AEMC

Review of the regulatory framework for metering services

DIRECTIONS PAPER – STAKEHOLDER FEEDBACK TEMPLATE

The template below has been developed to enable stakeholders to provide their feedback on the questions posed in the Directions paper and any other issues that they would like to provide feedback on. The AEMC encourages stakeholders to use this template to assist it to consider the views expressed by stakeholders on each issue. Stakeholders should not feel obliged to answer each question, but rather address those issues of particular interest or concern. Further context for the questions can be found in the Directions paper.

SUBMITTER DETAILS

ORGANISATION:	GRIDSIGHT
CONTACT NAME:	Dr. Brendan Banfield
EMAIL:	brendan@gridsight.ai
PHONE:	0407 079 765
DATE	28/10/2021

PROJECT DETAILS

NAME OF REVIEW:	Review of the regulatory framework for metering services
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CHAPTER 2 – QUESTION 1: BENEFITS WHICH CAN BE ENABLED BY SMART METERS

a. Are there other benefits which can be enabled by smart meters that are important to include in developing policy under the Review?	The key benefit that is enabled by smart meters is the ability to take a more bottom-up, data driven approach to managing distribution networks. Historically, network planning has required complex network models and load flow software that are highly sensitive to data inaccuracies, and feature many assumptions (particularly with regard to load and generation profiles). In centralised networks with minimal distributed generation, these methodologies have been sufficient, however, now that there is a significant amount of embedded generation causing

	power quality issues within LV networks, real network data is required to effectively manage these issues and increase DER hosting capacity. Leveraging smart meter data, in particular power quality data, allows a host of benefits such as the ability to identify power quality issues across the whole network, calculate hosting capacity, identify phase connection and broken neutrals, and manage the increasing uptake of distributed energy resources. Achieving this list of features without meter data using traditional practices is either highly inaccurate or impossible. The key to continuing the uptake of DER across Australia is data, and smart meter data should be at the forefront of this transition.
b. What are stakeholders views on alternative devices enabling benefits? What are the pros and cons of these alternative devices?	Retrieving data from alternative devices would create additional benefits, however, adding more data sources also creates additional complexity. The industry should first ensure that the value of smart meters deployed in the network is maximised by remotely configuring them to log power quality data as soon as possible, and providing a standardised way industry participants (particularly DNSPs) to access this data. This is a complete no-brainer as the assets and capability already exists. Pursuing other means of enabling benefits until power quality data is being logged and is able to be accessed by all DNSPs across Australia, would unnecessarily create additional costs associated with hardware acquisition, installation, communication and data integration.

CHAPTER 2 – QUESTION 2: PENETRATION OF SMART METERS REQUIRED TO REALISE BENEFITS

a. Do stakeholders agree that a higher penetration of smart meters is likely required to more fully realise the benefits of smart meters? If so, why? If no, why not?	Increasing the penetration of smart meters will increase the benefits that can be realised by these devices. However, the bigger priority has to be access to the data itself. Enough meters already exist to create enormous value for Australians (see below), however, we aren't able to unlock this value because the companies that are able to unlock the value (DNSPs and their service providers) can't easily access power quality data

	which is capable from being collected from these meters (voltage, current, phase angle, active power and reactive power). Retailers who presently control contractual relationships with Metering Coordinators are not naturally incentivised to collect this data, and experience to date has indicated that the request for this data often comes with an uneconomical price. We are only at the tip of the iceberg of value that can be unlocked from meters. The benefits that can be obtained from interval consumption data alone are only a fraction of what could be achieved with power quality data. The way to fully realise the benefits of smart meters faster, isn't to deploy more meters that only log interval consumption data - it's to reconfigure meters that are already deployed in the network to log power quality data, and provide DNSPs with a standardised way to access this data.
b. Do stakeholders have any feedback on the level of smart meter penetration required for specific benefits? Or to optimise all benefits?	Gridsight's Distribution Analytics platform is able to obtain insights at all levels of penetration, and significant insights with smart meter penetrations of 20% or greater. With 20% power quality data penetration available, it is possible to get visibility on network constraints such as overvoltage, undervoltage and voltage unbalance. It is also possible to use this data to generate highly accurate network models that can be used to assist network planning by simulating changes to a network such as DER export limiting, transformer tap changes and dynamic operating envelopes. Furthermore, it is also possible to identify the phase of customers and their associated distributed energy resources (DER) which can be useful when considering LV networks embedded with multiple single phase PV systems that can often lead to power quality issues. While increasing penetrations will provide improved accuracy, there is still a significant amount of value that can be unlocked if penetrations of 20% of power quality data are available.

