

28th October 2021

Alisa Toomey
Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

Re: Review of the Regulatory Framework for Metering Services EM00040

Dear Alisa,

Thank you for the opportunity to provide our response to the AEMC's Directions Paper for the review of regulatory frameworks for metering services. Landis+Gyr agrees with the AEMC's position that an increased deployment leading to greater penetration of smart meters in the market would help realise the potential benefits of these meters. We also believe that the current minimum specification of smart meters along with functionality already available in meters today can support current and emerging requirements arising as the industry begins to transform. There is also clear evidence that the capability of meters with respect to their cost has increased dramatically and meters can perform above the minimum specification to help support industry requirements. Landis+Gyr see meters as the source of truth for measurement of activity at the premise level and they are currently used for controlling load and generation.

Landis+Gyr has addressed the questions relevant to us in this response to the Directions Paper. Our key points can be summarised as follows:

- The primary role of an electricity meter is to assist in the financial settlement of the electricity markets. The meters are designed, manufactured, and tested in accordance with Australian and international standards and meet Australian National Measurement Institute requirements to ensure their efficacy with respect to measurement related to settlement.
- Beyond just financial settlement the meter is very capable of supporting and is being used for other functions that assist the market in terms of energy balancing and grid security. The potential of meters for this function has not yet been fully realised.

Landis+Gyr is a leading global provider of integrated energy management solutions for the utility sector. Worldwide, we have deployed more than 300 million meters to customers. Offering one of the broadest portfolios, we deliver innovative and flexible solutions to help utilities solve their complex challenges in Smart Metering, Grid Edge Intelligence and Smart Infrastructure across electricity, gas and water. With sales of USD 1.4 billion in FY 2020, Landis+Gyr employs more than 5,000 people in over 30 countries across five continents, with the sole mission of helping the world manage energy better.

Our focus is on providing leading technology, meters that have advanced features and a roadmap to support future industry requirements. We always welcome the chance to work with participants and stakeholders to understand their long-term requirements as input to our roadmap. Accordingly, we are excited to have the opportunity to contribute to this consultation.

Role of Electricity Meters

The primary role of the electricity meter is to provide accurate measurement for the financial settlement of the electricity market. In transitioning from a spinning disc meter, electricity meters are now data storage devices, able to hold several months of data measurements. This development has increased the accuracy of the settlement process with 5-minute interval data being used at all levels of the market

Flexible Meter Connection

In addition to providing the measurements for settlement, the role of electricity meters in the market has continued to develop as technology advances. Meters can currently be fitted with optional switches that enable power to be remotely connected and disconnected. Depending on the type of meter and the wiring to the meter it is possible to remotely control the connection of the entire site and individually control the flexible load and flexible generation at the site as pictured in Figure 1.

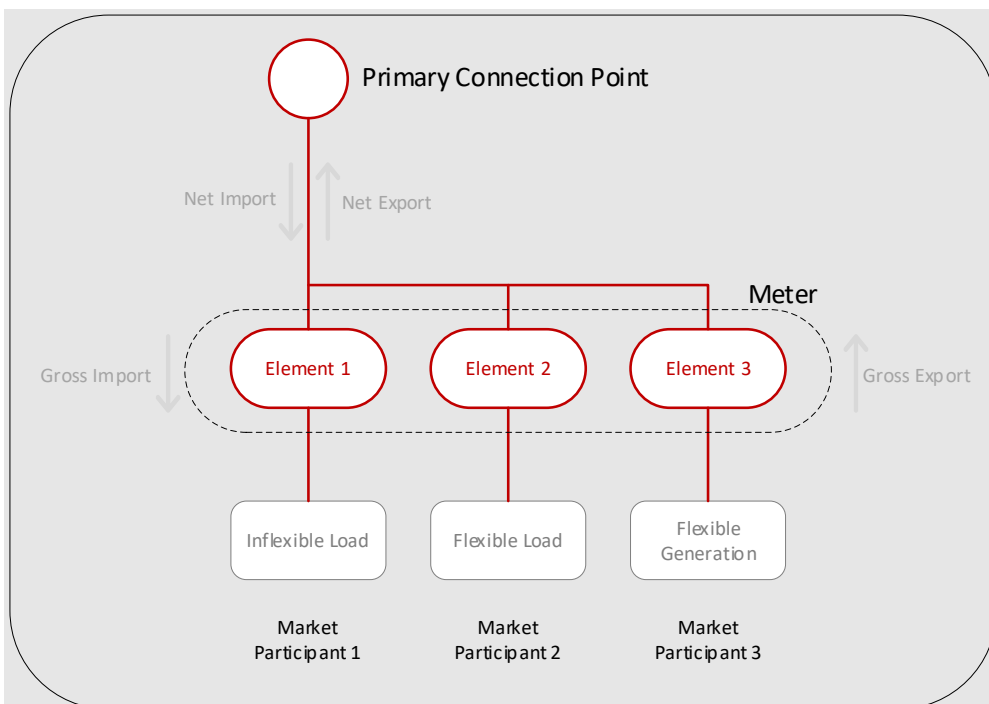


Figure 1: Example of a Three Element Meter Connection

This meter configuration allows market settlement of the site via Net measurements and also settlement of ancillary markets and transactions via the Gross measurement of each measuring element.

