



7 September 2022

Mr Warwick Anderson  
General Manager, Network Pricing  
Australian Energy Regulator  
GPO Box 3131  
Canberra ACT 2601

Dear Warwick

### **Connection charge guideline review —static zero export limits — Issues Paper**

CitiPower, Powercor and United Energy appreciate the opportunity to respond to the Australian Energy Regulator (AER) Issues Paper proposing the conditions when a distributor may impose a static zero export limit on a customer who is seeking to connect a micro embedded generator to the network.

The static zero export limit refers to a maximum specified capacity to export from a micro-embedded generator to the distribution network of zero at all times of the day and in all network operating conditions.

The AER proposes that distributors can only impose zero static limits where the connection satisfies one of the following conditions:

- Technical consideration: the export from rooftop solar will result in the distributor not meeting a regulatory obligation or maintaining the network within its technical limits – e.g. not meeting the voltage level and power quality standards, safety requirements, or network security requirements
- Economic consideration: the cost of augmenting the distributor's network assets to allow a reasonable export capacity level by the rooftop solar connection applicant outweighs the benefits arising from providing the additional export capacity, taking into consideration the expected future new distributed energy resources that will be able to be exported to the grid arising from the augmentation.

The AER also considers there should be some level of customer protection aspects to the matter, that:

- a static zero export limit cannot be imposed if the customer has a suitable dynamic response system as specified by the distributor
- the distributor must also undertake periodic reviews to assess whether the static zero limit can be lifted, such as following any network augmentation works or at the request of a customer.

### **Our view on the constraints**

We consider the AER conditions should be amended and clarified given the:

- evidentiary threshold for demonstrating compliance is too high
- concern that static zero limits are prohibited even if dynamic operating envelopes are not deployed by a distributor in a region.

First, the limited circumstances in which a distributor can offer a static zero limit appears to be narrow in scope with a high evidentiary threshold. In particular, the proposal appears to require evidence that allowing exports will either:

- lead to a technical non-compliance
- fail a cost-benefit test to augment the network.

First, we request the AER clarify the level of evidence expected to be provided by distributors to demonstrate compliance with this obligation.

Evidence that allowing exports will negatively impact another connection through high voltages can be provided by our businesses. Customers are required to seek pre-approval to connect micro-embedded generators to our network. These pre-approval applications are assessed using our Local Generation Connection Approval “LGCA” tool. The LGCA algorithm conducts power flow modelling to calculate voltage rise on the actual LV network for a customer request to connect a new or an upgraded PV system, underpinned by actual smart meter data. That is, it assesses the impact of the requested capacity of the inverter from the new connection being exported to the grid, and the consequential impact on other customers.

That said, there may be other technical reasons why a static zero limit should be imposed, such as risks to the safety or security of the network. The increase in risk may not result in a strict non-compliance with a regulatory obligation, and therefore the evidentiary threshold should be reduced.

Conducting a cost-benefit test for each and every static zero offer would be onerous. For CitiPower and Powercor, roughly 2,500 static zero unique offers are provided to customers each year. Some of the customers may seek several pre-approval applications, meaning the actual number of static zero offers provided using our pre-approval process would be even higher. The costs to upgrade our IT systems to automate this calculation, or employ extra staff to manually review each application and conduct the cost-benefit test, would need to be passed on to consumers. A lower evidentiary threshold should be specified, such as explicitly permitting use of a standard assessment framework.

Second, dynamic operating envelopes have not been deployed across all networks at this point in time and the AER proposal appears premature given the uncertainty regarding the technological outcomes and customer appetite. The technology has not been fully tested, and therefore it is unclear the extent to which it will operate on different network configurations such as remote rural single phase and single wire earth return (SWER) networks. A distributor should not be prevented from providing a static zero offer to a customer if dynamic operating envelopes are not available for use at that location, irrespective of the capability of the customer’s equipment.

### **Our approach to assessing export requests provides the right outcome to consumers**

We consider our pre-approval process for solar exports provides outcomes that are fair and equitable for customers. Currently, the results of the LGCA tool for 2022 is providing 94% of CitiPower and Powercor customers the full requested capacity as per the Model Standing Offer export amounts.

