Transgrid

People. Power. Possibilities.

Maintaining reliable supply to North West Sydney

RIT-T Project Assessment Conclusions Report

Area: Greater Sydney

Date of issue: 19 September 2025

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Executive summary

We are applying the Regulatory Investment Test for Transmission (RIT-T) to options for maintaining reliable supply in North West Sydney. Publication of this Project Assessment Conclusions Report (PACR) is the final step in the RIT-T process.

The Vineyard Precinct is part of the North West Priority Growth Area, an area identified by the NSW Government for new development. Stage 1 of the Vineyard area was rezoned in December 2017 and essential infrastructure such as roads, sewage and distribution infrastructure (provided by Endeavour Energy) has been delivered. Vineyard Precinct is now growing rapidly in line with the Stage 1 growth targets of 2,300 new homes and 7,000 residents.

Our power system studies show that this new development is resulting in rapid load growth to the area supplied by Transgrid's Vineyard 330/132 kV Bulk Supply Point (BSP). This load growth is forecast to cause the reactive margin at Vineyard BSP to drop to below one percent of the maximum fault level at the Vineyard 330 kV and 132 kV busbars.

Schedule 5.1.8 of the National Electricity Rules (NER) requires that the reactive margin (expressed as a capacitive reactive power (in MVAr)) must not be less than one percent of the maximum fault level (in MVA) at the connection point. The present network is unable to achieve this reactive margin in the future based on the latest demand forecasts. Shedding of load will be required to maintain this reactive margin at times of higher loads.

This RIT-T therefore examines various network and non-network options to address voltage stability to ensure compliance with the requirements of the NER and provide the greatest net benefit to the market.

Identified need: maintain reliable supply to North West Sydney in light of rapid load growth

The identified need for this RIT-T is to maintain reliable supply in North West Sydney by managing voltage stability constraints which are forecast to arise due to rapid demand growth. If the constraints associated with load growth in North West Sydney are unresolved, it could result in the interruption of a significant amount of electricity supply.

Schedule 5.1.8 of the NER requires that the reactive margin at a connection point must not be less than one percent of the maximum fault level at the connection point. Our power system studies show that the rapid load growth in the Vineyard Precinct will cause the reactive margin at Vineyard BSP to drop to below one percent of the maximum fault level at the Vineyard 330 kV and 132 kV busbars from summer 2025/26.

We have therefore commenced this RIT-T to assess options to ensure the above NER requirements continue to be met in North West Sydney with forecast demand increases.[1]

[1] As part of a joint planning initiative with Endeavour Energy, Transgrid recently completed a separate RIT-T to address load growth in the Western Sydney region ("Meeting demand growth in the Western Sydney Aerotropolis 'Priority Growth Area'")

No submissions received in response to the Project Specification Consultation Report

We published a Project Specification Consultation Report (PSCR) on 26 February 2025 and invited written submissions on the material presented within the document. No submissions were received in response to the PSCR.

No material developments since publication of the PSCR

No additional credible options were identified during the consultation period following publication of the PSCR.

No material changes have occurred since the PSCR that have made an impact on the preferred option. However, we have applied the following updates to this PACR:

- At the time the PSCR was published, Transgrid's cost estimate for Option 1 was primarily based on a desktop assessment of the activity required. Following assessment on site, additional complexity was identified which raised the estimated capital expenditure for Option 1 from $44.5m in the PSCR +/- 25 per cent in the PSCR to $51m +/- 25% in this PACR.
- We have also updated our Value of Customer Reliability (VCR) to reflect the latest AEMO Inputs, Assumptions and Scenarios Report.[2] On a statewide basis, the VCR values are lower than what we had used in the PSCR.
- The Expected Unserved Energy (EUE) calculation has been updated to reflect the latest forecasts.[3]

Two credible network options have been identified

We have identified one credible network option to meet the identified need from a technical, commercial, and project delivery perspective.[4] This option is summarised in Table E-1 below.

Table E-1 Summary of the credible options

Option	Description	Capital costs ($M, 2024/25)	Expected timing
Option 1	Loop-in Line 26 to Vineyard BSP	51	2028/29
Option 2	Install shunt capacitors at Vineyard BSP then loop-in line 26 at a later date.	86.9	2028/29

No submissions received in relation to non-network options

In the PSCR, we noted that we consider non-network options may be commercially and technically feasible to assist with meeting the identified need for this RIT-T either as standalone options or in combination with network options. We invited parties to make written submissions regarding the potential of non-network options to satisfy, or contribute to satisfying, the identified need for this RIT-T. No submissions were received in response to the PSCR in relation to non-network options.

[2] AEMO *2025 Inputs, Assumptions and Scenarios Report*, August 2025
[3] Transgrid, *Transmission Annual Planning Report (TAPR) 2025*, August 2025, pp.147
[4] As per clause 5.15.2(a) of the NER.

Option 1 delivers highest net economic benefits and will meet NER requirements

Implementing Option 1 by 2028/29 will not only satisfy relevant regulatory obligations set out in the NER and NSW reliability standards, it will also maintain voltage stability in North West Sydney for the long term.

Option 1 delivers the highest net economic benefits in all scenarios, meeting the identified need at a lower cost than Option 2. Accordingly, Option 1 has been identified as the preferred option.

Conclusion: Loop-in Line 26 to Vineyard BSP is optimal

The optimal commercially and technically feasible option presented in this PSCR – Option 1 (loop-in Line 26 to Vineyard BSP) – is the preferred option to meet the identified need and maintain reliable supply in North West Sydney. Moving forward with this option is the most prudent and economically efficient solution to ensure NER requirements and NSW reliability standards are met in the long term.

The estimated capital expenditure associated with this option is $51 million (+/- 25 per cent). Routine operating and maintenance costs relating to planned activities are approximately $254,500 per year.

Option 1 is found to have a positive net market benefit under the weighted scenario.

We have also conducted sensitivity analysis to assess the robustness of the economic assessment to key assumptions (changes in capital costs and discount rates). This sensitivity analysis confirmed that Option 1 being the preferred option is a robust outcome.

The works are expected to be undertaken between 2024/25 and 2028/29. Planning, design, development and procurement (including completion of the RIT-T) will occur between 2024/25 and 2025/26, while project delivery and construction will occur in 2026/27. All works are expected to be completed by 2028/29.

Next steps

This PACR represents the final step of the consultation process in relation to the application of the RIT-T process undertaken by Transgrid. It follows a PSCR released on 26 February 2025. No submissions were received in response to the PSCR.

The second step of the RIT-T process, production of a Project Assessment Draft Report (PADR), was not required as Transgrid consider its investment in relation to the preferred option to be exempt from that part of the process under NER clause 5.16.4(z1). Production of a PADR is not required due to:

- the estimated capital cost of the proposed preferred option being less than $54 million;[5]
- the PSCR states:
  - the proposed preferred option, together with the reasons for the proposed preferred option
  - the RIT-T is exempt from producing a PADR; and
  - the proposed preferred option and any other credible option will not have a material market benefit for the classes of market benefit specified in clause 5.15A.2(b)(4), with the exception of market benefits arising from changes in voluntary and involuntary load shedding;

[5] Varied to $54m based on the AER Final Determination: Cost threshold review, November 2024.

- the RIT-T proponent considers that there were no PSCR submissions identifying additional credible options that could deliver a material market benefit; and
- the PACR must address any issues raised in relation to the proposed preferred option during the PSCR consultation.

Parties wishing to raise a dispute notice with the AER may do so prior to 19 October 2025 (30 days after publication of this PACR). Any dispute notices raised during this period will be addressed by the AER within 40 to 100 days, after which the formal RIT-T process will conclude. Further details on the RIT-T can be obtained from Transgrid's Regulation team via regulatory.consultation@transgrid.com.au. In the subject field, please reference 'Maintaining Reliability in North West Sydney PACR'.

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1. Introduction

We are applying the Regulatory Investment Test for Transmission (RIT-T) to options which manage voltage stability to maintain reliable supply around the Vineyard area in North West Sydney. Publication of this Project Assessment Conclusions Report (PACR) is the final step in the RIT-T process.

The Vineyard Precinct is part of the North West Priority Growth Area, an area identified by the NSW Government for new development.[6] Stage 1 of the Vineyard area was rezoned in December 2017 and essential infrastructure such as roads, sewage and distribution infrastructure (provided by Endeavour Energy) has been delivered. Vineyard Precinct is now growing rapidly in line with the Stage 1 growth targets of 2,300 new homes and 7,000 residents.

Our power system studies show that this new development is resulting in rapid load growth to the area supplied by Transgrid's Vineyard 330/132 kV Bulk Supply Point (BSP). This load growth is forecast to cause the reactive margin at Vineyard BSP to drop to below one percent of the maximum fault level at the Vineyard 330 kV and 132 kV busbars.

Schedule 5.1.8 of the National Electricity Rules (NER) requires that the reactive margin (expressed as a capacitive reactive power (in MVAr)) must not be less than one percent of the maximum fault level (in MVA) at the connection point. The present network is unable to achieve this reactive margin in the future based on the latest demand forecasts. Shedding of load will be required to maintain this reactive margin at times of higher loads.

This RIT-T therefore examines various network and non-network options to address voltage stability to ensure compliance with the requirements of the NER and provide the greatest net benefit to the market.

1.1 Purpose of this report

The purpose of this PACR[7] is to:

- describe the identified need;
- summarise the submissions received to the Project Specification Consultation Report (PSCR);
- describe and assess credible options to meet the identified need;
- describe the assessment approach used; and
- provide details of the proposed preferred option to meet the identified need.

1.2 No submissions received in response to the PSCR and no material developments

We published a PSCR on 26 February 2025 and invited written submissions on the material presented within the document. No submissions were received in response to the PSCR. In addition, no additional credible options were identified during the consultation period following publication of the PSCR.

