GRID NET

30 January 2014

Australian Energy Market Commission
Level 5
201 Elizabeth Street
Sydney NSW 2000, Australia

Re: Framework for Open Access and Communication Standards Review

Dear Sirs:

Please find attached Grid Net's written submission for the AEMC Framework for Open Access and Communication Standards Review proceedings.

As background information, Grid Net is a software company that develops machine-to-machine software for the smart grid and smart home markets. The PolicyNet M2M Smart Grid Software has been designed and developed using leading government and utility industry standards and specifications. Commercially proven to scale in mission-critical, large-scale, smart meter infrastructure deployments, the PolicyNet Software delivers an open standards-based, reliable, secure, machine-to-machine platform for the management of intelligent smart grid and smart home networks.

Integrated with leading power distribution network devices, the PolicyNet M2M Smart Grid Software provides support for Advanced Metering, Distribution Network Monitoring & Control, Distributed Generation, Load Shaping, Demand Response, and Smart Home utility programs. Based on leading internet protocols, the PolicyNet Software can be used to securely and cost-effectively provision, configure, monitor, and manage 10s to 10MMs of distributed smart grid and smart home devices.

In the Australian market, the PolicyNet M2M Smart Grid Software is the only commercially deployed advanced metering system software (at SP AusNet) that fully meets the Victorian Department of Primary Industries, Minimum AMI Functionality Specification (Victoria) document, dated September 2008.

Thank you for the opportunity to submit our views and comments for your consideration.

Best Regards,

Ray Bell
Chairman and CEO

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5.3.4 Areas for comment

We are seeking stakeholder views on the appropriate selections of a common market protocol. In particular:

- **should an internationally accepted meter protocol form the foundation of the NEM common market protocol?**

A common market protocol should be internationally accepted, and not be a country specific protocol. The International Electrotechnical Commission 61968 standards are a series of broadly adopted international standards that define open standard-based information exchanges between electrical distribution and open market operational and business support systems. These standards are developed by Working Group 14 of Technical Committee 57 of the IEC (IEC TC57 WG14).

The IEC 61968 standards support the inter-application integration between the utility enterprise, open market participants, and the end customer (or consumer) systems or applications. IEC 61968 defines interfaces for all the major elements of an interface architecture for Distribution Management Systems [DMS], and the "currently under development" IEC 61968-10 sub-standard is defining interfaces for business functions external to distribution management systems, which includes Energy Management & Trading [EMS], Retail [RET], Supply Chain & Logistics [SC], Customer Account Management [ACT], Financial [FIN], Customer Premises [PRM], and Human Resources [HR] systems and applications.

The IEC 61968 standards and profiles are typically implemented with middleware services (e.g., web services or java messaging system) that broker messages among systems.

- **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?**

DLMS/COSEM, or other meter recorder application protocol standards like ANSI C12.18/.19, are not the right choice for a market protocol. Web Services and JMS are commonly used enterprise integration technologies, and can easily accommodate new functionality in the future. Modifications to standards-based meter protocols to allow new business and market functionality take years from concept to implementation. An IEC CIM compliant protocol is the natural choice integration of the utility ecosystem (distributor, retailer, customer, and other market participants).

- **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?**

No, why create yet another wheel? The actual costs and efforts to create a broadly adopted common market protocol are significant, not to mention they should not be singular to a specific country if they are truly to be a "common market protocol" that is adopted worldwide by product and systems developers.

The IEC CIM open standards work has been under development for many years, and is already being broadly adopted within the global community given its current state of maturity. Not to mention that the metering features and functionality found within meter recorder protocols like DLMS/COSEM and ANSI C12.18/.19 are already well represented in the published IEC 61968-9 Interface Standard for Meter Reading & Control [MR] sub-standard. In addition, there is open standards work currently underway to harmonize (or model) both the ZigBee Alliance SEP (SEP 2.x) specification and the ECHONET Lite specification within the IEC CIM.

Meter recorder protocol standards like DLMS/COSEM and ANSI C12.18/.19 are not appropriate for utility and market inter-application integration. Adoption of approved international standards for utility back-office inter-application integration, such as IEC 61968, offers the benefit of leveraging the work of a global ecosystem of utility standards development professionals.

- **would extensions to the B2B gateway present a viable option for the development of a services based common market protocol?**

MSATS/B2B for basic functionality only. New services offerings will rely on the ability of their provider to innovate and differentiate. Having to expose new functionality to the market will hinder this requirement.

5.4.1 Entity responsible for maintaining the common market protocol

We are seeking stakeholder views on the appropriate entity to maintain the documentation for a common market protocol. In particular:

- **would AEMO be the most appropriate entity to develop and maintain the common market protocol?**

To be honest, AEMO is only as good as the consultants that it employs. Our recommendation is that there should be a open industry and market body acting as the AEMO Consultant (under the auspices of Standards ANZ?, SGA?, Academia?, CSIRO?, Who?) to the IEC. This would ensure AEMO representation within the IEC for the submission and development guidance development of Australian-specific requirements for the common market protocol.

