

The background of the cover is a photograph of a high-voltage power line tower in the foreground, with several other towers visible in the distance. The sky is a mix of orange and blue, suggesting a sunset or sunrise. The image is overlaid with a large, semi-transparent blue shape that tapers from the bottom left towards the top right.

EYRE PENINSULA REINFORCEMENT

Contingent Project Application

22 MAY 2020

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Executive Summary

The Eyre Peninsula Reinforcement project will replace the existing transmission line supplying South Australia's West Coast to improve the reliability of electricity supply to the region through a long-term supply solution that will deliver maximum value for customers.

The project involves the installation of a new double-circuit line from Cultana to Yadnarie that is initially energised at 132 kV, but capable of being operated at 275 kV in the future if required, and a new 132 kV double-circuit line from Yadnarie to Port Lincoln. Replacement of the existing single circuit line avoids the need for backup generation, saving ongoing costs of \$9 million pa.

ElectraNet's Revenue Determination for 2018-19 to 2022-23 issued by the Australian Energy Regulator (AER) included capital expenditure of \$74 million (\$ 2017-18) for reconductoring sections of the existing transmission line between Cultana and Port Lincoln, given its condition and the increasing maintenance costs and risk of customer supply interruptions associated with the line.

The AER's decision also recognised that we were exploring broader alternatives that may deliver greater net benefits for customers through a Regulatory Investment Test for Transmission (RIT-T) assessment. The decision therefore included a contingent project that allows the revenue determination to be varied if the RIT-T assessment identified a more efficient option.

Following extensive engagement with stakeholders, in October 2018 we completed the RIT-T process with the publication of a Project Assessment Conclusions Report (PACR) that identified the full replacement solution to be the preferred option. In April 2019, the AER determined that this option satisfies the requirements of the RIT-T.

As the final step in the regulatory approval process, this contingent project application now seeks the incremental capital expenditure and revenue required to implement the preferred option identified in the PACR.

The capital costs for the project have been updated to reflect the outcomes of detailed project planning and competitive procurement processes. Most of the project costs are based on market pricing, providing confidence that the capital expenditure forecast reflects the efficient and prudent costs of delivering the approved solution.

A range of factors has led to the project cost estimate being approximately 15% higher than the estimate available at the time of the RIT-T (exclusive of project risk), including additional access track requirements, environmental approval requirements, and more recently the impacts of COVID-19. Considering these impacts on project construction timeframes, the delivery date for the project has also been revised from December 2021 to December 2022.

Importantly for customers, an updated cost-benefit assessment based on the latest cost and timing information demonstrates that the preferred option identified in the PACR continues to deliver strongly positive net market benefits of around \$50 million and remains the top-ranked option.

The updated modelling also confirms that the cost of the new transmission line is largely offset by avoiding the cost of replacement works on the existing line and ongoing network support costs, resulting in a minimal price impact for the average residential customer of approximately \$1 pa following completion.

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1. Introduction

1.1 Overview

This contingent project application ('Application') is submitted to the AER to amend the revenue determination that applies to ElectraNet in the current 2018-19 to 2022-23 regulatory control period and approve the total capital and operating expenditure required to deliver the Eyre Peninsula Reinforcement contingent project ('Project') in accordance with the provisions of clause 6A.8.2 of the National Electricity Rules ('Rules').

The Project involves the installation of:

- 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, and
- associated substation works at Yadnarie, Cultana, Middleback, Wudinna and Port Lincoln.

In April 2018, the AER accepted our revenue proposal for the 2018-19 to 2022-23 regulatory period that included capital expenditure of \$74¹ million (\$ 2017-18) for reconductoring sections of the existing transmission line from Cultana to Yadnarie and Yadnarie to Port Lincoln and ongoing network support of around \$9 million per annum to provide backup supply to Port Lincoln.²

At that time, it was accepted based on asset condition assessments that major components of the line had reached the end of their functional life and required replacement. However, it was also recognised that ElectraNet was continuing to explore broader alternatives that could deliver greater net benefits for customers, including full line replacement options, through a RIT-T assessment that was underway at that time.

Therefore, the AER's final decision on our revenue proposal included a contingent project that allows the determination to be varied if a more efficient option was identified through the RIT-T assessment. This contingent project allows ElectraNet to seek the incremental capital expenditure to deliver a more efficient solution, subject to satisfying the following trigger events:³

1. Successful completion of a RIT-T including an assessment of credible options identifying the duplication or replacement of the existing Cultana to Yadnarie and/or Yadnarie to Port Lincoln transmission lines as the preferred option that maximises positive net economic benefits and/or addresses a reliability corrective action.

¹ References to expenditure forecasts in this Application are generally expressed in real terms (in \$ 2017-18) while revenue requirements are expressed in nominal terms, consistent with the requirements of the AER's Post Tax Revenue Model (PTRM).

² AER, [Final Decision: ElectraNet transmission determination 2018 to 2023, Attachment 6 – Capital expenditure](#), April 2018, pp. 11-15 and Overview pp. 24-27 (AER, Final Decision, Attachment 6 – Capex).

³ AER, Final Decision, Attachment 6 – Capex, p. 19.

2. Determination by the AER that the proposed investment satisfies the RIT-T.
3. ElectraNet Board commitment to proceed with the project subject to the AER amending the revenue determination pursuant to the Rules.
4. Clauses 1 and 2 do not apply if a change in the law occurs that allows the inclusion of the proposed investment in ElectraNet's maximum allowed revenue under the revenue determination even if a RIT-T is not carried out.

