

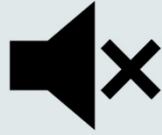
Wholesale Demand Response impacts on distribution networks

Information session for Distribution Network Service Providers
10:30am – 12:30pm (AEDT), Monday 26 October 2020

*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

NO	TIME (AEDT)	AGENDA ITEM	RESPONSIBLE
1	10:30am – 10:35am	Welcome and introductions	Ruth Guest (Chair)
2	10:35am – 10:40am	Session purpose and objectives	Ruth Guest
3	10:40am – 10:50am	Overview of WDR mechanism rule	Emily Brodie
4	10:50am – 11:00am	AEMO's WDR implementation program	Ruth Guest
5	11:00am – 11:20am	WDR impacts on DSNPs	Ruth Guest
BREAK 11:20am to 11:30am			
6	11:30am – 12:15pm	Workshop: Further WDR issues and opportunities	Ruth Guest
7	12:15pm – 12:25pm	Next steps and general questions	Emily Brodie
8	12:25pm – 12:30pm	Meeting close	Ruth Guest
	APPENDIX	Types of demand response	

Purpose and objectives

Ruth Guest

Forum Objectives

- **Purpose:** Forum for exploring Wholesale Demand Response (WDR) impacts on DNSPs
- **Objectives:**
 - Develop a full list of WDR issues affecting DNSPs
 - Identify potential mitigations and opportunities, where feasible and:
 - within constraints of the National Electricity Rules (NER)
 - Mindful of the relative regulatory roles of AEMO and DNSPs
 - Agree next steps

Overview of WDR mechanism rule

Emily Brodie

Refresher: Roles of the market bodies

Market body roles



Australian Energy Market Commission

Rule maker, market
developer and expert adviser
to governments

*Protects consumers and achieves
the right trade-off between cost,
reliability and security.*



Australian Energy Regulator

Economic regulation
and rules compliance

*Polices the system and
monitors the market.*



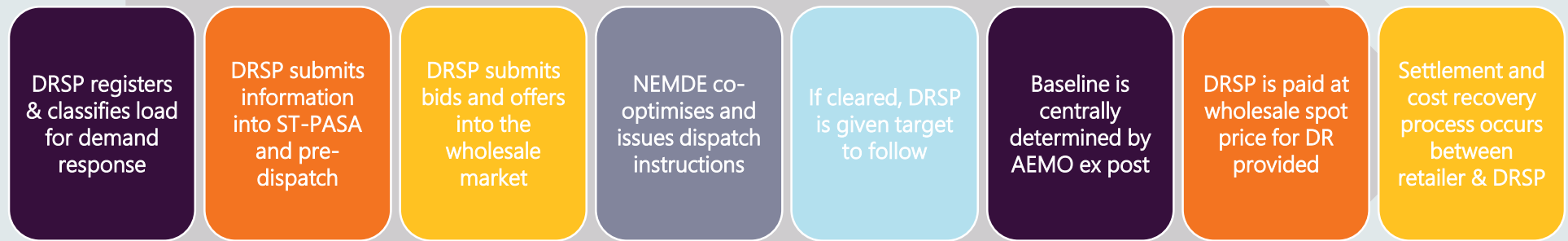
Australian Energy Market Operator

Electricity and gas systems
and market operator

*Works with industry
to keep the lights on.*

AEMC Final determination

- Final determination and rule published on 11 Jun 2020
 - <https://www.aemc.gov.au/rule-changes/wholesale-demand-response-mechanism>
- Final rule introduced a WDR mechanism that will commence on **24 Oct 2021**



WDR mechanism rationale

Current situation

- Customers can only undertake *wholesale demand response* via their retailer, facing limited pathways to participate in the NEM.
- Customers can access other *demand response* (out of market) products:
 - Emergency demand response i.e. Reliability and Emergency Reserve Trader (RERT)
 - Network demand response
 - *[See appendix for more details on other types of demand response]*

Final rule

- Facilitates greater access to WDR for **large customers** whose retailers do not currently offer such products
- Provides reliability- and price-related benefits, including by being an alternative to expensive peaking generation
- Places requirements on DRSPs to participate in central dispatch with a lesser set of obligations than other scheduled participants.

