

# WA DER Market Participation Forum

14 December 2022





# Welcome

Tom Butler, Manager – Distributed Markets WA

We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.

**We pay respect 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**:

1. Ensure that discussions are limited to the matters contemplated by the agenda for the discussion
2. Make independent and unilateral decisions about their commercial positions and approach in relation to the matters under discussion with AEMO
3. 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:

1. Which customers they will supply or market to
2. The price or other terms at which Participants will supply
3. Bids or tenders, including the nature of a bid that a Participant intends to make or whether the Participant will participate in the bid
4. Which suppliers Participants will acquire from (or the price or other terms on which they acquire goods or services)
5. 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.

# Online forum housekeeping



1. Please mute your microphone to avoid distracting background noises.



2. Video is recommended for presenters only, as this helps with webinar performance and minimises distractions. However, we encourage you to turn it on via Q&A.



3. We encourage you to ask questions and provide feedback.



- Use the chat function at **any time** during the forum, we aim to respond to as many questions as possible.

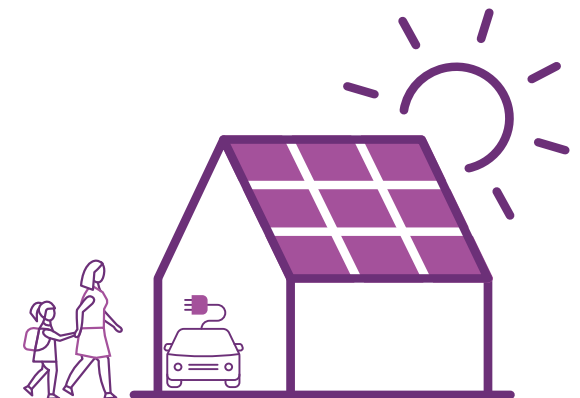


- Raise your hand during Q&A and wait till you're called upon. Don't forget to unmute and lower your hand after.

# Agenda

*Please note that this meeting will be recorded by AEMO and may be accessed and used by AEMO for **capturing meeting outcomes**. By continuing, you consent to AEMO recording the call and using the recording for this purpose. If you do not consent, you may exit the meeting. No other recording of the meeting is permitted.*

1. **Year in review and 2023 priorities** by Tom Butler
2. **Energy Policy WA update** by Aden Barker, Director Network Regulation & Customer Participation
3. **Recent DER updates**
  - **Visibility Framework** by Natalia Kostecki
  - **WEM DER Register** by Allicia Volvricht
4. **Project Symphony**
  - PMO update by Megan Allan, Stakeholder and Communications Lead
  - DMO update by Bruce Redmond
7. **Q&A**



# 2022 in Review

## Capability Evolution

### Operational tools

- Developed dynamic system models inclusive of DER and Load behaviour to operations.
- Supported Emergency Solar Management design and implementation to go-live and ongoing enhancements.

### DER standing data

- Identified data to be collected for Electric Vehicle chargers, and revised DER Register Information Procedure accordingly.

### Controllability

- Investigated potential options for system services from DER based on emerging system needs.

## Enabling DER Participation

### DER Orchestration Roles and Responsibilities

- Engaged and provided advice to Energy Policy WA confirming key policy decisions in relation to DER Orchestration via the Energy Policy WA Roles and Responsibilities project.

### VPP Visibility Guideline

- In response to policy direction to enable retailer-led DER aggregation, developed and consulted on a model to enable AEMO to gain visibility of aggregations as they develop, and progress to scale.

### Project Symphony

- Developed reports to outline Symphony implementation, and testing arrangements to inform final pilot recommendations.

## DER Performance

### DER Behaviour and standards

- Accelerated focus on poor compliance rates for DER installed across the SWIS, increasing attention on enhancements to the SWIS compliance monitoring and enforcement frameworks.

### Pilot platform and testing

- Project Symphony roles, detailed design, platforms and data exchanges confirmed and build ~95% complete.
- Project Symphony four test scenarios negotiated and AEMO implementation to complete by the end of December.

