

WDR Consultative Group #10

Tuesday 20 April 2021

WebEx only

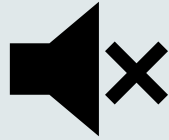
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**PLEASE NOTE THIS MEETING WILL BE RECORDED FOR THE
PURPOSE OF PREPARING MINUTES**

*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.*

Online forum housekeeping



1. Please mute your microphone, this helps with audio quality as background noises distract from the information being shared.



2. Video is optional, but having it turned off helps with webinar performance and minimises distractions.



3. We ask that you utilise the Chat function for any questions or comments you may have if you are unable to use audio.



4. If you have dialled in via phone, could you please email your name and organisation to WDR@aemo.com.au for our records.



5. Be respectful of all participants and the process.

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.

AGENDA

	TIME	TOPIC	PRESENTER
1	10:30am – 10:35am	Welcome	Ruth Guest (Chair)
2	10:35am – 10:40am	Notes, actions and feedback from previous meeting	Emily Brodie
3	10:40am – 10:45am	Registration system update	Ruth Guest
4	10:45am – 10:50am	Stakeholder update	Emily Brodie
5	10:50am – 11:00am	Dispatch conformance framework update	Madison Pigliardo
6	11:00am – 11:10am	EMMS technical specification approach	Armando Estrella
7	11:10am – 11:25am	WDR industry risk register	Emily Brodie
8	11:25am – 11:40am	WDR telemetry requirement scenarios	Greg Ruthven
9	11:40am – 11:55am	WDR dispatch scenarios	Ruth Guest
10	11:55am – 12:00pm	General questions and closing	Ruth Guest
APPENDICES			
A	Indicative program schedule		
B	Procedure changes timeline		
C	Project and system document changes		

Notes, actions and feedback from previous meeting

Emily Brodie

Responses to WDR Guidelines Q&A meeting actions

#	Topic	Action	Response
2	Telemetry requirements	AEMO to develop AGL's scenarios into worked examples and present to the WDR CG.	AEMO to present worked examples at this WDR CG meeting.

Responses to WDR CG #9 meeting actions

#	Topic	Action	Response

NO MEETING ACTIONS RECORDED FOR WDR CG #09

Registration system update

Ruth Guest

Context

- At the February WDR CG meeting, AEMO:
 - Explained that the WDR Portfolio Management System deployment may be delayed *if* the 5MS MDM deployment is later than 31 May 2021.
 - Presented two options to manage a potential PMS implementation delay and consequent impact to the DRSP registration process:
 - Option 1: Process applications in PM System when it's ready (potentially up to late August)
 - Option 2: Process applications manually from 24 June
 - Sought feedback from the WDR CG on the best way to manage a potential PMS implementation delay, including any new options.
- At the March WDR CG, it was noted that WDR CG respondents broadly supported a delay to registration application processing as opposed to a short-term manual workaround.

Registration System Update

- 5MS project are planning to release retail system into pre-production on 19 April for industry testing, and have increasing confidence of moving into production by end of May.
- Portfolio Management System will be ready and able to be deployed in June if 5MS timelines are met.
- An internal eligibility assessment tool that is not integrated into eMDM will support registration until full integration of baselining, now planned in October release.

NEXT STEPS

- WDR project continues to monitor 5MS program to determine if any delay to registration system availability will occur. However, this risk is decreasing and is captured in the WDR Industry Risk Register (see slides 32-38).

Stakeholder update

Emily Brodie

Timing changes for retail technical documents

- Feedback sought from WDR CG on proposal to delay WDR updates to the final MSATS technical/system documents
 - Allows AEMO to better prioritise the delivery of key WDR documentation
 - Does not affect the delivery dates of any other technical documents
 - All changes will be complete prior to the WDR industry testing period (Mon 6 Sep to Fri 1 Oct).
- Three responses received, no objections to date changes

Area	Document	Early version released	Comments due	Updated version published
RETAIL – MSATS/eMDM	MSATS technical specification	mid May Jun 2021	early Jun Jul 2021	early mid Jul 2021
	New or updated MSATS/eMDM guides	early Jun Aug 2021	mid Jun Aug 2021	early Jul Sep 2021

New WDR web material

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← Trials and initiatives

ST PASA Replacement project >

SRA Secondary Trading Project +

VAr dispatch >

Emerging Generation and Energy Storage – Grid Scale +

Wholesale demand response mechanism -

WDR Frequently Asked Questions

WDR Participant toolbox

Access to WDR data and information

WDR participant testing

WDR procedure and guideline consultations

WDR updates to market systems

Demand response mechanism

Wholesale demand response mechanism

AEMO is working with the industry to implement a Wholesale Demand Response (WDR) mechanism in the National Electricity Market (NEM).

AEMO established its WDR implementation program following the AEMC's determination on the [WDR Mechanism rule](#) in June 2020. The rule requires the WDR mechanism to start on 24 October 2021.

How WDR works:

The WDR mechanism will allow demand side (or consumer) participation in the wholesale electricity market at any time, however, most likely at times of high electricity prices and electricity supply scarcity. 'Demand Response Service Providers' (DRSP) will classify and aggregate the demand response capability of large market loads for dispatch through the NEM's standard bidding and scheduling processes.

