



Meeting Agenda

Meeting Title:	Demand Side Response Review Working Group (DSRRWG)
Date:	Wednesday 29 November 2023
Time:	9:30 AM – 11:30 AM
Location:	Online, via TEAMS.

Item	Item	Responsibility	Type	Duration
1	Welcome and Agenda	Chair	Noting	2 min
2	Meeting Apologies/Attendance	Chair	Noting	2 min
3	Competition Law Statement	Chair	Noting	2 min
4	Minutes			
	(a) Minutes of Meeting 2023_08_02	Chair	Noting – Already approved	2 min
5	Action Items	Chair	Noting	2 min
6	(a) Consultation Paper Submissions Summary	EPWA	Discussion	50 min
	(b) Dynamic Baseline proposal	Lantau Group	Discussion	50 min
7	General Business	Chair	Discussion	10 min
	Next meeting: TBA			

Please note, this meeting will be recorded.

Competition and Consumer Law Obligations

Members of the Demand Side Response Review Working Group (**Members**) note their obligations under the *Competition and Consumer Act 2010 (CCA)*.

If a Member has a concern regarding the competition law implications of any issue being discussed at any meeting, please bring the matter to the immediate attention of the Chairperson.

Part IV of the CCA (titled "Restrictive Trade Practices") contains several prohibitions (rules) targeting anti-competitive conduct. These include:

- (a) **cartel conduct:** cartel conduct is an arrangement or understanding between competitors to fix prices; restrict the supply or acquisition of goods or services by parties to the arrangement; allocate customers or territories; and or rig bids.
- (b) **concerted practices:** a concerted practice can be conceived of as involving cooperation between competitors which has the purpose, effect or likely effect of substantially lessening competition, in particular, sharing Competitively Sensitive Information with competitors such as future pricing intentions and this end:
 - a concerted practice, according to the ACCC, involves a lower threshold between parties than a contract arrangement or understanding; and accordingly; and
 - a forum like the Demand Side Response Review Working Group is capable of being a place where such cooperation could occur.
- (c) **anti-competitive contracts, arrangements understandings:** any contract, arrangement or understanding which has the purpose, effect or likely effect of substantially lessening competition.
- (d) **anti-competitive conduct (market power):** any conduct by a company with market power which has the purpose, effect or likely effect of substantially lessening competition.
- (e) **collective boycotts:** where a group of competitors agree not to acquire goods or services from, or not to supply goods or services to, a business with whom the group is negotiating, unless the business accepts the terms and conditions offered by the group.

A contravention of the CCA could result in a significant fine (up to \$500,000 for individuals and more than \$10 million for companies). Cartel conduct may also result in criminal sanctions, including gaol terms for individuals.

Sensitive Information means and includes:

- (a) commercially sensitive information belonging to a Member's organisation or business (in this document such bodies are referred to as an Industry Stakeholder); and
- (b) information which, if disclosed, would breach an Industry Stakeholder's obligations of confidence to third parties, be against laws or regulations (including competition laws), would waive legal professional privilege, or cause unreasonable prejudice to the Coordinator of Energy or the State of Western Australia).

Guiding Principle – what not to discuss

In any circumstance in which Industry Stakeholders are or are likely to be in competition with one another a Member must not discuss or exchange with any of the other Members information that is not otherwise in the public domain about commercially sensitive matters, including without limitation the following:

- (a) the rates or prices (including any discounts or rebates) for the goods produced or the services produced by the Industry Stakeholders that are paid by or offered to third parties;
- (b) the confidential details regarding a customer or supplier of an Industry Stakeholder;
- (c) any strategies employed by an Industry Stakeholder to further any business that is or is likely to be in competition with a business of another Industry Stakeholder, (including, without limitation, any strategy related to an Industry Stakeholder's approach to bilateral contracting or bidding in the energy or ancillary/essential system services markets);
- (d) the prices paid or offered to be paid (including any aspects of a transaction) by an Industry Stakeholder to acquire goods or services from third parties; and
- (e) the confidential particulars of a third party supplier of goods or services to an Industry Stakeholder, including any circumstances in which an Industry Stakeholder has refused to or would refuse to acquire goods or services from a third party supplier or class of third party supplier.

Compliance Procedures for Meetings

If any of the matters listed above is raised for discussion, or information is sought to be exchanged in relation to the matter, the relevant Member must object to the matter being discussed. If, despite the objection, discussion of the relevant matter continues, then the relevant Member should advise the Chairperson and cease participation in the meeting/discussion and the relevant events must be recorded in the minutes for the meeting, including the time at which the relevant Member ceased to participate.

Minutes

Meeting Title:	Demand Side Response Review Working Group (DSRRWG)
Date:	2 August 2023
Time:	9:32 AM to 11:36 AM
Location:	Microsoft TEAMS

Attendees	Company	Comment
Dora Guzeleva	(Chair) EPWA	
Toby Price	AEMO	
Tom Butler	AEMO	Joined until 11:00AM
Dimitri Lorenzo	Bluewaters Power	
Jake Flynn	Collgar Wind Farm	
Devika Bhatia	Economic Regulation Authority	
Claire Richards	Enel X	
Thomas Marcinkowski	EPWA	
Mitch O'Neill	Grids	Joined until 10:34AM
Bobby Ditric	Lantau Group, Consultant	
Dave Carlson	Lantau Group, Consultant	
Mike Thomas	Lantau Group, Consultant	Joined until 10:37AM
Wayne Trumble	Newmont Mining	
Tom Higgins	Perth Energy	
Tessa Liddelow	Shell Energy	
Graeme Ross	Simcoa Operations	Joined at 9:46AM
George Martin	Starling Energy	
Chris Alexander	Small-Use Consumer Representative	Joined at 10:05AM
Noel Schubert	Small-Use Consumer Representative	
Peter Huxtable	Water Corporation	
Mark McKinnon	Western Power	Proxy for Valentina Kogon
Apologies	From	Comment
Oscar Carlberg	Alinta Energy	
Justin Ashley	Synergy	
Valentina Kogon	Western Power	Mark McKinnon proxy

Michael Zammit	Integrated Management Services	

Item	Subject
------	---------

1 Welcome

The Chair opened the meeting at **9:32 AM** with an Acknowledgement of Country.

2 Meeting Apologies/Attendance

Noted as per the attendance record above.

3 Competition Law Statement

The Chair drew members' attention to the *Competition and Consumer Law Obligations* document circulated prior to the meeting. The Chair encouraged members to read the document carefully, and to raise any issues with the Chair immediately should they arise during the course of the working group deliberations.

4 Minutes

The Chair acknowledged the out of session approval and publication of the minutes from the previous meeting.

5 Action Items

Action Item 1:

- Mr McKinnon stated that none of Western Power's action items were able to be closed and requested further clarification from the group.
- Mr Schubert clarified that his request was for information on the average demand on typical circuits divided by the rating of the circuits to ~~estimate-illustrate~~ available capacity outside of peak times. Mr Schubert stated that average, rather than peak utilisation of ~~a-sampling-of~~ typical transmission and distribution circuits would be useful.

The Chair asked Mr Schubert if his initial ~~question-intention~~ giving rise to Action Item 1 was whether loads could be shifted to times when the network is not at full capacity to save network reinforcement costs for consumers.

- Mr Schubert confirmed that this was his question, and added that batteries would help with load levelling and addressing minimum demand upstream, but ~~can also provide benefits-cannot provide load levelling benefits~~ downstream. He noted that ~~both load and~~ batteries can be utilised to shift-level demand and highlighted that, if batteries were located at a local substation level or behind the meter, they could provide a greater benefit to the system by levelling demand all the way back through the network to transmission ~~connected-and~~ generation.
- Mr Schubert also said that this ~~hypothesis~~ supports the merits of load shifting at the customer end rather than halfway through the ~~transmission-system-network~~, ~~addingadding~~ that:
 - A number of transmission circuits have average utilisation of around 20% (because of the n-1 requirement), which is staggering given the capital involved.
 - Increasing average utilisation should be a key objective, but is not at the moment.