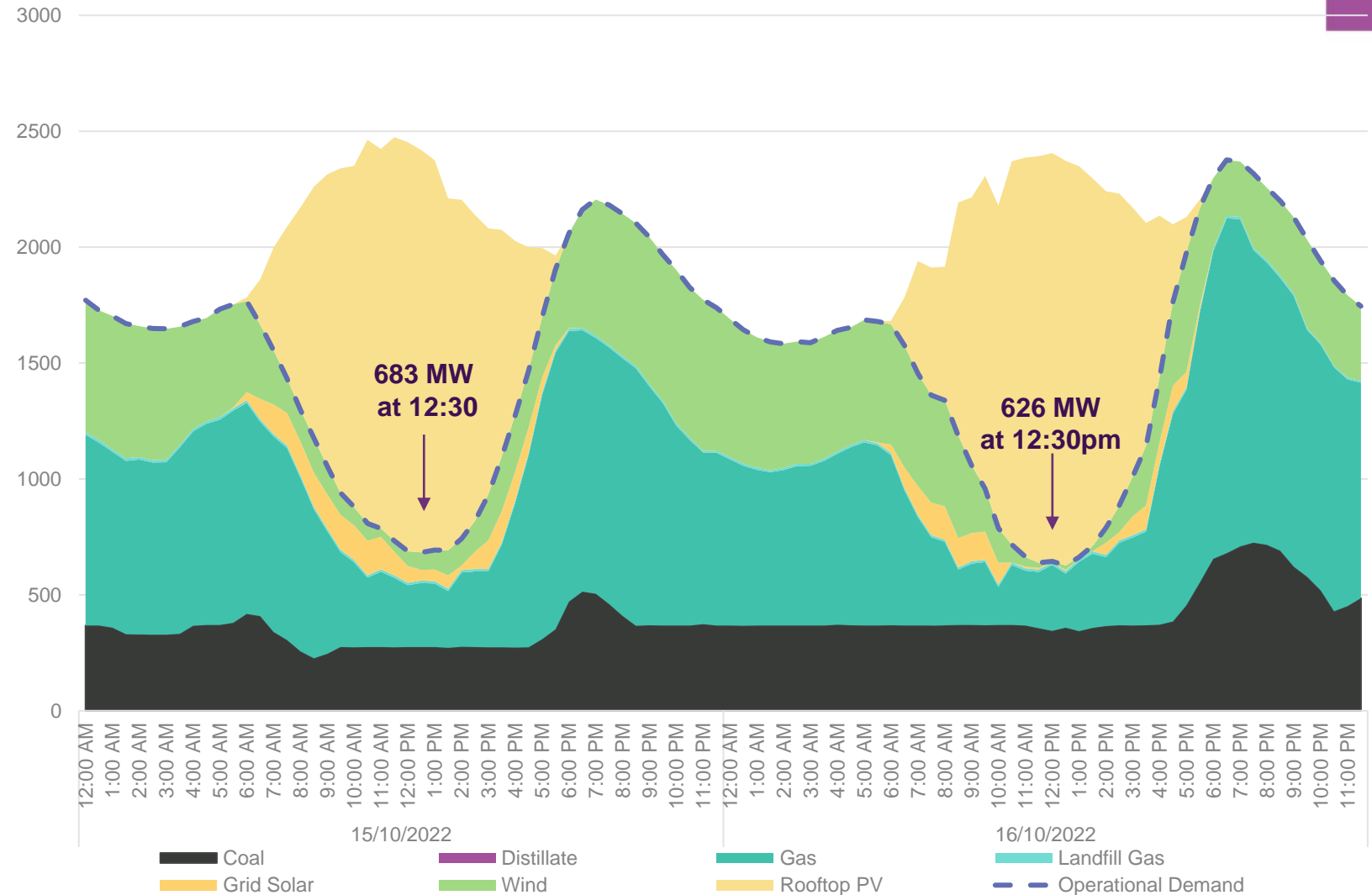
### Interoperability

- Partnering with NEM colleagues to review and develop standards for DER device interoperability.

# Record Minimum Demand

WEM operational demand and fuel mix on 15-16 October 2022

- On Sunday, 16 October 2022 the WEM recorded an all time record minimum operational demand of **626 MW** over the 12:30 - 13:00 Trading Interval.
- This came after a record minimum demand on the previous day of **683 MW**.
- During this period AEMO constrained the Synergy Portfolio to a minimum output of 430 MW in order to maintain power system security and reliability.



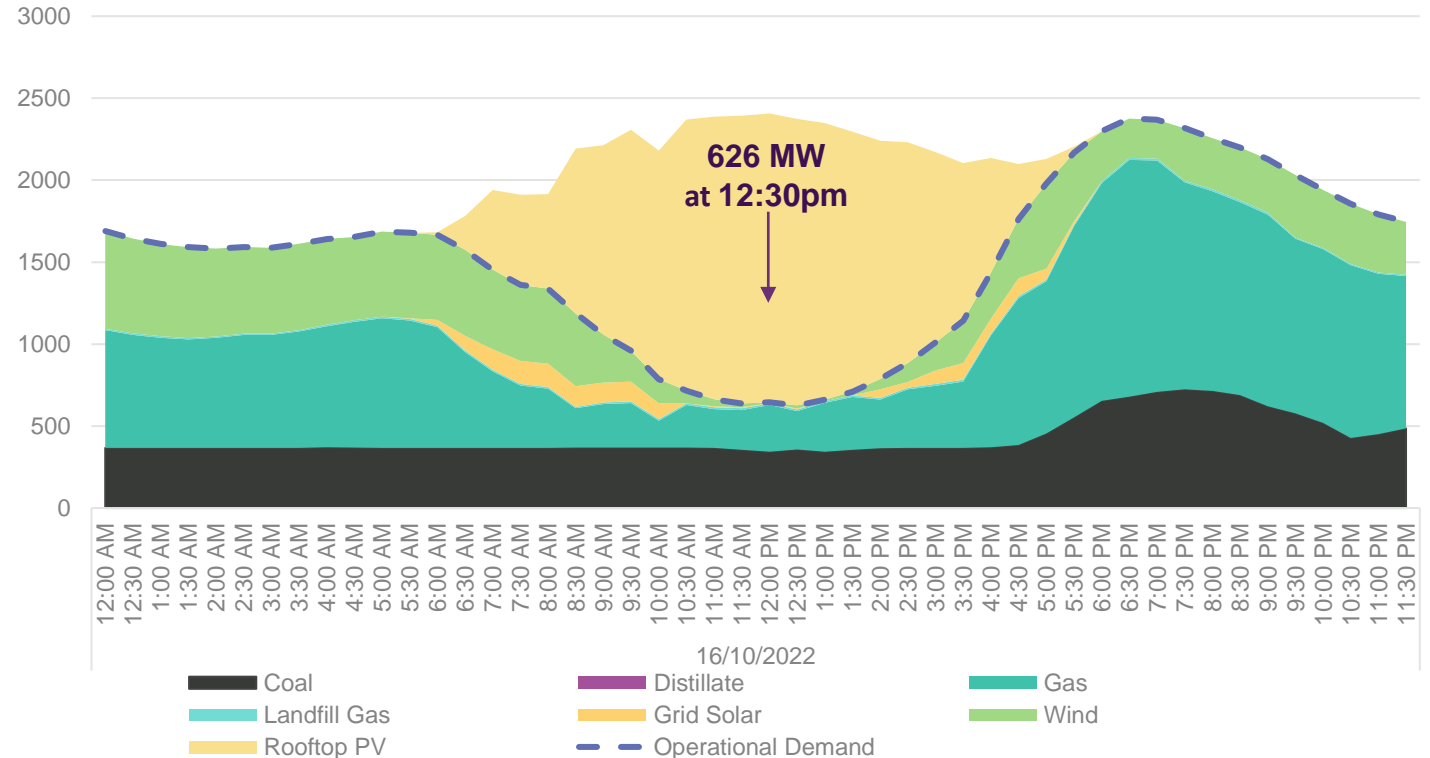


# Generation Mix and Renewable Penetration

- During the record minimum demand Trading Interval renewable penetration was 75.08%\* on underlying demand (including estimated DPV).
- The major contribution on renewable penetration was from DPV which covered 73.60% of underlying demand. This is an all-time record.
- Wind and grid solar generation was considerably low, contributing for only 0.8% and 0.24% respectively.
- Emergency Solar Management introduced in February 2022 as a last resort to maintaining system security and to support the continued uptake of roof top solar.

Visit the [WEM Data Dashboard](#) for insights on DPV

Actual generation by Fuel Type on 16/10/2022



# 2023 Priorities

## Capability Evolution

### Operational tools

- Emergency Solar Management enhancements (increase visibility, compliance, monitoring)

### DER standing data

- Finalise procedure and system changes to DER Register for Electric Vehicles and related enhancements to align to DER standards and capability.
- Test and ensure DER Register performance and benefits achieved.

## Enabling DER Participation

### DER Orchestration Roles and Responsibilities

- Project Eagle progressing towards establishing heads of power for DER Orchestration.