1.2 Structure of this Application

The remainder of this Application is structured as follows:

- Chapter 2 describes the Project and provides a summary of the RIT-T process that ElectraNet has completed;
- Chapter 3 sets out the regulatory requirements for the Application;
- Chapter 4 sets out the forecast capital expenditure requirements;
- Chapter 5 sets out the forecast incremental operating expenditure requirement to the end of the regulatory control period; and
- Chapter 6 sets out the incremental revenue required to the end of the regulatory control period as a result of the contingent project, together with the expected benefits for electricity customers.

The attachments that form part of our Application for the Project are described below:

- *Updated RIT-T cost-benefit assessment for the Eyre Peninsula* – HoustonKemp's independent report summarising the results of an updated cost-benefit assessment reflecting the latest cost assumptions and revised inputs.
- *Scope of works* – describes the scope of works for the Project in greater detail.
- *Post-tax revenue model (PTRM)* – the AER's model used to calculate the required incremental revenue for the balance of the current regulatory period.

Further supporting documentation has also been provided to the AER on a commercial-in-confidence basis, including detailed capital cost inputs and estimates, a project risk register and procurement information.

2. Project Summary

2.1 Project scope

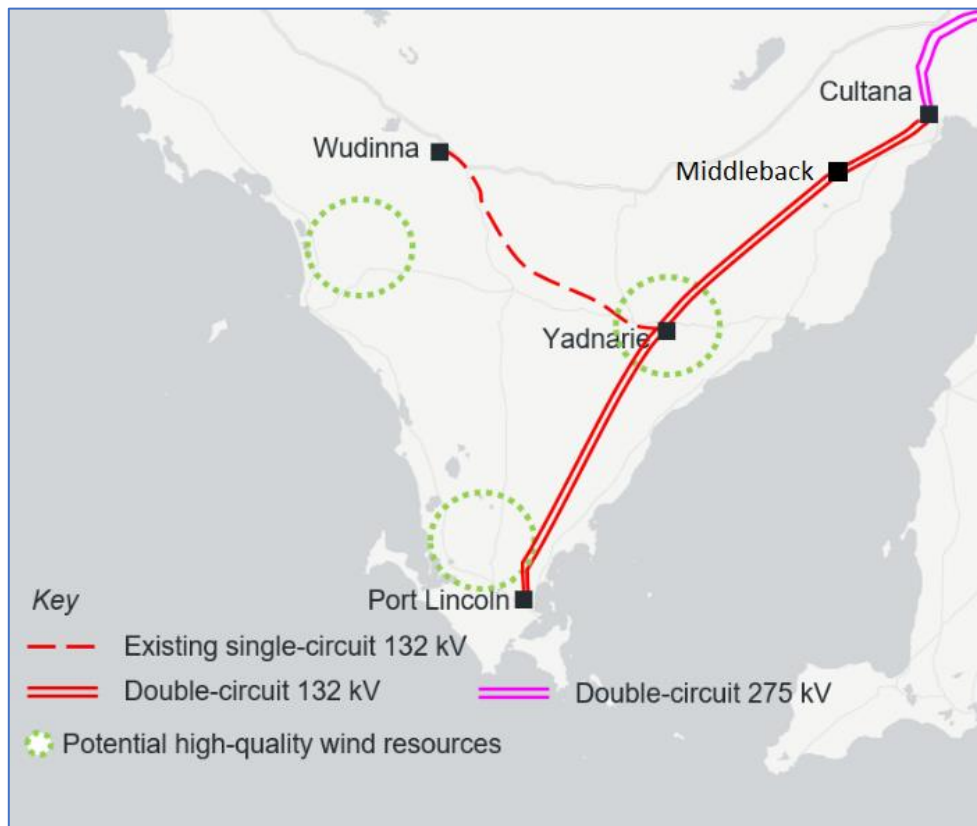
The Project increases the reliability of electricity supply to homes and businesses on the Eyre Peninsula, whilst providing the necessary flexibility to upgrade the network to operate at a higher capacity if needed to accommodate new mining developments or other demand increases in the future.

The Project scope includes:

- a double-circuit line from Cultana to Yadnarie initially energised at 132 kV with a rating of about 300 MVA, with the option to be energised at 275 kV with a rating of about 600 MVA if required in the future;
- a double-circuit line from Yadnarie to Port Lincoln rated to about 240 MVA; and
- associated substation works at Yadnarie, Cultana, Middleback, Wudinna and Port Lincoln.

Figure 1 illustrates the network configuration of the scope described above.

Figure 1: Network configuration of the Eyre Peninsula Reinforcement Project



This network configuration will utilise additional easements on the Eyre Peninsula that ElectraNet has already acquired. A level of additional generation support will also be required during construction to maintain supply during the outages required for the connection and commissioning of the new lines.

The costs of any future incremental capital works⁴ of moving from 132 kV operation to 275 kV operation triggered by the commitment of larger mining or other load developments on the Eyre Peninsula are not included within this Application.

Further information is provided in a detailed scope document which accompanies this Application.

2.2 Related projects

The Project avoids or replaces the need to re-conductor sections of the existing 132 kV transmission line from Cultana to Yadnarie and Yadnarie to Port Lincoln, which have been in service since 1967. In April 2018, the AER accepted our revenue proposal for the 2018-19 to 2022-23 regulatory period that included capital expenditure of \$74 million (\$ 2017-18) for these replacement works.

This line reinforcement project also avoids the need for network support services at Port Lincoln and associated ongoing costs of approximately \$9 million per year, which are currently recovered from customers under cost pass through arrangements. Reliability requirements at Port Lincoln are currently met by calling upon local generation services to provide back-up supply when supply from the existing 132 kV line is interrupted. These services will no longer be required to meet the required reliability standard once the new double circuit transmission line is in service.