Item	Subject
------	---------

The Chair stated that –Mr Schubert’s hypothesis about view concerning the under-utilisation of the network at away from peaks was true, with no more evidence needed to support it.

The Chair suggested that instead of providing the data described in Action Item 1, Western Power should help provide further information on how Western Power is improving average utilisation. The Chair that stated this issue could also be dealt with in the upcoming Consultation Paper.

The group agreed to close Action Item 1.

- Mr Trumble highlighted that Western Power introduced a permissive scheme in the Goldfields line area, and suggested that Western Power could provide information on the scheme and its success so far.
- Mr McKinnon agreed to provide this information.

Action: Western Power to provide an overview of the extent to which the Eastern Goldfields Load Permissive Scheme (ELPS) has been successful.

Action Item 2:

The Chair opened discussion on this action item by stating that:

- It can be assumed that storage facilities can be connected under a runback scheme and the market can take care of their network access quantities and injection.
- There is a question whether there is any reason to have an arrangement in which withdrawal can be constrained during peak times.
- Mr Price addressed the issue of storage participation in the market:
 - If a facility is registered and participating in the market, both its injection and withdrawal will be considered from a dispatch perspective, notwithstanding that Western Power may have ensured access should be available to it at all times.
 - From a market perspective, AEMO cannot differentiate between any participating MWs be it for injection or withdrawal.
- Mr McKinnon highlighted that Western Power provides connections on an unconstrained basis unless there is a network constraint, therefore alternative arrangements such as run-back schemes are atypical albeit becoming more prevalent.
- Mr McKinnon queried whether, if constrained access were to apply to ESR withdrawal, there is the ability through WEMDE or something else to manage that load so it is still within the limits of the network.
- The group agreed that it was preferable to integrate constraints on market participating facilities into the bidding and dispatch systems and processes.
- Mr McKinnon said that he would speak to Action Item 4 to clarify some of the issues arising under Item 2.

Action Item 4:

- Mr McKinnon said that almost all schemes, apart from the ELPS, were post-contingent protection based, stating that:
 - For runback schemes, loads connected by Western Power should be able to get their full contracted maximum demand (CMD) (unless there is planned maintenance or a trip to protect the network).
 - In contrast, under the ELPS Western Power is not able to connect customers under a reference service to meet the required CMDs on a 24/7 basis. Instead,
-

Item	Subject
------	---------

customers are allocated capacity on a rotational basis. It has been successful in that capacity not sold is now able to be used.

- The challenge is whether there a better way of allocating who gets spare capacity and should the approach be market based instead of bespoke.

The Chair stated that:

- If Western Power connects a customer on an unconstrained basis there is no market issue. It is only if a customer is connected on a constrained basis that the problem arises.
- The group needs to explore the best mechanism to facilitate the optimum dispatch outcome in the presence of network constraints.

Mr Price stated that:

- If a constraint results in market impacts (foregoing cheap constrained energy for expensive unconstrained energy), market visibility of this may affect decisions on whether to augment the network.
- In contrast, in a runback scheme the financial impost is crystallised when a decision to connect a load is made.

The Chair noted that load and generation were unconstrained at the start of the WEM, with generators not being connected unless they could export their full capacity at any point in time. This has changed to apply constraints to generators. A similar situation is now arising for loads.

- Mr Trumble stated that this arrangement has existed for the Parkston Power Station for 15 years, and both as a load and generation for at least the last 5 years until capacity became available under the ELPS.

The Chair queried whether, if there is insufficient capacity for a load to connect unconstrained, there is a service that could both cut time to connection and provide a non-reference service at a lower cost for loads.

- Mr Schubert highlighted that there is significant benefit for those customers who can consume above their CMD to do-so without penalties to help address minimum demand issues.

The Chair agreed, noting that they need to be integrated in the market with AEMO having full visibility. She added that this is particularly important as the network becomes more constrained (both in terms of generation and load). Such schemes could save money overall, both to the individual consumer and the market.

- Mr McKinnon drew a parallel with the Generator Interim Access (GIA) scheme highlighting that determining how to allocate capacity was a problem, and similar issues could arise in respect of loads. Mr McKinnon stated that hydrogen production could be an example in which a load may not want power all the time, only when the price is right.

The Chair stated, with regard to this Action Item, that the working group needed information on the current situation in the Goldfields and Western Power's view on how such schemes may grow given the network is increasingly constrained.

Action Item 3:

- Mr Price stated that:
 - Storage has been considered in the reliability modelling based on capacity credits or forecast capacity credits for the facility.
 - The optimisation assumes that storage will mitigate unserved energy even if that unserved energy falls outside the RCOQ for that facility.
-

Item	Subject
------	---------

- AEMO may modify the obligation intervals that were set two years ahead to ensure reliability is ensured, and this may cause the storage facilities to not be fully charged at the start of the intervals.

Action Item 7:

The Chair asked whether there was a reason to not allow a participant with a hybrid facility to register either as a DSP or a scheduled facility.

- Mr Price stated this is a question of the relative merits of a DSP compared with storage as a scheduled facility. Mr Price said AEMO's preference would be for the facility to be a scheduled or a semi-scheduled facility, stating that:
 - A scheduled facility is able to participate in ESS and has more market obligations (from a visibility and controllability perspective) even though there are less obligation hours of storage vs DSP.
 - A battery is the same battery with the same capacity whether it is registered as a DSP or not.

The Chair asked the group whether the consultation paper should seek views on this.

- Mr Butler stated that the expectation is that there will be opportunities on top of the capacity component for that registered facility to access other value streams.

The Chair stated that a facility may or may not be able to access them depending on how it's registered.

- Mr Trumble stated that:
 - There are three DSPs shown as registered in the Electricity Statement of Opportunities (ESOO), however two of those (Wesfarmers' and Synergy's) are also registered as intermittent loads.
 - As a result, those loads are not subject to the rules that apply to other DSPs.
 - In the last quarter, Boddington DSP was dispatched repeatedly, and the WEM Rules suggest that other DSPs should have been dispatched in preference and fall back in order once called.
- Mr Trumble requested clarification as to how DSPs can be registered as other facility types, whether they receive parallel income streams, and how they can circumvent the DSP rules by being registered as something else.

The Chair clarified that there is no way to circumvent DSP obligations, but that the AEMO preference is to treat them as an intermittent load to provide spinning reserve.

The Chair stated that there is a MAC action item for AEMO to address in regard to the Boddington DSP situation. The Chair will provide the information to the group when it is available.

Action Item 8:

The Chair stated that Enel X provided a paper which was circulated and the action is now closed.

Action Item 5:

The Chair stated that EPWA will make changes to the Metering Code to address this.

Action Item 6:

The Chair stated that this issue will be included in the Consultation Paper.

6 DSP Participation in RTM, including ESS

Mr Ditric stated that:

Item	Subject
------	---------

- DSPs do not bid in the RTM but instead are required to make capacity available.
- DSPs can be dispatched based on availability, but there is no bidding or consideration of prices in dispatch, they are dispatched as AEMO deems reasonable.

Mr Ditric asked whether there are there any obligations/requirements that prevent DSP participation in the RTM that the group should consider changing.

There were no responses.

The Chair suggested posing that question in the consultation paper.

