10 March 2022

Director Energy Programs
Department of Planning, Industry and Environment
Submitted via Email
Sophia.vincent@planning.nsw.gov.au
CC: energy.consumerpolicy@dpie.nsw.gov.au

NSW DPIE Consultation Paper – Promoting Innovation for NSW Energy Customers

Dear Ms Vincent

Ausgrid, Endeavour Energy and Essential Energy welcome the opportunity to provide a joint submission to the NSW Department of Planning and Environment's (**DPE**) Consultation Paper *Promoting Innovation for NSW Energy Customers (*the Consultation Paper*)*. We appreciate the collaborative approach DPIE has taken through early engagement on several of the important topics considered within the paper.

The electricity system is undergoing a fundamental transformation with the rapid uptake of Distributed Energy Resources (**DER**), community batteries, electric vehicles, standalone power systems (**SAPS**), metering penetration and several other emerging energy technologies all playing a uniquely different role across the networks we serve. The three NSW network businesses are each at uniquely distinct stages of emerging technology penetration and as such are each facing similar but unique challenges. As such, the Consultation Paper represents a timely opportunity to review existing arrangements to ensuring customers can maximise the benefits and opportunities available to them.

Attachment A provides our detailed answers to the specific questions in the Consultation Paper for DPE's further consideration. The specific areas of priority for our businesses are:

- **Maximising DER benefits, for example, through community batteries -** draw on delivering already identified customer outcomes that support DER activities. It is widely recognised that community batteries present a real opportunity for customer to get more out of their DER investments, but requires further support from NSW to address the regulatory hurdles to their wider deployment.

- **Support the Advanced Metering Transition –** There is a role for NSW to make progress on known gaps such as improved visibility and network data requirements which are foundational requirements for improvements in DER hosting across NSW.

- **Stand Alone Power Systems – D**NSPs are committed to improving customer experience, creating operating efficiencies, building a resilient network, and lowering prices for all network customers. Deploying SAPS and energy storage devices, when it is efficient to do so, is a mechanism for delivering these benefits to customers, however the existing national framework has well identified issues which require immediate resolution from NSW Government so that customers can experience these benefits.

- **Empowering customers with information -** The digitisation of information and communication between customers and DNSPs would be of great benefit when operating the network of the future. There are several areas where NSW could assist in delivering reforms which allow for seamless communications across multiple digital platforms.

- **Standards and compliance accreditation -** The NSW Government should work with the Federal Government to implement the recommendations from the Federal Government's 2021 Integrity Review of the Rooftop Solar PV sector. In particular, on recommendations associated with developing rules and the framework for an installer accreditation scheme that includes compliance and enforcement

The NSW Government will have an important role to play in the implementation of any reforms taken forward and as such we would appreciate the opportunity for further ongoing engagement on these topics. If you have any questions in relation to this letter, please contact:

- Ausgrid: Mr Alex McPherson at alex.mcpherson@ausgrid.com.au;
- Endeavour Energy: Mr Colin Crisafulli at colin.crisafulli@endeavourenergy.com.au; or
- Essential Energy: Natalie Lindsay at natalie.lindsay@essentialenergy.com.au.

Yours sincerely,

Chantelle Bramley

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Attachment A: Detailed response to consultation paper options and questions

Contents

PART 1: DIGITIAL ENERGY TECHNOLOGIES (METERING)

Issue 1: Meter costs to customers

The benefits of advanced metering would be supported by increasing the roll-out of advanced meters and take-up of associated services and cost-reflective tariffs. This will encourage customers to optimise their consumption profile for the benefit of the community and the electricity system as a whole.

The Department of Planning and Environment (**DPE**) raise concerns with the cost of advanced meters and related services being hidden, inconsistent and not well understood by customers. NSW Distribution Network Service Providers (**DNSPs**) agree with the Department of Planning and Environment (**DPE**) that greater transparency is integral to realising the benefits of advanced meters. Customer information on advanced meters needs to be easy to access, simple and consistent.

DPE raise the following options to better enable customers to make informed choices when installing an advanced meter and selecting a competitive retail market offer:

1. Work with National Energy Ministers to amend the Australian Energy Regulator's (**AER**) Retail Pricing Information Guidelines to ensure electricity retailers present the cost of smart meters on residential and small business electricity plans on their website. This would be similar to the conditions required of market offers under Section 37 of the National Energy Retail Law (**NERL**).
2. Work with the AER to display costs of smart meters on the Energy Made Easy website to allow customers to easily compare costs.
3. Introduce pricing guidelines for smart meter installations and potential meter board modification costs to assist in reducing bill shock, particularly for vulnerable households. This could be explored for New South Wales or nationally.

We support the options identified above and the importance of allowing customers to make informed decisions on their energy supply and usage. With respect to Energy Made Easy we recommend broadening the scope of the site to allow for detailed advice for the growing number of customers with DER. For example, the AER or the NSW Government should develop a web tool that helps customers to estimate the 'right-sized' solar installation for their consumption needs, it could use existing spatial and visual analysis platforms to assess individual homes. Clear and consistent information on new retail offers like EV charging or storage packages would also be of value.

Consultation questions

1a. How are the costs and benefits of smart meter installations currently communicated to customers?

As this is a retailer function, we have limited insight into what information is currently provided to customers on the costs and benefits of advanced meters. We note that Government bodies publish information (for instance energysaver NSW and the AER) in addition to retailers' websites.[1]

1b. Can electricity retailers provide government with the various cost inputs for smart meters (this information will be treated as commercial in confidence)?

N/A.

1c. Would it be useful for customers if the cost of a smart meter was included on the details of electricity plans on comparison sites?

NSW DNSPs support independent advice being provided to customers, such as comparison websites and additional detail from retailers in relation to the cost of smart meters. As a minimum we would expect customers to be provided with the itemised cost of the metering services when they enter an agreement with a retailer and on the ongoing energy bills they receive from them. This could be incorporated in the AER's Better Bills Guideline and Default Market Offer work and by expanding the scope of Energy Made Easy.

At the time of the Metering Competition reforms, the NSW DNSPs advocated for bill transparency and information to be provided to customers that would support their ability to make informed choices[2]:

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[1] See: https://www.energysaver.nsw.gov.au/cut-your-bills/measure-your-usage/using-smart-meters#:~:text=A%20smart%20meter%20is%20a,can%20read%20the%20meter%20remotely and https://www.aer.gov.au/consumers/my-energy-service/smart-meters/.

[2] NSW DNSPs (2014). https://www.aemc.gov.au/sites/default/files/content/674648e3-748d-4ac7-8c60-b2a5bd634c77/RuleChange-Submission-ERC0169-The-NSW-DNSPs-140529.pdf pg 12.

…retailers should inform consumers of their metering services charges upfront, at the time the contract is entered into, and it should be included on every bill as a separate line item. This would allow consumers to be fully informed and therefore able to compare charges for metering services. It would also introduce transparency as the consumer can confirm if charges for metering services are incorrectly applied when they directly engage a MC themselves, and they can compare what other MCs (including DNSPs) charge (as published in pricing lists) versus what the retailer charges.

It was decided by the AEMC that bill transparency for metering costs, where these costs where previously part of the bundled network service, would increase bill complexity, confuse customers and increase the risk of an adverse public response to metering competition. In our view, these arguments are not compelling[3].

The decision was made to disaggregate metering from monopoly network services and establish a competitive market. It is not clear how a functional market with sufficient competitive tension can be established without customers having access to basic information on price and service offerings upon which to make informed decisions. It is well established that price transparency generally leads to lower and unform prices[4].

1d. What share of customers in New South Wales are on cost reflective pricing tariff options?

See schedule 2 of the AER's retail market performance update.[5]

NSW DNSPs note the take-up of cost-reflective tariffs is largely dependent on assignment policies. For instance, for Endeavour Energy demand tariffs were employed to incentivise customers to manage their usage for the long-term benefit of all. Under Endeavour Energy's current cost-reflective tariffs, 90 per cent of customers on standard energy tariffs are likely to be better off on a cost-reflective tariff – without a change in their energy usage behaviour. The savings are more significant where energy behaviour is changed (i.e., customers choose to reduce their peak demand and use energy at different off-peak times).

Despite this structure, many retailers have been opting-out of moving customers onto cost-reflective tariffs. NSW retailers' slow roll-out of advanced meters partly impacts this. In Endeavour Energy's network area 65,000 customers are on cost-reflective network tariff which represents 5 per cent of customers (noting that 25 per cent of Endeavour Energy's customers have advanced meters).

The existing 'opt-out' assignment policy allows retailers to control the speed of network tariff reform. A review of tier-one retailer pricing literature and online offers, suggests many retailers may not be passing Endeavour's cost-reflective network tariff structure on to customers. Endeavour Energy is currently working with retailers to advance the transition, which is expected to improve outcomes for customers.

Historically, most Ausgrid residential and small business customers have been on flat energy-based network tariffs. These tariffs require customers to lower their usage if they want to lower their bills.

On 1 July 2019 Ausgrid introduced demand tariffs for residential and small business customers with smart meters to give customers (and their retailers) an incentive to use the network efficiently and reduce bills in the long run. If acted on by their retailer (either through directly passing on these tariffs or providing customers with simple education and tools), these tariffs allow customers to lower their bills by spreading out when they use their appliances during peak hours. Given peak demand is a material driver of network costs, demand tariffs are cost-reflective and therefore a win-win for both Ausgrid and our customers. This change has been a great success. As at 30 June 2021, there were about 108,000 residential and small business customers on demand tariffs.

Further, 413,000 residential and small business customers remain on cost-reflective time-of-use network tariffs. With 26 per cent of residential customers, and 53 per cent of small business customers facing cost-reflective tariffs, customers' ability to control their network bills has improved. With medium and large business customers continuing to face cost-reflective tariffs, 67% of our network charges were derived from cost-reflective tariffs in 2021.

In Essential Energy's network area approximately 180,000 customers or 20% of total customers are on cost reflective time of use pricing, noting that 25% of Essential Energy's customer base have advanced meters. Essential Energy

[3] Ibid.

[4] https://sgp.fas.org/crs/secrecy/RL34101.pdf.

[5] AER (2021). https://www.aer.gov.au/retail-markets/performance-reporting/retail-energy-market-performance-update-for-quarter-1-2021%E2%80%9322.

also offers, on an opt-in basis, an even more cost reflective demand price for small customers. The vast majority of Essential Energy's customers would be better off on this demand price, however, take up has been extremely low.

1e. What are the benefits and challenges for customers moving onto cost reflective tariffs?

The National Electricity Rules require distributors to gradually make their tariffs more cost-reflective over time. For example, this objective can be supported by transitioning single rate usage tariffs (or flat rate tariffs) to reflect different peak and off-peak times (time-of-use tariff).

Additionally, tariff reform will create the right incentives for DER such as solar PV, batteries, and electric vehicles to be integrated onto the grid as efficiently as possible.

Network tariff reform encourages a more efficient use of networks that helps reduce:

- The need for additional investment; and/or
- The amount of network infrastructure that needs to be maintained.

As customers ultimately pay for upgrades, tariff reform that encourages a more efficient use of the network will lead to lower network costs for all customers.

Per our response to question 1d, network tariffs are delivered to retailers, who package them with other costs such as the cost of wholesale energy in their service offerings to electricity customers. As distributors have no control over the retail electricity tariff that customers are offered, they may not directly reflect the network tariff.

Each regulatory period, distributors are required to submit a tariff structure statement (**TSS**) to the AER for approval. The TSS sets out the distributor's proposed strategies to progress network tariff reform. The pace of progress is informed by a variety of factors including:

- What customers want,
- What impacts customers will face, and
- The roll out of advanced meters, which make it possible to record when energy is used at different times of the day.

This means tariff reform strategies can evolve as stakeholder understanding develops and new technologies and service models emerge. To help distributors, the AER has provided guidance on how network tariff reform can be implemented.

The AER expect distributors to progress tariff reform by undertaking tariff trials to test more complex and innovative tariffs which could also enable new services. The AER has provided guidance for distributors on how tariff trials can be approached[6].

There will be several challenges in realising these benefits, some of which include:

- The cost and difficulties associated with transitioning customers to advanced meters;
- The adoption of cost reflective tariffs by retailers;
- Providing customers an understanding of changes to their tariffs and how they can benefit; and
- Potentially expanding tariff reform to export services following recent AEMC reforms.

Overcoming these challenges and realising the benefits of cost-reflective tariffs will become increasingly important as the number of customers with solar PV, batteries and/or electric vehicles (**EVs**) continues to grow rapidly.

Ausgrid worked with customer representatives to design the new cost reflective tariffs for electricity retailers that were introduced on 1 July 2019. Retailers can now offer demand pricing plans which include a demand charging component. When passed on to residential customers by retailers, demand tariffs encourage customers to shift electricity usage to off-peak times. As a result, customers would pay no more than their share for the load they place on the network. If a customer is on a demand pricing plan and sees a bill increase, there are ways to take control of their costs:

1. Ask the retailer for a different plan or shop around.
2. Reduce demand charge by taking turns with appliances, rather than running many at once, during the peak window.

