



30 November 2023

Ausgrid's 2024-29 Revised Proposal

# Attachment 5.7: CER Augmentation Business Case

Empowering communities for a resilient,  
affordable and net-zero future.



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# 1. CER augmentation

## 1.1 Our revised forecast

Ausgrid’s customer energy resources (**CER**) integration program identified a series of capability gaps we need to close to deliver the outcomes that our customers expect. One significant challenge relates to the efficient management of curtailment and overload risks, given the projected growth in CER penetration and EV load. To address this challenge, we proposed CER augmentation expenditure of \$47.1 million for the 2024-29 period in our Initial Proposal, which equates to an average expenditure of approximately \$9.5 million per annum.

The Australian Energy Regulator’s (**AER**) Draft Decision reduced our Initial Proposal CER augmentation expenditure from \$47.1 million to \$8.0 million. The AER explained that its alternative forecast is based on Ausgrid’s traditional augmentation expenditure for activities such as distributor upgrades and tap changes, which it considered to be a prudent amount for “business as usual” (**BAU**) activities.<sup>1</sup>

In this Revised Proposal, our updated CER augmentation expenditure is \$37.2 million for the 2024-29 period. In preparing this revised forecast, we have addressed the detailed modelling issues raised by the AER and its consultant, EMCa.

Table 1: Our revised CER augmentation expenditure

Program / project	Proposals in \$m, real FY24		
	Initial Regulatory Proposal	Draft Decision	Revised Regulatory Proposal
CER augmentation	47.1	8.0	37.2

1 AER, Draft Decision, Ausgrid distribution determination 2024–29, Attachment 5 – Capital expenditure, page 46.

## 1.2 AER’s Draft Decision

**Table 2** sets out the issues raised by the AER in its Draft Decision and an explanation of how we have responded to that feedback. To explain the issues and our response as concisely as possible, we have grouped the AER’s feedback under the following topics:

- **Modelling approach:** The AER expressed concern that Ausgrid’s modelling approach led to proposed CER augmentation expenditure that exceeded the prudent and efficient amount.
- **Estimating the value of future curtailment:** The AER identified several issues that may have led to Ausgrid over-estimating the value of future curtailment. Any over-estimate of this value may result in proposed CER augmentation that is not warranted.
- **Prudent and efficient CER augmentation in the face of uncertainty:** EMCa commented that uncertainty regarding the medium to long term impact of increased CER penetration on the LV network means that investing in traditional network assets with technical lives of over 40 years should be avoided or deferred where practicable. Given this stranded asset risk, the AER’s Draft Decision concluded that an alternative CER augmentation allowance based on Ausgrid’s historical levels of expenditure would be prudent and efficient.

**Table 2** provides a high level summary of the principal feedback received in relation to each of these topic areas and how we have responded. As noted in **Table 2**, further detailed information is provided in the subsequent sections.

*Table 2: What we heard and how we’ve responded*

Topic	AER’s Draft Decision	How we have responded
<b>1. Modelling approach</b>	<p>The three investment options considered by Ausgrid involve significant levels of augmentation. The base case scenario includes \$47.3 million of augmentation expenditure and the preparatory investment option includes \$60.6 million of augmentation expenditure. [...] we do not consider that these levels of augmentation expenditure are justified due to overstated benefits.<sup>2</sup></p>	<p>To address the AER’s concern, we have reconstructed the options analysis so that the “base case” is redefined as a “do nothing” case with minimal levels of expenditure. By recasting the options analysis against a “do nothing” base case, we can examine the outcomes associated with much lower levels of augmentation expenditure.</p> <p>Our Revised Proposal modelling approach is discussed in further detail in <b>Section 1.3</b>.</p>

<sup>2</sup> AER, Draft Decision, Ausgrid distribution determination 2024–29, Attachment 5 – Capital expenditure, page 44.

