30 January 2014

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Dear Mr Pierce,

RE: Draft Report – Framework for Open Access and Common Communication Standards Review (Reference EMO0028)

The NSW Distribution Network Service Providers, Ausgrid, Endeavour Energy and Essential Energy (the NSW DNSPs) welcome the opportunity to provide comments in response to the AEMC's Draft Report - Framework for Open Access and Common Communication Standards Review.

The NSW DNSPs support the development of a communication and access framework aimed at supporting smart meters and related services, as well as contestability in demand side participation (DSP) end services, if developed and implemented appropriately.

For DNSPs, it is important that any framework which is developed accommodates:

- *Access to data for network billing purposes* – it is important that access to billing data is maintained without the need for complex arrangements and multiple interfaces.[1]

- *Access to data to maintain network reliability* - DNSPs ultimately have responsibility for the quality and reliability of electricity supply to customers. [2]

- *Access to network functions such as direct load control:* this is particularly relevant during times of network constraint, where DNSPs require access to customers metering infrastructure to ensure the safety and reliability of its network.

- *Metering Coordinator (MC) of last resort arrangements* – under a contestable metering framework there is a risk that the MC (or SMP) could get into financial difficulties and cease operating. Consequently, it is essential that another organisation can quickly take over the responsibility for their metering points and ensure that reliable metering services continue to be provided to the benefit of all participants in the electricity supply chain.

- *Security* – cyber security is important for the protection and reliability of the electricity networks and smart meter infrastructures. It is important that any open access framework has in place appropriate security measures to prevent unauthorised use of functions like supply disconnect/reconnect and ensuring the privacy of customer data.

In addition to providing responses to the AEMC's questions in its Draft Report, (refer to **Attachment 1**), our submission is focussed around three main themes: 1) highlighting interdependencies with other reforms; 2) outlining the NSW DNSPs key positions regarding the adoption of communication interfaces; and 3) highlighting issues requiring further consideration by the AEMC.

Each of these themes is briefly discussed below. For further details please refer to our submission.

Interdependencies with other reforms

The NSW DNSPs note that there are a number of issues being considered within the scope of this review which are inherently linked to the Standing Council on Energy and Resources (SCER)'s rule change request to increase competition in metering and related services. Whilst issues pertaining to the SCER metering rule change are generally considered out of scope for this review, it is fundamental that any interdependencies between the two work streams are clearly identified and appropriate mechanisms established to align outcomes between the two reviews. If this is not done,

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[1] The NSW DNSPs note the more complex the model for open access and communication (where there is a need for multiple interfaces and back office systems to translate differing protocols), the higher the likelihood for errors in data and associated network billing. Further, there is a cost to DNSPs in having to maintain multiple systems to communicate with different meters within its network.

[2] While the monitoring of the network may generally be undertaken at a substation level, there are instances where data is required from individual installations as part of fault finding exercises and determining quality of supply at the periphery of the network, represented by the customer connection point.

we are concerned that the new metering framework will not deliver the anticipated benefits identified in the AEMC's Power of Choice Review.

Consequently, a key aim of the NSW DNSPs submission is to highlight areas of potential overlap between the two work streams and to demonstrate how outcomes from this review have the potential to impact on the success and viability of SCER's proposed metering framework.

NSW DNSPs key positions

The NSW DNSPs overarching position is that an open access framework which is based on the adoption of a DLMS/COSEM common meter protocol and common market gateway based on existing B2B processes will deliver the most benefits to market participants in the long term.

Our submission seeks to demonstrate that an open access and communication framework based on a common DLMS/COSEM meter protocol and B2B market gateway delivers optimal outcomes to market participants where there is a low penetration of smart meters at the time contestability is introduced. We note that a key benefit of such a framework is that it reduces complexity in market arrangements and delivers a higher level of interoperability. Consequently, a framework based on this is likely to facilitate overall competition (including competition amongst MCs); ensure the continuity of existing functionality; remove barriers for new entrants; minimises meter churn; and facilitates access at a low cost.

The NSW DNSPs note that a common market access model based on a B2B gateway could be implemented with either end to end common protocols or with a translation gateway, depending on the starting point for each jurisdiction (i.e. high penetration or low penetration of smart meters). Subsequently, an open access framework based on a B2B gateway is flexible enough to be adopted by all jurisdictions (with slight modifications) and should be implemented regardless of whether a common meter protocol is to be adopted.
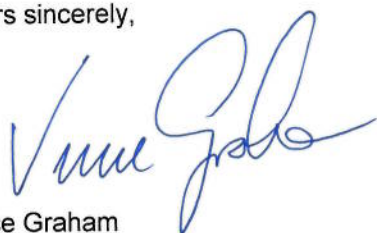
Issues requiring further consideration

Our submission seeks to highlight and discuss issues regarding access, security and the role of the smart meter provider (SMP) which required further consideration by the AEMC. In addition, we note that there is generally very little direction in the Draft Report regarding the AEMC's intended recommendations; nor is there discussion on the regulatory and implementation arrangements required to support open access.

It would be beneficial if the AEMC released a further supplementary paper containing draft recommendations for stakeholder comment prior to finalising its report to SCER. We consider that such an approach is not only consistent with open and transparent regulatory decision making but would also ensure that the report develop optimal outcomes to market participants and customers.

If you have any further queries or would like to arrange a meeting to discuss our submission please contact Mr Murray Chandler, Group Manager Network Technology & Innovation at Networks NSW on (02) 9269 7210 or murray.chandler@ausgrid.com.au

Yours sincerely,

Vince Graham
Chief Executive Officer
Networks NSW

1. Introduction

The NSW DNSPs support measures aimed at facilitating greater levels of customer choice. We believe it is important that regulatory and market arrangements support consumer choice as this is essential to enabling customers to make more informed choices about the way they use electricity.

It is our understanding that this review is aimed at establishing the enabling architecture to facilitate the broader adoption of smart meters nationally, in a manner which both supports commercial outcomes and delivers value to customers. The NSW DNSPs look forward to working closely with the AEMC and industry to develop a workable solution that achieves this outcome. In particular, we note that if developed and implemented appropriately, the framework could:

- enable the transition to cost reflective network tariffs;
- facilitate competition and innovation in metering and metering enabled services;
- promote the development of cost effective electricity products and services aimed at enabling consumers to better manage their energy usage;
- benefit consumers through economic achievement of future network operational benefits; and
- promote efficient investment by reducing meter lifecycle costs.

In addition to providing comments in response to the questions raised in the AEMC's Draft Report: Framework for Open Access and Common Communication Standards Review (Draft Report), the NSW DNSPS have sought to:

- **highlight interdependencies with other reforms** – this section is aimed at flagging possible issues arising from inter-related and interdependent areas of different related reforms which are being progressed separately to this review;

- **outline our key positions in relation to the adoption of communication interfaces -** this section is aimed at demonstrating why the NSW DNSPs consider an open access and communications framework based on the adoption of a common meter protocol (DLSM/COSEM) and a common market protocol based on the existing B2B gateway is likely to best achieve the intended review outcomes and promote the National Electricity Objective (NEO); and

- **highlight issues which require further consideration –** this section is aimed at discussing issues regarding access, security and the role of the smart meter provider (SMP).

