Advanced Metering Assets Limited
Level 9, Lambton House
160 Lambton Quay
Wellington 6011

14 September 2023

Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney NSW 2000

Reference: ERC0346

Submission on Unlocking CER Benefits through Flexible Trading – Directions Paper

Introduction

1. Vector Metering[1] welcomes the Australian Energy Market Commission's (AEMC) consultation on its *Directions Paper - Unlocking CER Benefits Through Flexible Trading* (the Directions Paper), dated 3 August 2023

2. Vector Metering supports the AEMC's decision to engage Energeia to assess the costs and benefits of increased customer energy resource (CER) flexibility in the national electricity market (NEM) – both to consumers and the energy system. In our view, a cost-benefit analysis (CBA) must be a pre-requisite before any models or approaches to unlock CER benefits through "flexible trading arrangements" (FTA) are progressed.

3. We agree with the AEMC's proposal not to progress AEMO's proposed flexible trading model 2 (FTM2) for small customers, given its significant costs and operational challenges. However, we believe that applying this model to large customers only, as proposed in the Directions Paper, may not necessarily confine new/additional costs to large customers. We discuss our views on this approach in our responses to Questions 6 and 7.

4. In relation to the creation of new metering roles for the measurement of street lighting and public furniture, we suggest that any future roles involving the provision of metering data to the NEM should be subject to similar data-related rules governing competitive metering service providers. This would ensure a level playing field for market participants providing similar services – which is consistent with good regulatory practice – and ensure the integrity of metering data provided to the market.

5. We set out our responses to the questions in the Directions Paper below, and make a few suggestions for improvement, including additional matters the Energeia CBA could consider.

Responses to selected consultation questions

QUESTION 1: ENERGEIA COST AND BENEFIT ANALYSIS APPROACH AND METHODOLOGY

- *Are there any other considerations or issues you consider should be included in Energeia's assessment approach and proposed methodology?*

6. The Directions Paper indicates that the Energeia CBA will involve three steps: 1) developing a methodology to model the whole-of-system benefits from different types of flexibility, focusing on CER connected to the low voltage network, 2) developing case studies to show

[1] Vector Metering provides cost-effective and end-to-end suite of energy metering and control services to energy retailers, distributors, and consumers in Australia and New Zealand.

how the benefits of CER will flow to customers with CER, without CER, and energy market service providers, and 3) forecasting the growth of flexible loads to 2050.

7. In addition to the above steps, we suggest that the Energeia CBA (or any future related CBA) examine the impact from end consumers' perspectives of situations where flexible load is separated from traditional load *vs* where it is not. For example, are end consumers likely to use their CER for self-consumption to reduce the amount of electricity they use from their retailer, or are they likely to inject power into the grid and get compensated for doing so? Would FTA increase end consumer choice and control over their energy cost enough to override any associated disruptions caused by the creation of another connection or sub-meter, or getting a second or more complex power bill? Recent and proposed CER-related trials and use cases capturing small consumer perception could inform this ongoing discussion.

8. We also suggest that the Energeia CBA consider whether some of the costs and implementation challenges of FTA at large customers' National Metering Identifiers (NMIs) are replicated for small customers and to what extent.

9. We further suggest that the Energeia CBA include a comparative assessment of the costs and benefits to large customers of using new FTA models *vs* using existing mechanisms to facilitate flexible trading (such as utilising the embedded network framework). This would provide insights on whether the introduction of FTA will deliver significant net benefits over improving/expanding existing frameworks (that were not originally created to facilitate flexible trading).

QUESTION 2: KEY CONSIDERATIONS FOR SEPARATELY IDENTIFYING AND MANAGING FLEXIBLE DER

- *What benefits can be gained through separately identifying CER irrespective of whether there is a single FRMP or multiple FRMPs at the customer premises?*
- *Are there additional implementation issues that we should consider for the draft determination (and draft rule if needed)?*

10. We note the AEMC's statement that "a range of options may be the preferred outcome given different consumer preferences and service provider business models".[2]

11. There are multiple ways of unlocking and optimising the benefits of flexible CER, whether it is separated or not from non-controllable load. For example, services are emerging that provide a discount to encourage CER uptake/investment but do not prescribe how the customer should use energy (e.g. the EV charger is not separately metered); any usage in the entire premise is charged at a lower rate.[3] In such cases, using an FTA model that adds a second service provider or financially responsible market participant (FRMP) at a single NMI would only raise costs without any significant net benefits for the customer. This is especially true for the small customer for which having more than one FRMP at a single connection point is not to be supported for now.