Mr Ditric asked whether the WEM Rules should be changed to allow and/or require DSPs to bid into the RTM or whether they provide optimum value by participating in the RCM only.

- Mr Trumble expressed concern that the DSP is being called when AEMO thinks it might need it, but in many cases AEMO then decides it is not required. Mr Trumble asked how a DSP could be paid for supplying energy and also be available to AEMO as an insurance policy.

The Chair responded that DSPs currently do not offer in the market to reduce consumption. They just get an activation notice that they will be dispatched in 2 hours and need to respond.

The Chair said that there is a question whether there should be changes requiring DSPs to submit offers, noting that the risk is that they may all bid at the cap, requiring a tie-breaker.

The Chair asked Mr Price if, when the new market commences, the optimisation of those things would be better and the activation may be more precise than it is today.

- Mr Price said that he hopes so, noting there is always uncertainty around dispatch because of the notice period required.

The Chair noted that:

- the notification period is 2 hours, in contrast with the SRC last summer where a longer, 9 hour notification period created much uncertainty.
- the 2-hour period in the rules may need to be reconsidered if DSPs need to make offers.

The Chair asked whether more equalised participation is required.

- Mr Schubert stated that the market is still not mature, and if there are more ways for demand side to participate in the market then there will be demand that can participate.

The Chair said that DSPs receive capacity credits to be available at peak but have a 12-hour obligation. The Chair asked whether there is a benefit of allowing DSPs to offer to buy from the market in middle of day. The Chair noted that the price floor is at -\$1,000 price, and the Chair suspected the peak price would reach that level when the second cap is removed.

The Chair invited other views on the slide but there were none.

Mr Ditric stated that:

- AGC is needed to offer ESS.
- It makes it more difficult for DSPs to participate if there is an aggregator as a middle person.

Mr Ditric asked whether there are any ESS that DSPs would be suitable to provide.

- Mr Price sought clarification that the discussion was about a DSP associated with an interruptible load, stating that ESS is available in that scenario in the form of contingency reserve raise in the new market.

The Chair confirmed this was the case.

Item	Subject
------	---------

The Chair queried whether, if a load is significantly larger than the ESR, that hybrid facility would need to register as a scheduled facility.

- Mr Butler stated that it would only need to register if it's going to provide contingency services.

The Chair stated that:

- Currently, if a DSP with an ESR component registers as a scheduled load it cannot also register as a DSP. The only exception is interruptible load as it is not a scheduled facility.
- There is a need to determine whether, if load is significantly bigger in size than the ESR, this is a barrier to entry to the detriment of the market.
- Mr Schubert stated that interruptible loads offering ESS are very valuable because they are fast and do not need ~~AGGAGC~~.

The Chair stated that the key questions to be addressed by the group are:

- If a facility is providing spinning reserve, or in the future contingency raise, is it providing both services at the same time and should it get the benefit of both; and
- If it is activated to provide spinning reserve, is it also covering its DSP obligations.
- Mr Ross stated that there are two different market services: one is contingency and the other is capacity. More often than not they do not coincide. While they may influence the decision of which to dispatch first, they are often very different services to the market.

The Chair stated that the fundamental question is whether such a facility would ever be activated as a DSP if AEMO needs it as spinning reserve.

- Mr Price identified the same challenge on generation side. Mr Price asked, in relation to fast responding storage that receives capacity credits and also provides contingency reserve, whether during peak demands WEMDE would optimise to keep it as contingency reserve or dispatch it for energy.
- Mr Schubert stated that there have been occasions in the past when the operator has lowered the spinning reserve requirement because of lack of available capacity.
- Mr Price responded that this is an operational decision to maintain security and reliability, but there would be a level of foregone ESS that would be too great a risk. Mr Price clarified that the discussion is about capacity credits, which are clearly an insurance policy procured some time ahead, and not about making the operational considerations that you might do in an emergency.

The Chair highlighted that a DSP is the reverse of a scheduled generator in that it ensures load is met at peak. Though the DSPs do not offer in the market like a scheduled generator they still play a role by reducing their demand. The Chair tasked the group whether they should therefore be treated as a generator that is also accredited to provide spinning reserve and be given both capacity credits and a spinning reserve payment.

The Chair stated that these issues could be considered in the consultation paper.

- Mr Trumble asked, once facilities are registered to provide both services, who makes the decision as to how they will be used.

The Chair stated that this exact question was asked in the MAC, and an answer from AEMO was needed before the consultation paper is finished.

- This was noted by Mr Price.
-

Item	Subject
------	---------

Mr Ditric said that bidding in the RTM becomes more of a requirement if DSPs provide ESS. Mr Ditric asked whether it would be problematic if a DSP providing ESS is not co-optimised with other providers of the ESS.

The Chair queried whether ~~their is~~there is the DSP or the intermittent load that should be allowed/required to be in both, since it is providing ESS as an interruptible load rather than a DSP.

- Mr Schubert stated that, if an interruptible load is interrupted at peak times, it is no longer providing spinning reserve but demand reduction and, therefore, the remaining generator output is reduced by the same amount thus maintaining the level of spinning reserve. He stated that the load, therefore, ought to be able to value stack by getting capacity credits as well as being paid for spinning reserve / contingency raise.
- Mr Trumble stated that the way it is practically working now is by not dispatching other DSPs and holding them as spinning reserve.

The Chair concluded that:

- In the new market, interruptible loads would be bidding in the contingency raise market.
- If they are not dispatched because of a low price, they are treated as every other DSP and activated when necessary (noting that a DSP providing capacity would not be providing contingency raise at the same time).
- AEMO would need to know how to rotate loads in such circumstances.
- Mr Price mentioned the new clause 7.4.10 of the WEM Rules which will require a participant to reduce its interruptible load offers to zero if dispatched as a DSP and if it is registered as both interruptible load and DSP at same connection point.

The Chair noted these issues would be covered in the consultation paper.

- Mr Ross stated that this works both ways, if DSPs are dispatched then they cannot be in the contingency raise market.

The Chair noted Mr Ross's point.

8 Non-DSP Load Participation in RTM and ESS

Mr Ditric stated that:

- The discussion concerns large loads registering as a scheduled or semi-scheduled facility, with a scheduled facility not able to be a DSP.
- There are two possible incentives for a dispatchable load, one - dispatch at low load periods, ~~another~~ - dispatching off during high ~~demand~~demand periods to reduce demand.

These two options will be explored by the working group, especially any potential barriers to participation.

Mr Ditric introduced the questions for this discussion, asking in particular what working group members thought about the role of retailers in this area.

- Mr Schubert questioned whether retailers that are enjoying low or negative prices actually want load to increase because price will then increase. Mr Schubert stated that negative prices are not currently reaching customers and, therefore, customers cannot respond to them.
 - Ms Richards asked if there are any loads currently registered as scheduled facilities.
 - Mr Huxtable said that loads can participate via retailers to get the benefit of the price shifts in the market, but noted that with the obligations around dispatch and bidding a load might not be interested in participating.
-

Item	Subject
------	---------

- Ms Richards stated that other jurisdictions that have adopted demand side bidding, scheduled loads etc, have had minimal uptake because the costs and effort outweigh the benefits.

The Chair said that this would be highlighted in the consultation paper.

- Mr Price agreed with this from an energy perspective alone, but stated that future loads and storage are examples of the benefits of accessing more ESS. Mr Price recommended this as a topic for the consultation paper.