For the purposes of this Application, the additional capital expenditure sought for the delivery of the Project is reduced by the cost of these re-conductoring works which are avoided and for which ElectraNet is already funded in the ex-ante capital expenditure forecast approved by the AER within the Revenue Determination for the 2018-19 to 2022-23 regulatory control period.

2.3 Regulatory Investment Test for Transmission

ElectraNet completed a detailed assessment of long-term electricity supply options for the Eyre Peninsula region through the RIT-T. This assessment commenced in July 2017 and concluded with the release of a PACR in October 2018.⁵ A brief summary of the outcomes of this assessment is set out below.

⁴ These capital works primarily involve substation works at Cultana and Yadnarie.

⁵ ElectraNet, [Eyre Peninsula Electricity Supply Options: Project Assessment Conclusions Report](#), 18 October 2018, pp. 34-39.

2.3.1 Identified need

The identified need for the RIT-T was to explore options for providing a reliable electricity supply to the Eyre Peninsula most efficiently in the future, taking into account the requirement to replace major transmission line components serving the lower Eyre Peninsula in the next few years and the scheduled expiry of the network support arrangement at Port Lincoln.

It also considered the benefits of 'future proofing' new transmission line options to provide flexibility for upgrading the network to operate at a higher capacity if needed.

2.3.2 PACR options considered

The PACR investigated five broad options for supplying the Eyre Peninsula, together with variants of these options, ranging from maintaining the equivalent of current capacity on the Eyre Peninsula, including a backup generation network support arrangement, through to upgrading the entire network to 275 kV with two completely divergent network paths.

Three of these options were specifically designed to be flexible and allow for capacity upgrades to the network if a certain 'trigger' occurs, i.e. the commitment of mining load on the Eyre Peninsula. This allowed for an assessment of the benefit of investing more upfront to provide flexibility for upgrading that option to 275 kV at a lower cost later, if required.

A further two lower capacity options were also assessed in response to submissions to the Project Assessment Draft Report (PADR) which involve reconductoring sections of the existing line and building a new 132 kV line on a separate easement.

A summary of each of the 12 option variants assessed, including costs and key features of each option, is provided in the PACR.⁶

2.3.3 PACR outcome

The PACR identified the preferred option as:

- 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; and
- a new 132 kV double-circuit line from Yadnarie to Port Lincoln.

The preferred option was found to maximise net market benefits by:

- increasing reliability of electricity supply to customers on the Eyre Peninsula, reducing the frequency of outages;
- removing current network constraints, allowing the market to benefit from more low-cost energy from existing wind farms on the Eyre Peninsula;

⁶ ElectraNet, Eyre Peninsula PACR, 2018, pp. 34-39.

- providing greater opportunities for new demand and renewable energy developments on the Eyre Peninsula compared to the current supply arrangement; and
- ‘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 PACR estimated that the preferred option would deliver net market benefits of around \$150 million over the next 20 years relative to a ‘do nothing’ base case with a new SA-NSW interconnector in-place, or \$140 million without a new interconnector. The net market benefits were 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 estimated capital cost of the preferred option was \$240 million (\$2017-18) (around \$160 million more than reconductoring sections of the existing transmission line) with commissioning by end 2021, subject to obtaining necessary statutory approvals.⁷

The preferred option provides the necessary flexibility to upgrade the network to operate at a higher capacity if needed and is robust to the assumed likelihood of new mining developments or other demand increases in the future.

2.4 AER Determination

On 23 November 2018, we submitted a formal request to the AER for a determination that the preferred option identified in PACR satisfies the requirements of the RIT-T, in accordance with clause 5.16.6 of the Rules.

On 11 April 2019, the AER made a determination that the preferred option satisfies the RIT-T requirements. More specifically, the AER’s review of the PACR found:

- the identified need is consistent with the RIT-T requirements;
- the credible options assessed meet the definition of a credible option, and the number and range of credible options is appropriate given the magnitude of the likely costs of the credible options;
- the number, choice and weighting of the reasonable scenarios satisfies RIT-T requirements;
- the costs of the credible options have been appropriately quantified;

⁷ ElectraNet’s Revenue Proposal of March 2017 for the 2018-19 to 2022-23 regulatory period included an indicative capital expenditure estimate of \$200 million (\$2017-18) for the Eyre Peninsula Reinforcement contingent project. The Revenue Proposal noted that this estimate was based on an indicative 132 kV double-circuit line option and acknowledged that the actual cost of a fully scoped solution would depend on the construction voltage (132 kV or 275 kV) and final configuration, subject to the outcomes of the RIT-T. The PACR identified a double-circuit 132 kV line with the ability for the Cultana to Yadnarie section to be upgraded to 275 kV as the preferred option.

- the selection of material market benefits and the quantification of those material market benefits satisfies RIT-T requirements; and
- the preferred option was correctly identified.

The AER engaged an expert to undertake an independent review of the findings and conclusions presented in the PACR and assist the AER in its assessment.⁸

The determination was not required to consider whether the estimated capital costs of the preferred option represent efficient and prudent costs that reasonably reflect the capital expenditure criteria. That will be considered by the AER in assessing this Application.

2.5 Updated Analysis

Since publishing the PACR in October 2018, there have been several developments relevant to specific inputs and assumptions relied upon at the time of the cost benefit assessment. To demonstrate whether the preferred option identified in the PACR remains unchanged and continues to provide positive net market benefits, ElectraNet engaged HoustonKemp to update the cost-benefit assessment to account for these changes.

