energy networks association

SMART METERS: REMOVING REGULATORY BARRIERS AND MAINTAINING CONSUMER SAFETY FOR A MARKET-LED ROLLOUT IN NEW SOUTH WALES

ENA submission, 19 February 2016

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EXECUTIVE SUMMARY

ENA welcomes the opportunity to make a submission into the NSW Department of Industry consultation on jurisdictional safety regulation to facilitate the market-led rollout of smart meters in NSW.

With the introduction of contestable metering in the mass market sector, metering installation responsibilities will transfer from distribution businesses to retailers and metering coordinators. It will critical for the success of future smart metering initiatives that stringent safety requirements are maintained.

ENA notes that significant impetus for installation of smart meters in NSW will come from replacing aged or faulty meters or replacing meters of customers of the NSW Solar Bonus Scheme. ENA notes that new smart meters have different safety installation implications to current type 4 meters.

ENA is pleased to see the initiative undertaken by the NSW Government to review its processes to frame the rollout of contestable metering for small customers in NSW.

ENA considers that the NSW review may be helpfully informed by past experiences relating to the rollout of AMI meters in Victoria, the Home Insulation Program and solar photovoltaic installations.

ENA considers that the valuable lessons from safety precedents such as those referenced above is to ensure robust and effective safety regimes are in place especially to support introduction of new products and processes with significant safety implications.

ENA advocates maintaining strong measures to ensure appropriate training, audit and compliance measures relating to installation of smart meters for customers.

Metering installers will require safety and electrical skills training; knowledge to address asset and installation practices within specific network contexts; appropriate accreditation and individual authorisation, and be supported by a clear management and audit regime identifying clear responsibilities and accountabilities.

INTRODUCTION

The ENA is the national industry association representing the businesses operating Australia's electricity transmission and distribution and gas distribution networks. Member businesses provide energy to almost every household and business in Australia.

The ENA understands that the NSW Department of Industry, Division of Resources and Energy is undertaking targeted consultation on changes to legislation and regulation to facilitate the market led rollout of smart meters, in line with the national reform for small customer metering services.

The ENA has welcomed the stated intention of the national metering reform to achieve:

- better information;
- cost reflective pricing;
- better retail service;
- new products and services; and
- better network services.

ENA welcomes the focus within the current consultation process to "…*address perceived existing barriers to the market-led rollout of smart meters while maintaining the integrity of the safety, technical and compliance regimes*"[1].

The reform of metering services for small customers in the mass market must ensure safety for customers, installers and all other parties.

ENA has flagged the importance of ensuring appropriate review and amendment of jurisdictional safety regulation to maintain safety throughout the metering installation and operation in light of the very significant changes in processes and responsibilities under the national reform program. For this reason, ENA will contribute to the NSW review process. However, ENA will not address the specific detail of NSW jurisdictional measures, which will be covered by the NSW networks in their responses.

[1] NSW Government, *Smart meters: removing regulatory barriers and maintaining consumer safety for a market-led rollout of smart meters in New South Wales*, February 2016, p. 2

METERING SAFETY

Throughout the Australian Energy Market Commission (AEMC) metering rule change process ENA identified and flagged risks with two major safety issues:

- installation of meters, especially replacement meters, and
- management of de-energisation and re-energisation services, especially relating to life support customers.

ENA provided detail to the AEMC and other stakeholders on safety matters related to metering for small customers. ENA CEOs highlighted critical safety issues in meetings with the AEMC Commissioners. ENA representatives also provided comprehensive input to a safety workshop organised by the Commonwealth Department of Industry (DOI) in November 2015. The workshop was attended by jurisdictional safety regulators and policy officers (including from NSW) as well as representatives from networks, metering service providers and representatives from AEMC and the Australian Energy Market Operator (AEMO). ENA is heartened by the widespread recognition of the urgent need to review safety frameworks to reflect changes in metering responsibilities.

ENA appreciates the initiative undertaken by the NSW Government on reviewing the metering installation framework in NSW and seeks to bring the following issues to your attention.

METER INSTALLATION

Smart meter installations may be required for new builds or to replace existing meters. Although there are some common issues regarding safety and wiring installation, most new installation situations are likely to be relatively straight forward to manage safely.

However, ENA notes that significant impetus for installation of smart meters in NSW will come from replacing aged or faulty meters or replacing meters of customers of the NSW Solar Bonus Scheme after it expires on 31 December 2016.

ENA considers that significant safety issues will be confronted by meter installers replacing existing meters for small customers. Historically, meters have been long life assets and some NSW networks retain significant volumes of operational meters aged over fifty years.

Where these aged metering assets are replaced under the current regulatory regime for small customers, networks operate very comprehensive risk assessment, training, installation and audit regimes to ensure that the network-authorised installers can correctly identify and address safety issues ranging from asbestos meter boards, to aged or damaged insulation and deteriorated wiring.