[6] AER (2022). https://www.aer.gov.au/networks-pipelines/network-tariff-reform.

3. Reduce demand charge by time-shifting some appliance usage to outside the peak window.

Residential EV charging

By way of example, as flexible loads such as EVs become more common network price signals can encourage charging at times to minimise total system costs. However, retailers may design innovative products (such as bundling energy service or subscription-based pricing) that dilute these network price signals in addition to the challenges of cost-reflective pricing noted above. To avoid this occurrence, networks are working closely with retailers on trial tariffs that support a 'prices for devices' approach as take up of this new technology rapidly advances.

There may be opportunities to reduce this risk by collaborating with retailers and/or implementing technology that can assist with making flexible loads responsive to network price signals in order to reduce network costs. On the former we note that networks currently engage with retailers regularly as part of business-as-usual activities and specifically in developing a TSS during a regulatory reset determination. On the latter there should be consideration of technical standards for in-home charging infrastructure. This may include smart charging functionality where charging units can respond to network pricing in a more dynamic manner.

EV-related retail pricing innovations may also include billing on a customer basis rather than on a NMI basis. That is to say, a customer may sign up with a charging provider and receive a bill for both at-home charging and fast charging during their journeys. This type of development would be a departure from the traditional energy supply model where customers are billed based on their consumption at one location. It will be important that the regulatory framework keeps pace with these types of innovations to preserve network price signals that promote efficient use of network infrastructure.

We note there are several regulatory reforms and processes related to tariffs and pricing for DER devices such as EVs. These include the Energy Security Board's (**ESB**) work as well as the AEMC's DER related rule changes. All these reviews and market reform processes must the aligned and coordinated, to the extent possible, so that there is a consistent, 'whole-of-market' view of the future and reforms are moving in the same direction to address DER integration issues. This should include the proliferation of EVs.

Non-residential EV charging

For non-residential EV charging, the network issues are less to do with integration into existing market structures but rather that relevant parties are effectively coordinating with networks on locational decisions for this infrastructure.

Given the size of the load involved price signals, both connection costs and ongoing tariffs, will be an important tool to promote efficient use of existing network infrastructure and reflect the costs of network upgrades to facilitate fast charging, where required. An uncoordinated roll-out of fast charging without these important price signals has the potential to increase network cost unnecessarily, particularly as the market develops.

To effectively integrate this type of EV charging into the energy system we need a collaborative approach between infrastructure providers and networks. This will require input from players across the industry to gain a better understanding of issues and share knowledge and capabilities.

From a network perspective, collaboration with industry is an important input into understanding the business models of these infrastructure providers so that we can effectively plan for a future with a higher penetration of EVs. This includes providing these users with cost-reflective price signals to increase utilisation of existing network capacity and limiting significant network augmentation to keep costs as low as possible.

Charging providers should also be encouraged to incentivise EV owners to use charging stations at times of excess energy (sunlight hours) and not at times of peak demand. Our concern is that if only the owners of these stations are seeing network pricing signals, vehicle owners may not realise that their actions could increase costs to them in the long run.

In addition, there are regional development opportunities related to the roll-out of EV charging infrastructure. Unlocking these benefits also requires a collaborative, whole-of-system approach that seeks to promote tourism for travellers in EVs to regional and rural communities and provides insights into where EV charging infrastructure can be located to minimise external investment and deliver a reliable experience both in terms of fast charging en route and charging at the destination.

1f. Are there any other costs to customers that should be considered?

Yes, there can be unexpected costs when an advanced meter is installed as practical issues are encountered. For instance, a switchboard may need to be replaced due to insufficient space, wiring issues or the presence of asbestos. In some regional areas of NSW, there are around 60,000 meter boxes mounted on poles and over 10,000 master subtractive mater installations, which introduces safety and technical challenges when these meters fail and require a smart meter upgrade.

Issue 2: Meter life and redundancy charges

DPE notes uncertainty around the remaining life of legacy meters and discusses whether a faster rollout of advanced meters would align with technological changes and community expectations. The options to accelerate the rollout being:

1. Mandate a retirement age of basic meters and propose that the AER reconsider the depreciation approach for unrecovered meter assets in the next round of electricity distribution regulatory resets.
2. Require distributors to notify relevant parties (such as the meter manufacturer or other distributors) when a 'family failure' is identified in a meter population. This will remove duplicative testing and ensure retired meter populations are consistent across networks.

As noted in our individual responses (see Ausgrid,[7] Endeavour Energy,[8] Essential Energy[9]) to the AEMC review of competition in metering, the NSW DNSPs consider accelerating the rollout of advanced metering critical to realising their benefits and supporting the customer led transition to DER. This view is reinforced by the stakeholder feedback and detailed analysis put forth in the AEMC's Competition in Metering Review Directions Paper which reiterates the significant customer benefit that would be unlocked through greater advanced meter penetration across the NEM including:

- Greater retail product offerings, such as demand and time of use pricing and demand management services, quicker customer transfers and the facilitation of different billing cycles;
- Lower costs to customers through improved network operation efficiency;
- The ability to accurately and remotely determine the location of an unplanned outage;
- The ability to prioritise life support customers in the event of an outage;
- Faster response times during general unplanned outages leading to improved public safety;
- Empowering customers with a mobile application for communications and usage data;
- Reduced cost to serve and confusion for customers by eliminating 'buffer letter communications' for planned outages;
- Reduced energy theft;
- Eliminating the need for meter reading visits to medically vulnerable customers during COVID-19 outbreaks or lockdowns;
- Improved understanding of voltage across the network;
- Increased customer safety through early identification of broken neutral issues; and
- Increased accuracy of network connectivity/topology and through that better planned and unplanned outage management.

Despite these benefits the current rollout of advanced metering has been dispersed and lower than required to enable tangible value from which improved services could be delivered to customers. There are a number of factors driving this slower uptake:

- Inefficient and complex installation practices - which can vary significantly between retailers and metering coordinators;
- Lack of incentives - a major contributing factor is that the benefits from smart meters are split between multiple parties, in particular between distribution businesses and retailers, which is impacting the roll out of smart meters and benefits for all end users being realised; and

[7] Ausgrid (2021). https://www.aemc.gov.au/sites/default/files/2021-11/Rule%20Change%20Submission%20-%20EMO0040%20-%20Ausgrid%20-%2020211028.PDF.

[8] Endeavour Energy (2021). https://www.aemc.gov.au/sites/default/files/2021-11/Rule%20Change%20Submission%20-%20EMO0040%20-%20Endeavour%20Energy%20-%2020211028.PDF.

[9] Essential Energy (2021). https://www.aemc.gov.au/sites/default/files/2021-11/Rule%20Change%20Submission%20-%20EMO0040%20-%20Essential%20Energy%20-%2020211026.PDF.

- Customers are not incentivised to seek advanced meters - with limited access to services and concerns over tariff reassignment.

In order to realise the benefits of advanced metering the need to accelerate the rollout is well supported by customer advocates including the Energy and Water Ombudsman[10] (**EWON**), Australian Council of Social Service[11] (**ACOSS**), the Public Interest Advocacy Centre[12] (**PIAC**) and research from the Australian Energy Foundation (**AEF**) that highlights the benefits of advanced metering to vulnerable customers (including life support customers).[13]

The benefits (and challenges) of acceleration have also been recognised by other regulators. For instance, the UK set individual targets per retailer with the aim to deliver market-wide coverage by 31 December 2025. Also, the Tasmanian Government recently committed to the acceleration of advanced meters across the state, with the goal of reaching full deployment by 2026.

On the challenges of accelerating the rollout we note the advice of Energy Consumers Australia (**ECA**) which stressed that achieving a social licence is critical to the success (or otherwise) of any acceleration[14]:

> *One clear direct cost to the consumer which must be addressed in working towards a social licence is the remediation of site upgrades. Recognising that this is potentially beyond the remit of the AEMC, we would encourage the AEMC to work with jurisdictions to establish better protections and support for consumers who require metering board upgrades as part of their smart meter installation. Poor wiring is a safety issue and consumers should be provided with information and support to understand the options available if they cannot afford the upfront costs. With the introduction of a backstop date or target and a greater push for retailer-led roll outs of smart meters, consumers may find themselves in a situation of having to pay for upgrades they didn't even realise they needed. Similarly, if small customers' ability to opt-out from a retailer-led roll out is removed, there needs to be financial protections in place for consumers.*
>
> *Time spent chasing up delays and poor communication when it comes to installation is another cost to consumers that needs to be addressed. As will be discussed later in this submission, the role and responsibilities of the various parties involved in smart meter installation are confusing to consumers, which causes frustration. Clear and consistent communication is critical to a positive experience for the consumer*

We also note the importance of considering the impacts of accelerated depreciation of legacy metering and providing clarity on this in advance of the NSW DNSPs FY25-29 determination process. Our forecast position at the conclusion of the current regulatory control period (FY20-24) is as follows:

- Ausgrid closing Metering Asset Base (MAB) of $100M ($nominal) with a remaining life of 4.6 years;
- Endeavour Energy closing MAB of $13M ($nominal) with a remaining life of 14 years; and
- Essential Energy closing MAB of $74M with a remaining life of 7.8 years

We consider it suboptimal for the NSW DNSPs to be recovering the costs associated with pre-1 July 2015 meters from customers for decades beyond the introduction of a competitive market for metering. It is distortionary, administratively burdensome and inconsistent with the likely economic life of the underlying assets. We recommend that options of accelerated depreciation, where applicable, be considered in consultation with customers and the AER and taking into account customer impact analysis. Although we note previous attempts to do so by numerous networks have been rejected.

For our detailed feedback on options to accelerate the rollout of advanced metering we refer DPE to the NSW networks' responses to the AEMC's Competition in Metering Review Directions Paper, noting the following key points:

1. **Establish principles:** Key principles behind a meter replacement target should be established such as maximising economies of scale for rolling out advanced meters, minimising subsequent dis-economies of scale in maintaining legacy metering assets and targeting sites where the customer value of transition is highest.

[10] AEMC (2021). https://www.aemc.gov.au/sites/default/files/2021-11/Rule%20Change%20Submission%20-%20EMO0040%20-%20EWON%20-%2020211027.PDF pg 3.
[11] AEMC (2021). https://www.aemc.gov.au/sites/default/files/2021-11/acoss_submission_to_aemc_discussion_paper_on_smart_metering_08112021.pdf pg 4-5.
[12] PIAC (2021). https://www.aemc.gov.au/sites/default/files/2021-11/rule_change_submission_-_emo0040_-_piac_-_20211111.pdf pg 7.
[13] Australian Energy Foundation (2021), Better outcomes for energy consumers using life support equipment at home. https://grants.energyconsumersaustralia.com.au/archive/clean-reliable-energy-for-people-on-life-support-at-home.
[14] ECA (2021). https://www.aemc.gov.au/sites/default/files/2021-11/rule_change_submission_-_emo0040_-_eca_-_20211103.pdf pg 2-3.

2. **Incentives and cost sharing:** There is a split incentive inhibiting the rollout of advanced meters. Although introducing cost-sharing arrangements will increase complexity and be contrary to evidence suggesting the benefits of smart meters skew to retailers and customers[15]. However, there may be merit in establishing a centrally administered fund or approved charges to cover the costs of remediation requirements.
3. **Targets:** A flexible approach is preferred, which may involve intermediate and/or geographic targets, with an age-based trigger or backstop end-date for removing all meters acting as a safety net rather than a driver of replacement decisions. The NSW DNSPs have the expertise and knowledge to coordinate the rollout of advanced metering with metering coordinators who work across multiple retailers to maximise efficiencies in deployment. Networks have visibility of emerging issues with legacy metering types, meters reaching end-of-life and areas where accelerated deployment would yield greater benefits for life support customers and for customers with DER and controlled load appliances.
4. **Data access:** To realise the benefits of advanced metering it is also critical that networks have improved access to the data provided by these meters. The ESB's post-2025 market design recommendations recognise that greater visibility of the network is required for DNSPs to manage and plan for the increasing penetration of DER and to operate the network more dynamically as part of their Distribution System Operator (**DSO**) functions. Visibility of the network would also greatly assist during extreme events such as storms, floods and bushfires. To date, negotiating with multiple metering coordinators, prohibitively high access charges, lack of a standardised data format and exchange process and lack of incentives have presented significant barriers to networks accessing advanced metering data.

The NSW DNSPs are supportive of the proposed options but suggest the mechanism to accelerate the rollout (such as an age based trigger) be considered further to better utilise the expertise of networks in order to maximise the efficiency of the proactive replacements and the associated benefits to customers. We also suggest consideration be given to improving our ability to access and utilise advanced metering data to ensure benefits are realised.

Consultation questions

2a. What is the average life expectancy of basic meters and smart meters?

Approximately 15 years for advanced meters and 35 years for basic. Noting the estimate for advanced meters is less certain given the technology is relatively newer and evolving.

2b. What are the main operating factors that affect the life expectancy of smart meters?

