



Inquiry into the reliability and quality of electricity supply on the Eyre Peninsula

Draft Report: Executive Summary

May 2017

Request for submissions

The Essential Services Commission (**Commission**) invites written submissions on this paper by **Friday, 18 August 2017**.

It is the Commission's policy to make all submissions publicly available via its website (www.escosa.sa.gov.au), except where a submission either wholly or partly contains confidential or commercially sensitive information provided on a confidential basis and appropriate prior notice has been given.

The Commission may also exercise its discretion not to publish any submission based on length or content (for example containing material that is defamatory, offensive or in breach of any law).

Responses to this paper should be directed to: **Inquiry into the reliability and quality of electricity supply on the Eyre Peninsula**.

It is preferred that submissions are sent electronically to: escosa@escosa.sa.gov.au

Alternatively, submissions can be sent to:
Essential Services Commission
GPO Box 2605
ADELAIDE SA 5001

Telephone: (08) 8463 4444
Freecall: 1800 633 592 (SA and mobiles only)
E-mail: escosa@escosa.sa.gov.au
Website: www.escosa.sa.gov.au

Contact Officer: Nathan Petrus, Director Consumer Protection and Pricing.

1 Executive Summary

The Essential Services Commission (**Commission**) is undertaking an inquiry into the reliability and quality of electricity supply on the Eyre Peninsula (**Inquiry**). The Inquiry was referred to the Commission by the South Australian Treasurer on 9 March 2017, pursuant to Part 7 of the Essential Services Commission Act 2002.

The Inquiry was initiated following concerns raised by Eyre Peninsula community members about the customer impacts arising from the level of reliability and quality of supply in the region.

This Draft Report sets out the Commission's draft findings and draft recommendations for the Inquiry, which have been informed by stakeholder consultation on the Eyre Peninsula and elsewhere. The Commission invites written submissions to this Draft Report, which should be provided by Friday, 18 August 2017.

The Commission has identified various technical options that would improve the reliability and quality of supply on the Eyre Peninsula. Some of those options, particularly certain generation options, could deliver reliability benefits that exceed the implementation costs. There are also opportunities to improve the regulatory framework to provide better processes for system planning and coordination of network and non-network activities. This is especially important given the technological changes that are currently occurring in the electricity industry.

1.1 Reliability and quality of supply performance on the Eyre Peninsula

Reliability of electricity supply on the Eyre Peninsula was generally consistent between 2006-07 and 2015-16. There has been a significant deterioration in performance during 2016-17, due to the severe weather events on 9 September 2016, 28 September 2016 and 23 December 2016.

Regions supplied by long, radial distribution feeders (remote from the transmission network) typically receive the greatest total minutes off supply, and include regions near Elliston, Penong and Cowell.

Data on historical reliability performance on the Eyre Peninsula confirms that there are two different reliability problems that could be addressed:

- ▶ There are ongoing reliability problems at the distribution feeder level, which are driven mainly by lightning strikes on radial distribution lines affecting local supplies.
- ▶ More recent reliability problems are driven by severe weather events that mainly impacted transmission services affecting large parts of the peninsula.

Survey evidence suggests that customers on the Eyre Peninsula are used to experiencing reliability problems and some have become conditioned to power outages. For those customers that are dependent on a reliable power supply (for example, hospitals and supermarkets), some have installed their own back-up generators. Representations from customers suggest that, during the 28 September 2016 statewide blackout, the greatest concern of customers was the loss of telecommunications services, which is dependent on electricity.

There is anecdotal evidence of poor quality of supply (voltage variations) in parts of the Eyre Peninsula, although complaints data suggests there are few problems. SA Power Networks has reported that, during the 2006-07 to 2016-17 period, there have been 209 quality of supply enquiries and only nine complaints. There have been 12 proactive load and voltage tests by SA Power Networks over the 10 year period, with nine requiring rectification at the distribution transformer level. The Energy and Water Industry Ombudsman SA has reported that it has received 20 cases from 8 March 2014 to 8 March 2017 relating to quality of supply on the Eyre Peninsula.

To determine whether or not there is a systemic quality of supply problem, the Commission has requested that SA Power Networks install voltage testing equipment at particular locations on the Eyre Peninsula, commencing in May 2017. The Commission is working with SA Power Networks and councils on the Eyre Peninsula to implement those tests. The Office of the Technical Regulator will provide independent oversight of that process.