The Chair said that this depends on the type of load, adding two comments:

- A large load without onsite generation might actually take advantage of this.
- The group needs to explore whether there is anything in that rules that prevents a load that is not part of a DSP from participating.
- Mr Price queried whether in a scheduled facility, its parasitic load is treated in the same way as the parasitic load of a generator.
- In the chat, Mr Alexander asked for “views on NEM scheduled lite proposition as a way to reduce the burden”
- Ms Richards answered in the chat that she is “waiting to see the latest proposal but in all previous iterations of the idea, industry feedback has been that there is insufficient incentive to take up either _“of the "lite" options they are considering.”
- Mr Butler answered that: “it’s a consideration in the DER work in the WEM, with similar aspects considered through AEMO’s DER Visibility Framework, ahead of DER Participation models (Oct 2025).”

Mr Ditric stated that:

- There are types of loads that could increase demand during SWIS low demand periods.
- These are loads that do not operate 24/7 and can engage a “batch” process to store their “product”.

Mr Ditric asked whether:

- these loads would be able to participate in the RTM during low demand periods.
- there are enough of these types of loads in the WEM to make this viable.
- Mr Schubert added that because large customers have been on time of use tariffs for a long time, there are probably loads operating overnight now taking advantage of lower prices who could shift to midday if they had the incentive to do so.

The Chair asked whether there is a need for a more structured service given AEMO has triggered procurement of NCESS to address minimum demand twice already.

- Mr Schubert stated that this depends on whether customers are paying too high a price through NCESS, and whether a lower price overall (including for implementation) was available through a structured service.

The Chair clarified that the discussion concerned large customers, not DER.

- Mr Price expressed the personal view (not an official AEMO view) that the ultimate objective will be levels of excess renewables which are used to charge storage to meet demand at other times. Mr Price asked whether:
 - capacity payment for those storage resources to supply at other times is sufficient to ensure they are charged and therefore withdraw at the times when excess renewables are available.
-

Item	Subject
------	---------

- storage projects would be built without additional support and should support be provided in the form of incentivising consumption in addition to generation.
- Mr Price said that the WEM Investment Certainty Review will have a role to play, and sufficiency in revenue streams to allow those projects to be built and participate in the right way, is something AEMO needs to forecast better.

The Chair stated that the WEM Investment Certainty Review will be commenced in parallel with what reference technology type is selected for the flexible capacity service, as it may lead to a higher price for flexible capacity in the RCM than the price for peaking capacity.

The Chair noted that if all of the new storage charges in the middle of the day the price in the middle of day will probably rise, but it should still be lower than prices during the evening peak.

- Mr Schubert said that this depends on whether enough storage capacity is built to keep up with or outstrip the growth in rooftop PV installation.

The Chair said that the DER program will solve some of those issues.

The Chair stated that it might be necessary to wait and see if the flexible capacity services together with ESS price and reserve capacity price address this problem before the group considers a standard service to address minimum demand.

- Mr Schubert agreed as long as participants are not paying high amounts for minimum demand services.

Mr Schubert said that loads would participate to reduce their IRCR without actively participating in the RTM itself.

The Chair noted that even with much higher price caps in the NEM the cost and effort, especially in the 5-minute market, may outweigh the potential benefits.

The Chair noted that there were no other contributions.

The Chair asked whether larger loads can provide effective regulation service by installing AGC or similar.

- Mr Schubert said that they could, if they have the technology, but that such technology is not available. Mr Schubert said that it would be interesting to see if there are any international markets in which large loads install technology to respond to real time pricing.
- Ms Richards stated that she is not aware of any loads providing a regulation service, even for relatively large flexible loads. Ms Richards also noted that most markets require AGC for regulation, which is a barrier in itself.

The Chair asked if there is an expectation, or ability, for more loads to provide a contingency raise service.

- Ms Richards said that:
 - There are many examples of loads capable of providing it.
 - Loads providing it have AGC, however AGC may not be necessary.
 - It is unclear what telemetry obligations are for interruptible loads participating in the WEM, and that there are possibly SCADA requirements that present a barrier.
 - In other interruptible load markets, there are no telemetry obligations, only compliance with dispatch instructions. Offers reflect what loads can actually provide in a frequency event, with local response to locally measured frequency deviation.
-

Item	Subject
------	---------

- Mr Price stated that there is a carve-out in the accreditation procedure for not having AGC for providing contingency reserve raise.
- Mr Price agreed with Ms Richards regarding telemetry, saying that there are currently barriers with respect to communications and control systems. However, AEMO plans to consult on this as part of updating the FCESS Accreditation WEM Procedure. Mr Price said that the real time SCADA is not necessary to provide those services but some level of visibility of the service availability should be required.

The Chair noted that this would be included in the consultation paper, with reflections on telemetry obligations in other markets.

- Mr Schubert stated that visibility is key for AEMO, and noted that:
 - For contingency raise, the local UFLS relays used by interruptible loads can operate and trip the load.
 - For contingency lower, an over frequency relay could instantly turn on a big load.
- Ms Richards added that curtailing solar is also effective as it can be turned off quickly.
- Mr Trumble stated that Boddington is the largest single connection load on the system and does have an UFLS scheme which works automatically.
- Mr Trumble asked Mr Price how ~~does~~AEMO dispatches spinning reserve for those programs currently identified as DSP and also providing spinning reserve and how AEMO monitors the performance of the service.
- Mr Price said that ultimately the spinning reserve will be enabled through dispatch instructions to each facility for the relevant dispatch interval.
- Mr Price said that he is not aware of the exact SCADA requirements for the current interruptible loads, but expects the status of the underfrequency relays would be visible to AEMO.
- Mr Trumble noted that DSPs, when dispatched, are subsequently required to show that they did reduce load to the required level.
- Mr Trumble asked if the other two DSPs being held as spinning reserve are being dispatched by AEMO as spinning reserve, and whether that is fast enough given the discussion on participants providing ESS needing to be SCADA connected.

Mr Price answered that:

- They will be enabled for ESS, which is checking whether their underfrequency relay is active, with no other signal required to enable them for an interval.
- Following a contingency (as with all providers) AEMO uses a ~~high-speed~~high-speed data recorder to review whether performance was in line with accredited quantity.
- The new FCESS framework includes information on failure to perform in line with accreditation parameters.

The Chair asked if AEMO requires them to be enabled when they are getting instruction but be disabled at other times, and stated there may be a contentious issue as to how quicky they can be restored.

- Mr Price did not believe there is a requirement for them to disable a response, but that there was a droop response that they must provide, and that there are differences in reserving headroom and providing a contingency reserve response.

The Chair said that the procedure needs to be checked, as well as how that will work in a competitive market if DSPs may or may not be dispatched for contingency raise.

Item	Subject
------	---------

- Mr Price stated if a load is not in merit it will not be dispatched in the contingency reserve raise market, but if there is an event it will still be required to respond to frequency in both directions.

The Chair said that it must therefore be up to the load to disable itself, so it does not respond to frequency deviations and is not being paid if it is not in merit.

The Chair said that RoCoF can be provided by loads and questioned whether the working group needed to discuss this issue. The Chair invited views on ~~this but~~ this but received none.

Mr Ditric asked whether:

- there was a need to explore ways for loads / DSPs to participate in the STEM, and whether there was an appetite for participation.
- there are any restrictions due to the wording 'sale and supply of energy' and whether this should also include withdrawal.
- Mr Schubert said that there was a retailer in the past who purchased energy from the STEM and sold it to customers at STEM prices plus a margin.

The Chair stated that if they have a bilateral contract they can do that, but the question is can a participant do so without having any bilateral position.

Mr Ditric said that there is also a question as to whether a load can register and bid to buy energy from the STEM, not just sell to the STEM.

- Mr Huxtable stated that loads should definitely be able to both buy and sell outside bilateral contracts if that is not already possible.

The Chair stated that this issue will be addressed in the consultation paper.

