

25 February 2022

Department of Planning, Industry and Environment

Lodged by email: [energy.consumerpolicy@dpie.nsw.gov.au](mailto:energy.consumerpolicy@dpie.nsw.gov.au)

Dear Sir/Madam,

### **Promoting innovation for NSW energy customers – Consultation paper**

Origin Energy Limited (Origin) welcomes the opportunity to provide comments on the Promoting innovation for NSW energy customers consultation paper.

Our submission focuses on the issues most relevant in our roles as a retailer, as well as an installer and operator of various forms of Distributed Energy Resources (DER) in New South Wales. Origin views the integration of DER as a key long-term reform.

We have developed our own proprietary virtual power plant (VPP) platform to enable the coordination of behind the meter distributed energy resources (DER). Assets connected to the VPP have grown from 98 MW to 217 MW over the past 12 months, including an increasing variety of distributed energy and Internet of Things (IoT) devices. These devices include hot water systems, solar, batteries, air conditioners and various industrial assets, which are aggregated, controlled and dispatched in response to market and portfolio positions, creating value for both Origin and customers through a lower cost of energy.

We support the development of a customer centric, competitive market approach to DER integration, that focuses on incentives rather than mandating rules. This should be flexible and support a range of technologies to allow customer choice and promote the development of multiple products and services. We are pleased to see a strong focus of customer considerations in the consultation paper. Clear communication from Government of why such changes are required will be very important in maintaining community acceptance.

Ideally, rules and standards to promote active DER should be nationally consistent. We suggest that there is a role for market bodies such as the AEMC and AEMO to develop a national framework, in consultation with other key stakeholders such as state governments and networks. This could include a common standard for communication to the connection point. We are concerned that Australian consumers may suffer unnecessary costs and confusion if individual jurisdictions or networks adopt disparate policy settings.

In summary, our key points on this consultation paper are as follows:

- **Demand response in NSW** – Origin supports a competitive market approach to the deployment of demand response. We suggest that the NSW Government has a role to play in facilitating a broad range of demand response opportunities so that customers can choose what suits their needs and budgets. This could include promoting a national framework for DER integration more generally, plus providing incentives for enabling technologies such as smart meters and smart EV chargers.

- **Enabling flexibility and dynamic controls** – we suggest that the NSW Government should focus on a wholistic approach to DER integration which includes demand shifting, enabling technologies, tariff structures and storage. How these are implemented, including the impacts on customers, will be important. We support policies which provide incentives for customers to change their demand profile, rather than mandated rules.
- **Community batteries** - it is important that ownership and operating models of community (or medium scale) batteries continue to allow for competitive forces to operate. Competition will best deliver lower costs to customers over the longer term.
- **Electric Vehicles (EVs)** - Origin supports the existing NSW Government rebates of \$3,000 for eligible EVs and abolition of stamp duty and encourages the NSW Government to continue this policy to facilitate the uptake of EVs. Additionally, Origin considers that a key priority requiring NSW government support is incentivising smart charging infrastructure.
- **Retailer's emissions performance** – there are range of challenges in trying to implement this policy. At a high level, there is a difficult balance to strike between presenting potentially complex information in an easy-to-read format. We suggest that existing reporting processes be leveraged as much as possible and encourage the Government to undertake further targeted consultation on this issue.
- **Metering issues** - the consultation paper acknowledges the AEMC's current review of the national regulatory framework for metering services. The paper seeks further information in relation to metering noting that it intends to work closely with the AEMC and share information arising from the consultation. While we support the provision of additional information, we consider that the case for a state-based smart meter roll out outside the current AEMC national process has not been adequately established and risks undermining the national process and its associated benefits.

We provide responses to selected consultation paper questions in the attached table. As the consultation paper is quite broad ranging, we understand there will be further targeted consultation on many of these issues. We will be pleased to be involved as the Government's response is further developed.