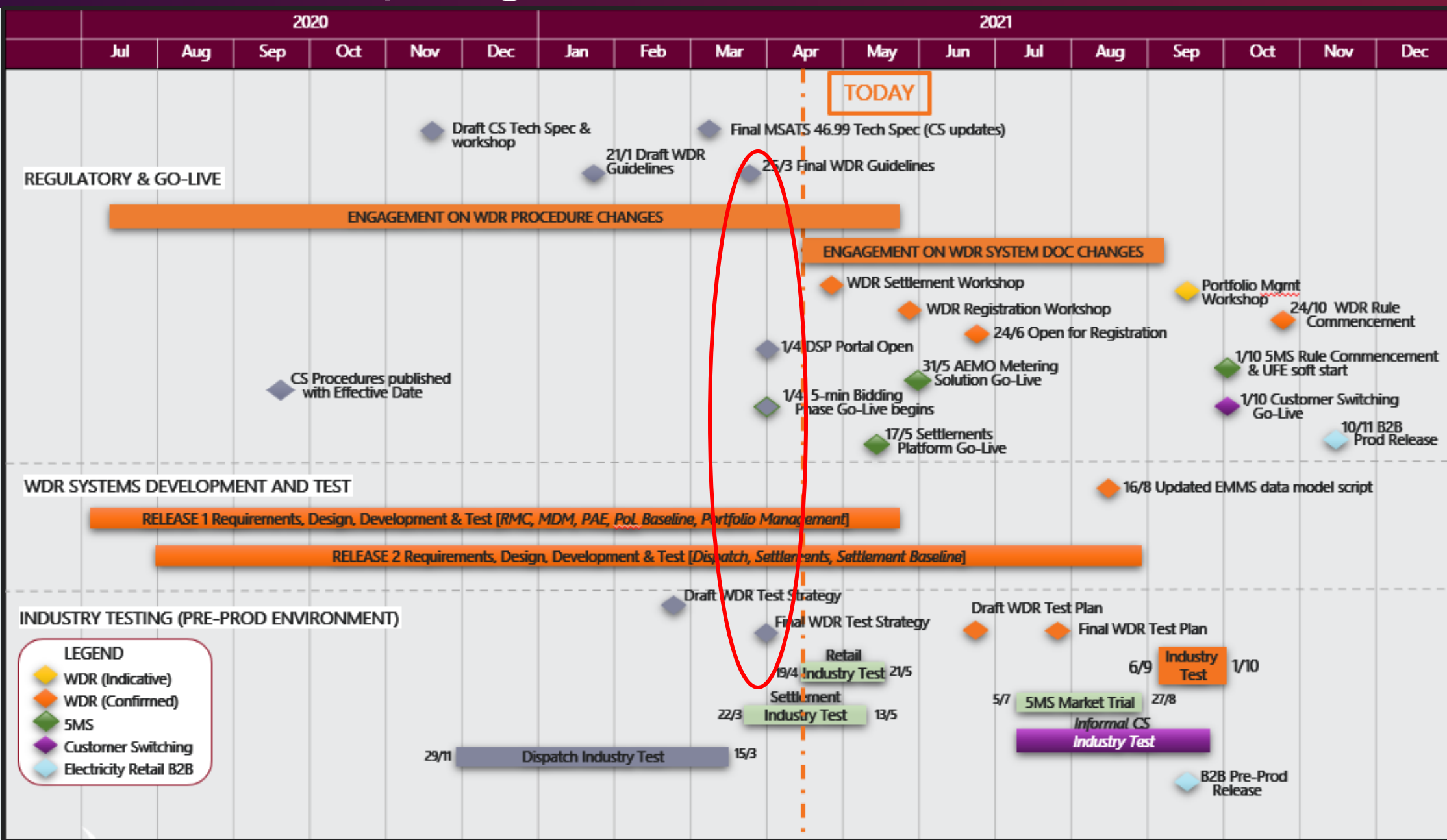
The DRSP will receive payment for the dispatched response, measured in Mega-Watt hours (MWh) against a baseline estimate, at the electricity spot price.

AEMO's WDR program and industry engagement

To deliver the WDR mechanism, AEMO is collaborating with the following organisations:

Indicative program schedule

Current as of 14 APR 21



Upcoming WDR engagement (1/2)

	APRIL		MAY
Workshop	DNSP endorsement process workshop	WDR settlement workshop	WDR registrations workshop
Purpose	Energy Networks Australia (ENA) will be holding a workshop to seek input into the DNSP endorsement process for WDR aggregations.	To provide: <ul style="list-style-type: none"> • Refresher on WDR settlement process • Examples of WDR settlement against baselines • Details of WDR settlement reports 	To provide: <ul style="list-style-type: none"> • Detailed explanation of the DRSP registration process and WDRU classification and aggregation processes • Where to find forms and guides.
Audience	DNSPs and prospective DRSPs	FRMPs and prospective DRSPs	Prospective DRSPs
Timing	TBC	Wed 28 Apr, 10am-12:30pm AEST	Fri 28 May, 10am to 12:30pm AEST
Format	Webex	Webex	Webex
Attendee nominations due	TBC	COB Tue 20 Apr	COB Thurs 20 May

Upcoming WDR engagement (2/2)

Meeting	Meeting Date
DNSP endorsement process workshop	TBC mid/late April
WDR settlement workshop	Wed 28 Apr 21
WDR CG #11	Tue 18 May 21
WDR registration workshop	Fri 28 May 21
WDR CG #12	Tue 15 Jun 21

Proposed agenda for May WDR CG meeting:

- Administrative matters
- Approach to Industry Testing *Plan*
- Portfolio Management System update
- Intro to Baselining tool