The Chair identified two scenarios for discussion:

1. Western Power has signed a runback scheme contract, and how that is visible to the market and how is it included in dispatch.
2. Western Power goes through an NCESS mechanism and signs contracts with curtailable loads which are already connected.

The Chair asked whether these should be visible to the market, stating that AEMO would also need to be involved in their dispatch in the RTM.

- Mr Trumble asked if the existing DSP requirements of 200 hours a year and 12-hours a day availability has been considered.

The Chair said that this was considered in the RCM Review. The paper will be published today and suggests a change from 200 hours to the difference between 1 in 10 and 1 in 50 forecast, which drops the hours significantly.

- Mr McKinnon wanted to clarify that this is talking about pre-contingent runback schemes to resolve network constraint or allocating spare capacity as opposed to post-contingent protection based schemes that are set and forget.

The Chair clarified that for existing loads, there is a question as to how they are considered in the market:

- Those that are set and forget can be included in the constraint equations.
- If they are more actively managed (pre-contingent) the question is whether they should be not only visible but actively dispatched through the market rather than operate outside of it.

9 International Case Studies

Not covered.

Item	Subject
------	---------

10	General Business
-----------	-------------------------

None.

11	Next Steps
-----------	-------------------

The Secretariat will prepare a Consultation Paper for discussion at the MAC (the date of which is to be advised).

The meeting closed at 11:34 AM



Agenda Item 5: DSRRWG Action Items

Demand Side Response Review Working Group (DSRRWG) Meeting 2023_11_29

Shaded	Shaded action items are actions that have been completed since the last PAC meeting. Updates from last PAC meeting provided for information in RED.			
Unshaded	Unshaded action items are still being progressed.			
Missing	Action items missing in sequence have been completed from previous meetings and subsequently removed from log.			
Item	Action	Responsibility	Meeting Arising	Status
1	Provide the working group with a table of average utilisation values for typical network circuits	Western Power	Meeting 2023_06_07	Closed

Item	Action	Responsibility	Meeting Arising	Status
2	Advise how constrained access schemes would work for ESR if it is required to constrain both their injection at certain times and their withdrawal during the peak period	Western Power	Meeting 2023_07_05	<p>Closed</p> <p>At the previous meeting, Mr McKinnon highlighted that Western Power provides connections on an unconstrained basis unless there is a network constraint, therefore alternative arrangements such as run-back schemes are atypical albeit becoming more prevalent.</p> <p>Mr McKinnon queried whether, if constrained access were to apply to ESR withdrawal, there is the ability through WEMDE or something else to manage that load so it is still within the limits of the network.</p> <p>The group agreed that it was preferable to integrate constraints on market participating facilities into the bidding and dispatch systems and processes.</p>

Item	Action	Responsibility	Meeting Arising	Status
3	Advise how an ESR with constrained consumption is, or will be, taken into account in the reliability modelling as part of the LT PASA	AEMO	Meeting 2023_07_05	<p>Closed</p> <p>At the previous meeting, Mr Price stated that:</p> <ul style="list-style-type: none"> Storage has been considered in the reliability modelling based on capacity credits or forecast capacity credits for the facility. The optimisation assumes that storage will mitigate unserved energy even if that unserved energy falls outside the RCOQ for that facility. AEMO may modify the obligation intervals that were set two years ahead to ensure reliability is ensured, and this may cause the storage facilities to not be fully charged at the start of the intervals.

4	Provide information on the prevalence of curtailable load arrangements ("runback schemes")	Western Power	Meeting 2023_07_05	<p>Closed</p> <p>In the previous meeting, Mr McKinnon said that almost all schemes, apart from the ELPS, were post-contingent protection based, and that:</p> <ul style="list-style-type: none"> • For runback schemes, loads connected by Western Power should be able to get their full contracted maximum demand (CMD) (unless there is planned maintenance or a trip to protect the network). • In contrast, under the ELPS Western Power is not able to connect customers under a reference service to meet the required CMDs on a 24/7 basis. Instead, customers are allocated capacity on a rotational basis. It has been successful in that capacity not sold is now able to be used. • The challenge is whether there a better way of allocating who gets spare capacity and should the approach be market based instead of bespoke. <p>The Chair stated that the working group needed information on the current situation in the Goldfields and Western Power's view</p>
---	--	---------------	--------------------	--

Item	Action	Responsibility	Meeting Arising	Status
				on how such schemes may grow given the network is increasingly constrained.
5	Propose changes to the Metering Code to allow confidential information to be shared between Western Power and AEMO for market purposes and for these to be consulted on in the DSR Review consultation paper	EPWA	Meeting 2023_07_05	In progress
6	Propose changes to allow a load and storage connected behind the same NMI to be measured separately by Western Power meters and settled separately	EPWA	Meeting 2023_07_05	Closed At the previous meeting, the Chair stated that this issue would be included in the Consultation Paper (this has now occurred).
7	Provide views on whether participants can be given the choice of registering a DSP with capacity credits instead of a Scheduled Facility if they have an ESR and a load behind the meter, and whether that poses any threat to system security	AEMO	Meeting 2023_07_05	Closed There was discussion of this issue in the previous meeting and it was referred to in the Consultation Paper.
8	Provide examples of how dynamic baselines work in other markets, in which there are proactive rules and incentives as opposed to reactive compliance-based regimes	Enel X	Meeting 2023_07_05	Closed
9	Provide an overview of the extent to which the Eastern Goldfields Load Permissive Scheme (ELPS) has been successful	Western Power	Meeting 2023_08_02	Open



Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

DSR Working Group

Meeting 5

29 November 2023

Working together for a
brighter energy future.

Today's agenda

Item	
1	Consultation Paper submissions summary
2	Dynamic Baseline proposed approach

Consultation Paper Submissions Summary

Responses to DSR Proposals

Proposal 1: Transparency regarding constrained access connections should be provided for and, to the extent practicable, constrained access loads should be integrated into the processes in the WEM rules.

Summary of responses

- Generally supportive of proposal
- Some suggested further changes to the connections framework than what was proposed.

Further questions

- One submission suggested determining a minimum size for inclusion. Should this be considered further?
- AEMO suggested the market rules should empower AEMO to obtain relevant data from Western Power for use in market processes. Should there be explicit provisions in the rules to empower AEMO to request additional data from Western Power?

Responses to DSR Proposals

Proposal 2: The WEM Rules should be amended to clarify the circumstances in which a hybrid facility comprising a load and an ESR component will be required by AEMO to register as a Scheduled Facility. The WEM Rules should also be clear whether there is any flexibility for the relevant market participant to register such a facility as a DSP and receive capacity credits accordingly.

Summary of responses

- Responses from DSR proponents stated their preference for ensuring registration flexibility and allowing for the ability for a hybrid facility to register as a DSP
- AEMO maintained its preference that a hybrid facility with an ESR component be registered as a Scheduled Facility.

Further questions

- Should controllability of a facility be the primary basis for registration requirements? For example, if $DSR > ESR$ component then the Facility can register as either DSP or Scheduled Facility but if $DSR < ESR$ component then the Facility can only register as a Scheduled

Responses to DSR Proposals

Proposal 3: More flexibility should be provided to hybrid facilities that are registered in the WEM by enabling them to use Western Power installed sub-metering for the purpose of settlement in the STEM and the Real-Time Market, including the ESS markets.

Summary of responses

- Generally supportive of proposal but suggested there's a need for further consideration of practical matters such as technical feasibility, site access and alignment with national requirements.
- One submission suggested sub-metering would be cost prohibitive and likely to increase barriers for DSR participation.
- Another submission suggested looking at alternative lower cost options instead of Western Power meters

Further questions

- What are the likely new complexities that could arise from installing a sub-meter that are not encountered when installing the main meter?