Topic	AER's Draft Decision	How we have responded
2. Estimating the value of future curtailment	<p>The AER considers curtailment as overstated by applying annualised customer export curtailment value (<b>CECV</b>) values.<sup>3</sup></p>	<p>We agree that the better approach is to adopt a more granular application of the CECV data to annual forecast volumes, rather than interpolated volumes. As described in <b>Section 1.4.1</b>, we have now adopted a more granular approach and incorporated the revised results in our cost benefit analysis and adopted the AER's 2023 CECVs.</p>
	<p>The AER and EMCa indicate 253V is a conservative trigger to calculate customer curtailment in the context of AS4777.2:2020, which has the effect of over-estimating the extent of curtailment.<sup>4</sup></p>	<p>To address the issues raised by EMCa, we have updated our approach to model the operation of the inverter standard on curtailment. We engaged the University of Wollongong to independently confirm our approach to calculating curtailment is consistent with AS4777. Further information is provided in <b>Section 1.4.2</b>.</p>
	<p>EMCa was critical of Ausgrid's approach to quantifying reliability benefits. It noted that Ausgrid has applied the value of customer reliability (<b>VCR</b>) to assumed avoidance of being unable to fully serve electric vehicle charging loads "on demand". EMCa viewed Ausgrid's approach as inconsistent with the intent of VCR, resulting in a considerable overstatement of this assumed benefit. EMCa concluded that this is better recognised as "deferred supply" of energy than as "unserved" energy, and it would expect the per-kWh cost of such deferral to be considerably less than the VCR.<sup>5</sup></p>	<p>EMCa raise a valid point regarding the application of the VCR where electric vehicle (<b>EV</b>) load can be switched to other periods. However, the extent to which EV load can be switched in this way is much more limited than EMCa assumes. Additionally, the primary risk driver is interruption of supply, which affects all customers. We have applied VCR to affected customers under the real world example where a fuse blows on an LV distributor interrupting supply for all customers until the fault is found, EV chargers isolated and the distribution fuse replaced.</p> <p><b>Section 1.4.3</b> provides further information on our updated modelling of the costs associated with EV load to address the issues raised.</p>

3 AER, Draft Decision, Ausgrid distribution determination 2024–29, Attachment 5 – Capital expenditure, page 45.

4 Ibid, page 42.

5 Ibid, page 43.

Topic	AER's Draft Decision	How we have responded
<b>3. Prudent and efficient investment plans in the face of uncertainty</b>	EMCa noted that there is significant uncertainty about the medium to long term utilisation of the LV network given the potential for energy self-sufficiency via energy storage. Therefore, it suggested that investing in traditional network assets with technical lives of over 40 years should be avoided or deferred where practicable. <sup>6</sup>	We agree with EMCa that there is significant uncertainty regarding the future growth of CER and its impact on the CER network. However, we have compelling evidence of voltage issues already emerging on the network, as noted above. Our modelling outcomes also supported a short realisation of benefits for the majority of these investments. This Revised Proposal provides further background and better context for our CER augmentation expenditure proposal, which is discussed in <b>Section 1.5</b> .
	The alternative estimate is based on Ausgrid's traditional augmentation expenditure for activities such as distributor upgrades and tap changes. We consider this is a prudent amount for BAU activities. <sup>7</sup>	We have responded to the AER's alternative estimate for Ausgrid's augmentation expenditure by examining the costs and benefits of this option in updated modelling. The results of this analysis are presented in <b>Section 1.5</b> .

As noted in **Table 2**, further information on each topic is provided below. This further information also responds to issues raised by EMCa, where these issues are relevant to the AER's reasoning and conclusions in its Draft Decision. **Section 1.5** concludes by explaining why our revised proposal for CER augmentation expenditure is prudent and efficient, having regard to the modelling results, our existing level of compliance and our customers' expectations.

### 1.3 Modelling approach

Ausgrid's CER integration program in the initial proposal was supported by a spreadsheet model which examined three options, which are described below.

#### Option 1: Base case

This option integrates CER augmentation expenditure using our current business settings, including a set of assumptions around existing and proposed tariffs. It applies traditional network augmentation as the primary means to alleviate CER curtailment. Investment activities are economically justified based on the value of alleviated forecast customer curtailment.

#### Option 2: Preparatory investment

This option improves our capability to manage complex power flows through improved network visibility and understanding of the network. It includes an uplift in ICT capabilities to improve customer compliance to CER standards, which improves the cost effectiveness of planning decisions in relation to CER. This option also includes scope for a connections uplift to

6 AER, Draft Decision, Ausgrid distribution determination 2024–29, Attachment 5 – Capital expenditure, page 43.

7 Ibid, page 46.

improve Ausgrid’s capability to connect increasing volumes and types of CER above the current capability.

### Option 3: Proactive investment

This option builds on improvements in Option 2 and leverages these preparatory investments to deliver the highest benefit to customers by increasing utilisation of the existing grid, incentivising and rewarding coordinated CER.