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

Not if the DSP market participants take an active contributory and development guidance role within the previously suggested AEMO Consultant entity and the relevant IEC TC working groups.

- **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?**

See prior responses and suggest approach.

5.4.2 Adding new functions to the common market protocol

We are seeking stakeholder's views on whether the accredited parties and MPs should be required to define new functions in the smart meter functionality specification 28 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?**

Yes. Definitely. Contestability under the Power of Choice implies the ability to innovate and differentiate in a competitive environment.

- **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?**

We believe that Minimum Functionality (currently SMI 1.3) is where full and open disclosure and specification should be regulated. New functions must be allowed to encourage service innovation.

5.5 Common meter protocol

We are seeking stakeholder's views on whether a common meter protocol should be adopted, or whether SMPs should be able to use protocol translators. In particular:

- **should there be a common meter protocol?**

Absolutely. Our recommendation is DLMS/COSEM as an open standards-based meter recorder application protocol within the meter itself. The IEC 61968-9 (and emerging 61968-10) standards and related Profiles should be the common meter protocol "northbound and southbound" interfaces from the meter recorder application running on the meter. The added value of this approach, is that the IEC standards already abstract the ANSI C12.18/.19 meter protocol (running on the Victorian smart meters), which means that these deployment can be "grandfathered" in, and replaced in the future with DLMS/COSEM (either via over the air firmware replacements on the deployed meters, or as the deployed meter is aged out of the meter population).

- **if a common meter protocol is required, should it use the internationally accepted DLMS/COSEM protocol as its foundation?**

See previous response.

- **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?**

  See previous response.

- **without a common meter protocol do proprietary meter protocols (and protocol translations) be more likely to support competition in DSP and related services?**

No.

5.6.4 Proposed smart meter communication architecture

We are seeking stakeholder's views on the proposed architectures above. In particular, should the proposed architecture of:

- **a protocol translation at the point of entry (Figure 5.1) be supported in the NEM?**

See previous responses.

- **a common meter and market protocol (Figure 5.2) be supported in the NEM?**

See previous responses.

the proposed protocol that allows communication via either the meter protocol or the market protocol (Figure 5.3) be supported in the NEM? In addition, we are 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?

See previous responses.

5.7 Allocation of the SMP role

We are 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.

We believe that the SMP responsibilities could be equally provided by a separate entity, or by an entity that is providing a combination of SMP, MDP, MP, SMCN, FRMP, or ESCO services. As such, we believe what is required is a well defined SMP Role service and responsibilities definition, and the open market participant structures will evolve based upon competition versus regulatory driven structures.

6.1 Whether to regulate rights of access

We welcome comments on:

- **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);**

Tricky issue, given revenue meter data ownership. End Customer (consumers) have legal rights to access their consumption (and delivery) information, and to dictate who else can access their information. Today, DNSP's (who currently own the deployed meters in Australia) have legal rights to the "quality of supply" and "service level" information recorded by the meter. In a future market scenario, the other market participants will have certain legal rights to certain meter data produced by the meter.

- **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; and**

See previous response.

- **how the existing rights and obligations relating to the use of metering infrastructure and metering data would impacted by smart meters.**

See previous response.

6.2 Nature of services provided

We welcome comments on:

- **how the services that could be enabled by smart meters be defined and should these services be subject to regulation;**

It is in the best interest of the planet (not to mention the market participants), that "quality of supply" and "service level" information recorded by the meter be provided to the DNSP. This actionable information can be used by the DNSP to lower operational costs and significantly reduce line and fault loss through directed capital spend, resulting in (i) a lower carbon footprint for electricity distribution, and (ii) lower regulated rates for distribution.

- **whether there would there be alternative means of providing these services other than through a smart meter.**

There are lots of market participant services that can be realized by the market participants from the meter data available on today's advanced smart meters. That being said, other than protecting the DNSP's rights to the data referenced above, we believe that the regulatory entities should let the free economics and competition determine the future energy information service models and businesses.

6.3 Whether to regulate charges for access

We welcome 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; and**

Yes, driven by free market economics and open competition.

- **whether there would be risks to efficient pricing outcomes and, if so, how the risks may they be addressed.**

We do not believe there will be any risks.

6.4 Consumer protection requirements

Our focus for the remainder of this review is considering whether any of our recommendations under this review will pose new risks to consumers and what these risks may be. If new risks could be introduced, we will assess whether the existing consumer protection mechanisms would provide sufficient protection or whether new measures may be required. We welcome comments on these issues.

See previous responses.

6.5 Other issues

A number of other issues relating to the regulatory framework and provisions under the NER require consideration. Two of these issues are discussed below.

6.5.1 Accreditation of parties

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. We welcome comments on these issues.

Yes, to ensure that the entity meets and adheres to the service and responsibilities of the defined role.

6.5.2 Smart metering standing data

Supporting discovery of smart metering standing data requires further assessment.

There are mechanisms under the NER that provide for 'NMI discovery'. 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.

(*) Standing Data contains information about a connection point such as the address and the distributor. The data does not include consumption information. In this case, NMI stands for National Metering Identifier.

Yes, via self describing Web Services or Java Messaging System interfaces.