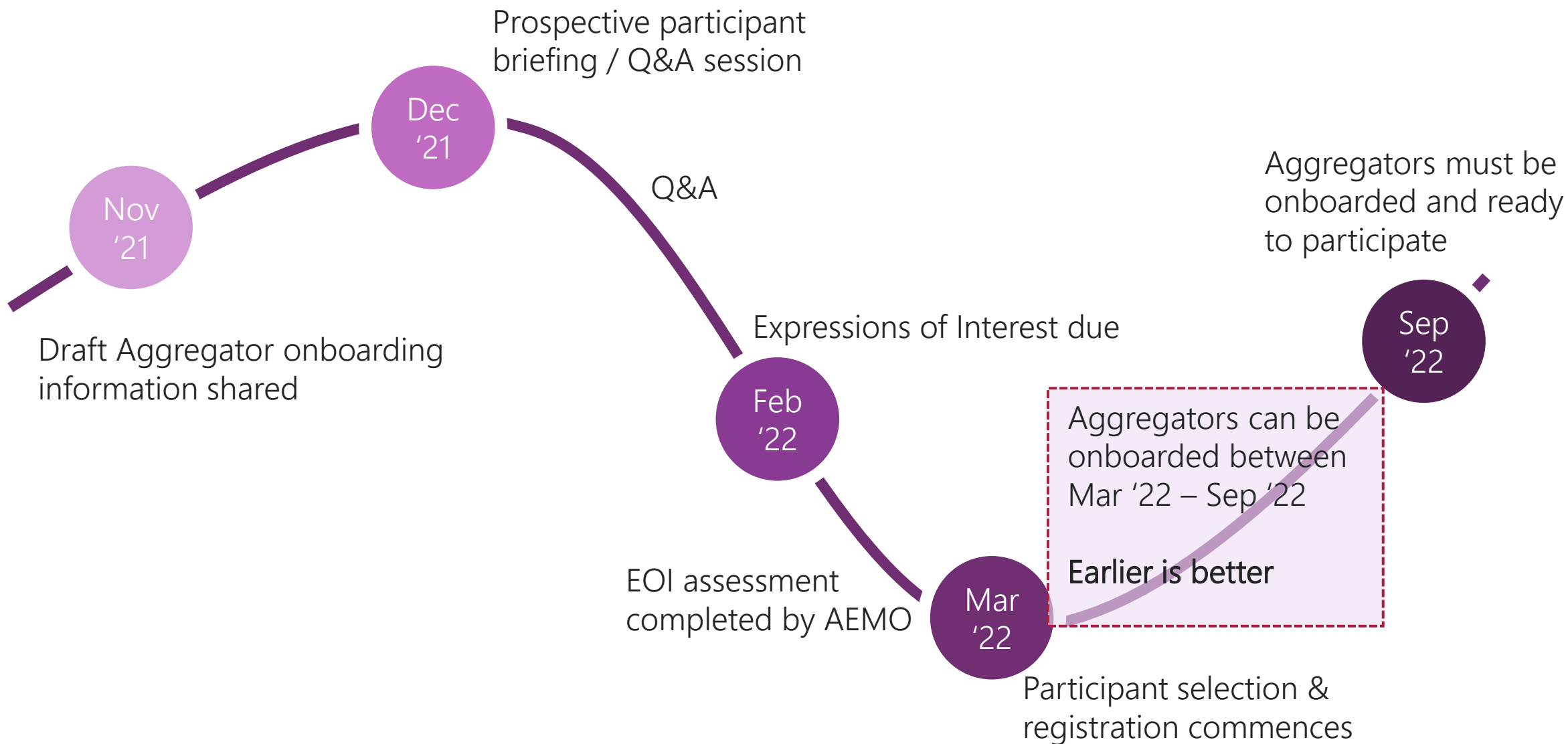
- This information will support aggregators in understanding the requirements and assessing the effort of participating in Project EDGE.

Note: Project EDGE is off-market and only requires an additional 2 aggregators to participate.

- Following an Expression Of Interest phase, AEMO will identify **2 appropriate additional aggregator participants** based on a range of criteria.
- Not all criteria are mandatory, but meeting these criteria will maximise learning outcomes for the project. Desired criteria include:
 - Participation in all services being tested in the project (wholesale energy & local services exchange)
 - At least one aggregator is also a retailer
 - Ability to engage in customer insights studies (inc. agreements in place with customers to enable this)
 - Willingness to participate in activities to maximise knowledge sharing and understanding (e.g. participation in surveys, interviews, provide inputs into knowledge sharing reports etc.)
 - Customers within the AusNet Services jurisdiction, preferably the Hume region
- Note that these criteria are not mandatory, but meeting more of them will increase an aggregator's chance to participate.