If we upgrade the network to accommodate greater solar exports, we actively communicate this with customers with offers to re-apply for additional capacity created if wanted. Augmenting the network to increase export capacity typically involves upgrading or installing additional distribution transformers to provide sufficient capacity, or upgrading conductors to a larger size on our low-voltage network. After the works are completed, we proactively communicate with relevant customers to encourage them to reapply for greater export capacity.

Should you require any further information on this matter, please contact Elizabeth Carlile [REDACTED]

Yours sincerely,

Brent Cleeve  
**Head of Regulatory Policy and Compliance**  
**CitiPower, Powercor and United Energy**

## APPENDIX - RESPONSE TO QUESTIONS

### Q1. Under what limited circumstances should distributors be able to impose static zero limits?

We are concerned the economic and technical considerations proposed in the Issues Paper are more narrowly defined in scope and more onerous to demonstrate compliance than anticipated in the Australian Energy Market Commission's (AEMC) final determination, and the resultant rule.

In particular, clause 5A.E.3(d1) of the National Electricity Rules (NER) indicates the AER's connection charge guideline may consider the limited circumstances in which static zero export limits are offered, which may include:

- system limitations, whether in particular circumstances or at particular locations or otherwise; or
- limitations on the capabilities of plant or equipment of distributors or retail customers.

The costs to demonstrate compliance should be taken into account by the AER in this guideline. The AER's criteria appear to either require demonstration that allowing exports will either lead to a technical non-compliance, or not satisfy a cost-benefit test to augment the network. This is a high evidentiary threshold when considered on an application-by-application basis.

Aside from voltages, there may be other technical reasons why a static zero limit should be imposed, such as risks to the safety or security of the network or situations where customer power quality is currently under investigation to address localised issues caused by third parties. The increase in risk may not result in a strict non-compliance with a regulatory obligation, and therefore the evidentiary threshold should be reduced.

In terms of voltages, we can provide evidence that allowing exports will negatively impact another connection through high voltages. As noted above, we utilise the LGCA tool to model the specific LV network, using all customer real and reactive power and voltage data sourced from our smart meters. As this is based on actual data we forecast the resulting voltage rise of the proposed PV connection. If the forecast voltage rise is within agreed voltage thresholds then full export will be approved. Generally, the reason why a lesser amount might be approved will be because the voltage thresholds will be exceeded.

Further, for our businesses, the costs of conducting a cost-benefit test for each and every static zero offer would be onerous. We would need to upgrade our IT systems to automate this calculation through our LGCA tool and develop additional supplementary systems and tools to monitor other issues. Even with these systems in place additional staff would still be required to manually review outlier application and conduct the relevant tests. That is, there would be additional IT capital expenditure, and likely a step change in our operating expenditure. The costs to consumers from bearing these additional costs is likely to be greater than the benefit of demonstrating compliance.

To this end, we request the AER clarify the level of evidence expected to be provided by distributors to demonstrate compliance with this obligation. We consider a lower evidentiary threshold must be specified, such as explicitly permitting use of a standard assessment framework.

### Q2. Under what circumstances should we take into account equity issues when considering the application of static zero limits?

We consider the technical considerations should be expanded to better capture the equity issues between customers seeking to connect rooftop solar to the grid, and those existing customers on the network.

In particular, the technical considerations should assess whether the exports from the additional connection would negatively impact the power quality for other customers or the performance of other generating units on the distributors network, not just whether it will result in the distributor not meeting a regulatory obligation or maintaining the network within its technical limits.

**Q3a. What are your views on networks using a 'standard approach' to decide on whether to impose a zero export constraint for each individual application?**

N/A – we utilise smart meters to assess impacts on the network and customers

**Q3b. If you consider a 'standard approach' to be inappropriate, what depth of analysis or study should networks be required to do in the limited circumstance where a static zero limit may need to be imposed? What would be the likely costs of this level of study? Should the costs of the study be charged on a requester or treated as a general network administration cost?**

N/A – we utilise smart meters to assess impacts on the network and customers

**Q4a. What information should the distributor provide the connection applicant when a distributor proposes a static zero limit and how should that information be provided?**

We agree a distributor should provide an explanation of the methodology used to assess requests for solar exports, and the reasons why a static zero limit may be offered. This information could be contained on the distributors' website, which the customer can be referred to in the event they receive a static zero offer.

The Issues Paper suggests that distributors provide access to an independent technical expert to review the distributors analysis and the connection offer. We do not support this proposal. This would be costly for a distributor to provide, and the benefits of doing so are not clear.