1.2 Options for improving reliability of supply

The Commission has consulted with electricity industry participants to identify options for improving reliability of supply on the Eyre Peninsula. Options have been sought from SA Power Networks, ElectraNet and Eye Energy, a Port Lincoln-based provider of photovoltaic generators and batteries.

The options provided by ElectraNet are the subject of a separate consultation process as part of a Regulatory Investment Test under the National Electricity Rules (NER). The conductors of the existing transmission system from Cultana to Port Lincoln are due for replacement and ElectraNet's network support contract with Synergen Power at Port Lincoln is due to expire in December 2018. ElectraNet has identified various options for upgrading the line, which it states will achieve, or in some cases exceed, the transmission reliability standards that it must achieve under the Electricity Transmission Code. It has also stated that other benefits may arise from the options, including optionality benefits, expected to arise from relieving the current output constraints on existing Eyre Peninsula wind farms, as well as facilitating additional wind generation and the connection of new mining loads.

Evaluation of the full benefits of ElectraNet's options, including non-reliability benefits, is beyond the scope of this Inquiry and are to be addressed in the Regulatory Investment Test process that ElectraNet has recently commenced.

SA Power Networks has proposed options involving hardening of the distribution network (creating greater lightning protection), upgrading protection and communications equipment associated with sub-transmission networks to allow the existing Port Lincoln generators to supply the west coast, installation of new generators and installation of reclosers and supervisory control and data acquisition (SCADA) equipment. The generation options, which would back up the transmission network, appear to deliver the greatest reliability benefits, although a targeted program of hardening the distribution network is also likely to be a means of improving reliability to those towns with relatively low reliability levels.

Eye Energy has provided the Commission with information on two commercial projects that it is intending to implement: large-scale solar PV in Cleve and Wudinna (with options for batteries) and a 'smart mini-grid' for the tuna industry in Port Lincoln. Both options would be privately funded and would not require an increase in network tariffs. Investors would rely on wholesale market and ancillary market payments for revenue streams. Therefore, the commercial risks of the projects would not be faced by customers, who would only pay for the market services provided by those options as they are delivered.

The technical options considered by the Commission are inter-related; the implementation of one project is likely to affect the viability of others. The options have also been evaluated relative to a base case, which reflects the current electricity supply arrangements on the Eyre Peninsula. While there is the potential for new demand, for example through mining developments such as the Iron Road project, the implications of those new developments on electricity supply options has not been factored into the Commission's analysis. Likewise, any unconfirmed new supply sources (for example, potential co-generation at the Whyalla steelworks), has not been reflected in the analysis. Those possible future developments may, however, have a significant impact on the future electricity supply requirements for the Eyre Peninsula.

1.3 Improving the incentives for prudent and efficient levels of reliability and quality of supply

The Commission has also considered if there are any impediments in the NER or the Commission's regulatory framework to promoting appropriate levels of reliability and quality of supply to customers on the Eyre Peninsula. In relation to those matters, the Commission's draft findings are:

- ▶ The current feeder-type reliability standards in the Electricity Distribution Code may not provide the right incentives to SA Power Networks to maintain or improve reliability. The reliability standards are set on a feeder-type basis rather than a locational basis and reliability performance in certain regions may be 'hidden' in aggregated performance data. This is a matter that will be considered by the Commission in its upcoming review of SA Power Networks' reliability standards to apply from 1 July 2020.
- ▶ While the NER require transmission and distribution businesses to undertake joint planning, the split responsibilities along the electricity supply chain may not always align to deliver the best possible outcomes for customers, in comparison to a single overall responsibility. In addition, the electricity supply chain is no longer linear, due to changes in technology (for example, consumers can also be generators). The previously clear distinction between monopoly and contestable services is becoming blurred, with the emergence of distributed generation and mini-grids, which may compete with incumbent network businesses. In the case of the Eyre Peninsula, where new technologies and new business models are emerging, more effective joint planning, with some independence in the joint planning process, may lead to better customer outcomes than the current approach. Recent changes to joint planning frameworks internationally may provide a useful reference point for South Australia.



The Essential Services Commission
Level 1, 151 Pirie Street Adelaide SA 5000
GPO Box 2605 Adelaide SA 5001
T 08 8463 4444

E escosa@escosa.sa.gov.au | W www.escosa.sa.gov.au