### VPP Visibility Information

- Receive data from some VPPs, providing greater insights into scale and operational arrangements.
- Consider the model for enabling visibility following October 2023.

### Pilot platform and testing

- Finalise recommendations for implementation of DER Aggregation arrangements in the WEM, based on learnings and integration design Project Symphony.

### WEM Implementation planning

- Develop implementation plan for DER Orchestration in the WEM, drawing in Project Symphony as piloted capability to enable scoping of implementation project to meet October 2025 go-live.

## DER Performance

### DER Behaviour and standards

- DER Orchestration Roles and Responsibilities continues, led by Energy Policy WA.
- Review if DER compliance and performance.
- Develop improved cyber security arrangements for DER with Energy Policy WA.

### Restart

- Finalise research into prospective roles and opportunities for DER in the restart process.

### Pilot platform and testing

- Project Symphony testing complete and directly informing prospective requirements for WEM services from DER.
- Identify forecasting and planning opportunities with DER orchestration/services given the proposed service requirements.

### Interoperability

- Finalise the implementation of the CSIP-AUS DER interoperability standard.



Government of Western Australia  
Energy Policy WA

# Energy and Governance Legislation Reform - Update 'Project Eagle'

Aden Barker

Director Electricity Networks & Customer Participation



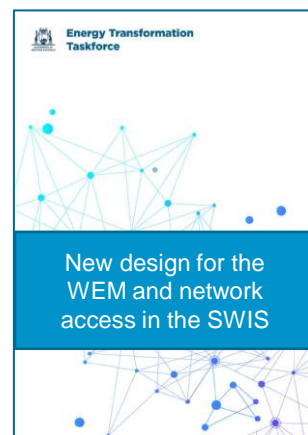
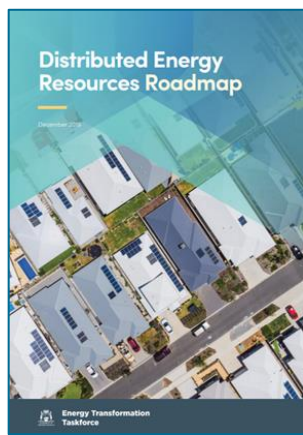
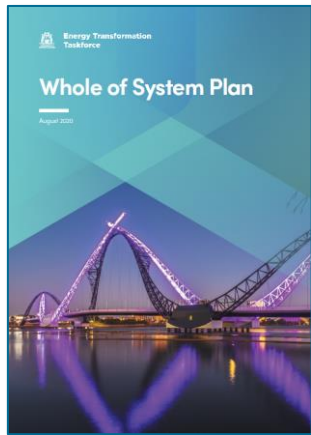
14 December 2022

Working together for a  
**brighter** energy future.

# The journey so far ...

The energy sector is transforming rapidly, with the ongoing uptake of intermittent generation (small and large) and the opportunities and challenges it presents

## Energy Transformation Strategy Stage 1: 2019-2021



Responded to the challenge of the transformation by developing:

- **New Wholesale Market and Access arrangements**
- **Distributed Energy Resource (DER) Roadmap**
- **Whole of System Plan (WOSP)**

## Since mid-2021

- **Rooftop solar growth remains strong; minimum demand continues to decrease**
- **In 2021 the minimum was 761MW, in 2022 we reached a new low of 626MW**
- **Management of the power system is becoming more complex and challenging, and emerging challenges require ongoing response**

# Energy Transformation Strategy Stage 2: 2021-2025

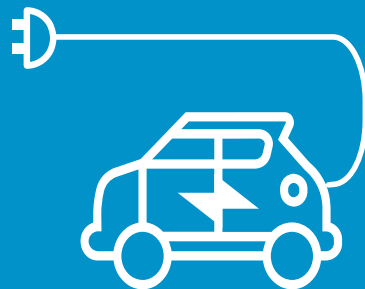
- The Energy Transformation Strategy Stage 2 (ETS 2) builds on the initiatives of the ETS
- Continues the transition of the power system
- Manages emerging risks to power system security and reliability

## Four themes of ETS 2 – released in July 2021

Implementing Taskforce decisions



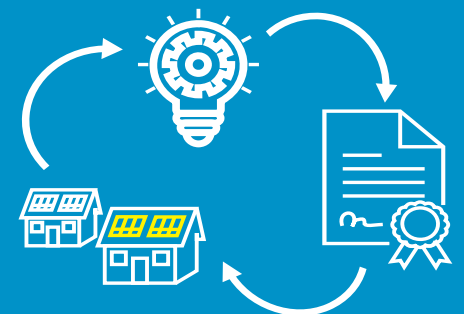
Integrating new technology into the power system



Keeping the lights on as the power system transitions



Regulating for the future



Working together for a **brighter** energy future.