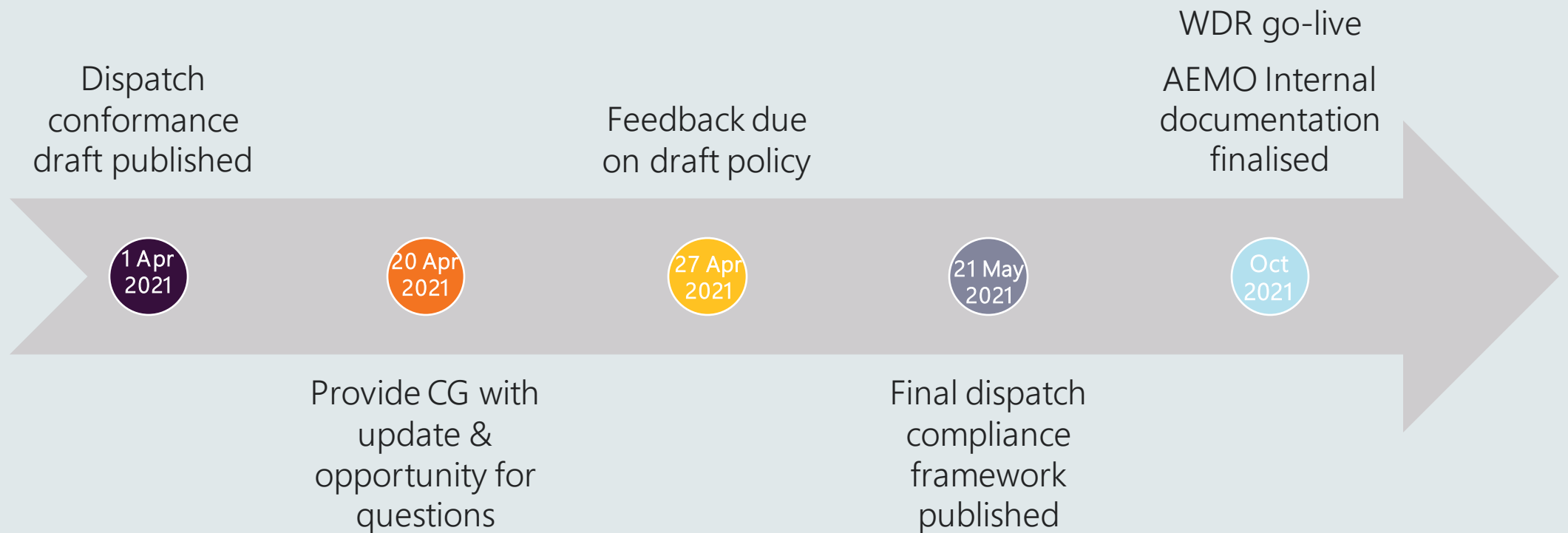


Please provide agenda suggestions at any time to WDR@aemo.com.au

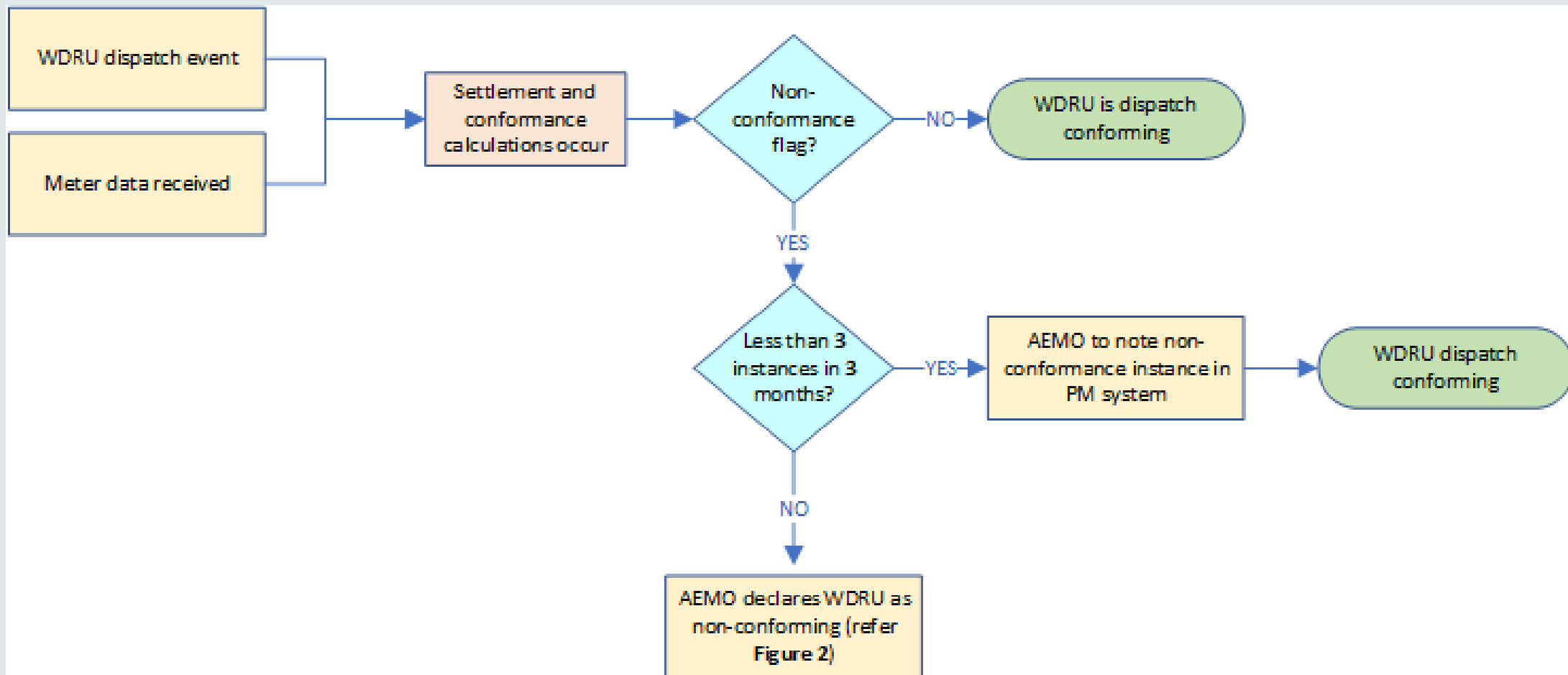
Dispatch conformance policy update

Madison Pigliardo

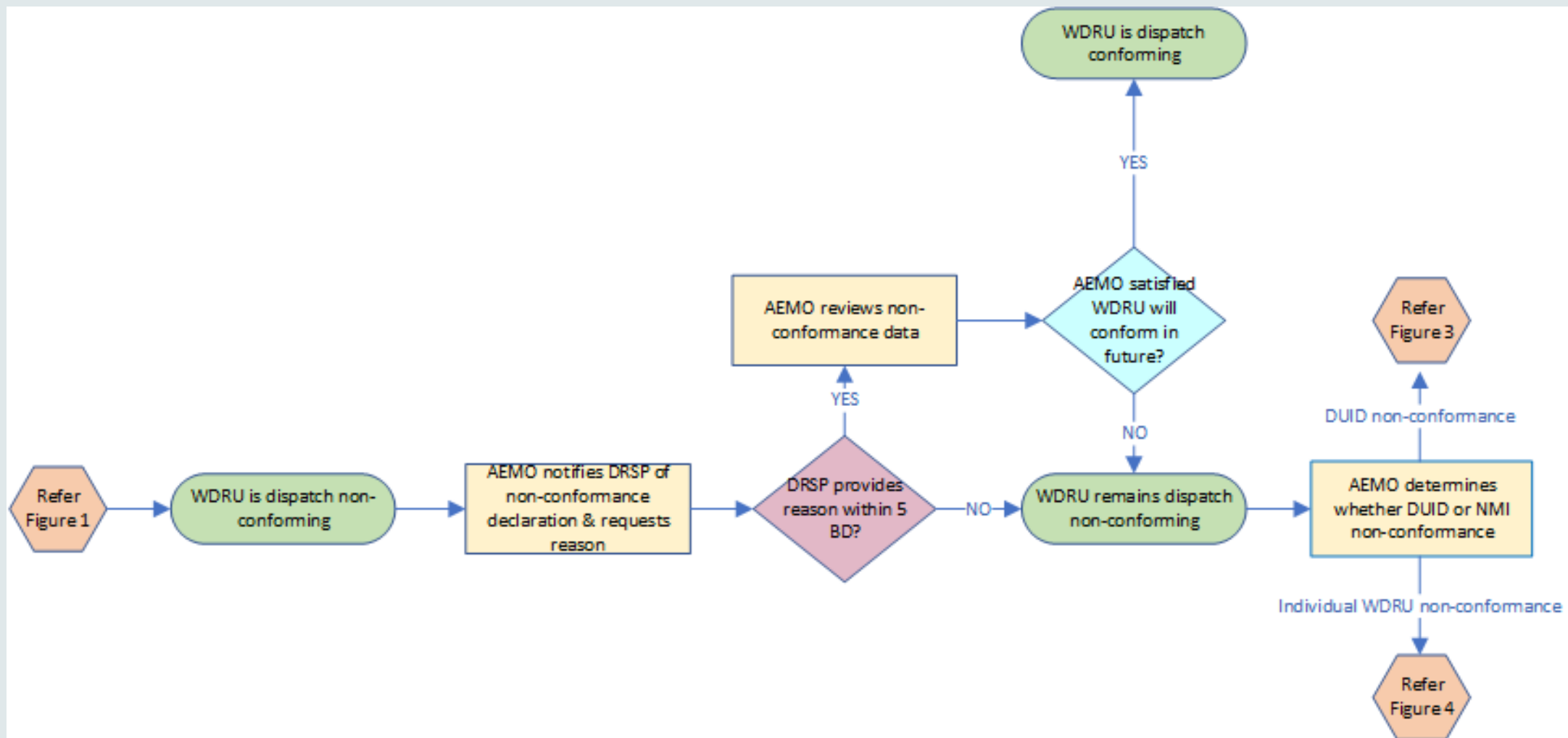