Each of these topics is discussed in further detail below.

2. Interdependencies with other reforms

This section of our submission seeks to:
- highlight the need for the AEMC to adopt a coordinated approach towards metering related reforms;
- identify key areas of metering reforms which are inter-related; and
- highlight potential implementation issues.

2.1 The need for a coordinated approach towards metering related reforms

The NSW DNSPs note that the outcomes from this review form one aspect of a broader reform package to establish a new metering framework. Other key pieces of reform which are inter-related to this review include the Standing Council on Energy and Resources (SCER) rule change request to increase competition in metering and related services and the Australian Energy Market Operator (AEMO) foreshadowed rule change request to establish a framework to enable multiple trading relationships and embedded networks (MTREN) in the National Electricity Rules (NER).
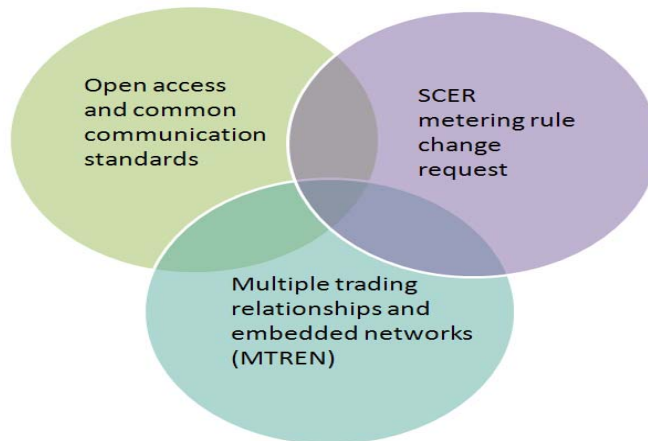
It is our understanding that the current intent is to progress these areas of reform in parallel to one another. Given that there are a number of interdependencies and overlap between the areas of reform, particularly between this review and the SCER metering rule change, it is critical areas of overlap or interdependencies between the reform areas are identified so that decisions are made holistically, taking into account the ramifications/impacts of decisions made in one reform area upon the others.

If such an approach is not adopted we consider that there is a risk that the new framework will not deliver the anticipated benefits that were identified in the AEMC's Power of Choice Review. Further, there is a risk that the new metering framework could result in a number of suboptimal outcomes such as:

- creation of regulatory uncertainty;
- stifle innovation and competition[3];
- be overly complex and difficult to implement; and
- impose significant costs to both customers and market participants.

The risk of reforms outcomes being negatively impacted by the outcomes of other reforms could be avoided if appropriate effort is put in place to identify key areas of interdependencies between the separate reforms. Where such interdependencies are identified, appropriate checks should be established to ensure that outcomes from the reform areas align or where appropriate, reform areas are combined.

Given the potential for decisions regarding metering architecture and interfaces to impact the viability and success of some of the options and arrangements being considered in other areas of reform, it is important that any recommendations made by the AEMC regarding the open access and common communications framework are flexible enough to accommodate different scenarios for the adoption of smart metering nationally. For example, whether smart meters are to be rolled out contestably and whether the starting assumption for a smart meter roll-out is that there will be low or high levels of smart meter penetration; and whether there will be multiple trading relationships possible at a connection point.

2.2 Identifying key areas of interdependency between reforms

As noted above, this review is closely related to the impending SCER metering rule change request. Consequently, the recommendations from this review are likely to impact the ability of the new metering framework to deliver the benefits identified in the AEMC's Power of Choice Review.

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[3] The NSW DNSPs note that if the new metering framework is not appropriately developed and implemented there is the risk that the framework could diminish existing competition arrangements in NSW under the Accredited Service Provider Scheme in NSW.

From a DNSP perspective, the introduction of contestability in metering and related services will require a number of operational changes to allow alternative metering coordinators (MCs) to deliver metering services. These changes have the potential to create operation risks in a number of areas such as:

- maintenance of load control services;
- meter replacement interface issues for the new MC;
- access to meter data and other smart meter functions; and
- retention and improvement of network functionality in smart meters.

To demonstrate this point, consider the scenario where metering contestability is introduced without a common meter protocol or common market gateway. Under such a scenario, market participants would be required to establish multiple interfaces and back office systems to cover all SMPs. In turn, SMP's may utilise their own proprietary meter protocols, unique to their metering vendor, risking inefficiency; complicating customer switching; and encouraging equipment churn.

Figure 1 – Access and communication framework without common market access or meter protocols
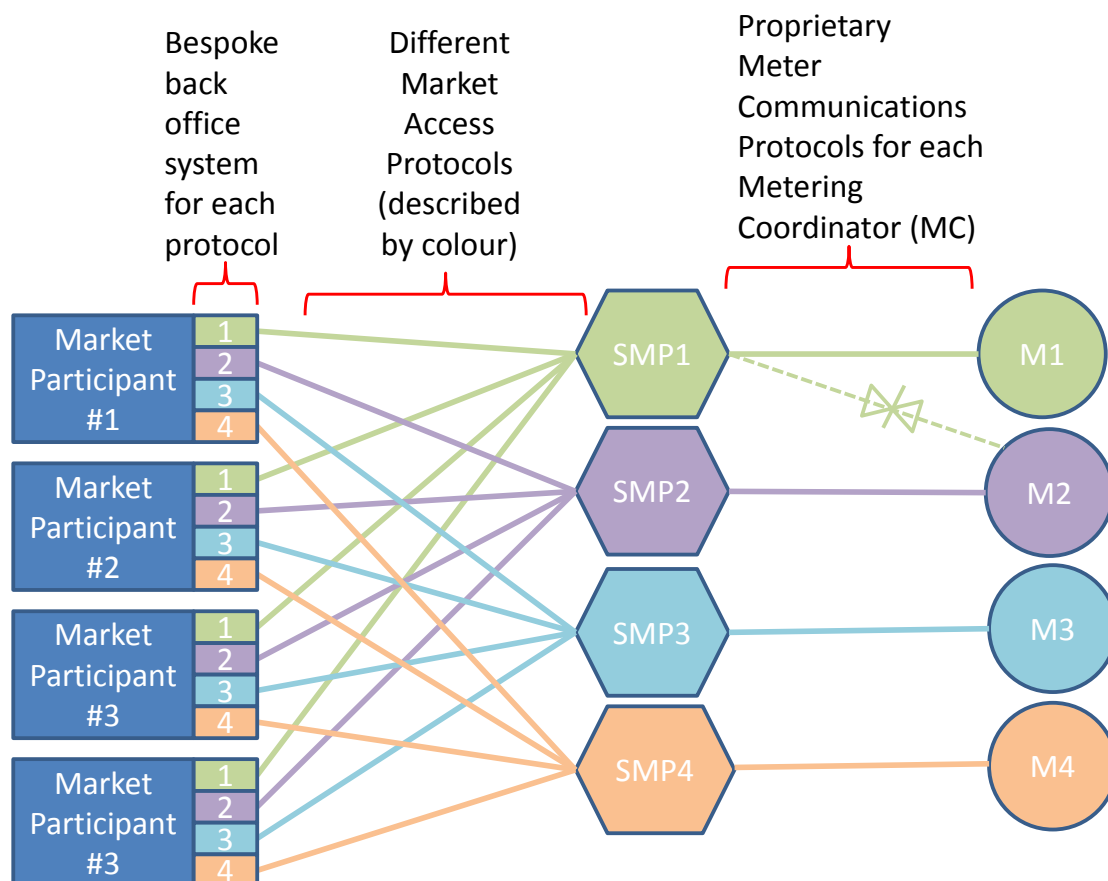
It is clear from the above diagram that where there is no common meter protocol or market gateway processes and communication transactions, in a contestable metering environment become more complex. Without a defined standard market access protocol, market participants will need to adapt to each SMP's access standard to be able to send and receive transaction requests. This point is illustrated in Figure 1 by the matched colour coding of meters to MCs and back office systems. As illustrated by Figure 1, in order for different market participants to be able to communicate with different SMPs they need to acquire separate back office system protocols for each SMP.