Electronic component failure, incompatibility with future software and platform upgrades, and environmental factors like humidity and temperature.

2c. What is the average cost to a retailer of replacing a distributor's basic meter asset before it reaches its end of life?

N/A - although we would note sites with asbestos or switchboard related issues would be significantly more expensive to replace.

2d. What are the factors to be considered before mandating end of life for basic meters?

Currently, the inability of networks to trigger the replacement of a meter if it is faulty or part of a faulty population of meters. This restricts the ability of networks to work with metering coordinators to develop broad based replacement programs that are more efficient and beneficial. Instead, the pace of the current transition is determined by retailers who have limited and split incentives.

Relevant considerations for mandating end-of-life for basic meters include:

- **Target approach:** as aforementioned, a key issue with whether setting a target replacement age will support the optimal transition or whether a multi-faceted approach should be taken that sets intermediate targets and/or allows for networks and metering coordinators to maximise the efficiency of the transition (for instance on the basis of geography).
- **Unexpected costs:** When replacing a meter a number of auxiliary issues can be encountered which can impact the cost and complexity of the process. For instance:
  - Remediation of switchboards due to asbestos and other defects.

[15] Department for Business, Energy & Industrial Strategy, Smart meter roll-out: cost-benefit analysis 2019, September 2019, pg.63.

- Relocation costs of switchboards in multi-occupancy premises due to coordination challenges and/or insufficient room.
- Relocation costs of pole mounted meter boxes and non-complaint metering configurations like master subtractive metering installations.

Consideration needs to be given to how these challenges are best managed and funded.

- **Customer engagement:** Establishing and maintaining a social licence for the transition by ensuring customers are provided clear, simple and consistent information on the benefits of the transition, options to compare metering service providers, the costs to them, the responsibilities of each party and procedural steps for dispute resolution and complaints.
- **Cost recovery:** Which party funds the replacement of meters and the unexpected costs noted above. Noting that in the absence of regulation and/or a fast-tracked rollout there is a risk of price gouging/predatory pricing by metering providers and electrical contractors.
- **Deliverability:** Practical considerations such as the resourcing capacity of metering providers, the availability of advanced meters and associated hardware equipment and the capacity and capability of advanced meter operating platforms.

2e. What are the main challenges to replacing basic meters or smart meters that reach their end of life?

In terms of practicality, key challenges include:

- Site remediation for asbestos, old wiring and other switchboard issues;
- Relocation costs for insufficient room, particularly in multi-occupancy buildings;
- Relocation costs of pole mounted meter boxes and non-complaint metering configurations like master subtractive metering installations;
- Shared service fuse sites can also increase the time, cost and impact (multiple outages) associated with replacing basic meters;
- Site access issues (locks, fencing, pets, remoteness, etc); and
- For advanced metering access to an effective telecommunications signal. This can be particularly challenging in rural areas and may require an MRIM (Manually Read Interval Meter) to instead be installed noting these can be converted to full smart meters once communications become available in the future.

2f. What measures should be included to protect vulnerable customers if their meter needs to be replaced? Would exemptions need to be included to account for implementation challenges at some premises?

While advanced metering offers significant benefits to vulnerable customers it will also be necessary for customer protections to be put in place if an accelerated rollout occurs. This includes providing customers with clear and simple information on advanced metering and how it will impact them.

Outside of an MRIM, in certain circumstances we would caution against an opt-out policy for advanced metering. Such arrangements could significantly erode the benefits of advanced metering and the efficiency of the transition. Instead, we recommend advanced meters are rolled out and cost-reflective tariffs adopted to optimise the take-up of DER and reduce future system costs for all customers. Retailers and policymakers can then support vulnerable customers through alternate tariff offerings, payment options and/or rebates.

However, the unexpected costs associated with the transition do present a significant challenge. Where a customer is unaware of their meter being replaced but is then required to fund switchboard remediation costs this would increase hardship and negative sentiment towards advanced metering. To mitigate this risk there is merit in a central Government agency establishing a fund to support vulnerable customers (at a minimum) with these unexpected costs that arise because of the transition to advanced metering.

Issue 3: Solar connection delays

The Consultation Paper highlights that some solar customers are experiencing significant delays to their smart meter installation and in turn their solar panels. We note the responsibilities in the NERR, including for planned outage notifications, are clear but in practice there has been confusion (or attempts to transfer costs) between metering providers and retailers on responsibilities creating delays.

We share DPE’s concern and note it is also important to consider the role of installers in the solar installation process. In addition to advanced metering, information on the solar installation is required for AEMO’s DER register as well as new DER reporting to IPART under our recently amended Distribution Licence Conditions. There also needs to be confirmation that the inverter complies with Australian Standards and any settings required by each respective network (if any).

The NSW DNSPs have a limited ability to ensure these requirements are satisfied as we do not have a direct relationship with the installer or responsibility for the metering. This, in addition to confusion (or misaligned incentives) between retailers and metering providers, can result in customers experiencing delays or being left to arrange their own metering installations.

To address these issues the NSW Government has raised the following potential options:

1. Allow for third parties to request a meter installation on behalf of a customer, with the customer’s consent.
2. Advocate for clear role responsibilities in the smart meter installation process as part of the national AEMC metering review to ensure consistency for all customers.

We support these recommendations but consider the second point should be expanded further to include consideration of a compliance framework for DER installations in NSW (or an additional recommendation added).

As noted in our joint response to prior engagement with DPE on a DER strategy for NSW, we consider there is a clear role for government to ensure there is a robust compliance framework for DER, covering safety, technical requirements, and cyber-security. This is critical to protect customers from sub-standard installations or technology. The framework should include all DER technology types and supporting infrastructure such as solar PV, private poles and wires, batteries, and data sharing obligations/restrictions for customer protection.

Whilst other reviews are underway to establish technical standards for DER, the NSW Government should consider whether a compliance framework is required to enforce these standards. This may also extend to providing avenues for customers impacted by faulty installations to seek redress.

Consultation questions

3a. Are the current installation timeframes, and the measures to monitor compliance with those timeframes, that are required under the national rules appropriate?

Yes, we consider the current timeframes are appropriate noting they have been recently reviewed by the AEMC. Our concern is that AEMO’s current meter fault notification (**MFN**) process allows for exemptions that effectively create a loophole for non-compliance with the specific timeframes.

For instance, Endeavour Energy have more than 16,000 basic meters that required replacement since December 2017 that are yet to be replaced due to an exemption. We do not consider this is an acceptable outcome and the transition will continue to lag if broad based exemptions are obtainable.

3b. Are you aware of any regulatory or non-regulatory barriers that may be contributing to delays in the installation of smart meters?

As noted above the MFN exemptions framework is creating a regulatory barrier to the timely replacement of meters. Ambiguity around responsibilities may also be considered a regulatory barrier but this confusion may be also driven by non-regulatory factors.

A more specific example of where improvements could be made to the regulatory framework is shared fuses. At present, when undertaking metering installation or repairs where customers share a fuse, a temporary isolation for group supply is required to be undertaken. This is due to a meter provider not being able to isolate a single customer to perform a meter exchange without also disconnecting others on a shared fuse. DNSPs are therefore required to identify and notify all impacted customers within the shared fuse group of a planned outage and perform the outage on an agreed date and time, within 25 business days, so the meter provider can carry out the meter exchange. Each time an individual customer requires a meter exchange or repair, this process is repeated, meaning customers may experience multiple isolations even if their individual meter is unaffected.

Under the current regulatory framework, DNSPs are responsible for the distribution network up to the point of supply and have defined obligations under the current rules and ring-fencing arrangements. As such, when undertaking shared fuses work, multiple stakeholders are involved, including electrical contractors, retailers, metering coordinators and occasionally work safety representatives (for issues such as asbestos). This coordination across multiple stakeholders often entails a material administrative resourcing effort.

Nonetheless, when attending on site, field crews often experience a variety of reasons preventing completion of temporary isolation work including cancellations or even ‘no shows’ by metering installers. In addition there are many instances where temporary isolation works are not required when the field crew arrives onsite due to no shared fuse or works that could be conducted by Level 2 ASPs. This prevents completion of the work and restarts the entire process. Such an outcome results in additional costs for multiple parties and often negatively impacts a customer’s experience.

It is worth noting that this issue has been raised through the AEMC Metering Review process where one option which has been discussed is a ‘one-in-all-in’ option, whereby if one meter sharing a fuse or metering panel needs to be replaced by a smart meter or upgraded, all other meters attached to that shared fuse should also be replaced in bulk. If this issue is not addressed adequately at the next stage of the AEMC review we would encourage DPE to specifically consider establishing a policy to address this.

Non-regulatory barriers may include the efficiency of the process, supply chain management and logistics, resourcing and capacity of metering providers, commercial pressures, switchboard defects or complicating factors such as shared fuses and multi-occupancy sites, site access issues and customer reluctance to transition.

3c. What additional measures would need to be implemented to unlock these customer benefits?

We understand that currently retailers do not arrange the install of the advanced meter until the solar has been installed. This delays the benefits the customer expects to enjoy from solar, particularly if the metering provider discovers issues when attending the site. Further, as more DER is connecting to the low voltage network with increasing scale, the technical limitations of the network are being tested. To operate the network of the future and take on our role as DSOs, DNSPs require the timely provision of advanced meter data to deliver the following outcomes:

- Provide near real time readings of voltage, currents, and real and reactive power in order to safely and reliability operate the network to meet licencing requirements;
- Better planning to optimise the network to maximise utility of customers’ installed DER, ensuring customers are not unnecessarily constrained from exporting;
- Timely identification and rectification of safety issues;
- Improved levels of customer service through the timely and accurate provision of information; and
- Improved tariff incentives and reforms.

Nonetheless, under the current National Electricity Rules (**NER**), metering data can only be made available to DNSPs to complete their obligations of operating the network in a safe and reliable manner, or when required to meet obligations under AEMO procedures such as customer billing and settlement processes, otherwise known as the minimum NER service specification requirements. Outside of these specific circumstances, metering data must be provided through bilateral commercial arrangements between DNSPs and metering coordinators.

At present, these commercial arrangements between DNSPs and metering coordinators are not working efficiently for the following reasons:

- Across metering coordinators there is a lack of data standardisation of key terms, data arrays and data terminology. In many instances, the data systems utilised across participants are different and provided in multiple formats requiring different software licences. Subsequently any data received requires substantial data treatment, ultimately increasing DNSP costs.
- Inconsistencies in standardised contractual arrangements across metering coordinators requires substantial legal work when negotiating arrangements across multiple metering coordinators.
- Cost prohibitive pricing arrangements in some circumstances.

The impediments listed above are hindering efficient customer outcomes. This is directly preventing the greater update of smart services and products facilitated through improved live data communication.

Therefore, at the time of DER installation we suggest the process be streamlined so that the advanced meter is required prior to, or in parallel with, the installation of the solar. Standardising the process (and funding) for unexpected site remediation issues is also worth considering. For instance, we are aware that some metering providers train and equip their staff to safely manage asbestos to minimise cost and disruption to the customer while others transfer the issue to the customer to resolve which can cause delays.

Post the installation of the advanced meter and DER device we consider there is an ongoing need for the NSW networks to have better access to meter data (such as power quality data) considering the increasing uptake of DER and evolving role of networks in managing and enabling DER.

3d. Are there any benefits for customers to allowing third parties to be able to manage the installation of a smart meter on their behalf?

We note that electrical contractors, solar installers and Level 2 ASPs can arrange for the installation of a meter on behalf of the customer, if this arrangement is accepted by the customer retailer.

We also agree that for multioccupancy sites the strata should be able to appoint the metering coordinator as the owners of the switchboard infrastructure noting this will likely require a rule change.

Issue 4: Meter board upgrades

The Consultation Paper outlines the process and challenges involved in upgrading a meter board that can delay the installation of an advanced meter and/or DER. DPE offers the following options for improving the timeliness and efficiency of the existing process:

1. Consult with National Energy Ministers to amend laws and rules to ensure:
    a. if it is safe to do so, customers or their agent may submit a photo of their electricity meter board to their electricity retailer to enable the metering provider to make a preliminary assessment of whether a meter board upgrade is required before attending the site
    b. metering providers that attend a meter board, particularly in multi-occupancy dwellings (such as apartments and townhouses), can record and report the state of the meter board via an approved process (such as inclusion in the database supporting Market Settlement and Transfer Solutions (**MSAT**) or other).
2. Distributors to provide ASPs with blanket approval to re-mount old meters on new meter boards in apartment buildings, rather than owners' corporations having to seek permission from their DNSP.
3. DPE is working with the Department of Customer Service as part of the review of the Strata Schemes Management Act 2015 to require owners' corporations to consider meter board upgrades as part of their 10-year Capital Works Fund Plan.

We support these options noting with respect to option 2 that old meters and relays may contain asbestos material and cannot be relocated under the WH&S Act.

Consultation questions

4a. Should there be a requirement to replace meter boards that are older than a specified age (e.g. 30 years) as a prerequisite to installing a smart meter?