This option unlocks additional value by introducing a dynamic service capability platform allowing Ausgrid to deliver dynamic pricing and dynamic operating envelopes. By using dynamic services and a mixed approach to augmentation that includes community batteries and Static Synchronous Compensators (STATCOMs).

In formulating these options, we engaged with our customers and stakeholders to understand their preferences. Our customers and stakeholders expressed clear expectations that Ausgrid will leverage existing assets to deliver reduced total energy costs, continue to provide a safe network, increase resilience in the face of a changing climate and help communities achieve net zero targets.<sup>8</sup>

Achieving net zero in line with government targets will require rapid electrification of business, industrial and transportation processes, resulting in significantly higher electrical loads, supplied from an increasing base of renewable electricity generation. It is important that DNSPs across Australia are prepared for this shift and do not inadvertently delay the achieve of net zero targets by not making sufficient capacity available in a timely manner.

It was evident to us that while there are opportunities available to leverage our existing assets to facilitate these outcomes, to do so would require enhancements to our existing capabilities. Our approach therefore, was to enable customers to invest in CER and take part in new energy solutions as they choose, while ensuring that we achieved the most efficient balance of cost, safety, and reliability for all customers.

In light of the emerging CER challenges and our customers’ expectations, our Initial Proposal presented a base case option that included traditional investment to address the existing and forecast curtailment issues on our network. Our analysis demonstrated that our preferred option (**Option 3**), which included augmentation of \$47.1 million, was preferable to the base case.

The AER’s Draft Decision proposed a substantially reduced augmentation allowance of \$8.0 million, which reflects our historical expenditure for activities such as distributor upgrades and tap changes for responding to CER related challenges. Relatedly, EMCa, made the following comments in relation to the opportunity to resolve issues through tap changes:

*“...Ausgrid’s proposal provides scant information about the opportunity for further changing tap settings on transformers in its network. However, based on our experience, it is a relatively low cost means of releasing hosting capacity from existing assets where the taps have been set to respond to undervoltages due to peak demand impacts and/or the superseded standard of 240V.”*

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8 Ausgrid, Ausgrid’s 2024-29 Regulatory Proposal Attachment 5.7: CER integration program, 31 January 2023, page 3.

EMCa also observed that the DER Integration Expenditure Guidance Note states that the BAU base case should assume that the distributor continues its BAU activities which are ‘ongoing, economically prudent activities that occur in the absence of a credible option being implemented.’ As noted in **Table 2**, the AER’s Draft Decision concluded that:

*“The three investment options considered by Ausgrid involve significant levels of augmentation. The base case scenario includes \$47.3 million of augmentation expenditure and the preparatory investment option includes \$60.6 million of augmentation expenditure. [...] we do not consider that these levels of augmentation expenditure are justified due to overstated benefits.”*

To respond to the AER’s concerns and address the issues raised by EMCa, we have undertaken additional modelling of the CER augmentation expenditure, including a revised base case (**Option 1**) that excludes all future CER augmentation expenditure. While this base case does not meet our obligations under the NEO and is therefore not credible, it provides an appropriate starting point for the analysis and also enables us to examine the net benefit associated with the AER’s alternative expenditure allowance of \$8.0 million.

**Option 2** analyses a program of work based on the AER’s alternative expenditure allowance of \$8.0 million, while Ausgrid’s preferred option (**Option 3**) has been modified to incorporate modelling improvements and revised assumptions raised by EMCa and the AER.

Our revised modelling options are:

- **Option 1:** ‘Do nothing’ or BAU base case;
- **Option 2:** AER’s alternative augmentation allowance; and
- **Option 3:** Ausgrid’s revised augmentation proposal.

In relation to **Option 3**, our revised modelling approach provides a reappraisal of the optimal CER augmentation investment that maximises the net benefit for customers that our modelling has justified. The results of this analysis are presented in **Section 1.5**, which also considers the impact of uncertainty on our revised CER augmentation proposal.

## 1.4 Estimating the value of future curtailment

As summarised in **Table 2**, the AER raises three concerns regarding our approach to estimating future curtailment:

- Applying annualised CECV calculations;
- Adopting a 253V trigger for curtailment; and
- Estimating the costs of EV risk of overload and supply interruption.

We address each of these issues in detail below.



### 1.4.1 Applying annualised CECV calculations and curtailment modelling improvements

The AER's Draft Decision expressed concern that our approach to estimating the costs of curtailment overstated the value of avoided curtailment by applying a single average CECV value over each five-year period.