Specifically, the developments and resulting changes to inputs and assumptions include the following:

- ElectraNet has progressed the procurement and contracting process for the preferred option, which has resulted in refined capital cost estimates and expenditure profiles compared to those used in the PACR assessment.
- Following the expiry of the existing contract for network support services at Port Lincoln in December 2018, ElectraNet completed a competitive tender process to secure network support services until completion of the Eyre Peninsula Reinforcement, allowing network support cost assumptions to be forecast with a greater degree of certainty.
- A later commissioning date of December 2022 is now expected, twelve months later than that assumed in the PACR, as informed by the contracting and procurement process undertaken since the PACR was released and accounting for the impacts of COVID-19.⁹

The updated modelling finds that the preferred option identified in the PACR continues to have strongly positive net market benefits and remains the top-ranked option when the revised inputs described above are applied. Further, sensitivity testing demonstrates that the preferred option remains unchanged:

- whether or not the proposed SA-NSW interconnector is built;

⁸ The AER's determination, including our determination request and the independent expert's report, are available from the AER's website at <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/contingent-projects/electranet-eyre-peninsula-electricity-supply-options-regulatory-investment-test-transmission-rit-t>.

⁹ Consistent with the project timing outlined in section 3.3.

- if the project is delivered in a later timeframe of June 2023;
- if the Port Lincoln generator support arrangements continue for six months after commissioning;
- if capital costs increase further (by up to 59 per cent); or
- if estimated wholesale market benefits fall (by up to 75 per cent).

HoustonKemp's independent report summarising the revised assumptions and outcomes of the updated modelling accompanies this Application.

2.6 Next Steps

ElectraNet is now proceeding to deliver the preferred option identified in the PACR that the AER has confirmed satisfies the RIT-T. The next steps involve:

- assessment of the required capital and operating expenditure by the AER;
- the AER awarding ElectraNet incremental revenue commensurate with the capital and operating costs of the project;
- finalising line and substation contracts with relevant suppliers;
- completing environmental, cultural and development approvals; and
- commencing line and substation construction works.

3. Regulatory Requirements

The regulatory requirements for contingent projects are contained in clause 6A.8.2 of the Rules and in the AER's Process Guideline for Contingent Project Applications.¹⁰

The key requirements for this Application are outlined in the following sections.

3.1 Amendment of Revenue Determination for Contingent Project

Clause 6A.8.2 of the Rules sets out the requirements for making an application to amend a revenue determination to include a contingent project.

Clause 6A.8.2(b) sets out the information that the application must provide, specifically:

- an explanation that substantiates the occurrence of the trigger event;
- a forecast of the total capital expenditure for the contingent project;
- a forecast of the capital and incremental operating expenditure, for each remaining regulatory year which the Transmission Network Service Provider (TNSP) considers is reasonably required for the purpose of undertaking the contingent project;
- how the forecast of the total capital expenditure for the contingent project meets the Rule threshold;
- the intended date for commencing the contingent project (which must be during the regulatory control period);
- the anticipated date for completing the contingent project (which may be after the end of the regulatory control period); and
- an estimate of the incremental revenue which the TNSP considers is likely to be required in each remaining regulatory year of the regulatory control period as a result of the contingent project being undertaken.

Clause 6A.8.2(f) requires the AER to accept the relevant amounts in the application if it is satisfied that the amounts of forecast capital expenditure and incremental operating expenditure reasonably reflect the capital expenditure criteria and operating expenditure criteria, taking into account the capital expenditure factors and operating expenditure factors, in the context of the contingent project.

Chapters 4 and 5 of this Application set out the capital and incremental operating expenditure requirements for this contingent project respectively, together with the assumptions and methodology used to arrive at these forecasts.

The incremental revenue required for this project and corresponding benefit to be delivered to customers is set out in Chapter 6. The remaining regulatory requirements are addressed in the remainder of this section.

For completeness, Appendix A includes a checklist of the above regulatory requirements.

¹⁰ AER, [Process Guideline for Contingent Project Applications under the National Electricity Rules](#), September 2007.

3.2 Trigger Events

Clause 6A.8.2(b)(1) requires ElectraNet to substantiate the occurrence of each trigger event relevant to a contingent project. A contingent project application must be lodged as soon as practicable after the occurrence of the applicable trigger event(s).¹¹

The applicable trigger events approved by the AER in respect of the Project have all been satisfied as outlined in Table 3-1 below.

Table 3-1: Status of Eyre Peninsula Reinforcement contingent project trigger events

Trigger event	Status
1. Successful completion of a RIT-T including an assessment of credible options identifying the duplication or replacement of the existing Cultana to Yadnarie and/or Yadnarie to Port Lincoln transmission lines as the preferred option that maximises positive net economic benefits and/or addresses a reliability corrective action.	Complete. This trigger event was satisfied by the publication of the Project Assessment Conclusions Report (PACR) on 18 October 2018. ¹²
2. Determination by the AER that the proposed investment satisfies the RIT-T.	Complete. On 11 April 2019 the AER made a determination that the preferred option identified in the PACR satisfies the RIT-T.
3. ElectraNet Board commitment to proceed with the project subject to the AER amending the revenue determination pursuant to the Rules.	Complete. On 30 April 2020 the ElectraNet Board made a commitment to proceed with the Eyre Peninsula Reinforcement Project, subject to the AER awarding incremental revenue commensurate with the capital and operating costs of the project, in accordance with the Rules (see Appendix B).
4. Clauses 1 and 2 do not apply if a change in the law occurs that allows the inclusion of the proposed investment in ElectraNet's maximum allowed revenue under this revenue determination even if a RIT-T is not carried out.	Not applicable. No such change to the law has occurred.

As the relevant trigger events have now occurred, this Application presents the required information for the AER to make a determination to approve the total capital expenditure for the project and amend ElectraNet's revenue determination under 6A.8.2 of the Rules.

¹¹ In accordance with clause 6A.8.2(a1) of the Rules.

¹² ElectraNet, [Eyre Peninsula PACR](#), 2018.

