



EYRE PENINSULA ELECTRICITY SUPPLY OPTIONS

**Project Assessment
Conclusions Report**

18 OCTOBER 2018

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Executive Summary

ElectraNet has explored options for providing a reliable electricity supply to the Eyre Peninsula most efficiently in the future, including ‘future proofing’ to accommodate potential mining and renewable energy developments.

The existing single-circuit 132 kV line serving the Eyre Peninsula has been in service since 1967 and several sections now require major replacement works. In April 2018, the Australian Energy Regulator (AER) accepted our revenue proposal that included capital expenditure of about \$80 million for these replacement works, and ongoing network support to provide backup supply to Port Lincoln.¹ The AER’s acceptance of our revenue proposal noted that this RIT-T investigation was on-going, and included a contingent project that would allow the determination to be varied if a more efficient option was identified.

This Regulatory Investment Test for Transmission (RIT-T)² investigates whether there are more efficient supply options, including building new transmission lines. It also considers the benefits of ‘future proofing’ the new transmission line options to provide flexibility for upgrading the network to operate at a higher capacity if needed in the future.

This Project Assessment Conclusions Report (PACR) is the final step in the RIT-T process and follows the Project Assessment Draft Report (PADR), released in November 2017.

Overview

We have found that the most efficient way to provide a reliable supply to the Eyre Peninsula is:

- a new double-circuit line from Cultana to Yadnarie that is initially energised at 132 kV, but which has the option to be energised at 275 kV if required in the future
- a new 132 kV double-circuit line from Yadnarie to Port Lincoln

This new supply arrangement is a lower cost and more flexible solution compared to that identified in the PADR, that:

- increases reliability of electricity supply to homes and businesses on the Eyre Peninsula, reducing the frequency of outages
- removes current network constraints, allowing the market to benefit from more low-cost energy from existing wind farms on the Eyre Peninsula
- provides greater opportunities for new demand and renewable energy developments on the Eyre Peninsula compared to the current supply arrangement
- includes ‘future proofing’ for cost-effective expansion of network capacity when needed in the future to accommodate potential larger mining developments and renewable energy investment on the Eyre Peninsula.

The cost of the new transmission line is fully offset by avoiding the cost of replacement works on the existing line and ongoing network support costs of \$8 to \$9m per year, resulting in a negligible price impact for the average residential customer in South Australia.

¹ AER, *ElectraNet Transmission Determination 2018 to 2023*, Final Decision, Attachment 6 – Capital Expenditure, April 2018, pp, 11-15.

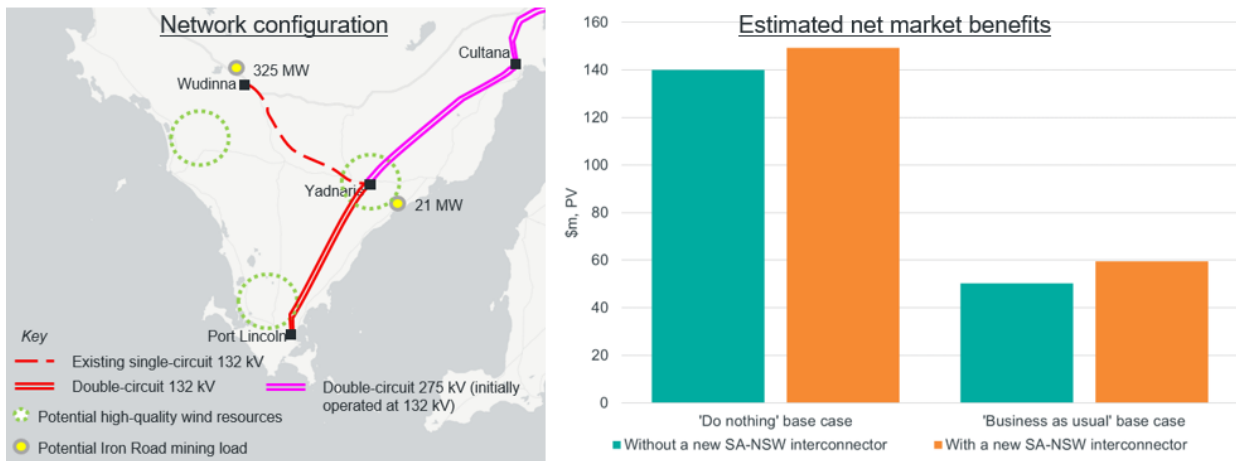
² The Regulatory Investment Test for Transmission (RIT-T) is the economic cost benefit test that is overseen by the AER and applies to all major network investments in the National Electricity Market.