Further, as noted in Figure 1, if a standard meter communications protocol is not established each SMP is likely to establish their own proprietary meter communications protocol, which

are not compatible with other SMP. This is shown in Figure 1 by SMP1 not being able to communicate with different meters such as M2.

Consequently, when procuring additional meters for a roll-out, a MC/SMP may find that their choice of metering is limited to only a small number of manufacturers. This is because each metering solution will utilise its own protocol translation for communicating data to the MC's meter data management system (MDMS) and back off system, meaning that the SMP is effectively locked into its metering solution unless it decides to acquire additional MDMS and back office capabilities to allow it to interface with differing metering solutions.

For Retailers and DNSPs, the implications from the adoption of this type of metering architecture is multiple interfaces to multiple MC's requiring more complicated back office systems and interfaces. This additional complexity is likely to reduce the robustness of the back end systems and if DNSPs are unable to access core metering functions such as load control, this may jeopardise their ability to ensure that their electricity network operates safely and reliably.

It is evident from the above example, that if appropriate decisions are not made regarding the open access framework, the proposed framework for metering contestability is likely to result in undesirable and costly outcomes to both consumers and market participants, and further is unlikely to promote the achievement of the NEO.[4]

In our view, the SCER metering rule change should not commence until a decision is made by SCER regarding the AEMC's recommendations from its review of open access and common communications standards. Once SCER has made a decision from this review, these recommendations should be combined into the one rule change request in order for the issues raised by these two areas of reform to be addressed holistically. We consider that adopting such an approach would ensure proper alignment of outcomes from the reforms and would also avoid duplicative industry consultation and rework. In addition, we note that adopting this approach also reduces the risk of conflicting and/or inconsistent changes to IT systems, contractual arrangements and business processes.

2.3 Transitional and implementation issues

The NSW DNSPs note that the Draft Report does not discuss regulatory and market arrangements required in implementing the recommendations from this review. We consider that there would be considerable benefit if the AEMC consulted with stakeholders on this issue prior to making its final recommendations to SCER.

Careful consideration is required regarding how the different reform outcomes will be transitioned to and implemented once the rule change requests have been finalised. Given the interdependent nature of some of the changes, we suggest that a coordinated approach to implementation is adopted. This would avoid unnecessary costs to market participants from having to make similar changes to their systems multiple times. It would also allow the changes to be implemented in a timely manner.

3. Communication interfaces

The NSW DNSPs overarching position is that an open access framework which is based on the adoption of a DLMS/COSEM common protocol at the meter level and a common market gateway equivalent to existing B2B processes, at the participant level, will deliver the most benefits to market participants in the long term. Specifically we note that adopting such a framework is likely to:

- enable the transition to cost reflective network tariffs;
- facilitate competition and innovation in metering and metering enabled services;
- promote the development of cost effective electricity products and services aimed at enabling consumers to better manage their energy usage;

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[4] Section 3 of our submission further explores this issue and proposes a framework which we consider will deliver optimal outcomes for market participants and customers in the long term and in a manner consistent with the NEO.

- improve consistency of product offerings across jurisdictions resulting in an improved customer and market data quality;
- retention and improvement of network enabled services; and
- promote efficient investment by reducing meter lifecycle costs by:
    - o reducing complexity and costs associated with smart metering provision
    - o eliminating unnecessary meter churn
    - o reducing retailer churn costs
    - o enabling easy market entrance for new meter coordinators

This conclusion is supported by the analysis in the table below on the possible options and combinations for establishing an open access framework.

Table 1: High level analysis of open access options

Objective	Common Market Access Protocol coupled with a Common Meter Protocol	Common Market Access Protocol coupled with No Stated Meter Protocol	Market Access Directly via Common Meter Protocol	Market Access via No Stated Meter Protocol
Enable Overall Competition	Delayed Start / Enables Competition	Virtual Monopolies	Complex for Aggregators / Customers	Virtual Monopolies
Enable MC Competition	Best	Good	Difficult	Poor
Ensure Continuance of Existing functionality	Simple / Low Cost	More Complexity / More Cost	More Complex / Moderate Cost	More Complexity / More Cost
Enable Innovation	Supported through formal processes	Supported	Supported	Best Supported
Minimise Meter Churn (under contestability)	Significant	Very Significant	Significant	Very Significant
Reduced Retailer Churn Costs	Low Cost	High Cost	Moderate Cost	High Cost
Eliminate Barriers for New Entrants	No Barriers (grandfathering)	Existing Monopolies	No Barriers (grandfathering)	Existing Monopolies
Ensure Security (Accredited Party Operates on Where Authorised)	Lower Cost	Moderate Cost	Lower Cost Virtual Monopoly	High Cost Virtual Monopoly

The remainder of this section is aimed at further demonstrating why the NSW DNSPs consider an open access framework which is based on the adoption of a common meter protocol and common market gateway with a market point of entry is likely to deliver the most benefits to market participants in the long term and is consistent with the NEO.

## 3.1 Adoption of common protocols

As highlighted by Table 1, common meter and market protocols are advantageous for the effective operation of smart metering infrastructure in the future. Market participants will have a need for access to meter functionality, which would be enabled in a consistent fashion through a common meter protocol but facilitated through a smart meter provider (SMP) via a common market protocol.

Under the new metering framework there may be multiple SMPs operating across each DNSP's network and within each geographic locality. Common protocols will reduce the complexity for DNSP's to be able to provide time critical services to customers (such as load control) after the implementation of smart meters. Without common protocols the DNSP would need to develop systems required to communicate with multiple parties through multiple protocols, with ongoing development required for new entrants or changes to existing SMP's services.[5] The NSW DNSPs are keen to avoid this situation as it is both complex and costly, and in addition is likely to result in price impacts for customers.

Consequently, the NSW DNSP's support the use of the DLMS/COSEM standard[6] as a common meter protocol in conjunction with an extended B2B gateway to support smart meter transactions. As noted in Table 1, such a framework is likely to facilitate effective retail competition as well as support competition amongst MCs; ensure the continuity of existing functionality; remove barriers for new entrants; minimise meter churn; and facilitate access at a low cost.