If you wish to discuss any aspect of this submission further, please contact Matthew Kaspura at [matthew.kaspura@originenergy.com.au](mailto:matthew.kaspura@originenergy.com.au).

Yours sincerely,



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# Attachment A: Responses to selected consultation paper questions

Issue	Question	Origin Response
2 – Meter life and redundancy charges	2a	Basic meters 30 years and smart meters expected life 15 years.
	2b	A smart meter is a technology-based meter rather than mechanical – some of the old mechanical meters are still operating 40 years after being installed. Smart meters are a bulk manufactured meter, generally using low-cost components.
	2c	Smart meter costs are dependent on a range of issues including location and the density of deployment (bulk deployments are more cost-effective). A typical replacement is expected to cost between \$100 and \$200 on average with annual costs of about \$100 (see response to 1b, above).
	2d	<p>A key issue is the impact on customers who will need to upgrade switchboards or have additional repairs completed at the site to enable the meter to be installed.</p> <p>The meter can only be installed onto a site that meets the current compliance rules, if the site has not been upgraded in 30 years, then there can be significant work required by the customer.</p> <p>If it becomes a rule requirement that we need to change the meter in a similar way to the existing b2b process, then we would need to manage any sites that couldn't be completed via the existing exemption process. We will need to understand the parameters under which the aged program become a new requirement and what impact it then has on the existing rules.</p> <p>The legacy site issues such as shared fuses requiring either costly network coordination or multiple outages are well known and have been identified in the AEMC metering review. Specifically, where the MC/MP attends a site and discovers a shared fuse the intended meter upgrade is required to be rescheduled because a retailer cannot disconnect the customers of other retailers. Furthermore, the retailer is liable for wasted site visit from the DNSP to perform the disconnection</p>

	2e	As above in 2d for basic meters. Replacing smart meters is normally straight forward as a meter protection device is installed enabling the meter to be isolated.
	2f	Vulnerable customers can benefit the most from better consumption data to help them manage bill shock, but are also least likely to be able to afford the work required on an aged switchboard. There is an existing AEMO exemption process where the MC is not able to replace a meter under certain circumstances. We note that the obligation to rectify a metering installation remains with the customer.
3 – Solar connection delays	3a	From a monitoring aspect the current requirements are generally appropriate, but this does not address the issue of affordability associated with new installations.
	3b and 3c	<p>Origin's views on the impediments to an accelerated roll out are set out in our submissions to the AEMC <i>Review of the regulatory framework for metering services</i>. These views and potential solutions are summarised below.</p> <p>The process for recovering above-average installation costs – the ability to recover non-standard installation costs where a customer has not requested the replacement represents a significant impediment to an accelerated roll out. These additional costs can be significant in some instances and up-front recovery is not feasible, especially where the customer is unable/unwilling to pay. Enabling a process for cost recovery is critical. We consider that the Government needs to enable a process to ensure that such costs are able to be recovered. Cost recovery options in the case of hardship customers, that is, those customers who are unable to pay for meter replacements particularly where these are not standard replacements also need to be considered.</p> <p>A process for recovery of shared information/data needs to be developed to ensure that stakeholders that receive benefit pay a fair share of metering costs. This would involve determining a framework for the type of data to be provided, an agreed data standard/quality, a pricing policy and an assessment of how associated revenues are shared between parties, including networks, Metering Providers and retailers</p> <p>Control of load switching – the distribution network service provider may seek to maintain controlled load time switches rather than allow Metering Providers to include the time switches on the newly installed meter. This significantly limits the efficiency of the roll out program and the benefits case of a smart meter deployment.</p>