3.3 Project Timing

For the purposes of this Application, the applicable dates for commencement and completion of the Project are as follows:

- Date for commencement of the contingent project – 1 July 2018.
- Anticipated date for completing the contingent project – 31 December 2022.

The capital expenditure associated with the contingent project is contained within the current 2018-19 to 2022-23 regulatory control period.¹³

The commencement date reflects the work performed by ElectraNet to date to complete and obtain regulatory approvals for the RIT-T. The anticipated completion date for the Project is consistent with project commissioning by end 2022.

3.4 Pre-lodgement Consultation

The AER's Process Guideline for Contingent Project Applications under the National Electricity Rules encourages transmission companies to engage with the AER prior to lodgement of a contingent project application to assist both the AER and TNSP to satisfy the requirements of the Rules.

We undertook the pre-lodgement process prior to formal lodgement of this Application with the provision of a range of background and supporting information to the AER together with a draft copy of this Application.

We also provided a briefing to our Consumer Advisory Panel on the Application and invited feedback as part of pre-lodgement consultation.

¹³ Prior period expenditure of approximately \$3.1m was also incurred on this project comprising \$1.9m (\$2017-18) in 2011-12 and 2012-13 relating to earlier RIT-T consultation (see Lower Eyre Peninsula Reinforcement RIT-T: [PSCR](#) and [PADR](#) available on ElectraNet's website) and expenditure of approximately \$1.2m (\$2017-18) in 2016-17 and 2017-18 relating to the RIT-T assessment described in section 2.3. This expenditure has already been reflected in the opening RAB (as incurred) together with the associated revenue in ElectraNet's current revenue determination and is therefore excluded from the incremental revenue sought in this application. The full amount will be included in the closing RAB.

4. Forecast Capital Expenditure

This chapter presents the forecast capital expenditure for the Project in accordance with clauses 6A.8.2(b)(2)-(4) of the Rules.

The forecast capital expenditure is considered by ElectraNet to be reasonably required to undertake this Project, taking into consideration the capital expenditure criteria and capital expenditure factors set out in the Rules.¹⁴

4.1 Basis for estimates

Table 4-1 below provides a summary breakdown of the cost components and the basis of the capital expenditure forecast for this Application.

Table 4-1: Breakdown of forecast capital expenditure and basis (\$m 2017-18)

Capex Item	Cost estimate ¹⁵	Basis for Forecast Expenditure
Transmission line works	216	Estimate based on tender pricing
Substation works	19	Estimate based on tender pricing
Land access & approvals	10	Estimates from internal and external sources
Project delivery costs	27	Estimate based on current delivered costs and benchmarks
Project risk	18	Detailed probabilistic risk assessment
Total	290	

4.1.1 Basis of capital expenditure estimates

ElectraNet has undertaken a comprehensive procurement process to deliver the Project at the lowest cost whilst ensuring that risk is appropriately managed in the delivery model. This has included a rigorous procurement process from June 2019 to April 2020, incorporating market assessment and a competitive tender process.

A balanced approach was applied to the tender assessment to ensure the core objectives of the Project were met, including safety, environmental protection and cultural heritage impacts, in addition to cost, quality, risk and delivery requirements.

The capital expenditure forecasts have been estimated by ElectraNet based on vendor pricing, current delivered costs and prevailing market rates, with market pricing forming over 85% of the cost estimate (excluding project risk). This information is drawn from a range of sources, including tender pricing, market information, recently completed projects, purchased equipment and current labour and foreign exchange rates.

¹⁴ As required by clause 6A.8.1(b)(2)(ii) of the Rules.

¹⁵ Excluding prior period expenditure of approximately \$3.1m.

Estimated capital costs have also been revised to account for a range of other factors through the course of detailed project planning, including detailed assessment of project risks, additional access track requirements, environmental approval requirements, and more recently the impacts of COVID-19.

Project delivery costs have been forecast based on current costs, consistent with benchmarks accepted by the AER in previous revenue determination processes.

4.1.2 Basis of project risk estimates

An appropriate project risk allowance has been calculated based on the established project risk management methodology previously accepted by the AER.¹⁶ This methodology involves a detailed evaluation and probabilistic assessment of known risks that reflect the stage of the project in the delivery cycle and complexity of the works involved.

The steps taken in performing these risk assessments are outlined below:

- Project risks are identified through a process of expert internal review and assessment across the relevant project disciplines. A description of each risk is captured and documented within a risk register.
- A risk assessment is undertaken to identify appropriate mitigation measures and quantify the cost impact of the residual risk. The detailed inputs to this risk assessment are determined with the relevant subject matter experts.
- Monte Carlo Analysis is performed to simulate project risk cost outcomes on a probabilistic basis, based on the likelihood of occurrence and range of potential cost impacts across each of the identified risks on a 50% probability of exceedance ('P50') basis.
- The outcomes of this risk assessment are used to establish the risk allowance component of the capital cost estimate.

4.2 Capex Forecast by Year

As explained in section 2.2, the Project avoids the need for the \$74 million (\$ 2017-18) reconductoring project for sections of the existing 132 kV transmission line between Cultana and Port Lincoln which is already included within the scope of the approved ex-ante capital expenditure allowance for the 2018-19 to 2022-23 regulatory control period.

Accordingly, the additional forecast capital expenditure required to undertake the Project is limited to the expenditure to be incurred net of the cost of the reconductoring project as outlined in Table 4-2 below.

¹⁶ Consistent with AER's Expenditure Forecast Assessment Guideline (2013) and the risk allowance methodology used in ElectraNet's recently approved Main Grid System Strength contingent project application: <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/contingent-projects/electranet-main-grid-system-strength-contingent-project>.