CHAPTER 3 – QUESTION 3: TO REACH A CRITICAL MASS IN A TIMELY MANNER, OPTIONS TO ACCELERATE THE ROLL OUT SHOULD BE CONSIDERED

a. Do you consider that the roll out of smart meters should be accelerated?	Critical mass of smart meters has already been reached for immense value to be unlocked. The reason value isn't being unlocked yet is: 1) the meters

Please provide details of why or why not?	aren't configured to log power quality data, and 2) DNSPs and their service providers have to negotiate with metering coordinators for access to the power quality data. To solve 1) the minimum service specifications need to be updated to include power quality data logging, and applied retroactively. To solve 2) access to power quality data from meters needs to be standardised. While we strongly support deploying more meters, it is critical that the industry is aware that meter penetration is not the bottleneck - efficient access to power quality data is.
b. What are the merits, costs and benefits of each option? Is there a particular option which would be most appropriate in providing a timely, cost effective, safe and equitable roll out of smart meters?	No response provided
c. How would each of these options for rolling out smart meters impact the cost profiles of smart meters?	No response provided
d. Are there other options that you consider would better provide a timely, cost effective, safe and equitable roll out of smart meters?	No response provided

CHAPTER 3 – QUESTION 4: OPTIONS TO ASSIST IN ALIGNING INCENTIVES

a. Do stakeholders agree that a higher penetration of smart meters is likely required to more fully realise the benefits of smart meters? If so, why? If no, why not?	No response provided
b. Do stakeholders have any feedback on the level of smart meter penetration required for specific benefits? Or to optimise all benefits?	No response provided

CHAPTER 3 – QUESTION 5: THE CURRENT MINIMUM SERVICE SPECIFICATIONS ENABLE THE REQUIRED SERVICES TO BE PROVIDED

a. Do you agree with the Commission's preliminary position that the minimum service specification and physical requirements of the meter are sufficient? If not, what are the specific changes required?	No, we strongly disagree with this position. The minimum service specification should also include the following services: • remote on-demand meter read service - per phase voltage, current, active power and reactive power • remote scheduled meter read service - per phase voltage, current, active power and reactive power And it should be applied retroactively to existing meters. If these two services were provided, the vast majority of data requirements to enable significant and immediate benefits to consumers and the industry would be met without having to deploy any more silicon in the network. Type 4 meters are capable of providing these services, however because they are not in the minimum service specification, the meters generally aren't configured to provide this service. From our first-hand experience, when DNSPs request metering coordinators to reconfigure their meters to capture power quality data, they encounter significant resistance and enormous lead times, and uneconomic pricing. If the specification was updated such that meters had to be configured to log power quality data, along with an efficient mechanism for data access, then that would solve this problem.
b. Are there changes to the minimum service specifications, or elsewhere in Chapter 7 of the NER, required to enable new services and innovation?	The minimum service specification should also include the following services: • remote on-demand meter read service - per phase voltage, current, active power and reactive power • remote scheduled meter read service - per phase voltage, current, active power and reactive power And it should be applied retroactively to existing meters. If these two services were provided, the level of potential innovation from meters would increase by several orders of magnitude, and it would be possible to: • get visibility on network constraints such as overvoltage, undervoltage and voltage unbalance

	• generate highly accurate network models that can be used to assist network planning by simulating changes to a network such as DER export limiting, transformer tap changes and dynamic operating envelopes • calculate hosting capacity of a given network or section of network • identify the phase of customers and their associated distributed energy resources (DER) with penetrations, which can be useful when considering LV networks embedded with multiple single phase PV systems that can often lead to power quality issues • create a safer grid by proactively identifying degrading neutrals
c. What is the most cost-effective way to support electrical safety outcomes, like neutral integrity? Would enabling data access for DNSPs or requiring smart meters to physically provide the service, such as via an alarm within the meter, achieve this?	Ensuring power quality data is being logged, and providing DNSPs and their service providers with access to this data is the most cost-effective way of enabling neutral integrity. Degrading neutrals can be proactively detected using batch power quality data, which is cost-effective (the infrastructure required to manage is significantly cheaper than real-time). This would also create the optimal safety outcome as degrading neutrals could be identified and fixed before they become completely broken. In addition already broken neutrals could be detected en masse without the need for costly realtime integrations from multiple MCs to DNSPs.
d. Do you agree smart meters provide the most efficient means for DNSPs to improve the visibility of their low voltage networks? Why, or why not? What would alternatives for network monitoring be, and would any of these alternatives be more efficient?	Smart meters definitely provide the most efficient means to improve LV network visibility. From our first-hand experience, 5-minute power quality data from smart meters provides excellent levels of visibility and insight into network issues and constraints. Interval consumption data provides a lesser degree of visibility but is still compelling relative to the status quo (nothing). Other alternatives, such as integrating with smart inverters or deploying more devices into the network, would require significantly more time and cost significantly more to set up, for no extra benefit compared to having power quality data provided from meters. Additionally, monitoring per phase power quality data at distribution transformers increases the level of insight across both the LV and HV distribution networks. However, this is a complementary technology to meter data, not a replacement as it is is unable to provide insights into downstream voltage performance, the most significant determinant of DER Hosting Capacity.
e. Can smart meters be used	Yes, when per phase power quality data from meters

