



Government
of South Australia

Department for
Energy and Mining

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Consultation on the Proposed Smart Meter Minimum Technical Standards in South Australia

Glossary

AEMC	The Australian Energy Market Commission
AEMO	The Australian Energy Market Operator
AS/NZS	Australian/New Zealand Standard
DER	Distributed Energy Resources
MC	Metering Coordinator
NER	National Electricity Rules
NERR	National Energy Retail Rules
PV	Photovoltaic
SAPN	SA Power Networks

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1. Background

On 26 November 2015, the Australian Energy Market Commission (AEMC) made a final rule which introduced (amongst other things) competition in metering-related services. This rule, which was also part of the AEMC's Power of Choice reform, came into effect on 1 December 2017 and amended the National Electricity Rules (NER) and the National Energy Retail Rules (NERR).

A smart meter is an advanced, digital meter which records electricity usage every 30 minutes and sends usage information remotely. It must also meet the *minimum services specification*, as per the NER. The minimum services specification sets out a list of services that a meter must be capable of providing, including (but not limited to) the remote de-energisation and re-energisation of the smart meter, rather than focusing on the technical components that must be included (such as the number of elements). Often, these technical components are left to others to determine, as well as other national standards that industry must comply with (for example, AS/NZS 3000 which details the Wiring Rules).

The installation, maintenance and management of electricity meters was the responsibility of the Distribution Network Service Provider, SA Power Networks (SAPN) prior to 1 December 2017. The responsibility was then transferred to a new Participant – a Metering Coordinator (MC), as part of the AEMC's final rule. In addition, retailers are now required to appoint an MC for their customers, unless the customer has appointed an MC themselves.

In South Australia, roughly 4000 smart meters are installed each month. This can be for a variety of reasons, such as the customer having a new solar photovoltaic (PV) system installed. When a customer intends to install a new solar PV system, the customer (or their electrician) must submit an application to SAPN so that SAPN can assess the impact (if any) that this equipment will have on their local network, in order to ensure that it does not negatively affect other customers.

Often, a new smart meter is wired in the lowest cost manner and the installation process includes aggregating all distributed solar generation at the site, together with the customer's general load. This set up allows an MC to individually de-energise and re-energise whole customer sites (as per the minimum services specification) but not to de-energise and re-energise the solar generation system separately from customer's load.

Minimum operational demand¹ is an emerging challenge that must be managed in South Australia.

The Australian Energy Market Operator (AEMO) has been analysing low demand conditions and advised that without action, low demand conditions could represent a real risk of the supply of electricity being disrupted to all or part of the South Australian community.

Curtailing distributed energy resources (DER) in response to monetary incentives or in emergency situations can assist mitigate the impact of this emerging challenge.

¹ Operational Demand is demand that is met by local scheduled generating units, semi-scheduled generating units, and non-scheduled intermittent generating units of aggregate capacity ≥ 30 MW, and by generation imports to the region.

2. Flexible smart meter configuration

There are various technologies that may be capable of remotely curtailing DER. Smart meters are likely to be a cost effective option as they are in the process of being rolled out to small customers in South Australia.

Smart meters can have more than one metering element and contactor and are therefore able to measure and operate several separate circuits independently of each other. Through the appropriate number of elements and contactors, the meter can be wired to allow separate operation and measurement at a customer level.

Customer's sites could be configured to have flexible loads (such as hot water systems) and general loads (such as the customer's lights, fridges, etc.) separated from distributed generation (such as solar generation). This would allow de-energisation (and later re-energisation) of the customer's solar generation or hot water remotely whilst allowing the customer's other load to remain operating unaffected.

It is understood that currently some of the metering being installed in South Australia has two elements and two contactors. This means that by simply wiring smart meters differently it could be possible to provide increased functionality for the customer.