Networks undertake very comprehensive technical installation auditing processes to verify installation practices by their employees or contractors in order to maintain safety for both installers and customers. In NSW, this is covered under the training and authorisation requirements of the Accredited Service Provider (ASP) scheme oversighted by the networks. Typically NSW networks undertake tens of thousands of site audit inspections each year.

With the introduction of contestable metering in the mass market sector, metering installation responsibilities will transfer from distribution businesses to retailers and metering coordinators. It will critical for the success of future smart metering initiatives that stringent safety requirements are maintained.

Metering installers have an obligation to rectify or defect/isolate or make safe any dangerous or unsafe equipment or installations encountered while installing meters.

It should be noted that existing contestable meters with which these installers are likely to be experienced represent approximately one per cent of all meters within the National Energy Market (NEM).

Existing contestable meters are very different to smart meters which are whole current meters. Whole current meters are different in the following key ways:

- 100 per cent of the load current (and electrical energy) passes through the meter (increasing safety reliance on correct connection);
- Premise polarity, load phase sequence, neutral terminations can be impacted by the installer; and
- Overloaded installations may be encountered during installation works.

Recognising the increased risk inherent in this situation, the introduction of AMI meters in Victoria was preceded by a detailed risk assessment relating to connection of smart meters to ensure on-going safety for both customers and installers.

ENA would be happy to provide copies of this the review to the NSW Government.

The Victorian rollout placed great emphasis on the importance of appropriate training, audit and compliance checking to ensure installers were comprehensively trained, supported and monitored in order to maintain their safe metering environment.

The Victorian experience notably highlighted the wide range of issues confronted by installers replacing aged meters. Box 1 below outlines the experience of Citipower/Powercor in rolling out smart meters in Victoria, which identified almost 7,000 significant safety defects and over 300,000 additional site rectifications required.

Box 1: Citipower/Powercor experience

The quality assurance program implemented by CitiPower/ Powercor in its rollout of 1.2 million AMI meters identified and resolved:

- **6,800 defects** that posed a **serious threat** to customer lives or property
- **Over 300,000 additional on-site rectifications**
  - 93,000 line taps fitted to Active/Neutral links
  - 92,000 exposed single insulated cables protected
  - 83,000 timber board replacements
  - 27,000 fuse holder upgrade / replacements
  - 25,000 duplicate service fuses removed
  - 13,000 level 1 & level 2 Customer Defects issued
  - 7,000 metal link covers replaced
  - 3,000 isolation points added

The frequency of these issues emerging highlights the need for a prudent safety management regime. Jurisdictional safety regulators need to ensure that safety frameworks, training and compliance practices enable metering installers to respond appropriately when confronted with widely varying safety challenges such as indicated by past experience in NSW and recent circumstances in smart metering installations in Victoria.

ENA is pleased to see the initiative undertaken by the NSW Government to review its processes to frame the rollout of contestable metering for small customers in NSW. ENA considers that this process must ensure that safety is not compromised and that detailed installation training, on-site technical review and comprehensive compliance auditing is maintained.

ENA notes the consultation paper specifically seeks advice on training needs and obligations. In the light of previous metering experience by the NSW networks and recent experience in the Victorian AMI rollout of smart meters, ENA advocates maintaining strong measures to ensure appropriate training, audit and compliance measures relating to installation of smart meters for customers.

Metering installers will require safety and electrical skills training; knowledge to address asset and installation practices within specific network contexts; appropriate accreditation and individual authorisation, and be supported by a clear management and audit regime identifying clear responsibilities and accountabilities.

SAFETY PRECEDENTS

ENA believes that the safety aspects of the rollout of smart meters to individual small customers may be informed by the experience of other Government initiated programs to benefit small customers, such as the Home Insulation Program and solar PV installation incentive programs.

HOME INSULATION PROGRAM

ENA brought to the attention of the AEMC and the safety workshop the relevance of findings of the Royal Commission into the Home Insulation Program[2].

In their report, the Royal Commission sought to identify for future reference some critical safety and risk management lessons from the experience with the Home Insulation Program. Some key extracts of their findings are included in Box 2 on the following page.

[2] Hanger, Ian, AM QC *Report of the Royal Commission into the Home Insulation Program*, 2014, pp. 302-312

The Royal Commission identified the critical need to ensure appropriate oversight of safety matters. It found that management of significant risks to individuals resulting especially from innovative, new programs remains the responsibility of all parties, including governments.