Timeline for participation - indicative



Scheduled Lite Visibility Model

Trent Morrow & Liam McManus

[AEMO]



Focus of workshop

Types of Information

Forecast availability

Forecast activity
(including forecast volume at price points)

Telemetry

Bids

Metering

Standing / Static data

Types of Participants

Non-Scheduled Generator that does not currently provide forecast information to AEMO

Traders of Aggregated DER Portfolios

Traders of Aggregated Demand Response

Non-Scheduled Load that does not currently provide meter data to AEMO

Third party service providers

- Real-time (or close to real-time) information on generation and consumption.
- Examples:
 - Telemetry from Scheduled Units
 - Meter data from large industrial loads
 - Operational data from VPPs
- Provides visibility and input to demand forecasts

Limited by what inverter manufacturers can deliver

AEMO should work with DNSPs to share real-time data

OEMs would need to have real-time information provision as a specification / standard

At what portfolio capacity threshold is it appropriate to obtain this information

AEMO is currently exploring telemetry solutions through other initiatives

- A forecast of passive consumption and/or generation, availability and (ideally) forecast volumes at various price points.
- Examples include
- Input to
 - NEM Dispatch
 - Pre-dispatch
 - In PASA for reserve assessments
 - Commitment decisions by scheduled resources

Network capacity will be an important input into forecasting as forecasts are increasing linked to available network capacity.

NMI level vs aggregated data - likely that AEMO will require aggregate forecasts (providing they can be mapped)

Forward looking forecast of available network capacity (forward looking DOEs) will be beneficial and inform bidding

Quality of data / uncertainty may vary – consider how this is factored into forecast

Unknown response from uncontrolled load => separate out price responsive resources

*Forecast volume would be price dependent.
If forecast isn't binding then will it be accurate?*

Barriers

Participation would incur a cost to participants

There is a cost of meeting data standard.

Need to provide clear requirements / specifications early so that participants can build to them.

Ideally AEMO would provide platform / documentation to make participation as simple as possible

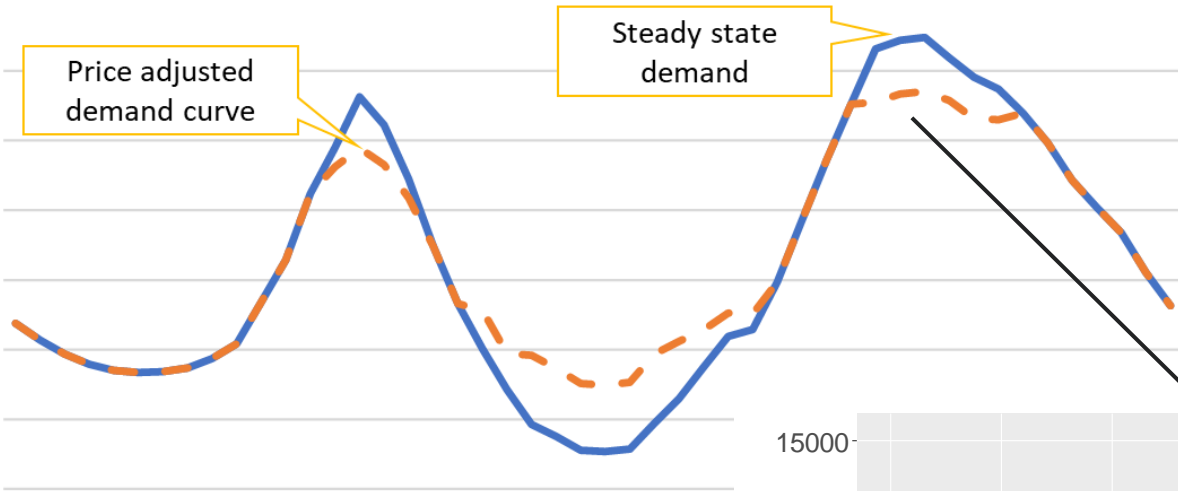
Incentives / approaches

Important to provide clear incentives so that they can be factored into business case to support participation in scheme.