The preferred option is a new double-circuit line from Cultana to Yadnarie that is initially energised at 132 kV but which has the option to be energised at 275 kV in the future, with a new 132 kV double-circuit line from Yadnarie to Port Lincoln

We have investigated five broad options for supplying the Eyre Peninsula, together with variants of these options. These range from maintaining equivalent capacity on the Eyre Peninsula as currently (i.e., a single-circuit 132 kV line coupled with network support at Port Lincoln), through to upgrading the entire network to 275 kV, with two completely divergent network paths (including via Wudinna).

The RIT-T assessment shows that options which involve building a new double-circuit transmission line from Cultana to Port Lincoln, via Yadnarie, are expected to deliver the greatest net market benefits. Of these options, the preferred option³ (Figure E.1) involves building a double-circuit line from Cultana to Yadnarie that is initially energised at 132 kV but which has the option to be energised at 275 kV at a later date (including during the initial construction phase) if prospective mining developments on the Eyre Peninsula become committed, with a new 132 kV double-circuit line from Yadnarie to Port Lincoln.

Figure E.1 – Preferred option for the Eyre Peninsula, ‘Option 4D’⁴



Note: The ‘business as usual’ base case involves reconductoring sections of the existing transmission line and establishing a new backup generation network support arrangement at Port Lincoln, while the ‘do nothing’ base case reflects reliance on increasing reactive maintenance and network support, with no reconductoring of the existing line.

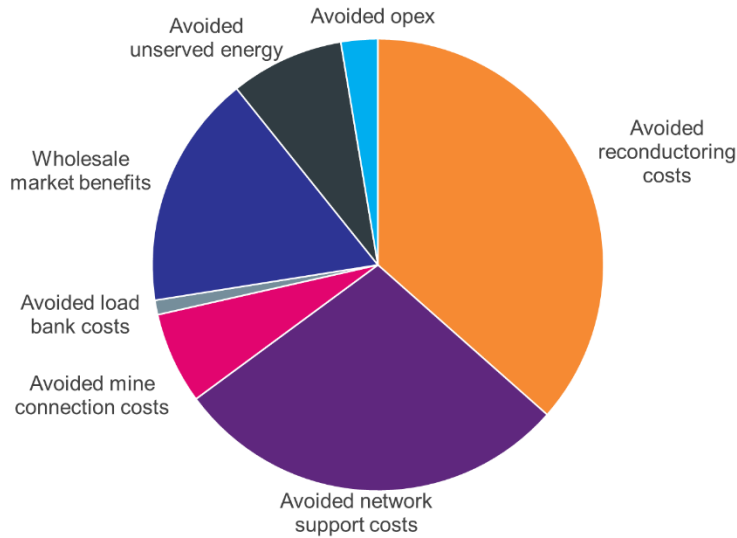
The benefits of the preferred option (Figure E.2) against the business as usual base case primarily comprise:

- avoided future costs of reconductoring the existing lines
- avoided costs associated with future network support contracts (which are no longer needed)
- wholesale market benefits (principally due to increasing output from existing wind farms)
- reductions in unserved energy
- avoided costs of future mining connections (adjusted for the probability of mining load emerging in the future).

³ The preferred option is defined as the option that maximises net market benefits under the RIT-T framework.

⁴ The approximate \$90 million of net benefit difference between the two different base cases reflects the net benefits of reconductoring sections of the existing transmission line and establishing a new backup generation network support arrangement at Port Lincoln estimated as part of ElectraNet’s 2018-23 Revenue Proposal, adjusted for inflation.

Figure E.2 – Breakdown of benefits for the preferred option, ‘Option 4D’, with a new SA-NSW interconnector



Details of the preferred option include:

- An estimated capital cost of \$240 million, which is approximately \$160 million more than reconductoring sections of the existing transmission line⁵
- Removal of the need for backup network support, saving direct ongoing operating costs of around \$8 to \$9 million per year
- Delivery of net market benefits of around \$150 million over 20 years (in PV terms) relative to a ‘do nothing’ base case with a new SA-NSW interconnector in-place, or \$140 million without a new interconnector
- Net benefits that are approximately \$60 million and \$50 million more than reconductoring the existing line and renewing a network support contract at Port Lincoln with and without the interconnector, respectively
- The cost of the new transmission line is offset by saving customers the cost of replacement works on the existing line and ongoing network support costs of \$8 to \$9 million per year, resulting in a neutral impact on the transmission component of the annual electricity bill for the average residential customer in South Australia relative to the reconductoring option (business as usual base case)
- If a new mining load or other significant load connects in future, the further upgrade works to enable operation of the Cultana to Yadnarie line at 275 kV would be funded by customers generally. However, depending on its actual size, the new significant load would bear a significant portion of both locational and wider components of transmission charges, expected to result in an overall reduction of transmission charges to other customers.

