

Eyre Peninsula Electricity Supply Options

RIT-T Project Specification Consultation Report Summary

ElectraNet understands the importance of a reliable electricity transmission supply to the regional areas of South Australia such as the Eyre Peninsula, and the contribution it makes to the ongoing economic development of the wider South Australian economy.

The Eyre Peninsula is served by a radial 132 kV transmission line which runs from Cultana to Yadnarie to Port Lincoln (refer to Figure 1). A radial 132 kV line also extends from Yadnarie to Wudinna to supply the West Coast. The original line to Port Lincoln was established in 1967. We have in recent years been rebuilding and reinforcing the Cultana and Whyalla substations.

Supply to Port Lincoln is supported by a network support arrangement which enables ElectraNet to call upon the services of three diesel fired gas turbines connected at Port Lincoln when needed. This arrangement expires in December 2018. The South Australian Electricity Transmission Code¹ (ETC) reliability standards require that ElectraNet provide non-continuous "N-1" equivalent line capacity to the Port Lincoln exit point, so that back-up supply is available for Port Lincoln when supply from the 132 kV line is interrupted.

ElectraNet has been actively exploring options to improve the reliability of supply to Port Lincoln, including options to replace or upgrade the transmission lines serving the lower Eyre Peninsula. Our most recent assessment of the line condition indicates that components of the line are nearing the end of their functional life and will require replacement in the next few years.

To enable this work, we have included in our 2018-19 to 2022-23 revenue proposal to the Australian Energy Regulator (AER) an allowance for the replacement of major transmission line components on the Eyre Peninsula².

Alternatively, the full replacement of the line (for example as a double circuit line) may be more cost effective and deliver greater benefits to Eyre Peninsula customers through potentially improving supply reliability and capturing other market benefits. To take this forward, we are undertaking the Regulatory Investment Test for Transmission (RIT-T), which will assess the costs and benefits of alternative network and non-network solutions.

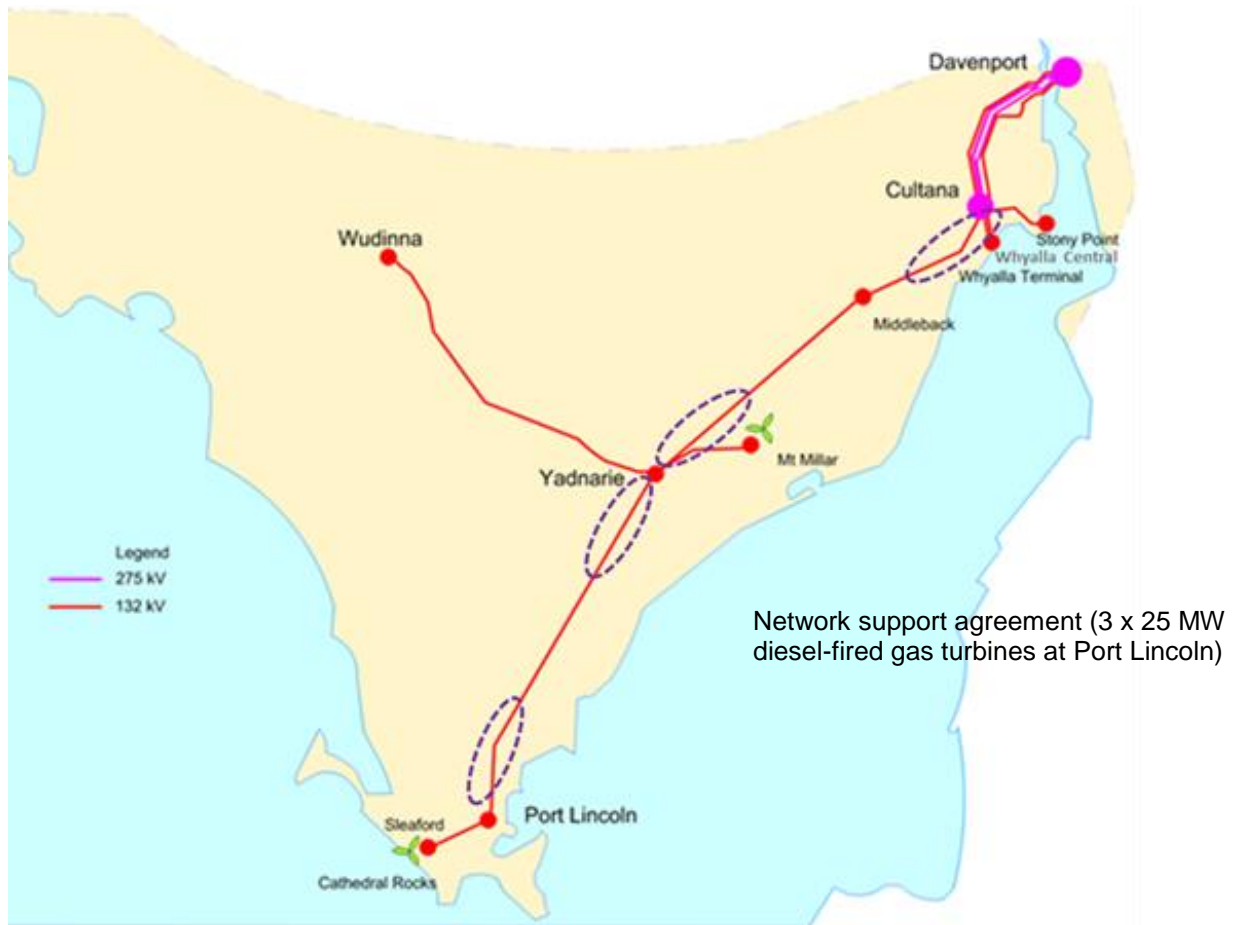
This Project Specification Consultation Report (PSCR) represents the formal commencement of the RIT-T process to investigate electricity supply options for the Eyre Peninsula.