Whilst it would be good practice to remove asbestos from meter boards via such a mandate there are also many meter boards that are over 30 years but in good condition. An alternative option would be to mandate a safety test / visual inspection after 30 years to avoid placing an unnecessary burden on customers, especially multi-occupancy building owners.

4b. What challenges would prevent electricity retailers and metering providers from offering a meter board survey service to customers before a smart meter is installed?

The primary challenge will be the costs involved in doing so and the logistics noting a site visit will be required. Useful information would include the panel type, cable condition, switchgear condition and amount of space available / potential limitations. An initial desktop assessment where the customer takes a photo of the meter board may be a less expensive option. This is provided the costs of receiving, storing, sharing, and reviewing the photo between multiple parties is not material. For instance, MSATS currently does not allow for files to be uploaded, meaning a flag may instead be required that multiple parties could raise. Other procedurally issues would also have to be addressed, such as how do parties access the file and whether the customer must re-send the file if there is a retailer churn.

4c. If a meter board survey service can be provided, how much should customers pay for the service? Can the service be offered for free?

It is unlikely the service can be offered for free unless the NSW Government establishes a fund for customers to apply for/access in certain circumstances for a free meter board health check.

We would expect that cost should not be more than in the order of $250 per single dwelling for a visual assessment. If testing is included the cost would be higher and for a multi-occupancy site cheaper with less travel time to the site.

Noting this is simply an estimate for the purposes of providing context given this work will be contestable and outside of the function and remit of the NSW DNSPs.

4d. Should electricity retailers and/or metering providers receive a report on the state of a customer's meter board? If not, why?

We would expect this to help identify safety and other faults (noting the NSW networks do not possess this information). If this occurs the customer should also be given the right to share (or not share) the report with other parties. It is also worth noting that broad assessments cannot necessarily be drawn from this reporting given the installation practices and meter types used by metering providers differ.

4e. What are the challenges to using an existing platform to enable metering providers to register and share the state of a customer's meter board with other energy market participants?

As noted above, the existing platform (MSATS) does not allow for attachments like photos and would likely require an upgrade. In addition to this, there would need to be agreement between parties to share the information, establish protocols around testing, implementation, and timeliness of any changes. This process may also require the establishment of administrative fees to allow the responsible party to recover costs.

It should also be made clear that any potentially unsafe situation or defect is addressed as soon as reasonably practicable and that the sharing of the photo between multiple parties does not confuse the responsibilities for addressing issues that are identified.

4f. Are these options suitable for customers in regional and rural areas, or are there other options that should be considered to meet the needs of these customers?

A photo-based assessment which can be remotely uploaded is even more beneficial for remote and rural areas where the cost of a site visit is more significant.

4g. What is the best way to provide customers, solar panel installers and electricity retailers with information about meter board upgrades?

We consider it is important that metering providers and ASPs do their own due diligence inspection when performing work on meter boards. Legal liability issues may arise where these parties rely on photo assessments or site visit reports from other parties.

As aforementioned, existing processes would also be improved where the installation of advanced metering is the first step in installing DER devices like solar panels to identify and address meter board issues.

Issue 5: Sample meters

DPE's paper highlight that the NSW networks are currently required by the AEMO metrology procedures to each maintain 200 sample meters at residential and small business customer sites. The need for this on an ongoing basis is questioned in light of the increasing penetration of advanced metering across the state. The options to address this potential inefficiency are:

1. Amend AEMO's metrology procedures to remove the controlled load profiles requirement completely – removing the need for sample meters.
2. Amend AEMO's metrology procedures to retain the controlled load profiles requirement for settlement purposes but instead utilise historical profiles – removing the need for sample meters.
3. Retain the controlled load profiles requirement and collect data for profiles from smart meters – removing the need for sample meters. Enabling this option will require change to the NER and changes to the metrology procedures.

The NSW DNSPs agree that this requirement has become antiquated and unnecessary with the proliferation of advanced metering in NSW. As noted in the paper, these sample meters are often mistakenly removed. Maintaining this population would also require us to incur avoidable costs like upgrading comms to 4G. Further, each network will eventually run out of spares (some have already) meaning we would have to instead install network devices (interval meter and comms) on meter boards downstream of the revenue meter (noting there is limited space). This outdated requirement increases network costs which in turn will be passed onto customers.

Our preference is therefore to remove the jurisdictional requirement as suggested above so that AEMO no longer requires sample meter data in NSW.

Consultation questions

5a. Are there broader benefits (beyond the financial settlements process) to retaining controlled load profiles in New South Wales?

No, the controlled load profiles are only used by AEMO for financial settlements process by the request of the NSW Government. Further, as type 6 meters are replaced the need and purpose of controlled load profiles will diminish.

5b. Are the costs to enable smart meters to determine the controlled load profiles less than the benefits from the information?

There would be minimal costs to use advanced meters with off-peak for controlled load profiles.

5c. What alternative options should be considered?

We support removing the requirement for jurisdictional controlled load profiles completely from AEMO's metrology procedures as the simplest and most cost-effective solution.

If there are concerns from retailers about the impact this may have on their financial settlements, then we would encourage the acceleration of replacing basic meters for customers that have controlled load. This would align with the broader industry direction to accelerate the roll out of advanced meters. In addition, with the implementation of global settlement any perceived settlement risk will be shared between all retailers.

Issue 6: Consumer protections for remote vs manual re-energisation and de-energisation

The Consultation Paper highlights disparities in the customer protections between manual and remote re-energisation and de-energisation of a premises. To address this, DPE suggests it:

- Align all existing obligations on DNSPs when they undertake manual re-energisation and deenergisation services whether done manually or remotely.
- Create a new framework for metering providers to adhere to when carrying out remote services.

We support these recommendations and wish to be involved in the development of new guidelines/requirements to ensure there are no unintended consequences. We also wish to note that the NSW DNSPs cannot provide remote energisation or de-energisation services, instead we may only request them from the contestable metering coordinator.

Consultation questions

6a. Should the same obligations be applied to both manual and remote re-energisation and de-energisation services?

Yes.

6b. Do you foresee any unintended consequences of aligning these obligations?

No, however further consultation may be required on this once detailed drafting is available.

6c. Do you consider there to be any barriers that may prevent a customer being afforded the same protections if they have been remotely re-energised and/or de-energised?

For life support customers there is currently a 'double check' requirement by the retailer and DNSP. This may need to be extended to the metering provider as well given there is no obligation on them to check and avoid remote disconnection of a life support customer.

Issue 7 Enhancing protections for hot water embedded network customers

Consultation questions

7a. Is it appropriate to require the sale of hot water to be treated as the sale of energy, to allow hot water embedded network customers to be given similar consumer protections as those in traditional common hot water systems?

Yes, we consider hot water embedded network customers should have equitable outcomes and protections with ordinary hot water system customers.

7b. Do you foresee any unintended consequences of requiring hot water embedded network operators to bill customers for hot water in the underlying energy source (in cents per megajoule or kilowatt hour), rather than as a separate 'hot water' product (in cents per litre)?

No comment.

7c. Do you consider there to be any barriers that may prevent a hot water embedded network operator from billing customers in the underlying energy source?

No comment.

7d. Do you consider the AEMO Retail Market Procedures (NSW and ACT) formula for the calculation of energy usage to be appropriate and reasonable for use within hot water embedded networks?

No comment.

PART 2: THE FUTURE OF DER

DER in New South Wales

Issue 8 consultation questions

8a. Are the suggested guiding principles appropriate and adequate to guide government strategy for enabling high levels of active DER in New South Wales?

While NSW DNSPs support the proposed guiding principles, we recommend an additional guiding principle: 6. Reduce and address regulatory barriers that hinder or prohibit DER solutions that deliver value to customers.

8b. What practical measures should the government consider to support DER and the suggested guiding principles?

We recommend that DPE streamline and standardise the installation of advanced meters by increasing the requirement on installers and requiring them to capture all required information in the DER register. This should include reforms that improve DNSP access to and the quality of data received. This could occur by expanding the minimum NER service specifications requirements to require metering coordinators to provide 5-minute internal readings of voltage, current and real and reactive power to DNSPs as part of a mandated standardised fee for service. This fee would include the efficient marginal costs of providing the data and could be set by an independent pricing regulator such as the AER or Independent Pricing and Regulatory Tribunal (**IPART**). The regulator could use a light-handed commercial arbitration framework to determine pricing.

Life support customers and customers in bushfire prone areas should be prioritised to receive smart/advanced meters with metering coordinators providing these customers' smart meter data to DNSPs so that customer service and support can be enhanced for this critical cohort. The costs for this data could be recovered as part of a standardised fixed fee for service.

We also recommend DPE encourage national bodies like the AEMC and ESB to align their work, to ensure that there are consistent standards, data definitions, B2B processes and data systems and architecture. This should be industry-led with equal representation from all stakeholders involved.

8c. How can the government support greater demand side participation and flexibility for customers and market participants?

Smart Metering

If the issue of low smart meter penetration is not addressed adequately at the next stage of the AEMC review, we would encourage NSW Government to specifically consider establishing a policy to address this. In addition, there are a few no regrets smart meter penetration policy actions which could be adopted immediately within NSW in the near term. For example, the requirement to install smart meters for life support customers so DNSPs can see when they have an outage and promptly investigate the matter instead of waiting on the customer to call.

Compliance Framework

A clear role for government is to ensure a robust compliance framework for DER, covering safety, technical requirements, and cyber-security. This is critical to protect customers from sub-standard installations or technology. The framework should include all DER technology types and supporting infrastructure such as solar PV, private poles and wires, batteries, and data sharing obligations/restrictions for customer protection.

We note there are technical reviews underway establishing technical standards for DER technologies, in particular the *DEIP Interoperability Steering Committee (ISC)* lead by AEMO.[16] The DEIP ISC is focusing on establishing cyber security and communication standards (IEEE2030.5) to better enable DER integration. This builds on work undertaken by Standards Australia on updating inverter standards (AS 4777.2) which seeks to maintain a secure, safe, and reliable power system.

Whilst technical standards are being updated and developed, DPE should consider whether a robust compliance framework exists to enforce these standards. A compliance framework is also needed to provide avenues for customers impacted by faulty installations, such as solar PV, to seek redress through an ombudsman function, with compliance capability. Our understanding is that NSW Fair Trading is accountable for installation standards and complaints, however we recommend this accountability be confirmed and/or clarified as part of the strategy.

[16] https://aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/deip-isc

Interoperability

Future-proofing customers' investment in DER and appropriately accounting for cyber security needs to remain front of mind. It is important that DER technology is interoperable and able to interface in a safe, reliable, and secure way with markets, solution providers, aggregators, traders, and network control systems. This benefits customers as it prevents them from being restricted to a sole DER provider or requiring upgrades to their systems to meet system security obligations.[17]

Whole of system thinking

Doing whole of system infrastructure planning will be key to achieving a sustainable and secure energy system for all. This is important given the need to ensure community support for both Renewable Energy Zone (REZ) activities and DER uptake for customers. For example, it may not be palatable to some customers to pay for the Roadmap via the Scheme Financial Vehicle when their DER exports are being curtailed. This could include providing incentive support for all customers to access DER via supporting programs, while providing the support to large scale renewable generation through the Roadmap. Additionally, as DPE continues to consider the Roadmap's REZ access regime, whole of system thinking should be incorporated into the strategy and considered as a key principle in the Draft Scoping Paper.

We refer to our comments in Part 1 which is related to this matter.

8d. What material concerns and barriers will need to be mitigated to support DER?

DPE should consider whether existing incentives sufficiently support the use of new technologies and establishment of markets that may not otherwise be cost-competitive.18 While these solutions may require NSW Government subsidies in the short to medium term it is expected that markets mature, increase competition, and promote positive social and environmental outcomes in the long-term interests of customers.

We recommend that DPE provides the NSW Government's Net Zero Plan, EV Strategy, Electricity Infrastructure Roadmap and Hydrogen Strategy to the AER with guidance that these plans and strategies are jurisdictional requirements in NSW. This would enable the AER to consider these plans in its analysis of 'environmental benefits' when valuing DER and finalising its DER Expenditure Guidance Note. The AER's current position in its draft guidance is that it will only allow DNSPs to quantify environmental benefits if there is an identifiable tax, levy or other payment. If the AER were to understand the NSW Government's plans and strategies in this light, then DNSPs would be better able to quantify the benefits of DER and ensure appropriate DER enablement investments as a result.

See section 12 on community batteries.

8e. What could be done to ensure vulnerable, low-income and other 'locked out' households are not disadvantaged by the energy transition?

We recommend:

- Supporting shared assets such as community batteries (see section 12 on community batteries) while ensuring retail competition will facilitate improved access to DER.
- Supporting DER enablement that put downward pressure on wholesale market prices, which will provide flow on benefits through lower prices for all customers.

While it may be difficult to design and implement programs that directly support DER in low-income households (in addition to the existing programs), equitably sharing costs and benefits will remain key to support low-income households. It is therefore important for DPE to consider how to share costs among customers and to limit the extent to which non-DER customers are subsidising DER customers in things like government schemes, and network and retail pricing.

