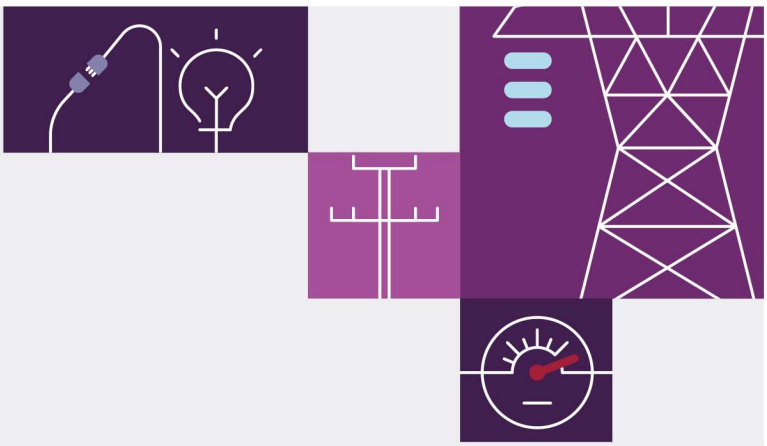
AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

Appendix 2. Stakeholder Engagement

June 2022

Appendix to the Scheduled Lite: Draft High Level Design Consultation Paper



Important notice

Purpose

This is Appendix 2 to Scheduled Lite: Draft High Level Design Consultation Paper, available at https://aemo.com.au/initiatives/trials-and-initiatives/scheduled-lite

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Version control

Version	Release date	Changes
1.0	21/06/2022	Initial consultation version

AEMO acknowledges the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters and culture. We pay respect to Elders past, present and emerging.

A2. Stakeholder Engagement: Feedback Summary

AEMO held a series of workshops to engage with stakeholders via the *Distributed Energy Resources Market Integration Consultative Forum (MICF)*[1]. The engagement has provided valuable feedback on the proposed design of Scheduled Lite.

Key Feedback/comments[2] that supported the development of the proposed Scheduled Lite design, along with AEMO responses, are summarised in Tables below[3].

Table 1 Visibility Model Feedback

Design Element	Feedback provided	AEMO response
Participation	Please clarify the value of having a secondary connection point, and what is the value of separating of price responsive resources for the visibility model?	Participants will not be required to establish a secondary connection point to participate in the Visibility Model unless they choose to do so (that is, via Flexible Trader Model 2 if a rule change is made by the Australian Energy Market Commission [AEMC] to enable it or via Flexible Trader Model 1 which is being implemented as part of the Integrating Energy Storage Systems [IESS] rule change). AEMO is considering a range of models to enable broad participation in the Visibility Model and will continue to seek feedback from stakeholders on potential options as the model develops. AEMO expects that the value in separating controllable resources from passive resources is the ability for the participant to more accurately forecast those controllable resources (and in the case of the dispatch model – to better conform to dispatch instructions). If a participant is able to forecast its consumption and generation at a single connection point (i.e. controllable and passive resources) within a performance tolerance band then AEMO expects this type of participation should be facilitated.
	"How does this deal with the fact that flex assets may not be accessible all of the time, and could switch between non-flex and flex depending on customer preferences?"	The proposed design enables two alternatives for this situation: • On a bottom-up basis - the participant could reflect the change in the forecast information through their indicative bids as appropriate. • At a portfolio level - the proposed operating model would provide the participant with the option to opt-in (active) or opt-out (passive), which the participant can utilise as appropriate.
	"Parent/child type arrangements may throw up some commercial challenges with regard to impacts on network charges. Particularly as we see trials of new network tariff structures aimed at price responsive and exporting resources."	Allocation of network charges is a key consideration for the Flexible Trading Arrangements rule change proposal. AEMO has noted a range of options in its high-level design for the AEMC's consideration.
Registration	"Standalone Power Systems (SAPS) or non-National Electricity Market (NEM) microgrid	AEMO will give further consideration to implications for SAPS and microgrids.

[1] Transitioning from AEMO's existing Virtual Power Plant (VPP) Demonstrations Frequently Asked Questions (FAQ) working group, this aggregator- and retailer-focused forum engages with aggregators, retailers, and stakeholders directly impacting or impacted by Distributed Energy Resources (DER) integration into markets.

[2] Emphasising on the feedback received in the last DER MICF workshop on the 30th March 2022, where an overview and high-level designs for the Visibility Model and the Dispatchability Model were presented to DER MICF members.

[3] The Tables address the associated comments by Model and Design elements. Please note that some comments were merged with other comments of the same nature, into an overview of feedback comment. Specific comments can be identified by quotation marks.