Table 4-2: Capital expenditure forecast (\$m 2017-18)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Eyre Peninsula Reinforcement Project	0.6	9.0	59.4	170.6	50.4	289.9¹⁷
Reconductoring line sections between Cultana & Pt Lincoln	(1.8)	(19.4)	(27.0)	(19.8)	(6.1)	(74.1)
Incremental contingent project capital expenditure	(1.2)	(10.4)	32.4	150.8	44.3	215.8

Totals may not add due to rounding

The expenditure profile above reflects the delivery schedule for the Project based on commissioning by end 2022.

4.3 RIT-T comparison

Table 4-3 below compares the capital expenditure forecast proposed in this Application with the estimated capital cost of the Project modelled in the PACR.

Table 4-3: Forecast and PACR capex comparison (\$m 2017-18)

Forecast	PACR¹⁸	Contingent Project Application¹⁹
Capex estimate	240	290

Since publishing the PACR in October 2018, we have updated the capital cost estimate for this Project to reflect the market pricing outcomes of the competitive procurement and contracting process. Capital costs have also been revised to account for a range of other factors identified through the course of detailed project planning, including detailed assessment of project risks, additional access track requirements, environmental approval requirements, and more recently the impacts of COVID-19.

As explained in section 2.5, we have updated the cost benefit modelling with the latest information on project cost and timing and other key inputs. The updated modelling demonstrates that the preferred option identified in the PACR continues to have strongly positive net market benefits and remains the top-ranked option. Sensitivity testing shows that the preferred option remains robust to further variation in key inputs, including a capital cost increase of up to 59 percent.

¹⁷ Excludes prior period expenditure of approximately \$3.1m.

¹⁸ ElectraNet, Eyre Peninsula PACR, 2018, pp. 35-36.

¹⁹ Excluding prior period expenditure of approximately \$3.1m. The updated economic cost benefit assessment which accompanies this application has been based on the full project cost of \$293m.

4.4 Capital Expenditure Threshold

To qualify as a contingent project, the proposed capital expenditure at the time of ElectraNet's revenue determination was required to exceed either \$30 million or 5% of the Maximum Allowed Revenue (MAR) for the first year of the regulatory control period, whichever is the greater.²⁰

As the AER determined a maximum allowed revenue for ElectraNet for the first year of the current regulatory control period of \$305.3 million (smoothed), 5% of this total is approximately \$15.3 million. Therefore, the applicable threshold for a contingent project is \$30 million. As the estimated cost of the Project exceeds this figure, the threshold requirements of clause 6A.8.2(b)(4) of the Rules are satisfied.

4.5 Capex Forecast for the CESS

The incremental capital expenditure above results in an increase in the ex-ante capital expenditure forecast for the purposes of the Capital Expenditure Sharing Scheme (CESS) in accordance with the requirements of the scheme.²¹

The revised capital expenditure forecast to be used to calculate efficiency gains in the 2018-19 to 2022-23 regulatory period is as outlined in Table 4-4 below, compared with the existing target capex for the CESS.

Table 4-4: Forecast capex for the CESS (\$m Jun 2017-18)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Target capex for the CESS	111.9	210.4	179.6	251.1	97.2	850.1
<i>Existing target capex for the CESS</i>	<i>113.1</i>	<i>220.9</i>	<i>146.8</i>	<i>98.4</i>	<i>52.4</i>	<i>631.7</i>

Total may not add due to rounding

4.6 Conclusion

The total forecast capital expenditure for the purposes of this Application is \$289.9 million²² (\$2017-18). The incremental contingent project capital expenditure sought for the delivery of the project (net of avoided reconductoring costs) is \$215.8 million (\$2017-18).

We are confident that this forecast is both efficient and prudent (in accordance with the capital expenditure criteria) and that it meets the required capital expenditure objectives set out in the Rules.

²⁰ In accordance with clause 6A.8.1(b)(2)(iii).

²¹ AER, [Better Regulation – Capital Expenditure Incentive Guideline for Electricity Network Service Providers](#), November 2013, p.9.

²² Excluding prior period expenditure of approximately \$3.1m that is already included in the RAB.

We have reached an advanced stage in our competitive procurement process, with market tested pricing forming the basis of the detailed project cost estimates upon which the expenditure forecasts in the Application are based. This provides confidence that the capital expenditure forecast reflects the efficient and prudent costs of delivering the solution approved by the AER under the RIT-T.

5. Forecast Incremental Operating Expenditure

This chapter presents the forecast incremental operating expenditure required for the Project in accordance with the requirements of clause 6A.8.2(b)(3) of the Rules.

The forecast incremental operating expenditure detailed in this chapter is considered by ElectraNet to meet the operating expenditure criteria and operating expenditure factors set out in the Rules.

5.1 Basis for estimates

ElectraNet has determined the incremental operating expenditure for the Project in a manner consistent with the methodology and models accepted by the AER in its revenue determination for ElectraNet for the current regulatory control period.

The operating expenditure forecast for the Project is comprised of:

- A reduction in ongoing network support costs; and
- A minor increase in debt raising costs (based on benchmark costs calculated using the PTRM).

Overall, this results in a net reduction to operating expenditure requirements for the balance of the regulatory period, as set out below.

5.2 Network support

The Project avoids the ongoing need for network support services to meet the applicable reliability standard at Port Lincoln. An ongoing reduction in network support costs has been factored into the forecast below following the scheduled completion of project commissioning and testing activities in 2022-23, allowing four months for the completion of these works.