# 'Project Eagle' Legislative Amendments:

## Consultation Paper – October 2021

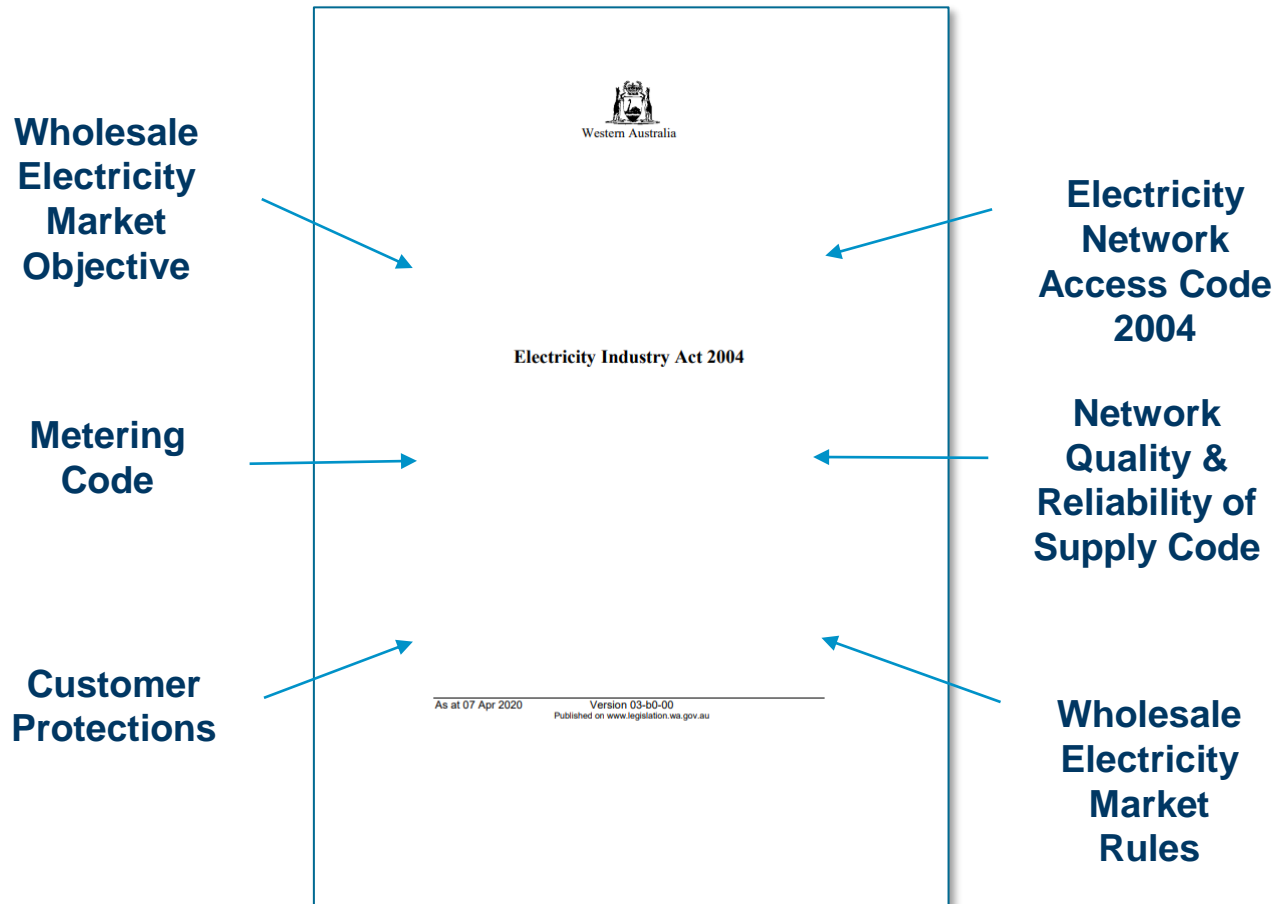
- Consultation Paper set-out scope of 'Project Eagle' - amending legislation to *enable* ETS Stage 2 and other reforms

But first .....

- Project Eagle does not set detailed policy positions or involve regulatory drafting
- Following legislative amendment: extensive and consultative work program – policy development and instrument drafting
- An Information Paper outlining the details of Project Eagle will be released shortly, covering information covered in this presentation



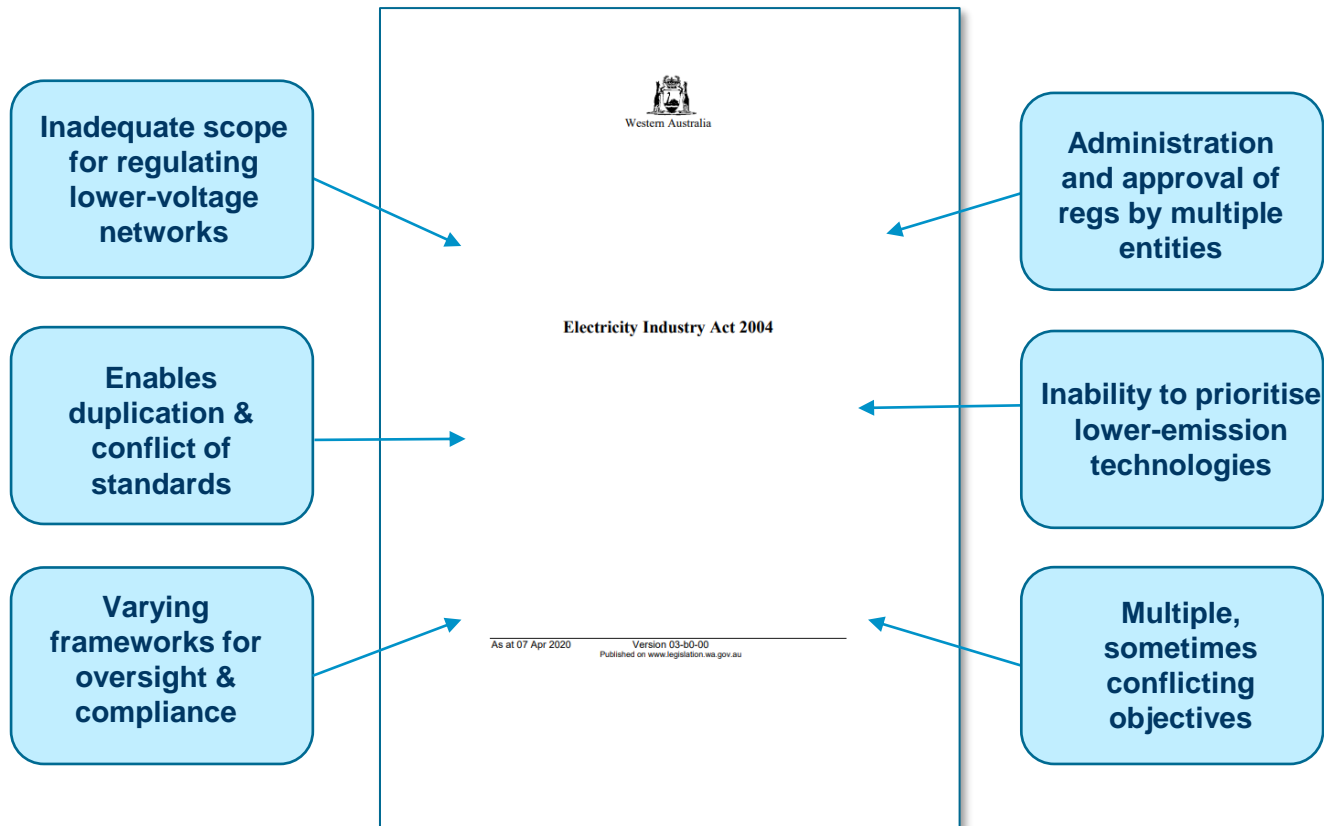
# The Electricity Industry Act 2004



## The *Electricity Industry Act 2004*:

- 20-years-old – different context
- Empowers more detailed regulations, rules and codes
- Subordinate instruments have varying heads of power, objectives, and change processes
- Primary Legislation powerful, but difficult to amend

# 20 years on, how's it playing out?



## Examples of current regulatory limitations:

- **Managing DER and distribution network connections** DER is contributing to power system risks, but limited standards apply – the ability to regulate and manage DER essential to the efficient and safe operation of the power system.
- **Maintaining power system security and reliability** Existing framework is spread across disparate instruments, administered and approved by different entities – no end-to-end, consistent PSSR standards.
- **Facilitating efficient investment and integration for lower-emissions technologies** Multiple, conflicting objectives across instruments limit effective outcomes and flexibility to encourage lower-emission technologies.