⁵ The \$160 million has been calculated as the capital cost of the preferred option (\$240 million) less the capital cost of reconductoring sections of the existing line in this regulatory control period (\$80 million).

The preferred option has changed since the PADR, requiring lower up-front costs

The preferred option in the PADR was a 'set and forget' option comprising a double-circuit 275 kV line between Cultana and Yadnarie, and a double-circuit 132 kV line between Yadnarie and Port Lincoln ('Option 4B').

The preferred option in this PACR is a more flexible variant of this earlier option involving lower up-front cost, under which the section between Cultana and Yadnarie would be built to 275 kV but operated at 132 kV until additional capacity is needed, e.g. to accommodate the commitment of new mining or other load on the Eyre Peninsula.

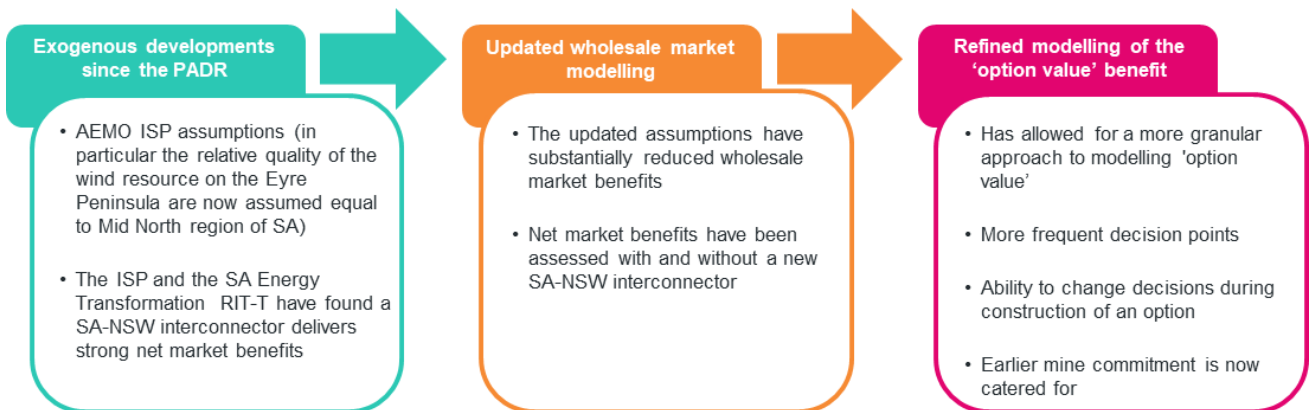
In the event such commitment occurs prior to completion of construction, then this option would be operated at 275 kV from the start as the preferred option, and would therefore be the same as Option 4B. However, if there is no commitment of mining or other load, then the costs associated with the substation components of Option 4B would be avoided until such time as required to accommodate mining or other development, thus lowering the upfront costs to customers.

Key modelling assumptions have been updated to align with AEMO's Integrated System Plan

We have aligned the underlying wholesale market modelling assumptions with the assumptions used for the inaugural Integrated System Plan (ISP) released by the Australian Energy Market Operator (AEMO)⁶.

The PADR highlighted that wholesale market benefits were largely driven by the assumption of a relatively higher quality of wind resource on the Eyre Peninsula, and that a reduction in the assumed differential would have a corresponding impact on reducing the market benefits in the RIT-T assessment.

Figure E.3 – Developments since the PADR



Since the publication of the PADR, AEMO has undertaken detailed investigations into various renewable resources around Australia. In particular, the ISP assumes that there is no material difference between the quality of the wind resource on the Eyre Peninsula and in the Mid North region of South Australia.

⁶ AEMO, Integrated System Plan, July 2018.

We have updated the RIT-T wholesale market modelling to align with this assumption, even though a recent assessment we commissioned from Aurecon continues to find that there are high quality wind resources on the Eyre Peninsula that could potentially be developed in preference to resources in the Mid North.

Updating this assumption has resulted in a reduction in the wholesale market benefits estimated for the options under this RIT-T compared to the PADR, with wholesale market benefits now primarily driven by the impact of the various options on relieving constraints on the operation of the existing windfarms on the Eyre Peninsula.

