

Stakeholder workshop – minutes

Subject of the meeting	Stakeholder forum to discuss the Customer export curtailment value methodology		
AER parties	Eric Groom (Chair), Kris Funston, Pat Devlin		
Other parties	Oakley Greenwood: Lance Hoch, Rohan Harris Endgame Economics: Oliver Nunn Cadency Consulting: Anthony Seipolt External event with 30+ stakeholder attendees		
Date	23 February 2022		
Time	14:00 – 16:00 AEDT		
Phone to <input type="checkbox"/>	Phone from <input type="checkbox"/>	Meeting <input type="checkbox"/>	Other MS Teams <input checked="" type="checkbox"/>

Presentations

A copy of the presentation slides is available on the AER website.

Introduction (AER)

Kris Funston (Executive General Manager for Network Regulation) welcomed all attendees, delivered the acknowledgement of country and outlined housekeeping procedures for the workshop.

Eric Groom (AER Board Member) discussed the work done so far on the development of the Customer export curtailment value (CECV) methodology, as well as its relationship with DER-related guidance, including the Value of DER (VaDER) methodology study, DER integration expenditure guidance note and the export tariff guideline.

Pat Devlin (Assistant Director Network Regulation) discussed the key issues raised in the AER's issues paper on the CECV methodology, and summarised stakeholders' responses to these issues. These key issues included:

- DER value streams—this includes consideration of what the CECV should value and why. The AER's initial view was that the CECV should focus on wholesale market value streams, with distribution network service providers (DNSPs) permitted to quantify other value streams themselves (such as network sector value streams). It was noted that some stakeholder submissions suggested the inclusion of additional value streams, such as for intangible benefits or based on customer willingness-to-

pay, either in the CECV estimation or alternatively permitted under the AER's DER integration expenditure guidance note.

- Curtailment—this includes how curtailment is defined in the context of estimating CECVs. The AER's initial view was that the impact of curtailment could be modelled at a macro level by estimating the impact on wholesale market value streams if there are more or less DER exports relative to an expected level. It was noted that some stakeholder submissions sought clarity on what we mean by curtailment, recognising that export curtailment can occur for a range of reasons and not just due to overvoltage issues.
- The time-varying nature of CECVs—this includes recognition that changes in generator dispatch costs vary according to time of day and season. The AER's issues paper sought views on how values that may vary considerably over time should be aggregated for the purpose of demonstrating the value of a proposed DER integration investment. It was noted that stakeholder responses generally supported estimating CECVs at a granular level, however practical issues regarding the use of CECVs were to be resolved.
- The locational nature of CECVs—based on the AER's initial view that CECVs capture wholesale market value streams, the AER suggested that CECVs should only vary by NEM region and are not more granular in nature. It was noted that most stakeholder responses agreed that this approach was sensible.
- Modelling issues—this includes the tools we use to estimate CECVs and the inputs and assumptions necessary. The AER's issues paper sought views on whether electricity market modelling should be undertaken or whether shorthand methods should be applied. It was noted that, in general, most stakeholders supported the AER undertaking electricity market modelling for estimating wholesale market value streams.

#	Question/comment	Response
1	Noting the AER's position on which value streams should be included in the CECV methodology, will there be more engagement on the DER integration expenditure guidance note before it is finalised? Will the AER's draft CECV methodology indicate the AER's position on the potential inclusion of additional value streams?	The AER's draft CECV methodology (due for publication in April 2022) will indicate the AER's position on the potential inclusion of additional value streams under the DER integration expenditure guidance note. At this point the AER will consider whether further engagement on the matter is necessary.
2	Will the release of the draft methodology include a release of values as well?	Yes, the draft CECV methodology will include values.
3	The CECV methodology scope is too narrow in focus, and other value streams based around customer willingness-to-pay and intangible benefits should be considered.	The CECV methodology is focused on wholesale market value streams (in particular, measuring changes in generator dispatch cost) as this is the primary benefit of DER integration identified by DNSPs so far in expenditure proposals.

		<p>The Value of DER methodology study and the AER's draft DER integration guidance note both comment on the usefulness of willingness-to-pay studies in the context of valuing the benefits of DER integration. In short, they are useful for the purpose of calculating values of customer reliability because there are no realistic substitutes for reliability (and therefore no methods for estimating the value placed on reliability). Exports from DER substitute for (displace) centralised electricity generation, and therefore it is possible to model the impact of this (in terms of costs/benefits to customers) rather than ask customers via a willingness-to-pay-survey.</p> <p>Willingness-to-pay surveys may be useful for estimating the value of other DER value streams, provided the values ultimately accrue to consumers and producers within the electricity system.</p>
4	How will the CECV methodology apply to Power and Water Corporation (in the Northern Territory), noting that it does not operate in the NEM?	The AER will consider in its draft CECV methodology how Power and Water Corporation should estimate wholesale market value streams for DER integration, noting that a methodology that models the operation of the NEM will not be applicable.
5	Distribution networks should not be precluded from considering customer voice and preferences when developing their expenditure plans, and AER guidance should reflect this.	See responses to #1 and #3.

Presentation (Oakley Greenwood)

Lance Hoch (Executive Director, Oakley Greenwood) introduced the project team, comprising:

- Oakley Greenwood – responsible for overall project direction, inputs to wholesale market modelling and the development of the DNSP model.
- Endgame Economics – responsible for wholesale market modelling.
- Cadency Consulting – responsible for technical input on DER enablement and network investment projects.