Current timeline: Post-event dispatch conformance policy



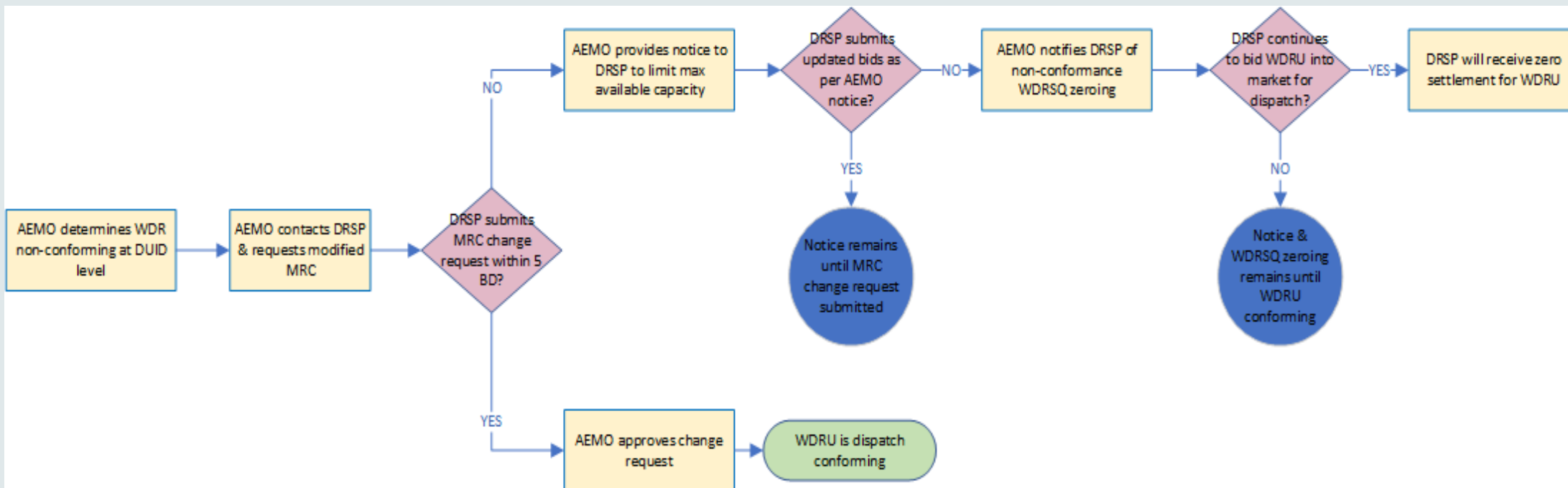
Policy overview: Initial non-conformance



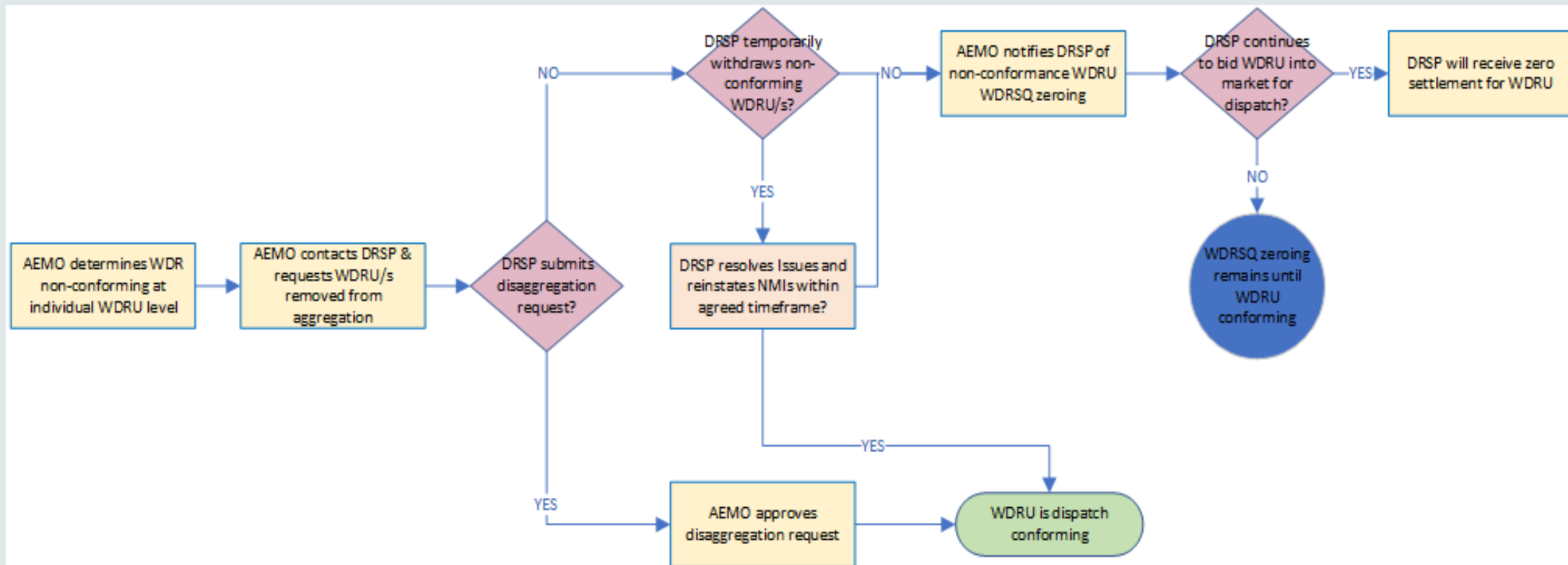
Policy overview: Repeated non-conformance



