

# DER Market Integration Consultative Forum

24 February 2022



**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 – 11:15 | Project EDGE update                    | Nick Regan [AEMO]           |
| 11:15 – 11:40 | Project EDGE – Research Plan overview  | Nick Regan [AEMO]           |
| 11:40 – 12:00 | Scheduled Lite – HLD & progress update | Trent Morrow [AEMO]         |
| 12:00 – 12:25 | Q&A                                    | All                         |
| 12:25 – 12:30 | Future Meetings & Close                | Amanda van der Sluys [AEMO] |



# Project EDGE Update

## Upcoming Deliverables

Mar '22:



Project Research Plan Published

Apr '22:



Public Interim Report Published

Apr/May '22:



Public Webinar – Providing an overview

of the Public Interim Report and knowledge

gained to date.

## Aggregator Onboarding

- EOI Q&A sessions held – Jan & Feb '22
- 1-1 discussions with interested aggregators completed
- EOIs must be submitted by 28 February 2022



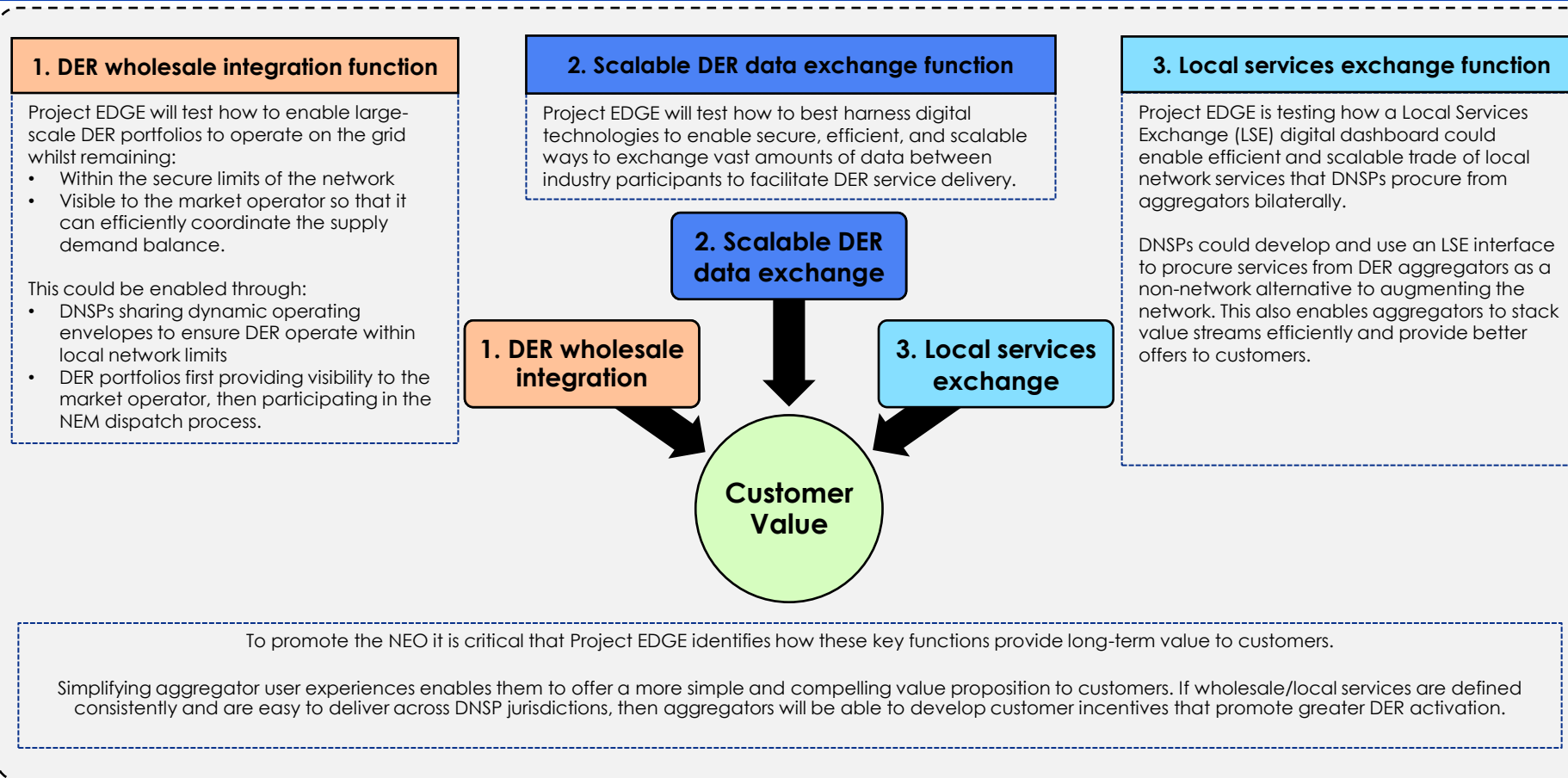
# Project EDGE – Research Plan Overview

# Project EDGE will test the core functions of a digitised, decentralised power system and market



To generate an evidence base that supports the development of market structures appropriate for a high DER future, Project EDGE will test the three key function sets that are vital elements of efficient and scalable DER integration that delivers value to customers. Project EDGE is testing the interaction of these function sets in a concept called the DER Marketplace.

This Research Plan outlines how Project EDGE aims to demonstrate that an integrated digital ecosystem linking many systems and capabilities across various industry actors to exchange data and services is an efficient and scalable model in the long-term interests of consumers