		<p>Opt-out options – we consider that removing opt-out options (for individual customers and in relation to multi-occupancy dwellings) is necessary for promoting the efficiency of the roll out program. Wasted visits or multiple visits to a site significantly increase the per meter cost of installation.</p> <p>We consider the processes around a retailer led deployment for standing offer customers is cumbersome. The process involves an extended lead time where retailers are required to provide the customer with multiple advance notices. We believe this process could be refined to find a balance between providing customers with suitable advance notifications while also allowing retailers to more efficiently manage the installation process.</p>
	3d	It is not clear which third parties this relates to. The MC is currently responsible for coordination and provision of metering services at a connection point.
4 – Meter board upgrades	4a	We consider that meter boards should only be replaced if required. However, this would need to be combined with a smart meter install as the old meter cannot be reinstalled.
	4b	A meter board survey is currently provided but is only identified at the time the technician attends the site and not before. Based on the relatively low proportion of meter boards that require replacement (approximately 10 to 15%), we consider a widespread meter board survey would be inefficient. Rather, the best time to determine if a meter board replacement is required is at the time a technician attends the site for meter installation.
	4d	We do not consider that a meter board report is required. The status of the meter board is only an issue where an installation problem is identified. Notwithstanding, it remains the customers responsibility to resolve meter board issues.
	4e	We consider that a meter board register would add further cost to the installation process. A further issue relates to managing the proposed process. We note that the networks have been attending basic meter sites every 90 days – an option could be for networks to photograph and identify problems as part of this process and share this information with retailers to enable future planning.
	4f	Given the additional travel and resource time costs associated with regional sites, we consider there are benefits to a bulk deployment in regional areas. Retailers should have the flexibility to target specific volumes and locations in order to optimise any replacement program and achieve cost efficiencies both for customers and retailers.
	4g	The status of the meter board is best determined when a technician attends the site for meter installation.

7 – Hot water embedded network customers	7a	<p>We consider that hot water is a unique product or service. The supply of hot water involves heating the water, the cost and maintenance of plat, reticulation within the site, billing etc. The customer is not buying energy they are buying the service of hot water. On that basis we do not consider it useful to bill hot water on an energy to heat basis. This is confusing for the customer. The customer is buying heated water not gas and wants to be billed as such.</p> <p>We believe this charging structure can co-exist with appropriate consumer protections.</p>
8 – DER in NSW	8a	<p>Yes, the guiding principles are appropriate. In particular, we support the development of a customer centric, competitive market approach to DER integration, that focuses on incentives rather than mandating particular rules. This should be flexible and support a range of technological solutions to allow customer choice and promote the development of multiple products and services.</p>
	8c	<p>Overall, Origins suggests the NSW Government has role to play in facilitating a broad range of demand response opportunities so that customers can choose what suits their needs and budgets. This could include promoting a national framework for DER integration more generally, plus providing incentives for enabling technologies such as smart meters and smart EV chargers.</p> <p>We support a competitive market approach to the deployment of demand response. We have significant experience in deploying and orchestrating demand response from a variety of sources. Across the NEM, we now have over 217 MW of demand response connected through our platform.</p> <p>Origin has developed a proprietary VPP platform to enable the coordination of behind the meter DER. The platform enrolls and connects to a range of DER, including solar, battery storage, controlled load (e.g. electric hot water, electric vehicles and pool pumps) and large appliances (e.g. air conditioning). The platform uses AI to learn and predict the behaviour of energy consumers and optimises each of the assets based on this learned behaviour.</p> <p>The platform has been designed to integrate with a range of hardware solution providers, allowing customers to have a greater degree of choice when selecting a connected home energy solution. Origin uses the platform to create additional value for our connected customers by:</p> <ul style="list-style-type: none"> <li>• Maximising solar self-consumption – generate and store solar energy for later use</li> <li>• Energy efficiency – optimise asset operation to reduce overall volume of electricity consumed</li> </ul>