No material changes have occurred since the PSCR that have made an impact on the preferred option. However, we have applied the following updates to this PACR:

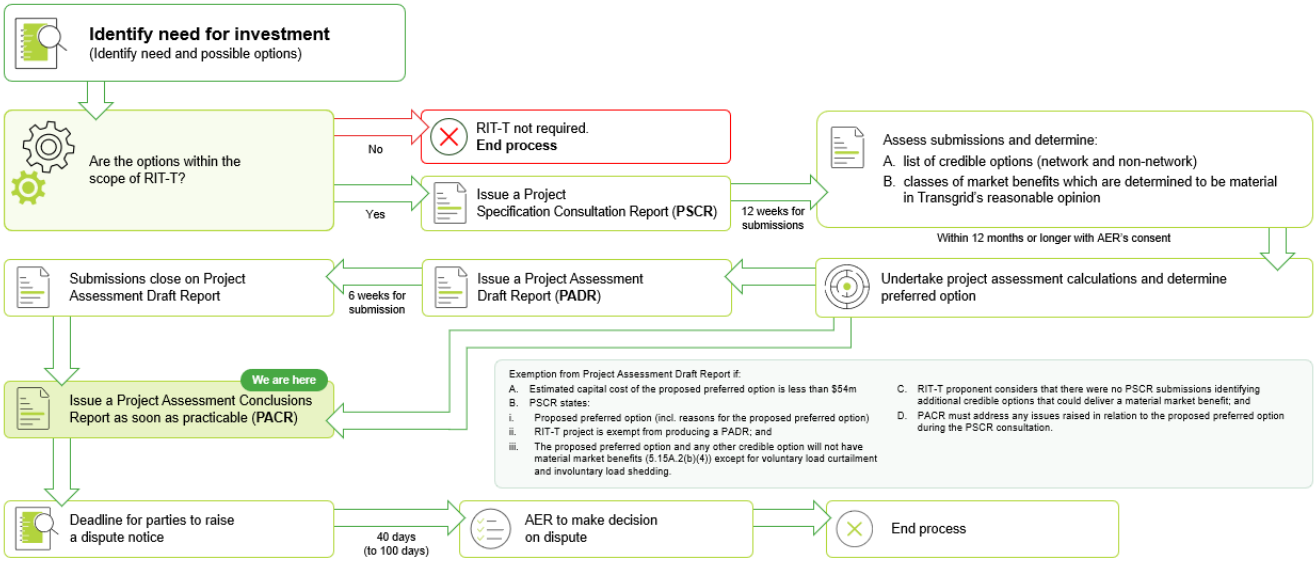
6 NSW Department of Planning and Environment, Vineyard.
7 See Appendix A for the National Electricity Rules requirements.

- At the time the PSCR was published, Transgrid's cost estimate for Option 1 was primarily based on a desktop assessment of the activity required. Following assessment on site, additional complexity was identified which raised the estimated capital expenditure for Option 1 from $44.5m in the PSCR +/- 25 per cent in the PSCR to $51m +/- 25% in this PACR.
- We have also updated our Value of Customer Reliability (VCR) to reflect the latest AEMO's Inputs, Assumptions and Scenarios Report.[8] On a statewide basis, the VCR values are lower than what we had used in the PSCR.
- The Expected Unserved Energy (EUE) calculation has been updated to reflect the latest forecasts.[9]

1.3 Next steps

This PACR represents the final step of the consultation process in relation to the application of the RIT-T process undertaken by Transgrid.

Figure 1-1 This PACR is the final stage of the RIT-T process



The second step of the RIT-T process, production of a Project Assessment Draft Report (PADR), was not required as Transgrid consider its investment in relation to the preferred option to be exempt from that part of the process under NER clause 5.16.4(z1). Production of a PADR is not required due to:

- the estimated capital cost of the proposed preferred option being less than $54 million;[10]
- the PSCR states:
  - the proposed preferred option, together with the reasons for the proposed preferred option
  - the RIT-T is exempt from producing a PADR; and

[8] AEMO *2025 Inputs, Assumptions and Scenarios Report*, August 2025.
[9] Transgrid, *Transmission Annual Planning Report (TAPR) 2025*, August 2025, pp.147
[10] Varied from $46m to $54m based on the AER Final Determination: Cost threshold review, November 2024.

- the proposed preferred option and any other credible option will not have a material market benefit for the classes of market benefit specified in clause 5.15A.2(b)(4), with the exception of market benefits arising from changes in voluntary and involuntary load shedding;

- the RIT-T proponent considers that there were no PSCR submissions identifying additional credible options that could deliver a material market benefit; and
- the PACR must address any issues raised in relation to the proposed preferred option during the PSCR consultation.

Parties wishing to raise a dispute notice with the AER may do so prior to 19 October 2025 (30 days after publication of this PACR). Any dispute notices raised during this period will be addressed by the AER within 40 to 100 days, after which the formal RIT-T process will conclude.

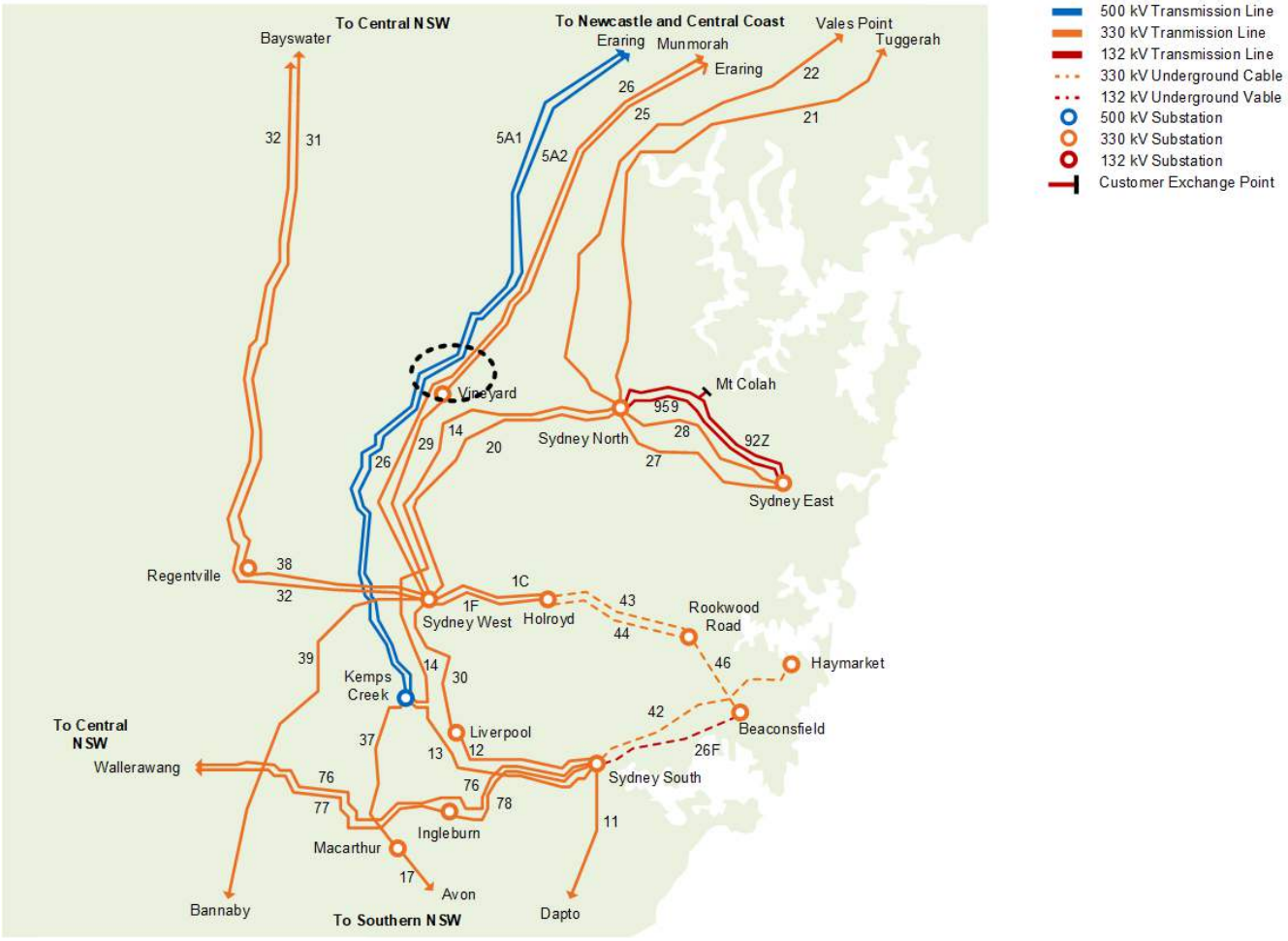
Further details on the RIT-T can be obtained from Transgrid's Regulation team via regulatory.consultation@transgrid.com.au. In the subject field, please reference 'Maintaining Reliability in North West Sydney PACR'.

2. The identified need

2.1 Background to the identified need

The current Greater Sydney electricity transmission network is shown in in Figure 2-1 below. The North West Sydney area is supplied by Transgrid's Vineyard 330/132 kV substation, which is a Bulk Supply Point (BSP) to Endeavour Energy. This substation connects to two 330 kV transmission lines, one from Eraring substation (Line 25) and one from Sydney West substation (Line 29). Vineyard substation is circled in Figure 2-1.

Figure 2-1 Greater Sydney transmission network



The Vineyard Precinct is part of the North West Priority Growth Area, an area identified by the NSW Government for new development. Stage 1 of the Vineyard area was rezoned in December 2017 and essential infrastructure such as roads, sewage and distribution infrastructure (provided by Endeavour Energy) has been delivered. Vineyard Precinct is now growing rapidly in line with the Stage 1 growth targets of 2,300 new homes and 7,000 residents.