Clarifications

- Sub-metering for components will be entirely optional for participants
- Lower cost options are likely to run contrary to national metering requirements

Responses to DSR Proposals

Proposal 4: The dynamic baseline for DSR participation will be based on an ex-ante 'X of Y' methodology incorporating a 'day of adjustment'. A cap will be placed on upward adjustment but uncapped for downward adjustment. Ex-post mitigation through examination of data could still be followed to detect any undesirable behavior that is not being mitigated through ex-ante measures.

Summary of responses

- Supportive of an ex-ante X of Y dynamic baseline approach
- Two submissions suggested a 10 of 10 approach and one submission suggested a 5 of 10 approach

Further questions

- See slides 16 to 28

Dynamic Baseline will be covered in more detail in the next section

Responses to DSR Proposals

Proposal 5: No change to the SRC mechanism is proposed, as the SRC framework already provides for the effective participation of DSR.

Summary of responses

- Generally supportive of the proposal
- One submission suggested the SRC framework could be improved to increase DER participation
- Another submission suggested the performance of the SRC framework be reviewed after this hot season to assess DSR participation

Further questions

Clarifications

- A separate EPWA project is considering DER participation in the WEM
- Coordinator must review the SRC framework after each SRC tender

Responses to DSR Proposals

Proposal 6: Amend the Electricity Industry (Metering) Code 2012 (Metering Code) so Western Power must share metering data on request to AEMO, to the extent necessary for market purposes, and with AEMO keeping that information confidential.

Summary of responses

- Supportive of the proposal
- Western Power noted that in some case the Metering Code prevents sharing of NMI data
- AEMO proposed changing the Metering Code, to require Western Power to remove a meter from the deemed accumulation meter list if requested by AEMO.

Clarifications

- Data required by AEMO is not only metering data but also other related information
- EPWA will commence a Notional Wholesale Meter project, once AEMO plans for the implementation of 5-min settlement have been firmed up

Responses to DSR Proposals

Proposal 7: Take steps to remove impediments from the WEM Rules to allow direct participation by DSR in the STEM

Summary of responses

- Generally supportive, however AEMO noted that they have not identified any barriers in the current market that would prevent DSR participation in the STEM

Further questions

- Are there any barriers that would prevent DSR participation in the STEM?
- Is this a priority area for participants?

Responses to DSR Proposals

Proposal 8: No changes are proposed to DSP participation in the Real-Time Market.

Summary of responses

- Supportive of this proposal

Further questions

Responses to DSR Proposals

Proposal 9: No change is proposed to DSR participation in the Real-Time Market as the participation of flexible loads is already provided for.

Summary of responses

- Supportive of this proposal
- One submission suggested that a review of DSR and DER participation in the RTM is warranted at some point in the future

Further questions

- Should the Market Rules include a review of DSR participation in the RTM in the future?

Responses to DSR Proposals

Proposal 10: No changes are proposed to be made for a specific service to address the minimum demand issues in the SWIS at this time.

Summary of responses

- Generally supportive of this proposal
- One submission suggested that households and small business be directly incentivised to address minimum demand instead of a market solution.
- Another submission suggested that, while at present they support no changes, this decision should be reviewed in a few years to see if it's still suitable

Further questions

- Should the Market Rules include a review of the need for specific minimum demand services in the future?

Clarifications

- DER participation is addressed in a separate EPWA workstream

Responses to DSR Proposals

Proposal 11: The size and potential technical limitations (such as the telemetry requirements) for providing ESS should be reviewed to ensure that there are no unnecessary barriers for the provision of ESS by technically capable DSR.

Summary of responses

- Two submissions suggested that telemetry is an unnecessary barrier
- AEMO stated a preference to retain the requirement for telemetry.
- One submission suggested that the FCESS framework requirement for loads to respond within 400ms is a barrier and proposed a scaled approach.

Further questions

- Is there a lower cost solution for DSR providers to share key information with AEMO instead of telemetry?
- Can the FCESS response time requirements be modified to allow participation of slower responding DSR?

Responses to DSR Proposals

Proposal 12: No changes are proposed to be made to the ability of DSR to register as both an Interruptible Load and a DSP, and provide Contingency Reserve Raise services at the same time it receives capacity credits. However, methodology for the rotation of DSP dispatch will be developed.

Summary of responses

- Generally supportive of the proposal
- One submission noted that Interruptible Loads may also be able to meet the requirements for Flexible Capacity.
- AEMO stated a preference that the DSP rotation method is not defined but if it must then it should be detailed in WEM Procedure instead of the Market Rules

Further questions

- Do members have any views on DSP rotation methods?
- Should a rotation requirement be prescribed in the rules or a procedure?

Dynamic Baseline proposal

Dynamic Baseline Basic Elements

Common elements of a dynamic baseline

Baseline window:

A period of time preceding and, optionally, following a Demand Side Response (DSR) Event over which electricity usage data is collected for the purpose of establishing a Baseline. Examples of baseline windows include:

- the last 10 non-holiday weekdays;
- the 10 most recent eligible non-event days;
- the 10 most recent program-eligible days beginning 2 days before the event;
- the last 45 calendar days; or
- the previous year.

Exclusion rules:

Rules for excluding data from the Baseline Window. Common exclusion rules include:

- Excluding days with DSR events.
- Excluding days with outages, or force majeure events.
- Excluding days with extreme weather.
- Excluding days with the highest or lowest loads.

Dynamic Baseline Basic Elements

Common elements of a dynamic baseline

Calculation type:

The method of developing the baseline value using the data from the baseline window. Examples of calculation types include:

- Average value: for each hour, calculate the average of the load during that hour over the included days.
- Regression: calculate load by regressing the load from the included days on weather and other variables, usually with separate regression coefficients by hour of the day.
- Maximum value: take the maximum of the loads in the included period.
- Rolling average: the updated unadjusted baseline for an operating day is equal to 0.9 times the prior unadjusted baseline plus 0.1 times the most recent included day.

Dynamic Baseline General Principles

Common element of a dynamic baseline

Baseline adjustments:

An additional calculation applied after the basic Calculation Type, to align the baseline with observed conditions of the event day. Factors used for adjustment rules may be based on, but are not limited to: temperature, humidity, calendar data, sunrise/sunset time and/or event day operating conditions. Examples of baseline adjustments include:

- Additive: add a fixed amount to the provisional baseline load in each hour, such that the adjusted baseline will equal the observed load at a time shortly before the start of the event period.
- Scalar: multiply the provisional baseline load at each hour by a fixed amount or scalar, such that the adjusted baseline will equal the observed load on average during a time window shortly before the start of the event period.

Adjustment window:

The period of time for which the adjusted baseline matches the observed load. Examples of adjustment windows include:

- The hour before the event (hour -1).
- The 2 hours before the event (hours -1 to -2).
- The two hours that end two hours before the event (hours -3 to -4).