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[17] This analogous to Apple's product and platform dependency where customers can only use Apple products and platforms.

[18] Some examples of existing incentives include: **For customers** - the NSW Solar Bonus Scheme supported the widespread take-up of solar PV across NSW. More recently, the NSW Government's Empowering Homes Program seeks to incentives the uptake of home battery systems through offering interest free loans; **For networks** - the national regulatory framework provides incentives and planning obligations that promote the use of innovative and non-network-based solutions to emerging network constraints. Following the AEMC DER Access, Incentives and Pricing Rule Change the AER will review and may develop a more targeted incentive scheme to incentivise networks to provide an efficient level of export hosting; and **For suppliers of non-network options and innovations** – market pricing signals (such as FCAS) and ARENA funding provide incentives that will drive market innovations such as VPPs and EV charging.

8f. What can the government do to improve equity of access to the benefits of clean energy solutions?

Per our response to question 8e, retail competition combined with their exposure to cost-reflective pricing is critical to incentivise innovation and ensure equitable access to the benefits of clean energy solutions. Also, see section 12 on community batteries.

8g. How can the government help to unlock the full value of DER and load flexibility on the distribution network, and ensure asset owners are properly protected and compensated?

As outlined in 8b regarding metering data and in the metering section, DNSPs need to have access to smart metering data to be able to unlock the full value of DER and load flexibility.

As outlined in section 9 on dynamic operating envelopes.

As outlined in 8c on interoperability standards, compliance frameworks, and appropriate customer protections.

8h. What are the most promising clean energy solutions for delivering material private, network and market benefits?

See response to sections 12 on community batteries and 13 on EVs.

Issue 9: Enabling flexibility and dynamic operating envelopes

Consultation questions

9a. How can customers be encouraged to only install solar systems that suit their current consumption needs? What would be the most effective measure to achieve this aim?

As mentioned in section 1, it could be useful for NSW Government and/or the AER to develop a web tool that helps customers to estimate the 'right-sized' solar installation for their consumption needs. Appropriate pricing and incentives that encourage self-consumption and education programs could also be useful. For instance, educational programmes to explain how two-way pricing for solar exports could assist in customers selecting the right sized system for their household.

In addition to this, we recommend supporting customers to access home batteries, community batteries and/or smart load control where customers install solar systems that exceed their existing consumption needs. Current trends suggests that customers will opt to install the largest possible system that they can to increase self-sufficiency and contribute to the decarbonisation of the energy system. Batteries and other technologies supported by appropriate tariffs and education that encourage residential solar PV customers to export at higher value times might the most pragmatic solution in these circumstances.

9b. Will changing usage and system demand profiles likely disrupt grid security and reliability in New South Wales, and if so when and how?

Yes. The voltage and system stability challenges that South Australia has and is facing gives an early insight into the challenges we're likely to face in New South Wales as rooftop PV penetration increases across the region. This could be compounded by increased EV uptake changing usage profiles if it is not well coordinated. However, this can be mitigated, if the NSW Government implements the right mechanisms, that, for example, enable scaled community battery rollout by DNSPs and other community battery providers, encourage EV charging during non-peak times and support ongoing cost reflective tariff reform (and the smart metering needed to enable this).

9c. What can the NSW Government do to mitigate the potential problem of breaching lack of load thresholds?

In addition to our response to section 12 on community batteries, section 13 on EVs and question 1e on tariff reform, DPE should also advocate for clearly defined roles and responsibilities between AEMO, Transmission Network Service Providers (**TNSPs**) and DSOs in managing system security through 'whole of system' approaches to regulation and planning.

9d. How can the NSW Government best enable dynamic operating envelopes?

We recommend DPE implement customer education and information awareness raising programs to help customers understand that the abundance of renewable energy in the middle of the day and increased electrification of things like transport means that dynamic solutions like operating envelopes are needed to ensure networks are operating safely and system security is maintained. This will bridge the gap between historic customer expectations and the service delivered in a highly renewable future. These programs will be crucial as networks' role as DSO increase through the ESB post-2025 reform work.

Once public buy in established for the need of dynamic management in this future, the NSW Government should focus on building the social licence for DSOs and others to leverage inverter controls or the ability to turn-off the export channel on smart meters for short periods. This includes establishing appropriate customer protection, transparency in how often these measures are employed, and consideration of the balance between control and incentives.

Load side operating envelopes could offer a new way for customers to access low-cost electricity by opting in their flexible load such as EVs, hot water and pool pumps into these programs on a discretionary basis. This is currently an under considered policy issue with the majority of focus being (understandably) placed on solar exports.

In addition to customer engagement, clear direction to industry that this is part of the future landscape will provide confidence to the market to investment in these solutions and make it part of default product offerings. Timely direction on this will be important to future proof investment decisions customers make today.

9e. What issues or barriers, including around consumer protections, need to be considered if implementation of dynamic export limits is pursued?

We would encourage DPE to participate in the ESB's post-2025 evolved customer protection framework workstream to ensure that the proposed market design changes recognise and ensure that customer protections remain fit for purpose.

DER customers are unlikely to support curtailment without understanding the reason behind these measures and so a NSW Government's information raising programs (see question 9d) will be critical to explain to customers the need for limited duration curtailment.

9f. Are there NSW-specific customer, grid infrastructure and/or technological issues that should be considered in enabling dynamic operating envelopes?

See response to question 9d re load side operating envelopes.

Issue 10: Quality, standards and compliance

Consultation questions

10a. How can solar installers and DNSPs ensure all inverters (new and legacy) are set correctly and have the correct capabilities activated?

The NSW Government should work with the Federal Government to implement the recommendations from the Federal Government's 2021 Integrity Review of the Rooftop Solar PV sector.[19] In particular, recommendation A-1 on developing rules and the framework for an installer accreditation scheme. This should include mandatory requirements that all newly installed inverters should:

- Have the ability to set export limits; and
- Mandate entering data in the DER register, including confirming the installed inverter settings.

The rules and framework should include a clear compliance and auditing framework with penalties and requirements to remediate installations that did not comply with the rules and framework. Audits of installer compliance should occur via the DER Register so that already installed inverters can be remediated as and where needed and full compliance can occur overtime with the rules and framework. Depending on the circumstances, penalties could include requirements to remediate, fines and temporary or permanent expulsion from the installer accreditation scheme. Customers, DNSPs, AEMO and retailers should be able to report non-compliance to the DER Register and the installer accreditation scheme compliance function.

Accredited installers should also have to pass mandated training so that they are aware of their obligations under the installer accreditation scheme.

We note that DNSPs do not always have a direct relationship with DER installers and do not have a compliance function for installers. For example, we are often unaware of which installer installed the DER and therefore unable to

[19] Clean Energy Regulator (2021). http://www.cleanenergyregulator.gov.au/RET/Pages/About%20the%20Renewable%20Energy%20Target/Rooftop-Solar-Sector-Review.aspx

contact them for remediation. Additionally, DNSPs have no legal mechanism to enforce compliance. It is important that the installer accreditation scheme clearly identify (and provide for if needed) an entity to carry out this function.

10b. Is there value in DNSPs being able to remotely access or communicate with DER assets on their network to check and dynamically manage settings in accordance with changing conditions on the network?

We recommend in the first instance that appropriate controls are put in place to ensure inverters are installed correctly and with the right settings per response to question 10a. Without improved compliance on inverter installation and inverter data entry into the DER Register, DNSPs cannot accurately 'see' to react to or 'predict' to plan for what is happening on the network.

The value in DNSPs being able to remotely see and communicate with DER assets is in the ability to reduce exports by a small percentage at the connection point without turning off the export completely. This is best enabled through dynamic export limits published to the connection point as discussed in 9d. However, in some instances a dynamic export limit published directly to a solar inverter could be more efficient, particularly where a customer does not have other flexible resources on site. We recommend that the framework for DER control should be flexible enough to enable fit for purpose customer solutions that allows for this model while providing a clear pathway to whole of site optimisation behind the connection point when there is sufficient value in this.

10c. If an additional check of the inverter setting is required, who would be best placed to carry this out?

The solar installer could be required to do an additional and auditable check of the inverter setting at the time of installation as part of the rules and framework for the installer accreditation scheme.

10d. Should New South Wales fast track mandating that all new DER installed must be active (i.e. visible and controllable)? What approaches should be considered to ensure these assets are active?

Yes, DPE should work to fast track this work, ensuring inverters are not only active, but also interoperable so customers are not locked into specific providers. Lessons learned from NSW could be used for the national framework and adopted in NSW. The NSW Government should seek to implement realistic and no regrets requirements until a national requirements framework comes into place.

10e. What frameworks or measures should the government consider putting in place to ensure installed DER systems are compliant with the relevant technical and quality standards?

Having a compliance framework within the rules for the installer accreditation scheme, will help ensure that installers comply with applicable standards for inverter installation.

See other responses in Section 10.

Issue 11: Improving the visibility of residential DER and data management

Consultation questions

11a. Is the AEMO DER register the best way to improve the visibility of DER in New South Wales? What better approaches should be considered?

DPE should work with AEMO to ensure that the DER Register becomes the single source of truth for static DER data. The DER Register is the least-cost approach for customers, government and regulators and reduces the risk of duplication and increased data discrepancies. However, the NSW Government should work to improve data visibility, accuracy, and ease of access for DNSPs per our response to Sections 1, 9 and 10.

The NSW Government should consider the role of customer protections for the full range of DER (including flexible appliances) to understand the need for customer privacy protections in some instances. This should be balanced against the value flexible of load in integrating more renewables.

11b. What should the NSW Government do to help improve the visibility of changing operating conditions across the distribution network? Are behind the meter DER assets a viable and cost-effective solution?

See response to Sections 1, 9 and 10 to improve smart meter and inverter installation compliance to minimise the need and associated costs with attending sites.

11c. What would an ideal system, data collection and notification process look like to have the best oversight of these assets? Who should be responsible for this system?

No comment.

11d. Should there be different notification requirements based on the size or capacity of the EV charging or other DER infrastructure not already captured by the DER register (i.e. 7 kilowatt or 50 kilowatt chargers)?

As per our response to 11a, DPE should consider what appropriate customer protections need to be in place as more data on new kinds of DER is centrally captured.

11e. How can installers of DER be supported to ensure robust reporting of DER data to networks and AEMO? How should compliance be enforced?

See response to Section 10.

11f. What should the NSW Government consider in working with AEMO to expand the DER register to incorporate new controllable loads not already captured by the register?

See response to question 11a. Some further consideration could be given to including data fields that are likely to form the basis of incentive schemes on DNSPs to improve export services.

Issue 12: Community batteries and emerging technologies

Consultation questions

12a. Are there any concerns about community batteries (or other similar DER innovations) from a system or customer perspective that should be considered as part of any future strategy or reform?

Local community resources (i.e. solar gardens, community batteries, shared EV charging) and embedded networks are effectively natural monopolies as it is inefficient for a second provider to install a similar community resources alongside existing resources. It is therefore important that in all models access to these DER resources is appropriately managed so retail contestability is maintained (i.e. to prevent a retailer from 'monopolising' the local community by limiting access to community resources to their customers).

A key focus of Ausgrid's community battery trial is to maintain retail competition. We are of the view that DNSPs are a natural fit for this type of arrangements (since we currently manage shared assets with open retail competition) but are also supportive of other models that are developing in the market, provided competition is maintained and appropriate frameworks are in place to share these resources (and their benefits) with local communities.

There are several benefits of allowing DNSPs to use storage devices to offer both network services as well as offering other contestable services to customers. Namely these benefits relate to DNSPs being able to:

1. **'Value stack' a larger number of services** than third parties and avoid the costs imposed by the third-party contracting arrangements necessitated by the ring-fencing requirements;
2. **Be in a better position to provide access to efficiently located storage assets** for smaller market exposed participants on a neutral basis, and in doing so support competition; and
3. **To maximise locational value to the network** from storage devices due to DNSPs detailed understanding of current and future network needs and certainty of access to these resources to support the local network.
4. **Ability to leverage synergies with existing distribution assets**: DNSPs have the unique ability to leverage synergies with existing (and planned) distribution assets to derive more value for customers, as well as better support the network more generally.
5. **Overcoming cost barriers and reduce network costs**: Leveraging the existing regulatory framework that sees DNSPs investing in shared assets and recovering these costs over time at a regulated return is an efficient and equitable way to overcome the high upfront cost barrier for customers considering purchasing batteries. This would likely result in quicker uptake, which would assist the more efficient utilisation of local renewable generation. This in turn would reduce pressure on existing network assets and, at scale, may help defer or avoid alternative network costs.
6. **DNSPs can best manage network issues**: Batteries represent a flexible and future proof network investment. DNSPs are best placed to use batteries to support the network by managing voltage issues and increase renewable hosting capacity at a community level. This would most effectively be done as owner-operator of batteries as well as the provider of a storage service to customers.