Scheduling of DRSPs under the WDR rule

Under the rule DRSPs will:

- Participate in central dispatch in a transparent, scheduled manner.
- Be treated in a similar manner to scheduled generators, i.e. a DRSP will submit dispatch offers and when cleared by NEMDE, receive dispatch targets to provide WDR.
- Be able to set the wholesale market price.
- Have a number of obligations and incentives consistent with the obligations imposed on scheduled generators, including compliance with dispatch targets.

Information provision to DNSPs under final rule (1/2)

- Several DNSP submissions requested that the WDR final rule provide them access to more information about DR in their networks to:
 - *"operate their network such that they meet their network service obligations*
 - *effectively plan their network accounting for the potential for wholesale demand response to impact on the timing and magnitude of factors such as peak demand."*
- AEMC agreed that *"it is important for DNSPs to have sufficient information to allow them to provide network services. DNSPs are likely to need more information about the timing, location and capacity of demand side participation. This information will be necessary to manage the planning and operation of these networks."*
- AEMC also considered that DNSPs have options to manage operational challenges associated with WDR e.g. via *"commercial agreements with large customers connected to their networks"*

Information provision to DNSPs under final rule (2/2)

Type of information	Available to DNSPs?	Comment
NMIs that provide WDR	✓	AEMC considered this combination of information will: <ul style="list-style-type: none">• allow a DNSP to assess which customers on its network are providing WDR and their consumption profiles• assist DNSP decisions in planning their network to account for WDR provided through the mechanism.
NMI metering data on network	✓	
Notification to the FRMP that a NMI is dispatched to provide WDR	✗	The FRMP notification <i>does not</i> : <ul style="list-style-type: none">• specify the amount of DR to be provided• indicate when a specific NMI will respond or whether another NMI in the same aggregation will be responsible for providing the response
Historical information on the amount of WDR provided	✗	Information on the <i>specific location</i> of where WDR was provided is not made available to market participants.