# Stakeholder consultation - Oct 2021



**Timeframes for delivery and consultation of reforms**



**Query establishment of new Energy Code – “Big Bang”**



**Advisory panels to provide expertise and transparency**



**Stakeholder positions on Government policy settings (out of scope)**



**Recovery of implementation costs – who pays?**



# Revised scope of the reforms

## 1. A new, overarching Objective

Overarching theme for the EI Act and subsidiary instruments  
Enables differential treatment of technologies

## 2. Expanding the scope of the WEM Rules

**Electricity  
Networks Access  
Code 2004**

Made under Part 8  
of the EI Act

**Western Power's  
Technical Rules**

Made under the  
Access Code

**Electricity Industry  
(Metering) Code  
2012**

Made under Part 2 of  
the EI Act

***Electricity Act*  
1945**

Relating to network  
voltage and frequency  
limits

**Electricity  
Industry (NQRS)  
Code 2005**

Made under Part 2 of  
the EI Act

## 3. Improving arrangements to address new subject matter

Enabling WEM Rules to address matters not adequately dealt with under existing instruments

# Next steps

## Update

- We will provide an update at the time of the introduction of the amending bill to Parliament (anticipated to occur in the second half of 2023)
- This update will include further detail on implementation timeframes and stakeholder engagement

## More information

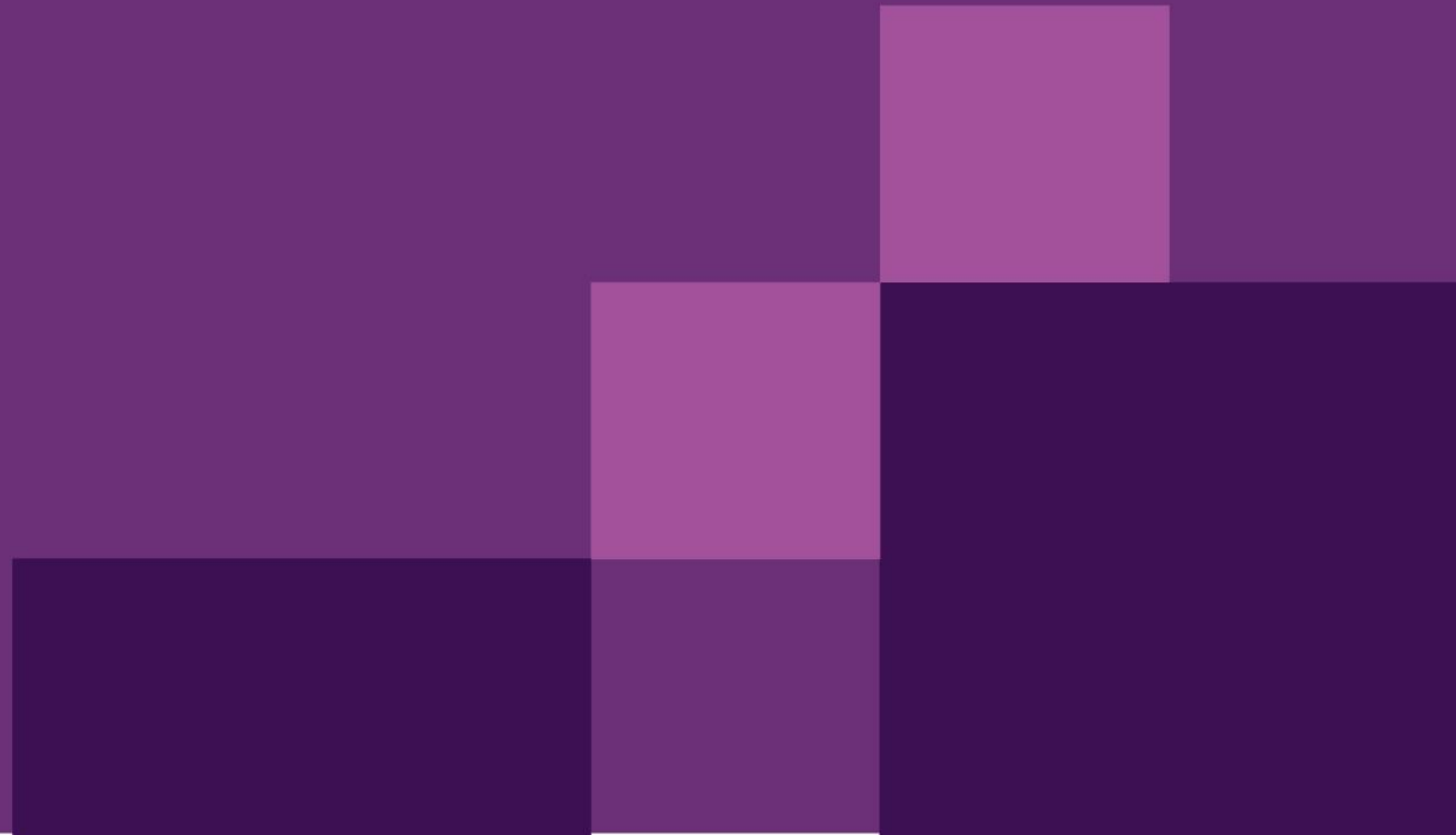
- The slides from recent consultation session will be available on our website
- An Information Paper will be released in mid-December
- Contact [EPWA-info@dmirs.wa.gov.au](mailto:EPWA-info@dmirs.wa.gov.au)

