



John Pierce
Chairman
Australian Energy Market AEMC
www.aemc.gov.au

3 October 2012

Dear Mr Pierce,

Submission Response - EMO0022 Australian Energy Market Commission Draft Advice Energy Market Arrangements for Electric and Natural Gas Vehicles Approach Paper

Origin Energy Ltd (Origin) welcomes the opportunity to comment on the Australian Energy Market Commission Energy Market Arrangements for Electric and Natural Gas Vehicles Draft Advice (the 'Draft Advice'), released on 29 August 2012.

Origin is a major Australasian integrated energy company focused on gas exploration, production and export, power generation and energy retailing. Listed in the ASX top 20, Origin is Australia's largest energy retailer servicing 4.4 million customer accounts.

As part of our commitment to innovation and investing in tomorrow's energy solutions, Origin is supporting the development of the emerging electric vehicle market in Australia by working with partners to develop charging solutions and customer education programs. We recognise the opportunity that this transport solution represents to customers, energy markets and the community as a whole.

This submission focuses on electric vehicles (EVs) in the National Electricity Market (NEM). Origin will not be providing comment on issues specific to Western Australia or natural gas vehicles.

OVERVIEW OF ORIGIN'S POSITION

Origin is generally supportive of the Australian Energy Market Commission's (AEMC's) proposals pertaining to the role of pricing signals to facilitate efficient EV charging, controlled charging and vehicle to grid discharging, and the sale of electricity. In particular, we support the AEMC's proposals that EVs be treated like other forms of large load, EV charging behaviour is best incentivised through network pricing signals and that mandatory price structures for residential EV customers would be inefficient. To be fully effective, Origin believes it is necessary that these arrangements be accompanied by retail price deregulation. So long as retail prices remain regulated, the pricing structures that can be offered to customers will be limited and the introduction of network time of use pricing poses significant risk to retailers and the energy market if not accompanied by deregulation of retail prices.

We also support the AEMC's view that the supply of electricity for the purposes of EV charging generally constitutes a sale of electricity under the National Energy Retail Law and that the Australian Energy Regulator (AER) has a role in determining the legal status of electricity supply offered by bundled service providers - with transparent guidance provided by the AEMC. In addition to this, Origin believes that consumers are entitled to expect the same consumer protections for all EV charging services. Origin therefore recommends that all EV charging service providers - be they retailers, distributor or third parties - offering direct EV charging or bundled services, be subject to the National Energy Customer Framework (NECF). This is required for consumer protection and to ensure service providers compete on a level playing field.

While we are supportive of efforts to ensure energy market frameworks appropriately enable the commercial uptake of electric vehicles, we do have some comments on specific proposals in the Draft Advice.

Specifically, Origin has concerns regarding the suite of proposed changes to metering arrangements that would separate load and provide for multiple financially responsible market participants (FRMPs) to supply electricity to a single consumer connection point. On the basis of evidence supplied to date, we do not believe the case has been made to support the proposals outlined in section 3 of the Draft Advice.

Our concern principally relates to the lack of quantification of costs associated with retailer system changes that would be required under a multiple FRMP model. While it is difficult to identify an identical industry precedent or to make simplistic comparisons, Origin notes that the system set up costs to NSW retailers of a previously significant system change - full retail contestability - was in the order of \$80M¹. The AEMC must consider costs associated with the introduction of its proposed changes, and how these costs can be borne according to a “causer pays” principle.

- In addition to increased system set up costs, Origin is concerned that the increased complexity associated with multiple FRMPs at a single connection point will create a material increase in the cost to serve associated with acquiring, retaining and maintaining customers - this includes increased costs associated with customer service and moves, transaction costs such as billing and payments, complaints, hardship, and debt recovery.
- Origin considers it is possible that the total cost associated with the AEMC’s proposal could be in the order of tens to hundreds of millions of dollars. The fact that we are not in a position to narrow down this range based on available information, is itself an ample indication that more work needs to be done to determine whether the AEMC’s proposal is in the best interests of customers.

Origin is concerned to ensure that the AEMC bases proposed changes on realistic cost estimates - with respect to the total costs of EVs on the electricity system, the costs of installing dual meters at a residence and the total costs (and equity consideration according to the “causer pays” principle) associated with a dual FRMP model. It is only with credible cost comparisons that decisions can be made when comparing policy options.

- A key set of input data to the AEMC’s decision making is AECOM’s final modelling advice, the *Impact of Electric and Natural Gas Vehicles on the Energy Markets*. In particular, the Draft Advice quotes AECOM’s estimate that the charging of EVs if left unmanaged could cost the electricity system in the order of \$10,000 per vehicle². Origin considers that with cost reflective electricity pricing the impact of EVs would be significantly less. AECOM itself acknowledges that its estimate referred to fully un-managed charging; a scenario intended to be used to book-end their analysis. It does not therefore necessarily represent a realistic scenario and Origin is therefore concerned that the AEMC is making recommendations for fundamental changes to energy market arrangements based on an extreme and unlikely situation. We are concerned that this important point has been lost, first in the AEMC’s Issues Paper and now in the Draft Advice.
- Another apparently influential piece of input data is an estimate that installing a second meter at a premise under existing rules costs between \$1,000 and \$8,000³. While the AEMC acknowledges these numbers have not been verified, Origin is concerned that it has nonetheless used them as the prime justification for proposed changes to metering arrangements.
- On initial review, Origin estimates that for a residential site that is compliant with the current Service and Installation Rules of the relevant jurisdiction, the cost to establish a second meter

¹ Based on published IPART cost /customer of \$5 per customer per annum over two 3 year determination periods on a NSW customer base of 2.7 million.

