14 September 2023

Australian Energy Market Commission

Submitted electronically: https://www.aemc.gov.au/contact-us/lodge-submission

RE: ERC0346 Unlocking the benefits of Customer Energy Resources

Origin Energy appreciates the opportunity to provide a submission in response to the Australian Energy Market Commission (AEMC) Direction Paper *Unlocking the benefits of customer energy resources*. In AEMO's rule change proposal, it is evident that what might be considered 'benefits' vary greatly between technology type and the expectations and needs of the end customer.

- Origin supports efforts to ensure the benefits of customer energy resources (CER) are available to customers.
- Origin supports the AEMC's decision to limit its assessment of the benefits of flexible trading arrangements to large customers and to exclude small customers.
- Origin does not consider that flexible trading arrangements that require the inclusion of additional connection points are required to provide benefits of CER to large customers.
- We are unconvinced AEMO's proposal has demonstrated that there is a relevant scale to inaccuracy of unaccounted for energy to justify the cost of retrofitting existing non-contestable unmetered load (NONCUML) infrastructure.

The AEMC has engaged Energeia to assess the costs and benefits of increased integration of CER flexibility to consumers and to the system. The report that Energeia prepares will be used to develop a modelling tool that the AEMC can use in this and future rule changes and reviews. Based on the modelling methodology paper, Origin is concerned that this modelling proposal will not make a realistic assessment of the existing and future impact of CER.

Origin's views on these issues are set out below.

Large customer CER arrangements

AEMO's rule change proposal seeks to enable consumers and the market to separate flexible CER and allow these to be managed and recognised in wholesale market settlements if they choose. As large customers are currently entering agreements with providers to separate and manage their CER under current arrangements, we must infer that AEMO is concerned that the CER is not visible within the wholesale market, and AEMO cannot manage energy flows associated with it. Origin would suggest that this issue is unrelated to whether benefits are available to customers with CER.

We acknowledge that visibility may be a problem for AEMO but do not consider it is the result of current CER management options. The current National Electricity Market Dispatch Engine (NEMDE) is increasingly relied upon to manage solutions that it was not designed for. As a result, an information asymmetry exists that impacts the quality of AEMO's forecasting. This has flow on implications to the market.

We consider that the *Unlocking benefits of CER* rule change is fundamentally premised on the same problem (i.e., that AEMO may not have sufficient information) to be addressed in the *Integrating Price Responsive Resources* rule change proposal. We additionally consider that the *Integrating Price Responsive Resources* rule change proposal would likely be more effective at resolving this information asymmetry issue, as it proposes methods to provide AEMO with missing information. This does not mean that Origin supports that rule change, only that the likelihood of the desired information being obtained is greater.

Large customers with CER enter benefit-sharing arrangements (often revenue based) agreed in negotiated contracts that specifically address both what the CER technology available is, and the customers' expectations of that technology. As AEMO note, it is possible, if somewhat complex, for a large customer to enter into an agreement with one provider for the load component of their energy needs and a separate agreement for their CER by establishing an embedded network framework. In the case of large customers, we would not consider complexity a limiting factor since customers with these large installations also employ specialist energy managers to negotiate their agreements.

It is easier to ensure that there is a customer benefit where the CER and the customers load are connected using the same connection point. This can result in the creation of an embedded network at a large customer site. AEMO note that the embedded networks framework was not created for the management of CER. This does not mean that the utilisation of embedded network structure for such purposes is disadvantageous for either the provider or end user. The only disadvantage of this design would be from AEMO's perspective: there is no separate visibility of the CER within the wholesale market.

Origin does not consider that the metering configuration is a problem that needs solving, and particularly not using the metering and connection architecture as outlined in AEMO's rule change proposal.

A framework for street lighting and other public furniture

Origin does not support the inclusion of this issue in this rule change proposal. We consider this is a separate, unrelated issue that should undergo a separate rule change review process including a cost benefit analysis specific to addressing this issue.

In their original rule change proposal, AEMO stated that most requirements that apply to type 4 metering installations should also apply to connections with minor energy flows[1]. AEMO has submitted a new proposal for these installations which would undertake settlement calculations using actual energy flow data instead of an algorithm to calculate electricity charges. Origin considers this approach is preferable to the original rule change proposal and meets most of the original design purposes.