We consider that a common meter protocol in conjunction with a B2B market gateway is likely to deliver a high level of interoperability. Interoperability is clearly desirable as systems with high interoperability have lower equipment costs and lower transaction costs, higher productivity through automation, more conversion of data and information, higher competition between equipment suppliers and more innovation of both technology and applications.[7] As noted by Gridwise Architecture Council, such systems consistently prove that interoperability and standards enhance users' choices because those requirements create a framework within which vendors and competitors can innovate – as long as the finished products perform the needed functions and exchange data with other, related products.[8]

Figure 2 – NSW preferred framework: B2B Gateway with common protocols
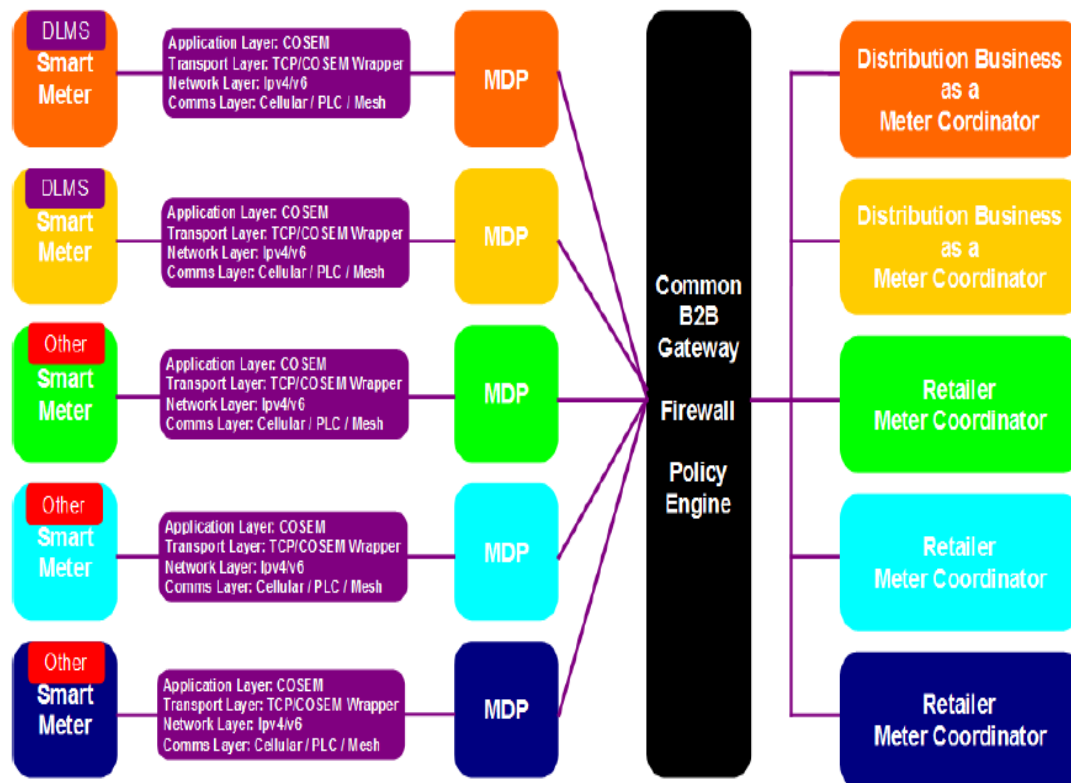

checklist, version 1.5, August 2010, p1.

[8] Ibid.

It is important to note that the framework outlined above and depicted by Figure 2, is more easily implemented in full in jurisdictions with low penetration of smart meters. However the key elements of the framework outlined in this section can also be adapted to the Victorian jurisdiction. This could be accomplished by implementing the common market access gateway via a translation layer to the existing Victorian smart meter systems so that market participants can achieve a similar level of access to functionality. The level of functionality available may be limited to those functions inherent to the present Victorian Smart Meter technology; however the access gateway being common achieves the advantage of consistency of access across all jurisdictions to at least the subset of functions that are currently commonly available. This also removes the requirement to organise access via the specific protocols at the meter level. Further, such an approach allows for the move to common protocols as new infrastructure is installed or upgraded.

The NSW DNSPs have sought to represent how our preferred framework for open access and communication could be adapted to work effectively nationally (including Victoria).

Figure 3 – Adoption of a common market access gateway via a translation layer (proposed arrangements for Victoria and other jurisdictions)
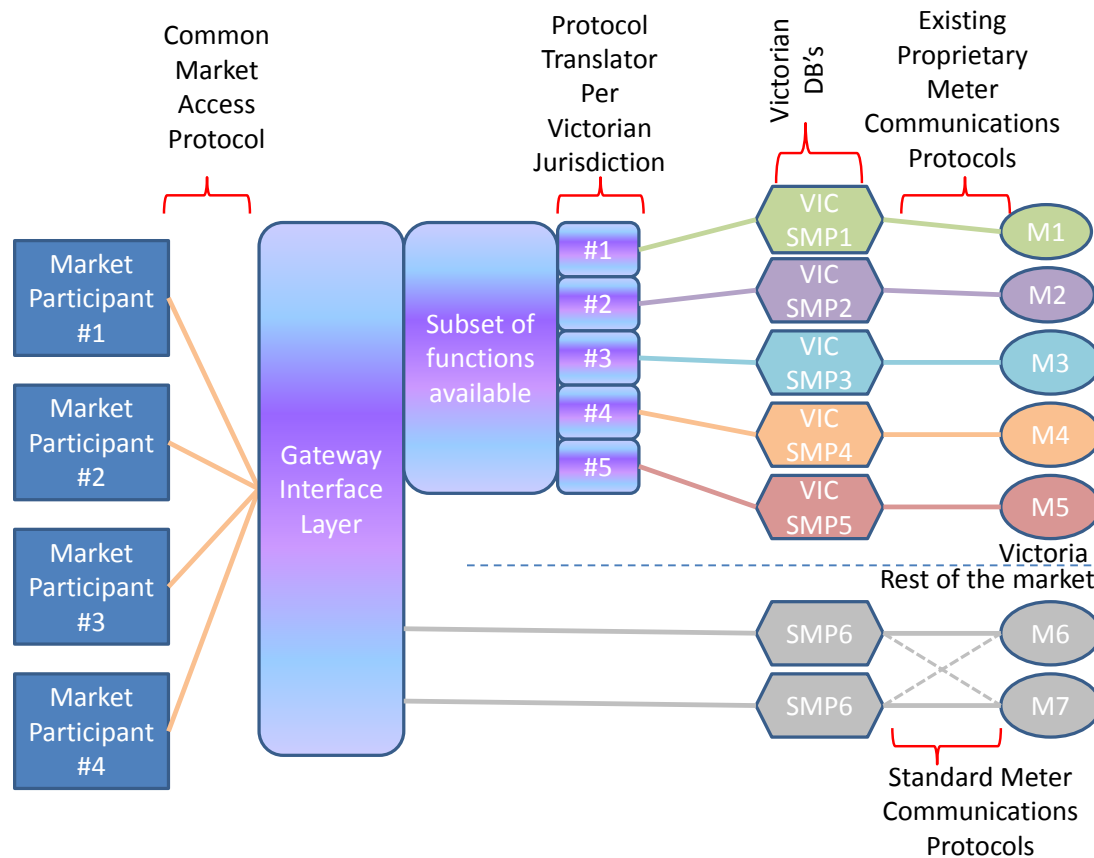
3.2 Common meter protocol

A common meter protocol will facilitate interoperability, where participants are able to access smart meter infrastructure in a consistent way. This is particularly relevant where direct access to the infrastructure at the meter level is required and there are multiple smart meter installations involved. A common communications protocol for all SMP's will provide faster recovery should an SMP exit the market, with alternate SMP's able to quickly take over communication to the smart meter infrastructure without the need for meter churn.