² AEMC Draft Advice Energy Market Arrangements for Electric and Natural Gas Vehicles, p. ii

³ AEMC Draft Advice, Energy Market Arrangements for Electric and Natural Gas Vehicles, p. 29

and NMI is likely to be in the order of \$1,000 to \$3,000 - very much at the lower end of the range to which the AEMC refers. Moreover, even if the AEMC's proposed changes are implemented, they are not likely to reduce the bulk of the costs that comprise the \$1,000 - 3,000. This is because, firstly, these costs would likely still be required as they pertain to necessary physical establishment activities - an outage to install the new metering, onsite work to ensure the site is safe, cabling to connect the EV charger and the installation of new isolation devices. Secondly, installing an EV charger would likely require upgrading the front meter (the least complex arrangement being a 2 element Type 4 meter), which will have its own additional costs.

In light of the importance of ensuring credible cost and benefit assumptions when making decisions, Origin believes that a cost benefit analysis that applies due scrutiny to the complete suite of establishment and ongoing costs resulting from the AEMC's proposed changes (and that considers all available options) is required.

- Origin is concerned that not only could the costs of the AEMC's proposal be significant and the intended benefits not actually realised, but also that there are other available cost effective options that have not and must be fully considered. This includes for example off market sub metering, which would also achieve the outcome of measuring EV usage separately, or alternatively a good faith commercial negotiation framework with appropriate mediation/arbitration arrangements.

Origin also believes that the AEMC must ensure that its proposals ensure competitive neutrality.

- Origin is concerned the draft proposals on metering arrangements seems to suggest that third parties pay only the cost of operating the DSP and not the establishment costs involved with making changes to energy market arrangements and infrastructure. For example, Origin is concerned that the AEMC is recommending an uneven apportionment of costs between the parent and child FRMP and the reason for this is not clear. Specifically, Origin does not understand why all fixed Distribution Use Of System (DUOS) charges and losses within the premises would be assigned to the FRMP for the parent National Meter Identifier (NMI).

Origin would also like to highlight its belief that the proposal for any FRMP at a premises to disconnect the entire load is unworkable - this proposal creates serious health and safety risks to consumers and undermines the NECF.

- Origin fundamentally disagrees with the suggestion that any FRMP at a multi-FRMP premises should have the power to disconnect the consumer's total load - the implications are significant and we do not accept the proposal.
- Allowing for multiple FRMPs means that any service provider that sees a benefit in selling load-specific products could do so, and the only limitations are the range of services and the number of meters that a consumer could accommodate. This would mean that the provider of EV services, or air-conditioning services, or refrigeration services, or any other services being offered, could disconnect the total load. The problems associated with this scenario are compounded if any one or more of these service providers are not subject to the NECF and the consumer protections within it.
- If the goal is to have each load be able to be disconnected, then each part of the load must be able to be disconnected independent of the other FRMP(s) at the premises and FRMPs wishing to disconnect need to pay for the capacity to do this separately.

If the AEMC's proposed changes to metering arrangements are to be implemented, this must be done in partnership with retail price deregulation to minimise customer gaming.

- There is a serious risk that, if implemented, the proposed metering arrangements will increase the likelihood of customer gaming between FRMPs as customers endeavour to capture the benefits of their DSP whilst minimising their costs.

- Take for example the scenario where a home has two separate supply tariffs at a single connection point (NMI) - one TOU tariff for an EV for example - and a separate flat tariff for the rest of the home. During peak periods the TOU tariff would send a signal to the customer to not charge their EV. Under current arrangements at a customer's home with a single connection point (and a single supply point, meter, FRMP and tariff), the customer would receive the intended signal. However, under the arrangements proposed by the AEMC where there would be two or more supply points (and meters, FRMPs and tariffs) at a home's single connection point, the intended signal could be subverted. This is because a customer could potentially optimise their position in the market by continuing to charge their EV at peak times by switching the EV charging to the home socket and paying the flat tariff - thereby avoiding the costs they are imposing on the network - and then, at off peak times switching back to the socket on the TOU tariff. Origin notes that this scenario would apply particularly to DSP plug-in DSP applications rather than pre-wired applications, which we anticipate would be more physically inconvenient - but not impossible - to game. Therefore the likelihood of this optimisation could increase with technology advances that enable more plug-in socket appliances and remote control.
- In regulated jurisdictions this would subvert the behaviour changes intended to be driven by cost reflective electricity pricing. Retail price deregulation removes this problem by allowing the tariffs at each supply point to be fully competitive. Origin recommends that retail price deregulation be a pre-requisite for the introduction of multiple FRMPs at a single connection point. This should be applied at a jurisdictional level or otherwise on a premises by premises basis whereby customers who introduce multiple FRMPs are required to forego the right to regulated tariffs.
- The potential for gaming highlights safety issues associated with having multiple supply and metering points at a single premises. In general, a licensed electrician or other authorised person may not effectively isolate all supplies to a premises and hence be working on live equipment. Specifically, an authorised person may isolate, for example, the EV charging circuit but find that due to gaming the equipment has been connected to the other supply and hence remains energised, presenting a safety risk.

Origin's responses to specific questions raised in the Draft Advice are outlined below.

I would be happy to discuss any aspect of this submission further with the AEMC at your convenience or alternatively you can contact Madeleine Lyons (02 8345 5207).

Yours faithfully,



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ORIGIN RESPONSES TO SPECIFIC QUESTIONS RAISED

SECTION 2: ELECTRIC VEHICLES - NEM METERING ARRANGEMENTS TO FACILITATE EFFICIENT BEHAVIOUR

Question 1 EVs and pricing

Do you agree that efficient EV charging behaviour should be incentivised through network pricing signals? If so, what arrangements are necessary to implement these pricing signals?