7. **DNSPs can lease batteries for use in market services**: DNSPs are well placed to lease storage to market participants, including smaller retailers, to provide 'other services' like ancillary services when the battery is available. This provides an opportunity to optimally use the available energy storage capacity and increase smaller retailers' competitiveness.
8. **Increased competition in storage services**: Enabling DNSPs to lease spare capacity to the contestable market for energy storage will increase competition in the storage services market and incentivise competing providers to be more efficient and innovative.
9. **Access to economies of scale and existing community relationships**: DNSPs have access to economies of scale that could allow for greater investment in more intelligent storage technology. In addition, we have an existing and enduring relationship with the communities in which these assets will be located. Combined with appropriate regulatory oversight this could lead to efficient, equitable and open shared services to communities.

Despite these significant benefits identified above, the current regulatory framework and AER distribution ring fencing guideline heavily restricts DNSPs providing community battery solutions. In our view, DNSP led community batteries should be allowed where the benefits generate the greatest net benefit for the community by outweighing the costs of the status quo.

12b. What technical and regulatory changes that have not already been addressed, should be considered to enable the full value of community batteries and other DER solutions to be unlocked?

Per Question 12a.

We note that vulnerable customer advocates, local councils and smaller retailers have indicated that they support networks delivery community batteries as 'Community Batteries' provide an opportunity to realise cost scale economies and support the NSW Government's Net Zero Plan whilst maintaining customer access and retail competition.

However, the AER's Distribution Ring-Fencing Guideline (V3) imposes clear restrictions on a distribution network's ability to own and lease batteries to third parties to unlock the full value of the device and enable a broader demographic of customers to access DER technologies. This is because distribution networks can only directly own and lease batteries to third parties if they secure a case-by-case waiver from the AER. We believe that the NSW Government should consider a more measured regulatory intervention by creating regulations using existing regulation-making powers under the *Electricity Supply Act (NSW) 1995* at this critical phase to enable community battery scale storage devices (i.e. less than 1 MWh in size) to be exempt from the national framework.

The NSW Government should explore regulatory solutions via these powers to encourage DNSP-led community batteries within NSW including a potential derogation away from this specific restriction of the distribution ring fencing guideline. This reform would be timely given the rapidly changing customer expectations currently being considered as part of DNSPs regulatory proposal activities and the development of the NSW Government's REZs.

DNSP critical infrastructure license conditions are drafted in a way that is less nuanced for assets like community batteries. Consideration should be given to understanding how the critical infrastructure conditions may need to be nuanced to allow for flexibility. For example, most batteries are remotely monitored and controlled by battery manufacturers to proactively prevent safety incidents. However, as all DNSP assets are considered part of the distribution network and subject to critical infrastructure license conditions, complex and costly workarounds are needed to discharge this responsibility to the local DNSP.

Consideration should also be given to DNSP critical infrastructure cyber security licence conditions. See, for example, Ausgrid's and Endeavour Energy's submissions to IPART's Review of Electricity Network Operator Licences Issues Paper and Draft Report 2022.[20]

We note that the same ring-fencing restrictions and critical infrastructure restrictions are not imposed in the same way on gentailer, generator, retailer or TNSP-led batteries. As a result, manufacturers will favour parts of the market with lower regulatory requirements, even if more value are technically possible to be achieved in other parts.

It is important to understand that community batteries are an emerging technology solution that need to be appropriately supported until established. Current trials are aiming to unlock the full value stack and in particular barriers that prevent trials are slowing down the development of these solutions.

[20] Submissions to IPART (2022). https://www.ipart.nsw.gov.au/Home/Industries/Electricity/Review-of-electricity-network-operators-licences/.

12c. Are there any technical requirements or standards that should be developed to support the safe and efficient rollout of these kinds of emerging solutions?

See response to question 12a and 12b.

12d. Are community batteries an economically effective solution to managing the increasing amount of generation from rooftop solar PV on the distribution network? If not, what other solutions should be considered?

Yes. See responses to question 12a and 12b.

12e. What are the barriers for developing and implementing a community battery project, and then connecting and operating the battery?

See response to 12b re regulatory barriers.

Additional barriers for community batteries include development approvals in the public domain and EPA noise-level considerations for assets close to houses. Trials should be encouraged and supported to overcome these challenges.

12f. What other emerging solutions could enable locked out demographics to participate in the energy transition and benefit from clean energy solutions?

We recommend flexible load solutions of all types be explored to help locked out demographics to participate in the energy transitions and benefit from clean energy solutions.

12g. Are there any other ways the NSW Government can support broader rollout of community batteries and other promising DER solutions that can enable locked out demographics to access the benefits of clean energy solutions?

See response to question 12b. The NSW Government can support the broader rollout of community batteries to enable locked out demographics to access the benefits of clean energy solutions by derogating from the NER to have batteries partially Regulated Asset Base funded and excluded from the Ring-fencing Guidelines. The NSW Government should also make community sized batteries eligible for Long Term Energy Service Agreements (LTESA) or alternative capacity payments under the Roadmap.

Issue 13: EV infrastructure in existing apartment buildings

On the options to address EV infrastructure in apartment buildings, we support the options to address this issue and recommend that the NSW Government implement model apartment by-laws for owners' corporation, strata and community plans that create a default presumption in favour of installing EV-charging infrastructure.

Additional comments on EVs:

- The NSW Government should consider how it can advocate and regulate for the NSW distribution network to be upgraded to better enable EVs and support two-way flow of energy for EVs. For example, within the Renewable Energy Zones, establishing low-carbon planning hubs/developments and supporting EV infrastructure enablement as part of the NSW DNSPs' regulatory resets.
- NSW DNSPs support the colocation of EV charging on NSW DNSP power poles and other assets such as kiosks. This is especially important for customer who do not have access to off-street parking.
- Embedded networks will require dedicated consideration and protections, to ensure EV owners obtain and receive the benefit of the value stack of their EV as a flexible load, which could be sold for use by another entity.

Consultation questions

13a. How can the NSW Government support the residential deployment of electric vehicles and associated charging infrastructure? EV charging infrastructure installation practices

The NSW Government should:

- Implement information awareness raising and advertising programs to improve understanding of how to use charging infrastructure; and
- Work with relevant state and federal agencies to ensure that legislation and standards that support EVs keep pace with the roll-out of EVs.

This will enable NSW DNSPs to provide feedback to customers to assist with their EVs and EV charging infrastructure.

13b. What are the roadblocks to the installation of EV charging infrastructure in apartment buildings?

New apartment buildings should be required to comply with Australian Standard 3000 in relation to maximum demand. This may require reviewing connection standards to apartment buildings to ensure that DNSP planners can accommodate the potentially higher maximum demand for these sites. Without adequate planning and connections, the unplanned load could strain networks' capacity to meet the additional load.

13c. Of the three methods listed above, what is the preferred method for connecting EV charging infrastructure in apartment buildings?

Each method has positives and negatives depending on the circumstances. DPE should give precedence to a flexible approach depending on the apartment building and ensure that safety is the primary metric against which method is used. For example, our concerns with method 1 is that it could overload circuits without adequate visibility to prevent it.

13d. Do owners' corporations or strata managers have any concerns about residents contracting licensed electricians to install private charging infrastructure in their parking space and connecting it to their apartment's electricity meter?

No comment

13e. Should there be different connection requirements based on the size or capacity of the EV charging infrastructure (i.e. 7 kilowatt or 50 kilowatt chargers)? EV charging infrastructure usage and billing practices?

Installation must comply with the Australian Standard 3000 on wiring rules. This should be enforced by the relevant entities and we also note our response to question 13b.

13f. Who would be best placed to own and operate EV charging infrastructure in apartment buildings?

We recommend that this be regulated to ensure maximum consumer protections and choice.

13g. How should the costs of the EV charging infrastructure in the apartment building be accounted for?

We recommend an equitable and cost-reflective approach to account for the costs of EV charging infrastructure.

13h. Do electricity retailers or any other entities offer any specialised plans or discounts to incentivise EV charging infrastructure in apartment buildings?

No comment

13i. Would it be fair to charge EV charging infrastructure users fees for installing, maintaining and operating the EV charging infrastructure in strata schemes (in addition to energy consumption charges)? Who should pay for these and why?

No comment

13j. Should energy consumption from EV charging infrastructure on common property be paid for by users or borne by the owners' corporation?

No comment

13k. Who should be responsible for managing and controlling the use of EV charging infrastructure on common property?

The property owner is and should remain the entity responsible for all safety on their properties, including EV charging infrastructure. However, apartments are likely to have higher EV density than other residential connections. They therefore may provide greater flexible load sources for DSOs to manage their network. As a result, there could be merit in considering how apartment buildings and strata complexes can reduce the cost of EV infrastructure by giving EV owners in their sites opportunities to sell their power back into the grid. As part of the smart grid future these sites for over a specified amount of charging capacity could have some form of communication with our network to provide a dynamic approach to maximise charging in lower demand periods.

Issue 14 Distributor-led stand-alone power system regulatory framework

Consultation questions

14a. What are stakeholder views on the AEMC's proposed service delivery model?

The NSW DNSPs are committed to improving customer experience, creating operating efficiencies, building a resilient network, and lowering prices for all network customers. Deploying SAPS and energy storage devices, when it is efficient to do so, is a mechanism for delivering these benefits to customers.
There can be significant benefits for customers and communities in deploying SAPS, particularly in regional and remote locations:

- When the 'poles and wires' of the traditional electricity infrastructure in remote areas are removed, and customers are supplied electricity via a SAPS, there may be a significant reduction in DNSP expenditure which in turn has the potential to deliver savings to all network users. These savings are driven by reduced operational costs (such as vegetation management around infrastructure) and the ability to remove sections of the network that traverse through difficult terrain and serve very few customers;
- SAPS can reduce bushfire risk. Significant portions of our electricity infrastructure are located in high-risk bushfire areas, so the risk that energised powerlines could cause a spark which may ignite a bushfire is removed;
- SAPS have the potential to embed resilience in the network, enabling a customer or community to remain energised in an emergency. This is particularly important for keeping telecommunication towers and fire-fighting equipment operational; and
- SAPS can be modular and easily transportable, making them especially suited to emergency response situations

Despite the significant benefits outlined above, the AEMC's proposed service delivery model is unreasonably complicated. By prioritising retention of the existing retailer customer and market relationships, the AEMC model adds cost, complexity and confusion for end customers. The key reasons are:

- Increased complexity and uncertainty for customers. Feedback during current trials is that customers do not understand why pricing is linked and market relationships continue when they are disconnected from the wider electricity market, particularly when the bulk of the energy is expected to be created by renewable energy at the point of consumption;
- Opportunities to tailor customer pricing incentives to SAPS generation costs is more limited, potentially leading to poorer customer outcomes (e.g. increased diesel run times) or high system costs. Refer to response to Question 15; and
- There is an increased administrative burden and systems costs for retailers, AEMO and DNSPs to establish systems for linking markets and receiving payments related to SAPS generation.

The likely outcome is the proposed service delivery model will lead to a lower uptake of SAPS across the NEM. In addition, by maintaining the link to wholesale electricity prices, the AEMC national framework design reduces any incentive for the creation of innovative and advanced SAPS products and services for the relatively few SAPS customers (compared to the size of the customer base) which are aligned to the optimum use of the SAPS. Reduced innovation in products and services for SAPS customers will reduce customer choice, increase system costs and reduce the forecast number of SAPS overall.

Under the AEMC national framework, there will be less SAPS installed compared to a simpler model, and this will not be in the long-term interests of customers.

14b. Should DNSP-led SAPS customers always be required to contract with an energy retailer?

As outlined in 14a, there are negative impacts in terms of customer experience and efficient SAPS delivery when generation, distribution and retailing functions are disaggregated within a SAPS installation. Provision should be made for customers to explicitly choose to directly engage the DNSP to provide a complete SAPS energy service where the DNSP has identified the site should be transitioned to a SAPS. This supports customer choice and efficient outcomes for all customers. Refer to answer 14c.

14c. Or is direct retail contracting with the relevant DNSP appropriate where the customer provides explicit informed consent? If so, under what circumstances?

The vast majority of SAPS are located on a customer's private property and as such DNSPs work closely with customers to understand their load profiles and technical requirements. It is for this reason DNSPS undertake the majority of active customer consent and engagement activities to ensure SAPS benefits are realised. In return, customers, particularly those in remote areas experience improved reliability outcomes and aesthetic benefits through the removal of existing poles and wires on properties. DNSPs will continue to have close relationships with these customers for the life of the asset as a result and would be well placed to extend that relationship to the retail domain for individual customer SAPS.

For this reason, direct retail contracting with the relevant DNSP is the best solution when an individual SAPS is used by the DNSP for regulated power supply. To ensure that customers supplied by a DNSP pay a fair price, prices could be regulated by IPART or by reference to an accepted benchmark such as the standing offer price. This will ensure customers are 'no worse off' when being transitioned to a SAPS and will continue to maintain their existing customer protections. This option is likely to deliver the greatest savings for customers and offer the most flexibility and customer choice, without impacting their customer protections.

With only a few thousand SAPS customers forecast in the coming years, removing a market retailer from the SAPS customer relationship is unlikely to have a significant impact on the retail market. Removing the role of the retailer would not mean that customers would lose their existing customer protections either as these can be provided by the DNSP with appropriate regulatory design and oversight.

