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Landis+Gyr - PO Box 6274 South Sydney Business Hub Alexandria NSW 2015

Mr Eamonn Corrigan
Director
Australian Energy Market Commission
Level 5
201 Elizabeth Street
Sydney NSW 2000

16 October 2012

Re: Landis+Gyr's Submission: AEMC's Power of Choice Draft Report

Dear Mr Corrigan,

Landis+Gyr acknowledges the work that you and your team have undertaken with the Power of Choice initiative.

Landis+Gyr is an international leader in smart metering technology, and a key supplier of interval and smart meters in Australia, including to the Victorian AMI program, Ausgrid's Smart Grid Smart City project and Western Power's smart meter trial. Landis+Gyr has been manufacturing meters in Australia since 1921¹. Landis+Gyr's extensive manufacturing and R&D operations have been critical in the research, design and manufacture of meters to address Australia's unique industry requirements.

Based on Landis+Gyr's experiences both internationally and locally and on review of:

- The AEMC Draft Report : Power of Choice – giving consumers options in the way they use electricity (dated 6 September 2012);
- The AEMC Power of Choice Review Draft Report : Supplementary Paper - Principles for metering arrangements in the NEM to promote installation of DSP metering technology (dated 6 September 2012);
- The presentations at the Public Forum (on 3 October 2012) ; and

¹ In 1921, Landis+Gyr electricity metering operations were founded under Electricity Meter and Manufacturing Company Pty Ltd and over the years, through acquisitions and mergers, have evolved and operated under various names including EMAIL Pty Ltd and AMPY EMAIL Pty Ltd.

- The Stakeholder Reference Group meeting (on 10th October 2012),

Landis+Gyr would like to highlight a number of *critical issues and recommendations* to support a more successful implementation of this proposed initiative.

1. Network Benefits

The AEMC draft report acknowledges that there are significant benefits to be derived from the meter, Smart Grid and Energy Management system functions based on AEMC's proposed architecture of the meter (Supplementary Paper, page 9).

The AEMC proposed models rely on a *number of parties negotiating to deliver functionality above the proposed minimum functionality specification for societal benefits*. Landis+Gyr is not aware of an existing model where multiple parties have successfully negotiated an outcome that optimised deployment costs unless the parties are incentivised to do so; to meet regulatory requirements; or face risk of penalty if they fail to do so. The consequence of a failed negotiation is additional deployment costs for consumers including wastage of deployed assets, installation costs and costs associated with encumbered processes. In Landis+Gyr's opinion, the risk of market failure of this proposal is significant.

Recommendation 1A:

The AEMC's proposed minimum specification include the functionality as stated in the National Smart Metering Program (NSMP) Smart Metering Infrastructure (SMI) Minimum Functionality Specification – finalised after extensive stakeholder consultations and endorsed by SCER (9 December 2011).

Recommendation 1B:

As a minimum (if Recommendation 1A is not implemented), the AEMC's proposed minimum functionality specification must include considerations for:

1. Safety features including disconnect relay, temperature monitoring and consumer supply monitoring;
2. Network reliability features such as power quality monitoring, active and reactive load measurements from distributed generation;

3. Load control management features such as audio frequency load control (ripple) and under frequency load control functionality;
4. Home Area Network (HAN) connectivity features including the Smart Energy Profile (SEP);
5. Remote firmware upgrade features to support meter, Smart Grid and Energy Management System applications; and
6. Imposition of minimum standards for design, manufacturing and calibration of meters to ensure conformance to Australian conditions (such as lightning withstand).

This will reduce both the capital and operating costs in the long run and offers an optimised and efficient electricity infrastructure – leading to lower cost for consumers based on prudent investment.

2. Consumer Benefits

Landis+Gyr concurs consumers would benefit from retail time varying tariff models, but Landis+Gyr believes that consumers can only exercise choice when they have real-time and accurate information.

It is the availability of real-time information that *empowers consumers to manage and control their energy usage – and cost*. This drives the need to have all consumer premises equipped with up to the minute billing information of their electricity usage.

Recommendation 2A:

The AEMC's proposed architecture and scope of the Energy Management System requires further elaboration and Landis+Gyr requests that the AEMC forms a working group to define the details of its functions and provisioning mechanisms.

Recommendation 2B:

Consumer device connectivity (Home Area Network - HAN) must be based upon on a widely deployed open standard platform such as the ZigBee Smart Energy Profile (SEP) to accelerate the delivery of Energy Management Services to consumers.

Recommendation 2C:

Where Energy Management System functions are implemented, they must have a direct interface to an accredited revenue metering device/s to ensure that consumers have visibility and correlation to accurate and timely billing grade data.

The AEMC needs to incorporate in their proposed model the additional benefit of widespread HAN deployment - whilst Retailers can extend their retail product offerings to include 'load shedding' incentive models, distribution utilities can also use Energy Management System functions as Smart Grid business functions to establish 'guaranteed controllable load' agreements with consumers.