Origin agrees that efficient EV charging behaviour should be incentivised through network pricing signals, however to be fully effective it is necessary that this be accompanied by retail price deregulation. So long as retail prices remain regulated, the pricing structures that can be offered to customers will be limited and the introduction of network time of use pricing poses significant risk to retailers and the energy market.

Further to this, Origin supports the AEMC's:

- Draft advice summarised in section 7.1 that EV load in general should be treated the same as any other large load and DSP. Origin is concerned however by the AEMC's proposed exception to this - namely that in some circumstances specific energy market arrangements for EVs may be necessary, for example network licensing exemptions for providers of EV charging. It is not clear why this should be the case and Origin instead contends that there should be no differential treatment for EVs.
- Commitment to apply the causer-pays principle - specifically, this should be applied not just to ongoing operating costs, but also to the set up costs required to change existing market arrangements.

Question 2 Controlled charging

Do you have any suggestions on how to improve the method for valuing non-firm benefits and improving the negotiation process among multiple parties so that the diverse benefits of controlled charging are captured?

Origin notes that in this section of the Draft Advice the AEMC seems to make an assumption that aggregators are necessary to value and capture non-firm benefits of EVs. Origin is not convinced that this is the case. In the event that aggregators become involved it is crucial that they bear all costs and risks associated with aggregator functionality. Without this assurance, there is a risk that aggregators will be free-riding existing market participants.

Question 3 Vehicle to Grid

Should clause 7.3.1(a)(7) of the NER be amended to reflect the current early status of V2G? Should interval meters be required to have bi-directional capability?

Origin supports enabling bi-directional flow and vehicle to grid (V2G) applications. However, EVs should not be treated any differently in this regard from other forms of distributed generation and DSP - EV load only varies as a function of firmness, location and quantum.

A scenario to consider is the possibility of the owners of EVs coinciding within the solar photovoltaic (PV) demographic - this would require the interval meters being installed to have bidirectional capability with V2G and vehicle to home (V2H) together with PV capability (either net or gross) - with important energy and data flow considerations.

Question 4 Identifying a large load (including an EV)

1. Should any loads above a threshold (eg. 15 amps) be identified to the DNSP? Could the Wiring Rules (AS/NZS 3000:2007) provide the basis for determining the maximum demand at a premise and provide the means by which an electrical contractor can notify a DNSP of a new or altered installation affecting maximum demand at that premise?

2. If there are no requirements to identify particular appliances, should there be a total load threshold above which identification to a DNSP is required?

Origin supports load transparency and notes this functionality will assist more with demand management than consumption management.

Origin also notes that large residential sites with significant electrical appliances such as heating/air conditioning already in place may encounter issues when installing an EV charger without upgrading their mains connection. If a new mains connection is required to be installed for an EV, network providers may require a network review to ensure it can be managed; this is similar to what network providers currently undertake for some PV systems to ensure the operational integrity of the electricity network.

SECTION 3: ELECTRIC VEHICLES - NEM METERING ARRANGEMENTS TO FACILITATE CONSUMER CHOICE AND EFFICIENT CHARGING

On the basis of current evidence, Origin does not believe that the case has been made to support the proposals for NEM metering arrangements outlined in section 3 of the Draft Advice and pertaining to questions 5 - 9 below. We believe these proposals require further analysis and credible quantification of associated costs, and costs of alternatives, to enable a proper assessment of the options and evidence based decisions to be made. For an overview of our concerns and reasoning please refer to Overview of Origin's Position on pages 2 - 4 of this submission.

Question 5 Changing the definition of connection point and supply point

Do you agree that changing the definition of connection point and supply point in the NER should facilitate separate metering of loads (or generation)? Does the creation of this new definition produce any unintended consequences? Please provide reasons.

Origin does not support the AEMC's proposal to change the definition of connection and supply point in the NER and has serious concerns that it will produce the following unintended consequences:

1. *Creation of an uneven playing field whereby 'secondary retailers' downstream of the supply point (or 'child meter FRMPs') - and their customers - free ride existing connection metering infrastructure and upstream customers.*
- Origin is concerned that the AEMC's proposal would result in general consumers bearing the additional costs associated with introducing separate supply points and FRMPs, whereas applying the user pays principle should require these costs be borne by EV /DSP customers.
 - For example, Origin notes that section 3.1.1 of the Draft Advice seems to imply that EV load should not pay its fair share in network use of system charges and that these should be paid for by the parent meter FRMP. As per previous sections, causer-pays principles must apply, EV customers must pay their fair share of DUOS and all other costs - in accordance with the degree to which EV's use the distribution network.
 - Another example is the costs and responsibility involved in settling the embedded network in a parent/child arrangement - it is not currently clear who would take this up. If it is to be the parent FRMP, costs associated with the task of allocating losses and volumes for settlement across both FRMPs would need to be measured, fully accounted for and appropriately apportioned.