# Questions

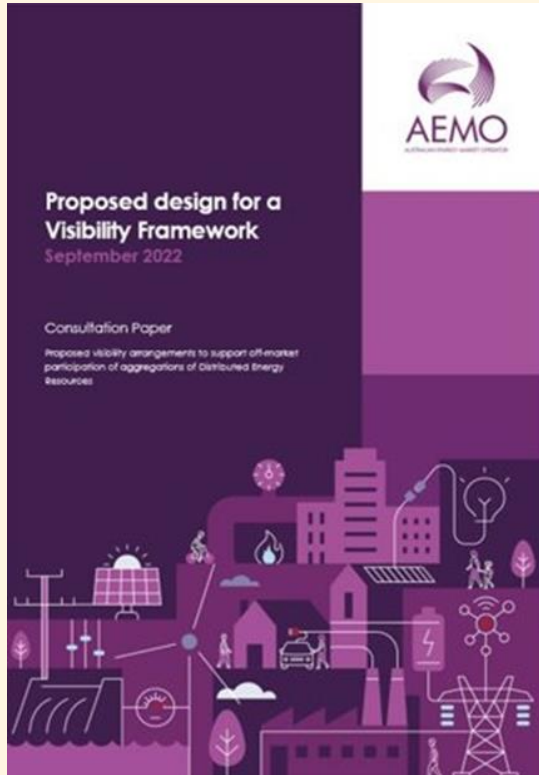
# DER Participation

VPP Visibility Framework

Natalia Kostecki



# Progress on VPP Visibility Guideline



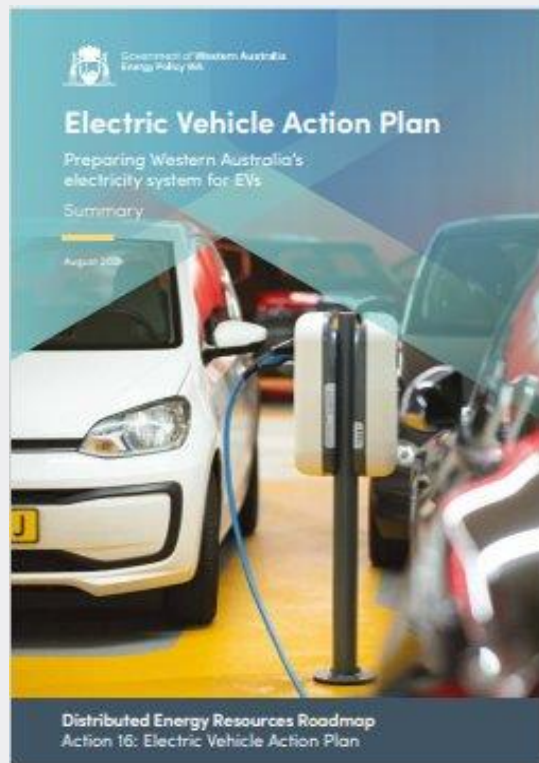
- **Consultation published 13 September 2022**
  - Consultation closed 26 October 2022
- **Five responses**
  - To be published on the consultation [web page](#)
- **Feedback informed VPP Visibility Guideline drafting**
  - Definitions, application, negotiation framework
- **Guideline scheduled for publication end 2022 / start 2023**
  - Explanatory Paper and Explanatory Note
- **Stage 1 - Voluntary**
  - Focus is Minimum Visibility Data model adequacy, data collection and understanding rule requirements

# WEM DER Register Information Procedure

Procedure Consultation - Amendments to the WA  
DER Register Information Procedure

Alicia Volvricht

# WEM DER Register Information Procedure



## AEMO has initiated a Procedure Change Proposal to amend the WEM DER Register Information Procedure to:

- ❑ incorporate EV's / EV charging equipment data in accordance with action 12 of Energy Policy WA's Electric Vehicle Action Plan;
- ❑ integrate changes following amendments to the Australian Standard AS/NZS 4777.2:2015 which has been superseded by AS/NZS 4777.2:2020;
- ❑ include additional context to improve quality of information exchanged.

### The consultation process

The consultation process is outlined below. Dates are indicative only and subject to change.

Process Stage	Indicative date
Publication of Procedure Change Proposal	12 December 2022
APCWG forum	17 January 2022
Closing date for submissions on Procedure Change Proposal	24 January 2023
Publication of Procedure Change Report	3 March 2023
Proposed commencement of amended WEM DER Register Information Procedure	2 October 2023





# Project Symphony

Our energy future

## Project update by the PMO

Megan Allan, Stakeholder and  
Communications Lead

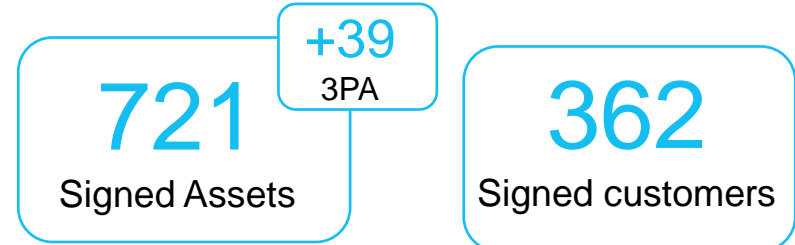
In partnership with:



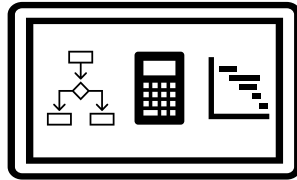
Project Symphony has received support from the Australian Renewable Energy Agency (ARENA) as part of ARENA's Advanced Renewables Program.

# Project Symphony Success Criteria & Achievements to Date

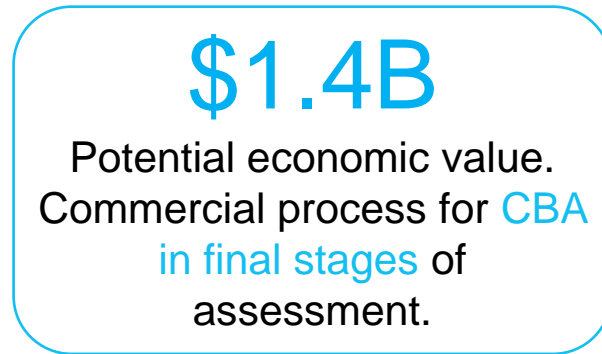
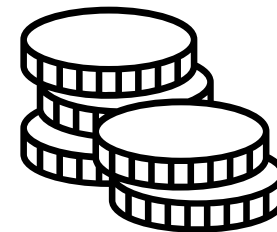
Customer participation



Technology solutions

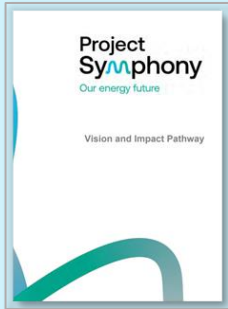


Value



# ARENA Deliverables

## LIBRARY PUBLISHED



### Vision and Pathway Work Package

Outline of the economic value of a virtual power plant (VPP) in the South West Interconnected System (SWIS) of Western Australia.