Policy overview: DUID non-conformance



Policy overview: Individual WDRU non-conformance



Interval non-conformance flag

$$MW\ error_n = MWB_n - ((BSQ_n - ME_n) \times 12)$$

Excluded intervals:

- Where dispatch target = 0 MW
- First interval of dispatch event

	Threshold	Source
Under delivery	MW error \geq 6 MW	For scheduled generators (under procedure SO_OP_3705) small and large dispatch errors flag when units are 6 or more MW from a dispatch target. Errors this large within an interval must flag to identify potential system security risks.
Over delivery	MW error \leq -6 MW	

BSQ	Baseline settlement quantity (MWh)
ME	Metered energy (MWh)
MWB	Dispatch target (MW)

Settlement Day non-conformance flag

$$\text{Settlement day ratio} = \frac{\sum_{n=1}^N (BSQ_n - ME_n)}{\sum_{n=1}^N (\frac{MWB}{12})}$$

Excluded intervals:

- Where dispatch target = 0 MW

	Threshold	Source
Under delivery	Settlement day ratio \leq 50%	Following analysis of RERT data, AEMO has identified that potential baseline inaccuracies on a given day may result in an unit under or over delivering by up to 50%.
Over delivery	Settlement day ratio \geq 150%	

BSQ	Baseline settlement quantity (MWh)
ME	Metered energy (MWh)
MWB	Dispatch target (MW)

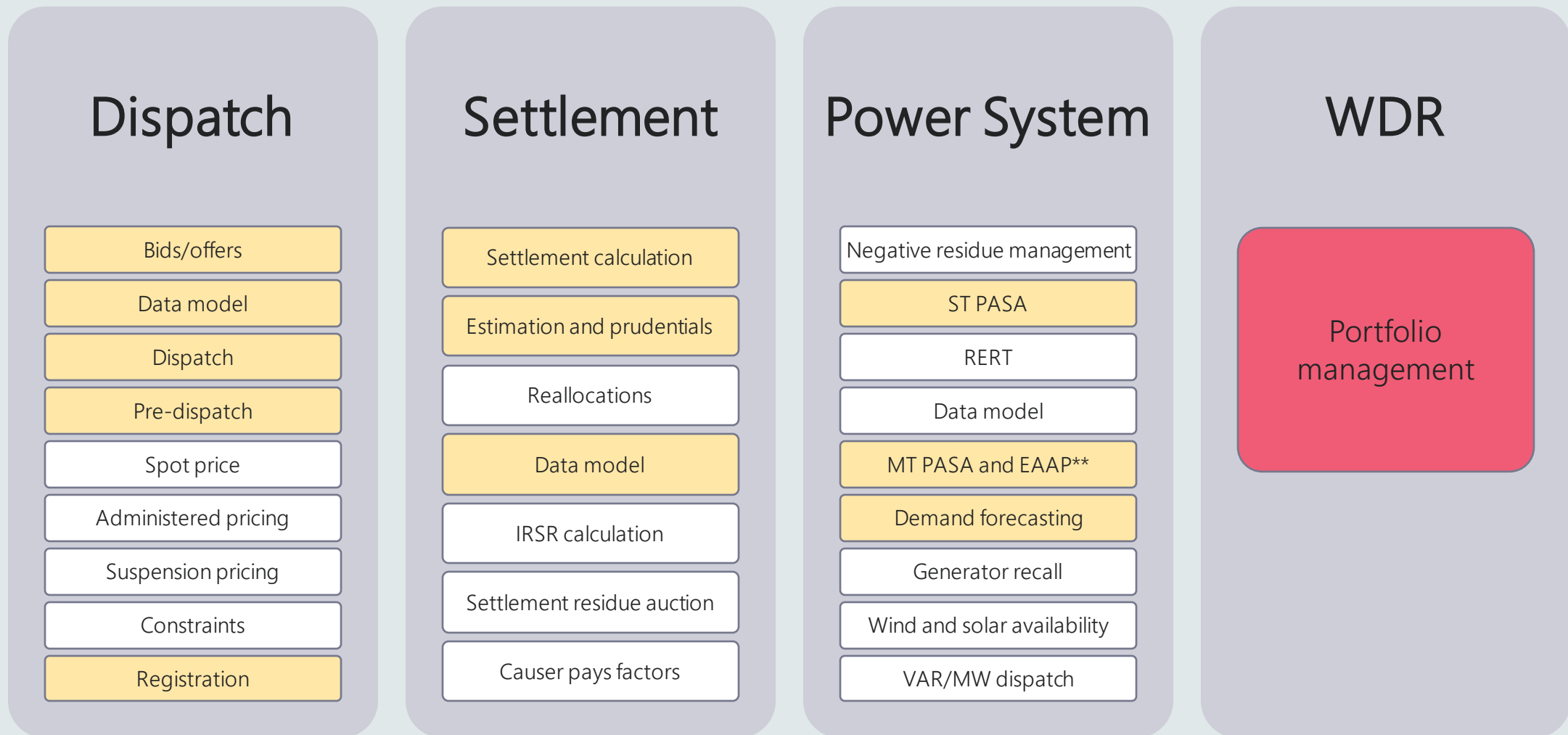
EMMS Technical Specification - Approach

Armando Estrella

Purpose and audience

- EMMS Technical Specification:
 - Describes the technical changes required to participants' systems for the updated Data Model
 - Provides guidance about the changes to their Wholesale market system under the NER.
- This information is aimed at business analysts and IT staff in participants' organisations.