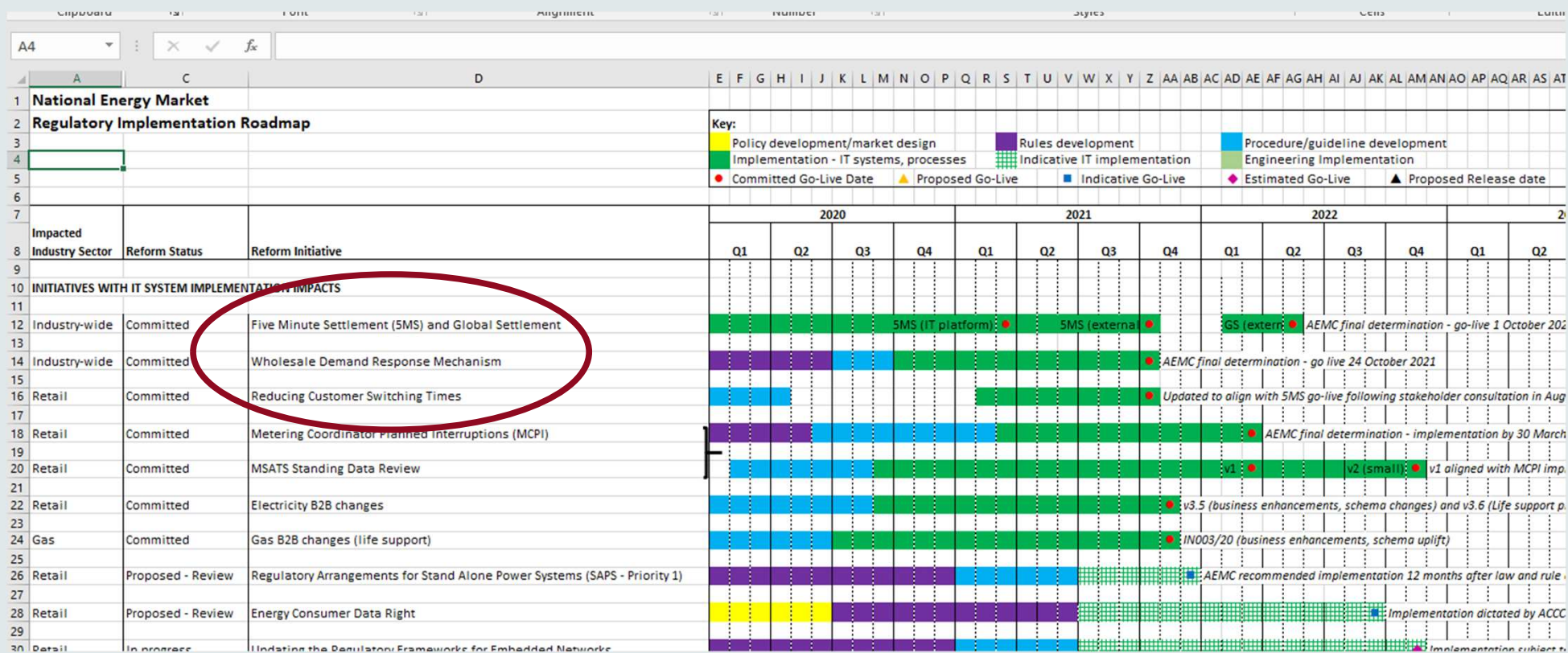
AEMO recognises DNSPs' operational and planning challenges – this is the focus of this workshop