Our power system studies show that this new development is resulting in rapid load growth to the area supplied by Transgrid's Vineyard 330/132 kV BSP. This load growth is forecast to cause the voltage stability issues at Vineyard BSP.

2.2 Description of the identified need

Schedule 5.1.8 of the NER requires that the reactive margin at a connection point (expressed as a capacitive reactive power (in MVAr)) must not be less than one percent of the maximum fault level (in MVA) at the connection point.

Our power system studies show that the rapid load growth in the Vineyard Precinct will cause the reactive margin at Vineyard BSP to drop to below one percent of the maximum fault level at the Vineyard 330 kV and 132 kV busbars from summer 2027/28 under a single credible contingency of the 330 kV Line 29 that supplies the Vineyard BSP from Sydney West.[11] As the present network is unable to achieve this reactive margin for higher expected demands, shedding of load will be required to maintain this reactive margin at times of higher loads to avoid voltage collapse in the network .

We have therefore commenced this RIT-T to assess options to ensure the above NER requirements continue to be met in the longer term in North West Sydney in light of the rapid load growth.[12]

We consider this a 'reliability corrective action' under the RIT-T, as the proposed investment is for the purpose of meeting externally-imposed regulatory obligations and service standards, i.e., Schedule 5.1.8 of the NER.

2.3 Assumptions underpinning the identified need

This RIT-T has been initiated in response to rapid load growth in the Vineyard Precinct. The demand forecasts underpinning the identified need for this RIT-T support the development of the NSW Government's North West Growth area.

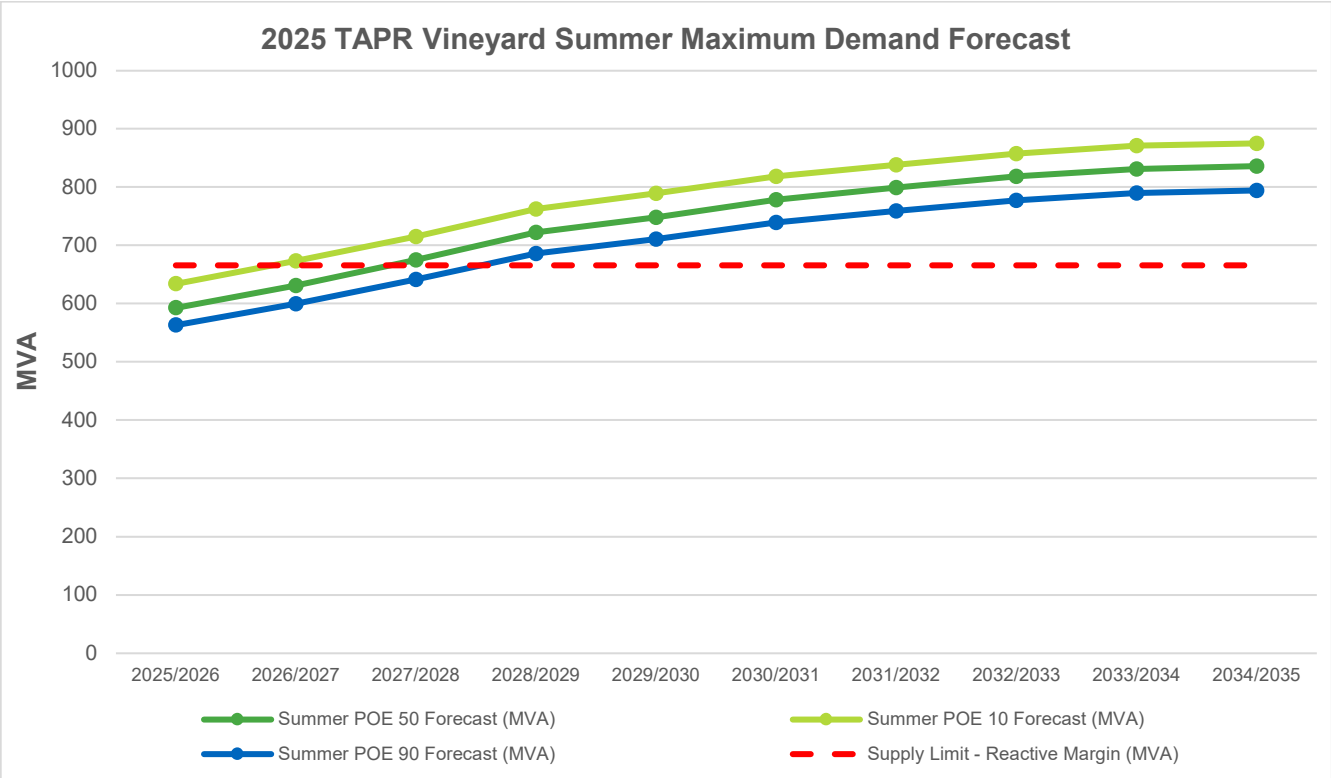
We have undertaken planning studies considering the load that can be served by Vineyard BSP in the event of a single credible contingency while maintaining compliance with the voltage stability requirements set out in the NER. These studies shows that the total demand at Vineyard BSP will need to be limited to 666 MVA to meet reactive margin requirements under the NER with the current network configuration.

[11] Under a single credible contingency of Line 29, over 600 MW of Vineyard BSP load will be radially supplied through line 25 at summer peak demand. The significant reactive losses on the long 330 kV line (109km in length) lead to a large voltage drop and potential voltage collapse at Vineyard BSP.

[12] As part of a joint planning initiative with Endeavour Energy, Transgrid has recently completed a separate RIT-T to address load growth in the Western Sydney region ("Meeting demand growth in the Western Sydney Aerotropolis 'Priority Growth Area'")

Figure 2-2 below illustrates the summer maximum demand forecast at Vineyard BSP against the maximum load which can be supplied at the site to meet the reactive margin requirements. The demand forecasts show that the forecast rapid load growth will exceed this limit by 2027/28 under POE 50 scenario.

Figure 2-2 Vineyard BSP summer maximum demand forecast



The above assessment highlights the need is required to be addressed by summer 2027/28 in order to ensure compliance with the NER. The analysis in this PSCR uses the central (POE 50), low (POE 90) and high (POE10) demand forecasts provided by Endeavour Energy.

The expected completion date of the options identified to address the issue is 2028/29. Until the solution is in place, to maintain compliance with the NER load transfers will take place initially to lower loading at Vineyard substation. However, it is expected that load curtailment would eventually be required until a remediation solution is implemented.

3. Options that meet the identified need

In this RIT-T, we consider credible options as those that would meet the identified need from a technical, commercial, and project delivery perspective.[13]

Transgrid considers that there are two credible network options to meet the identified need. These options are summarised in Table 3-1.

Table 3-1 Summary of the credible options

Option	Description	Estimated capex ($M, 2024/25)	Expected commission date
Option 1	Loop-in Line 26 to Vineyard BSP	51	2028/29
Option 2	Install shunt capacitors at Vineyard BSP and loop-in line 26 at a later date	86.9	2028/29

3.1 Base case

Consistent with the RIT-T requirements, the assessment undertaken in this PACR compares the costs and benefits of each credible option to a 'do nothing' base case. The base case is the (hypothetical) projected case if no action is taken, i.e.,[14]

> "*The base case is where the RIT-T proponent does not implement a credible option to meet the identified need, but rather continues its 'BAU activities'. 'BAU activities' are ongoing, economically prudent activities that occur in absence of a credible option being implemented*"

Under the base case, where the voltage stability issues due to load growth are unresolved, there is expected to be a requirement for load curtailment in the North West Sydney area from 2027/28. This is expected to result in unserved energy as set out in Table 3-2.

Table 3-2 Expected unserved energy at Vineyard BSP[15]

Year	Expected unserved energy POE50 (MWh)
2027/28	3
2028/29	297
2029/30	694
2030/31	1342
2031/32	1930
2032/33	2536
2033/34	3070
2034/35	3301

[13] As per clause 5.15.2(a) of the NER
[14] AER, *Application Guidelines Regulatory Investment Test for Transmission*, November 2024, pp.22.
[15] The expected unserved energy results were revised to accommodate the changes as per the latest demand forecast received from Endeavour Energy following the publication of PSCR.

While this is not a situation we plan to encounter, and this RIT-T has been initiated specifically to avoid it, the assessment is required to use this base case as a common point of reference when estimating the net benefits of each credible option.

