



Government  
of South Australia

Department for  
Energy and Mining

[energymining.sa.gov.au](http://energymining.sa.gov.au)

# Consultation on the Proposed Remote Disconnection and Reconnection Requirements for Distributed Solar Generating Plants in South Australia

## Glossary

AEMO	The Australian Energy Market Operator
DER	Distributed Energy Resources

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## 1. Background

Minimum net demand is an emerging challenge that must be managed in South Australia.

The Australian Energy Market Operator (AEMO) has been analysing low demand conditions and has made recommendations which seek to respond to the minimum net demand challenge.

In 2012, minimum net demand occurred for the first time in the daytime, influenced by growing generation from distributed solar generation. Since that time, minimum net demand has declined by an average of 80 MW per year, reaching a record minimum of 458 MW on 10 November 2019.

To AEMO's knowledge, South Australia is the first gigawatt scale power system in the world to approach operation with such high proportions of demand met by distributed energy resources (DER), such as solar generation on homes and businesses.

Solar installations are growing rapidly, with more than 200 MW per year being installed in South Australia at present. If growth continues at this rate, AEMO forecast minimum net demand could reach zero in South Australia within the next 1-3 years.

One of the challenges identified by AEMO is ensuring there is the sufficient demand on the power system to run it securely. This challenge is most significant when South Australia is operating as an island. Whilst the likelihood of a separation event, high distributed solar generation output and a severe fault is low, should they coincide, AEMO may not have the ability to operate South Australia in a secure state.

Decreasing distributed solar generation output is an option that can be implemented in response to commercial financial incentives or in an emergency circumstance.

This option has been used by AEMO to manage power system security under powers contained in the national energy frameworks. When South Australia separated from Victoria in 2020 due to transmission tower damage, AEMO directed SA Power Networks to curtail distributed solar generation under their control to help maintain a secure power system.

Emergency powers in the Emergency Management Act also provide for the Minister responsible for energy to direct generators in an electricity supply emergency. If such necessity arose, currently to meet a direction, owners of distributed solar generation would need to manually disconnect their generator. There are risks associated with the speed and coordination of this response, and the desired result of avoiding significant disruption to customer electricity supply in South Australia may not be achieved.

Remote disconnect and reconnect of distributed solar generation may also be an attractive commercial offering which could be offered to customers for financial reward.

As solar generation continues to be added to the distribution network, it is prudent to future proof the technical capability of the technology that is installed.

## 2. Proposed Technical Standard

It is proposed that distributed solar generation be capable of being remotely disconnected and reconnected. If this functionality were to be exercised, the customer would have an agent registered with the Technical Regulator who has the authority and ability to perform this function on their behalf.

The register of agents would not be public, but confidential information held by the Technical Regulator and accessible only by the owner/operator of the distribution network to which the solar generation is connected and persons with authority under law to direct distributed solar generation to disconnect or reconnect.

The customer could authorise the agent to exercise this functionality in accordance with the terms and conditions of any commercial offering they choose to participate in.

The intention is that the proposal is technology neutral, allowing the competitive market to determine the most efficient way of meeting this technical standard.

To provide industry and installers with guidance of technical solutions that meet the standard, it is proposed that the Technical Regulator may issue a guideline deeming particular technical solutions. An installer that follows a technical solution in the Technical Regulator guideline would be deemed to have met the standard.

### 3. Application of the Technical Standard

The technical standard will be mandatory for all new distributed solar generation. It is also proposed to apply to existing distributed solar generation if any part of a person's electricity infrastructure prescribed by the Technical Regulator is being replaced.

The prescribed parts of a person's electricity infrastructure for replacement purposes is dependent on the competitive market solutions to meeting this technical standard. For example, if this technical standard was met through the inverter, the Technical Regulator may prescribe inverter replacement as a trigger for implementing this standard for existing distributed solar generation.

The obligation will apply to the:

- owner/operator of the distributed solar generation – to take reasonable steps to ensure it complies with the technical standard.
- installer of the distributed solar generation – must only carry out work of connecting an electricity installation if it complies with the technical standard.
- owner of distribution network – must only allow solar generating plant to connect to their distribution network if it meets the technical standard.

### 4. Proposed Implementation Pathway

It is proposed that the Electricity (General) Regulations 2012 (the Regulations) will be amended to provide that solar generating plant must be capable of being remotely disconnected and reconnected by a registered agent of the plant for the purpose of this capability.

The registered agent must be authorised to remotely disconnect and reconnect the plant in the circumstances that the owner of the solar generating plant is lawfully being directed to disconnect or reconnect. The agent must also be registered in the register maintained by the Technical Regulator. The register information will only be able to be shared with the distribution network operator and a person with authority to direct solar generating plant to disconnect or reconnect under law.

The requirement will apply to solar generation plant that is connected to the distribution network, including solar generating plant which is exempt from the requirement to hold a licence.

The requirement will apply to new solar generating plant connected to the distribution network and existing solar generating plant connected to the distribution network if a prescribed part of the persons electricity infrastructure is being replaced. The Technical Regulator will be responsible for prescribing parts of electricity infrastructure which trigger compliance with this standard on replacement.

The Technical Regulator may issue a guideline on installation methodologies for solar generating plant that are deemed to meet this requirement.

The owner/operator of the distribution network will not be allowed to connect any new solar generating plant to the network if it is not capable of being disconnected and reconnected remotely by a registered agent.

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 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

The new requirement is proposed to commence in September 2020. It is proposed to have immediate effect, meaning a solar generating plant which does not meet the technical standard must not be installed after the commencement date.

Stakeholder feedback is sought on existing technology that could form part of the solar generating plant to meet the new requirement from the commencement date. For technology that requires modification to meet the technical standard, stakeholder feedback is sought on forecast timeframes for such modifications.

## 6. Consultation Timeline

The Department for Energy and Mining invites comments on the proposed remote disconnection and reconnection requirements for solar generating plants in South Australia from stakeholders and other interested parties by 5PM (ACST) on 10 July 2020.

Stakeholders can provide written submissions by emailing: [ETRConsultations@sa.gov.au](mailto:ETRConsultations@sa.gov.au).