Submission to the

Ministerial Council On Energy

Regulatory Impact Statement

May 2008

Paul Budde
Managing Director
Paul Budde Communication Pty Ltd
5385 George Downes Drive
BUCKETTY NSW 2250

Tel 02 4998 8144
Fax 02 4998 8247
Email: **paul@budde.com.au**
Web site: **www.budde.com.au**

Summary

Smart Grid Australia (SGA) is a new organisation and following its inaugural meeting in April 2008 set up a panel to provide input to the MCE paper on Smart Grid Roll Out and the Regulatory Impact Statement. As the facilitator of this alliance, I am submitting the enclosed response under my own company name Paul Budde Communication Pty Ltd.

Whilst meters are a critical component of a Smart Grid, they are not the only source of data for a smart grid. Sub stations provide key data, as do smart grid devices like pole top switches, cap banks, reclosers and sectionalisers. These distributed smart sensors with smart meters increase distribution grid observability in several ways utilising analytics and self healing algorithms across:

- line monitors (for PQ monitoring and fault / failure localisation);
- transformers and other monitors of network health;
- smart fault detectors (downed lines and arcing fault detectors);
- network communication devices.

For this to work there needs to be the use of "Open Systems" and interoperability between products and services within the Smart Grid. SGA is a representative body of many industry users and suppliers and we feel we could contribute more than just these comments.

We would like to offer our services to be a member of the Technical Working Group within MCE.

On Question 1 in the RIS:

The regulatory position regarding smart meters with respect to the lack of encouragement offered to distribution businesses to seek efficiencies where there is significant uncertainty and technology risk should be more carefully considered. As the problem of a shrinking field workforce and ongoing customer demand for improvement to distribution network reliability increase, schemes such as the Efficiency Benefits Sharing Scheme (EBSS) and the Service target performance incentive scheme (STPIS) will need to be modified to cater for the fact that innovation in the electricity industry will be required to address these problems. In order to incent businesses to invest in innovative technologies such as smart meters and, in the future, smart grids, distribution businesses should be allowed to add assets from such investments to their asset base (to enable revenue flow to distributors from a return on assets) with due consideration by the regulator in assessing the pricing impact to the risk of the investment. Smart Grids present a different model to the existing regulatory arrangements which stipulate the compliance with licence conditions. If the EBSS and STPIS can be co-ordinated to reward distributors for reducing operating cost and improving reliability, then the incentive to implement smart grid capability will lead to real benefits to cost and reliability for customers.

On question 2 in the RIS:

SGA fully supports the recommendation to include the HAN in the minimum functionality. The HAN opens up the possibility of leveraging the HAN to connect the National Broadband Network to the meter and thereby potentially reduce the cost of the smart meter communications network. The unique opportunity offered by the parallel processes running to establish a broadband network to 98% of Australian homes and a national smart meter rollout should be explored in order to avoid the further duplication of telecommunications infrastructure. Of great concern to the SGA is the potential that failing to consider the future potential of a smart grid would mean building a further overlay communications network (over and above that built for smart meters) because the network built for smart meters did not consider requirements beyond the current minimum requirements defined in the CBA. Smart grids will require significant network bandwidth (i.e. possibly up to 50kbps but definitely not the 12Mbps for the NBN) in order to obtain real time status from every network element and manage the dynamic distributed generation grid. This indicates that shared access to the NBN for both utility providers and Internet end users (broadband content consumers) could be feasible without any additional expense for the NBN network build.

It is understandable that the Smart Meter CBA needed to be limited to considering smart meter functionality, however, the implementation of the supporting communications network, if provided with foresight, could provide a platform for significant innovation in remote control and automation within the electricity distribution network. However, whilst no CBA of the breadth or detail completed for smart meters has been completed for smart grid functionality, it is unreasonable to expect that regulatory applications submitted by DNSPs for a more costly and higher bandwidth communications network will be favourably considered.

For this reason, SGA asks that the Department of Energy and the Department of Broadband collaborate such that the National Broadband Network rollout includes provision of a solution for electricity utilities as part of its open network delivery. This would then enable the delivery of a centralised communications network for smart meters and access to a high quality broadband network for ongoing smart grid applications without the associated expense of a separate communications network. The collaboration of these two significant industry sectors could enable a lower cost NBN (for example by DNSPs providing access to their power poles for carriage of the NBN fibre cables (thereby reducing the cost of fibre rollout where street ducts are not available) and a lower cost for DNSPs through access to NBN services.

The barrier to such arrangements in the past have been the lack of incentive for carriers to provide anything other than a standard carrier service to utilities. However, the NBN could be constructed to provide a carriage service similar to that used by the telecommunications carrier to monitor its own network. In other words, the carrier would cost the utility service as a bandwidth overhead to the hugely over-provisioned network built for content customers but not incur any significant cost to maintaining a physically separate access point.

As mentioned above, the HAN could allow the smart meter to be connected to the NBN and using a logical separation between the customer's broadband service and the utility service. As a further value add, the provision of a HAN could be used to both enable the DLC and IHD capabilities of the electricity utilities but also potentially a low cost way to distribute broadband to every power point in the home.

On question 13 of the RIS:

In reviewing the relative benefits of each option, the hybrid option of a distributor led rollout using a centralised communications and central data set would be lower cost than the Distributor led scenario considered in the CBA but still have all of its superior benefits. In addition it would address the risk of any distributor built communications network becoming outdated and immediately deliver an interoperable metering environment since all meters would need to communicate using the open IP network standard offered by the centralised communications network. On face value there appears to be no particular reason why adopting a single communications standard ahead of the international market would disadvantage Australian distributors in obtaining competitive prices for meters, as the open IP network would have economies of scale delivered by the openness of its network for other non utility applications and in particular the mass market access to the Internet. There are already smart meters available on the market (albeit representing a niche position) that have an IP (or Internet) interface and given the plethora of devices that will be connected to the Internet, the technology to integrate smart meter electronics with an Internet interface should be cost competitive and ensure longevity of supply.

Whilst it is understood that the meter market has evolved using proprietary standards, this is not unusual for many other industry specific applications and where proprietary standards have been adopted, the standards have tended to be short term and soon become Internet capable. Telemetry and building control are examples of these.

A further benefit of this approach would be that scarce resources in telecommunications skills would not need to be increased within each distributor and the use of the communications system for smart grids could provide significant further benefits for utilities.

On question 24 of the RIS:

Clearly, a change in direction from the DNSP led scenario presents a major risk to the Victorian model which is broadly in line with the preferred model found by NERA. However, in the event that the hybrid model is agreed, the Victorian solution will still allow the piloting and trialling of the conceptual benefits defined in the CBA. Of critical importance is the need to prove the consumer response and learn from this and adapt over time to optimise the demand response solutions as well as the technical risks for the project.

Bucketty May 2008