We note that the AER has published a high-resolution pricing model of curtailment which sets a price per kWh of curtailed energy for every 30-minute interval over the next 20 years (starting FY2022-23). As such, we accept that using 5-yearly average CECV data reduces this granularity and, therefore, may result in an over- or under-estimate of the costs of curtailment depending on the expected profile of curtailment.

We also recognise the challenges in forecasting curtailment volumes to which the CECVs are applied. Our Initial Proposal described the process of quantifying expected curtailment under a particular scenario of CER adoption requires data or assumptions in relation to many parameters, including:<sup>9</sup>

- Existing network conditions, including voltage profiles, network and customer load profiles;
- Volumes of rooftop solar adoption aligned to AEMO's step change scenario, their forecast capacities and inverter parameters, in addition to existing and projected data on EVs and batteries;
- The amount of energy a solar installation will generate for each time interval, and projections of export volumes (which in turn will depend on individual household characteristics); and
- The geographic distribution of the installations on the network, noting that the concentrations of generating capacity on the network will affect local over-voltages and curtailment.

Each of these inputs introduce forecasting challenges and uncertainties, particularly given limited data availability and rapid growth in CER penetration driven by new technologies, falling costs and government policy initiatives. Given these limitations, our initial proposal also used interpolated, five-yearly, volume of curtailment forecasts, rather than annual forecasts.

We accept the AER's position that our use of CECV 5-yearly averages and the use of interpolated data does not make sufficient use of the granular CECV data published by the AER. In this revised proposal, we have made the following improvements to our estimation method:

- CECV is calculated as a weighted average of times-of-day when curtailment is highest from the AER's published CECV values (FY23 update)<sup>10</sup>.

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9 Ausgrid, Ausgrid's 2024-29 Regulatory Proposal, Attachment 5.7: CER integration program, 31 January 2023, Appendix B, section 4.

10 AER updated half hourly CECVs: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/customer-export-curtailment-value-methodology/update>

- Peak half-hourly intervals are identified for each year based on analysis of results from Ausgrid’s LV Hosting Capacity Model. The half-hourly CECV values for the peak intervals over each year are weighted by solar output to produce average annual CECV values.
- We have removed the interpolation between 5-year periods.

### 1.4.2 Adopting a 253V trigger for curtailment

As described above, modelling curtailment volumes is complex. In our Initial Proposal, we adopted a 253V trigger for the purpose of modelling curtailment. In response to this approach, EMCa expressed the view that 253V is a conservative trigger, which has the effect of over-estimating the extent of curtailment.<sup>11</sup> Instead, EMCa considered that 258V was a more appropriate trigger.

To address the issues raised by EMCa we engaged an expert from the University of NSW’s (UNSW) School of Photovoltaic and Renewable Energy Engineering to independently examine modelling inverter curtailment under different voltage setpoints. UNSW’s review found that there were many sites which experienced tripping (anti-islanding and limits for sustained operation) at voltages lower than 258V or 255V.

The figure below presents an example of tripping curtailment from a sample site. This example illustrates that adopting a 258V threshold for estimating curtailment, as suggested by EMCa, would likely not be appropriate.