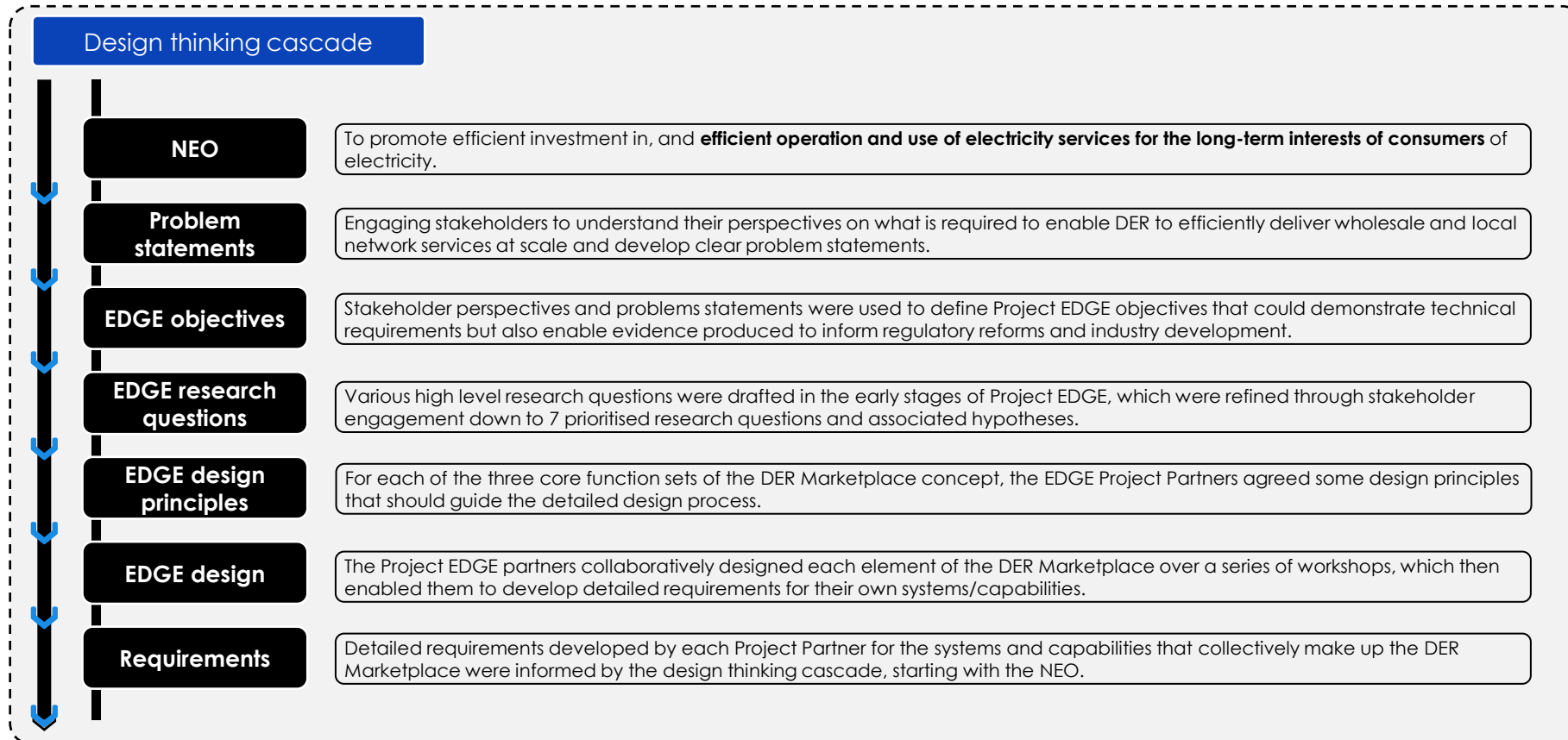


# The framework used to develop the Research Plan traces back to the NEO



The Research Plan provides traceability to the NEO and Project EDGE objectives and it will inform the Project Partners on the various elements of the design thinking, including the research questions, hypotheses, theoretical and practical exercises, and the data collection and analysis plan required to address Project EDGE's objectives and industry problem statements.