12. Recent studies in Australia and overseas on the value of greater CER flexibility point to massive potential benefits for network management purposes[4], allowing electricity networks to avoid the costs of new 'poles and wires' investment or expanding their network. However,

---

[2] Directions Paper, page iv

[3] https://www.agl.com.au/discover/sustainability/powering-up-your-electric-vehicle

[4] For example, the 2021 Sapere cost-benefit analysis of DER in New Zealand, https://www.ea.govt.nz/documents/1742/Sapere_CBA.pdf

it appears the potential benefits from FTA from end consumers' experience (the 'consumer journey') are less known or exposed.

13. Ensuring consumer choice is key to the success of any FTA model. Any benefits can only be realised if consumers choose to subscribe to FTA-enabled services. Optionality for consumers in how they use and generate electricity is therefore important; they should be able to participate in the electricity market when, where, and how they want.

14. It is unclear from the Directions Paper and from AEMO's rule change request whether: 1) the presence of CER at a premise will be required to be exposed to the market separately to passive loads, or 2) whether it will be up to customers to decide to make their CER visible when they make arrangements with a service provider (FRMP or other party) .

15. We have some reservations about the approach of measuring all CER loads and generation, irrespective of whether they are currently utilised for a wholesale market product or not. This concern is particularly relevant for small customers who may only have a single FRMP at their premises.

16. It is worth noting that South Australia has already implemented regulatory measures that mandate the use of multi-element meters for all newly installed meters, regardless of the presence of CER. This was introduced as a future-proofing measure by the state regulators. However, it results in the deployment of more expensive metering infrastructure, which South Australian customers are currently shouldering the cost of, with no apparent benefit unless CER is indeed present.

17. Even for sites with CER installations, Metering Data Providers are collecting data from the CER as off-market data. This off-market data is not being transmitted to anyone, as there is no demand for it, except in specific niche circumstances.

18. AEMO's FTM2 proposal suggests the introduction of a new settlement point within the customer's installation, necessitating a separate NMI. If this were to apply to all CER sites as the sole means of identifying and measuring CER, it could render the metering arrangements deployed in South Australia redundant, and the investment in enhanced metering arrangements may appear as a sunk cost borne by consumers.

19. We urge caution against any approach that mandates all CER sites to expose their load and generation volumes without a clear use case, as this is likely to drive up the overall cost of metering.

20. Corollary to the above, robust consumer protections in any recommended FTA model(s) would be important. This is to ensure unintended consequences, such as the imposition of unnecessary complexity or the inefficient allocation of costs, are avoided.

21. In our first submission on this workstream, dated 16 February 2023,[5] we strongly suggested that progressing any FTA models should be supported by a CBA. The CBA should show that clear net benefits for consumers can be delivered from the introduction of these models into the *National Electricity Rules* (the Rules).

22. The AEMC could consider issuing a second Directions Paper (or an Update Paper or an informal update of its views) ahead of its Draft Determination on this workstream. A second Directions Paper, informed by the Energeia CBA and submissions on this consultation, will

[5] Prior to Vector Metering's separation from Vector, on 1 July 2023 - https://www.aemc.gov.au/sites/default/files/2023-03/Vector_Submission%20AEMC%20Consultation%20Unlocking%20CER%20Benefits%20through%20Flexible%20Trading.pdf, page 1

enable stakeholders to better understand the AEMC's likely future positions and the dynamic inter-relationships of this workstream with other ongoing CER-related reforms.

23. In relation to the conduct of CER/FTA trials under the regulatory sandbox framework, we suggest that participation in such trials that receive public funding be open to interested parties through a contestable process. The outcomes of publicly funded CER trials should be released publicly to better inform future regulatory and business processes and decisions.

24. The AEMC notes that facilitating flexible trading is but one of several ongoing reforms to unlock the benefits of flexible CER in the NEM.[6] While tariff reforms are not within the scope of this consultation, we believe more broadly that the design of future tariffs will have significant influence on the effectiveness of any proposed FTA models, and future CER adoption and innovation. We note the AEMC's statement that it "has identified an opportunity to consider the role of network and retail pricing in further unlocking the value of CER flexibility."[7]