The ISP has assumed in its base case that replacement of the existing lines on the Eyre Peninsula with a double circuit 132 kV line would proceed. The ISP includes a high level consideration of a potential upgrade of the network to a double circuit 275 kV line to Yadnarie to connect additional generation and concludes that this would be required in the late 2030s under its Neutral case assumptions. However, the ISP does not explicitly consider the implications of potential mining loads on the Eyre Peninsula or the option value arising from initially constructing higher rated lines.

We have refined our approach to ‘option value’ assessment

The PADR analysis made a number of simplifying assumptions regarding the timing of the emergence of mining loads in order to accommodate the ‘option value’ analysis within the broader cost benefit and wholesale market modelling framework used for the RIT-T assessment.

We have now applied a more granular approach to modelling the ‘option value’ associated with options that have the flexibility to stage the investment and respond to changes in external events.

In particular, we have made three key refinements to the option value modelling framework (Figure E.4) to reflect a more realistic set of responses to new information as and when it becomes available.

The refined option value modelling continues to feed into the updated wholesale market modelling to derive the overall cost benefit results.

Figure E.4 – How the modelling of ‘option value’ has been refined in the PACR assessment

Modelling Parameter	Simplifying assumption made in the PADR assessment	Refined assumption used in the PACR assumption
How often can decisions about upgrading voltage from 132 kV to 275 kV be made	Three decision points regarding upgrading over the 20-year period— an initial decision in 2018 and two further decisions at five-year intervals	Annually
First year a mine could make a binding connection agreement	2023	2019
Interaction between constructing an option and mines committing	Not previously accommodated for	Incorporated flexibility for the construction plan to change during the construction period to accommodate higher capacity substations, where mining load seeks connection <i>during</i> the construction period

Submissions to the PADR led to consideration of three new options

We received 12 submissions on the PADR from a range of interested parties. Submissions helped us shape and consider three new options or option variants.

As a result, our assessment now includes two new lower capacity options that involve reconductoring sections of the existing line and building a new 132 kV line on a separate easement – one via Yadnarie and another via Wudinna (Options 2B and 3B, respectively).

We also further considered a 500 kV double-circuit option, including the potential to go via the West Coast of the Eyre Peninsula. However, our detailed costing of this option found that it would involve capital costs in excess of \$2 billion – more than three times the most expensive credible option considered – without providing commensurate additional market benefits. This finding, combined with the revised assumptions regarding the relative quality of wind resources on the Eyre Peninsula, led to the assessment of this option being discontinued.

A range of other queries were raised in submissions that have been addressed in this PACR.⁷ Engie raised a number of detailed questions regarding the wholesale market modelling, which have led to revisions to the modelling and this is addressed in detail in **Error! Reference source not found.** to this PACR.

In addition to the two new lower capacity options (Options 2B and 3B), we have assessed the same broad options for supplying the Eyre Peninsula as in the PADR, which reflect a wide variety of different network capacities and routes. These options range from:

- maintaining equivalent capacity on the Eyre Peninsula to that currently available, i.e., a single-circuit 132 kV line coupled with network support at Port Lincoln; through to
- upgrading the entire network to 275 kV, with two completely divergent network paths from Cultana to Port Lincoln in order to provide greater supply resilience.

Table 1 summarises each of the options we have assessed in this PACR.

Table 1 – Summary of the credible options assessed

Option	Pt Lincoln network support	Single or double-circuit	Voltage	Estimated capital cost(s) ^{8,9}
<i>Options involving transmission lines from Cultana to Port Lincoln via Yadnarie</i>				
1 ('base case')	Yes	Single (retain current line)	132 kV	\$80 million (reconductor initial sections) \$90 million (reconductor remaining sections in 2033) \$25 million (future replacement of Yadnarie substation in 2037)
2	No	Double	132 kV	\$225 million \$20 million (future replacement of Yadnarie substation in 2037)

⁷ Key topics raised by parties in submissions include the: use of least-cost modelling for RIT-T planning purposes; credibility of larger and smaller capacity options; assumed uptake of wind generation; constraints on existing wind farms; mining developments; and current network support arrangement at Port Lincoln.

⁸ The scope and capital cost estimates for each of the options has been refined and updated since the PADR. Appendix I summarises the extent of these revisions and provides a further breakdown and timing of the costs.

⁹ All options also incur \$2.9 million cost of installing a 5 MW load bank at Port Lincoln in 2019, with option 1 requiring additional 5 MW load banks at a cost of \$2.9 million in each of 2025, 2030 and 2035.