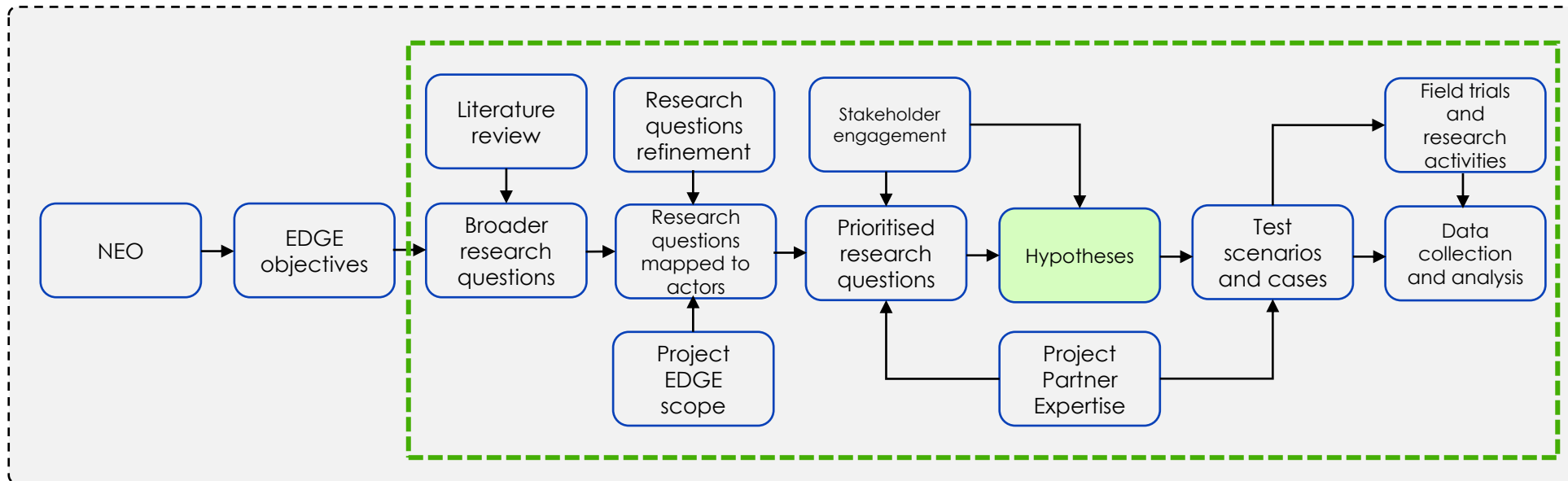
The Research Plan was developed using an iterative approach to refine and prioritise questions, hypotheses, and define test cases that will generate empirical evidence to feed into regulatory and industry decision making. It has been developed based on literature review, subject matter expertise from the Project Partners, and feedback from broad stakeholder engagement, with the ultimate aim to tie every aspect of Project EDGE back to the NEO.