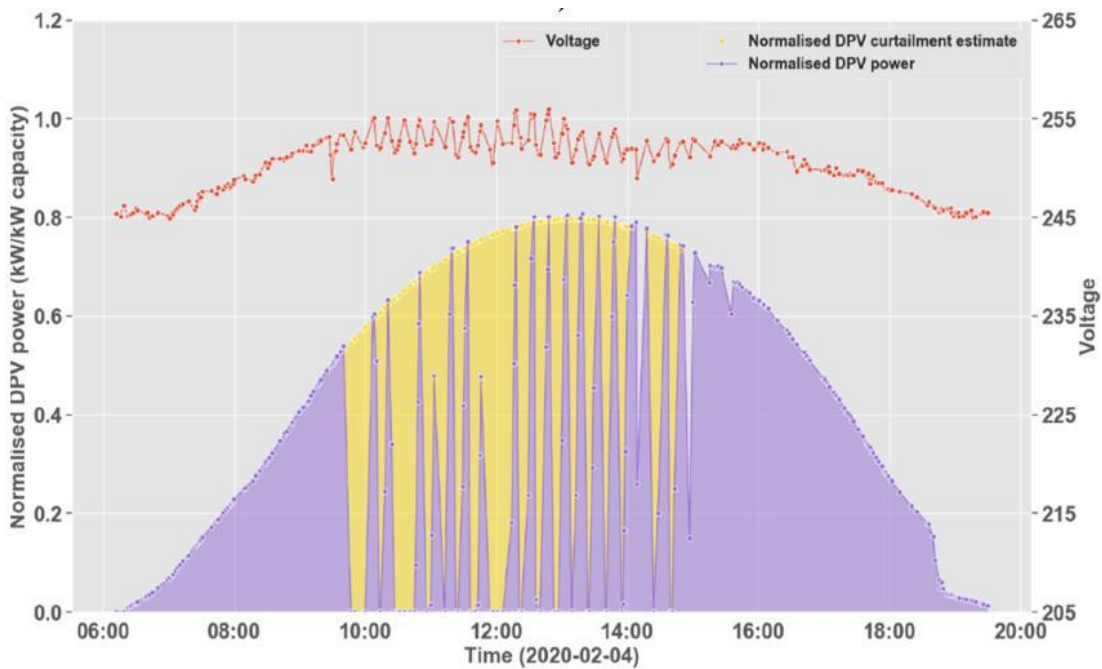


Figure 1: Sample site showing curtailment occurring below 255V

11 AER, Draft Decision, Ausgrid distribution determination 2024–29, Attachment 5 – Capital expenditure, page 42.

In this Revised Proposal, we have revisited our modelling approach to address EMCa's conclusion that the 253V curtailment trigger is not appropriate. Instead, we have amended our modelling to reflect the requirements of the inverter standard AS 4777.2:2020, which manages overvoltage as follows:<sup>12</sup>

- **253V:** volt-watt response initiates and ramps down the output (kW) of the system linearly as voltage increases to 265V;
- **258V:** trips the inverter if the 258V is sustained on average for 10 minutes;
- **260V:** trips the inverter if 260V is sustained for more than 1 second; and
- **265V or more:** instantaneous inverter trip.

The UOW<sup>13</sup> has reviewed our approach to calculating curtailment based on information provided on **Att. 5.7.8 - Rooftop Solar CBA model - 30 Nov 2023 – Confidential**. Their report confirmed our approach is consistent with AS4777:2020 and adheres to the New South Wales Service Installation Rules which permit a 2% voltage rise between the customer connection point and the customers' inverter installation.

### 1.4.3 Estimating the costs of EV risk of overload and supply interruption

The AER's Draft Decision included EMCa's concern that Ausgrid applied the VCR to assumed avoidance of being unable to fully serve electric vehicle charging loads 'on demand'. The AER commented that this represents a misapplication of VCR and a considerable overstatement of this assumed benefit because:

- EV charging is one of the easier loads to time-shift, which is why it is recognised as an ideal candidate for orchestrated control.
- An inability to supply an EV charger load at a particular time will for the most part have a negligible cost to a customer (and may even be unnoticed) provided the charging load can be supplied at a deferred time prior to when the consumer requires the EV to be charged to its desired level.

In addition to the application of the VCR, EMCa commented on Ausgrid's modelling of the projected growth of EV load, noting that the location of EVs is important in assessing its likely impact on the network. In particular, EMCa commented that Ausgrid's approach was reasonable, noting that it involved:

- Clustering of EVs due to household income, i.e. higher amongst higher income households.
- Clustering due to 'neighbourhood effects', EV uptake will be greater in neighbourhoods that have also adopted other CER technologies.

In this Revised Proposal, we have enhanced our analysis of EV clustering to account for other relevant factors such as household wealth, access to off-street parking and housing type. Further detailed information on these factors and their impact on EV clustering is provided in the

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<sup>12</sup> EMCa, Ausgrid's 2024 to 2029 Regulatory Proposal, Review of proposed expenditure on CER and for ERP System, August 2023, paragraph 87.

<sup>13</sup> University of Wollongong

updated model that accompanies this Revised Proposal (see **Att. 5.7.3 - CER CBA total view model - 30 Nov 2023 – Public**).

In principle, we agree with EMCa’s view that if EV load could be shifted to other periods, the costs to EV users would be substantially below the VCR. While we have considered the range of charging types and assumptions underpinning customer behaviour in AEMO’s updated FY2023 IASR<sup>14</sup>, our existing systems are not equipped to switch EV load in localised networks, as envisaged by EMCa. Instead, our existing ‘convenience charging’ for EV users is only capable of providing network-wide incentives to shift demand to off-peak periods. This type of charging is substantially less targeted and effective than ‘smart charging’, which we expect to be introduced in conjunction with jurisdictional policy approaches and changes to the National Electricity Rules (**NER**).

