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The Chair, Ministerial Council on Energy
GPO Box 9839
CANBERRA ACT 2601

via email: mce@industry.gov.au

Dear Sir

***National Smart Meter Rollout***

Thank you for the opportunity to comment on the Phase One reports of the Smart Meter Working Group.

It is obvious from the reports that some good work has been carried out to assess different options for inclusion in a national minimum standard functionality specification. However, it is also clear that the terms of reference for this project have been framed narrowly around the notion of a national extension of the Smart Meter rollout that has been mandated in Victoria.

Since the original work in Victoria began:

- public and political awareness of the threat posed by global warming and climate change has blossomed;
- the link between rising greenhouse gas levels and climate change has been confirmed with a very high level of certainty;
- the most recent reports of the IPCC and numerous other authorities have established a undeniable connection between human activity (in particular, the burning of fossil fuels and de-forestation) and greenhouse gas levels;
- the world's top scientists are now calling for ***urgent*** action to avert catastrophic consequences with social, economic and environmental dislocation on a scale never before seen in human history;
- to achieve the *least damaging* prognosis, greenhouse gas levels have to peak and be stabilised by 2015 – a truly daunting challenge!

In a nutshell, the world has changed dramatically and it is time to undertake a sanity check whether goals set just a few years ago are still the right goals for today in the light of what is now known.

The growing demand for energy – in particular, electricity consumption – is one of the largest contributors to rising greenhouse gas levels. Fortuitously, the electricity industry is also one where there is great scope for improvement. Most electricity grids operate today as inefficient, dumb networks – pumping out electricity radially from central sources. Little or no technology is used beyond zone substations to optimise network operation and manage electricity consumption more effectively. The industry is ripe for a sweeping program of modernisation.

The term “Smart Grids” is rapidly emerging as an umbrella term describing such modernisation programs. By embedding computer and communications technology throughout the grid, every active element can be monitored and unprecedented levels of optimisation and control can be achieved. Estimates of the beneficial impact of Smart Grid technology on greenhouse gas emissions vary, but are commonly cited in the range 10% to 30%.

The term “Smart Grid” has really only emerged since the work in Victoria first began. Given this, it is not surprising that the approaches forged in Victoria ignore the bigger picture opportunities associated with Smart Grids. However, now that this technology is so clearly on the international agenda, it would be disastrous for national policy to blindly follow the approaches that were forged prior to the advent of Smart Grids.

This is not to deny that Smart Meters (as have been mandated in Victoria) will deliver some worthwhile benefits. Undoubtedly the introduction of time-of-use pricing will be a valuable catalyst in changing the behaviour of many energy consumers. However, some overseas modelling suggests that introducing Smart Meters alone would typically achieve *less than half* of the potential benefits of Smart Grids in terms of bringing Australia’s electricity supply grids into line with “world’s best practice”.

Broadening the deliberations to consider Smart Grid technology has important ramifications for the communications infrastructure that is deployed in conjunction with Smart Meters. If the communications requirements are defined narrowly in terms of sweeping up a daily collection of interval usage readings and occasionally broadcasting a demand-management request, a low capacity communications solution will suffice.

However, if the real potential of the Smart Grid is to be harnessed, the meter needs to be viewed as a pivotal element in a coherent and pervasive communication network. It sits at the gateway between the utility and consumers – and behind that gateway will be a growing array of energy-smart appliances and micro-generation sources. These need to be monitored and managed in real-time in order to operate networks in an optimum manner. This requires a much higher capacity, real-time communications capability.

Herein lies the sting! By rushing into an AMI rollout, Australia may shut the door on the opportunity to fully modernise its electricity supply networks through Smart Grid initiatives. Replacing meters is a costly exercise, and utilities as well as consumers are not going to want to digest that cost again any time soon. Assuming rollouts commence in the 2010 time frame, it is likely to be 2025 (based on a notional meter life of 15 years) before the opportunity to introduce Smart Grids comes around again.

This timeframe would take Australia *10 years beyond the IPCC deadline* for stabilising emissions if the enormous social, environment and economic dislocation of climate change are to be held down to the least damaging projections.

Based on statements made at the Metering Conference held in Melbourne from 23-25 October, none of the narrowband technologies tests was fully satisfactory. Overseas, new approaches are being forged to specifically overcome the limitations

of existing narrowband technologies. As an example, Iberdrola (based in Spain and the 4th largest utility in the world by market capitalisation) leads a consortium of European utilities that have determined the need for a robust, bi-directional communications solution with higher performance and better reach than any of those assessed in trials undertaken in Victoria. These requirements will be satisfied by design, and then implemented in silicon. The utilities supporting this initiative already have a collective demand for some 27 million units – and there is potential for this to increase to 60 million units. As a result, costs are expected to be on a par with the least expensive of existing technologies. The fruits of this work are expected to become available in time for mass deployments commencing 2010.

BPL represents another (existing) technology that is being used in a number of overseas Smart Grid deployments. It has the capacity to satisfy not only the communication needs of the utility, but also to enable the delivery of consumer broadband services, potentially delivering valuable side-benefits by introducing competition into an area that all too often is still held in the monopoly grip of the incumbent telecommunications provider.

In the light of these developments, a complete assessment of the AMI business case in Australia needs to take account of the risk that moving prematurely will either:

- deny Australia the benefits that Smart Grids can offer for the next 15 years or so; or
- inflict the burden of another costly meter upgrade program in a 5-10 year timeframe if those benefits are to be harnessed.

I believe that factoring these risks into the modelling work would yield significantly different results than those that have been presented to date.

I appreciate the pressure to meet tight deadlines – and recognise the possibility that this submission will be set aside because it does not conform to the relatively specific guidelines within which feedback has been invited. However, in the words of Lord Chesterfield *"Whoever is in a hurry shows that the thing he is about is too big for him."* There is no better time than right now to pause and check that nationally we are setting our sights on the right goals.

The health of the planet that we will leave to our children and to our grandchildren depends on seizing every opportunity – especially the big ones such as are on offer through the overhaul of ageing electricity supply networks.

Yours sincerely

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