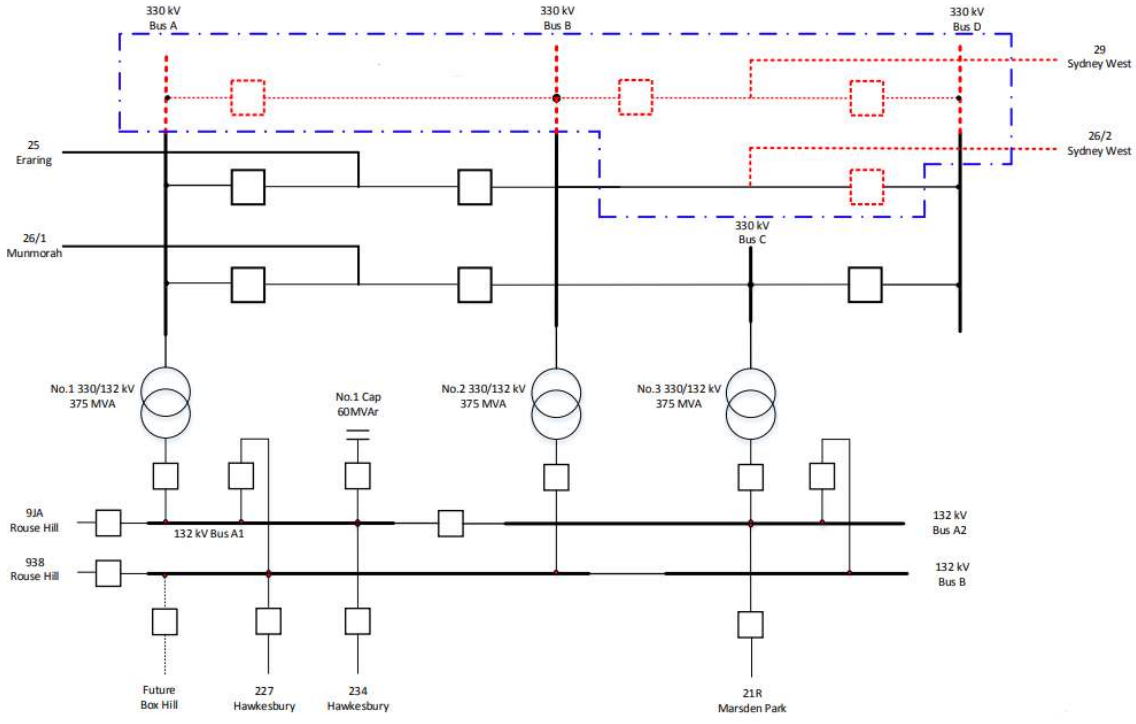
3.2 Option 1 – Loop-in Line 26 to Vineyard BSP

Option 1 involves connecting the existing Line 26, which runs from Munmorah to Sydney West substation, to Vineyard BSP. Line 26 presently runs as a double circuit with Lines 25 and 29, passing Vineyard BSP. Connecting Line 26 as a loop-in would involve the following works at Vineyard BSP:

- A deviation to Line 26 to connect it to Vineyard BSP
- Extension to the existing 330 kV busbars
- Four new bus section circuit breaker switchbays
- Two new transmission line switchbays
- Relocation of the connection point for the existing No. 2 330/132 kV transformer
- Associated secondary systems works.

An indicative network diagram for Option 1 is shown in Figure 3-1 below (new elements shown in red).

Figure 3-1 Indicative option 1 network diagram



The estimated capital cost of Option 1 is approximately $51 million as set out in Table 3-5.

Table 3-3 Option 1 Capital Cost ($M, real 2024/25)

Capital cost	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Transmission line works	0.3	1.1	6.2	0.2
Substation works	1.5	6.3	34.4	0.9
TOTAL	1.8	7.4	40.6	1.1

This expenditure is comprised of:

- $8.0 million in labour costs;
- $5.0 million in materials costs; and
- $38.0 million in expenses.

Routine operating and maintenance cost are estimated at approximately $254,500/annum.

The works are expected to be undertaken between 2024/25 and 2028/29. Planning, design, development and procurement (including completion of the RIT-T) will occur between 2024/25 and 2025/26, while project delivery and construction will occur in 2026/27. All works are expected to be completed by 2028/29.

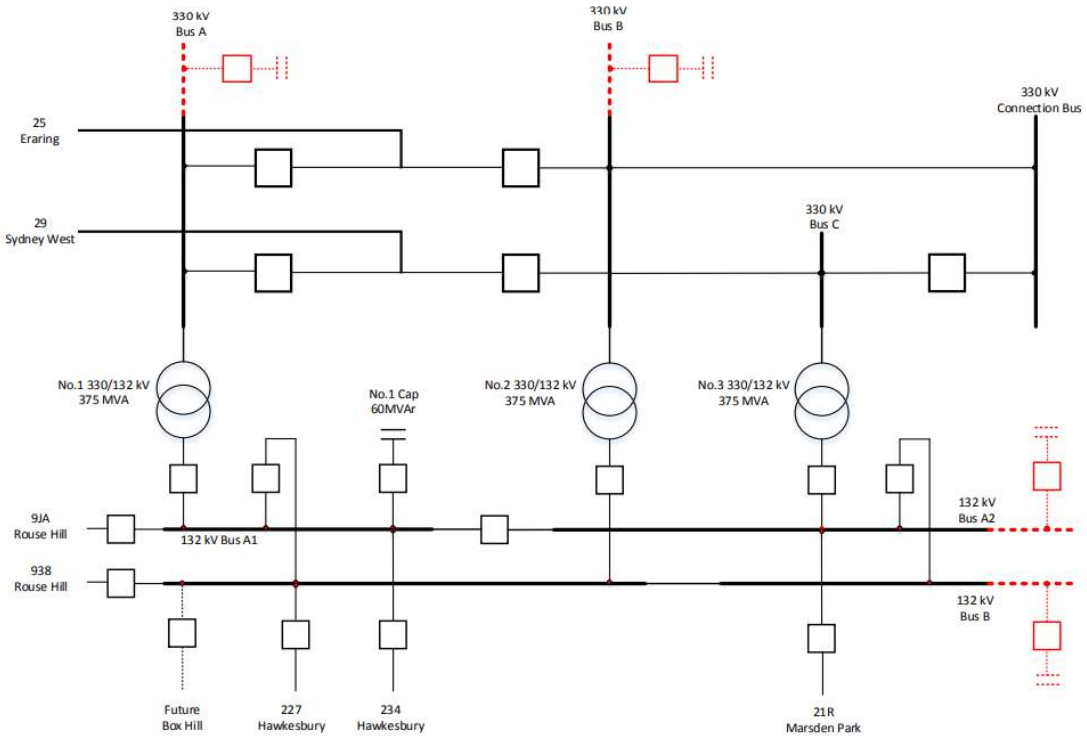
This option will increase the reactive margin to maintain NER voltage stability compliance and avoid unserved energy across the assessment period.

3.3 Option 2 – Install shunt capacitors at Vineyard BSP and loop-in Line 26 at a later date

Option 2 involves increasing the reactive margin by installing two new 200 MVAr 330 kV shunt capacitors and two new 100 MVAr 132 kV shunt capacitors, with associated switchbays, bench extensions and secondary systems works to Vineyard BSP, while also connecting the existing Line 26, which runs from Munmorah to Sydney West substation, at a later date (as per Option 1).

An indicative network diagram for Option 2 (new shunt capacitors) is shown in Figure 3-2 below (new elements shown in red).

Figure 3-2 Indicative Option 2 network diagram



The estimated capital cost of Option 2 is approximately $86.9 million as set out in Table 3-4.

Table 3-4 Option 2 Capital Cost ($M, real 2024/25)

Capital cost	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Transmission line works	0.07	0.53	2.51	2.61
Substation works	1.03	7.57	35.59	36.99
TOTAL	1.1	8.1	38.1	39.6

This expenditure is comprised of:

- $10.7 million in labour costs;
- $45.2 million in materials costs;
- $30.9 million in expenses and land costs[16].

Routine operating and maintenance cost are estimated at approximately $434,150/annum.

We estimate that it will take 42 months from this RIT-T commencement to complete Option 2 with commissioning possible in 2028/29.

[16] Some of the cost breakdowns for Expenses and Land have been combined due to commercial processes Transgrid would need to engage in to strategically acquire the land.

This option with the cap banks alone will increase the voltage stability limit to 900 MVA which can avoid unserved energy up to 2036. Additional reactive support devices will be required following this to maintain voltage stability compliance, however, would not be effective due to large voltage step changes, and therefore the line turn-in would need to become a part of this solution to fully meet the need.

3.4 Options considered but not progressed

We have also considered whether other options could meet the identified need. Reasons these options were not progressed are summarised in Table 3-5.

Table 3-5 Options considered but not progressed

Option	Reason(s) for not progressing
Load transfer from Vineyard BSP to Sydney West BSP	Sydney West BSP is also experiencing rapid load growth and the supply capacity at Sydney West is reaching its limit. Therefore, this option is not technically feasible.
New shunt capacitors in Endeavour Energy's distribution network	This option involves the installation of ten 5 MVAr shunt capacitors in Endeavour Energy's distribution network, which is the maximum number that can be installed due to space limitations and can only address the need for one year before the voltage stability limit is breached again. Additional reactive support will require the expansion of multiple zone substations, which is not considered to be commercially feasible.
Non-network options	In the PSCR, we noted that we consider non-network options may be commercially and technically feasible to assist with meeting the identified need for this RIT-T either as standalone options or in combination with network options. We invited parties to make written submissions regarding the potential of non-network options to satisfy, or contribute to satisfying, the identified need for this RIT-T. No submissions were received in response to the PSCR in relation to non-network options.

3.5 No material inter-network impact is expected

Transgrid has considered whether the credible options listed above is expected to have material inter-regional impact[17]. A 'material inter-network impact' is defined in the NER as:

> "*A material impact on another Transmission Network Service Provider's network, which impact may include (without limitation): (a) the imposition of power transfer constraints within another Transmission Network Service Provider's network; or (b) an adverse impact on the quality of supply in another Transmission Network Service Provider's network.*"

AEMO's suggested screening test to indicate that a transmission augmentation has no material inter-network impact is that it satisfies the following[18]:

- a decrease in power transfer capability between transmission networks or in another TNSP's network of no more than the minimum of 3 per cent of the maximum transfer capability and 50 MW

[17] As per clause 5.16.4(b)(6)(ii) of the NER

[18] Inter-Regional Planning Committee. *Final Determination: Criteria for Assessing Material Inter-Network Impact of Transmission Augmentations*. Melbourne: Australian Energy Market Operator, 2004. Appendix 2 and 3.

- an increase in power transfer capability between transmission networks or in another TNSP's network of no more than the minimum of 3 per cent of the maximum transfer capability and 50 MW
- an increase in fault level by less than 10 MVA at any substation in another TNSP's network; and
- the investment does not involve either a series capacitor or modification in the vicinity of an existing series capacitor.