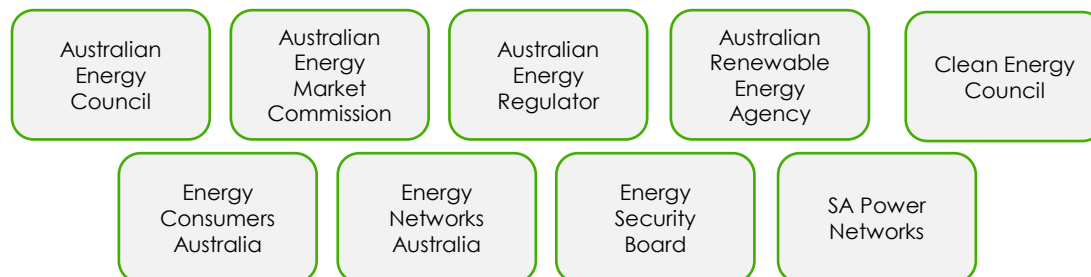
# UoM applied an iterative approach to test, refine and prioritise research questions and hypotheses



The Project Partners co-developed initial research questions that were used to progress early trial design and platform development. These initial research questions were also informed by an extensive literature review, including the related national and international activities summarised in Appendices 2 and 3. A comprehensive stakeholder consultation and collaboration process further refined the research questions and hypotheses. Engagement was conducted through direct one-to-one discussions with key stakeholders, while forums facilitated engagement with a broader audience. Collaboration with Project Partners facilitated the design of test cases and scenarios, and the data that would need to be collected from those research activities. The approach adopted by UoM is illustrated in the process diagram below. The full list of stakeholders engaged is included in Appendix 4.