QUESTION 3: ENABLING A SECOND SETTLEMENT POINT AT A SINGLE CONNECTION POINT

- *Do stakeholders agree the technical and market considerations outlined above are the key considerations we should address in relation to establishing a second settlement point, irrespective of the metering configuration options available and proposed for separating and measuring CER?*
- *Should a second settlement point at a single connection point be restricted to defined situations and conditions (e.g. EV charging)? What criteria and governance processes need to be applied when allowing second settlement points at customer premises?*
- *What would be the appropriate framework for approving and verifying alternative measuring devices permitted to be used at the second settlement point?*
- *What would the implementation costs be for creating second settlement points with associated metering configuration options?*

25. In addition to the technical and market considerations outlined in the Directions Paper for the establishment of a second settlement point regardless of the metering configuration, the AEMC could consider:

    - The appropriateness of the model for different types of load, e.g. whether a particular FTA model is more appropriate where there is an electric vehicle (EV) charger;
    - Whether less accurate devices need to meet a threshold to ensure a degree of accuracy, e.g. quality hurdle;
    - Compliance levels for each settlement point;
    - Whether secondary settlement points should be limited to particular situations; and
    - Approval of devices by the appropriate body, e.g. compliance with the *National Measurement Act*.

26. We would like to urge caution regarding any assumption that customers can be shielded from associated costs when it comes to implementing a second settlement point. AEMO's proposal suggests that establishing a secondary settlement point is the most cost-effective option for customers in comparison to alternative arrangements, such as parallel metering. However,

[6] Directions Paper, pages 9-14

[7] *Ibid.*, page iv

we believe that implementation costs for consumers will vary considerably based on the infrastructure configuration at the specific site.

27. To illustrate, when a consumer is installing a smart EV charger, it is plausible that the consumer would incur the following costs:

    - Upgrading the power supply from single-phase to three-phase;
    - Upgrading the consumer mains, covering the area between the connection point and the meter installations;
    - Upgrading the existing metering, transitioning from single-phase to three-phase metering;
    - Establishing a dedicated 32-amp circuit extending from the existing metering panel to the secondary settlement point; and
    - Finally, creating the secondary metering sub-board on which a secondary meter can be installed. This meter may or may not be the EV smart charger itself.

28. In the above example, the costs associated with establishing the secondary settlement point or secondary metering point are but a tiny portion of the overall costs related to the rest of the required work.

29. We suggest that the Energeia CBA (or any future related CBA) make a comparative assessment of FTA models that involve a second settlement point *vs* those that do not. This will help establish a body of use cases that would support the most effective approaches for facilitating flexible trading.

QUESTION 4: USING OTHER DEVICES FOR CER MEASUREMENT AND REWARD

- *What changes to the rules, if any, should be assessed in relation to these non-market-related devices for CER products and services to consumers?*

30. In our view, the assessment of any changes to the Rules in relation to "non-market-related devices" for CER products and services should depend on how these devices are actually used. In cases where data is flowing from these devices into the NEM (e.g. for market settlement or billing purposes), these devices should be brought into the metering regime. The data-related rules that apply to competitive metering services should generally apply to other devices providing data to the market for similar purposes.

QUESTION 5: ESTABLISHING TWO CONNECTION POINTS AT A SINGLE PREMISES

- *Are there any changes we could make to the NER and NERR to assist in overcoming the current barriers to the second connection point?*
- *What issues need to be considered in evaluating whether there should be changes to the fixed network tariff for second connection points at the same premises? How (if at all) should this issue be addressed in the NER?*

31. The answers to the above questions will depend on the FTA models that will be progressed, if any. As indicated in our February 2023 submission on this workstream, a compelling case remains to be made for the establishment of secondary settlement points at this stage of market development.[8]

[8] https://www.aemc.gov.au/sites/default/files/2023-03/Vector_Submission%20AEMC%20Consultation%20Unlocking%20CER%20Benefits%20through%20Flexible%20Trading.pdf, pages 11

32. As further suggested in the above submission, the AEMC could consider convening an industry working group to identify the information and communication requirements for secondary settlement points, should any FTA model involving two connections be considered.[9]

QUESTION 6: AEMO'S SPECIFIC FTM2 FOR SMALL CUSTOMERS

- *Do you agree with the Commission's view and its initial position to not progress further with AEMO's specific FTM2 for small customers?*

33. Vector Metering agrees with the AEMC's initial position not to progress AEMO's FTM2 model for small customers at this time. Our previous submission on this workstream identified multiple costs and implementation challenges associated with this model, which are reproduced in the table below. In our view, these challenges are unlikely to be overridden by any benefits FTM2 can potentially deliver.