14d. Should the same service delivery requirements be applied for both individual power systems (SAPS supplying single customers) and microgrids?

As outlined above, in the case of an individual power system, insisting on the insertion of a retailer into the business model makes the service delivery model unnecessarily cumbersome.

For microgrids supplying significant numbers of customers, whether DNSP or 3rd party provided retail competition may be preferred – similar to embedded network regulation today.

Note that small SAPS which support more than one customer (e.g. two or three co-located homesteads or homestead with granny flat, in a remote area) but are otherwise not a microgrid should be treated as individual power systems rather than microgrids.

14e. Which service delivery model do stakeholders prefer?

The NSW DNSPs support the 'integrated service delivery model' of DNSP-led SAPS based on individual power systems. This could take the form of either DNSP acting as a retailer (either off market or as registered market participant), or DNSP appointing a 3rd party service provider to perform retail functions for those customers.

This would be the most appropriate service delivery model for DNSPs to use when providing individual power systems for regulated supply and would involve a derogation to allow DNSPs to enter into contractual arrangements directly with customers in certain circumstances with IPART providing regulatory oversight of pricing.

14f. Are there other options the NSW Government should be considering?

A potential alternative may be to allow DNSPs to register as or to appoint a third-party retailer to perform SAPS retail functions for SAPS customers under NER.

Issue 15 SAPS Pricing

Consultation questions

15a. What are stakeholder views on the AEMC's proposed pricing model?

The approach proposed by the AEMC strives for a NEM consistency model and to ensure retailers continue to serve SAPS customers, but reflects an administered settlement process based on a wholesale market that does not apply to SAPS and which is disconnected from the price of energy consumed by these customers.

The wholesale price is a function of large-scale generation and demand from a variety of customers, including large industrial customers, businesses and residential customers, as well as broader factors that impact the wholesale market and pricing such as network constraints, disorderly bidding and the energy and energy - ancillary services co-optimisation process of AEMO. As such, it does not reflect the cost of supply through a SAPS. For instance, in summer months, NEM wholesale prices tend to peak during the day – this is the inverse of the cost structure of generation in a SAPS as solar output is highest during the day. Prices in a SAPS environment should therefore be low during the day to leverage the output of the solar panels and minimise draw on the battery. A wholesale linked SAPS price would signal the opposite with high prices during the day. As a result, there is a risk that SAPS will be over-engineered to accommodate the historical energy usage patterns of the customer. This can lead to higher costs that could otherwise be avoided.

In addition, wholesale electricity prices in the NEM are impacted by much wider macroeconomic issues that are not in any way linked to the cost of electricity in a SAPS. These factors include interdependencies with international oil and gas markets, weather patterns including droughts impacting on hydro-generation and international coal markets. Further, the linkage of a SAPS to the wholesale electricity market can create confusion for customers and adversely impact levels of trust. Specifically, a customer will generally understand the SAPS system and how it is impacted by their behaviour but will not understand why or how their SAPS is in any way tied to the wholesale electricity price.

DNSPs believe that the pricing approach put forward by the AEMC may lead to poorer customer outcomes as a result of higher costs and reduced innovation. Each of these concerns is discussed in detail below. The AEMC's proposed pricing model overcomplicates pricing for SAPS for no apparent benefit. It is unclear why it would be desirable for SAPS customers to face electricity charges that reflect the cost of supply on the National Electricity Market (**NEM**).

Pricing to customers supplied by SAPS should reflect the cost to supply them, rather than the costs on the NEM. This will provide customers with efficiently sized SAPS systems and will lower the costs borne by all network customers.

15b. To what extent is non-cost reflective pricing a barrier to the roll-out of SAPS systems?

As outlined above, there is no tangible benefit in structuring pricing for SAPS customers so that it reflects costs to supply through the wholesale market of the NEM. Costs to supply on the NEM are entirely unrelated to pricing for SAPS customers. The requirement that SAPS customers face NEM wholesale market reflective costs can lead to higher costs for SAPS customers.

For instance, under the NEM consistency model the price of energy consumed by a SAPS customer under the national SAPS framework retains a link to the wholesale market, and does not reflect the cost to supply a SAPS customer, therefore there is no clear pricing signal to the customer to optimise the system. As a result, that SAPS will be over-engineered to accommodate the historical energy usage patterns of the customer.

Without appropriate pricing signals, the SAPS needs to be designed to accommodate the customer's historical usage patterns. This can lead to higher costs that could otherwise be avoided. For example, battery costs are a significant driver of the overall cost of SAPS. If a customer is provided with the correct price signals and shifts consumption to the middle of the day, its energy needs can be served by a SAPS with a battery that is one half to one third the size of a SAPS for a comparable customer on a typical wholesale tariff. Indeed, the required linkage to AEMO settlement systems to give effect to a SAPS wholesale settlement price, requires system investment and updates from AEMO system teams, which will potentially further delay the roll out of SAPS in the NEM. Given the small number of SAPS systems expected, concise and targeted reform at the NSW level is needed.

15c. Given the limited number of expected SAPS customers in New South Wales, would it be more practical to maintain NEM consistent pricing?

SAPS customers do not benefit from maintaining NEM consistent pricing. While the pricing approach proposed under the NEM consistency model preserves the settlement and retail arrangements in the NEM, it does so at the expense of providing customers with fit-for-purpose systems and which are unlikely to be efficiently utilised by the customers they serve. As such, it is anticipated to add unnecessary costs to DNSP-led SAPS, to the detriment of all network customers as existing cross-subsidies will become further entrenched.

SAPS customers should face pricing which best reflects the cost to the SAPS system (subject to pricing oversight) which ensures they are 'no worse off' than a grid connected customer. The equity between customers can still be maintained under a flexible pricing arrangement, but in such a way that it reduces costs that are borne by all customers. Under all options the policy principle that customers would be 'no worse off' as a result of being transitioned to a SAPS could be maintained through appropriate regulatory oversight and customer protections.

15d. To what extent is the pricing model likely to affect the efficient sizing of the SAPS system and the customer's experience?

Without appropriate pricing signals, the NEM consistency model requires SAPS to be designed to accommodate the customer's historical usage patterns. This can lead to higher costs that could otherwise be avoided as well as a greater sizing of land required to host the SAPS infrastructure. For example, battery costs are a significant driver of the overall cost of SAPS. If a customer is provided with the correct price signals and shifts consumption to the middle of the day, its energy needs can be served by a SAPS with a battery that is one half to one third the size of a SAPS for a comparable customer on a typical standing tariff.

The additional capital cost associated with over-engineering the system could be avoided if DNSPs were allowed to work with customers to understand their energy needs and design fit-for-purpose systems, and develop pricing arrangements that reflect the efficient cost of supplying energy through a SAPS - and in doing so, incentivise the optimum use of the system. This approach would lower capital costs and reduce ongoing operational costs and thus lower costs for all network users.

Issue 16 Service classification

Consultation questions

16a. Do stakeholders feel the AEMC's proposed service classification arrangements are suitable?

The AEMC's proposed service classification arrangements are overly complicated and for this reason reforms on the AER's ring fencing guidelines were immediately required to ensure basic workability.

16b. Do stakeholders feel the AER's final ring-fencing guidelines adequately support DNSPs to provide generation services in the absence of a market for third party provision of SAPS generation services?

The latest amendment to the ring-fencing guidelines provide an avenue for DNSPs to invest in SAPS pilots in the near term and reduce the uncertainty inherent in the AEMC's SAPS framework. However it does not provide long term certainty of investment in broader deployment of SAPS to optimise energy distribution for customers in remote areas.

DNSPs continue to operate under a regulated revenue cap whereby any earnings arising through SAPS generation will not be in addition to revenues derived from network services. DNSPs are only incentivised to transition customers to SAPS solutions where it is efficient to do so, driving improved customer outcomes for all network users. The incentives which drive behaviour and compliance in this area are robust.

It is worth highlighting that DNSP's expectation is that a competitive supplier market will almost always be drawn on to deliver a SAPS installation, as one already exists today for off grid customers. This competitive market for SAPS provisioning will exist regardless of whether the customer-retailer relationship remains the same or not, and is key to delivering the innovation in SAPS delivery noted as beneficial in Q14. We note that current trials in NSW are assessing the ability of the market to deliver on-going servicing of SAPS to the levels required for DNSPs to meet their licence reliability obligations in remote or difficult to access locations, however at this stage the viability of those services are unproven.

It is also worth noting that the AER can review SAPS distribution ring fencing guideline at any time to assess overall performance. Whilst reviewing regulatory arrangements provide appropriate compliance oversight, they can also have the unintended affect of introduced regulatory uncertainty, undermining DNSPs ability to make investment decisions in a stable framework. As such, permanent changes to the NSW framework are preferable.

16c. Should consideration be given to an increased exemption cap above that provided by the AER's national exemption cap?

Rather than beginning with a large set of narrowly defined exemptions, we recommend a generic exemption approach supported by a framework of reporting and review. This would enable regulators to review the impact of DNSP decisions on competition and whether changes are needed.

16d. Are stakeholders of the view that some form of change is needed to enable network ownership of SAPS generation assets?

Yes. To ensure the delivery of customer benefits as outlined above, DNSPs should be allowed to own the generation component of individual power systems used for regulated supply of electricity.

We are of the view that this ownership should not be limited by an exemption cap and instead should be subject to a process of reporting and review. Again it is worth noting that DNSPs are only incentivised to transition customers to SAPS solutions where it is efficient to do so, driving improved customer outcomes for all network users.

16e. Which service classification option do stakeholders prefer?

It would be the in the best interest of NSW customers for NSW to derogate from the national framework to allow DNSPs to own and operate generation assets and include these assets in the RAB. This would ensure that the benefits SAPS systems will be provided to NSW customers within the current 2019-2024 regulatory control period. To ensure the timely delivery of these reforms for the ultimate benefit of NSW customers, these derogations should be made at the same time as the NSW Government opts into the SAPS national framework which we understand is scheduled to occur in mid-2022. This option would deliver the following benefits:

1. Provides certainty that bushfire risks are managed by those best placed to do so
2. Provides certainty to DNSPs in order to make the required investments
3. Reduces time and costs associated with implementing the changes needed
4. Supports long-term approach and certainty
5. Applies consistently across all NSW DNSPs

16f. Are there other options the NSW Government should be considering?

No further comments

PART 3: ENERGY CUSTOMERS' DIGITAL JOURNEY

Issue 17 Access to Information

Consultation questions

17a. What kind of information, or which topics, do customers find most challenging or confusing to find information about in relation to advanced meters, DER and/or other energy technologies?

NSW DNSPs defer to customer advocates and peak bodies for comment this question

17b. Are customers likely to access the information on a website using a desktop browser or a mobile device?

In our view information should be provided and accessible across multiple information platforms allowing for individual customer to seek out their information as best suits their individual preferences.

17c. Would customers prefer to focus their research journey by learning about the various technologies available to them, or by learning about their specific dwelling type?

Customers require tailored information based on the objective of their search which can vary. Many customers particularly from culturally and linguistically diverse communities are often inclined towards affordability objective and open to explore alternatives to reduce energy bill.

Additionally, customers may need specific information that pertains to their dwelling type for instance customers that rent an apartment may seek out additional information regarding their energy appliance efficiency, whereas a customer who owns their own free-standing property may be more inclined to access information regarding the ownership and installation of solar and battery technologies. These divergences also span geographies, for instance fringe of grid customers may enquire about SAPS for reasons of bushfire prevention and reliability improvements.

Issue 18: Electricity retailers' emissions performance

Consultation questions

18a. Would customers prefer to review emissions performance based on the electricity retailer (i.e. the business) or based on the electricity plans offered?

We would defer to customer-based organisations who would have more relevant knowledge as to customer's emission billing preferences.

It is worth noting that the AER has recently concluded its comprehensive better bills workstream which contained several findings which may be relevant to this area.

18b. Where would customers prefer to see information about retailer emissions (e.g. on a bill, on the retailer website, on a retail plan comparison site, or a combination)? Electricity retailer practices

As above.

18c. Are there existing frameworks that electricity retailers use, or can use, to report on emissions and/or offsets? If so, how can these frameworks incentivise renewable energy generation over carbon offsets to ensure avoided emissions are rated highly?

We would defer to retail and generation based organisations who would have more relevant knowledge in this area.

18d. What information to retailers already collect about the generation sources when purchasing electricity; for example, to meet internal targets or the RET? (Responses flagged as commercially sensitive will not be shared.)

We would defer to retail and generation based organisations who would have more relevant knowledge in this area.

18e. What offset programs do electricity retailers currently participate in? Are the programs in Australia or international?

We would defer to retail and generation based organisations who would have more relevant knowledge in this area.

18f. What actions, if any, do electricity retailers take to promote GreenPower? Do electricity retailers offer GreenPower at a competitive market rate, or absorb any of the costs? How many of your customers opt-in to GreenPower?

We would defer to retail and generation based organisations who would have more relevant knowledge in this area.