5.3 Incremental Opex Forecast

The incremental operating expenditure forecast for the contingent project is as follows:

Table 5-1: Incremental operating expenditure (\$m 2017-18)

Component	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Network support	0.0	0.0	0.0	0.0	(1.4)	(1.4)
Debt raising costs	0.0	0.0	0.0	0.0	0.1	0.1
Total opex	0.0	0.0	0.0	0.0	(1.3)	(1.3)

5.4 Opex Forecast for the purposes of the EBSS

The incremental operating expenditure above results in a minor adjustment to the operating expenditure forecast for the purposes of the Efficiency Benefit Sharing Scheme (EBSS) in accordance with the requirements of the scheme.²³

The revised operating expenditure forecasts to be used to calculate efficiency gains in the 2018-19 to 2022-23 regulatory period are shown in Table 5-2 below, compared with the existing target opex for the EBSS²⁴.

Table 5-2: Forecast opex for the EBSS (\$m Jun 2017-18)

Component	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Total opex	90.4	90.9	92.5	93.6	92.7	460.0
Less debt raising costs	(1.3)	(1.3)	(1.3)	(1.3)	(1.4)	(6.6)
Less network support	(8.4)	(8.4)	(8.4)	(8.4)	(7.0)	(40.5)
Target opex for the EBSS	80.7	81.2	82.8	83.8	84.3	412.9
<i>Existing target opex for the EBSS</i>	<i>80.7</i>	<i>81.2</i>	<i>82.8</i>	<i>83.8</i>	<i>84.3</i>	<i>412.9</i>

Totals may not add due to rounding

5.5 Conclusion

The incremental impact on operating expenditure for the contingent project in the remaining years of the regulatory control period is a net reduction of \$1.3 million (\$2017-18).

ElectraNet is confident that this forecast is both efficient and prudent (in accordance with the operating expenditure criteria) and that it meets the operating expenditure objectives of the Rules.

²³ AER, [Better Regulation – Efficiency Benefit Sharing Scheme for Electricity Network Service Providers](#), November 2013, p.9.

²⁴ As the incremental opex proposed in this Application impacts only debt raising costs and network support costs, both of which are excluded expenditure categories under the EBSS, the target opex for the EBSS remains unchanged.

6. Incremental Revenue Requirements

Clause 6A.8.2(b)(7) of the Rules requires ElectraNet to provide an estimate of the incremental revenue likely to be required for each remaining regulatory year of the regulatory control period as a result of the Project being undertaken.

The incremental revenue sought by ElectraNet is consistent with the capital and incremental operating expenditure as described in Chapters 4 and 5 above.

ElectraNet has modelled the required incremental revenue on a nominal basis using the AER’s PTRM for the current period (as most recently updated by the AER for the trailing average cost of debt) and based on the annual capital expenditure forecasts presented in this Application. A copy of this PTRM accompanies this Application.

In accordance with clause 6A.8.2(b)(7)(ii) of the Rules, the capital expenditure forecast has been classified in a manner consistent with the AER’s roll forward model to allow for the calculation of the Regulated Asset Base at the close of the current regulatory control period.

6.1 WACC

Clause 6A.8.2(b)(7)(iii) of the Rules requires ElectraNet to model its incremental revenue requirements based on the prevailing rate of return determined by the AER for the current regulatory control period. The WACC used by ElectraNet for this Application satisfies this requirement of the Rules and is provided in Table 6-1 below.

Table 6-1: WACC Parameters²⁵

Parameter	AER Approved Value
Risk-free rate	2.87%
Forecast inflation	2.45%
Market risk premium	6.50%
Gearing	60.0%
Equity beta	0.7
Nominal pre-tax return on debt	4.35%
Nominal post-tax return on equity	7.40%
Nominal vanilla WACC	5.57%

²⁵ As last updated by the AER in April 2020 in its annual trailing average cost of debt update.

6.2 Depreciation

Clause 6A.8.2(b)(7)(iv) of the Rules requires that the calculation of the estimated incremental revenue be consistent with the way depreciation is calculated under clause 6A.6.3.

The incremental annual regulatory depreciation shown in Table 6-2 below has been calculated using the prevailing PTRM as applied by the AER for the current regulatory control period.²⁶

Table 6-2: Incremental Regulatory Depreciation (\$m nominal)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Approved regulatory depreciation	44.2	63.4	64.8	74.3	71.1	317.9
Eyre Peninsula Reinforcement Project incremental regulatory depreciation	0.0	0.0	0.3	(0.6)	(5.6)	(5.8)
Revised regulatory Depreciation	44.2	63.5	65.1	73.7	65.5	312.1

Totals may not add due to rounding

The updated total regulatory depreciation forecast for the 2018-19 to 2022-23 regulatory period will be applied in calculating ElectraNet's opening RAB at the commencement of the following regulatory control period, consistent with the forecast depreciation approach approved by the AER in the current revenue determination.²⁷

6.3 Tax allowance

The incremental annual net tax allowance shown in Table 6-3 below has been calculated using the prevailing PTRM as applied by the AER for the current regulatory control period.

Table 6-3: Incremental Tax Allowance (\$m nominal)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Approved tax allowance	4.9	7.5	8.4	9.9	9.9	40.5
Eyre Peninsula Reinforcement Project incremental tax allowance	0.0	0.0	0.0	0.0	0.2	0.2
Revised Tax Allowance	4.9	7.5	8.3	9.9	10.1	40.7

Totals may not add due to rounding

²⁶ As last updated for ElectraNet in April 2020 by the AER's in its annual trailing average cost of debt update.

²⁷ AER, [ElectraNet transmission determination 2018 to 2023](#), April 2018, p13.

6.4 Incremental revenue requirements for each year to end of period

Based on the estimates provided above and using the prevailing PTRM, ElectraNet has calculated incremental annual building block revenue requirements for the contingent project as shown in Table 6-4.