Vector Metering's comments on AEMO's recommended FTM2 model[10]

Pros	Cons	Impact on customer
• Total energy use from generation into LV network is measured for the premise • May reduce physical wiring costs for the customer • Secondary point can be remote from the primary point • Allows for secondary settlement to be de-activated in the market if the FRMP is the same across both points.	• Overall responsibility of the metering installation is unclear. Does the primary FRMP have obligations to protect the interest of the secondary FRMP? • Cost and complexity of extending the metering system architectures to support NMI subsidiary relationships and FRMP relationships for a connection point • Requires the primary retailer to receive readings from the secondary retailer for retail billing and AEMO invoice for reconciliation purposes • Dealing with network charges is more complex. The AEMO proposal that these charges go to the primary FRMP is not equitable where there are different customers at the primary and secondary settlement points – a situation that is not uncommon (e.g. tenant/landlord scenario)	• Customer gets a bill from each FRMP (retailer and CER agent) • Customer will pay for two meters • Likely to create confusion on which FRMP to contact if there is a problem • May avoid additional wiring at the customer's premise (in a minority of situations).

[9] https://www.aemc.gov.au/sites/default/files/2023-03/Vector_Submission%20AEMC%20Consultation%20Unlocking%20CER%20Benefits%20through%20Flexible%20Trading.pdf, page 11

[10] *Ibid.*, pages 8-9

Pros	Cons	Impact on customer
	• Secondary point is remote from the primary point and is likely to have more difficult access arrangements for maintenance and inspection • Settlement calculation by AEMO and settlement reconciliation by retailers is more complex • Measurement and settlement equation may not work if the customer installs generation capability to the primary settlement point • New processes required so that the MP for the secondary settlement point is made aware of activities on the primary settlement point that impact their service, e.g. MP2 is told that the loss of supply is related to an outage at the primary point and not because of a truck roll.	

QUESTION 7: AEMO'S FTM2 PROPOSAL FOR LARGE CUSTOMERS

- *Do you agree that introducing AEMO's FTM2 (or variations to it) for large customers would create an additional or better option for large customers to engage with multiple service providers?*

34. See our response to Q6 on the cost and implementation challenges of AEMO's FTM2 model, in general.

35. In our view, the proposal to progress the FTM2 model only for large customers would not necessarily confine costs to the large customers adopting the model. Requiring the industry to support the FTM2 model would have a wider impact on established processes and procedures. This could include introducing changes to AEMO's and industry participants' systems and processes – involving new/additional costs that will flow on to end consumers.

36. While FTM2 costs for large customers could be perceived to be less impactful due to the larger benefits that are anticipated, the solutions do not necessarily cost less. The cost of introducing changes to the electricity system to support FTM2 would be the same for one category of customers as for all customers. These cost increases would have to be recovered from a smaller pool of end customers, rather than 'smeared' across a wider customer base. There could also be increased costs for some consumers in the market who would not benefit at all from the adoption of FTM2 by large customers.

37. The potential wider cost impacts of a selective application of the FTM2 model, as proposed in the Directions Paper, highlights the need for robust consumer protections to support this

model. This is to ensure unintended consequences – such as increased or disproportionate costs for some customers, who may not benefit from this approach – are avoided.

38. The above considerations show that the cost and implementation challenges of FTM2 for small customers could just as well be replicated, to various extents, for large customers. Progressing this selective approach should be supported by a CBA, whether as part of the Energeia CBA, or any future related CBA.

39. Given the above considerations, we are inclined to prefer the use of existing mechanisms (or their derivatives) over the proposed approach of adopting FTM2 only for large customers.

QUESTION 8: MULTIPLE FRMPS: EMBEDDED NETWORKS MODEL

- *Other than metering and network connection costs, are there other reasons SGAs use the embedded network framework?*
- *Would the proposed changes to network tariffs in NSW and Tasmania drive SGAs in those states to adopt different models?*
- *Do stakeholders consider that the existing embedded network framework should continue to be used to facilitate flexible trading and market participation or should the Commission consider alternative models/framework?*
- *Are there any additional issues with the use of the embedded networks framework to facilitate flexible trading not already discussed above?*

40. For the reasons stated in our response to Question 7, we are inclined to prefer the use of existing mechanisms (or their derivatives) over AEMO's new and complex FTM2 model. FTM2 is likely to require changes to AEMO's and industry participants' systems and processes, which will have system-wide cost implications.