The NSW DNSPs support the adoption of DLMS/COSEM as a common meter protocol. DLMS/COSEM is an accepted international standard and has already been utilised in a number of smart metering installations. Further, the NSW DNSPs note that DLMS/COSEM is

also likely to become the communications standard for smart grids infrastructure, providing greater interoperability between meters and other smart grid devices.

Using an existing international communication standard should provide long term savings in infrastructure costs. Australia is quite a small metering market and any customisations[9] required to smart meter infrastructure are likely to result in increased costs, while these may be marginal on a per unit basis this will still add overhead to the overall program.

Grandfathering arrangements should be put in place for existing smart meter deployments, providing a transition path towards the common protocols, with new installations being compliant with the nominated standard where possible. This may be an extended transition path for existing installations, particularly if the current supplier is not willing to upgrade infrastructure to support the new communications protocol or the approved timetable for infrastructure investment is too long. The existence of current smart metering installations should not limit the introduction of a new common protocol allowing the benefits to be realised for all new smart meter installations.

3.3 Common market access protocol

The common market access protocol is complementary to the meter protocol.[10] The NSW DNSPs consider that a common market access protocol will provide consistency for all market participants on how they interact with smart metering installations, irrespective of who provides the smart metering services. This will reduce complexity of systems development under smart meter deployments with all participants able to implement the required transactions into systems up front, with changes only required when new smart meter functions are introduced.

The NSW DNSPs consider the common market access protocol should be developed independently from the common meter protocol. We note that a B2B gateway would be a good starting point as a suitable option for acting as the transaction portal between participants, as it is already embedded within business processes. However, it is important to note that the development of the B2B gateway (as a common market access protocol) will require new definitions of smart meter functions and actions to be added as new B2B transaction types, to allow consistent business rules to be implemented into business systems for DNSP's and Retailers.

A common market access protocol based on a B2B gateway model provides a scalable approach for supporting an optimal level of interoperability between systems and accredited parties to access meter data and load control services. As noted in section 3.1 a market access model based on a B2B gateway could be implemented with either end to end common protocols or with a translation gateway, depending on the starting point for each jurisdiction (i.e. high penetration or low penetration of smart meters). However, the development of a common B2B market gateway will need to be done in conjunction with an agreed minimum specification for smart meters in order to ensure that all 'must have' (or essential) functionality is available for both DNSPs and other market participants.

Key strengths from adopting a common market B2B gateway include:

- DNSPs will only require a single interface and communications link to a B2B Gateway, which is more efficient than multiple interfaces to multiple meter data providers (MDPs).
- In areas with high penetration of smart meters a solution utilising a common single gateway with an industry standard transaction protocol is preferable. Here the addition of a translation gateway allows the DNSPs/MCs/SMP's in Victoria to continue to utilise existing smart meter infrastructure (SMI) without the requirement for large reinvestment.

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[9] Customisation are likely to be a barrier to entry for new smart meter providers to the Australian metering market, with changes required to be able to offer the product in Australia with little guarantee of sales.

[10] In contrast to a meter protocol situation, the broader market model involves interfaces between various businesses and market participants. It links with parties outside of the market and also links into market administration systems. The market model also operates with higher levels of abstraction and specific business rules for the various market players.

- Both approaches allow distribution businesses to access meter data and commands from a broad range of meters and meter data provider (MDP) systems that work with different manufacturers, and support the maintenance of direct load control services to meet distribution business obligations on the safe and reliable operation of the network.
- A common platform reduces the risk of meter change or loss of functionality if the meter is replaced. This reduces vendor lock in to proprietary systems and drives competition amongst meter manufacturers. When procuring additional meters the MC, may choose from a range of manufacturers with inter-operable meters, which is truly competitive.
- Enduring interoperability and innovation brings new functionality into the market that will likely result in network services desirable to distribution businesses being offered from the market at a low incremental cost.

3.4 Market Point of Entry

The NSW DNSPs consider that a market point of entry should be adopted, rather than point of entry at the meter as it provides better security. In addition, it:

- is relatively simple and low cost from a DNSP or retailer perspective;
- helps to ensure that the integrity of the network operation is maintained by safeguarding against the use of unauthorised access to metering functions such as remote disconnect or reconnection;
- operates with higher levels of abstraction allowing the application of specific business rules for the various market players, dealing with issues such as access security and authentication at a customer / connection point / jurisdictional level (rather than just at a metering hardware level)
- allows for higher level abstraction for easier access to smart meter functionality which would otherwise be described in a more complex form if a meter protocol was used directly;
- manages market specific work flows and prioritisation of messages, such as for network security; and
- is developed and driven by the specifics of the Australian market rules, administered by Australian market administrators, and developed in a timeframe that suits Australia's circumstances.

Whilst market point of entry is preferred, the NSW DNSPs note that in order to ensure this point of entry operates effectively; appropriate congestion and prioritisation of messages will need to be established for safe and reliable supply of network. For example load control / disconnect for safety must have a higher priority than other messages to maintain integrity of the network and public safety.

4. Issues requiring further consideration

The remainder of this section further examines issues in relation the categorisation of services under the smart meter minimum functionality specification; access and charging arrangements; adding new functions; and the role of the SMP.

4.1 Categorisation of services

The NSW DNSPs support the AEMC's categorisation of services into *basic*, *advanced* and **new**. However, the NSW DNSPs suggest that rather than using the terminology "basic" in categorising services the AEMC should consider using the term "standard" to avoid confusion with the market term "basic" which is used for meters that support type 6 installations only.

We note that whilst the AEMC uses this categorisation throughout its Draft Report it does not provide an indication as to what services in the minimum functionality specification are likely to fall into each category.

The NSW DNSPs consider that the basic/standard service category could be further broken into two sub-categories, essential services and support services. We consider that advanced

services are optional services that the MC is able to provide, though is not required to do so; and new services are those services which are not basic or advanced services.

4.2 Access and charging arrangements

As noted throughout our submission, DNSPs require access to data and network control functions in order to meet licence conditions to ensure the safe, secure and reliable supply of electricity to end customers. It is crucial that DNSPs are able to access certain "Must Have" services (i.e. essential services) provided free of charge to the accredited parties and recovered through annual metering charges from the MC to the customer or retailer. These "Must Have" services include:

- meter reads (remote access for interval data);
- existing direct load control;
- events and power quality;
- remote meter service checking;
- loss of supply detection; and
- disconnection and reconnection.

The NSW DNSPs note that there is a risk that network businesses may be charged for additional metering services. The new arrangements create a potential situation where each new MC has an unregulated monopoly for network services.

We note that whilst it is fundamental that DNSPs are able to have access to such services, there is less of an incentive for MC's to provide such functions at a reasonable price. This is because unlike other services, MCs does not need to compete against other MCs to provide network services. As MC's effectively have a monopoly over network services, the NSW DNSPs note that without appropriate regulation of charges there is a risk that DNSPs may be charged inflated prices for access to advanced network services.