Dynamic Baseline Design Principles for WA

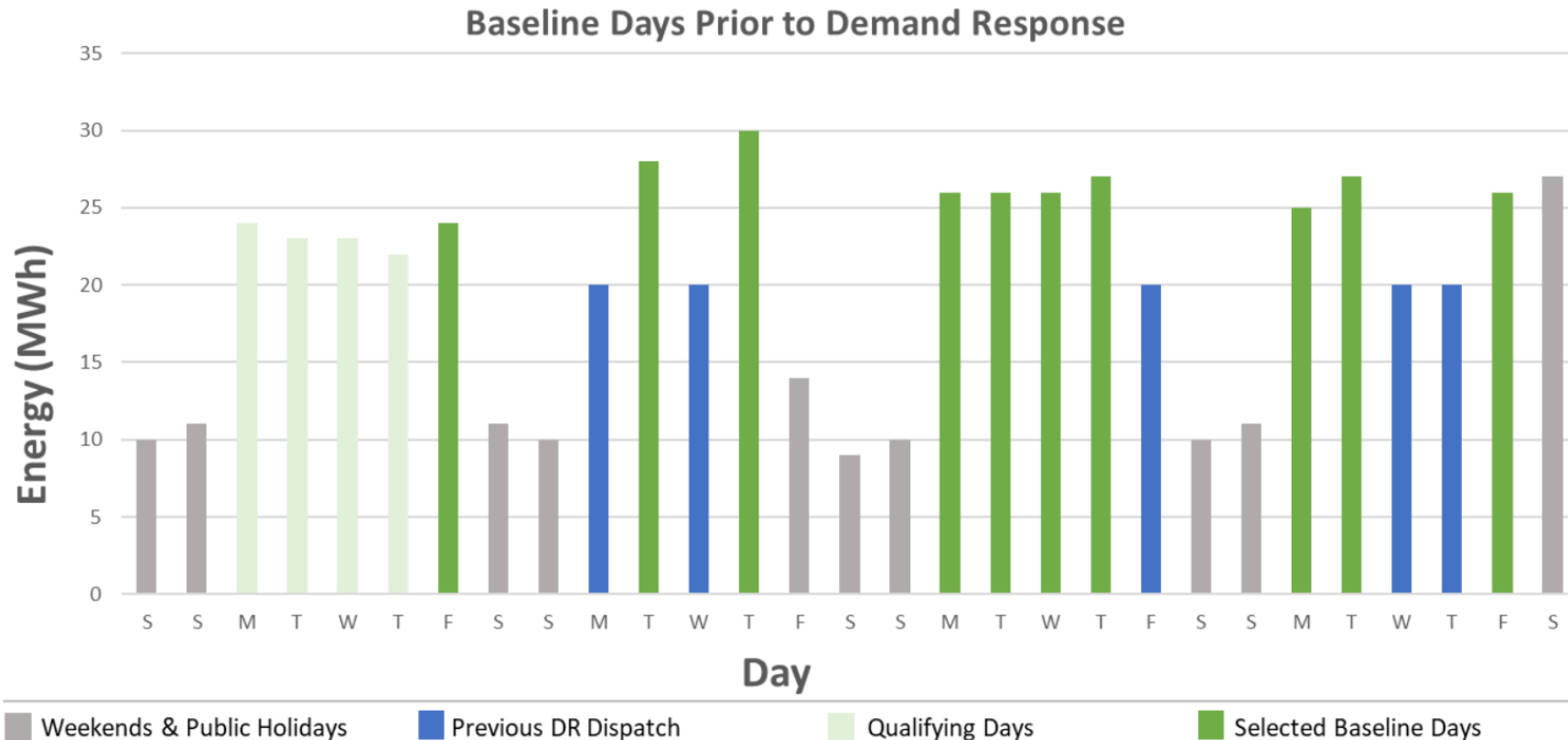
Developing a dynamic baseline for WA - the following design principles were considered

1. Minimise time and cost to implement
2. Allows for as wide participation as possible including aggregation of smaller loads
3. Align with the NEM as much as possible and practical
4. Closely reflect and predict the underlying load
5. Simple and understandable approach
6. Proven concept used by other markets
7. Ensure the approach can be used consistently with other WEM components

Proposed Dynamic Baseline approach for WEM

Design Element	Proposed Approach
X of Y method	10 of 10
Baseline window	10 most recent eligible non-event days
Exclusion rules	Exclude weekends and DSR event days
Calculation type	Average value
Baseline adjustments	Scalar – 20% cap for upward adjustment, uncapped for downward adjustment
Adjustment window	2 hours looking back from the DSR dispatch notice
Ex-post review	Ex-post review only if changes to associated meters or updated meter readings

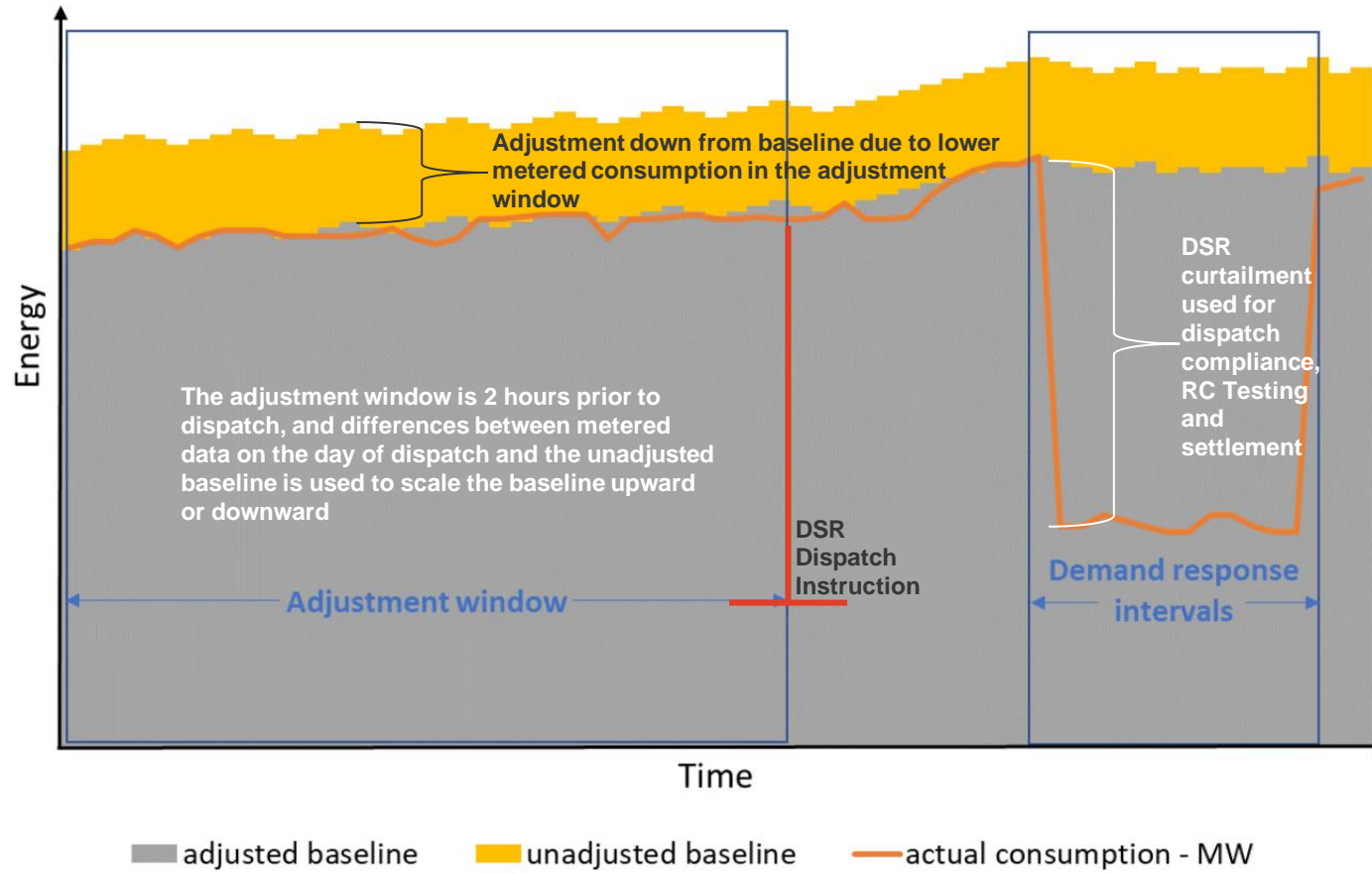
Proposed approach – an example



- A qualifying day must satisfy requirements such as not having been dispatched or tested for demand response on that day, or not being a weekend or public holiday.
- **Question: Are there any other days that should be considered a non-qualifying day?**