		<ul style="list-style-type: none"> <li>• Load shifting – shift energy usage to different times of the day, shifting between peak and off-peak</li> <li>• Peak shaving – reducing the peak energy usage amount and reduce network demand charges (if applicable)</li> </ul> <p>Origin recently launched a mass-market demand response program, Spike, which is available to all Origin residential electricity customers with a digital meter. The program rewards customers for meeting regular energy-saving targets (run as discrete “Spike hour” events). Customers can participate by manually switching off devices or deferring usage (behavioural demand response), as well as device-orchestrated response with controllable devices including EV chargers, smart plugs and air-conditioning controllers. Rewards include cash, gift cards and prizes. Origin has partnered on the platform development with OhmConnect, a leading provider of residential demand response in the US. Early uptake and activity levels have been promising.</p>
	8g	As noted above, the NSW Government can help unlock DER and load flexibility by facilitating a broad range of opportunities so that customers can choose what suits them. This should include incentives for enabling technologies as well as support for a national framework approach to key issues of DER integration such as implementation of dynamic controls.
	8h	<p>In our experience, there are numerous clean energy solutions that could provide customer, network and market benefits. These include:</p> <ul style="list-style-type: none"> <li>• Solar &amp; storage</li> <li>• Controlled load – such as hot water, air conditioning and pool pumps</li> <li>• EVs – including demand shifting from battery charging</li> <li>• Behavioural demand response</li> </ul>
9 – Enabling flexibility and dynamic operating envelopes	9a	The relative size of solar systems is only one factor in implementing a more dynamic electricity grid. We suggest that the Government should focus on a wholistic approach to DER integration which also includes demand shifting, enabling technologies, tariff structures and storage. How these are implemented, including the impacts on customers, will be important. We support policies which provide incentives for customers to change their demand profile, rather than mandated rules.
	9b	Issues arising from declining minimum operational demand has been most significant in South Australia and Western Australia. New South Wales should have more time to plan for these issues. The NSW Government should make use of this time by prudently phasing in the ability to dynamically control DER.

		EV charging could present one of the biggest challenges as it involves large lumpy loads that far exceed most other large household appliances such as air conditioning. We suggest that the NSW Government should prioritise the dynamic load shifting of EV charging, including by incentivising the uptake of smart charging infrastructure.
	9c	NSW should learn from other jurisdictions and plan now for potential impacts on minimum operational demand. As noted above, this should include the gradual phasing in of dynamic control of DER, with priority given to enabling technology such as smart charging for EVs.
	9d	The NSW Government should prepare for dynamic controls by considering the capabilities that should be required for devices and how quickly these should be phased in. This should include common standards for communications. Most jurisdictions are considering a common standard, based on IEEE 2030.5, for device interface between networks and third parties such as aggregators. This should include flexibility in the technological solutions allowed, including cloud services and third-party devices. We suggest that it is appropriate for networks to set standards in communicating with the network connection point but that communications behind the meter should largely be left to the market to determine, based on customer preferences. Overall, the purpose of the dynamic controls is to maintain reliability on the network more broadly, and this should be achieved in a manner which is cost effective and maintains customer choice.
	9e	<p>Consumer acceptance about the potential impacts of dynamic controls will be an important factor. Unless consumers can be shown the reasons for these changes and how they can access the benefits, there may be resistance to their implementation. Changes to solar feed-in tariffs over the past decade are a good example of this.</p> <p>We support the development of a customer centric, competitive market approach to DER integration, that focuses on incentives rather than mandating rules. This should be flexible and support a range of technologies to allow customer choice and promote the development of multiple products and services. We are pleased to see a strong focus of customer considerations in the consultation paper. Clear communication from Government of why such changes are required will be very important in maintaining community acceptance.</p>
10 – Quality, standards and compliance	10b	DNSPs should be able to remotely check the settings of DER assets on their network but should not be responsible for remotely controlling these assets. We suggest a better approach to dynamic control of DER assets is for DNSPs to send signals to aggregators to control devices on behalf of their customers. This will help promote competition in new services being provided. South Australia has recently introduced this arrangement where the aggregators are registered by the Government as “Relevant Agents”.