NEM Wholesale Systems: WDR participant change heatmap



High-level overview of EMMS tech spec changes for WDR

EMMS: Settlements	<ul style="list-style-type: none">• Enable WDRU energy to be settled, billed and invoiced.• Generate reconciliation reports.
EMMS: Bidding and dispatch	<ul style="list-style-type: none">• Enable WDRU energy to be dispatched and forecasted.• Changes are required to dispatch, pre-dispatch, PASA and operational forecasting• Changes are also required to bids submissions and MTPASA offers but they don't affect Tech Specs/Data Model.

Update timeline

Document	Early version released	Comments due	Updated version published
EMMS technical specification	late Apr 2021	mid May 2021	late May 2021
Data Interchange (DI) online help	Aug 2021	n/a	Sep 2021

EMMS Data Model script: WDR updates



The Electricity Data Model is the definition of the interface to participants for NEM wholesale data published by AEMO. A database conforming to the Electricity Data Model can contain a local copy of all current participant-specific data recorded in the main NEM database.

Detailed information on the packages, tables and reports in the Electricity Data Model are set out in supporting guides:

<https://www.aemo.com.au/energy-systems/market-it-systems/electricity-system-guides/wholesale-it-systems-software>

WDR industry risk register

Emily Brodie

Context

- WDR program is deeper into implementation - risks are able to be clearly articulated.
- As foreshadowed, the WDR *industry risks and issues register* is being introduced to effectively communicate, monitor and manage industry risks and issues.

Register: Overview

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Clipboard Font Alignment Number Styles Cells

T18

WDR Industry Risks & Issues Register (Updated monthly)

PURPOSE

The WDR Industry Risks & Issues Register facilitates the monitoring and reporting of industry risks and issues identified within the program.

This register contains 3 tabs:

- Overview (this tab) – provides a brief introduction to the register. Also contains the register version number as well as the date it was last updated.
- Industry Risk Register – contains all WDR Industry Risks identified by stakeholders and AEMO through the WDR Consultative Group, working groups and other meetings.
- Industry Issue Register – contains all WDR Industry Risks identified by stakeholders and AEMO through the WDR Consultative Group, working groups and other meetings.

RISK MATRIX

LIKELIHOOD	CONSEQUENCE				
	Immaterial	Minor	Moderate	Major	Extreme
Almost Certain	Medium	Medium	High	Critical	Critical
Likely	Low	Medium	High	Critical	Critical
Possible	Low	Medium	High	High	Critical
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

CONSEQUENCE	Qualitative Description	
	Immaterial	Minor
Immaterial	Minor issue of little concern	
Minor	Isolated case, some small disruptions	
Moderate	Requires attention, inconvenience	
Major	Requires urgent attention, impact days	
Extreme	Wide damage, lasting weeks, impact high	

TREND KEY

↑ IMPROVING
↔ NO CHANGE (STABLE)
↓ WORSENING

OVERVIEW RISKS ISSUES TABLES

Register snapshot

WDR Industry risks register																			
ID	Status	Work Stream	Risk Name	Category	Risk Description	Date raised	Date last updated	Target Resolution Date	Date resolved	Likelihood	Consequence	Impact Date	Priority	Resolution / Mitigations	Raised by	Actions	Residual probability	Residual impact	Residual rating
R1	Open	Program	AEMO business and operations not ready for WDR registration opening on 24 June 21	AEMO readiness	If AEMO is not ready for WDR registration opening, then there may be a delay to DRSP registration and WDRU classification/aggregation. For example, SMS MDM platform delay impacts Portfolio Management System (Release 1) delivery.	Apr-21				Unlikely	Moderate	24-Jun-21	Medium	AEMO has implemented a program management and reporting framework to monitor work stream deliverables. If deliverables are at risk, AEMO to develop and discuss remediation plan with WDR CG. AEMO to implement remediation plan. Stakeholder feedback suggest that a short delay would be acceptable to avoid extra work of manual process.	AEMO		Unlikely	Immaterial	Low
R2	Open	Registrations	AEMO's registration resource and timing constraints	AEMO readiness	If there are resource and/or timing constraints for AEMO, then there may be delays to registration/ classification/ aggregation activities.	Apr-21				Unlikely	Minor	24-Oct-21	Low	AEMO must determine registration applications within regulatory timeframes. In addition, AEMO will regularly engage with stakeholders on their WDR application intentions i.e. monitor potential timing and volume of applications to inform resource planning. Running a WDR registrations workshop to assist industry in understanding the registration/classification processes	AEMO		Rare	Minor	Low
R3	Open	Testing	Not enough participants or participant types	Testing	If there are too few participants or participant types ready to take part in invitation industry testing then industry's ability to interact	Apr-21				Possible	Minor	6-Sep-21	Medium	AEMO to define minimum requirements for invitation industry testing i.e. numbers of participants for each participant type for cohesive industry testing. Participants can use pre-production to run their own testing after the industry testing period however there will be reduced AEMO test support.	AEMO		Unlikely	Minor	Low

Proposed approach

Date	Action	Responsibility
Tue 20 Apr 2021	AEMO to develop for WDR CG's consideration: <ul style="list-style-type: none">• Strawperson register (attached)• Proposed risk management regime (next slide)	AEMO
Fri 30 Apr 2021	WDR CG to provide feedback on: <ul style="list-style-type: none">• Strawperson register• Proposed risk management regime	WDR CG
At WDR CG meetings and as required	AEMO to: <ul style="list-style-type: none">• Issue updated register that reflects feedback (where appropriate)• Manage register by monitoring and updating risks/issues for duration of project.	AEMO

Proposed risk management regime

Regular evaluation of risks and issues at WDR CG meetings (or out of session when necessary):

1. Prior to a WDR CG meeting, seek feedback on existing and new risks/issues
2. At WDR CG meeting review:
 - a) Current issues
 - b) "High" or "critical" risks:
 - Check probability and impact
 - Discuss additional mitigations
 - Discuss actions
 - c) New or existing risks that have been identified as requiring consideration
3. After WDR CG meeting, AEMO to:
 - a) Update to update register considering input from WDR CG
 - b) Post updated register on its website

Proposed risk management regime

DISCUSSION:

- How appropriate is this proposed risk management approach?
- What are the gaps?
- What changes would improve the approach?