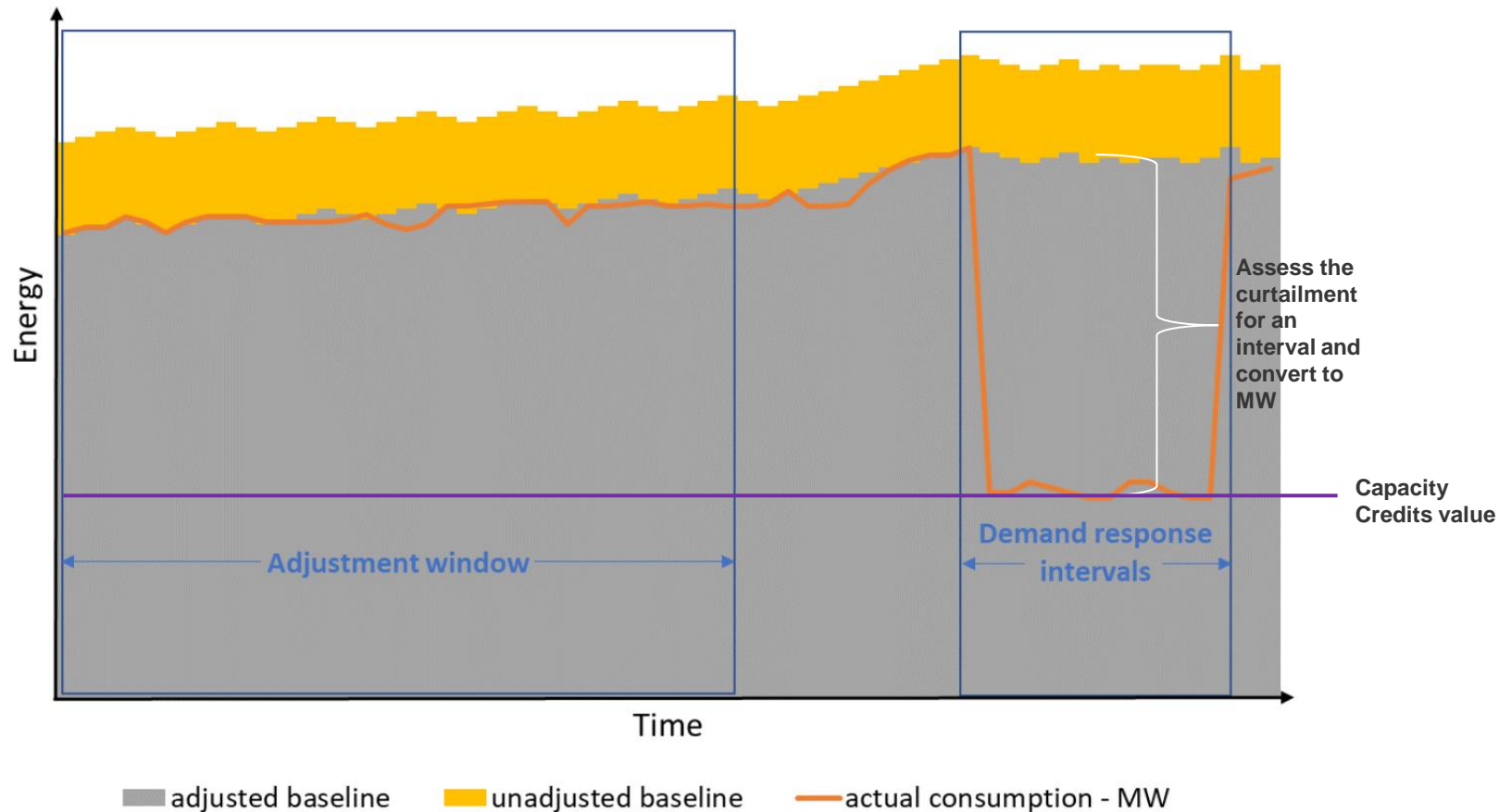
Proposed approach in practice

Unadjusted baseline to adjusted baseline



- For the dispatch compliance and settlement when a DSP received a dispatch notice, an adjusted baseline energy is derived from the DSP meter data from the previous 10 qualifying days ex-post

Dynamic baseline and RCM



- A dynamic baseline measures performance in MWh and for RCM purposes it's required to convert each individual interval's MWh demand into MW, rather than looking at the MWh recorded across all of the demand response intervals

US ISOs

Baselines and Adjustments by ISO and Product Type:

ISO	Demand Response Product/Service Type				Baseline	Adjustment
	Energy	Capacity	Reserve	Regulation		
CAISO	✓		✓		Caiso-10-in-10	Scalar
ERCOT		✓			ERCOT-Regression	Scalar
ERCOT		✓			ERCOT-Mid 8-of-10	Scalar
ERCOT		✓			ERCOT-Matching Day Pair	Scalar
ISO-NE		✓			ISO-NE 90/10	Additive
MISO	✓	✓			MISO-10-in-10	Option of None, Weather-sensitive or Multiplicative
NYISO	✓	✓			NYISO 5-of-10	Option of None, Weather-sensitive or Multiplicative
PJM	✓	✓			PJM 4-of-5	Option of None, Weather-sensitive or Additive

US ISOs

Weekday “X of Y” Baselines Used by US ISOs:

ISO	Baseline name	Average of	Out of
CAISO, MISO	10-in-10	10 most recent weekdays	10 most recent weekdays
ERCOT	Mid 8-of-10	10 most recent weekdays, dropping highest and lowest kWh days	10 most recent weekdays
NYISO	5-of-10	5 highest kWh days	10 most recent weekdays
PJM	4-of-5	4 highest kWh days	5 most recent weekdays

US ISOs

Weekend “X of Y” Baselines Used by US ISOs:

ISO	Baseline name	Average of	Out of
CAISO, MISO	10-in-10	4 most recent weekend days	4 most recent weekend days
ERCOT	Mid 8-of-10	10 most recent weekend days, dropping highest and lowest kWh days	10 most recent weekend days
NYISO	5-of-10	2 highest kWh weekend days	3 most recent weekend days
PJM	4-of-5	2 highest kWh weekend days	3 most recent weekend days

Australian NEM – Baseline Methodology Used

Baseline methodology is based on the CASIO “10 of 10” baseline methodology.

Accuracy threshold of 20% - Relative Root Mean Squared Error (RRMSE)

Bias threshold of $\pm 4\%$ - Average Relative Error (ARE)

Uses an on-the-day multiplicative adjustment capped at $\pm 20\%$.

Multiplicative adjustment is the difference between the actual consumption during the adjustment window in the unadjusted baseline and event day consumption, expressed as percentage of the baseline, subject to cap.

Adjustment window comprise the trading intervals in the 3 hrs which end 1 hour before the first Wholesale Demand Response (WDR) trading interval.

DSRPs can choose from 4 baseline methodologies:

- i. Business days (Business Days Methodology)
- ii. Non-business days (Non-Business Days Methodology)
- iii. All days (All Days Methodology)
- iv. Business days + non-business days composite (combination of (i) and (ii)) (Composite Days Methodology).

Allows a process for developing new methodologies (such as those suited to temperature driven loads).

Register of methodologies used – allows modification of parameters (e.g. accuracy threshold) at the register (not policy or rule) level.