*Start simple.
Add complexity as fleet capacities scale.*

*Basic forecasts initially
(daily, 4 hourly, 1 hourly updates)*

Outputs from Visibility model

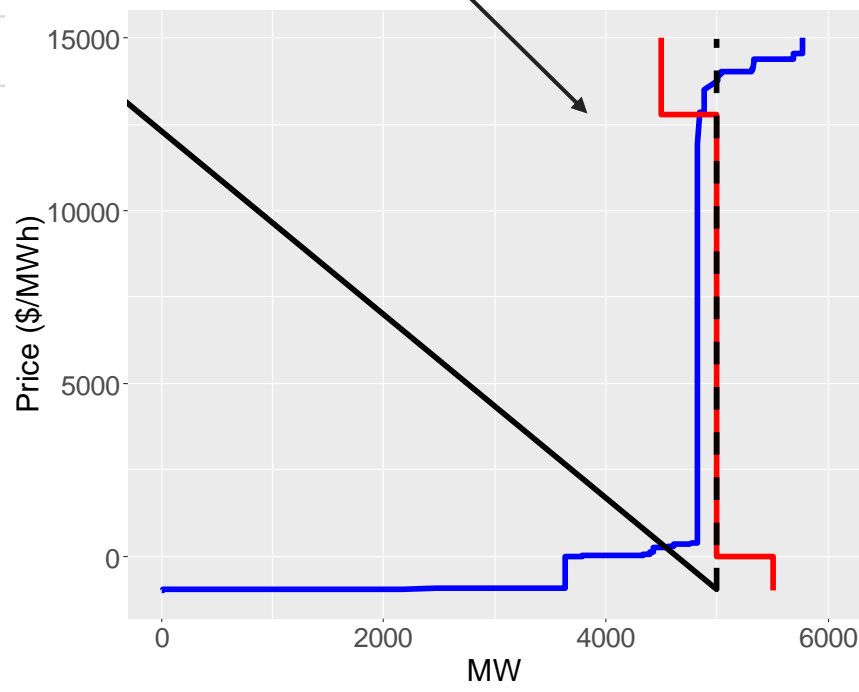


Provide further clarity on the need for data and what value it provides.

Give further consideration to how the information is used by AEMO and networks

Above is a time series representation of a steady state demand forecast and a price adjusted forecast.

To the right is the supply and demand curves for a single interval in that forecast.



Should indicative bids be published?

Consider the impact on competition

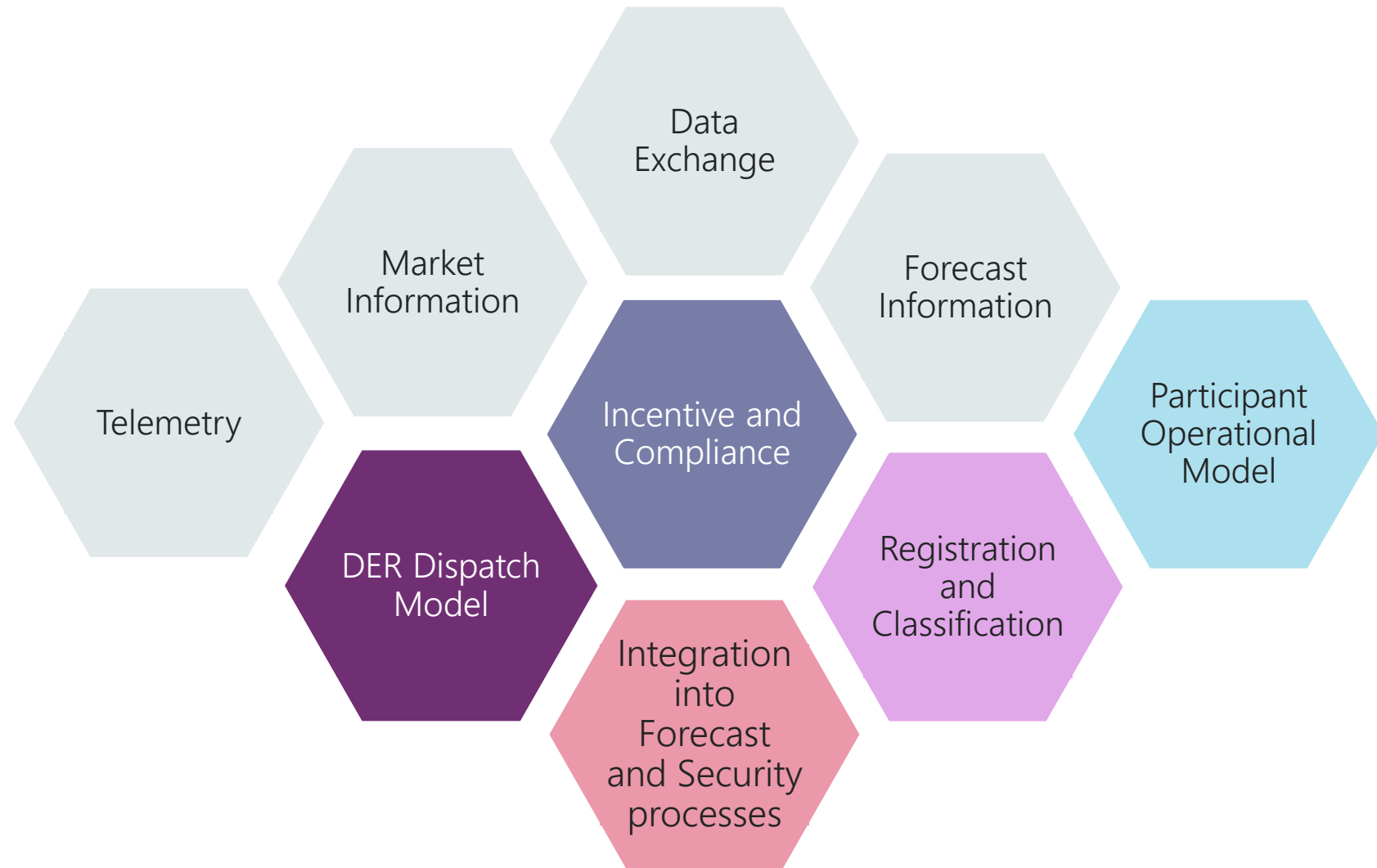
Legend Price Adjusted Demand Curve Static Demand Supply