Please provide feedback on the risk register and the risk management approach to wdr@aemo.com.au by Fri 30 April.

WDR telemetry requirement scenarios

Greg Ruthven

Context

- Stakeholders requested worked examples of where telemetry would/ would not be required for WDRUs.
- Worked examples provided on next slide

Key assumptions underpinning the scenarios:

1. NMI is not in a congested area of the network where AEMO could require telemetry.

Telemetry is required for individual or aggregated WDRUs that are below the 5 MW threshold but are located in an area of the power system where existing scheduled plant:

- a) needs to be curtailed to maintain power system security; or
- b) is forecast to be curtailed as a result of committed investments and works, or other changes in the power system.

2. DRSP has not sought an exemption from telemetry

Exemption process described in WDR Guidelines (section 3.1)

WDR telemetry requirement scenarios

SCENARIO			TELEMETRY REQUIRED?
1	Single site load < 5MW	Single or multiple load sources Single NMI where DUID = NMI	No telemetry required
2	Multiple NMIs in DUIDs	Multiple NMIs in forecast area DUID #1 = NMI 1 + NMI 2 + NMI 3 DUID #1 < 5MW DUID #2 = NMI 4 + NMI 5 + NMI 6 DUID #2 < 5 MW	No telemetry required on either DUID
3	Single site load > 5MW	Single load source behind NMI Single NMI where DUID = NMI	Telemetry required at DUID level = NMI level
4	Single site load > 5MW	Multiple load sources behind NMI Single NMI	Telemetry required at DUID Level = NMI level
5	Multiple site loads > 5 MW	Multiple sites combined into single DUID NMI 1 = 4.9 MW NMI 2 = 0.2 MW DUID = NMI 1 + NMI 2	Telemetry <u>not</u> required if NMI 1 and NMI 2 are on <i>different</i> TNIs Telemetry <u>is</u> required if NMI 1 and NMI 2 are on the <i>same</i> TNI
6	Multiple loads, but NMIs rolling in and out	Multiple NMIs within forecast area NMI 1 + NMI 2 < 5 MW	No telemetry required
		NMI 3 contract starts 1 June NMI 1 + NMI 2 + NMI 3 > 5MW NMI 2 contract end 1 July (a month later) NMI 1 + NMI 3 < 5W	Telemetry requirements for the 1 June – 1 July period: Telemetry <u>not</u> required if NMI 1 and NMI 2 are on <i>different</i> TNIs Telemetry <u>is</u> required if NMI 1 and NMI 2 are on the <i>same</i> TNI for the period where the aggregate load exceeds 5MW. DRSP could consider making exemption request.

WDR dispatch scenarios

Ruth Guest

Context

- Increasing stakeholder enquiries about various WDR dispatch scenarios
- Context: Rapid implementation, limitations on NEMDE functionality
- Today's scenarios:
 - Partial dispatch of DUID
 - DUID dispatch of FCAS vs Energy
- AEMO welcomes further scenarios at any time: wdr@aemo.com.au

Will it be possible for an aggregated DUID to be partially dispatched? (1/2)

Where partial dispatch = making one or more NMIs in an aggregation “unavailable”

- In response to stakeholder feedback AEMO is implementing the ability for DRSPs to identify their NMIs as non available in the Portfolio Management system to manage short term operational issues.
- This will effectively allow NMIs to be temporarily withdrawn from dispatch.
- Bidding should reflect the reduce availability accordingly.
- “Non-availability” in PMS is only for removing unavailable NMIs from the aggregation where there are legitimate operational restrictions.
- Expected that all NMIs in the aggregation will take part most of time to avoid concerns about moving load around sites owned by a single entity
 - For example, one NMI in a company’s portfolio increases demand and production to allow another NMI at another site to reduce demand. Net outcome, no benefit to market, DR paid to participant.

Will it be possible for an aggregated DUID to be partially dispatched? (2/2)

Where partial dispatch = the capacity offered is not fully dispatched

- For example, 10MW in a single price band is offered but NEMDE has dispatched only 4MW.
- Possible if the WDRU is the marginal unit setting the price or is network constrained.
- Likely a rare event for units offering capacity at a low price. If it occurs, participants can change offer price or volume (MWs) subject to the AER's bidding in good faith guidelines.

Can a single DUID provide both WDR and ASL? (1/2)

- NER states that a connection point can only be classified by the same DRSP for WDR and ASL.
- DRSPs must:
 - Ensure all offerings can be met as and when dispatched or enabled
 - Carefully consider if it could meet its DRSP obligations if another party was providing an “out of market” service for the end use consumer.
- AEMO expects that DRSPs will typically choose to have separate DUIDs for FCAS and WDR and manage their bids accordingly.
 - Allows a DRSP to manage the classification of loads independently and does not restrict classification of either energy/FCAS service.
 - AEMO has developed its processes and procedures with this approach in mind.

Can a single DUID provide both WDR and ASL? (2/2)

- However, it may be possible to allow a single DUID to provide both ASL and WDR, *and* be co-optimised through NEMDE, with the following restrictions:
 - List of NMIs would always have to be identical
 - Could not add a NMI for WDR that cannot also do ASL and vice versa
 - Needs to be a technically satisfactory trapezium provided for the energy/AS provision to allow co-optimisation
- If a DRSP wishes to pursue the above, please contact AEMO. This is so AEMO can work with you to ensure that the various energy/FCAS scenarios will work appropriately.