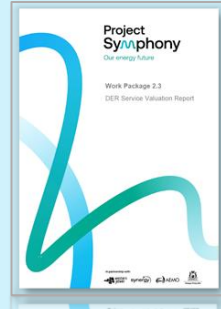
### Pilot area report Work Package 1.1

Defines the selected pilot area that will be the focus of Project Symphony by using existing network data and possible future scenarios using Western Power's Grid Transformation Engine



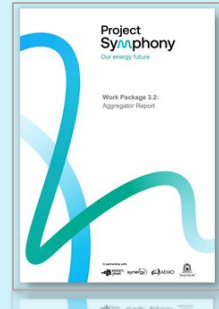
### DER Services Work Package 2.1

Outline of the economic value of a virtual power plant (VPP) in the South West Interconnected System (SWIS) of Western Australia.



### DER Service Evaluation Work Package 2.3

Valuation of Distributed Energy Resource Services:



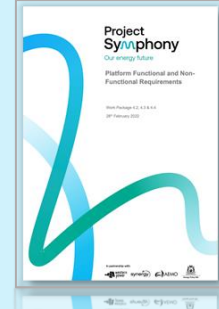
### Aggregator Report Work Package 3.2

Results of two customer surveys to understand the sentiment of residential and commercial customers towards DER orchestration and Third-Party Aggregators.



### Distribution Constraints Optimisation Algorithm Report Work Package 4.1

This document compares four equitable allocation methods, or Distribution Constraint Optimisation Algorithms (DCOA),



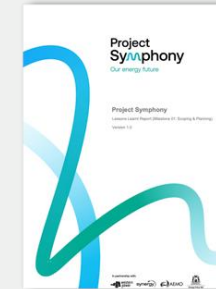
### DSO Platform Work Package 4.3

Describes the approach, requirements, and conceptual design for the DSO platform delivered by Synergy for Project Symphony.  
\*Combined with 4.2 & 4.4