We consider that each credible option satisfies these conditions as it does not modify any aspect of transmission assets and will only have localised effects around the Greater Sydney region of NSW. By reference to AEMO's screening criteria, there is no material inter-network impacts associated with any of the credible options considered.

3.5 Community engagement

Social licence costs can be reduced through early and continued engagement with communities and stakeholders who are reasonably expected to be affected by the project.

Transgrid is not proposing to undertake specific community engagement (in addition to the publication of the RIT-T consultation reports) in relation to this project. The proposed project relates to an augmentation to infrastructure within an existing substation, and as such there will be no additional impact on communities located close to the current transmission infrastructure, apart from construction activities. Transgrid will ensure that all construction works associated to the project are conducted in a manner that causes the least disruption to communities and notes that the construction activities will be subject to separate environmental approval.

As a result, Transgrid does not consider that there is a need for additional community engagement as part of this RIT-T process. We will still engage with community as part of our project's construction works notifications.

4. Materiality of market benefits

This section outlines the categories of market benefits prescribed in the National Electricity Rules (NER) and whether they are considered material for this RIT-T and whether they are material.

4.1 Avoided unserved energy is material

Transgrid considers that changes in involuntary load shedding are expected to be material for the credible options outlines in this PACR.

We have estimated the expected unserved energy if action is not taken in order to specify the base case for the RIT-T assessment (refer to Section 3.1).

We have taken into account option value as part of this PACR for any options that exhibit the requisite flexibility for option value to exist (e.g., Option 2 where the installation of capacitor banks can be staged).

Other categories of market benefits prescribed in the NER have not been estimated and are not considered material for this RIT-T, as outlined below.

4.2 Wholesale electricity market benefits are not material

We consider at this stage that a number of classes of market benefits are not expected to be material in the RIT-T assessment, and so do not need to be estimated, since the credible options being considered are not anticipated to have a substantive impact on the wholesale electricity market.

The credible options considered in this PACR do not address network constraints between competing generators and so will not have an impact on generation dispatch outcomes and the wholesale electricity market. Therefore, we consider that the following classes of market benefits are not material for this RIT-T assessment:

- changes in fuel consumption arising through different patterns of generation dispatch;
- changes in voluntary load curtailment (since there is no impact on pool price);
- changes in costs for parties other than the RIT-T proponent;
- changes in ancillary services costs; and
- competition benefits.

4.3 No other categories of market benefits are material

In addition to the classes of market benefits listed above, the NER also requires us to consider the following classes of market benefits arising from each credible option.[19] We consider that none of the classes of market benefits listed are material for this RIT-T assessment for the reasons outlined in Table 4-1.

[19] As per clause 5.15A.2(b)(4)-(6) of the NER

Table 4-1 Reasons non-wholesale electricity market benefits categories are considered not material

Market benefits	Reason
Differences in the timing of unrelated network expenditure	The credible options considered are all designed to meet the required reliability requirements and are unlikely to affect decisions to undertake unrelated expenditure in the network. Consequently, material market benefits will neither be gained nor lost due to changes in the timing of unrelated network expenditure from any of the options considered.
Option value	We note the AER's view that option value is likely to arise where there is uncertainty regarding future outcomes, the information that is available is likely to change in the future, and the credible options considered by the TNSP are sufficiently flexible to respond to that change.[20] We also note the AER's view that appropriate identification of credible options and reasonable scenarios captures any option value, thereby meeting the NER requirement to consider option value as a class of market benefit under the RIT-T.[21] We do not consider there to be any option value with the options considered in this PACR. Additionally, a significant modelling assessment would be required to estimate the option value benefits which would be disproportionate to the potential additional benefits for this RIT-T. Therefore, we have not estimated additional option value benefit.
Changes in network losses	There is not expected to be any material difference in transmission losses between options.
Changes in Australian greenhouse gas emissions	Neither option in this RIT-T is expected to affect the dispatch of generation in the wholesale market. No other material source of a change in Australian emissions has been identified. Accordingly, this benefit has not been estimated.

[20] AER, *Application Guidelines Regulatory Investment Test for Transmission*, November 2024, pp.56-57.
[21] AER, *Application Guidelines Regulatory Investment Test for Transmission*, November 2024, pp.56-57.

5. Overview of the assessment approach

This section outlines the approach that Transgrid has applied in assessing the net benefits associated with each of the credible options against the base case.

5.1 Description of the base case

As outlined in section 3.1, all costs and benefits considered have been measured against a base case where no network development is undertaken to address the identified need and electricity supply in the North West Sydney area will continue to be supplied by the existing capacity of the Vineyard BSP.

5.2 Assessment period and discount rate

A 20-year assessment period from 2024/25 to 2043/44 has been adopted for this RIT-T analysis. This period takes into account the size, complexity and expected asset life of the options.

Where the capital components of the credible options have asset lives extending beyond the end of the assessment period, the NPV modelling will include a terminal value to capture the remaining asset life. This ensures that the capital cost of long-lived options over the assessment period is appropriately captured, and that all options have their costs and benefits assessed over a consistent period, irrespective of option type, technology or asset life. The terminal values have been calculated as the undepreciated value of capital costs at the end of the analysis period and can be interpreted as a conservative estimate for benefits (net of operating costs) arising after the analysis period.

A real, pre-tax discount rate of 7 per cent has been adopted in all scenarios presented in this PACR, consistent with AEMO's 2025 Inputs, Assumptions and Scenarios Report (IASR).[22] The RIT-T requires that sensitivity testing be conducted on the discount. We have therefore tested the sensitivity of the Central scenario results to a lower bound discount rate of 3.0 per cent and an upper bound discount rate of 10.0 per cent (i.e., AEMO's 2025 IASR).[23] We also tested the sensitivity of the Central scenario results including in relation to the capital costs, operating and maintenance costs and VCRs.

5.3 Approach to estimating option costs

We have estimated the capital costs of the options based on the scope of works necessary together with costing experience from previous projects of a similar nature.

The cost estimates are developed using our 'MTWO' cost estimating system. This system utilises historical average costs, updated by the costs of the most recently implemented project with similar scope. All estimates in MTWO are developed to deliver a 'P50' portfolio value for a total program of works (i.e., there is an equal likelihood of over- or under-spending the estimate total).[24]

We estimate that actual costs will be within +/- 25 per cent of the central capital cost estimate. An accuracy of +/-25 per cent for cost estimates is consistent with industry best practice and aligns with the accuracy range of a 'Class 4' estimate, as defined in the Association for the Cost Engineering classification system.

[22] AEMO '2025 *Inputs, Assumptions and Scenarios Report*', August 2025, pp.159.
[23] AEMO '2025 *Inputs, Assumptions and Scenarios Report*', August 2025, pp.159.
[24] For further detail on our cost estimating approach refer to section 7 of our Augmentation Expenditure Overview Paper submitted with our 2023-28 Revenue Proposal.

All cost estimates are prepared in real, 2024/25 dollars based on the information and pricing history available at the time that they were estimated. The cost estimates do not include or forecast any real cost escalation for materials.

On 21 November 2024, the requirements set out in the Australian Energy Regulator's Regulatory Investment Test for Transmission (RIT-T) Application Guidelines were amended. The amended guidelines now expect a RIT-T proponent to explicitly consider community engagement and social licence during the RIT-T process.

The amended guidelines mean that Transgrid must consider social licence principles in the identification of credible options. This may affect how we determine the most likely cost and delivery timeline for an option.

Transgrid believes building relationships and trust is how we can gain and grow social licence. Through engagement with affected communities we identify prudent and efficient investment opportunities that can build and gain community acceptance for our options. Costs associated with social licence include those associated with engagements, community benefits, minor route adjustments and legislated additional landholders payments, as applicable.

We acknowledge this important change to the RIT-T guidelines. However, due to the nature of these works being an augmentation to infrastructure within an existing substation, and therefore low impact on community, we do not anticipate the need to provide additional costs to address social license considerations (as outlined in section 3.6).

Routine operating and maintenance costs are based on works of similar nature.

5.4 The options have been assessed against three reasonable scenarios

The RIT-T must include any of the ISP scenarios from the most recent IASR that are relevant unless:[25]

- the RIT–T proponent demonstrates why it is necessary to vary, omit or add a reasonable scenario to what was in the most recent IASR, and
- the new or varied reasonable scenarios are consistent with the requirements for reasonable scenarios set out in the RIT–T instrument.

The AER's RIT-T Guidelines clarifies that the number and choice of reasonable scenarios must be appropriate to the credible options under consideration, and that the choice of reasonable scenarios must reflect any variables or parameters that are likely to affect the ranking or sign of the net benefit of any credible option.[26]

For the purposes of this RIT-T, we consider that the ISP scenarios are not relevant. The key input parameter that is likely to affect the ranking or sign of the net market benefits of the credible options is expected maximum demand in the Parkes area. This input is independent from the assumptions underpinning the ISP scenarios, which are much broader in scope and do not adequately account for the highly localised identified need in this RIT-T. It follows that adopting the ISP scenarios would not be consistent with adopting scenarios that reflect parameters that could reasonably change the ranking or sign of the net market benefits of the credible options.

[25] AER, *Application Guidelines Regulatory Investment Test for Transmission*, November 2024, pp.43
[26] AER, *Application Guidelines Regulatory Investment Test for Transmission*, November 2024, pp.44

In line with the RIT-T Guideline, we have constructed reasonable alternative scenarios. To do this, we developed a **Central Scenario** which reflects our best estimate of each of the modelling parameters, including maximum demand, and capital and operating costs. This was based on local demand forecasts provided by Endeavour Energy that are able to capture the expected significant growth in demand driven by spot load including data centres, metro train lines and large commercial and residential development around the new airport in Western Sydney.