AEMO's WDR implementation program

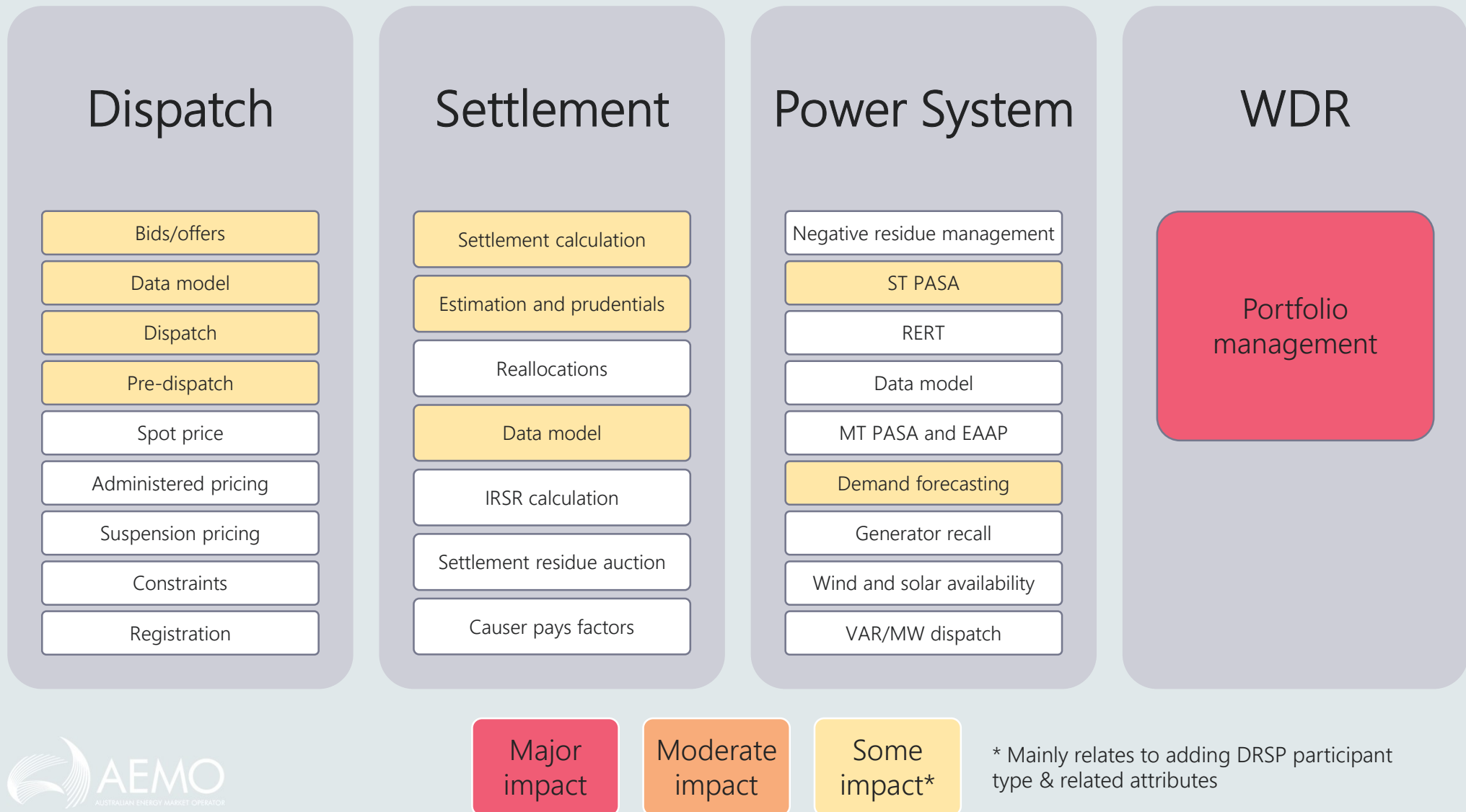
Ruth Guest

Concurrent implementation of 5MS, Customer Switching and WDR

For full details see: <https://www.aemo.com.au/initiatives/major-programs/regulatory-implementation-roadmap>