**Q4b. What's the best way to communicate the steps to inform customers' investment decisions? For example:**

- **What type of information should customers be provided with, when should it be provided and by whom?**
- **Who is best placed to provide effective customer education before a customer makes an investment decision?**

In Victoria, customers are encouraged to engage with their distributor early in the process to seek pre-approval for how much they can export, before committing to an investment in solar. Our websites set out this information, and provide links to other relevant sites, to inform consumers about their choices and steps to take before connecting rooftop solar.<sup>1</sup>

That said, having a static limit does not prohibit the customer from the benefits of self-consumption and will not stop us from seeking to remove constraints from our network where it is economic to do so.

**Q5. Are there exceptional circumstances where it would be appropriate for a distributor to impose a static zero limit where it has already been funded under revenue determinations to augment the network?**

Yes, the funding provided through the regulatory determination process is unlikely to be sufficient to upgrade the network to unlock export capacity for each and every customer in the areas served by our distribution networks.

We note that having a static limit does not prohibit the customer from the benefits of self-consumption and if distributors have the ability to access the inverter then flexible service options may become available.

**Q6a. What conditions must be met in the limited circumstance that a static zero limit is applied? Do you consider the above controls adequate?**

Please see our response to question 1.

---

<sup>1</sup> Refer <https://www.powercor.com.au/for-your-home/solar-and-other-technologies/rooftop-solar/>; or <https://www.unitedenergy.com.au/residential/solar-and-other-technologies/rooftop-solar>

The proposed condition to prohibit static zero limits when a customer has a dynamic response system should be deleted as it is premature. The network may not be able to offer dynamic operating envelopes (DOEs) in all areas – for example, DOEs may not operate on remote rural networks using SWER systems and as such, even if the customer has a suitable system, the network may not be able to interact with it in some locations.

**Q6b. In the limited circumstance that they are imposed, should static zero limits be subject to regular review? If so, what should the length of the period be?**

We do not support an explicit obligation for regular review of customers with a static zero limit. We already do this as on a targeted basis as we upgrade our network, and a regulated timeframe may be inefficient.

**Q7. At locations where it is not prudent nor efficient to augment the local network to increase the rooftop solar hosting capacity, should customers bear the cost for network augmentation if they wish to avoid export limitation?**

The AER guideline should make it clear that if a customer is willing to fund incremental augmentation, they should be allowed to.

**Q8. Do you consider that the above charging practice is reasonable? If not, what do you consider is a reasonable charging practice?**

This AER indicates that upgrades of the network to allow exports, where the upgrade is uneconomic for the customer, will likely be categorised as an Alternative Control Service.

The AER also proposes the charge to upgrade the network be calculated as:

- the actual cost to remove the static zero export constraint
- LESS the sum of the net present value (NPV) of the export charge revenue received from the connection applicant AND the projected future additional PV connections, over a 30 year period.

We have the following concerns with the proposed calculation:

- export tariffs are not currently in place in Victoria, and it is not clear if they will be
- the basis for calculating the “projected future additional PV connections” is not clear
- the cost-revenue test currently only applies to standard control services, where the under-recovery of costs is recovered through Distribution Use of System (DUoS) revenue from all customers.

We also disagree with the AER suggestion that the proposed calculation is similar to the avoided cost calculations applied in Victoria.<sup>2</sup> The avoided cost calculation, which will become part of the Electricity Distribution Code of Practice, ensures customers make a fair contribution to the undergrounding, modification or relocation of existing distributor assets. It does this by taking into account the age of asset being replaced, and the associated maintenance costs based on age.<sup>3</sup>

---

<sup>2</sup> AER, Issues Paper: Connection charge guideline review – static zero limits for micro embedded generators, August 2022, p. 16.

<sup>3</sup> For example, if a customer wishes to change the location of a pole on their nature strip, the cost the customer incurs takes into account whether the pole is new (e.g. 2 years old) or old (e.g. 48 years old). To the distributor, an old pole would be expected to be replaced soon and be incurring a relatively higher maintenance cost. If the replacement of an old pole is fully funded by a customer, the distributor would benefit through the deferment of the expected cost to replace the old pole and lower maintenance costs. The avoided cost calculation allows these benefits to be provided to the customer by reducing the amount the customer must pay to relocate the pole.