### Key stakeholders engaged in one-to-one discussions



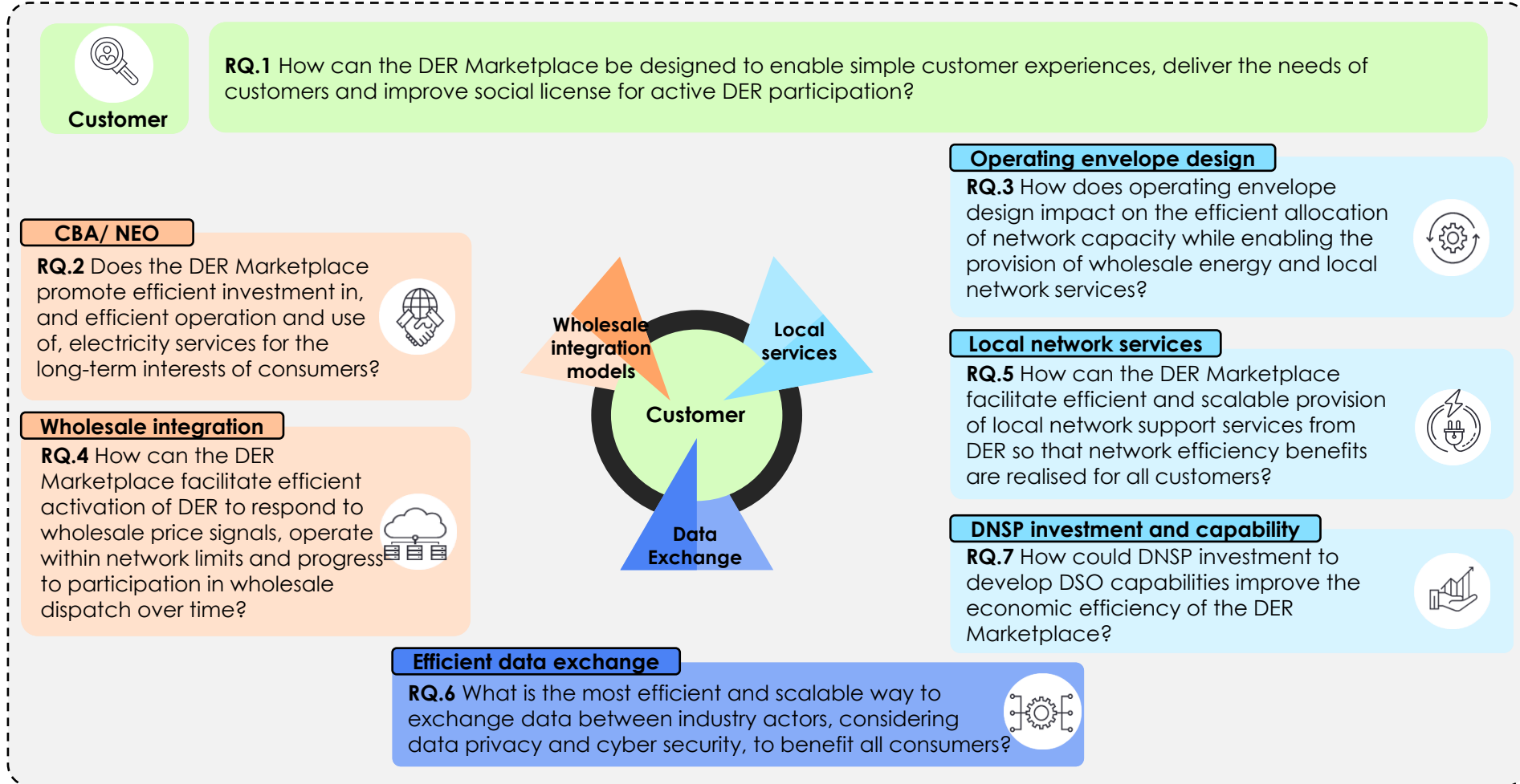
### Forums for engaging with a broader audience