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Option	Pt Lincoln network support	Single or double-circuit	Voltage	Estimated capital cost(s) ^{8,9}
2B	No	Single	132 kV	\$215 million \$25 million (reconductor remaining sections in 2033) \$20 million (future replacement of Yadnarie substation in 2037)
4A	No	Double	275 kV	\$330 million
4B	No	Double	275 kV (Cultana to Yadnarie) 132 kV (Yadnarie to Port Lincoln)	\$275 million
4C (flexible option)	No	Double	132 kV, with ability to be energised at 275 kV in future	\$250 million <i>Plus</i> \$40 million if the Cultana to Yadnarie line is upgraded to 275 kV operation <i>Or, plus</i> \$80 million if all lines are upgraded to 275 kV operation \$20 million (if needed for future replacement of Yadnarie substation in 2037)
4D (flexible option)	No	Double	132 kV, with ability to energise Cultana to Yadnarie section at 275 kV in future	\$240 million <i>Plus</i> \$40 million if the Cultana to Yadnarie line is upgraded to 275 kV \$20 million (if needed for future replacement of Yadnarie substation in 2037)
Options involving transmission lines from Cultana to Port Lincoln via Yadnarie and Wudinna				
3	No	Single	132 kV	\$405 million \$25 million (replacement of Yadnarie substation in 2037)
3B	No	Single	132 kV	\$290 million \$25 million (reconductor remaining sections in 2033) \$25 million (future replacement of Yadnarie substation in 2037)
5A	No	Single	275 kV	\$560 million
5B	No	Single	275 kV (Cultana to Wudinna) and 132 kV elsewhere	\$450 million \$25 million (future replacement of Yadnarie substation in 2037)
5C (flexible option)	No	Single	132 kV, with ability to energise all sections at 275 kV in future	\$455 million <i>Plus</i> \$25 million if the Cultana to Wudinna line is upgraded to 275 kV operation <i>Or, plus</i> \$65 million if the Cultana to Wudinna line AND the Cultana to Yadnarie lines are upgraded to 275 kV operation <i>Or, plus</i> \$110 million if all lines are upgraded to 275 kV operation \$25 million (if needed for future replacement of Yadnarie substation in 2037)

Three options have been specifically designed to be flexible and allow the ‘option’ of upgrading network capacity in the future, if a certain ‘trigger’ occurs (Options 4C, 4D and 5C). This allows us to consider the benefit of spending more upfront to provide flexibility for upgrading the network to 275 kV at a lower cost later, if required.

Options involving new double-circuit lines from Cultana to Port Lincoln via Yadnarie are the top-ranked options

The PACR assessment finds that new double-circuit lines from Cultana to Port Lincoln via Yadnarie provide the greatest net market benefit. The benefits of all options increase if a new interconnector between South Australia and New South Wales is assumed (Figure E.5),¹⁰ on account of additional output from existing Eyre Peninsula wind farms that can displace more expensive generation elsewhere in the NEM (Figure E.6 and Figure E.7).

The key findings of our updated assessment are that:

- All the options considered provide market benefits in terms of increased reliability, and therefore decreased unserved energy, for customers on the Eyre Peninsula – this is estimated to provide a benefit to residents of the Eyre Peninsula of approximately \$1 million/year (in PV terms) under the preferred option (Option 4D)
- All options provide a substantial benefit in avoiding network support costs associated with maintaining the required South Australian Electricity Transmission Code (ETC)¹¹ reliability standard at Port Lincoln – this avoided cost is, however, substantially the same for all credible options, relative to the ‘business as usual’ base case of line reconductoring (Option 1) and so does not affect the ranking of the options
- There are expected to be lower transmission costs associated with connecting new mining load to the electricity network for options that result in all, or part, of the Eyre Peninsula being operated at 275 kV capacity
- There are negligible benefits stemming from any impact on the wholesale electricity market by facilitating *new* wind generation locating on the Eyre Peninsula – this is a key change from the PADR and is due to the updated assessment of the relative wind resource quality on the Eyre Peninsula undertaken by AEMO as part of the ISP
- The estimated benefits of all options increase if a new interconnector between South Australia and New South Wales is assumed (consistent with the findings of the ISP and the South Australian Energy Transformation RIT-T currently being undertaken by ElectraNet¹²) – while Option 4D is estimated to deliver around \$2 million more net market benefits than Option 2 (ie, the second ranked option, being a non-upgradeable line) under the assumption that no new interconnector is built, this rises to \$7 million if a new interconnector is assumed to be built.