- In scenarios where an EV is a business vehicle that is charged in a home different business/residential set up arrangements mean there should be different DUOS for the site.
 - Finally, Origin is concerned the AEMC's proposals for parent/child metering arrangements plan to assign losses and all fixed DUOS charges to the FRMP for the parent NMI (discussed more in our response Question 6).
2. *Increased risk of customer optimisation between multiple electricity retailers enabling them to capture the benefits of their DSP without paying the costs - subverting the behaviour intended by be triggered by cost reflective/ TOU pricing.*
- Take for example the scenario where a home has two separate supply tariffs at a single connection point (NMI) - one TOU tariff for an EV for example and a separate flat tariff for the rest of the home. During peak periods the TOU tariff would send a signal to the customer to not charge their EV. Under current arrangements at a customer's home with a single connection point (and a single supply point, meter, FRMP and tariff), the customer would receive the intended signal. However, under the arrangements proposed by the AEMC where there would be two or more supply points (and meters, FRMPs and tariffs) at a home's single connection point, the intended signal could be subverted. This is because a customer could potentially optimise their position in the market by continuing to charge their EV at peak times by switching the EV charging to the home socket and paying the flat tariff - thereby avoiding the costs they are imposing on the network - and then, at off peak times switching back to the socket on the TOU tariff. Origin notes that this scenario would apply particularly to DSP plug-in DSP applications rather than pre-wired applications, which we anticipate would be more physically inconvenient - but not impossible - to game. Therefore the likelihood of this optimisation could increase with technology advances that enable more plug-in socket appliances and remote control.
 - Another unintended and perverse scenario could be where the EV is on a business tariff (as a company car) and household load is on a residential - this would require the FRMP for the residential site to be on a residential network tariff even through it is supplying a business requirement.
 - In regulated jurisdictions this would subvert the behaviour changes intended to be driven by cost reflective electricity pricing. Retail price deregulation removes this problem by allowing the tariffs at each supply point to be fully competitive. Origin recommends that retail price deregulation be a pre-requisite for the introduction of multiple FRMPs at a single connection point. This should be applied at a jurisdictional level or otherwise on a premises by premises basis whereby customers who introduce multiple FRMPs are required to forego the right to regulated tariffs.
 - The potential for gaming highlights safety issues associated with having multiple supply and metering points at a single premises. In general, a licensed electrician or other authorised person may not effectively isolate all supplies to a premises and hence be working on live equipment. Specifically, an authorised person may isolate, for example, the EV charging circuit but find that due to gaming the equipment has been connected to the other supply and hence remains energised, presenting a safety risk.
3. *Requirements to upgrade an accumulation meter at the customer's premise in order to allow subtractive metering for downstream metering points.*
- The customer would be required to pay for an upgrade of the meter for its conventional load (as distinct from its separately metered load for an electric vehicle, embedded generation and so on). At a minimum, this will require the installation of a type 5 interval meter to replace an existing accumulation meter. The Local Network Service Provider (LNSP) will be the Responsible Person (RP) for such upgrades and the customer will need to pay the alternative control service costs that are associated with the upgrade. In some jurisdictions, the installation and ongoing fees for type 5 metering can be relatively expensive (more than \$500 depending on customer connection characteristics).
 - In addition, the customer may not be able to revert to a lesser meter type once it upgrades to a type 4 or 5 installation.
 - If the customer and (for example) a second FRMP seek to install a remotely read meter, there may be compatibility issues in the future if a type 5 meter is upgraded to a type 4 or advanced

meter. While Origin notes (and supports) the unbundling of metering provision and meter service costs from regulated use of system charges (as recommended in the Power of Choice Draft Report), in practice customers may, for a period of time, continue to pay for: a basic accumulation meter, an upgraded meter (either provided through the competitive metering market or charged at a regulated rate via the LNSP); and, the new downstream (second supply point) metering device.

- While we note there are incentives and trade-offs involved for the customer to pursue such an arrangement, the consequences for ongoing meter costs of selecting particular services need to be fully explained to the customer.

4. *Significant additional costs that the customer will have to fund themselves.*

- For example, the settlement of supply point meters downstream of the connection point creates new administrative costs on the parent and child FRMPs for settlement.

In addition to unintended consequences, it is important to note that while the AEMC comments that separate metering requires a second connection point at present, this has not been Origin's experience - particularly in relation to embedded networks or sub-metering customer embedded generation (such as solar PV). It is unclear therefore how current provisions of the NER prohibit subtractive metering arrangements for measurement that is "on market". Furthermore, Origin notes that appliances such as Electric Vehicle Supply Equipment (EVSE) can have in-built metering meaning that there are no requirements for additional metering costs it is just a business process/commercial arrangement.]

Finally, it is not clear how retailer of last resort (RoLR) will apply in multiple FRMP scenarios. For example:

- In the case of multi-element meters (discussed in Question 7), if the FRMP is the failing retailer, and is also the RP, how is matter of RoLR to be managed?
- In the case of parent/child metering or multi-element/register metering, who is the RoLR for the load of the failing FRMP? There are existing arrangements for default RoLR that may complicate such issues.

Origin recommends that the costs and benefits of the advised changes be evaluated ahead of any rule change. This would also provide the opportunity to test different scenarios and draw out unintended consequences that may arise.

Question 6 Parent/child metering arrangements

Do you agree that our proposals address existing issues with parent/child metering arrangements? If so, how should these arrangements be specified in the NER? Please provide reasons.

Generally, Origin is of the view that the existing rules provide for the situation described by the AEMC. While a rule change may clarify some uncertainties with respect to roles and responsibilities, the NER does not prevent the type of outcomes that are described in section 3.2 of the Draft Advice. Further to this, Origin does not consider that the cost of a second meter installation to be remotely close to the cost range described on page 29 of the Draft Advice. The cost of an on-market child meter or a second meter will be very similar.

The load from an EV does not always have to be separately metered in order to provide a benefit to consumers. The EV load will form part of the total load from a connection point and tariffs can be developed that suit customer preferences without the installation of second meter. A second metering installation, while not imposing the costs of the kind the AEMC describes, will add additional costs and administrative arrangements will be required to settle the energy and allocate losses on a subtractive basis.

Origin has developed a number of scenarios and indicative costs that may assist the AEMC in further understanding the impacts of new parent/child arrangements, and multiple FRMPs/registerers at a single customer premise. These are set out in Table 1 toward the end of our comments on this section of the Draft Advice (after question 9).