Next Steps - Dispatch model workshop

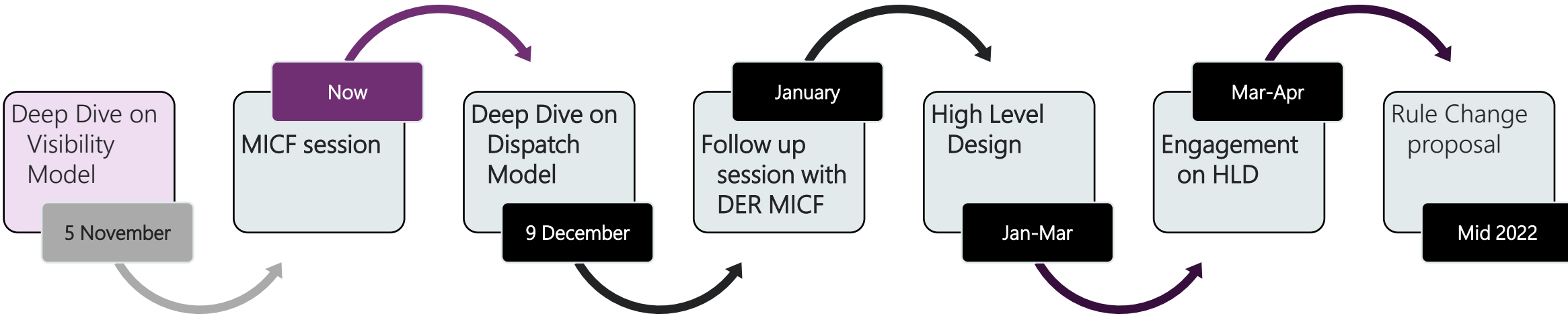
AEMO is planning to hold a 'Deep Dive' workshop on the Dispatchability Model for Scheduled Lite on the **9th of December**.

The next workshop will focus on design elements that have the most relevance to the Dispatch Model:

- Aggregated DER dispatch model
- Incentives and compliance
- Participant operational model
- Insights and lessons from relevant trials



Upcoming activities for development of the Scheduled Lite rule change



Q&A

Raise a hand to speak
Use the Teams chat function

Any other business

A hand in a dark suit sleeve holds a thin, dark rectangular frame. The frame is positioned horizontally across the upper middle of the image. The background is a city skyline with numerous skyscrapers, all rendered in a monochromatic purple and blue color scheme. The overall image has a semi-transparent, ethereal quality.

Future Meetings & Close

Next meeting: February 2022



Indicative dates:

- A poll will be distributed after this meeting via email to obtain feedback on the best date for the first meeting of 2022.
- Future meetings will be scheduled for the same day/time on a monthly basis for the rest of the year.

Note:

- Agenda & meeting documents will aim to be provided 5 days prior to meetings.
- Meeting actions will be distributed within 5 days post meetings (as required).
- Non-confidential information will be shared following each meeting.

Questions & contact

DERProgram@aemo.com.au

For more information
please visit www.aemo.com.au