While wholesale market benefits have reduced from the PADR owing to changes to wind capacity factor assumptions and the resulting reduction in projected new wind generation locating on the Eyre Peninsula, the assessment still finds a material benefit associated with relieving the constraints on and reducing losses for existing wind farms on the Eyre Peninsula.

¹⁰ Consistent with the AEMO ISP and the coincident South Australian Energy Transformation RIT-T.

¹¹ The Electricity Transmission Code is made by the Essential Services Commission of South Australia (ESCOSA) and specifies required reliability standards at transmission network connection points, including on the Eyre Peninsula.

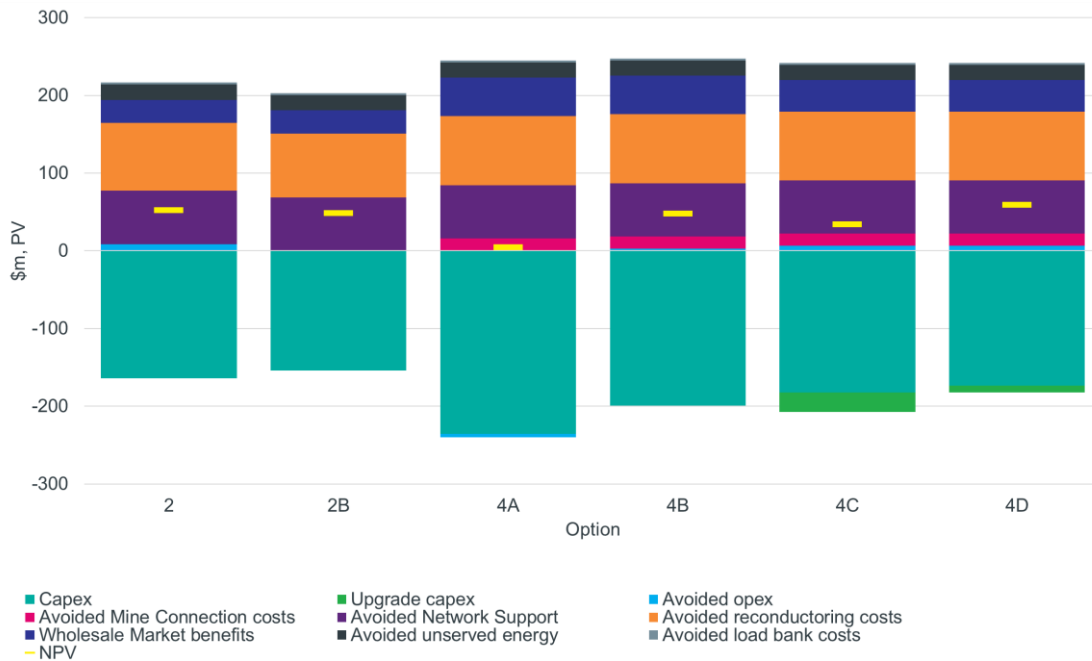
¹² Available at <https://www.electranet.com.au/projects/south-australian-energy-transformation/>.

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Figure E.5 – Summary of estimated net market benefits for credible options going via Yadnarie¹³ assessed under the ‘core’¹⁴ set of assumptions



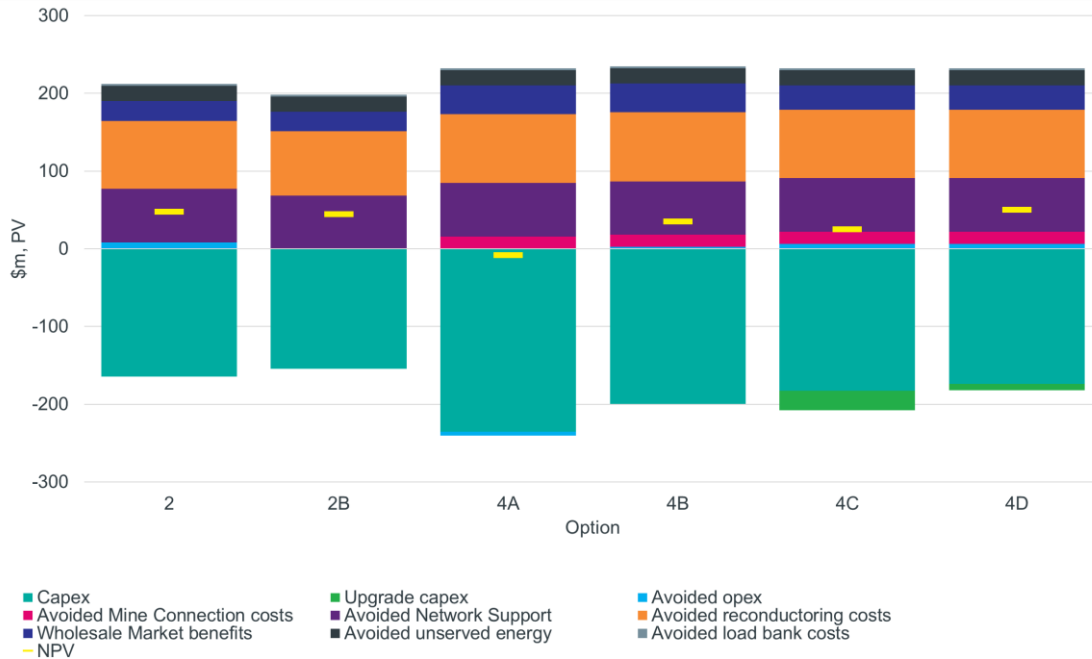
Figure E.6 – Breakdown of estimated net market benefits for credible options going via Yadnarie assessed under the ‘core’ set of assumptions – with a new SA-NSW interconnector assumed