As indicated above, we consider that the key input parameter that is likely to affect the ranking or sign of the net market benefits of the credible options is maximum demand in Western Sydney. We do not consider that variations in other parameters of the Central Scenario are likely to affect the outcome of the RIT-T assessment. In view of this, we have developed additional reasonable scenarios that reflect variations in maximum demand while holding other parameters the same as the Central Scenario.

In summary, we have developed the following scenarios:

- 'Central scenario' - assumes POE50 demand to be able to reflect our best estimate of maximum demand in Western Sydney.
- 'Low demand' scenario - assumes POE90 demand estimates to investigate a lower bound of maximum demand in Western Sydney.
- 'High demand' scenario - assumes POE10 demand estimates to investigate an upper bound of maximum demand Western Sydney

The NPV results in this PACR are reported for each scenario, as well as on a weighted basis. As we have no evidence or rationale for assigning a higher probability for one reasonable scenario over another, we have weighted each reasonable scenario equally.[27]

A summary of the key variables in each scenario is presented in the table below.

Table 5-1 Summary of scenarios

Variable / Scenario	Central scenario	Low growth scenario	High growth scenario
Scenario weighting	1/3	1/3	1/3
Discount rate	7.00%	7.00%	7.00%
Value of Customer Reliability (VCR) ($2024/25 m)[28]	$31.428/kWh	$31.428/kWh	$31.428/kWh
Minimum demand forecast	POE50	POE90	POE10
Network capital costs	Base estimate	Base estimate	Base estimate
Operating and maintenance costs	Base estimate	Base estimate	Base estimate
Avoided load shedding	Base estimate	Low demand forecast	High demand forecast

In addition to the scenario analysis, we undertook sensitivity analysis on key variables under the Central scenario, including in relation to capital costs and the discount rate.

[27] AER, *Application Guidelines Regulatory Investment Test for Transmission*, November 2024, pp. 56-57

[28] AEMO *2025 Inputs, Assumptions and Scenarios Report*, August 2025, pp.159. We note that the VCR applied in this PACR is lower than in the PSCR.

6. Assessment of credible options

This section outlines the assessment Transgrid has undertaken of the credible options. The assessment compares the costs and benefits of the option to a base case 'do nothing' option, where no network development is undertaken to address the identified need and electricity supply in the Vineyard area will continue to be supplied by the existing capacity of the Vineyard BSP.

6.1 Estimated gross benefits

The table below summarises the gross benefit estimated for each of the options relative to the base case in present value terms for the assessment period. The sole benefit included in this assessment is avoided involuntary load shedding.

Table 6-1 PV of gross economic benefits relative to the base case ($2024/25 million)

Option	Central (POE50) scenario	Low growth scenario	High growth scenario	Weighted scenario
Scenario weighting	*1/3*	*1/3*	*1/3*	
Option 1	1,143.4	606.30	1,867.8	1,205.8
Option 2	1,139.7	606.28	1,846.5	1,197.5

6.2 Estimated costs

The table below summarises the capital costs, and the operating and maintenance costs, of each option relative to the base case in present value terms for the assessment period.

Table 6-2 PV of capital and operating costs relative to the base case ($2024/25 million)

Option	Central (POE50) scenario	Low growth scenario	High growth scenario	Weighted scenario
Option 1	38.2	38.2	38.2	38.2
Option 2	62.1	62.1	62.1	62.1

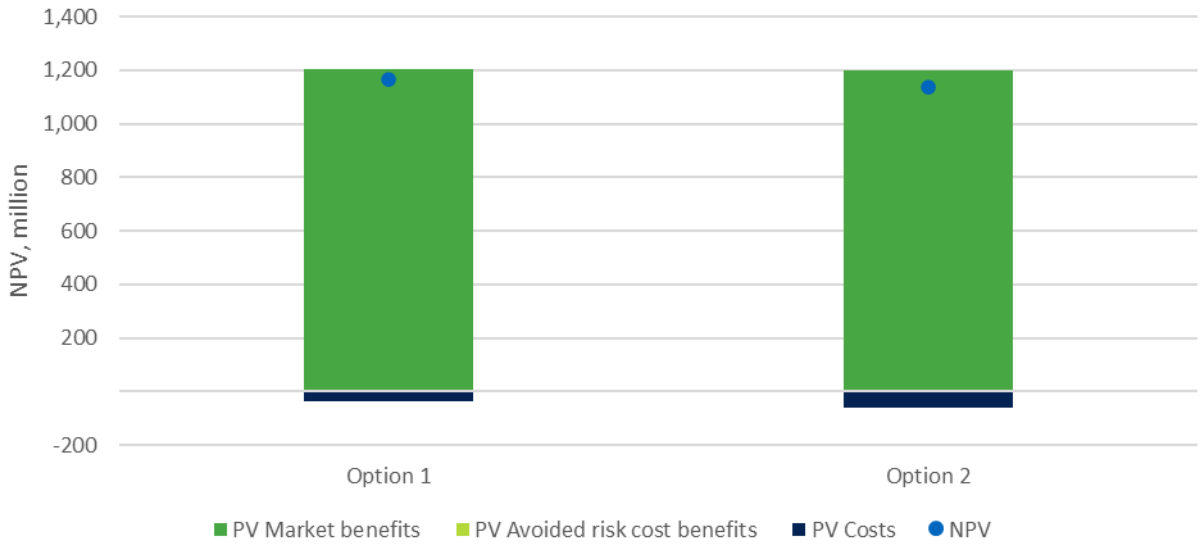
6.3 Estimated net economic benefits

The net economic benefits are the estimated gross benefits less the estimated costs. The table below summarises the present value of the net economic benefits for each credible option across the three scenarios, and on a weighted basis. Since we only identified one credible option, Option 1 has the greatest net market benefits and is therefore our preferred option.

Table 6-3 PV of net economic benefits relative to the base case ($2024/25 million)

Option	Central scenario	Low growth scenario	High growth scenario	Weighted scenario
Scenario weighting	*1/3*	*1/3*	*1/3*	
Option 1	1,105.2	568.1	1,829.6	1,167.6
Option 2	1,077.6	544.2	1,784.5	1,135.4

Figure 6-1 PV of net economic benefits ($2024/25 million)



The substantial size of each scenario's avoided involuntary load shedding benefit can be attributed to the base case not meeting any commercial and industrial forecast load in the Vineyard area due to the absence of a switchbay.

Overall, the figure above shows that Option 1 has a positive net economic benefit in all demand scenarios.

6.4 Sensitivity testing

We have considered the robustness of the RIT-T assessment by undertaking a range of sensitivity testing. The purpose of this testing is to examine how the net economic benefit of the credible options changes with respect to changes in key modelling assumptions. The factors tested as part of the sensitivity analysis for this PACR are:

- Scenario weights
- Higher or lower VCRs
- Higher or lower network capital costs of the credible options
- Higher or lower operating and maintenance costs of the credible options
- Alternate commercial discount rate assumptions
- Inclusion of Sunrise Energy Metals.

The sensitivity testing was undertaken against the Central scenario. Specifically, we individually varied each factor identified above and estimated the net economic benefit in that scenario relative to the base case while holding all other assumptions under the Central scenario constant. The results of the sensitivity tests are set out in the sections below.

6.4.1 Optimal timing of the project

We have estimated the optimal timing for the preferred option. The optimal timing of an investment is the year when the annual benefits (avoided risk costs) from implementing the option become greater than the annualised investment costs. The analysis was undertaken under the central set of assumptions and a

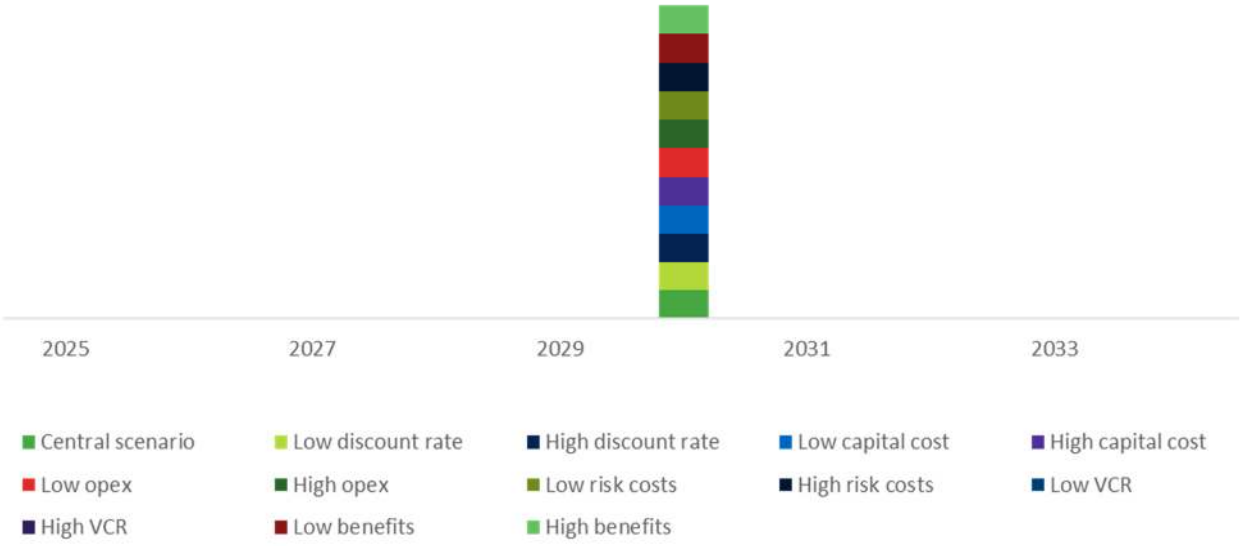
range of alternative assumptions for key variables. The purpose of the analysis is to examine the sensitivity of the commissioning year to changes in the underlying assumptions.