NEM Wholesale Systems: WDR participant change heatmap



NEM Retail Systems: WDR participant change heatmap

B2M / B2B interfaces

MDMT

B2M aseXML schema

NMID

CATS

MSATS B2M APIs

B2B transactions

B2B aseXML schema

VIC TUoS

CATS / MDM Processes

Profiling

CATS standing data

Meter data validation

Estimation / substitution

Energy allocation

CR processing

MSATS Browser / Reports

Meter data screens

Reports

SDR

NMID

WDR

Baselines

Major
impact

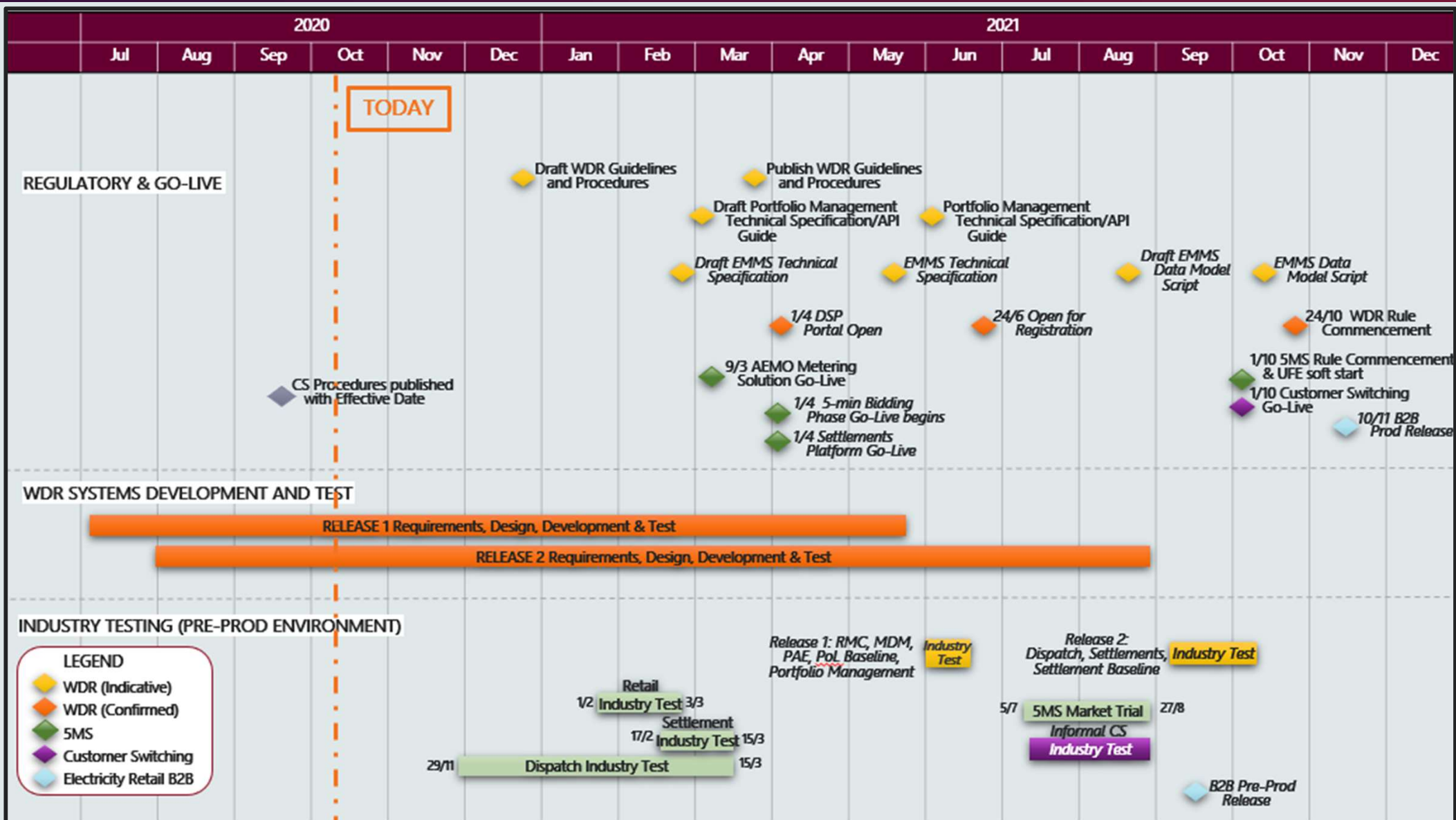
Moderate
impact

Some
impact*

* Mainly relates to adding DRSP participant type & related attributes

Indicative WDR timeline (including key dates for 5MS and CS)

Current as of 13 Oct 20



WDR impacts on DSNPs

Ruth Guest

Background

- AEMO hosted several one-to-one conversations with DNSPs to get an initial understanding of WDR impacts on distribution networks
- Broadly, impacts related to:
 - Technical issues
 - WDR visibility issues
- Expectation is that DR will be dispatched during high prices as a peak shaving facility
- DNSP will not have visibility in real time to these individual loads

Scope

In scope:

- Data provision
- Aggregation impacts

Out of scope:

- Connection processes and setting of performance standards
- Inclusion in AEMO's formal classification and aggregation process
- Real time dispatch information at the connection point (does not exist)
- B2B implementation of WDR (being managed in established forums)