¹³ This figure, Figure E.6 and Figure E.7 show only the estimated net market benefits for the credible options that go via Yadnarie. The options involving a new line going via Wudinna have significantly negative net market benefits. The results for the Wudinna options are presented in detail in the body of this PACR.

¹⁴ The ‘core’ set of assumptions reflect ElectraNet’s weighted view regarding key underlying assumptions likely to affect the magnitude of net market benefits estimated for each option. These core assumptions have been stress-tested through various sensitivity tests to ensure the robustness of the overall results. The ‘core’ set of assumptions also assume a ‘business as usual’ base case, where the existing line is re-conducted and network support is continued to be provided at Port Lincoln to meet ETC requirements.

Figure E.7 – Breakdown of estimated net market benefits for credible options going via Yadnarie assessed under the ‘core’ set of assumptions – no new SA-NSW interconnector assumed



Other findings include:

- Option 4D is the preferred option as it introduces flexibility and saves costs upfront by operating the Cultana to Yadnarie section at 132 kV until new mining or other load increase triggers conversion to 275 kV
- The additional cost of going via Wudinna (Options 3 and 3B and Options 5A-5C) is found to be greater than the additional benefits delivered
- The new variant of Option 2, developed in response to submissions to the PADR, that involves reconductoring sections of the existing line (Option 2B) is found to provide slightly reduced positive net market benefits than Option 2, while the additional cost of such an option going via Wudinna (Option 3B) results in substantial negative net market benefits
- Option 4B (with no flexibility) has higher costs than Option 4D (due to the Cultana to Yadnarie route being built and operated at 275 kV from the start), and so provides less net market benefits
- While Option 4C would still provide positive net market benefits, the cost of also providing flexibility to later upgrade the Cultana to Port Lincoln section to 275 kV was not found to be justified by the potential additional benefits.

The preferred option is robust to the assumed likelihood of new mining developments

The results are robust to the underlying assumptions regarding the likelihood that new mining developments will come to fruition on the Eyre Peninsula over the next 20 years.

We have sought independent advice from mining advisory firm AME Research on the likelihood of the various potential mining developments on the Eyre Peninsula progressing (**Error! Reference**

source not found.) AME is of the view that there is a greater than 50% probability of Iron Road¹⁵ coming online over the next 15 years. AME considers that the other potential mining loads on the Eyre Peninsula are not expected to come online over this period (and has effectively assumed they have a zero per cent probability, which has been reflected in the core modelling results in this PACR).

The magnitude of the estimated net market benefits is found to be sensitive to these underlying assumed likelihoods. While Option 4D is the top-ranked option under the core assumptions, it becomes even more preferred if other mining developments (i.e. other than Iron Road) are given a positive probability of developing over the assessment period. As an example, keeping all 'core' assumptions constant but increasing the likelihood that the other mining loads will develop to 1 per cent per year, increases the estimated net market benefits associated with Option 4D from approximately \$59 million to \$67 million if a new SA-NSW interconnector is assumed to be built, and from \$50 million to \$59 million if no new SA-NSW interconnector is assumed to be built.

We therefore consider that there is considerable potential upside to the core estimate of approximately \$50-\$59 million in net market benefits for Option 4D if any other mining or other loads do in fact develop on the Eyre Peninsula.

The assessment finds that Option 4D remains the preferred option even if the probability that the Iron Road mines will develop is reduced to 4.4 per cent per year¹⁶ in the case where no new SA-NSW interconnector is assumed to be built (this assessment keeps the likelihood of the other mining developments at 0 per cent).