3. Modularity with proposed meter architecture

Since the introduction of smart metering technology, Landis+Gyr has observed the *rapid and continual evolution of technologies and applications* associated with meters and communications protocols like ZigBee and standards including IEEE 802.16e, IEEE 802.15.4g, IEC 62053-11, CIM 61968-9, ANSI C12.19 and IEEE P1901.2. Landis+Gyr expects this trend to continue and possibly accelerate in the future.

Recommendation 3:

The AEMC proposed model must include the deployment of modular meters to allow for installation, upgrade and replacement of meter communications without the need to replace the meter, at every instance of change.

Modular meters offer 'swap-ability' of devices, which creates flexibility for upgrades; reduces opportunities for stranded assets and reduces stockpiles of potentially non-useable assets.

Landis+Gyr contends that the consequences for not implementing our recommendation increases meter lifecycle costs with unnecessary metering hardware upgrades; a proliferation of devices for additional functionality such as disconnect relays; and wastage arising from technology upgrades and obsolescence.

4. Interval Metering

Landis+Gyr notes that one of the key reasons for the lack of consumer choice is due to *the current use of deemed profiles which does not incentivise retailers* to encourage change in consumer behaviour.

Recommendation 4A:

Halt all further installation of accumulation-only meters - to ensure an accelerated rollout of interval meters (based on distribution utilities' existing minimum specifications) for consumers to realise early benefits from changes to the network tariff model.

Recommendation 4B:

Effective immediately, all new and replacement metering projects are furnished with interval meters (based on distribution utilities' existing minimum specifications) across all states.

Recommendation 4C:

The AEMC issues a clear policy on planned implementation approach (with defined timelines) for the implementation of interval meters. This needs to reflect factors such as State or Federal governments' programs or initiatives (such as Australia's 2020 Renewable Energy Target) and its impact on this initiative.

Recommendation 4D:

Incorporate existing standards for the delivery of interval data to consumers such as the North American Energy Standards Board (NAESB) PAP 10 Energy Usage Information model (US Green Button initiative).

Landis+Gyr views that failure to implement these recommendations will result in the continued roll-out of low functionality accumulation-only meters by market participants – delaying community benefits that can be derived from empowering consumers.

A Perspective: The Victorian AMI Program

When the AEMC kicked off the Power of Choice initiative (March 2011), the Victorian AMI program was under review by the Victorian government where its viability in terms of its costs and benefits were assessed. With good leadership and governance, the Victorian AMI program has begun delivering benefits to its stakeholders. Thus far, the program's key outcomes achieved (or in progress), include:

- The use of smart meter data analytics to resolve network reliability and safety issues including over and under voltage conditions, loss of neutral, blown high voltage fuses and solar installation impacts, responsively - in most times ahead of the consumers' noticing a supply problem;
- Victoria Government, in collaboration with key stakeholders including retailers, has launched 'Switch On' campaign and when further combined other initiatives including removal of Time of Use (ToU) moratorium will lead to greater innovation in retail tariff plans to provide true Power of Choice for Victorian consumers; and
- The emerging range of energy management solutions, including portals and IHDs, from retailers, distribution utilities and third-party vendors that will enable consumers to now manage and control their energy consumption and costs in a real-time mode.

This is an exceedingly positive outlook – Victoria has now established its foundation for a smart grid and is well positioned to deliver an electricity infrastructure at a lower operating cost in the long run; and attain increased retail participation with introduction of innovative retail products to an informed and engaged community - a win-win for all stakeholders.

In Summary

Based on smart metering and DSP program successes in Victoria and internationally, Landis+Gyr urges the AEMC to incorporate the following in your final report to the SCER:

1. The AEMC's proposed minimum functionality specification to include all functionalities as detailed in the NSMP SMI Minimum Functionality specification, as finalised after extensive stakeholder consultations and endorsed by SCER (9th December 2011). At a minimum, a less preferable alternative, AEMC should consider incorporating safety, reliability, load control

management, HAN connectivity, remote firmware upgrade and manufacturing and design metering standards as part of its proposed minimum functionality specification.

2. The AEMC to form a working group to define the details of its proposed architecture and scope of the Energy Management System functions – as outlined in its proposed architecture for the meter.
3. Modularity of meters must be included in the AEMC's proposed meter architecture to seamlessly effect rapid evolution of technologies and applications with meter, Smart Grid and Energy Management System functions.
4. To halt all further installations of accumulation-only meters, start immediate deployment of interval meters (based on distribution utilities' existing minimum specification) for new and replacement metering projects and a clear policy on the planned approach for interval meter installation across all states.

The AEMC's Power of Choice is an exciting initiative that could change the way electricity is delivered and consumed. With the inclusion of some minor considerations, the AEMC proposal will deliver tangible benefits to all stakeholders - and not only to the consumers - at an optimal cost.

Landis+Gyr thanks the AEMC for the opportunity to respond to this submission.

Landis+Gyr is keen to engage, participate and assist the AEMC to ensure that the outcomes as set out in the Power of Choice are realised.

If there is any aspect of this submission you would like to discuss in greater detail, please contact me on +61 2 9690 7334.

Yours Sincerely,



Steve Jeston
CEO
Australia, New Zealand & South East Asia