## LESSONS LEARNED



### Milestone 1 Scope and Planning



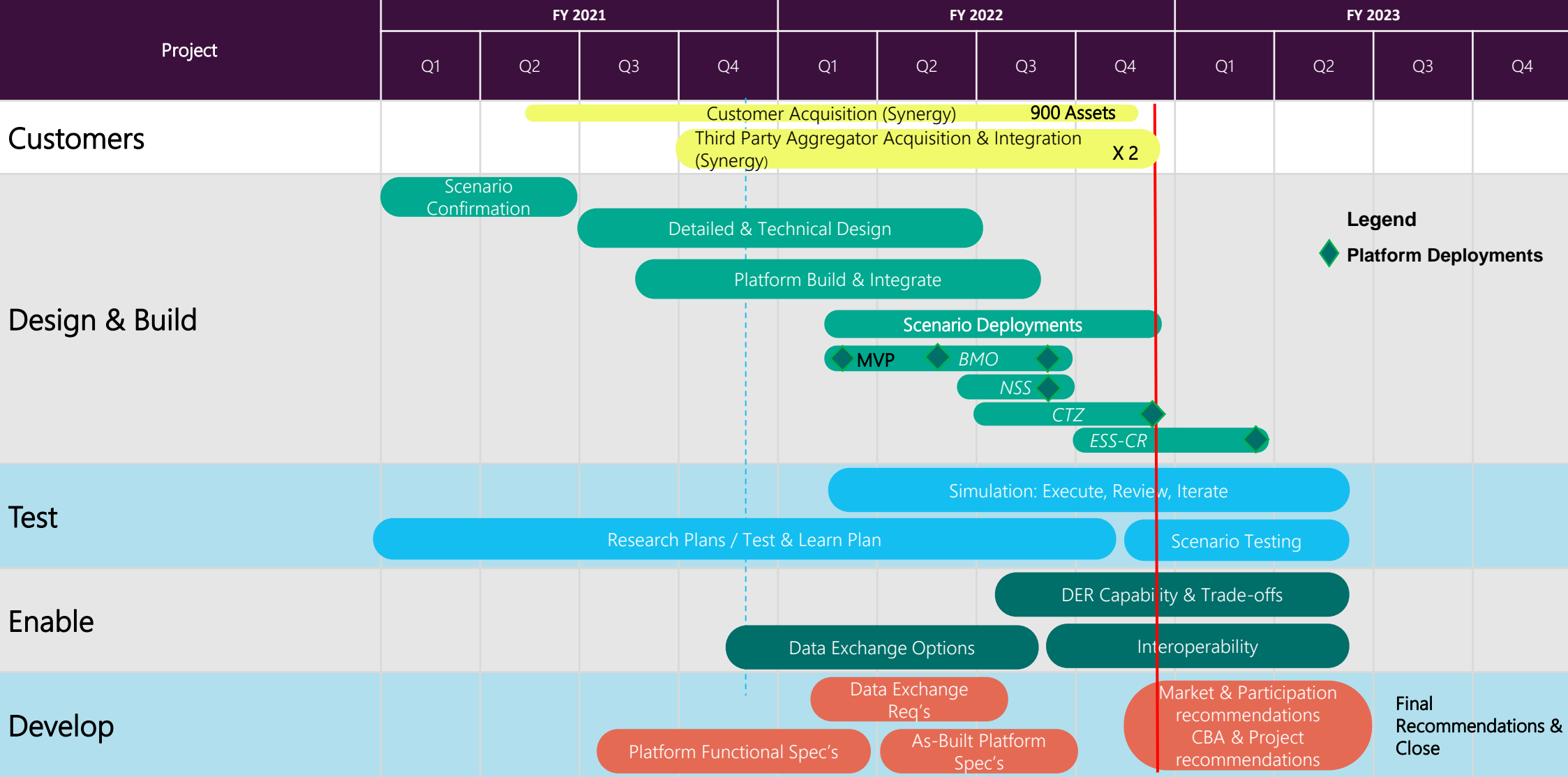
### Milestone 2 Build and Integrate

# Project Symphony Update

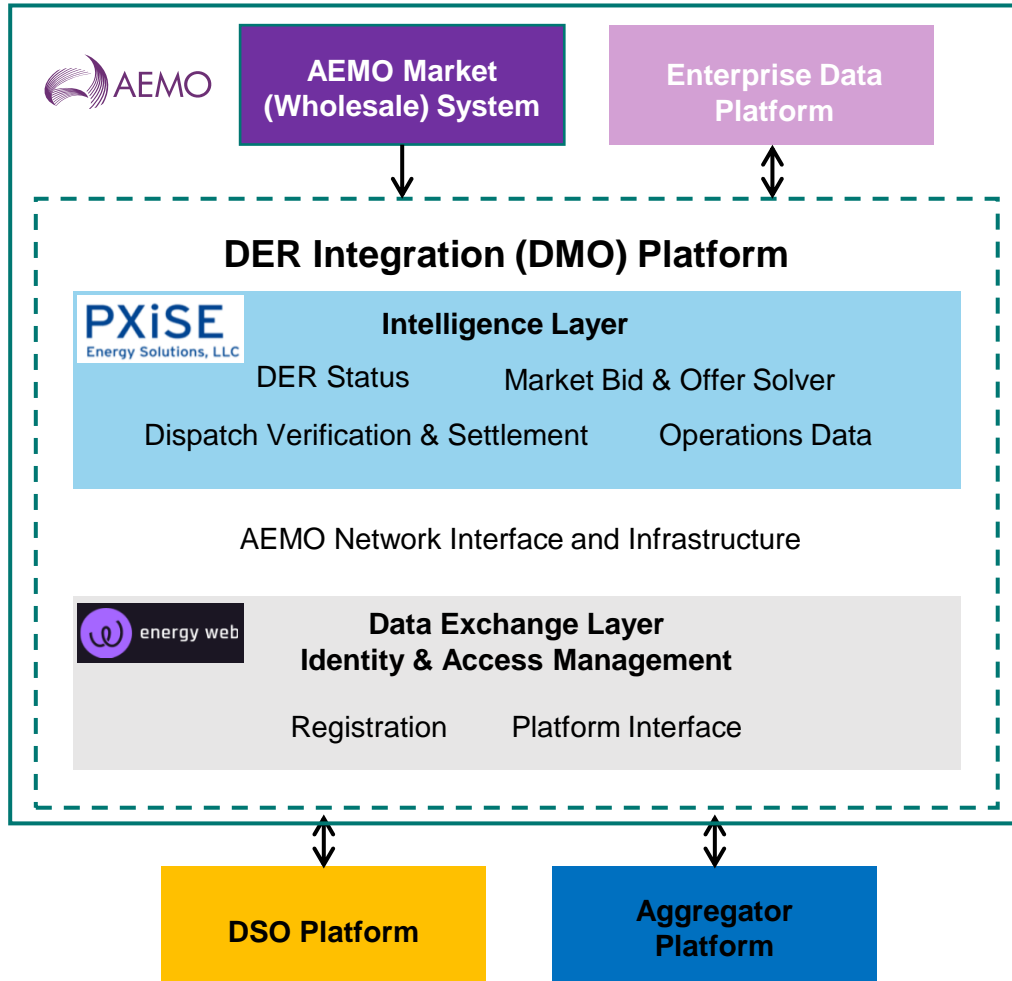
Bruce Redmond, Project Symphony Product Owner



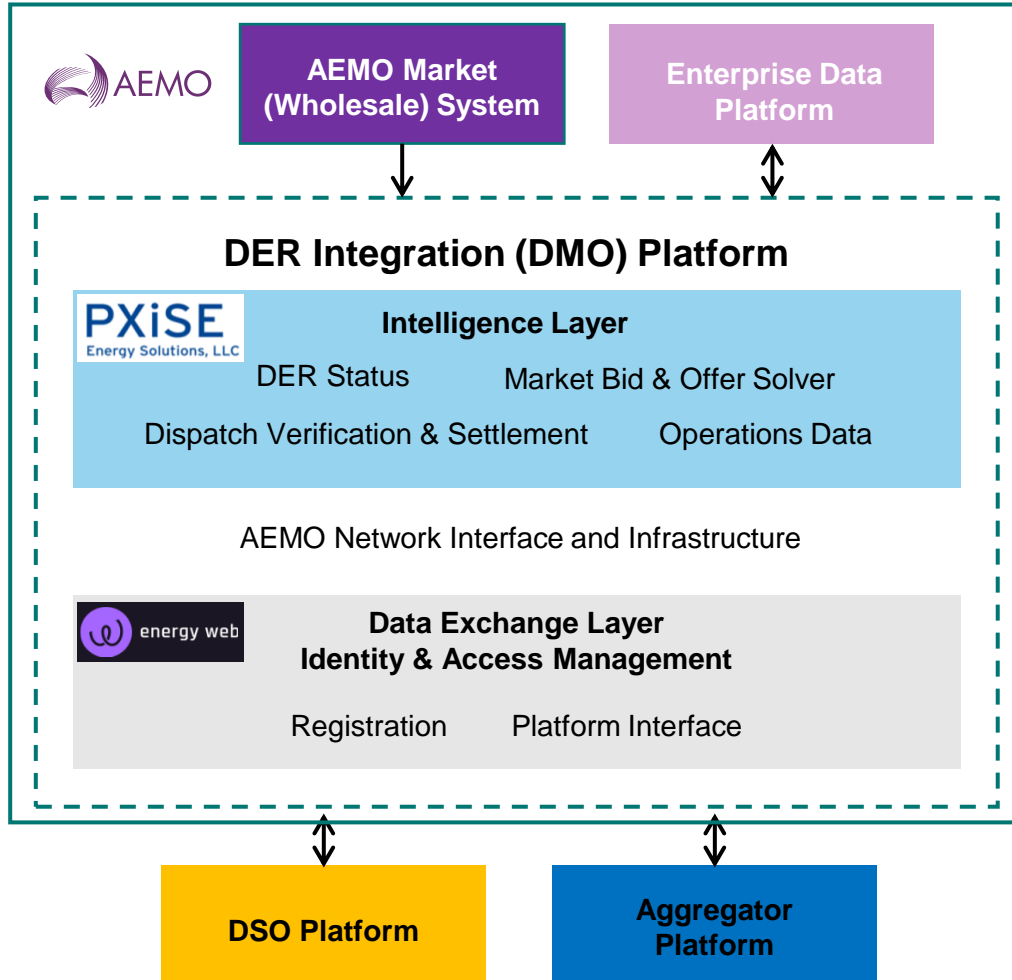
# Project Symphony: Where are we at?



# Market Platform: What we are building



# Market Platform: What we are building



## Reporting & Analysis

### EDP Model

- Visuals & Tables
- Dashboard and Reporting

## Platform Functionality

### Market Scenario's

- Balancing Market – Bi-directional
- Network Support Services
- Constrain to Zero
- ESS-CR

### Dashboard UI

## Capability & Automation

Scalability  
Performance  
Capability

## Platform Integrations

UI – Upload & Download  
API-API

In Progress

Complete

# Q&A



## WA DER Market Participation Forum

- 14 March 2023
- 13 September 2023
- 13 December 2023

## WA DER Program web pages:

[AEMO | WA DER Program](#)  
[WA DER Market Participation Forum](#)

## Project Symphony reports:

[ARENA's knowledge sharing bank](#)

## Contact us:

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





For more information visit

[aemo.com.au](http://aemo.com.au)