# The research questions will test fundamental elements and trace to the NEO



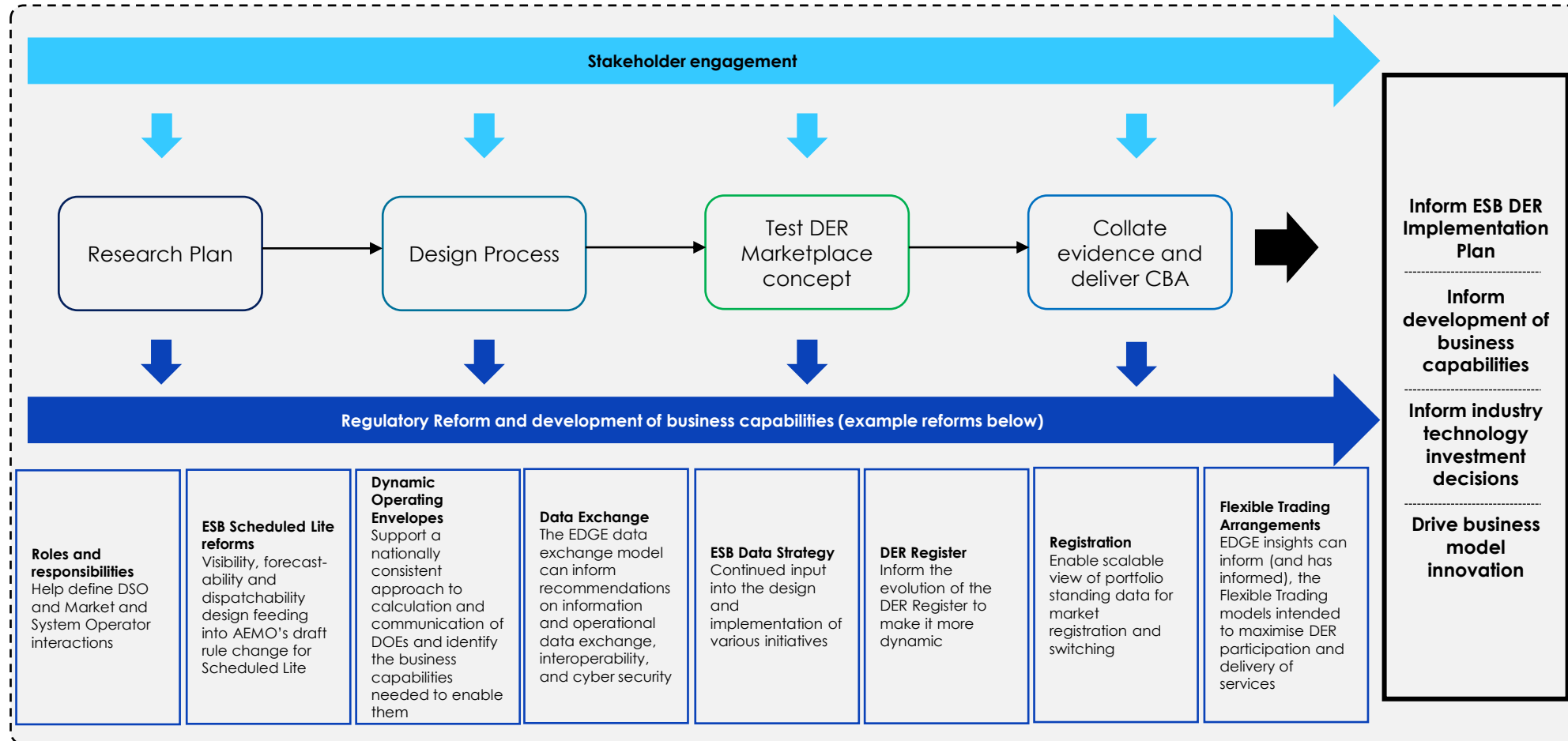
The seven research questions test key elements of the core functions and mechanisms and capabilities needed to facilitate an efficient DER Marketplace.



# Research outputs will provide an evidence base to inform stakeholder decision-making



The research outputs will help inform stakeholder decisions (including regulatory reforms and the development of business capabilities) throughout Project EDGE. For instance, the design process is already feeding into the design thinking for the ESB Schedule Lite reforms and the DEIP Dynamic Operating Envelopes working group. The field testing and final research outputs (including the CBA) will inform further stakeholder decisions.



# Scheduled Lite – High Level Design & Progress Update

- Voluntary mechanism aimed at lowering barriers and providing incentives for non-scheduled load and generation to provide information and participate in the dispatch and scheduling processes.
- The mechanism will be applicable to loads, aggregated DER and small generators (< 30MW), and third party services providers. We expect participation in the market by a trader rather than direct participation of end users.

## Development of Scheduled Lite mechanism

- ESB proposed the development of the Scheduled Lite mechanism as part of the DER Implementation Plan.
- The Scheduled Lite mechanism complements the implementation of Flexible Trading Arrangements, aiming to better integrate flexible demand and DER into the NEM. These reforms build on the Integrating Energy Storage Systems rule change.
- DER Trials such as Project EDGE will provide important inputs on key design elements.
- AEMO tasked with preparation of a high-level design and submission of rule change request by mid 2022.