The NSW DNSPs note the need for further consideration of this issue. We suggest that the AEMC consider clarifying the pricing rules, investigate whether setting limits on services categorised as advanced is appropriate/ a proportionate response, and that clarification in the rule is made to enable DNSPs to recover any new metering charges through their operating expenditure.

If the intent is for such services to be provided by the MC under the new metering framework, then it critical that appropriate service levels are placed on the MC so that networks will have an assurance that upon request a service will be provided to specific service levels and within a certain timeframe.

4.3 Adding new functions

The NSW DNSPs note that our preferred framework for adopting a common meter protocol and common market access B2B gateway is not viewed as being as supportive of innovation as other framework models.[11] However, we note that this issue could be addressed by allowing (but not requiring) a separate services gateway to be created by innovative MCs.

However it should be noted that the COSEM/DLMS meter protocol supports the development of new functionality developed by independent vendors because its object and data model has this flexibility. This can happen in two ways:

- the implementation of DLMS functionality that already exists in the broader library of definitions but does not yet exist in the Australian subset minimum functionality or;
- the development of brand new functions not yet defined, but utilising the same data and object model described in COSEM/DLMS

More broadly, by allowing a separate services gateway to be created by innovative MCs. The common market gateway would continue to be used for all standard messages and commands with new innovative services managed through an alternative interface and modified protocols established through bilateral agreements. This is shown in the diagrams below.
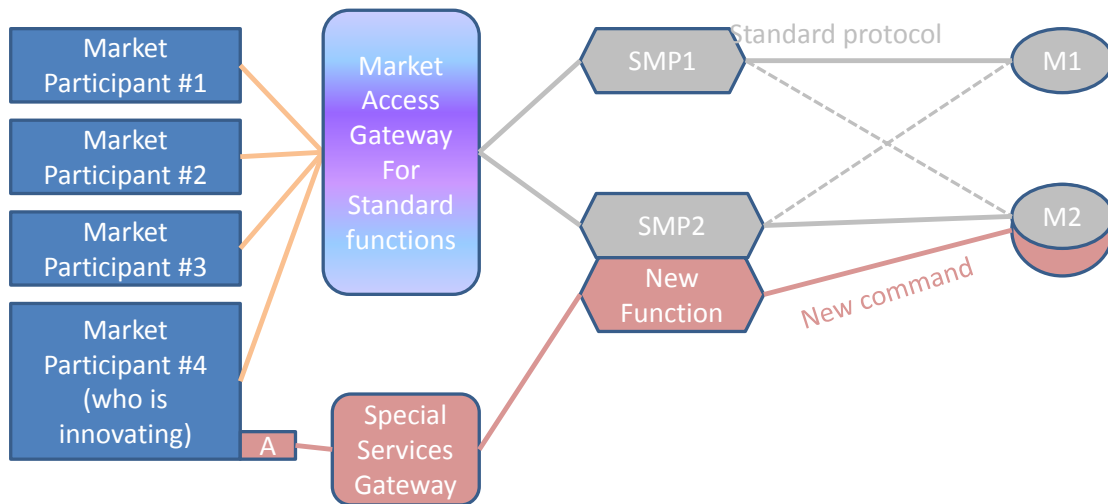
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[11] Refer to Table 1.

Figure 4 – Adding new functions via a separate service gateway

A key benefit of allowing a separate service gateway is that it would enable 'new' or market undefined functions to be implemented rapidly with vetting only by the MC and DNSP. This would help to avoid adverse impacts upon other functions and would help to ensure that the stability of the network or the ability for DNSPs to respond appropriately in an emergency situation was not adversely affected.

The NSW DNSPs note that the creation of a separate service gateway for the development and testing of new services in a non-production environment would support innovation in enhanced network services and provide the flexibility to make use of information sourced from the market. If innovative services become standardised at some later point they could be introduced to the common business gateway.[12]

4.4 The role of SMPs

The NSW DNSPs note that there is no clear justification for a separate SMP role. We consider a better approach would be to split and allocate these responsibilities to existing roles present in the market. Adopting such an approach would minimise the complexity in implementation (processes, IT systems and contracts) and change in existing communications.

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[12] 'New' functions once adopted by a large number of MCs or customers be reviewed and adopted into the defined set of services within the market protocol.

Topic	AEMC Question	NSW DNSP Response
Common Market Protocol **Section 5.1.1.**	The AEMC is seeking comment on the following options: • adopting a common meter protocol based on the internationally accepted DLMS/COSEM protocol; • adopting a common protocol based on DLMS/COSEM, except in Victoria where protocol translation could accommodate existing metering investment; and • no common meter protocol is adopted and protocol translation is allowed throughout the NEM.	As noted in our submission, the NSW DNSPs strongly support the adoption of a common meter protocol based on DLMS/COSEM for jurisdictions outside of Victoria. We note that adopting such an approach is likely to enable the transition to cost reflective prices, facilitate competition in metering and related services, and promotes consumer choice in an efficient manner and consistent with the National Electricity Objective (NEO). Given that Victoria has a high penetration of smart meters, adopting a common meter protocol is unlikely to deliver the same level of benefits as jurisdictions which have low levels of smart meter penetration. Consequently, we consider that there should be a derogation for Victoria not to adopt a common meter protocol and instead adopt a common translation protocol. The NSW DNSPs do not support the adoption of proprietary protocols. We note that if such an approach is adopted it is likely to lead to suboptimal outcomes for market participants and consumers. The loss of interoperability from adopting such an approach will most likely result in increased meter churn and will stifle competition by creating barriers to entry. (Refer to scenario outlined in section 2.2 and Table 1 of the NSW DNSPs submission).
Selection of common market protocol **Section 5.3.4**	The AEMC is seeking comment on the following issues relating to the selection of a common market protocol: • should an internationally accepted meter protocol form the foundation of the NEM common market protocol?. • is DLMS/COSEM sufficiently well developed to be used as the foundation for a market protocol, given the potentially synergies that exist with smart grid interoperability and other meter standards? • would the costs of developing an Australian specific services based common market protocol be likely to deliver sufficient benefits compared to using an internationally accepted metering protocol? • would extensions to the B2B gateway present a viable option for the development of a services based common market protocol?	The NSW DNSPs consider the common market protocol should be developed independently from a common meter protocol. In contrast to a meter protocol, the broader market model involves interfaces between various businesses and market participants. It links with parties outside of the market and also links into market administration systems. The market model also operates with higher levels of abstraction and specific business rules for the various market players. The market model must accommodate access security and authentication at a customer level, connection point level and at a jurisdictional level (rather than just at a metering hardware level). The model would also need to manage market specific work flows and prioritisation of messages, such as for network security. The market access protocol is developed and driven by the specifics of the Australian market rules and administered by the Australian market system. The timeframe for development and implementation must be managed locally and independently of other development timeframes that might be the case with a specific meter protocol For this and similar reasons, a market access protocol should operate separately to the meter protocol. We note that a B2B gateway appears to be a suitable option for acting as the transaction portal between participants, as it is already embedded within business processes.

Topic	AEMC Question	NSW DNSP Response
		However, it is important to note that development of a common market protocol will require the definition of smart meter functions and actions required for each transaction to allow consistent business rules to be implemented into business systems for DNSP's, Retailers and other accredited parties.