To address the AER’s concern that EV load risk of overload and supply interruption should not be costed at VCR, we have undertaken further analysis to determine:

- The forecast impact of EVs on peak demand consistent with AEMO’s updated FY2023 IASR, factoring in the potential for customer solar and distribution energy storage to offset peak demand, revised charging types (convenience, smart charging etc.) and a customer response to incentives.
- The forecast volume and allocation of EVs consistent with AEMO’s updated forecasts based on analysis undertaken by Everengi. This includes Statistical Area Level 1<sup>15</sup> allocation of EVs based on key factors such as wealth, availability of off-street parking and dwelling type relevant to Ausgrid’s unique network area.
- The extent to which risk of overload and supply interruption EV load can be shifted to other periods, and the appropriate cost that should be applied to that ‘deferred’ load (noting that this cost should be much lower than the VCR).
- The risk that EV load causes network outages that affect supply to other customers and the expected costs to those customers.

**Figure 2** below shows the revised AEMO estimates of EV growth, which we have factored into our revised proposal. It indicates that the EV growth is now substantially above the level assumed in our Initial Proposal.

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14 AEMO (2023). Inputs Assumptions and Scenarios Report (IASR) <https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2024-integrated-system-plan-isp/current-inputs-assumptions-and-scenarios>

15 [https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~Statistical%20Area%20Level%201%20\(SA1\)~10013](https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.001~July%202016~Main%20Features~Statistical%20Area%20Level%201%20(SA1)~10013)