The sensitivities we considered are:

- a 25% increase / decrease in capital costs
- a 25% increase / decrease in demand
- a lower discount rate of 3.0% and a higher discount rate of 10.0%
- a 30% increase / decrease in the VCR

Figure 6-2 below outlines the impact on the optimal commissioning year, under a range of alternative assumptions. It illustrates that for Option 1, the optimal commissioning date is found to be in 2028 for the balance of sensitivities investigated.

Figure 6-2 Distribution of optimal timing under a range of different key assumptions



6.4.2 Scenario weights

Option 1 has positive net economic benefits in all three scenarios. Therefore, there is no reasonable combination of scenario weights that would change the RIT-T outcome.

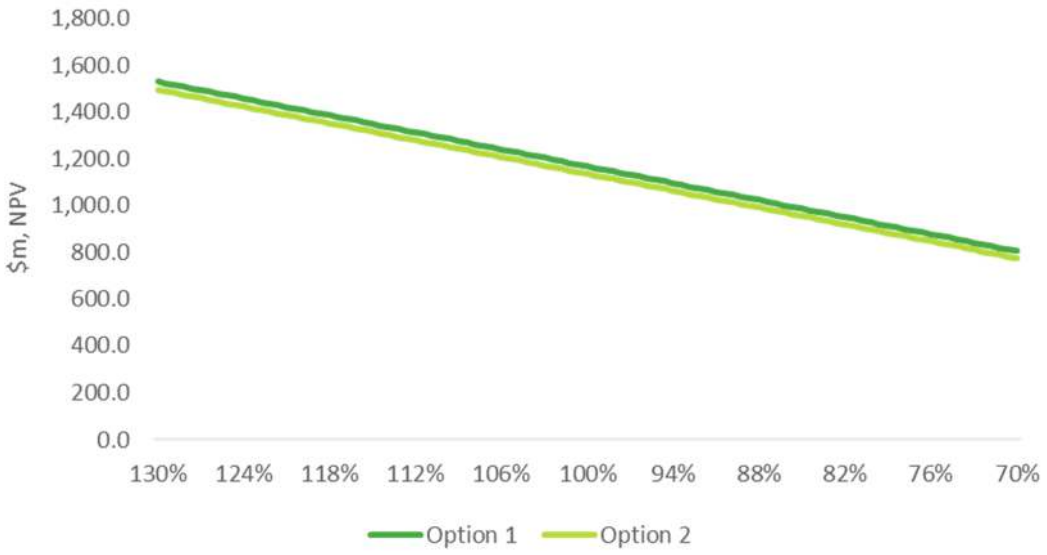
6.4.3 Value of customer reliability

We estimated the net economic benefit of each option by adopting a VCR that is 30% higher (the 'High VCR' scenario) and 30% lower (the 'Low VCR' scenario) than the estimate of VCR adopted in our Central scenario. The results of this analysis are presented in the table and figure below.

Table 6-4 PV of net economic benefits relative to the base case under a lower and higher VCR ($2024/25 million)

Option/scenario	Low VCR	High VCR	Ranking
Sensitivity	*Central estimate - 30%*	*Central estimate + 30%*	
Option 1	805.9	1,529.4	1
Option 2	776.2	1,494.7	2

Figure 6-3 PV of net economic benefits relative to the base case under a lower and higher VCR ($2024/25 m)



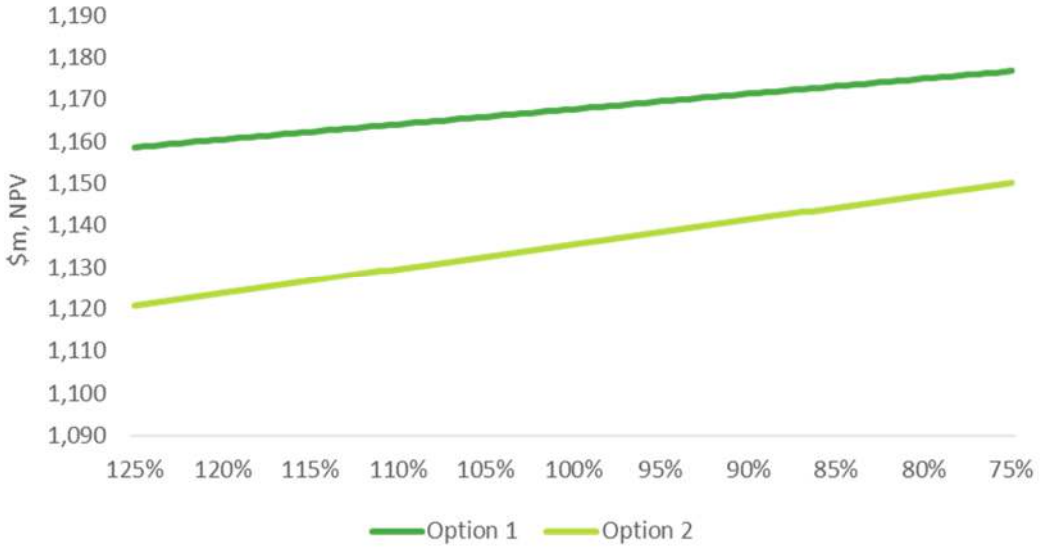
6.4.4 Network capital costs

We estimated the net economic benefit of each option by adopting capital costs for each option that are 25% higher (the 'High capex' scenario) and 25% lower (the 'Low capex' scenario) than the capital cost estimates in our Central scenario. Given that the capital costs are relatively minor compared to the benefits, the overall net economic benefits are unsensitive to changes in capital costs. The results of this analysis are presented in the table and figure below.

Table 6-5 Net economic benefits relative to the base case under lower and higher capital costs ($2024/25 million)

Option/scenario	Low capex	High capex	Ranking
Sensitivity	*Central estimate - 25%*	*Central estimate + 25%*	
Option 1	1,176.7	1,158.6	1
Option 2	1,150.1	1,120.8	2

Figure 6-4 Net economic benefits relative to the base case under lower and higher capital costs ($2024/25 million)



6.4.5 Discount rate

We estimated the net economic benefit of each option by adopting a low discount rate of 3.0% (the 'Low discount rate' scenario) and a high discount rate of 10.0% (the 'High discount rate' scenario). The results of this analysis are presented in the table and figure below.

Table 6-6 Net economic benefits relative to the base case under a lower and higher discount rates ($2024/25 million)

Option/scenario	Low discount rate	High discount rate	Ranking
Sensitivity	*3.0%*	*10.0%*	
Option 1	2,056.9	781.2	1
Option 2	2,019.5	752.2	2

Figure 6-5 Net economic benefits relative to the base case under a lower and higher discount rates ($2024/25 million)

6.4.6 Threshold analysis

We have also undertaken a threshold analysis to identify whether a change in the discount rate would change the RIT-T outcome. Our approach involved solving for the discount rate that would result Option 1 not being the preferred option. Our results suggest that there is no reasonable discount rate that would change the RIT-T outcome.

7. Final conclusion on the preferred option

This PACR finds that Option 1 is the preferred option to address the identified need. Option 1 involves connecting the existing Line 26, which runs from Munmorah to Sydney West substation, to Vineyard BSP.

The capital cost of this option is approximately $51m (in $2024/25). The works are expected to be undertaken between 2024/25 and 2028/29. Planning, design, development and procurement (including completion of the RIT-T) will occur between 2024/25 and 2025/26, while project delivery and construction will occur in 2026/27. All works are expected to be completed by 2028/29.

Option 1 is the preferred option in accordance with NER clause 5.15A.1(c) because it is the credible option that maximises the net present value of the net economic benefit to all those who produce, consume or transport electricity in the market. The analysis undertaken and the identification of Option 1 as the preferred option satisfies the RIT-T.

Appendix A Compliance checklist

This appendix sets out a checklist which demonstrates the compliance of this PACR with the requirements of the National Electricity Rules version 235.

Rules clause	Summary of requirements	Relevant section(s) in the PACR
5.16.4(v)	The project assessment conclusions report must set out:	
	(1) the matters detailed in the project assessment draft report as required under paragraph (k) See below.	See below
	(2) a summary of, and the RIT-T proponent's response to, submissions received, if any, from interested parties sought	N/A
5.16.4(k)	The project assessment draft report must include:	
	(1) a description of each credible option assessed;	3
	(2) a summary of, and commentary on, the submissions to the project specification consultation report;	N/A
	(3) a quantification of the costs, including a breakdown of operating and capital expenditure, and classes of material market benefit for each credible option;	3 & 4
	(4) a detailed description of the methodologies used in quantifying each class of material market benefit and cost;	4 & 5
	(5) reasons why the RIT-T proponent has determined that a class or classes of market benefit are not material;	4
	(6) the identification of any class of market benefit estimated to arise outside the region of the Transmission Network Service Provider affected by the RIT-T project, and quantification of the value of such market benefits (in aggregate across all regions);	4
	(7) the results of a net present value analysis of each credible option and accompanying explanatory statements regarding the results;	6
	(8) the identification of the proposed preferred option;	6 & 7
	(9) for the proposed preferred option identified under subparagraph (8), the RIT-T proponent must provide: (i) details of the technical characteristics; (ii) the estimated construction timetable and commissioning date; (iii) if the proposed preferred option is likely to have a material inter-network impact and if the Transmission Network Service Provider affected by the RIT-T project has received an augmentation technical report, that report; and (iv) a statement and the accompanying detailed analysis that the preferred option satisfies the regulatory investment test for transmission.	3 & 7
	(10) if each of the following apply to the RIT-T project:	N/A

Rules clause	Summary of requirements	Relevant section(s) in the PACR
	(i) if the estimated capital cost of the proposed preferred option is greater than $100 million[29] (as varied in accordance with a cost threshold determination); and (ii) AEMO is not the sole RIT-T proponent, the reopening triggers applying to the RIT-T project..	
5.16.4(z1)	A RIT-T proponent is exempt from preparing a PADR (paragraphs (j) to (s)) if: (1) the estimated capital cost of the proposed preferred option is less than $54 million[30] (as varied in accordance with a cost threshold determination); (2) the relevant Network Service Provider has identified in its project specification consultation report: (i) its proposed preferred option; (ii) its reasons for the proposed preferred option; and (iii) that its RIT-T project has the benefit of this exemption; (3) the RIT-T proponent considers, in accordance with clause 5.15A.2(b)(6), that the proposed preferred option and any other credible option in respect of the identified need will not have a material market benefit for the classes of market benefit specified in clause 5.15A.2(b)(4) except those classes specified in clauses 5.15A.2(b)(4)(ii) and (iii), and has stated this in its project specification consultation report; and (4) the RIT-T proponent forms the view that no submissions were received on the project specification consultation report which identified additional credible options that could deliver a material market benefit.	1

In addition, the table below outlines a separate compliance checklist demonstrating compliance with the binding guidance in the latest AER RIT-T guidelines.