	10d	We support the gradual phasing in of dynamic controls for new assets such as solar systems, batteries and EV chargers. Instead of conducting a separate process we suggest that the NSW Government work with existing processes which are already well progressed including AEMO and the South Australian Office of the Technical Regulator. One key issue will be to establish common communication standards – most jurisdictions are considering the application of IEEE 2030.5 to Australia.
Issue 11 – Improving the visibility of residential DER and data management	11a	The AEMO DER Register is a good starting point that could be built upon to provide better market visibility of DER in NSW (and other jurisdictions). Currently the DER Register is focused on solar pv systems and batteries. We suggest that EV chargers also be incorporated as a matter of priority.
	11b	<p>Providing voltage information from smart meters may assist in managing the network. As a retailer, we would believe it would be appropriate to share this voltage information with networks, for the appropriate fee to cover data management costs. The current AEMC review of metering is best placed to address this issue.</p> <p>Behind the meter DER assets are important but information from smart meters at the connection point is likely to prove more useful to networks and AEMO in managing the grid.</p>
	11d	As noted above, we suggest EV charging installations be incorporated in the DER Register. Additionally, we believe the NSW Government should incentivise the deployment of EV smart chargers so that such loads are capable of dynamic controls. We believe it is prudent to act early on EV chargers as these could represent significant loads on the system.
12 – Community batteries and emerging technologies	12a	It is important that ownership and operating models of community (or medium scale) batteries continue to allow for competitive forces to operate. Competition will best deliver lower costs to customers over the longer term.
	12b	A key regulatory issue that requires further consideration includes how network charges should apply to medium scale batteries. This should be applied in a competitively neutral fashion.
	12d	Medium scale batteries are one potential option in helping to manage the distribution network issues arising from minimum operational demand. The viability of batteries is likely to vary by a range of factors including the site chosen, current impacts on the network and tariff structures.

		<p>We note that there are a range of other options to help manage the network such as demand response, utility scale batteries and investment in the grid itself. It is important that all are considered when planning for the grid of the future.</p>
13 – Electric Vehicle Charging Infrastructure	13a	<p>Origin supports the existing NSW Government rebates of \$3,000 for eligible EVs and abolition of stamp duty and encourages the NSW Government to continue this policy to facilitate the uptake of EVs. We believe that the policy is well targeted at closing the gap between internal combustion engine and costs. Origin is also supportive of the Drive Electric NSW EV fast charging grants - extending this funding to apartment Body Corporate's and detached private dwellings would further improve the take-up of EVs whilst minimising the impact on electrical network infrastructure</p> <p>Additionally, Origin considers that a key priority requiring NSW government support is incentivising smart charging infrastructure. A smart-charging station can cost \$3,000 for a standard household, and considerably more for existing apartment buildings, which can discourage consumers if they are bearing the costs of installation. However, for households with EVs, EV charging presents by far the most significant draw on the grid. It makes good sense to incentivise smart charging as soon as possible to enable dynamic management of these loads to minimise network impacts. By way of example, we note the significant subsidies of up to \$2000 per unit that have recently been announced for the installation of smart EV chargers in South Australia.</p> <p>One avenue to consider specifically for apartments is building regulations requiring new apartment blocks to have charging stations installed during construction, as this overcomes some barriers faced in installing EV infrastructure in existing buildings. Charging requirements should reflect the number of dwellings of each development with consideration for backbone infrastructure and capacity associated with charging infrastructure.</p>
	13b	<p>Cost, particularly in existing buildings results in considerable challenges to installing charging infrastructure in apartment blocks:</p> <ul style="list-style-type: none"> <li>• Obtaining approval – works in apartment blocks need to be approved by strata management/owners corporation and this is more challenging if residents with EVs are renting/or there are few owners currently driving an EV.</li> <li>• Who pays for infrastructure upgrades – unlike work done within an individual apartment, EV infrastructure is typically in common areas accessible by all. Whilst the infrastructure is available to all to use, EVs are still very niche, and many apartment owners will not require use of charging stations and may consider it unfair to be expected to pay for the installation.</li> </ul>