Engineering Data

The consultation paper discussed the provision of engineering data to vested parties including the use of the data for determining Dynamic Operating Envelopes. Whilst providing data is important, consideration should be given to what data is being collected. Figure 1 is an example of a possible meter connection with flexible load and flexible generation being independently measured. This connection not only assists in the calculation of the Dynamic Operating Envelope but also provides the measurement data required to validate or settle any market transaction that occurred under a possible future Flexible Trader Arrangement.

Providing Grid Security

The additional functionality provided by electronic meters is being used by the market. The meter has sufficient sampling to detect a network underfrequency event such as the loss of a large generator. On detection of the underfrequency event the meter can be configured to disconnect the flexible load. This methodology allows power (inflexible load) to remain connected at the premise whilst still providing the load response in order to provide grid security. The traditional method is to use underfrequency relays connected to distribution feeders resulting in all power being completely cut to end users, not to mention disconnection of DER from the network that can assist in responding to underfrequency events.

Building System Redundancy

New Zealand has a long history of balancing their electricity system via the dispatch of generation but also via dynamic load control. This is achieved by having remote control of domestic electric hot-water systems. Because of this legacy, it is a standard installation practice that is understood by the domestic electrician through to the network companies and retailers. The system is used daily to flatten the demand curve, improving asset utilisation. It has been also used during contingency events that threatened grid stability, an example of which is described below.

In New Zealand on the 9th August 2021 there was a combination of events that resulted in rolling blackouts to the North Island due to a lack of generation. In response to these blackouts, load control was used to reduce their extent. During this event the spot price for electricity went to over \$230,000/MWh and equates to an additional market cost of over \$2,000 per connection for this single event alone. This is the suppressed market price with the load management system being used.

The point being made here is that the load control system whilst providing value in terms of daily operation, it can also be used in contingency events effectively providing system redundancy thus potentially reducing the impact of events.

The use of smart meters cannot only provide system redundancy in terms of load control but also generation curtailment. South Australia recently passed regulations that requires new solar installations to have the capability to be remotely controlled as an emergency backstop. The driver was to support grid security as the level of non-scheduled generation (including household solar) was approaching magnitudes that concerned the grid operator (AEMO). The approach being widely adopted is to connect a switched element in the electricity meter to the DER system. This allows the remote disconnection of DER from the network during contingency events. This was viewed by industry stakeholders as the most cost-effective method of providing this functionality in terms of deployment, cyber security, and utilisation of existing technology to benefit the consumer.

In conclusion, Landis+Gyr wholeheartedly supports the continued use of the smart meter as the measurement device for settlement of the electricity meter but also as a device to provide and support future markets and grid security. We would be pleased to assist further regarding this submission. Please do not hesitate to contact our Product Manager, Opi Taumalolo or Mark Bell, our Technical Director in this process for specific information regarding how meter solutions can be utilised to address current and future market needs as outlined in this response.

Yours sincerely,

Opi Taumalolo
Head of ANZ Product Management

Joe Thorne
ANZ Regulatory Lead

Response to AEMC Questions

CHAPTER 2 – QUESTION 1: BENEFITS WHICH CAN BE ENABLED BY SMART METERS

<p>a. Are there other benefits which can be enabled by smart meters that are important to include in developing policy under the Review?</p>	<p>Smart meters have existing functionality that is being used to resolve new and emerging issues. This has been demonstrated in South Australia where the problem statement was a grid security issue in certain situations. The traditional approach would have been to trip feeders and disconnect customers. By under having control of flexible generation at the source, the grid security issue is managed and customer outages are avoided. In short smart meters can be used for multiple applications (i.e. DER Management, Under frequency load shedding, export limits), but the core problem needs to be identified and the markets or regulations developed.</p>
<p>b. What are stakeholders views on alternative devices enabling benefits? What are the pros and cons of these alternative devices?</p>	<p>Alternate devices can provide new and added benefits to the market. However, the analysis needs to look beyond the device cost and include the full life cycle cost, including deployment, management, maintenance, and cyber security aspects. Landis+Gyr believes that existing smart meters can be further leveraged to provide adequate, proven and rigorously tested functionality to the electricity market. The meter is a cost-effective device that can be leveraged to support these new and developing market services.</p>

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

<p>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?</p>	<p>Landis+Gyr support the view that a higher penetration of smart meters would provide benefit to the electricity market. This benefit is not only in terms of accuracy in the settlement process but also through the provision of non-consumption/engineering data and functionality to support services and capabilities that improve energy delivery in a cost-effective manner. The examples provided show the benefit in terms of ancillary market and grid security functions of flexible load and flexible generation management.</p>
<p>b. Do stakeholders have any feedback on the level of smart meter penetration required for specific benefits? Or to optimise all benefits?</p>	<p>Landis+Gyr does not have a view on a specific level but considers the greater level of penetration would lead to greater benefits to the market.</p>