Developing two models for resources to opt into:

**1. *Visibility Model*** will focus on the provision of real-time and forecast information to AEMO for use in forecasting and market scheduling processes. Data may include:

- Real time information
- Forecasts for generation and load
- Indicative prices at which participants will curtail generation and/or demand respond

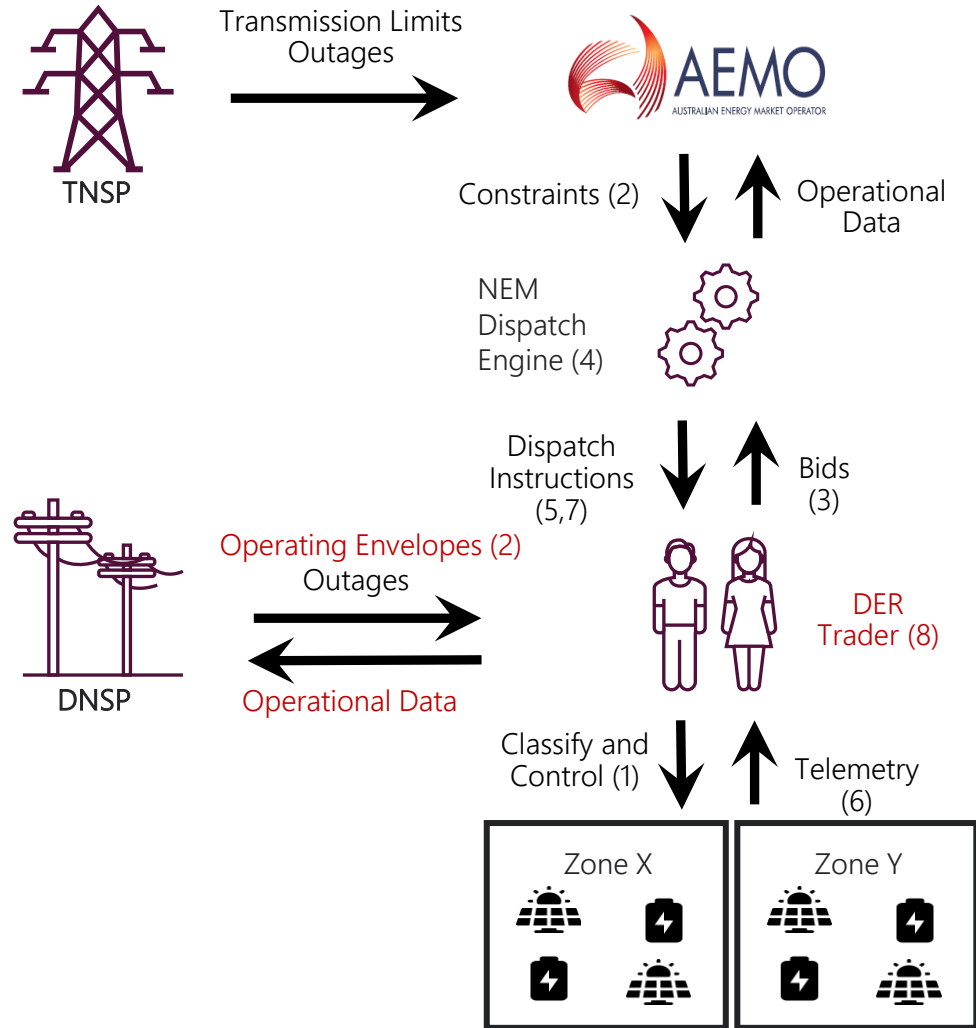
**2. *Dispatchability Model*** will integrate price responsive load and generation into the NEM dispatch process. Participants will be able to:

- Provide bids for their consumption and generation
- Receive dispatch targets
- Gain access to potential future markets

# NEM Central Dispatch: Future

Areas to investigate:

1. Registration
2. Constraints
3. Bids
4. Co-optimisation
5. Dispatch
6. Telemetry
7. Compliance
8. Operating Model



Red = potential new consideration.