Initial WDR issues list and discussion

WDR Issue	Description	Mitigation / Opportunity
Individual WDRUs: <ul style="list-style-type: none"> Size of WDR event Technical impact of WDR event on network 	Large loads quickly dropping off (or resuming) creates technical challenges: <ul style="list-style-type: none"> Impedance Voltage Flow management 	<ul style="list-style-type: none"> DRSP/ WDRU identification Ramp rates Visibility – telemetry Maximum responsive component (MRC) Performance standards
Aggregated WDRU: <ul style="list-style-type: none"> Size of WDR event Location Technical impact of WDR event on network 	Concentrated aggregation of loads quickly dropping off (or resuming) creates technical challenges: <ul style="list-style-type: none"> Impedance Voltage Flow management 	<ul style="list-style-type: none"> DRSP/ WDRU identification Ramp rates Visibility – telemetry Maximum responsive component (MRC) Aggregation WDRU : MRC: TNI mapping Power to disaggregate DNSP information for AEMO /DRSPs on locational issues Performance standards
Modelling operational behaviour	Difficult to model distribution system. How will WDRUs dispatch and what impacts will they cause? In real time won't know what is coming from where.	<ul style="list-style-type: none"> DRSP/ WDRU identification DNSP purchase metering data to review behaviour Ramp rates Visibility – telemetry

BREAK



Workshop: Further WDR issues and opportunities

Ruth Guest

Workshop

- *Please refer to the accompanying spreadsheet*

Next steps and general questions

Emily Brodie

Feedback sought

- AEMO to send out notes and update spreadsheet by Wednesday, 28 October
- DNSPs to provide feedback on WDR impacts by Friday, 6 November to wdr@aemo.com.au
- AEMO to:
 - Consolidate feedback and provide debrief to group
 - Should this debrief be via email or should another session be convened?

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>

Where your business has already been engaged in the WDR program, speak directly with your representatives for background information and the current context.

MEETING CLOSE

Thank you for your attendance
and participation!

Appendix: Types of demand response

Types of demand response

	WDR MECHANISM	RERT	ALTERNATIVE WITH RETAILER OR NSP
Type of mechanism	<ul style="list-style-type: none"> Market 	<ul style="list-style-type: none"> Out of market 	<ul style="list-style-type: none"> Out of market
Dispatch timeframes and communication	<ul style="list-style-type: none"> Scheduled in 5 min dispatch timeframe through standard bidding and dispatch process. 	<ul style="list-style-type: none"> Planned ahead (several hour lead time) through verbal communications and agreement 	<ul style="list-style-type: none"> Ranges from planned ahead to immediate. Automatic control to verbal comms.
Dispatch trigger	<ul style="list-style-type: none"> Bid is at or below market price 	<ul style="list-style-type: none"> AEMO operational decision 	<ul style="list-style-type: none"> Price or technical service need
Technical requirements	<ul style="list-style-type: none"> Standardised capability assessment through registration to meet obligations of NER and ensure no system security issues 	<ul style="list-style-type: none"> Procurement based service provision to meet reliability need 	<ul style="list-style-type: none"> Procurement based service provision to meet technical or commercial need
Market interactions	<ul style="list-style-type: none"> Bid information included in PASA and pre-dispatch 	<ul style="list-style-type: none"> PASA outputs feed into decisions on the need for RERT to protect market 	<ul style="list-style-type: none"> Information submitted to DSP portal
Settlement & Baselines	<ul style="list-style-type: none"> Baselines calculated at NMI level for settlement 	<ul style="list-style-type: none"> Baselines calculated at aggregated level for settlement 	<ul style="list-style-type: none"> Up to commercial arrangements
Dispatch compliance	<ul style="list-style-type: none"> Baselines aggregated to DUID level for dispatch compliance assessment 	<ul style="list-style-type: none"> Aggregated baselines used to assess demand response provided against contractual commitment 	<ul style="list-style-type: none"> Contract specific
Who pays for response?	<ul style="list-style-type: none"> Retailer pays for demand response at its NMI 	<ul style="list-style-type: none"> All Market Customers pay for RERT service 	<ul style="list-style-type: none"> Contracting party pays for service
Telemetry	<ul style="list-style-type: none"> Established based on size and location 	<ul style="list-style-type: none"> Large loads typically have telemetry, no additional requirements for RERT 	<ul style="list-style-type: none"> Contract dependent