The AEMC states on page 29 of the Draft Advice that it intends to introduce further flexibility to:

...increase the range of products and packages that can be offered to consumers, and hence increase competition in the provision of EV services and demand side options.

Origin considers that retailers and other services providers (including LNSPs) have been constrained in offering additional services for many years due to regulatory barriers (for example, the smearing of metering costs into general distribution use of system charges has discouraged investment in advanced metering services as customers will pay for replaced metering services they do not use in addition to their new services). While acknowledging new DSP services are now available due to falling technology costs, other DSP initiatives have been discouraged by regulatory restrictions since retail contestability of energy was introduced. Origin has pointed out these regulatory barriers in a range of forums in the past.

Also, on page 31 of the Draft Advice, the AEMC states that off market sub-metering “would not be contestable and consequently may limit consumer choice”, is perhaps at odds with the ability for the customer to switch to FRMP(s) who provide their preferred services. Origin would contend that some of the DSP services under discussion are new markets and it is not certain what market structures and commercial arrangements will emerge at this stage. As such, prescribing changes to the rules to accommodate particular models could be premature without actual market experience. Off market sub metering delivers the outcome of measuring the EV usage separately and can be more cost effective.

Finally, Origin is concerned that the AEMC’s proposals for parent/child metering arrangements do not evenly apportion costs between the parent and child FRMP and is not clear why - given its espousal of the causer-pays principles. Specifically, Origin does not understand why:

- losses within the premises would be assigned to the parent meter;
- all fixed DUOS charges would be assigned to the FRMP for the parent NMI, unless otherwise agreed with the consumer; and

The problem with this is that it creates an uneven playing field between existing retailers and incoming aggregators.

The risks being taken on the parent meter FRMP the process for settlement are unclear and require clarification. For example, is the parent FRMP responsible for settling for the whole combined load or the net load?

Origin notes that the existing Embedded Network guidelines provide an option for a customer to opt out of the embedded network -the implications of how this would work where there is the potential for what appears to be a FRMP and meter register to opt out of the embedded network are unclear. In addition where the EV is set up as a child meter and there is a clear separation between the house load and the EV the customer at the EV meter can still opt out of the embedded network.

Question 7 Multi-element meters

Do you agree that having one Responsible Person for multi-element meters is the efficient solution? Are there any other issues with multi-element meters that we should address?

No - there needs to be very clear roles and responsibilities for the market processes associated with the different metering elements. The existing processes work in the market as there is no concept of different retailers being associated with different elements.

It is difficult to see how multiple RPs could be supported for a single metering installation. Where multiple FRMPs are present at the site and metering is type 5, complexities in relation to who is the RP do not emerge as the RP is the LNSP. Where metering is type 1-4, any of the FRMPs could nominate to undertake the RP role (or nominate the LNSP to be the RP). In contestable situations, one solution to determining which FRMP should be the RP where a number of FRMPs are associated with a multi-element meter could be the FRMP with the most significant load (and financial exposure to the NEM). Origin believes that FRMPs and LNSPs will be able to arrive at commercially acceptable terms on this matter.

Origin agrees that multi-element metering is often more cost effective than separate single element meters, however we note that the cost of wiring specific loads to the multi-element meter may offset some of these savings. For example, metering solar PV systems on a gross basis (where the system is wired to the gross measurement element, usually at the front of a residential premise) is generally more expensive than net metering.

Question 8 Metering in embedded networks

Do you agree that our recommendations address existing uncertainties with respect to metering in embedded networks? Please provide reasons.

No - even where embedded networks have operated for an extended period with existing market participants there continues to be uncertainty and disputes regarding their establishment and ongoing responsibilities.

Customers would need to fully understand the implications for their site from forming an embedded network as well as the network related issues associated with the connections downstream, for which the networks generally have no responsibility.

Issues associated with electrical maintenance and faults would also likely be the customers' responsibility and need to be properly understood.

Question 9 Two (or more) FRMPs at a connection point

1. Do you agree that our recommendations will enable two or more FRMPs to operate effectively at a connection point? Please provide reasons

No - as previous outlined in questions 5 and 6 and the Overview of Origin's Position at the outset of this response.

Two or more separate FRMP's on the same connection point seems to be a solution to a problem that doesn't yet exist, and where there are other possible and lower cost solutions which have not been considered.

The existing market rules regarding B2B transactions and timings, market responsibilities and MSATS requirements have not been developed to take into account the possibility of multiple different FRMPs associated with a single meter / connection point.

With potential to have FRMP based on meter registers, the file format requirements for both data provision and market settlement need to be precise to ensure that the customers' data is sent to the correct industry participants and settled effectively.

Origin recommends that a full cost-benefit assessment is required before permitting two (or more) FRMPs at a connection point.

Question 9 cont.

2. In the event that one FRMP wishes to disconnect a consumer, do you agree that a FRMP should have the power to disconnect the consumer's total load, which includes the load from the other FRMP? Or do you think that each part of the load should be able to be disconnected independent of the other FRMP?

Origin fundamentally disagrees with the proposal that any FRMP at a multi-FRMP premises should have the power to disconnect the consumer's total load. The implications of the proposal for any FRMP to disconnect a consumer's premises as a whole are significant. A key issue the proposal raises is how EVs interact with existing electricity load that is deemed to be an essential service. While Origin is not implying that EV charging is an essential service, the AEMC's proposal opens up the scenario where multiple FRMPs would be interacting with and could possibly disconnect an essential service. If this were to proceed we can anticipate consumer confusion and health and safety risks, and significant cost, regulatory and reputational risk for the FRMPs for the remaining load (existing energy retailers). Costly and challenging disputes would result, and the Victorian Wrongful Disconnection regime for example would be overloaded with cases that may not be able to be linked back to effectively authorised retailers. If the goal is to have each load be able to be disconnected, then each part of the load must be able to be disconnected independent of the other FRMP(s) at the premises. In the event that this is not possible as a default (which we expect will be limited), the second and subsequent FRMPs will need to decide if they pay for upgrades to the premises to provide for separate disconnection or not.