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? Please provide details of why or why not?	Landis+Gyr are in support of an increased deployment rate as the benefits provided by smart meters would increase with higher penetration.
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?	Landis+Gyr has no specific comment on this item.
c. How would each of these options for rolling out smart meters impact the cost profiles of smart meters?	Landis+Gyr has no specific comment on this item.
d. Are there other options that you consider would better provide a timely, cost effective, safe and equitable roll out of smart meters?	Landis+Gyr has no specific comment on this item.

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?	Landis+Gyr agrees that a higher penetration of smart meters is likely required to more fully realise the benefits of smart meters.
b. Do stakeholders have any feedback on the level of smart meter penetration required for specific benefits? Or to optimise all benefits?	Landis+Gyr has no specific comment on this item.

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

<p>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?</p>	<p>Landis+Gyr agrees that the current minimum service specification is sufficient.</p>
<p>Are there changes to the minimum service specifications, or elsewhere in Chapter 7 of the NER, required to enable new services and innovation?</p>	<p>Landis+Gyr agrees that the current minimum service specification is sufficient.</p>
<p>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?</p>	<p>Analysis of cost effectiveness would have to be performed by the relevant stakeholders. As multiple components of the end-to-end solution contribute to improved safety outcomes such as neutral integrity. Only after assessment of the capability and maturity of these components can the cost effectiveness be determined. However, Landis+Gyr is confident that the meter in its current form could deliver relevant safety features through further consultation with industry stakeholders.</p>
<p>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?</p>	<p>Smart meters are one source of data that DNSPs can use to improve low voltage network visibility. The total cost in providing the data is more than just the cost of the device. Other factors need to be considered such as location, data rates and configuration of the device.</p>
<p>Can smart meters be used to provide an effective solution to emerging system issues?</p>	<p>Landis+Gyr believe that smart meters can be used for new and emerging system issues. This has been demonstrated in South Australia where smart meters were used to assist with system stability whilst also improving energy delivery to customers. This was done by using the control switch in the meter to disconnect solar generation at times of low system inertia.</p>

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

<p>a. Do you agree there is a need to develop a framework for power quality data access and exchange? Why or why not?</p>	<p>Landis+Gyr supports the concept of a power quality framework if it can provide better outcomes with respect to power quality data, whilst continuing to maintain market competitiveness between the various stakeholders.</p>
<p>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?</p>	<p>Landis+Gyr believes in the future there may be a need for third parties to access power quality data to provide additional 'behind the meter' services to the end consumer. Some of whom may have been directly engaged by the end consumer.</p>
<p>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?</p>	<p>Landis+Gyr has no specific comment on this item.</p>
<p>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?</p>	<p>Landis+Gyr has no specific comment on this item.</p>

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

<p>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).</p>	<p>Landis+Gyr believes the industry should look to leverage/enhance existing infrastructure to facilitate the provisioning power quality data. Rather than duplicating or introducing additional mechanisms in parallel to the existing market data mechanisms. This approach would help reduce costs through better utilisation of exiting techniques.</p>
<p>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?</p>	<p>Landis+Gyr has no specific comment on this item.</p>
<p>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?</p>	<p>Landis+Gyr has no specific comment on this item.</p>
<p>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).</p>	<p>Landis+Gyr has no specific comment on this item.</p>
<p>e. Are there any other specific options or components the Commission should consider?</p>	<p>Landis+Gyr has no specific comment on this item.</p>

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

<p>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 use cases?</p>	<p>Landis+Gyr has no specific comment on this item.</p>
<p>b. Noting recommendations in incentives and the roll out, are there other considerations for economies of scale in current and emerging service models?</p>	<p>Landis+Gyr has no specific comment on this item.</p>

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?	Landis+Gyr has no specific comment on this item.
b. Should an independent party provide information on smart meters for customers? If so, how should this be implemented?	Landis+Gyr has no specific comment on this item.
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?	Landis+Gyr has no specific comment on this item.

CHAPTER 3 – QUESTION 10: REDUCING DELAYS IN METER REPLACEMENT

a. Do you have any feedback on the proposed changes to the meter malfunction process?	Landis+Gyr has no specific comment on this item.
b. Are there any practicable mechanisms to address remediation issues that can prevent a smart meter from being installed?	Landis+Gyr has no specific comment on this item.

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?	Landis+Gyr has no specific comment on this item.
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?	Landis+Gyr has no specific comment on this item.
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?	Landis+Gyr has no specific comment on this item.

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?	Landis+Gyr has no specific comment on this item.
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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	Landis+Gyr has no specific comment on this item.
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OTHER COMMENTS

a. Information on additional issues	
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