# Summary of Feedback: December Dispatch Workshop

## Registration

*Current registration models do not allow VPPs to register and trade in energy.*

*If there are high costs associated with participation, then this could act as a barrier to mass uptake of active DER.*

*A requirement for a second connection point could rule out certain types of end users. Is it possible to develop a participation model based around the primary connection point?*

*A split between passive load and flexible resources may mean some level of coordination is required between retailer and DER aggregator.*

*Registration processes should be automated as much as possible.*

*Consider the practicality of participation in the proposed models.*

## Constraints

*DOEs are envisaged to apply at a connection point. Passive loads and generation at the primary connection point could impact the trade of the VPP.*

*For the purposes of calculating the DOE, the DNSP/DSO will need to know information about the active DER*

## Bids

*Gross data beneficial for AEMO operations. However, net arrangements align with other components of the market framework, and gross data may be more complex to operationalise.*

*Aggregator will need to bid in accordance with its DOE.*

*Zonal aggregation / bidding aligns with WDR implementation.*

*kW bid size would lower the bar for aggregators to enter the market. However, there are costs associated with moving from MW bid size.*

# Summary of Feedback: December Dispatch Workshop

## Dispatch

*Co-optimisation between energy and FCAS is the ideal. Also need to consider the implications of self-consumption.*

*Trials have shown VPPs can self-dispatch, respond to FCAS and optimise self-consumption.*

*VPP operator will need to ensure they can meet dispatch targets, taking into account local DOEs and/or network support agreements. Doesn't appear to be efficient to try and take account of this within centralised dispatch.*

## Telemetry

*AEMO need to define standards for granularity, accuracy, latency. Cost of connection should be considered, VPP demonstration APIs were considered to be expensive.*

*A meter at each individual site for an aggregated DER may mean there are opportunities to relax requirements if portfolio level accuracy is high.*

*Telemetry will come at a cost which could create a barrier to participation.*

## Compliance

*Obligations and compliance will need to be different and fit for purpose across the different models of participation.*

*Obligations and compliance will have implications for the customer.*

*A flexible approach to conformance is required for DER in general. Batteries can ramp linearly but there may be impact on asset.*

*Participants seek further information on how compliance will be assessed and managed so that feedback can be provided.*

*Given the rising cost of compliance, is there a way for AEMO to centralise compliance requirements and standards?*

*Workshop highlighted strong relationships to other initiatives in the **DER implementation plan**.*

## **Consumer Protections | Retailer authorisation review**

- Participation in a VPP could have complex implications for the customer. There needs to be clarity and transparency for customers of the opportunities and risks associated with participation in a VPP.
- Creating structures in the market for the trading of DER has implications for self-consumption and there is a potential financial risk to the customer associated with a mismatch in retail offerings between service providers at a household.

## **Flexible Trading Arrangements**

- Will provide a framework for a third party trader to aggregate DER and trade energy in the market.

## **Dynamic Operating Envelopes**

- If DOE are to apply at the primary connection point then a way of sharing the limit and coordinating between traders is required to support VPPs trading in the market.

## **Interoperability**

- Further work on interoperability required to underpin the participation and operational models envisaged for Scheduled Lite.

- High level design workshops
  - Aiming to run two workshops in March with DER MICF working group
  - Discuss next layer of detail and respond to feedback provided in earlier workshops.
  - Workshop 1 – Participation across Visibility and Dispatchability models.
  - Workshop 2 – Dispatch model focus.
- Publish Draft High Level Design in April for consultation
- Analyse rule changes required in accordance with High Level Design (June)
- Submit rule change request and High Level Design to AEMC in July.

# Q&A

Raise a hand to speak  
Use the Teams chat function

**Any other business**

A hand is shown in silhouette, holding a dark rectangular frame. The background is a city skyline with numerous skyscrapers, all rendered in a monochromatic purple hue. The text is overlaid on this background.

# Future Meetings & Close

Next meeting: 24 March 2022



# Questions & contact

[DERProgram@aemo.com.au](mailto:DERProgram@aemo.com.au)

*For more information*  
please visit [www.aemo.com.au](http://www.aemo.com.au)