to provide an effective solution to emerging system issues?	is available it provides significant insight into multiple system issues such as overvoltage and undervoltage, voltage unbalance, neutral conductor degradation and monitoring of DER compliance and installation problems (such as cross-phased batteries, curtailments and disconnections, see here for details). This presents the most efficient and effective means to both identify and manage these issues both in the short and medium term.

CHAPTER 3 – QUESTION 6: ENABLING APPROPRIATE ACCESS TO DATA FROM METERS IS KEY TO UNLOCKING BENEFITS FOR CONSUMERS AND END USERS

a. Do you agree there is a need to develop a framework for power quality data access and exchange? Why or why not?	Yes, we strongly agree. From first-hand experience, the current process by which DNSPs acquire the data is arduous and requires them to negotiate data purchase in a landscape that isn't competitive (two metering coordinators control the vast amount of meters). A framework for power quality data access and exchange would significantly reduce the burden of acquiring power quality data for DNSPs and their service providers, and in doing so, would enhance electrical safety outcomes, improve LV visibility, and increase innovation in the industry.
b. Besides DNSPs, which other market participants or third parties may reasonably require access to power quality data under an exchange framework? What are the use cases and benefits that access to this data can offer?	Gridsight is a third party with a large focus on extracting value from meter data. If this data could be accessed independently of commercial contracts with DNSPs or metering coordinators, it would dramatically accelerate our ability to innovate and provide value to DNSPs, consumers and other existing and emerging energy market participants and stakeholders, such as safely increasing DER penetrations. Further, the more this data is made readily available, the more competition will arise from other third parties, increasing benefits again. Such access will require certain security measures in place to ensure data remains secure and held within Australia. However, if third parties were able to prove these mechanisms and be added to a list of verified stakeholders who can access this data, it will only bring about further innovation and benefits across the sector. That said, the most immediate benefits to consumers and the broader energy sector is for DNSPs and their service providers to have access to power quality data from meters. This is fundamentally related to having a network which can accommodate existing and emerging DERs and loads (such as EVs) in the most efficient manner without requiring costly network augmentation or the installation of unnecessary additional devices, or at worst hard limits on renewable generators.

c. Do you have any views on whether the provision of power quality data should be standardised? If so, what should the Commission take into consideration?	Yes, we are certain that the provision of data should be standardised. The commission should consider the format of this data, and in particular, implement a standardised structure and acquisition method, across all accessible meter data. In relation to data provisioning, implementing a web portal or similar where DNSPs, market participants and third parties can access their specified data programmatically would greatly reduce the barriers associated with negotiating and integrating with several metering coordinators and/or retailers.
d. Do you consider the current framework is meeting consumers' demand for energy data (billing and non-billing data), and if not, what changes would be required? Is there data that consumers would benefit from accessing that CDR will not enable?	Consumers don't currently have demands for non-billing data because applications haven't been built that leverage non-billing data. And the reason applications haven't been built, is that innovators can't access non-billing (i.e. power quality) data. Retailers who presently control much of the data and consumer interaction have little incentive to make this available to consumers. Power quality data must first be accessible for applications to be developed and consumer demand to grow for those applications.

CHAPTER 3 – QUESTION 7: FEEDBACK ON THE INITIAL OPTIONS FOR DATA ACCESS THAT THE COMMISSION HAS PRESENTED

a. What are the costs and benefits of a centralised organisation providing all metering data? Is there value in exploring this option further? (e.g. high prescription of data management).	There is only value in exploring this if the minimum service specifications are first changed to include the following services, and applied retroactively to existing meters: • remote on-demand meter read service - per phase voltage, current, active power and reactive power • remote scheduled meter read service - per phase voltage, current, active power and reactive power Given that DNSPs already have access to interval consumption data, without a change to the minimum service specifications there will continue to be insufficient power quality data recorded, and there is no point having a centralised body to provide metering data if there is no additional data providing further benefits. Note: interval consumption data is excluded from this as DNSPs already have access to this data for free. If sufficient power quality data is captured and available, then yes, a centralised organisation providing meter data would very likely reduce the current barriers related to negotiating and obtaining meter data in a standardised format ready for immediate use, and would be worth exploring. In