Guidelines section	Summary of the requirements	Section in the PACR
3.1	In all cases, it is essential that RIT-T proponents express the identified need as the achievement of an objective or end, and not simply the means to achieve the objective or end. This objective should be expressed as a proposal to electricity consumers and be clearly stated and defined in RIT-T reports, as opposed to being implicit.	2.2
3.2.5	A RIT-T proponent must consider social licence issues in the identification of credible options. There are many potential sources of information when considering how this should be done, which include community sentiment data, prior experience, best practices, relevant guidelines, and early engagement with consumers, stakeholders and communities.	3.5 & 5.3
3.4	Except for specific circumstances, RIT-T proponents must adopt the inputs, assumptions and scenarios from the most recent inputs, assumptions and scenarios report (IASR).	5.5

[29] Varied to $103m based on the AER Final Determination: Cost threshold Review published November 2024
[30] Varied to $54m based on the AER Final Determination: Cost threshold Review published November 2024

3.4.1	The RIT-T specifies that: (i) The RIT-T proponent must adopt the discount rate from the most recent inputs, assumptions and scenarios report unless it provides demonstrable reasons why a variation is necessary. If the RIT-T proponent decides to vary this parameter, this variation must be consistent with paragraph 19. (ii) The present value calculations must use a commercial discount rate appropriate for the analysis of a private enterprise investment in the electricity sector. The discount rate used must be consistent with the cash flows being discounted. Consistent with the RIT-T requirement, present value calculations in the ISP must use a commercial discount rate appropriate for the analysis of a private enterprise investment in the electricity sector. Given this consistency, it should be suitable for RIT-T proponents to apply the discount rate that AEMO has applied in the most recent ISP.	5.2
3.5	In the RIT-T, costs are the present value of a credible option's direct costs. These must include the following classes of costs: • Costs incurred in constructing or providing the credible option. • Operating and maintenance costs over the credible option's operating life. For clarity, a consequence of this is that, if the modelling period is shorter than the life of the credible option, the RIT-T proponent would incorporate the operating and maintenance costs (if any) for the remaining years of the credible option into the terminal value. • Costs of complying with relevant laws, regulations and administrative requirements. A RIT-T proponent must exclude from its analysis, the costs (or negative benefits) of a credible option's harm to the environment or to any party that is not prohibited under the relevant laws, regulations or legal instruments, with the exception of changes in Australia's greenhouse gas emissions.	5.2 & 5.3
3.5A.1	Where the estimated capital costs of the preferred option exceeds $100 million[31] (as varied in accordance with a cost threshold determination), a RIT-T proponent must, in a RIT-T application: (i) outline the process it has applied, or intends to apply, to ensure that the estimated costs are accurate to the extent practicable having regard to the purpose of that stage of the RIT-T (ii) for all credible options (including the preferred option), either · apply the cost estimate classification system published by the AACE, or · if it does not apply the AACE cost estimate classification system, identify the alternative cost estimation system or cost estimation arrangements it intends to apply, and provide reasons to explain why applying that alternative system or arrangements is more appropriate or suitable than applying the AACE cost estimate classification system in producing an accurate cost estimate	NA
	For each credible option, a RIT-T proponent must specify, to the extent practicable and in a manner which is fit for purpose for that stage of the RIT-T:	

[31] Varied to $103m based on the AER Final Determination: Cost threshold Review published November 2024

3.5A.2	(i) all key inputs and assumptions adopted in deriving the cost estimate (ii) a breakdown of the main components of the cost estimate (iii) the methodologies and processes applied in deriving the cost estimate (e.g. market testing, unit costs from recent projects, and engineering-based cost estimates) (iv) the reasons in support of the key inputs and assumptions adopted and methodologies and processes applied (v) the level of any contingency allowance that have been included in the cost estimate, and the reasons for that level of contingency allowance	3 & 5
3.5.3	The RIT-T proponent is required to provide the basis for any social licence costs in their RIT-T reports and may choose to refer to best practice from a reputable, independent and verifiable source.	3.5 & 5.3
3.6.1	Under the RIT-T instrument, a RIT-T proponent must include all classes of market benefits unless: • it can provide reasons for why a particular class of market benefit is unlikely to materially affect the outcome of the credible options assessment, or • it expects the cost of undertaking the analysis to quantify the market benefits will be disproportionate to the scale, size and potential benefits of the credible options.	4
3.6.2	Under the RIT-T instrument, a RIT-T proponent must also consider classes of market benefits that: • the RIT-T proponent determines relevant, and • we have agreed to in writing before the RIT-T proponent publishes its consultation report.	4.3
	For each credible option, a RIT-T proponent must develop two states of the world (one with the credible option in place and the other being the base case with no option in place) for each reasonable scenario. This allows the RIT-T proponent to later derive the market benefits of an option by comparing these states of the world, and then probability weighting those benefits across a range of reasonable scenarios.	5.1
3.7.1	All assets and facilities that exist during a RIT-T application must, at least initially, form part of all relevant states of the world (both with and without the credible option in place and in all reasonable scenarios). Beyond taking account of existing assets and facilities, a state of the world must capture the future evolution of and investment in generation, network and load. To capture this, the RIT-T instrument requires the RIT-T proponent to include appropriate: • Committed projects: these must form part of all states of the world, consistent with the treatment of existing assets and facilities. • Actionable ISP projects: these must form part of all states of the world, consistent with the treatment of committed projects unless the level of analysis required to include the actionable ISP project is disproportionate to the scale and likely impact of the credible options under consideration. • Anticipated projects: the RIT-T proponent must use the ISP, and where absent from the ISP, its reasonable judgement to include these in all relevant states of the world. • Modelled projects: appropriate market development modelling will determine which modelled project to include in a given state of the world. For completeness, where a RIT-T proponent adopts the market modelling from the most recent ISP, ISP projects that are not actionable ISP projects (that is, future ISP projects and ISP development opportunities) will usually be modelled projects.	NA

	Where no scenarios from the ISP are relevant to the RIT-T application, the RIT-T proponent must form reasonable scenarios consistently with the requirements for reasonable scenarios in the RIT-T instrument.	5.5
3.8.1	Under the RIT-T instrument, the number and choice of reasonable scenarios must be appropriate to the credible options under consideration. Specifically, the choice of reasonable scenarios must reflect any variables or parameters that are likely to affect: • the ranking of the credible options, where the identified need is for reliability corrective action, inertia network services or system strength services. In these cases, only the ranking (as opposed to the sign) of credible options' net economic benefits is important; and • the ranking or sign of the net economic benefit of any credible option where the identified need is not for reliability corrective action, inertia network services or system strength services. In these cases, the preferred option must have a positive net economic benefit.	
3.8.2	Where the estimated capital cost of the preferred option exceeds $100 million[32] (as varied in accordance with an applicable cost threshold determination), a RIT-T proponent must undertake sensitivity analysis on all credible options, by varying one or more inputs and/or assumptions.	NA
3.9.1	The methodology for assigning probabilities to each reasonable scenario must be consistent with the methodology for choosing the reasonable scenarios themselves. Where a RIT-T proponent has no evidence or rationale for assigning a higher probability for one reasonable scenario over another, it may weight all reasonable scenarios equally. Moreover, where the RIT-T proponent uses the most recent ISP scenarios as its reasonable scenarios, it must adopt the probability weightings that AEMO used in the most recent ISP.	5.5
3.9.2	A RIT-T proponent must separately undertake a weighted averaging of the direct costs of a credible option as well as the market benefits of a credible option.	5.5
3.9.3	The RIT-T instrument requires RIT-T proponents to consider option value as a class of potential market benefit.	4.3
3.9.4	If a contingency allowance is included in a cost estimate for a credible option, the RIT-T proponent must explain: · the reasons and basis for the contingency allowance, including the particular costs that the contingency allowance may relate to, and · how the level or quantum of the contingency allowance was determined.	NA

[32] Varied to $103m based on the AER Final Determination: Cost threshold Review published November 2024

3.11.2	While there are no specific requirements for the level of information required of concessional finance agreements at the RIT-T stage of a project, enough information must be provided to justify an agreement's inclusion. If a proponent seeks to include an unexecuted concessional finance agreement in the RIT-T, they must undertake sensitivity testing for the scenario the agreement doesn't eventuate	NA
4.1	RIT-T proponents are required to describe in each RIT-T report · how they have engaged with local landowners, local council, local community members, local environmental groups or traditional owners and sought to address any relevant concerns identified through this engagement · how they plan to engage with these stakeholder groups, or · why this project does not require community engagement	3.5