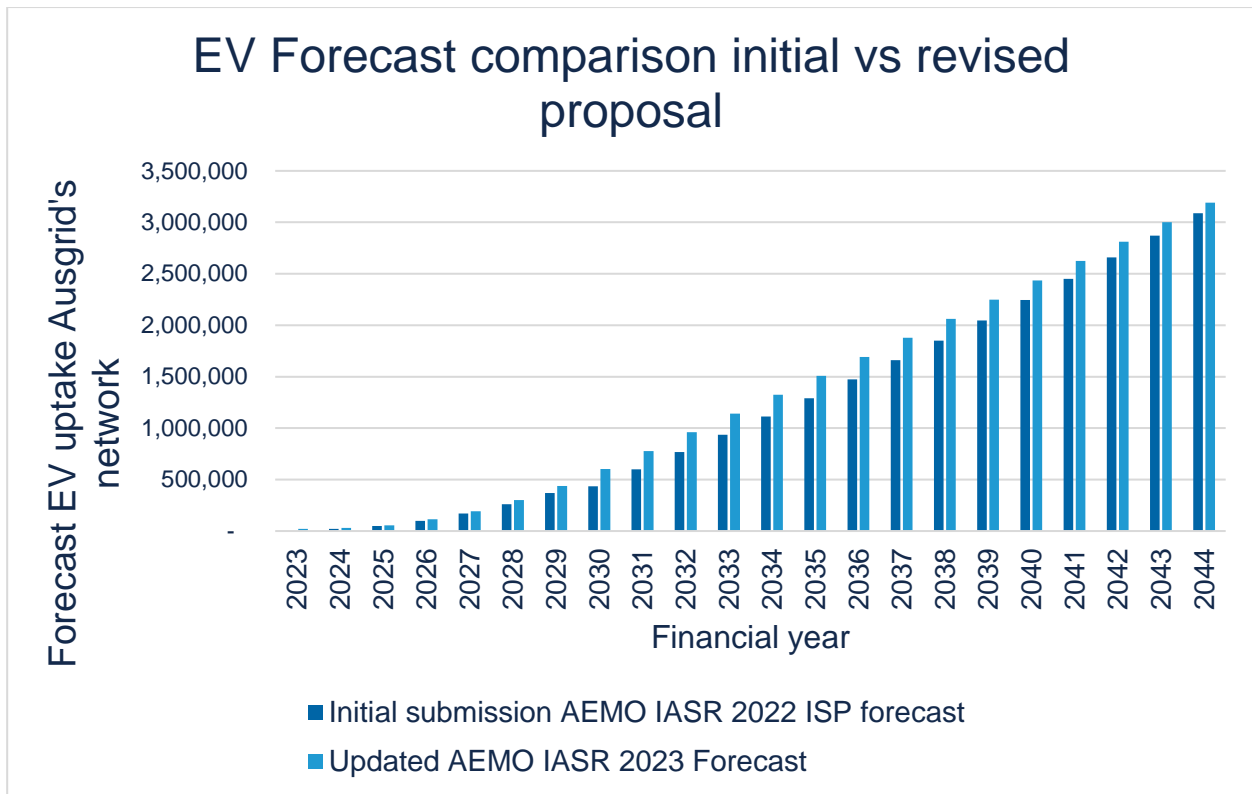


Figure 2: Updated EV forecast for Ausgrid's network aligning with AEMO's FY 23 IASR compared to initial submission.

In summary, we have undertaken substantial further work to estimate the expected costs to customers if EV load cannot be met. In updating this analysis, we have accepted that switching of EV load to other times should not be costed at VCR. Notwithstanding this issue, our assessment is that the expected costs relating to EV load are significant. The conclusions from this analysis are presented in the next section.

## 1.5 Prudent and efficient investment plans in the face of uncertainty

As described in **Section 1.3**, we have refreshed our modelling of the CER augmentation options in response to the AER's Draft Decision by redefining the base case, modelling the AER's alternative forecast and revising our initial proposal's preferred option. We have also revisited our proposed plans, having regard to the detailed issues raised by the AER and EMCa, as discussed in **Section 1.4**.

This section presents the results of our updated modelling and explains why our revised CER augmentation expenditure is prudent and efficient' having regard to overvoltage issues and continuity of supply on our network and feedback from our customers.

### 1.5.1 Modelling results

**Table 3** sets out the results of our updated modelling. Further information on the model, input assumptions and sensitivity testing are provided as an **Att. 5.7.3 - CER CBA total view model - 30 Nov 2023 – Public**.

Table 3: Updated cost-benefit analysis (real \$m, FY24)

Option	Capital expenditure (Total, 5 yrs)	Avoided EUE and curtailment (PV 20yrs)
1. Base case (do nothing)	\$0.0	\$0.00
2. AER's alternative forecast	\$8.0	\$115.4
3. Revised submission	\$37.2	\$397.9

The model shows the significant curtailment and unserved energy costs associated with a 'do nothing' base case. The AER's alternative forecast (**Option 2**), which would allow \$8.0 million over the 2024 to 2029 regulatory period, would enable \$115.4 million (present value 20yrs) benefits over the FY2025-44 period.

Our revised **Option 3** results in a net benefit of \$397.9 million with a \$37.2 million investment over the FY2025-44 period, delivering \$282.5 million additional benefit over the AER's alternative forecast.

This updated analysis shows that our Revised Proposal achieves a materially higher net benefit compared to the both the AER's alternative forecast (**Option 2**) and the 'do nothing' option.

### 1.5.2 Existing overvoltage issues

The previous section explained that there are significant net benefits associated with our preferred option as it will reduce the future level of curtailment compared to the 'do nothing' option. To put this proposal into context, it is helpful to consider the existing overvoltage issues on our network.

The AER's DER Integration Expenditure Guidance Note explains that distributors are required to maintain voltages at customer premises within an acceptable range in order to ensure safe, reliable and efficient operation of their appliances and equipment.<sup>16</sup> In terms of compliance obligations, distributors must comply with AS61000, which requires distributors to comply with overvoltage 'soft limits' 99% of the time, and undervoltage 'soft limits' 99% of the time, at each customers' point of supply.

- The soft limit for undervoltage is set at 230V minus 6%, which equates to approximately 216V.
- The soft limit for overvoltage is set at 230V plus 10%, which equates to 253V.

Unfortunately, our customer data makes it difficult to determine the existing level of compliance with AS61000. Having said that, the available data at a feeder (or 'distributor') level indicates a significant issue. Furthermore, our most recent data (shown in orange below) indicates that overvoltage is likely to be worse than indicated at the time of our Initial Proposal (shown in blue in **Figure 3** below).

<sup>16</sup> AER, DER integration expenditure guidance note, June 2022, page 12.