It should be recognised that this proposal is not specific to EVs and nor is it limited to a two FRMP premises. Allowing for multiple FRMPs means that any service provider that sees a benefit in selling load-specific products can do so, and the only limitations are the range of services and the number of meters that a consumer can accommodate. This can then mean that the provider of EV services, or any other services being offered, can disconnect the whole load. Further, there is a chance that any one or more of these service providers will not be subject to the NECF and the consumer protections within it, such as minimum collection periods and disconnection obligations.

This situation raises several important issues that Origin believes the AEMC cannot ignore.

First, the AEMC has suggested that the NECF and the Australian Consumer Law (ACL) are much the same, with the implication that disconnection via the ACL will have much the same consumer impact as disconnection under the NECF. Origin disagrees with this view - and points to the substantial work and effort that has been expended developing the NECF given the presence of the ACL as counter evidence.

In fact, these consumer protection regimes are clearly different, with the level of consumer protections under the NECF being significantly higher than the ACL. The NECF reflects the fact that electricity is an essential service for residential consumers, and thus provides for disconnection timeframes, hardship programmes, use of an energy Ombudsman and life support mechanisms, among other things. Energy retailers are not allowed to disconnect a consumer where they have not adhered to the minimum collections timeframes or offered payment plans under certain circumstances, and they also cannot disconnect if the consumer is on life support, in the retailer's hardship programme, or where the consumer has made a complaint to the relevant Energy Ombudsman. These requirements are not reflected in the ACL.

It is inappropriate that any service provider could disconnect a consumer's household and not be subject to the full disconnection, collections, complaints and hardship requirements of the NECF. Regardless of whether a service provider's own service is seen to be core or incidental, or whether it is the sale of energy or something else, the moment that such a service provider can affect the provision of electricity to the whole premises they must be subject to the same requirements as other retailers.

Leading from this, we can see that there are several occasions where an energy retailer cannot disconnect a residential consumer based on that consumer's specific circumstances, and that the nature of those circumstances may not be shared with the market as a whole. While the distributor

for the premises will have life support information and this can be provided to all FRMPs (with the correct contractual arrangements), the customer's membership of a retailer's hardship programme or status of a complaint will not be shared information. Having multiple FRMPs at a premises thus requires new processes for all FRMPs which might disconnect the whole load to be aware of the consumer's situation with another service provider and to not take action under a range of circumstances. This will be difficult to police if the service providers are not all subject to NECF, and we suggest it is impossible to manage effectively and with regard to the consumer's reasonable expectations about privacy. As a final point it should be recognised that consumers cannot contract out of these provisions of NECF - it does not matter what service providers might agree with consumers, if the whole premises is disconnected the retailer selling electricity to the bulk of the house- or the parts deemed "essential" which is another complicated issue that the AEMC is opening up and that would require resolution - has legal obligations to comply with the NECF.

Even if all service providers are subject to NECF, there are further reasons why the AEMC's disconnection proposal is impractical. Service providers will have different credit models, and it is not appropriate for a new service provider's collections approach to hamper the original service provider's customer service or credit collection model. Energy retailers are regularly requested to consider disconnection as a last resort only, even where there are rights to disconnect under NECF, and this is a principle of NECF itself. Energy retailers are criticised for moving to disconnection where there are further ways to engage with customers first, and this is a policy topic that is regularly on the agenda of government and regulatory decision-makers. It is inappropriate to overlay another service model that does not share or understand the essential service policy to date and the principles observed. As an existing retailer to the premises, we also object to our capacity to collect debt from our customers being limited by another service provider.

As a final point, we believe there is a question as to whether the contractual term that would provide for disconnection of an entire load by one FRMP would constitute an unfair term under the ACL. For example, it is difficult to see how disconnection of an entire household is reasonably necessary to protect an EV charging business's interest, particularly given the level of potential detriment to which the household may be exposed.

SECTION 4: ELECTRIC VEHICLES - NEM ARRANGEMENTS TO FACILITATE CONSUMER CHOICE

Question 10 Sale of electricity and the bundled service provider

Do you consider the AER should be required to specify how it will determine whether a bundled service provider is selling a good or service that constitutes a legal sale of electricity, for example, through a guideline?

Yes, Origin supports the AER specifying how it will determine whether a bundled service provider is selling a good or service that constitutes a legal sale of electricity. However, this may require more than a guideline, and we question how there are not more comprehensive changes required to NECF as a whole.

Given the implications of the AEMC's other proposals, such as the proposal above that any FRMP might be able to disconnect a consumer's whole load, we would expect any assessment of what is the sale of electricity to clearly also account for the effects of the range of service providers on authorised retailers and their existing obligations to consumers. These cannot be seen as parallel or somehow independent services - the consumer's home is already receiving an essential service and this cannot be compromised in any way. Consumers are unlikely to appreciate semantic differences between electricity provision and provision of kilometres or units of air, or whatever other device may be used by a service provider, and consumer dissatisfaction will be high should the actions of the additional service providers impact their existing energy supply.

Question 11 EVs and retail exemptions framework

Do you agree that the AER should review its retail exemptions framework to clarify the status of EV charging at commercial EV charging stations where on selling occurs? Please provide reasons.