	addition it is likely the cost of this data would be reduced via the establishment of economies of scale (both for providing the data and sharing any costs across the largest possible number of customers), and transparency on any data access costs.
b. What are the costs and benefits of minimum content requirements for contracts and agreements for data access to provide standardisation? Would such an approach address issues of negotiation, consistency, and price of data?	Minimum content requirements would be a band-aid solution. Ultimately, if individual negotiations need to happen with each data provider, then acquiring power quality data is still not scalable and as such, the benefits that meters provide for the industry, the end consumer and our society would continue to be unnecessarily, and severely limited when compared with a centralised and standardised data access mechanism.
c. What are the costs and benefits of developing an exchange architecture to minimise one-to-many interfaces and negotiations? Could B2B be utilised to serve this function? Is there value in exploring a new architecture such as an API-based hub and spoke model?	B2B should not be used for this function as the platform would be difficult and expensive to integrate with modern applications. In addition using this would provide incumbent market participants with an advantage in access to this data, which disadvantages newer companies and third parties, creating a barrier to innovation. The proposed API-based model is standard across multiple industries and would be most suitable here.
d. What are the costs and benefits of a negotiate-arbitrate structure to enable data access for metering? Is there value in exploring this option further? (e.g. coverage tests or non-prescriptive pricing principles).	Negotiate-arbitrate is a band-aid solution. Each metering coordinator or upstream retailer effectively has a monopoly on each of their customers' data, and as such parties who want to purchase power quality data from a specific location have to purchase that data from a specific metering coordinator or retailer. Standardised access, pricing and usage terms for power quality data is the only solution that would provide the industry with the foundation it needs to maximise electrical safety outcomes, LV visibility and innovation across the entire industry.
e. Are there any other specific options or components the Commission should consider?	In summary, once power quality data is being recorded, a centralised organisation providing meter data on standardised terms via an API-based hub and spoke model is the structure that would have optimal benefits for Australia.

CHAPTER 3 – QUESTION 8: A HIGHER PENETRATION OF SMART METERS WILL ENABLE MORE SERVICES TO BE PROVIDED MORE EFFICIENTLY

a. Are there other potential use cases that third parties can offer at different penetrations of smart meters? What else is required to enable these	Gridsight as a third party currently uses historical smart meter data to provide LV network visibility, hosting capacity estimation and advanced LV network planning. This can all be achieved with historical power quality data with meter penetrations as low as 20%. These calculations only become more reliable as

use cases?	smart meter penetrations then increase.
b. Noting recommendations in incentives and the roll out, are there other considerations for economies of scale in current and emerging service models?	No response provided

CHAPTER 3 – QUESTION 9: IMPROVING CUSTOMERS' EXPERIENCE

a. Do you have any feedback on the proposal to require retailers to provide information to their customers when a smart meter is being installed? Is the proposed information adequate, or should any changes be made?	No response provided
b. Should an independent party provide information on smart meters for customers? If so, how should this be implemented?	No response provided
c. Should retailers be required to install a smart meter when requested by a customer, for any reason? Are there any unintended consequences which may arise from such an approach?	No response provided

CHAPTER 3 – QUESTION 10: REDUCING DELAYS IN METER REPLACEMENT

a. Do you have any feedback on the proposed changes to the meter malfunction process?	No response provided
b. Are there any practicable mechanisms to address remediation issues that can prevent a smart meter from being installed?	No response provided

CHAPTER 3 – QUESTION 11: MEASURES THAT COULD SUPPORT MORE EFFICIENT DEPLOYMENT OF SMART METERS

a. Do you have any feedback on the proposal to reduce the number of notices for retailer-led roll outs to one?	No response provided
b. What are your views on the opt-out provision for retailer-led roll outs? Should the opt-out provision be removed or retained, and why?	No response provided
c. Are there solutions which you consider will help to simplify and improve meter replacement in multi-occupancy premises? Should a one-in-all-in approach be considered further?	No response provided

CHAPTER 3 – QUESTION 12: FEEDBACK ON OTHER INSTALLATION ISSUE

a. Do you have feedback on any of the other installation issues raised by stakeholders? Are there any other installation issues the Commission should also consider?	No response provided

CHAPTER 3 – QUESTION 13: IMPROVEMENTS TO ROLES AND RESPONSIBILITIES

a. Are there any changes to roles and responsibilities that the Commission should consider under this review? If so, what are those changes, and what would be the benefit of those changes	No response provided

OTHER COMMENTS

a. Information on additional issues	No response provided