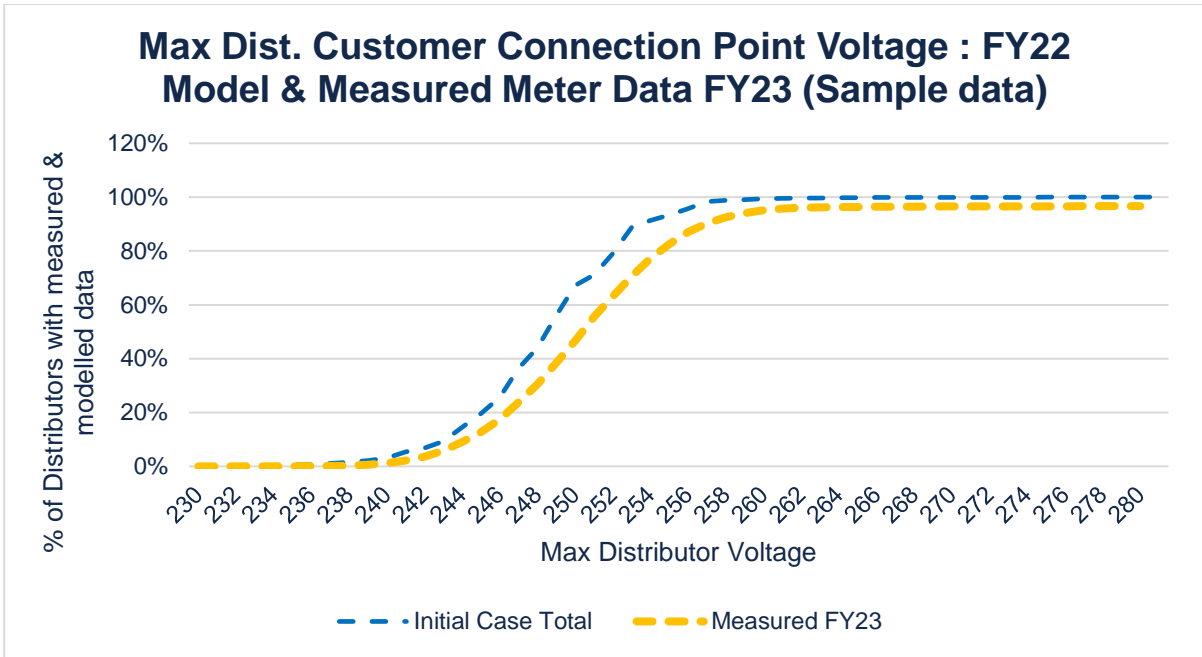


Figure 3: Maximum voltage by feeder showing a comparison between FY22 data used in the hosting capacity model and current smart meter data

We currently have insufficient information to determine our existing level of compliance with AS61000. Nevertheless, the above data indicates that there is already a significant non-compliance issue, a number of feeders have recorded maximum voltages above 253V. Furthermore, the projected growth in CER penetration and EV load exposes the network to the risk of worsening non-compliance over time.

While our revised CER augmentation proposal is justified by the cost-benefit analysis presented in **Section 1.5.1**, the expenditure may also be warranted to achieve compliance with AS61000. As improved network data becomes available, any residual compliance issues will be identified and resolved over time.

**1.5.3 Customer expectations, prudence and efficiency.**

In considering the prudence and efficiency of our proposed CER augmentation, it is useful to return to the feedback we received from our customers and their expectations regarding future CER capacity.

Our Initial Proposal outlined how our customers recognise the overall benefits that CER offers and expect Ausgrid to offer a platform that facilitates the transition to a decentralised and low carbon economy that delivers on their net zero ambitions. We have heard through our customer engagement that customers have consistently been looking for improved access to the benefits of CER for customers. An important aspect of meeting our customers’ expectations is to ensure that we have sufficient network capacity to accommodate the projected growth in CER penetration.

We agree with EMCA’s view that there is considerable uncertainty regarding the future growth in CER and its impact on the LV network. However, we do not agree that the most prudent course of action in the face of this uncertainty is to avoid, as far as practicable, expenditure on traditional network assets. Instead, our view is that a prudent course of action is to ensure that

our LV network has the capacity to meet our customers' future CER requirements so that our network is equipped to facilitate opportunities to reduce customers' bills and the transition to net zero.

The existing level of non-compliance with AS61000 indicates that more investment is needed now to meet our compliance obligations. Given the likelihood of existing non-compliance and the projected growth in CER penetration, it would not be prudent to adopt a BAU approach to CER augmentation. This view is also supported by our modelling results, which show that our preferred option will deliver a higher net benefit than the AER's alternative forecast and, therefore, is prudent and efficient.