We note that in other, international jurisdictions, the benefits of interoperability through a common meter protocol are not utilised for the purpose of common market access. Instead, the advantage is achieved more generally by a single jurisdiction being able to interchange equipment from multiple metering equipment vendors. This approach encourages a different level of economic efficiency – that of metering equipment vendor competition – whilst maintaining a consistent and future proof capability of the installed fleet of metering equipment. Examples of this include France where companies such as Itron, Iskra, Landis & Gyr and Sagem compete for a slice of the market of equipment supply, whilst the "MC" for a given jurisdiction is fixed.

For these markets, retailer and other market participant access is via a Market Access Protocol rather than directly through a common meter protocol.

Whether the existing B2B gateway can be extended to provide a basis for the development of a common market access protocol will depend on the expected service levels and how closely the current asexml standard[13] of B2B matches any international protocol. |
| **Maintenance of the common market protocol Section 5.1** | The AEMC is seeking comment on the following:

1) would AEMO be the most appropriate entity to develop and maintain the common market protocol?

2) is there the potential for the responsible entity to adversely impact on the competitive provision of DSP and related services?

3) would AEMO be regarded as sufficiently neutral, should the common market protocol be based on the existing B2B arrangements, as the B2B procedures are maintained by the Information Exchange Committee, established by AEMO? | The NSW DNSPs note that whether AEMO is the most appropriate entity to develop and maintain the common market protocol will depend on whether a DLMS/COSEM protocol is adopted or whether the existing B2B gateway is extended.

Given that the NSW DNSPs have a preference for a common market access protocol based on a B2B gateway being adopted, we consider that AEMO would be the most appropriate entity for developing and maintaining the common market protocol.

The NSW DNSPs support the ENA's response to this issue. |

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[13] aseXML is a standard developed by Australian energy industries to facilitate the exchange of information between participants of the energy industries using XML. The aseXML Standards Working Group (ASWG) is responsible for the development and maintenance of the aseXML standard

Topic	AEMC Question	NSW DNSP Response
Adding new functions to the common market protocol Section 5.4.2	The AEMC is seeking stakeholder's views on whether the accredited parties and MPs should be required to define new functions in the smart meter functionality specification before they can be implemented. In particular: • would requiring new functions to be fully documented before they are used stifle innovation and reduce competition in the provision of DSP and related services? • would not requiring new function to be documented be likely to lead to reduced levels of interoperability, and hence reduce competition in the provision of DSP and related services in the longer term?	The NSW DNSPs would prefer to have new features documented as part of the common market protocol and communicated to relevant parties before they are used, however we recognise that this may result in delays in delivery and may stifle innovation and competition in the short term. We note that this issue could be addressed by allowing (but not requiring) a separate services gateway to be created by innovative MCs. The common market gateway would continue to be used for all standard messages and commands with new innovative services managed through an alternative interface and modified protocols established through bilateral agreements. The gateway review would need to include at a minimum, a review by DNSP's to ensure that the functionality of the new service would not adversely affect the stability of network infrastructure or the ability for the DNSP to respond appropriately in an emergency situation. If innovative services become standardised at some later point they could be introduced to the common market gateway.
Common Meter Protocol Section 5.5	The AEMC is seeking feedback on the following: • should there be a common meter protocol? • if a common meter protocol is required, should it use the internationally accepted DLMS/COSEM protocol as its foundation? • if a common meter protocol is required, should existing Victorian smart meter operators be required to offer a protocol translation to the new common meter protocol? • without a common meter protocol do proprietary meter protocols (and protocol translations) be more likely to support competition in DSP and related services?	Whether it is appropriate to adopt a common meter protocol or not will depend on the existing level of smart meter penetration. Where there is a low penetration of smart meter penetration optimal outcomes and interoperability is likely to be achieved via the adoption of a common meter protocol such as DLMS/COSEM. However, where a jurisdiction has a high level of existing smart meter penetration, such as Victoria, adopting a common meter protocol is likely to result in suboptimal outcomes and increase market participant and consumer costs in the short term. Consequently, the NSW DNSPs support the adoption of a common meter protocol for NEM jurisdictions and consider that there should be a derogation for Victoria not to adopt a common meter protocol. Rather we note that in Victoria, interoperability can be achieved by adopting a common translation protocol in conjunction with a common market access B2B gateway. Key benefits of adopting a common meter protocol include: • Increased competition for metering equipment due to increased interoperability • Supports effective MC of last resort event arrangements, as it simplifies the process for transferring the data responsibilities to another registered provider; • Manufacturers have certainty in the development of communication modules for the minimum functional specification metering equipment Under the AEMC's contestable metering proposal if a MC of last resort event occurs, it will be a more efficient process to transfer the data and other metering functions and responsibilities to another registered provider if a common metering protocol was adopted. Without the common protocol option it is likely that meters would need to be replaced or

Topic	AEMC Question	NSW DNSP Response
Common Meter Protocol Section 5.5 **(continued)**		that some type of protocol translation developed to enable the MC of last resort to access the meter. Both are time consuming and expensive exercises. Given that the intent of having contestable MC's in the future is to drive competition and innovation it is highly likely that a number of new companies would be seeking to be involved in this metering space. This raises the potential of a MC of last resort event. Further reasons for adopting DLMS/COSEM as the common meter protocol include: • It is an interface model that accommodates interface objects with standard identifiers and data types to ensure the method of *access* to the objects is consistent irrespective of the objects that are available. The functions available are *self describing* and the data model semantically clear. In combination, this helps to ensure successful interoperability. • Additional objects can be added to accommodate evolution of functions, without changing the access method. This means that it allows for future innovation in functions and services. • It is independent of the data transport layer, more easily enabling a range of communications technology solutions to be utilised. • There is an existing, rich library of interface classes already defined, describing widely used meter and smart meter functionality. • The model supports security, secure access, firmware image transfer and messaging. • The model supports conformance testing of components, better ensuring successful interoperability between metering equipment vendors. • There are a number of European (Netherlands, France, Spain, UK, Italy), Asian (India) and Middle Eastern (Saudi Arabia) implementations as well as meter vendor sponsored companion standards (IDIS) that can be referenced for applicability and learning's. • It is defined in IEC standards and is internationally supported and developed, better ensuring sustainability of standard and lower maintenance cost obligations compared to developing an Australia specific meter protocol. • A companion standard (minimum functionality) can be established and maintained for the Australian context as a subset of existing objects, delivering a level of customisation suited for the Australian market without attracting a significant support and development cost that would otherwise be the case if a bespoke Australian meter protocol was developed and adopted. Where there are low levels of smart meter penetration, we consider that proprietary protocols are unlikely to support competition. Refer to section 2.2 of our submission.