Origin agrees that the AER should review its retail exemptions framework to clarify the status of EV charging at commercial EV charging stations where on selling occurs. This is unlikely to comprise a significant piece of work but it would appear to be a minimum requirement given the paradigm shift reflected by services such as EV charging outside the home. Electricity may be seen as merely a replacement for petrol in these circumstances but the nuances of the change should be investigated with stakeholders through AER consultation.

Appendix 1: Indicative costs associated with various metering options⁴

	Option description	Additional meter required?	Incremental costs		Multiple FRMPs allowed?	Ongoing meter opex (annual)	
			High	Low		High	Low
1	Customer installs EV charging, does not alter existing meter.	No	\$0	\$0	No	\$30-\$50 (T6) \$60-\$100 (T5) \$80-\$120 (T4)	\$25-\$40 (T6) \$35-\$70 (T5) \$40-\$75 (T4)
2	Single FRMP, off market meter to measure EV- (T4)	Yes	2 T4 meters @ \$500 = \$1000	2 T4 meters @ \$300 = \$600	No, but second retailer/third party may be contracted to second meter	\$80-\$120 (T4)	\$40-\$75 (T4)
3	Single FRMP, off market meter to measure EV- (T5)	Yes	2 T5 meters @ \$600 = \$1200	2 T5 meters @ \$250 = \$500	No, but second retailer/third party may be contracted to second meter	\$60-\$100 (T5)	\$35-\$70 (T5)
4	Parent/child metering (T4)	Yes	As for option 2	As for option 2	Yes	\$80-\$120 (T4)	\$40-\$75 (T4)
			As for option 2 + annual admin cost for settlement (\$100-\$150 per annum) Cost to serve for second FRMP			\$60-\$100 (T5)	\$35-\$70 (T5)
5	Parent/child metering (T5)	Yes	As for option 3	As for option 3	Yes	\$80-\$120 (T4)	\$40-\$75 (T4)
			As for option 2 + AEMO settlement costs (\$100-\$150 per annum), cost to serve for second FRMP, potential duplication in dispute resolution			\$60-\$100 (T5)	\$35-\$70 (T5)
6	One meter, two separate FRMPs (T4)	No	1 T4 meter @ \$500	1 T4 meter @ \$300	Yes	\$80-\$120 (T4)	\$40-\$75 (T4)
			AEMO settlement costs, cost to serve for second FRMP, potentially higher dispute resolution costs (\$50-\$125 per annum)			\$60-\$100 (T5)	\$35-\$70 (T5)
7	One meter, two separate FRMPs (T5)	No	1 T5 meter @ \$600	1 T5 meter @ \$250	Yes	\$80-\$120 (T4)	\$40-\$75 (T4)
			As for option 6.			\$60-\$100 (T5)	\$35-\$70 (T5)

Key: T4 = type 4, remotely read interval meter

T5 = type 5, manually read interval meter

T6 = type 6, basic accumulation meter

⁴ These apply to any dedicated metering arrangement, not just EVs and are incremental for multiple devices separately metered in the NEM. Also note - using a meter within the appliance like the EVSE requires no additional metering costs.

Appendix 2: Summary of Origin’s position on AEMC’s Draft Advice

AEMC Draft Advice	Origin position
<p>7.1 Electric Vehicles - NEM arrangements to facilitate efficient behaviour</p> <p>Our power of choice review found that the current network and retail tariffs do not necessarily reflect the cost of supply and the delivery of electricity. This means that most consumers currently do not have options to capture the value of DSP activities. Therefore, the current pricing arrangements are unlikely to promote efficient charging behaviour for EV consumers.</p> <ul style="list-style-type: none"> • Although efficient behaviour requires high use consumers to face cost reflective prices, we do not recommend mandating specific price structures for residential EV consumers because: • EVs should be treated as other forms of large load and DSP and the power of choice review will provide advice on how the market could move towards more cost reflective prices; and • retailers and networks can still develop their own EV specific tariffs to incentivise efficient behaviour. • Also, we recommend that: <ul style="list-style-type: none"> – there may be merit in having some form of geographical variation in the DUOS charges to better focus the network costs onto the EV consumer; and – meters with interval read capability are necessary to enable consumers to be incentivised to behave in a manner that yields efficient market outcomes. The power of choice review is exploring how high use consumers, such as large load consumers, can be allocated interval (or other time varying) meters to facilitate efficient behaviour. • We consider that the connections charging framework administered by the AER is appropriate for EVs connecting to a distribution network and we are not proposing any changes. The framework for setting upfront connection charges under Chapter 5A of the NER allows for the possibility of applying a connection charge to EVs connecting to a distribution network depending on the nature and size of the connection. • We consider that the right to controlled charging ultimately lies with the consumer. This right can be assigned by the consumer to other parties in exchange for benefits to the consumer. To realise the benefits of controlled 70 Energy Market Arrangements for Electric and Natural Gas Vehicles charging, effective commercial relationships (or contracts) between the consumer and potentially DNSPs, retailers and aggregators are required. We recognise the role that third parties (such as aggregators) can play in negotiating (on behalf of the consumer) the allocation of benefits between multiple parties. To assist these third parties in negotiating benefits of controlled charging so that it is captured in commercial contracts, it may be necessary to set some regulatory guidance on the steps to take in the negotiation process and possible measures to assess the value of DSP to aid the negotiations. The power of choice review is exploring how the energy market arrangements should support these contracts. • Regarding V2G, we consider that the right to control the discharge of an EV back to the grid resides with the EV consumer. We consider that the consumer can assign the costs and benefits of EV discharging to other parties (eg. retailers, DNSPs, aggregators) in exchange for consumer benefits through contractual relationships. There is a role for third parties to negotiate on behalf of consumers the set of benefits falling across multiple parties. 	<p>Generally support.</p> <p>To be fully effective it is necessary that network pricing signals be accompanied by retail price deregulation. So long as retail prices remain regulated, the pricing structures that can be offered to customers will be limited and the introduction of network time of use pricing poses significant risk to retailers and the energy market. Origin therefore supports the AEMC in its review of electricity market competition by jurisdiction through the Australian Energy Market Agreement.</p> <p>Origin does not consider that third parties (such as aggregators) are prima facie required for customers to realise these benefits - they may at times be an unnecessary middle man.</p> <p>Origin supports the establishment of regulatory guidance on the steps to take in the negotiation process and possible measures to assess the value of DSP to aid the negotiations.</p>