BOX 2: Extract from the findings of the Royal Commission into the Home Insulation Program

Section 14: "*The future*: a*voiding repetition of failures*

> *14.7.1* ***The identification and management of risks under the HIP was seriously deficient****. The* ***risk of death and serious injury to installers****, among the most serious of all the risks that might eventuate,* ***was*** *identified in working groups and in the risk identification process, but* ***not recorded in the Risk Register and did not appear there until a death had occurred****. This is the polar opposite of how a risk management process is supposed to work. p.308*
>
> *…*
>
> *14.7.3* ***What might be done then in the future to avoid a repetition of this situation****, where a risk process sought only to identify and dismiss risks, rather than explore the full range of possibilities and consider how these could be mitigated, and by whom? p.309*
>
> *…*
>
> *14.9.4 … it is critical to public policy interventions of this scale and nature that Government understand the implications for end users or deliverers.* ***It appears, particularly when it comes to national programs, that policy-makers have too limited a focus on strategic level outcomes such as macro-economic reform, when the greatest single impact a program may have is on the safety or well-being of an individual at the end delivery point of an implemented policy—in the case of the HIP, inside roof cavities. Government must make strenuous efforts to understand the nature of its interventions… "*** *p. 311*

SOLAR PV INSTALLATIONS

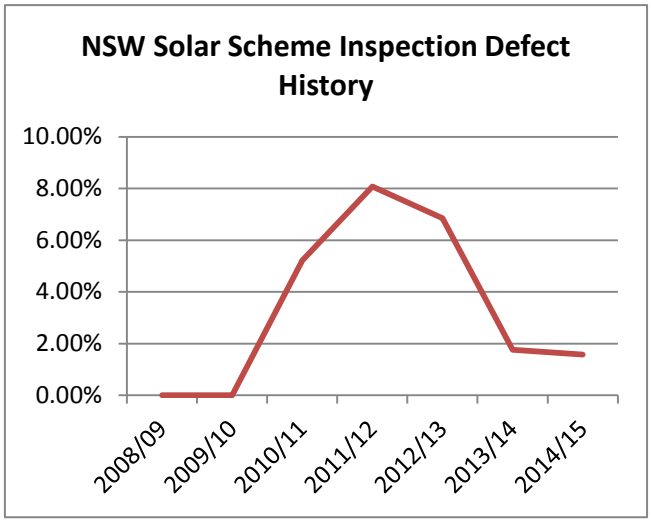
Experience in NSW and Victoria with installation of solar PV systems also reflect predictable increases in breaches relating to safe installation practices where persons less familiar or unfamiliar with the specific safety challenges from new product installations are engaged.

New South Wales

As an example, Ausgrid reported defects rising to eight per cent on early solar installations under the ASP scheme. This related to the rapid expansion of the scheme in light of the incentive of generous feed-in tariffs.

After additional training and responses to remediate the defects, the installation experience returned to 'normal'.

Figure 1: NSW Solar Scheme Inspections[3]



Victoria

Victoria also reported experience of increased defective installations of solar PV systems coinciding with introduction of feed-in tariffs causing a rapid growth in demand for installation.

In response to concern with perceived problems arising from solar PV installation, in 2010 Energy Safe Victoria (ESV) commissioned an audit of solar systems across Victoria.

[3] ENA, *Metering and electrical installation work: ensuring safety of customers and workers: Presentation to safety workshop*, 24 November 2015, slide 15

The review by ESV reported that eleven per cent of solar PV installations had been installed with incorrect isolation switches, which constituted a potential fire risk.

ESV also noted that a further twenty per cent had technical non-compliance issues (mostly relating to labelling requirements under clause 3.5 of Australian Standard 5033: 2005 *Installation of photovoltaic arrays*).

ESV responded by immediately implementing a range of measures to improve the technical knowledge and practices of the industry in relation to the installation and inspection of solar panel systems.

Initiatives undertaken by ESV included:

- technical seminars for Licensed Electrical Inspectors (LEIs);
- advice disseminated in their technical magazine to all electricians in Victoria; and
- encouraging LEIs to participate in further training at RMIT on inspection of solar installations.[4]

As a further medium/longer term measure, ESV also established a specialised working group to provide guidance and advice on training and the regulatory arrangements that will ensure the safe installation and operation of new and emerging technologies.

ESV also undertook to produce guidelines and additional technical advice on solar installations[5].

ENA CONCLUSIONS

ENA considers that the valuable lessons from safety precedents such as those outlined above is to ensure robust and effective safety regimes are in place especially to support introduction of new products and processes with significant safety implications.

Specialist training, technical support, audit and compliance regimes are needed to ensure maintenance of the safety standards that are needed especially in environments where defects can cause significant danger and potential death to customers and electrical installers.

ENA welcomes the investigation by the NSW Government of the changes to the framework for safe installation of smart meters in NSW under a market led rollout. The transfer of responsibilities inherent in this process requires careful consideration to maintain safe installation and operational practices for both customers and installers.

ENA advocates maintaining strong measures to ensure appropriate training, audit and compliance measures relating to installation of smart meters for customers.

Metering installers will require safety and electrical skills training; knowledge to address asset and installation practices within specific network contexts; appropriate accreditation and individual authorisation, and be supported by a clear management and audit regime identifying clear responsibilities and accountabilities.

[4] Electricity Safe Victoria, *Safety of solar panel installations in Victoria: report*, July 2010, pp. 10-12

[5] ibid, p.13