Topic	AEMC Question	NSW DNSP Response
Proposed smart meter communications architecture Section 5.6.4	The AEMC is seeking stakeholder's views on the proposed architectures discussed on pages 31 and 32 of the draft report. In particular, should the proposed architecture of: 1) a protocol translation at the point of entry (Figure 5.1) be supported in the NEM? 2) a common meter and market protocol (Figure 5.2) be supported in the NEM? 3) the proposed protocol that allows communication via either the meter protocol or the market protocol (Figure 5.3) be supported in the NEM? 4) In addition, the AEMC is seeking stakeholder's views on whether changes to the NER would be required to allow the SMP to manage access, security, congestion and message validation required for smart meter deployments?	The NSW DNSP's support the use of the DLMS/COSEM standard[14] as a common meter protocol in conjunction with an extended B2B gateway to support smart meter transactions. As noted in Table 1 of our submission, such a framework is likely to facilitate effective retail competition as well as support competition amongst MCs; ensure the continuity of existing functionality; remove barriers for new entrants; minimise meter churn; and facilitate access at a low cost (Refer also to section 3 of our submission) The NSW DNSPs recommend that access, security, congestion and message validation should be addressed through changes to the National Electricity Rules (NER). We consider that currently, the NER does not adequately address these issues. Regarding the role of the SMP, please see our comments in response to the AEMC's questions regarding options of the SMP.
Smart meter provider Section 5.7	The AEMC is seeking comment on whether the SMP's responsibilities should be retained in a separate role, or whether these responsibilities should be assigned to an existing entity.	The NSW DNSPs consider that the SMP roles discussed in the Draft Report should be split and allocated to the existing MP/MDP roles present in the market, representing a new accreditation type available to existing or new participants in the market. This would be achieved by requiring smart meter MP/MDP's to obtain the appropriate level of accreditation by AEMO. This would minimise complexity in implementation (processes, IT systems and contracts) and communication by eliminating the need to create a new SMP role within the market.
Whether to regulate access Section 6.1	The AEMC is seeking comment on the following: • whether the right of access to smart meters should be enforced under the NER and, if so, to what degree (e.g. should right of access apply to all smart meter functions or in relation to providing certain services); • what are the contractual arrangements that are expected to be in place and to what extent these contractual relationships are to be supported by	The NSW DNSPs note that the NER generally covers off on measurement services and access to data. Access to smart meter functions should be authorised at a service level. The NSW DNSPS consider that the NER should determine the contractual arrangements that must be in place to ensure effective market operation (i.e. Retailer to MC, MC to DNSP, Retailer to DNSP). It would be expected any SMP activities would be accredited by AEMO and subject to newly developed service level requirements (SLRs) to ensure compliance. Further consideration is needed as to the relationships between customer/DSP providers/retailers/DNSP's. NSW has over a third of its customers on load control and access to services changing in this area could be severe. For example, if a DNSP is denied direct access to smart

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[14] Specifically, the NSW DNSPs support the DLMS/COSEM standard and a agreed subset of functionality as a minimum standard described in an "Australian" companion standard (selected from the existing broad Cosem/DLMS library of functionality).

Topic	AEMC Question	NSW DNSP Response
	rights under the NER; • how the market (the NEM as a whole or the retail energy market) would be impacted if participants are denied access to smart meters; how would different participants be impacted;. • how the existing rights and obligations relating to the use of metering infrastructure and metering data would impacted by smart meters.	meters, then contractual arrangements need to be put in place with all MC and Retailers to manage network integrity functions and maintain clear accountabilities, performance standards and liabilities to manage statutory obligations i..e. WHS, public safety, network reliability and security etc. Refer to sections 4.1 and 4.2 of our submission.
Services provided Section 6.2	The AEMC is seeking comments on: • how the services that could be enabled by smart meters be defined and should these services be subject to regulation; • whether there would there be alternative means of providing these services other than through a smart meter.	Whether services provided are regulated or not will depend on the nature of each function/service. As a starting point, the NSW DNSPs suggest that the definition of services should be categories into those that are metrology, those that are essential to support the meter infrastructure, essential network management service, additional/advanced services and undefined/new services. This would enable classification and allocation of regulation by group of services. If expressed according to the AEMC's categorisation of services in its Draft Report the relevant categories would be: • <u>Basic</u> - this could be further categorised into essential metering support services and essential network management services which should be mandatory for all meters; • <u>Advanced</u> - additional/advanced services which meters should be capable of providing, however, the provision of these services should come at a price; • <u>New:</u> undefined new services For further details refer to Appendix 1 of our submission.
Charging for services Section 6.3	The AEMC is seeking comments on: • under a contestable market for the provision of services enabled by smart meters, could we be confident that efficient pricing outcomes for access charges would be likely to emerge; • whether there would be risks to efficient pricing outcomes and, if so, how the risks may they be addressed.	Cost reflectivity is always going to be a challenge in this area. As the service provided is contestable there is no overarching review to ensure customers are receiving the best value for money, particularly if there are a reduced number of suppliers operating in the area (eg rural distribution areas). The NSW DNSPs are concerned that contestability may result MCs 'cherry picking' the profitable sites to the detriment of the non or less profitable sites. The NSW DNSPs consider that services which have been identified as essential services should remain free of charge to accredited parties and recovered as a metering charge by the MC. Charges for additional or advanced services should be regulated to address the potential issue of monopoly prices being charged for these services.

Topic	AEMC Question	NSW DNSP Response
		It is important that there is appropriate price regulation over the provision of basic/essential services, as from a DNSP perspective MC's are a virtual monopoly provider of network services. If charges for essential services are not regulated MC's will have the ability to increase charges above reasonable cost, as the DNSP cannot 'shop around' for a better price as the MC is selected by the customer or retailer and will have contractual obligations. The NSW DNSPs note the need for further consideration of this issue. We suggest that the AEMC consider clarifying the pricing rules, investigate whether setting limits on services categorised as essential is appropriate/ a proportionate response, and that clarification in the rule is made to enable DNSPs to recover any new metering charges through their operating expenditure.
Consumer protection Section 6.4	The AEMC welcomes comments on whether any of their recommendations under this review will pose new risks to consumers and what these risks may be.	If there is limited regulation the natural alignment of single MC to Retailer with strategic partnerships will create an environment where there is little or no competition to change MC without a retailer change. There is therefore a high risk that the customer will be paying an increased cost to maintain their metering services.
Accreditation of parties Section 6.5.1	If third party service providers are to have obligations under the NER, consideration is required as to whether they need to be defined as market participants and register with AEMO. Whether they need to accredited by AEMO for access to smart meter functionality also requires further consideration. The AEMC welcome comments on these issues.	All third party service providers should require accreditation by AEMO to access smart meter service/functions. If this was not managed then there will be less ability to hold other market participants to account for their obligations with the potential confusion in the cause of an issue (especially with high volume activities such as load control). Appropriate accreditation will also play an important role in ensuring the delivery of basic/essential metering functions such as reading to allow networks and FRMPs to bill. The NSW DNSPs consider that it must be mandatory that MCs and SMPs are accredited (as an extension of current MP/MDP accreditations), and that appropriate and regular auditing by AEMO is maintained
Smart metering standing data Section 6.5.2	Supporting discovery of smart metering standing data requires further assessment. There are mechanisms under the NER that provide for 'NMI discovery'.34 These provisions could be expanded to provide for the discovery of smart metering standing data. However, clarifications would be required on who would be accessing smart metering standing data and under what circumstances.	The NSW DNSPs support a review of standing data and a definition of which elements of the data should be accessible to which roles. We also note the need for adequate identification of the type metering installed at a premise is made available in MSATS.