AEMC Draft Advice continued	Origin position
7.2 Electric Vehicles - NEM metering arrangements to facilitate consumer choice and efficient charging	Do not support.
<p>We recommend that the term 'connection point' in Chapter 7 and Rule 3.15 of the NER be replaced with 'supply point'. The supply point would be the point where part, or all, of the consumer's load would be metered. In the remainder of the NER the term 'connection point' would continue to refer to the point of physical connection between the network assets and the assets of the network user (consumer or generator). This change would mean that a consumer that establishes an additional metering installation at its premises need not establish a second connection point.</p> <ul style="list-style-type: none"> • We recommend that a consumer be able to arrange for a parent/child (or subtractive) metering arrangement within its premises when: – there is a single connection to the LNSP; and – there is a single consumer at the premises (such as a residence or small business). • For parent/child (or subtractive) metering arrangements, we recommend: <ul style="list-style-type: none"> – losses within the premises would be assigned to the parent meter; – all fixed DUOS charges would be assigned to the FRMP for the parent NMI, unless otherwise agreed with the consumer; and – the NMI for the child meter(s) would be assigned by the Responsible Person¹¹¹ for the child meter. <p>(111 The choice of the Responsible Person is specified in the NER. We are considering the role of the Responsible Person, including who it can be, in the power of choice review.)</p> <ul style="list-style-type: none"> • We recommend that, where a single metering installation has multiple measurement elements and assigned multiple NMIs (that is, a multi element metering installation), there must only be a single Responsible Person for: <ul style="list-style-type: none"> – all the components of the metering installation; and – all the NMIs associated with each metering element. • We also recommend allowing individual measurement elements within a single device to be regarded as separate metering installations. This would allow individual measurement elements to be: <ul style="list-style-type: none"> – assigned to different FRMPs by the associated consumer(s); and – assigned different NMIs by the Responsible Person. • We recommend that the arrangements for metering within an embedded network be included in the NER. In particular, embedded networks should be brought into the metering and settlements frameworks in Chapter 7 and rule 3.15 of the NER by: <ul style="list-style-type: none"> – defining connection points between the embedded network and the associated downstream consumers as connection points (and supply points) under the NER; and – allowing these connection points (and supply points) to be settled in the NEM. • In situations where there are two (or more) FRMPs at one connection point, we recommend: <ul style="list-style-type: none"> – where there is only one point of disconnection and a FRMP wants to disconnect the consumer, this FRMP can disconnect the total load at the connection point, including the load of other FRMPs; – for multi element metering installations, we have specified ways to share the costs associated with the Responsible Person; – access to the metering installation be managed by the Responsible Person; – when a consumer changes one of its FRMPs, we have suggested ways of managing this process; – assigning DUOS charges to FRMPs in a manner that is proportional to their impact on total DUOS; – a process where a consumer or FRMP seeks to upgrade one of its metering installations; and – ways for addressing situations where a consumer moves house or has a billing/metering query. 	<p>Refer to concerns outlined in Overview of Origin's position on pp2-4 of this submission.</p>

AEMC Draft Advice continued	Origin position
<p>Electric Vehicles - NEM arrangements to facilitate consumer choice</p> <p>We consider that the supply of electricity for the purposes of EV charging would generally constitute a legal sale of electricity in the NEM under the NERL and in Western Australia under the <i>Electricity Supply Act 2004 (WA)</i>.</p> <ul style="list-style-type: none"> • For bundled service providers, we recommend that the AER or the ERA determine whether the services offered constitute the legal sale of electricity. The AER or ERA should consider whether the sale of electricity is a primary or incidental part of the bundle of services provided. • We consider that EV battery swap services do not constitute the sale of electricity for the purposes of the NERL, and therefore the energy market arrangements do not apply to these services. • We consider that the current consumer protection framework is appropriate for EV consumers. However, we recommend that the AER review its retail exemptions framework to clarify the status of EV charging services at commercial EV charging stations where onselling occurs. • We consider that the network licensing regime administered by the AER is sufficiently robust to cater for EVs charged over a distribution network or over an embedded network and are therefore not proposing any changes. We note that the AER has developed a network exemption for EV charging in embedded networks, which would cover commercial EV charging stations. • We consider that the current arrangements for addressing the risk of EV service provider financial failure are appropriate and therefore we are not proposing any changes. That is: <ul style="list-style-type: none"> – If the bundled service provider is registered as a retailer, then the Retailer of Last Resort (ROLR) provisions would apply. – If the bundled service provider is subject to a retail exemption, then ROLR does not apply however the AER may place conditions on the bundled service provider. <p>-If the bundled service provider is found by the AER not to provide services that constitute the legal sale of electricity, then the energy market regulatory arrangements do not apply and this become a general risk faced by EV consumers.</p>	<p>Generally support</p> <p>Support, however this may require more than a guideline, and we question how there are not more comprehensive changes required to NECF as a whole.</p> <p>Support, however these service providers should still be subject to NECF.</p> <p>Origin agrees that the AER should review its retail exemptions framework to clarify the status of EV charging at commercial EV charging stations where on selling occurs.</p>