General questions

Ruth Guest

WDR contact and information



Mailbox

wdr@aemo.com.au



WDR program information

<https://aemo.com.au/initiatives/trials-and-initiatives/wholesale-demand-response-mechanism>



WDR stakeholder engagement options

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

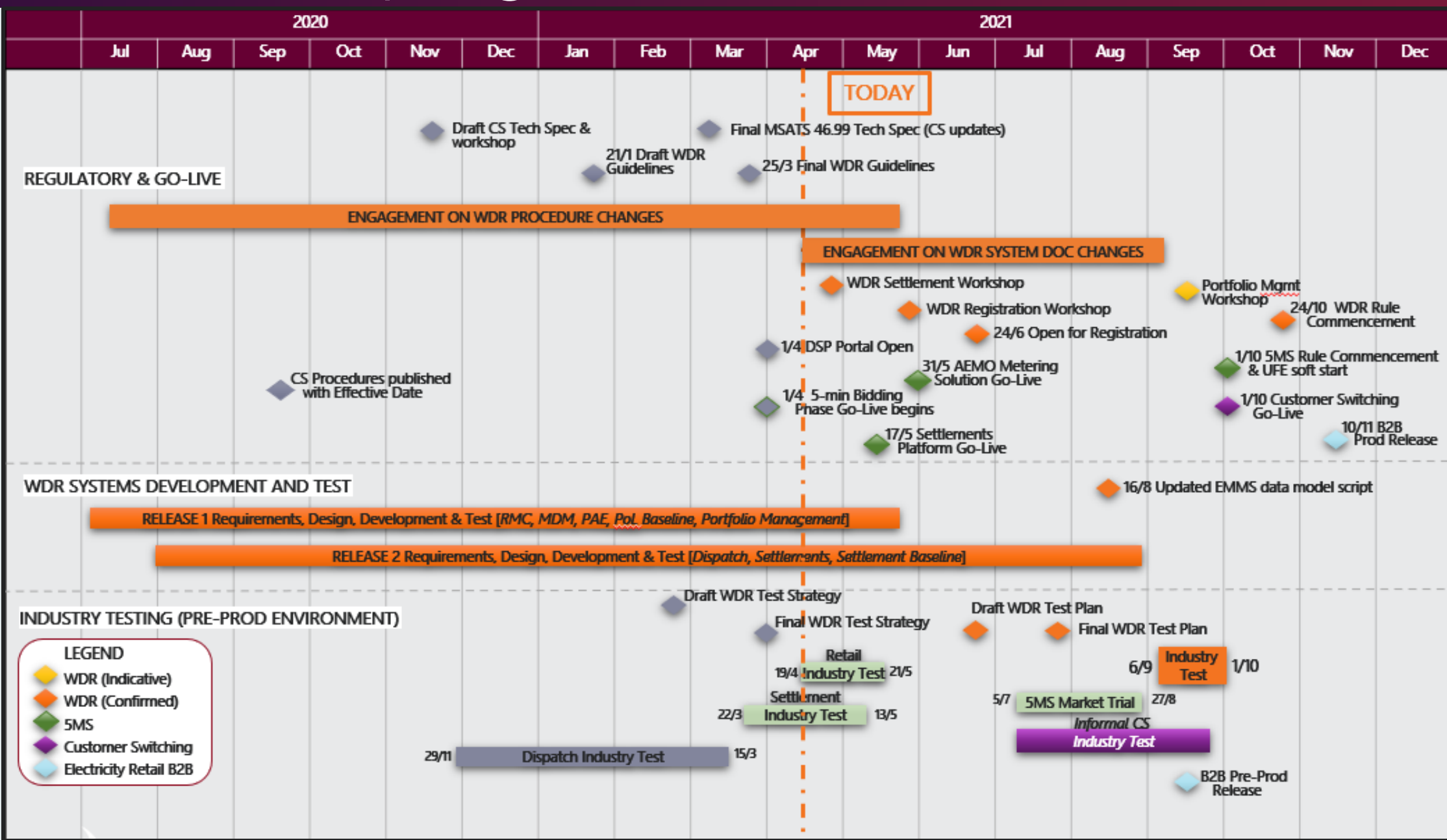
Thank you for your
participation!

APPENDIX A

Indicative program schedule

Indicative program schedule

Current as of 14 APR 21



APPENDIX B

Procedure changes timeline

Procedure change timelines

Current as of 14 APR 21

Procedure package	Consultation Paper	Round 1 Consultation	Draft	Round 2 Consultation	Final
WDR Guidelines	Thu 22 Oct 2020	Fri 27 Nov 2020	Thu 21 Jan 2021	Fri 19 Feb 2021	Thu 25 Mar 2021
Settlements and Prudentials procedure – CLP	Fri 04 Sep 2020	Fri 16 Oct 2020	Thu 12 Nov 2020	Fri 4 Dec 2020	Mon 18 Jan 2021
Settlements and Prudentials procedure - Estimations	Thu 05 Nov 2020	Fri 18 Dec 2020	Mon 18 Jan 2021	Wed 10 Feb 2021	Thu 4 Mar 2021
Retail procedures & B2B guide	Mon 12 Oct 2020	Tue 17 Nov 2020	Tue 15 Dec 2020	Tue 02 Feb 2021	Tue 16 Mar 2021
Market & System Operations procedures	Fri 09 Oct 2020	Tue 17 Nov 2020	Fri 11 Dec 2020	Fri 29 Jan 2021	Fri 12 Mar 2021
Demand-side participation information guidelines	Wed 26 Aug 2020	Wed 30 Sep 2020	Wed 11 Nov 2020	Wed 25 Nov 2020	Fri 18 Dec 2020
Baseline Eligibility, Compliance and Metrics Policy	Fri 18 Dec 2020	Fri 5 Feb 2021	Thu 18 Mar 2021	Thu 8 Apr 2021	Thu 20 May 2021

APPENDIX C

Project and system document changes

Project and system document change timelines

Current as of 14 APR 21

Area	Document	Early version released	Comments due	Updated version published
DISPATCH CONFORMANCE	Post-event dispatch conformance policy	01 Apr 2021	22 Apr 2021	21 May 2021
TESTING	WDR Industry test strategy	25 Feb 2021	11 Mar 2021	01 Apr 2021
	WDR Industry test plan	Jun 2021	Jul 2021	Jul 2021
WHOLESALE – EMMS	EMMS technical specification	Apr 2021	mid May 2021	31 May 2021
	Data Interchange (DI) online help	Aug 2021	n/a	Sep 2021
PORTFOLIO MANAGEMENT SYSTEM	Guide to Portfolio Management System (PMS)	mid Aug 2021	late Aug 2021	mid Sep 2021
	Markets Portal online help (PMS updates)	mid Aug 2021	late Aug 2021	mid Sep 2021
RETAIL – MSATS/eMDM	MSATS technical specification	mid Jun 2021	early Jul 2021	mid Jul 2021
	New or updated MSATS/eMDM guides	early Aug 2021	mid Aug 2021	early Sep 2021

EMMS Data Model script: WDR updates



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<https://www.aemo.com.au/energy-systems/market-it-systems/electricity-system-guides/wholesale-it-systems-software>