18g. Do retailers foresee any complexities or challenges reporting on the draft criteria?

We would defer to retail and generation based organisations who would have more relevant knowledge in this area.

18h. How often should the information about retailers' emissions performance be reported: monthly, quarterly, annually (by calendar year or financial year)?

Ideally any reporting should be aligned with existing processes and procedures, i.e. annual financial reporting disclosure obligations etc.

Issue 19: Definition of life support equipment for energy rebates

We support the options provided in the Paper to:

1. Review the NSW list of approved life support equipment and update it with new or emerging life support equipment available in the market.
2. If required, work with the AER to update the definition of 'life support equipment' in the NERR in order to align with any updates to the NSW list. Implement a uniformed 'Customer Number' system across the industry
   - Customer number can be linked to local government agency E.g. Service NSW
   - Life support or medical equipment to be registered with the local government agency. E.g. Service NSW.
   - Local government agency is then responsible for ensuring that the data is shared with DNSP and Retailer order to align with any updates to the NSW list.
3. Mandate regular reviews of the approved lists of life support equipment based on assessment of new equipment available in the market.

We support option 1 to ensure that life support customers receive the appropriate rebate and support to access their rebate. We note that any new equipment will require system changes to be able to capture the equipment type in our systems so that we can effectively share this data B2B with retailers. As a result, DNSPs should be included in discussions that may impact our systems and customer interactions.

DPE should refer to the Energy Charter members' joint research initiative on life support to understand insights into this area.[21] The AEF prepared a report with recommendation to better understand the needs of life support customers including new criteria for life support equipment and how to refine the terminology of life support equipment.

The report advises that identification of equipment and processes used to validate customer eligibility should be led by medical associations such as the Australian Medical Association to define criteria to define prioritisation of equipment according to energy and health needs. A better distinction needs to be made between medical equipment and life support equipment that is critical to sustain life.

Of note, the report recommends supporting customers to have back-up power access with programs expanded to support no interest loans for battery storage in the event of an outage.

Consideration should also be given to advocating for amending the National Disability Insurance Scheme (NDIS) eligible equipment types to include funding for equipment, such as batteries, that maintain supply of electricity for life support equipment in the event of an outage. This could also apply to the costs associated with installing a smart meter.

We also recommend that DPE working with the AER and Services Australia to ensure that Services Australia and the NDIS automatically notifies customers of their eligibility for State and Federal Rebates, energy rebates and customer vulnerability programs upon receipt of a relevant Commonwealth concession card or receipt of NDIS equipment support. This would improve rebate uptake as, for example, many COVID-19-impacted customers were unaware that they were eligible to receive energy rebates upon receipt of their Commonwealth concession card.

Consultation questions

19a. Are customers and energy retailers aware of new, energy efficient or emerging life support equipment that are not eligible for the NSW LSR?

We note that nebulisers and suctions pumps are not eligible for NSW Government rebates. Refer to response to section 19 issues section.

19b. How often do energy retailers reject an application for the NSW LSR based on equipment type (if this data is available)?

Not applicable to DNSPs.

19c. Can electricity retailers advise how many of their customers have notified it of life support equipment requirements but do not receive the LSR in New South Wales?

Not applicable

19d. How often should the NSW Government review its list of approved life support equipment?

Refer to response to section 19 issues section.

19e. How can medical declarations that support a customer's need for life support equipment be automated to reduce the burden on impacted customers?

Refer to response to section 19 issues section.

Issue 20 Digitalising engagement with DNSPs

Consultation questions

20a. Would customers and DNSPs benefit from greater digitalisation of communication between them?

Yes the digitisation of communication between the customer and DNSPs would be of great benefit. When operating the network of the future ideally DNSPs and customers should seamlessly be able to communicate across multiple digital platforms for activities such as:

- Timely identification and rectification of network safety issues;

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[21] Australian Energy Foundation (2021). Better outcomes for energy consumers using life support equipment at home. https://grants.energyconsumersaustralia.com.au/archive/clean-reliable-energy-for-people-on-life-support-at-home.

- Notify and communicate outages to customers in real time;
- Communication of improved tariff incentives and reforms which maximise the effective utilisation of the network through load shifting or otherwise; and
- Display of physical network information such as voltage readings.

In relation to life support customers, this digitalisation could have an immediately positive impact as the communication of the visibility of the real-time outage situation allows DNSPs to better estimate restoration timelines, so life support customers can understand whether to stay in their homes or seek other accommodation. In the case of any delays to restoration, DNSPs would then be able to prioritise restoring power to the property of life support customers and, as needed, encourage them to follow their emergency back-up plan. Without this real time communication, DNSPs rely on site visits and customer phone calls to identify where outages exist on the network at some cost.

20b. Are there current barriers to DNSPs communicating to customers electronically?

At present, there are a number of barriers to customer digitalisation in particular retailer privacy legislation which can make information flows cumbersome. In addition, DNSPs are hampered in our ability to proactively carry out campaigns (storm preparedness, safety around powerlines etc) due to our reliance on retailer records which often contains incomplete or out of date information. Quite often DNSPs are having to establish self-serve options on their respective websites as a means to obtain updated customer information.

20c. Would the development of systems that support customers opting-in to receive electronic communications and notices from their DNSP be of value?

Yes. If customers could choose how they receive electronic communications that would improve service delivery and customer engagement.

As mentioned above, it is worth noting that these systems do exist within our respective organisations that allow proactive communication with customers - however the impediment to those systems being used effectively is that there is no regulatory obligation for customer contact information to be provided by retailers i.e. mobile and email is provided for all and kept updated. Better customer data would encourage innovation (such as notifying customers of upcoming severe weather and safety campaigns).

Issue 21: Improving access to data on customers of embedded networks

The Consultation Paper highlights there are currently gaps in data on the number of embedded network operators (ENOs) and their customers in NSW. Improving visibility of embedded networks is a key step to ensuring ENOs adhere with their obligations and assist in developing further customer protections for embedded network customers.

We support improving the visibility of embedded networks but consider the information should be reported directly to AEMO and accessible to all market participants. We are also interested in participating in ongoing discussions with the NSW Government on potential policy reforms for embedded networks.

We note regulatory reforms were developed in 2015 to provide embedded network customers access to retail competition. Further reforms have been developed by AEMC that are awaiting implementation by Energy Ministers which strengthen obligations across access, pricing, service standards and operation that mirror the obligations (and therefore customer protections) of networks and retailers to improve embedded network customer outcomes.

From a policy perspective there are concerns that embedded network customers do not have sufficient access to competitive retail market offerings and therefore pay more for power. This issue has persisted after the AEMC's initial reforms in 2015. Whilst the AEMC made additional changes to further update the embedded network framework to address these concerns the changes have not been progressed further by Energy Ministers.[22]

This has resulted in some jurisdictions introducing their own reforms to strengthen embedded network customers protections. For instance, from 1 September 2020 the Essential Services Commission (**ESC**) in Victoria makes a determination on the maximum prices for all households and most businesses in embedded networks.[23] In January 2022 the Victorian Government announced its intention to ban new embedded networks being established in

[22] ABC News (2019). https://www.abc.net.au/news/2019-10-30/embedded-electricity-networks-energy-customers-paying-too-much/11653730
[23] Essential Services Commission (Vic) (2020). https://www.esc.vic.gov.au/electricity-and-gas/prices-tariffs-and-benchmarks/embedded-network-tariffs-including-caravan-parks/maximum-electricity-prices-embedded-networks-and-other-exempt-sellers-review-2020/.

apartment buildings from 1 January 2023 and implementing reforms to provide competitive retail offers and customer protections for existing embedding network customers.[24]

We share these concerns for embedded network customers and note embedded networks can also disadvantage the remaining customer base. For context, there are three key tariff-based savings available to ENOs:

1. Exploitation of the inherent inefficiencies of a ''postage stamp' pricing framework. This includes:
   a. Avoidance of fixed charges;
   b. Taking advantage of energy and demand price differentials between small and large customer tariffs;
2. Demand charges are based on the diversified demand of all customers within the EN rather than undiversified demand of each individual customer within the EN.
3. Netting of generation against aggregated load.

Whilst the second and third benefits are legitimate the first creates pricing inequities whereby the remaining customer base cross subsidises the embedded network's arbitrage of postage stamp pricing. Child connection point discoverability is an important enabler of pricing reforms that could address fixed charge avoidance and encourage the efficient deployment of embedded networks. An embedded network should be utilised where it is the most practicable model (e.g. caravan parks) and offers a cost-service quality mix that is more attractive to customers rather than implemented to exploit pricing inefficiencies or inconsistent regulations.

On the matter of inconsistent regulations, we are also concerned that there is a growing interest in 'Microgrids'. This could result in parties attempting to expand embedded networks from caravan parks, shopping centres, apartments and retirement villages to larger scale networks supplying multiple customers across a subdivided development. Whilst it is important to support innovative network designs and the deployment of new technologies this should be done in a safe and efficient manner that improves customer outcomes and with equivalent customer protections.

A key issue is therefore clarifying the jurisdictional treatment of owning and operating embedded networks that extend onto public land and/or of a certain size. Whilst embedded networks typically involve multiple customers at a single premise there may be growing use of Microgrids for communities. For instance, greenfield subdivisions with rooftop solar PV, centralised batteries and the embedded network (i.e. cables) running under land that will be dedicated for use public roads and land that will be sold to homebuyers.

There are significant risks to customers associated with this where an ENO is not suitably qualified or suited to maintaining and operating a quasi-network (rather than a typical embedded network). There is also a risk that networks (and therefore all NSW electricity customers) having to underwrite a competitive 'microgrid' market as an emergency operator of last resort.

To address this issue the *Electricity Supply Act 1995* (NSW) (ESA) may require amendment to clarify what constitutes a 'distribution system' and the circumstances under which an 'electrical installation' (be it an embedded network or microgrid or other variant) requires additional regulation and licensing in the form of reporting and monitoring through to technical, safety or price regulation.

The characterisation of a microgrid as a 'distribution system' or an 'electrical installation' under the ESA is critical given the ESA confers substantial powers on 'network operators' and exempts them from various burdens when installing, operating and carrying out works. This is particularly relevant for safety regulations, public road consent, property rights, access rights and obtaining planning approval.

The 'connection point' is a distinguishing feature between the two given the distribution system extends 'up to the connection point' and the electrical installation conveys electricity 'supplied from a distribution system'. The ESA allows for a connection point to extend beyond the land comprising the premises whereas the Service and Installation Rules (SI Rules) suggest a 'customer installation' is in a particular place. Whilst the definition of 'electrical installation' refers to embedded networks as an example this is not absolute and may allow for characterisation of some embedded networks as a distribution system.

The ESA and SI Rules of NSW may therefore benefit from adopting more consistent definitions of a 'connection point', 'distribution system', 'electrical installation' and 'customer installation' to prevent embedded networks from extending

[24] Media Release – The Hon Lily D'Ambrosio MP (2022). https://www.premier.vic.gov.au/sites/default/files/2022-01/220114%20-%20Roadmap%20To%20Banning%20New%20Residential%20Embedded%20Networks.pdf/.

across public lands (or of a certain nature or size). This may involve the adoption of separate definitions for ‘parent’ and ‘child’ connection points.

Consultation questions

21a. If embedded network operators were required to report on their ‘child’ connection points, should this reporting be done to the AER or their local electricity distribution network?

Yes. It should be reported to AEMO as part of MSATs data so that there is a single source of truth for metering data. The AER and DNSPs can then obtain that information from MSATS for validation as part of AER exempt seller exemption approvals and AER retailer authorisations.

21b. Other than status as an embedded network, and the number of ‘child’ connection points, what other data reporting requirements would be of value?

As embedded network providers become larger in scale and customer base, the NSW Government should consider imposing additional obligations on embedded network operators to ensure that they adhere to the same network obligations as DNSPs. For example, public safety and life support customer requirements.

This should include penalties for non-compliance as under the current framework it is unclear with responsibility lies with embedded network operators or body corporates/property owners.

Issue 22: Other improvements

Consultation questions

22a. Is there any other NSW energy related information that could be made more digital friendly?

NSW DNSPs recommend the NSW Government establishing a process to enable DNSPs to receive Compliance of Electrical Works certificate data.

22b. Are there any other NSW Government energy related processes that could be digitalised or streamlined, including for industry?

We note the recent changes to the SEPP (Transport and Infrastructure) 2021 have improved the approval pathways for SAPS for individual customers through the increase in allowable footprint and height under complying development provisions. However there remains an opportunity to bring SAPS approval pathways in line with other approval mechanisms for distribution network assets by explicit inclusion of SAPS in definitions of electrical works under Sub-division 1. In the long run this is the preferred approach to ensure consistent treatment of distribution system assets from a development approval perspective.

22c. Are there any new or emerging customer needs in the energy space that government should explore?

- Vehicle to grid (V2G) to enable EVs to store and discharge electricity generated from renewable sources.
- Shared energy within the installation e.g. ‘Solshare’ business that installs their unit on site with PV solar that distributes the common solar system through the units that opt in.