41. While superior models to facilitate flexible trading remain to be developed, it is reasonable to assume that (large) customers who are already using the embedded network framework to facilitate flexible trading would have already considered its costs and benefits to their business. As noted in the Directions Paper, "some of the issues stated by AEMO in its rule change request are related to existing market settlement procedures than the embedded network framework itself".[11]

42. The costs of using an entirely new FTA model *vs* using the existing embedded network framework for flexible trading purposes is something the Energeia CBA (or any future related CBA) could also assess.

QUESTION 9: MULTIPLE FRMPS: AEMO'S FTM2 PROPOSAL

- *If the Commission introduced FTM2, how would (or should) it affect the existing arrangements that allow forms of flexible trading, such as SGA, embedded networks, and wholesale demand response?*
- *Would introducing AEMO's FTM2 model for multiple energy service providers significantly impact the business model or costs of the primary energy service provider?*

[11] Directions Paper, page 38

- *Would FTM2 encourage distributors to test and implement new tariffs (e.g. dynamic) for sizable and responsive loads more readily than they have to date? Would FTM2 affect the way in which energy service providers (such as aggregators) provide network services?*
- *Are there any costs or benefits that we have not considered in relation to AEMO's FTM2 proposal?*

43. See our responses to Questions 6, 7 and 8.

44. As suggested in our response to Question 8, the Energeia CBA (or any future related CBA) could include a comparative CBA of large customers using AEMO's FTM2 model *vs* the embedded network framework (which some are already using) to facilitate CER flexibility. This will provide insights on whether introducing a new FTA model for large customers will deliver significant net benefits over improving/expanding the embedded network framework or other existing frameworks.

QUESTION 10: OPPORTUNITIES AND BENEFITS OF IMPROVING EXISTING ARRANGEMENTS

- *Do stakeholders consider there are other matters that the Commission should consider in terms of the opportunities, benefits, and costs for improving existing arrangements for the measurement of street lighting and public furniture?*

QUESTION 11: MARKET FUNCTIONS AND OBLIGATIONS – METERING ROLES

- *Should there be another level of accreditation for Meter Providers in the NER?*
- *What are stakeholders' views on distributors performing the functions of the MC, MP and MDP for the street lighting and other street furniture they manage, if MEFM is introduced?*
- *For street furniture not managed by distributors, should the existing competitive framework for metering parties apply if MEFM is introduced?*

45. Where new roles are created that involve the provision of metering data for market settlement purposes, compliance levels for those roles should be on a 'level playing field' with market participants already providing metering data for similar purposes. This will also ensure the integrity of metering data provided to the market.

46. If the requirements for new roles and functions relating to the metering of street lighting and public furniture (where those roles provide data to the market) are more flexible than those currently imposed on competitive metering service providers, then the requirements on the latter should be relaxed to similar levels.

47. We reiterate our view on roles that are being contemplated in relation to the provision of metering for street furniture:

> We encourage the AEMC to preserve optionality around the provision of metering services for street furniture so as not to stifle innovation while these services are emerging, e.g. automated streetlight dimming technology. This is particularly in relation to the parties who will be allowed to provide these services (i.e. not just DNSPs) or the roles that various parties can play to enable the delivery of these services. For example,

MPs or other accredited parties could be allowed to supply metering devices for street furniture to, or install metering devices on behalf of, DNSPs.[12]

QUESTION 12: TECHNICAL REQUIREMENTS

- *Do stakeholders have views on the removal or amendment of minimum service specifications for minor energy flow meters?*
- *Do stakeholders have views on inspection and testing requirements for minor energy flow meters?*

QUESTION 13: IMPLEMENTATION AND TRANSITION

- *Are there any other implementation or transitional issues we should consider for this aspect of the rule change?*

48. As indicated in our responses to Questions 10-11, in cases where new metering roles for street lighting and public furniture involve the provision of data to the market, similar rules governing competitive metering service providers should be developed for those new roles. This would ensure a level playing field for all parties providing data to the market, which is consistent with good regulatory practice. This would also preserve the integrity of market data and help instil consumer confidence in the electricity market.

Concluding comments

49. We are happy to discuss with the AEMC any aspects of our submission or provide information/insights relating to CER flexibility in the NEM. Please contact Paul Greenwood (Industry Development Australia, Vector Metering) in the first instance at Paul.Greenwood@vectormetering.com.

50. No part of this submission is confidential, and we are happy for the AEMC to publish it in its entirety.

Yours sincerely

Neil Williams
Chief Executive

[12] https://www.aemc.gov.au/sites/default/files/2023-03/Vector_Submission%20AEMC%20Consultation%20Unlocking%20CER%20Benefits%20through%20Flexible%20Trading.pdf, page 15