Benefits associated with flexible smart meter configuration include:

- Having access to more accurate information and visibility on generation and load
- Access to any commercial offerings for curtailment of generation or specific loads such as controlled load
- Emergency management

3. Proposed Technical Standard

It is proposed that smart meters installed at a connection point in South Australia must have a minimum of two elements with a contactor in each element. The new minimum technical standard for smart meters would be in addition to the minimum requirements prescribed by the national energy frameworks.

In addition to the existing standards (such as AS/NZS 3000), smart meters installed in South Australia would be required to be wired in accordance with any wiring guideline issued by the Technical Regulator. The purpose of the wiring guideline is to ensure that the smart meters are installed in a manner that gives effect to the benefits associated with a flexible smart meter configuration.

This minimum requirement would allow a customer's solar generation to be measured and controlled separately from a customer's load.

A customer which has solar generation, general load and controlled load would not be able to have each separately measured and controlled with a two element two contactor meter. These customers would need to be wired in accordance with current practice of general load and solar generation on one element and controlled load on the other element.

Other minimum technical standard options exist to provide these customers with the same level of control flexibility:

- Two element three contactor meter, with controlled load and solar generation on separate contactors within one element and general load on the other element, which would allow separate control, however, measurement of controlled load and solar generation would be combined.
- Three element three contactor meter which would allow separate measurement and control of general load, solar generation and controlled load.

Stakeholders views are requested on the minimum smart meter technical standard for a customer with controlled load, solar generation and general load.

It is understood that there may be cases where it is cost prohibitive to install a two element or three element smart meter at a customer's premises due to a matter such as the existing switchboard. Stakeholders views are requested on whether such scenarios exist and if so the nature of these scenarios.

The new minimum smart meter requirements are proposed to commence in September 2020 and would apply to any smart meters installed in South Australia after the commencement date.

4. Proposed Implementation Pathway

It is proposed that the Electricity (General) Regulations 2012 will be amended to provide that the minimum requirement for smart meters installed in South Australia is two element two contactor. The smart meters will also be required to be wired in accordance with a guideline issued by the Technical Regulator.

Depending on the feedback from this consultation, it is proposed that for a customer with general load, controlled load and solar generation the minimum requirement for a smart meter will be either:

- Two element two contactor smart meter wired in accordance with the Technical Regulator guideline
- Two element three contactor smart meter wired in accordance with the Technical Regulator guideline
- Three element three contactor smart meter wired in accordance with the Technical Regulator guideline.

The relevant compliance and enforcement provisions that will apply to this technical standard are:

- Section 60(1) of the *Electricity Act 1996* (the Act) requires a person who owns or operates electricity infrastructure must take reasonable steps to ensure the infrastructure complies with, and is operated in accordance with, technical and safety requirements imposed under the *Electricity (General) Regulations 2012* (the Regulations).
- Section 60(1b) of the Act requires that the owner or operator of an electrical installation must take reasonable steps to ensure the installation is compliant with technical and safety requirements imposed under the Regulations.
- Section 61 of the Act requires that persons carrying out work on an electrical installation must ensure that the work is carried out as required under the Regulations.
- The maximum penalty for noncompliance with either section 60 or 61 is \$50,000 for a body corporate or \$10,000 in other cases. An expiation fee of \$315 is applicable.

In accordance with Section 60(2), an owner or operator of an electrical installation may rely on a certificate of compliance as evidence that the installation complies with the safety and technical requirements.

5. Proposed Timeline

AEMO advice suggests that the South Australian power system is already facing serious security risks, and deeper record low demand periods are anticipated in spring 2020. Given two element two contactor smart meters are already available, the new technical standard is proposed to commence in September 2020.

If stakeholders consider that a two element three contactor or three element three contactor smart meter wired correctly would be of value to consumers with solar generation, controlled load and general load, feedback is invited on when such a requirement could feasibly commence.

6. Consultation Timeline

The Department for Energy and Mining invites comments on the proposed minimum technical standards for smart meters from stakeholders and other interested parties by 5PM (ACST) on 10 July 2020.

Stakeholders can provide written submissions by emailing: ETRConsultations@sa.gov.au.