Table 6-4: Incremental Revenue Requirement (\$m nominal)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Return on capital	0.0	(0.1)	(0.7)	1.3	10.8	11.3
Regulatory depreciation	0.0	0.0	0.3	(0.6)	(5.6)	(5.8)
Opex allowance	0.0	0.0	0.0	0.0	(1.5)	(1.5)
Net tax allowance	0.0	0.0	0.0	0.0	0.2	0.2
Unsmoothed revenue requirement	0.0	(0.1)	(0.4)	0.8	3.9	4.2

Totals may not add due to rounding

6.5 Amended maximum allowed revenue

The AER's final decision on the annual building block revenue requirement for the current regulatory control period is set out in Table 6-5 (as revised by the AER in April 2020 for the annual trailing average cost of debt update) together with the calculation of the amended MAR required for the contingent project.

Table 6-5: Amended annual building block revenue requirement (\$m nominal)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER annual building block revenue requirement	286.1	314.6	327.4	348.8	351.0	1,627.9
Eyre Peninsula Reinforcement Project revenue requirement	0.0	(0.1)	(0.4)	0.8	3.9	4.2
Amended annual revenue requirement (unsmoothed)	286.1	314.6	327.0	349.6	354.9	1,632.1

Totals may not add due to rounding

Recovery of the incremental revenue approved by the AER will commence in the 2021-22 regulatory year, in accordance with ElectraNet's approved Transmission Pricing Methodology.

Table 6-6 below sets out the updated MAR and X factors for the current regulatory control period.

Table 6-6: Amended maximum allowed revenue (\$m nominal)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
MAR (smoothed)	305.3	312.5	322.3	336.9	352.0	1,629.0
X Factor	14.85%	0.08%	-0.67%	-2.00%	-2.00%	-

Totals may not add due to rounding

The incremental revenue requirement has been smoothed in order to minimise impacts on customer prices over time, in a manner consistent with the requirements of the Rules that:

- Provides an equivalent revenue outcome in net present value terms; and
- Ensures the revenue to be recovered in the last year of the regulatory period is as close as reasonably possible to the unsmoothed revenue requirement.²⁸

Under the approach above, the smoothed incremental revenue requirement does not commence until 2021-22, aligning with the first year in which revenue recovery can commence under the annual transmission pricing process.²⁹

6.6 Customer bill impact

The PACR reported that the cost of the new transmission line is fully offset by avoiding the cost of replacement works on the existing line of \$74 million (\$ 2017-18) and ongoing network support costs of \$8 to \$9 million per year, resulting in a near neutral price impact for the average residential electricity customer in South Australia.

Updated modelling based on the latest cost estimates prepared for this Application confirms that the preferred option identified in the PACR continues to have strongly positive net market benefits and remains the top-ranked option using revised inputs.

The updated modelling also confirms that the cost of the new transmission line is largely offset by avoiding the \$74 million cost of replacement works on the existing line and ongoing network support costs of \$9 million per year, resulting in a minimal price impact for the average residential customer of approximately \$1 per year.

²⁸ In accordance with clause 6A.6.8(c).

²⁹ Noting that transmission prices have already been published under the Rules for 2020-21.



APPENDICES

Appendix A Requirements Checklist

The purpose of this table is to demonstrate compliance with the contingent project application information requirements specified in clause 6A.8.2(b) of the Rules.

Rule 6A.8.2(b) requirements	Reference in Application
(1) an explanation that substantiates the occurrence of the <i>trigger event</i> ;	Section 3.2 and Appendix B
(2) a forecast of the total capital expenditure for the <i>contingent project</i> ;	Section 4.2
(3) a forecast of the capital and incremental operating expenditure, for each remaining <i>regulatory year</i> which the <i>Transmission Network Service Provider</i> considers is reasonably required for the purpose of undertaking the <i>contingent project</i> ;	Sections 4.2 and 5.3
(4) how the forecast of the total capital expenditure for the <i>contingent project</i> meets the threshold as referred to in clause 6A.8.1(b)(2)(iii);	Section 4.4
(5) the intended date for commencing the <i>contingent project</i> (which must be during the <i>regulatory control period</i>);	Section 3.3
(6) the anticipated date for completing the <i>contingent project</i> (which may be after the end of the <i>regulatory control period</i>); and	Section 3.3
<p>(7) an estimate of the incremental revenue which the <i>Transmission Network Service Provider</i> considers is likely to be required to be earned in each remaining <i>regulatory year</i> of the <i>regulatory control period</i> as a result of the <i>contingent project</i> being undertaken as described in subparagraph (3), which must be calculated:</p> <ul style="list-style-type: none"> (i) in accordance with the requirements of the <i>post-tax revenue model</i> referred to in clause 6A.5.2; (ii) in accordance with the requirements of the <i>roll forward model</i> referred to in clause 6A.6.1(b); (iii) using the <i>allowed rate of return</i> for that <i>Transmission Network Service Provider</i> for the <i>regulatory control period</i> as determined in accordance with clause 6A.6.2; (iv) in accordance with the requirements for depreciation referred to in clause 6A.6.3; and (v) on the basis of the capital expenditure and incremental operating expenditure referred to in subparagraph (b)(3). 	Section 6.4 and 6.5

Appendix B Board Approval



I certify that the following is an extract from the minutes of a duly authorised resolution of the Board of Directors of ElectraNet Pty Ltd ABN 41 094 482 416 dated 30 April 2020.

Subject: Regulated Contingent Project - Eyre Peninsula Transmission Reinforcement

The Board RESOLVED to commit to proceed with the Eyre Peninsula Transmission Reinforcement Project, subject to the AER awarding incremental revenue commensurate with the capital and operating costs of the Project.

A handwritten signature in black ink, appearing to read 'Sam Dighton', written over a horizontal line.

Sam Dighton
COMPANY SECRETARY

DATE: 30 April 2020