		<ul style="list-style-type: none"> <li>Who pays for energy - in addition to capital costs on installation, residents may be concerned about how the energy consumed by EV charging would be absorbed across apartments.</li> </ul>
	13c	Origin prefers a smart EV charging solution which provides flexibility to manage payments (if required) and energy load to minimise the need for local switchboard and network upgrades. A Type 1 EV charger plugged into a common property power point would not provide for this flexibility
	13f	<p>A range of stakeholders are well placed to own and/or operate EV charging infrastructure. As a retailer, we are well placed to operate EV charging infrastructure and have experience in energy markets and managing demand response capabilities.</p> <p>Origin is currently undertaking a smart charging trial which includes installing and connecting at least 150 smart chargers onto Origin's Virtual Power Plant to manage EV charging.</p>
	13h	Origin's smart charging trial, which is being undertaken with ARENA, seeks to collect charging and usage data to provide insights into EV charging behaviours and examine responses to smart charging. The trial will provide insights required to inform the design of tariffs and retail propositions for smart charging to encourage the charging of EVs by customers in a way that will be beneficial to both EV owners as well as the electricity system.
18 – Electricity retailers emission performance	18a	We suggest information be based on the electricity retailer, not on individual plans. Our preference is to keep reporting as simple as possible.
	18b	We suggest information placed on a retail comparison site will be far easier to manage.
	18c	Origin already reports emissions annually through our comprehensive Sustainability Report. Other sources of existing information include the National Greenhouse and Energy Reporting system (NGERs), and the Renewable Energy Target (RET). In addition, Climate Active are looking to introduce new recognition options to help customers with differentiating between emission reductions, carbon neutrality and clean energy. We suggest that the NSW Government work with Climate Active so as not to duplicate effort.
	18d	As noted above our comprehensive Sustainability Report includes a range of information. This includes generation sources from PPAs.
	18e	Origin participates in a range of offsets programs including GreenPower and Climate Active. We are the largest GreenPower provider and have three products certified under Climate Active for carbon neutral gas, LPG and electricity.
	18f	Origin has been a strong supporter of the GreenPower program and has historically offered this as a product.

	18g	<p>Yes, there are range of challenges in trying to implement this policy. At a high level, there is a difficult balance to strike between presenting potentially complex information in an easy to read format. We have some hesitation in undertaking a highly complex task if it is ultimately only reported a “star rating”.</p> <p>Other challenges include</p> <ul style="list-style-type: none"> <li>• how information about retailers potential LGC shortfalls may be described. Such shortfalls are allowed under legislation and occur as an economic response to save retailers and their customers some cost.</li> <li>• comparing the pricing of offsets between retailers - this can vary widely depending on the quality of offsets used. Some retailers currently use a high proportion of cheap international offsets (such as CERs) but there is a trend to introduce minimum requirements for domestic offsets (largely ACCUs). For example, Climate Active is currently introducing such a requirement.</li> </ul>
	18h	Annual reporting is preferred, which aligns with other reporting requirements.
19 – Life support equipment for energy rebates	19a	We suggest that the NSW Government consult with medical professionals when it undertakes a review of eligible life support rebate equipment.
	19b	Data is not readily available. Typically, if the device is life support related it is almost always covered. For anything we are unsure of we attempt to reach out to the government for a second opinion on the eligibility.
	19d	We do not have a particular view on how often approved equipment should be reviewed but an annual period seems reasonable. As noted above, we suggest that the NSW Government consult with medical professionals.
	19e	We suggest this will be difficult to automate as the name of the retail account holder may not match the name on the medical declaration. There are likely to be numerous exceptions, depending on what customers /medical practitioners include in the relevant forms.