	Vendor may still provide service. Network may advertise SAPS opportunities"	
	"Could you clarify: Are you saying that to participate you must be registered as a Market Customer, Integrated Resource Provider (IRP) or Generator? E.g. if you're currently a <5MW, unregistered generator, you'd have to register as a Generator to participate? "	Participants wishing to participate in the Visibility Model would need to: • Register (or be registered) as a participant under the National Electricity Rules (NER) Framework according to its eligibility (e.g. as a Market Customer, IRP or Generator). • Register the resource(s) as a 'Visibility Unit' (per zone) • Classify connection point(s) within portfolio into a 'Visibility Unit'.
	"Would classification of connection point mean it could not be classified for other purposes? E.g. classification as Wholesale Demand Response Unit (WDRU), or ancillary service load/generating unit? Framework appears to only deal with responsiveness to wholesale prices, not provision of other services. Unclear how this interacts with other services and market participant categories."	The classification of a connection point as a 'Visibility Unit' is not an exclusive classification, therefore a connection point classified as 'Visibility Unit' could also be classified for other purposes.
	What is meant by a zonal aggregation? Some stakeholders expressed a preference for a regional aggregation to take into account the relationship between data reliability, compliance and cost.	The model outlined proposes the aggregation of connection points by zone. A 'zone' for the purpose of Scheduled Lite has not been defined – however, we expect approach would be consistent with Wholesale Demand Response (WDR) – multiple zones per region reflecting key transmission constraints and consistency with demand forecasting and Projected Assessment of System Adequacy (PASA) processes. It is proposed that the zonal approach to aggregation is supported by a level of automation for registration processes as there could be thousands of connection points within a participant's zonal aggregation. AEMO is assessing 'Zone definitions' as part of the Short Term Projected Assessment of System Adequacy (ST-PASA) Replacement Project. Aspects being considered as part of the zone definitions are: • Feasibility of implementation within existing Demand Forecasting System and existing workflows/processes • Network configuration • Load centres, specifically weather-responsive load • Industrial loads • Weather station locations • Climate zones
Integrating Information into Market Processes	What are the benefits of improving visibility i.e. what are the Distributed Energy Resources (DER) risks if such a model isn't introduced	AEMO expects information relating to price responsive resources will become increasingly important to the accuracy and effectiveness of short-term operations for AEMO, Distribution Network Service Providers (DNSPs) and Market Participants as aggregated portfolios of DER grow in size and as a portion of dispatchable resources across the NEM. For AEMO, indicative bid information for price-responsive resources could be incorporated into demand forecasting processes, and in turn, utilised in pre-dispatch, STPASA as well as operational activities that include interventions for power system security. For market participants, greater transparency of price-responsive resources and more accurate short-term forecasts are likely to aid commitment decision making across the short-term operational horizon. An inability to accurately incorporate price-responsive resources into the NEM short-term operations may result in a need to apply higher network limits, maintain higher security margins across the

		grid and hold higher operating reserves, and as a consequence such activities would result in higher costs to consumers. As part of previous Virtual Power Plant (VPP) trials, AEMO undertook an assessment of what operational data is required to facilitate participation of very large DER aggregation portfolios without causing negative impacts on power system reliability and security. An extract of the outcomes cited that *"From an operational perspective, AEMO requires visibility of the controllable resources in a VPP portfolio"*[4]. Please find further information in the VPP demonstration knowledge sharing reports.
Incentives and Compliance	There would be a cost to the customer and the DER trader associated with participation in the Visibility Model. The potential incentives may not be sufficient to warrant participation, and it may be complex to communicate the benefits and participation requirements to customers. Clarity of the compliance arrangements are required so that participants can better assess the merits of participation.	AEMO notes these comments and agrees that the success of the mechanism will be dependent on establishing incentives and value to consumers and balancing these against the costs. This balance will be challenging for the Visibility Model as the benefits of participation accrue to the market more generally (more accurate demand and price forecasts) rather than to participant or customer. The key focus areas for the high-level design process include: • **Returns** from market access, including potential provision of existing and future system services, reducing non-energy cost allocation. • **Costs** of telemetry, metering, forecasting and monitoring associated with participation. • **Risks** of market exposure, including civil penalty regimes • **Opportunities** for and implications of a staged approach to the implementation of Scheduled Lite models. Further consideration is required of the appropriate incentives e.g. AEMO is assessing the potential of a capability payment type for participation in the model which could apply at times / regions where greater visibility enhances secure power system operation. AEMO will also undertake further engagement with consumer groups to gain insights on Scheduled Lite communication and incentives.