However, we do not believe that it would make a material difference to unaccounted for energy (UAFE) to demonstrably meet the desired outcomes. AEMO has only completed one UAFE report, published in March this year. We consider that the aim of this reporting was to form a long-term view of the impact of UAFE and provide parameters in which to model the potential impact of changes to UAFE management.

As a result of this report an issue with 5-minute data spiking was identified. An interim solution, the "weights methodology", was developed to prevent energy volume spikes occurring following the application of the Five-Minute Load Profile (5MLP) in the settlements processes. 5MLP profiling methodology is to become effective from 1 October 2023[2]. We consider that further changes to UAFE

[1] Rule change request – Flexible Trading Arrangements (Model 2) and Minor Energy Flow Metering in the National Electricity Market (NEM) Section 4.2
[2] Unaccounted For Energy (UFE) Trends Report May 2023, p3.

processes will undermine the purpose of the established reporting, which is to determine to what extent UAFE represents a significant problem (among other things).

As a matter of principle, we consider that AEMO or other affected users who believe that the scale of UAFE would be significantly impacted by the proposed reforms ought to present the scale of the problem, i.e., the potential error margin of the cost of the UAFE. This would allow for a cost-benefit assessment of retrofitting NONCUML infrastructure to be undertaken, since there are known costs of retrofitting activities which have been undertaken for some infrastructure to draw on.

A cost benefit analysis against would clearly demonstrate whether there is any benefit to increasing technological capacities against the potential difference in accuracy. Origin considers the proposal must be demonstrably more efficient and cost effective than the current arrangements to be considered a viable solution, particularly for those who would be required to pay for the retrofitting of NONCUML, which would largely be local councils retrofitting public lighting and other public facilities.

If there is a demonstrable error margin, Origin is amenable to the proposal to change the UAFE calculation methodology, if it is accompanied by review of the new estimation method at regular intervals to ensure it is fit for purpose. We consider that this approach is likely to be less costly than retrofitting NONCUML infrastructure, and whether there is any impact to the accuracy of UAFE calculations could be clearly ascertained.

Energeia methodology and modelling

Origin welcomes the completion of a cost-benefit analysis of the increased integration of CER. However, we are concerned that the methodology as proposed will not make a realistic assessment of the existing and future impact of CER. This analysis will be important to the development of policy that shapes the future integration of distributed energy resources regardless of their size and will inform responses to other rule change proposals that are currently open for consultation, and so it is important that the cost benefit analysis be as accurate as possible.

The proposed methodology would assess different types of load flexibility, focusing on CER connected to the low-voltage network. The approach does not include a step in which Energeia will consult with providers that are already utilising load flexibility, and so we are interested in understanding on what basis this assessment will be made.

We suggest that Energeia should be tasked with consulting with interested stakeholders who have experience with CER and that this is included as an explicit part of their methodology.

Work to estimate potential cost savings of specific technologies will also be undertaken. These technologies include (but are not limited to) VPPs, bulk hot water and electric vehicles. Again, the approach does not include a step in which Energeia will consult with providers to understand how these technologies can or are being leveraged to achieve cost savings.

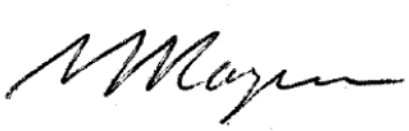
The methodology does not discuss how value would be determined. This is an important factor as the value of flexible load does not scale in a linear fashion; once lower wholesale pricing is achieved the value of any remaining flexible load is diminished. Similarly, the value of a VPP as compared to load shifting initiatives are significantly different and attract different costs. How this would be determined and assessed is not included in the approach and methodology paper.

We consider that an understanding of how CER is currently being utilised to provide value to customers in the current state is crucial to any assessment of future value extraction if the rule change were to be found preferable. Failure to include an assessment of benefits and benefit sharing available in the current state will result in an overly optimistic view of what benefit may exist in the future, as it is possible that most of that benefit is already realised.

Additionally, the modelling seems to include small customers. These are out of scope for the purposes of this rule change, and so it would seem inconsistent with the AEMC's directions paper. We consider that there is no detriment to including small customer data so long as it is appropriately excluded for the purpose of value assessment, since under the proposed parameters of the rule change proposal these CER assets would not be captured and therefore no specific value obtained.

If you have any questions regarding this submission, please contact Courtney Markham in the first instance on 03 9821 8086 or at Courtney.Markham@originenergy.com.au.

Yours sincerely



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