This is substantially below the AME assessment of 5.8 per cent per year.¹⁷ Moreover, if a new interconnector is built, the likelihood that Iron Road would develop has to fall to 2.5 per cent per year¹⁸ for Option 4D to no longer be preferred.

In addition, the assessment finds that, even if Iron Road is assumed to not develop over the assessment period (and there are no other developments), Option 4D is still estimated to have positive net market benefits. If a new interconnector is assumed to be built, under these assumptions Option 4D has an estimated net market benefit of \$43 million, ranked marginally behind Option 2 and 2B at \$50 million and \$47 million, respectively. Without the interconnector, under these assumptions Option 4D has estimated net market benefits of \$36 million, and is ranked behind Options 2 and 2B (which have higher estimated net market benefits of \$45 million and \$41 million, respectively).

These findings demonstrate that the preferred option is robust to the assumed likelihood of new mining developments or other demand increases in the future.

Option 4D relieves constraints on existing wind farms and creates opportunities for new renewable development on the Eyre Peninsula

¹⁵ Throughout this report where we refer to the 'Iron Road' mining development, we are referring to Iron Road's Central Eyre Iron Project (CEIP).

¹⁶ Equivalent to a 49% likelihood of Iron Road coming online over the next 15 years.

¹⁷ Assuming a 4.4 per cent annual likelihood for Iron Road under the 'core' assumptions, and a zero probability for other developments, results in Option 4D and Option 2 having equal estimated net market benefits (of \$47.5 million).

¹⁸ Equivalent to a 32% likelihood of Iron Road coming online over the next 15 years.

A new double-circuit line from Cultana to Port Lincoln, via Yadnarie, not only relieves constraints on existing wind farms on the Eyre Peninsula, but also provides opportunities for new renewable energy developments on the Eyre Peninsula.

The double-circuit lines between Cultana to Yadnarie would be able to accommodate approximately 500 MW of additional renewable generation if operated at 132 kV (and a further 500 MW, or 1,000 MW in total, if upgraded to 275 kV), while the 132 kV lines between Yadnarie and Port Lincoln would be capable of accepting about 350 MW of any such developments.

This finding is consistent with the ISP, which found that approximately 450 MW of solar generation is expected to locate on Eyre Peninsula in the late 2030s under a number of its future scenarios.

In addition, while the wholesale market modelling forecasts that minimal new wind generation will locate on the Eyre Peninsula over the assessment period, this may not ultimately be the case once the new lines are constructed. In particular, the modelling in this PACR adopts the ISP assumption that the wind resource quality on the Eyre Peninsula is approximately equal to that of the neighbouring Mid North region of South Australia.

However, prior to adopting the ISP assumptions, ElectraNet commissioned Aurecon to assess the quality and quantity of wind generation that could connect on the Eyre Peninsula. Aurecon concluded that the Eyre Peninsula is a marginally superior location on account of both the ability to build higher wind turbine towers on the Eyre Peninsula as well as a number of practical limitations that may limit new renewable generation in the Mid North region.

These additional benefits have not been included in the RIT-T assessment and would further add to the net benefits of the preferred Option 4D.

The preferred option also delivers additional benefits that are beyond the scope of the RIT-T framework

While the RIT-T is a rigorous economic cost benefit test to determine the merits of options to upgrade the transmission network, it is limited to the impact of investment within the electricity sector; that is, the costs and benefits which accrue to electricity generators, distributors, transmission businesses and electricity consumers. However, it can also be expected that there will be broader benefits of the preferred option to the South Australian community and economy.

Assessment of these broader benefits is beyond the scope of the RIT-T, but include:

- community benefits resulting from additional jobs in the construction of the new transmission infrastructure; and
- flow on benefits of increased local economic activity in industries that are facilitated by the investment; for example, for local commerce, agriculture, industry and mining operations and renewable energy developments in the region that are assisted by improved network capability or increased confidence about availability and reliability of supply.

The preferred option can be in place by the end of 2021

The preferred option can be constructed by the end of 2021, subject to obtaining necessary statutory approvals. In the event that sufficient mining load commits on the Eyre Peninsula before this date, then the preferred option would incorporate the substation works required to enable initial operation at 275 kV. Otherwise the preferred option would be operated at 132 kV with the substation

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upgrades occurring only when needed to accommodate the commitment of mining loads or other developments.¹⁹

¹⁹ The future incremental capital works of moving from 132 kV operation to 275 kV operation centre on substation works and are expected to take two years to complete.