The relationship between project outputs and the regulatory process were discussed.

Market modelling to determine CECV

Oliver Nunn (Managing Director, Endgame Economics) provided an overview of the market modelling process and discussed the various inputs needed for wholesale market modelling using PLEXOS. It was noted that energy related to dispatch cost and the resource cost related to the provision of essential system services would be modelled, but the investment cost (in generation capacity) would not be. This investment cost component was suggested as a potential future improvement to the model, along with new essential system services.

The DNSP model – Initial design ideas

Anthony Seipolt (Specialist Advisor, Cadency Consulting) introduced the concept of the DNSP model by discussing potential DER integration investment cases and how these would be catered by the model.

Rohan Harris (Senior Energy Economist, Oakley Greenwood) discussed three broad approaches the project team is considering for packaging wholesale market values into the DNSP model. These included:

- A string of half-hourly value for each year in the analysis period for each region
- Wholesale values developed for a set of “characteristic day” types
- Ranking characteristic days based on when curtailment is likely to occur.

Examples were provided for how each approach would work in practice.

Following a question-and-answer session, the project team sought written feedback for immediate consideration on the issues discussed, including the DNSP model, the concept of “characteristic days” and the ranking of these.

#	Question/comment	Response
6	How will the DNSP model work? How will it capture negative prices allowed by the project?	Prices are not the focus of the model – instead the model will be based on dispatch costs. The DNSP model still relies on DNSPs providing a curtailment alleviation profile specific to the investment project, to identify the value of avoided dispatch cost at particular times. Where ‘alleviation profile’ reflects the amount and timing of the curtailment alleviated by the project (i.e., the incremental export allowed by the project).
7	Will model outputs be half-hourly, based on model dispatch?	Yes, model outputs will be half-hourly. The model captures the avoided variable operation and maintenance costs (SRMC) due to the incremental export -- not the reduced revenue to the wholesale market (or the generator). That is, the modelling will reflect the change in wholesale energy production

		cost (rather than the change in wholesale energy price).
8	How far into the future will values be estimated? How will the AER account for terminal asset values?	Values will be estimated over a 20-year time horizon. The draft CECV methodology will provide the AER's views on the appropriateness of proposing terminal asset values.
9	How will the model account for changes in transmission investment?	<p>The model includes transmission network representation as per the draft 2022 ISP and includes future transmission and generation expansion path from the ISP as fixed inputs.</p> <p>The "marginal approach" means currently we do not model GX and TX investment, and the CECVs do not include these components. In the future GX investment could potentially be included (but would require an alleviation profile and volume to be included in the wholesale modelling). However, such an approach would be very computationally intensive, and therefore the materiality of the incremental value likely to be obtained from this analysis would need to be considered in light of the added expense and time the analysis would require. At present, our view is that modelling TX expansion would likely not be justified by the materiality of the value stream involved.</p>
10	If DER exports from solar PV generation eventually lead to the displacement of other solar generation, the value of further DER exports will become very low. What other values streams will encourage further DER integration?	<p>The installation of solar PV will have diminishing returns if exports are assumed to be based solely on an uncontrolled solar PV generation profile. There will be a loss factor change, with some increment in value for this.</p> <p>We are open to suggestions from stakeholders on any other value stakeholders consider that DER exports provide that this approach is not capturing beyond those value streams already considered.</p>
11	When solar PV generation displaces other solar generation, the additional value will be created by the ability of	The alleviation profile is the mechanism by which the DNSP nominates the incremental impact of its project. The DNSP should justify its analysis and rationale for the profile it proposes for

	batteries to charge during the day and discharge during peak periods.	each project (or how/why the proposed project has the impact on characteristic days that the DNSP has claimed).
12	Why does the model need to consider the potential investment cases that DNSPs may propose?	The options provide shortcuts for both the DNSP in proposing expenditure and the AER in assessing expenditure. Under option 1 (the string of half-hourly values) it may be labour intensive for the DNSP to develop such a detailed alleviation profile for a period up to 20 years.
13	The example discussed did not consider potential thermal constraints arising from just passive PV (not just because of VPPs).	Thermal constraints will be included as a reason for a DNSP to propose a capex project that would result in incremental DER export. The DNSP will accommodate this.
14	Observation that network's alleviation profiles will need to consider the overlay of export tariff signals and the resultant change in export habits. Noting that it is retailers that see the wholesale benefit the CECV is modelling and there is a question whether those retailers pass that benefit back to consumers.	Comment was noted.
15	I'm not sure average demand (vs volume) based thresholds like this make sense at a system level, given the constraints we are talking about alleviating are typically locational.	A DNSP might be doing something in a particular location to relieve a local constraint but the wholesale market value depends on the production cost in the wholesale market at that time. Therefore, we need to align when that export occurs to costs in the wholesale market.
16	DNSPs will be limited by their capability to model the proposed intervention (noting that networks had so far done this on an annual basis).	Stakeholders are invited to provide feedback or alternative approaches however some form of profile of intervention will be needed as an input.

Next steps (AER)

Pat Devlin noted that the AER plans to publish the draft CECV methodology and values in April 2022, and stakeholders will have an opportunity to formally respond at this stage.

(Stakeholder workshop ends)