We will continue to actively monitor and maintain the condition of transmission lines on the Eyre Peninsula through our ongoing maintenance program, to ensure the safety, security and reliability of supply to the Eyre Peninsula.

¹ Issue TC08 currently in force, issue TC/09 applicable on and from 1 July 2018. Both issues available from www.escosa.sa.gov.au/industry/electricity/codes-guidelines/codes.

² ElectraNet submitted a revenue proposal to the AER on 28 March 2017 for the 5-year regulatory period from 1 July 2018 to 30 June 2023. The proposal capital expenditure forecast includes approximately \$80m for replacing the line conductor in high priority sections of the Eyre Peninsula 132 kV lines.

Figure 1 Existing electricity transmission supply to the Eyre Peninsula



 About 120 km of line conductor needs to be replaced in the 2019 to 2023 regulatory period

The required replacement works on the existing transmission line and upcoming expiry of the existing network support contract provide a valuable opportunity to investigate alternative supply options

The identified need for this RIT-T is to explore electricity supply options for meeting Electricity Transmission Code (ETC) reliability standards at Port Lincoln most efficiently in the future – driven by the need to replace major transmission line components serving the lower Eyre Peninsula in the next few years, and the upcoming expiry of the network support arrangement at Port Lincoln.

We note that, following on from recent supply interruptions, the South Australian government has asked the Essential Services Commission of South Australia (ESCOSA) to investigate how electricity companies can improve power reliability and quality on the Eyre Peninsula.

While the focus of the ESCOSA review is to investigate and make recommendations on what measures can be taken to incentivise ElectraNet and SA Power Networks to upgrade current infrastructure and reconnect supply quicker after damaging storm events, the review will also look at the ETC reliability standards.

There is, therefore, the possibility that the ETC reliability standards applying to the Eyre Peninsula may change following the ESCOSAs review. Any change to the reliability standards will be taken into account in the RIT-T process and how this is done will be highlighted in the Project Assessment Draft Report (PADR) to be published in the second half of 2017.³

Options for delivering reliable supply into the future have been identified

At this stage, we have identified five credible options to consider, as summarised in Table 1.

Table 1 Summary of potential credible options

Option	Overview of option(s)	Indicative capital cost (\$ million, nominal)
Option 1 – Continue network support arrangement at Port Lincoln and component replacement works on the existing 132 kV single-circuit transmission line	132 kV line replacement works combined with a network support contract	80*
Option 2 – Double circuit 132 kV line [†]	Construction of a new double circuit 132 kV transmission line following a Cultana to Yadnarie and Yadnarie to Port Lincoln route [^]	200-300
Option 3 – two single circuit 132 kV lines [†]	Construction of two single circuit 132 kV transmission lines following separated routes between Cultana and Port Lincoln	200-350
Option 4 – double circuit 275 kV line ^{†,#}	Construction of a double circuit 275 kV transmission line following a Cultana to Yadnarie and Yadnarie to Port Lincoln route [^]	280-380
Option 5 – two single circuit 275 kV lines ^{†,#}	Construction of two single circuit 275 kV transmission lines following separated routes between Cultana and Port Lincoln	400-550

* This option would also have significant operating costs for ongoing network support at Port Lincoln

[^] For these options, we will investigate the potential benefits of additional emergency restoration measures, that may include network support, as well as the possibility of building the double circuit lines to a higher than normal wind loading design level

[†] For these options, we will also consider the potential benefits of upgrading the Davenport to Cultana 275 kV transmission lines to further improve supply reliability and security to the Eyre Peninsula

[#] To be operated initially at 132 kV

³ We will keep interested parties informed of any material changes impacting on the RIT-T process via our website

ElectraNet encourages responses from non-network proponents

Non-network option providers could participate in meeting the required service requirements from January 2019 by providing network support consistent with the Port Lincoln ETC (issue TC/09) Category 3 reliability standard. In particular, this would require restoring at least “N” equivalent line capacity within 1 hour of the commencement of an interruption arising from the failure of the installed transmission lines, the installed transformers or the network support arrangements.

These network support services are to be provided until the failure is resolved and while ElectraNet and/or SA Power Networks use their best endeavours to restore line capacity as soon as practicable.

ElectraNet encourages proponents of non-network solutions to respond to this PSCR with the costs and operating profiles associated with meeting the ETC reliability standards or better.

This PSCR includes the indicative amount of power required to be supplied by non-network solutions at Port Lincoln.

Next steps

ElectraNet welcomes written submissions on the information contained in this PSCR. Submissions are due on or before 21 July 2017. Submissions are sought on the credible options presented and the potential for non-network options.

Submissions should be marked “Eyre Peninsula Electricity Supply Options PSCR feedback” and emailed to consultation@electranet.com.au

Submissions will be published on the ElectraNet website. If you do not want your submission to be made publicly available, please clearly specify this at the time of lodging your submission.

A PADR, including full options analysis, is expected to be published by the end of October 2017.