Table 2 Dispatchability Model Feedback

Design Element		Summary of Feedback	AEMO response
Element	Item		
Participation and Registration	Level of aggregation	A zonal aggregation could potentially be costly and complex to implement. Some stakeholders suggested a regional approach and then split to zonal if required	AEMO proposed that the Zonal level of aggregation and threshold eligibility will be considered further to be consistent with the work being undertaken by AEMO on defining 'Zone definitions' in the STPASA replacement project. (See answer Visibility Model > Registration>what is meant by a zonal aggregation?) AEMO expects a level of automation will be required to assist participants with their portfolio management and avoid the need for manual re-registrations of connection point information.
	Threshold eligibility (e.g. minimum 1 MW size of aggregation for participation)	• Direct link to the level of aggregation that is decided i.e. "It depends on the size of the zones" • To take into account constraint areas (i.e. link to Dynamic Operating Envelope [DOE])	
	Participation via Standard Connection Point or Secondary Connection Point	• The benefits/advantages of having a second connection point are unclear • Participation via standard connection point should be an option	The ability to establish a second connection point (through either Flexible Trader Model 1 or 2) enables customers to separate their controllable resources and have them managed and recognised

[4] AEMO. NEM Virtual Power Plant Demonstrations, Knowledge Sharing Report #4, September 2021, available at https://www.aemo.com.au/-/media/files/initiatives/der/2021/vpp-demonstrations-knowledge-sharing-report-4.pdf?la=en&hash=B79987047DD4B55764C2BEB90D51B615

Design Element		Summary of Feedback	AEMO response
Element	Item		
			independently from their passive load in wholesale settlement, potentially by a separate provider. Whilst this is one potential model for participation in Scheduled Lite, AEMO is considering a range of options including participation via the standard connection point (where technical requirements can be met). AEMO will continue to seek feedback from stakeholders on these options.
Data Exchange	Data Exchange	"Project Energy Demand and Generation Exchange (EDGE) Cost Benefit Analysis (CBA) is considering Data hub costs, will that analysis feed into this process?"	Project EDGE will continue to inform the Scheduled Lite design, rule development and eventual implementation.
Dispatch	Bid granularity	• Direct link to the level of aggregation • Benefits definitely do not stack up at a small scale • To consider National Electricity Market Dispatch Engine (NEMDE) capabilities on managing large number of Dispatch Unit Identifiers (DUIDs) and the associated cost of doing so • To consider consistency	AEMO notes these comments to reinforce the ongoing work in defining zones, in order to ensure consistency between the different elements of the Dispatchability Model; i.e. the level of aggregation and threshold eligibility. (See answer Dispatchability Model> Participation and Registration>level of aggregation)
Incentives and Compliance	Incentives and Compliance	• Participation in future markets is not an immediate incentive • Enabling participation in Regulation Frequency Control Ancillary Service (FCAS) markets is potentially a valuable incentive. • Please clarify potential avoidance of Reliability and Emergency Reserve Trader (RERT) costs. • It may be challenging to settle benefits that accrue to a DER Trader operating at a secondary connection point.	AEMO takes note of these comments as part of ongoing work to assess/identify/apply potential incentives to participants wishing to take part in the Dispatchability Model.
		Please clarify who is going to undertake compliance	AEMO expects that compliance with dispatch instructions will be monitored by the Australian Energy Regulator (AER). However, further consideration of appropriate compliance arrangements is required – for instance, a participant may be compliant if it meets a certain performance threshold specific to Scheduled Lite Dispatch units.

Table 3 Opt-in Arrangement and Other considerations

Design Element	Feedback Overview	AEMO response
Operating Model – Opt-in Arrangement	• As a voluntary scheme, opt-in/opt-out is essential • Please give further consideration to the potential for a DER Trader to switch between the Visibility Model and Dispatchability Model. • To consider the opt-in arrangement as an approach to addressing portfolio scale issues	AEMO notes these comments and will further assess the Opt-in arrangement.
Other considerations	"The IEC Systems Committee on Smart Energy currently has two new pieces of work to look at Market Architecture including VPPs and bidding of DER."	AEMO notes this comment and will review the IEC work to guide future development of the Scheduled Lite models.

Glossary

The following is a list of abbreviations used in this document.

Term	Definition
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CBA	Cost Benefit Analysis
DER	Distributed Energy Resources
DOE	Dynamic Operating Envelope
DSNP	Distribution Network Service Provider
DUID	Dispatch Unit Identifier
EDGE	Energy Demand and Generation Exchange
FAQ	Frequently Asked Questions
FCAS	Frequency Control Ancillary Service
FTA	Flexible Trading Arrangements
IEC	International Electrotechnical Commission
IESS	Integrating Energy Storage Systems
IRP	Integrated Resource Provider
MICF	Market Integration Consultative Forum
NEM	National Electricity Market
NEMDE	National Electricity Market Dispatch Engine
NER	National Electricity Rules
PASA	Projected Assessment of System Adequacy
RERT	Reliability and Emergency Reserve Trader
SAPS	Standalone Power Systems
ST-PASA	Short Term Projected Assessment of System Adequacy
VPP	Virtual Power Plant
WDR	Wholesale Demand Response
WDRU	Wholesale Demand Response Unit