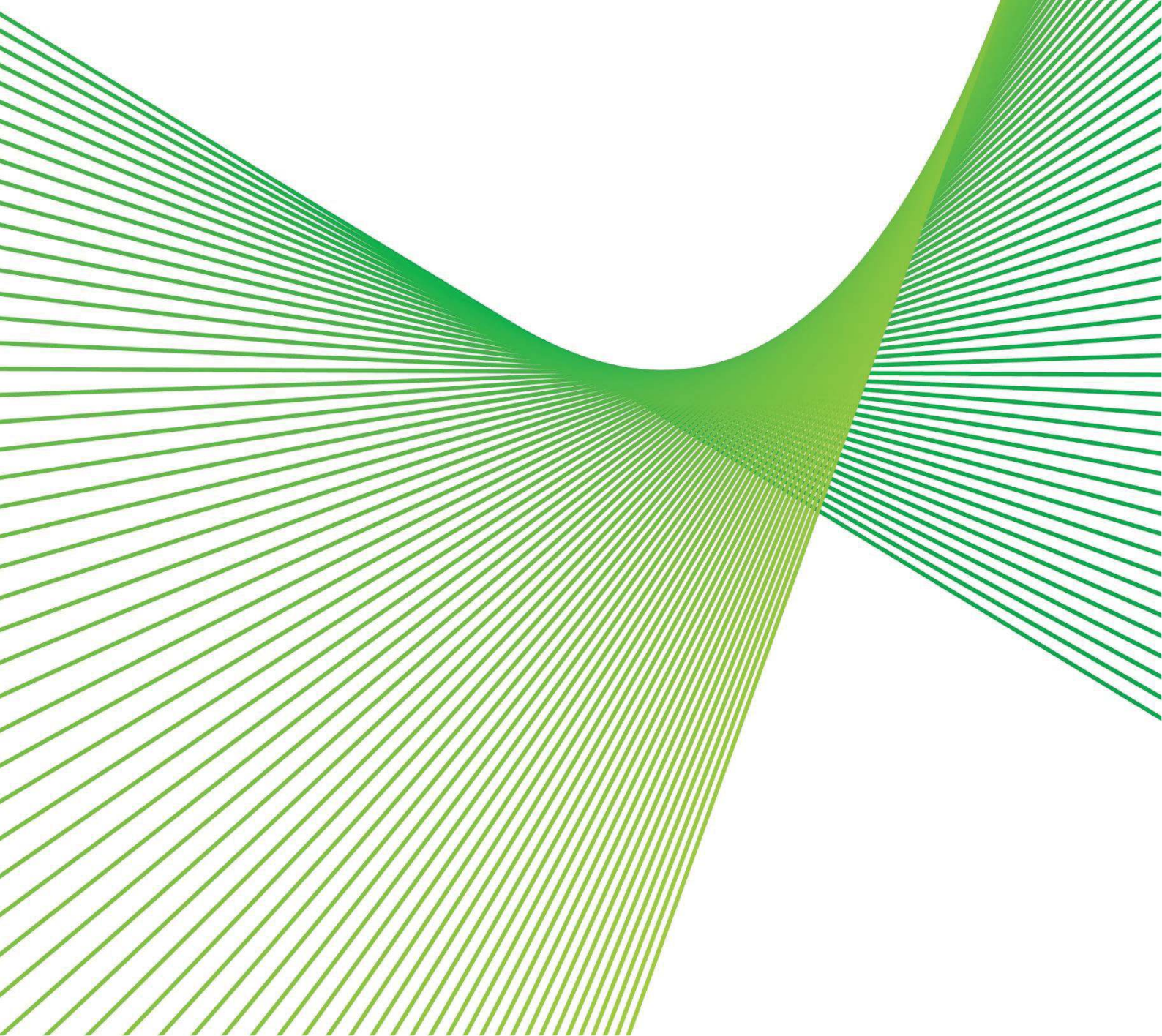


# Managing expected demand in the Panorama area

RIT-T – Project Specification Consultation Report

Region: Central West New South Wales

Date of issue: 7 December 2022



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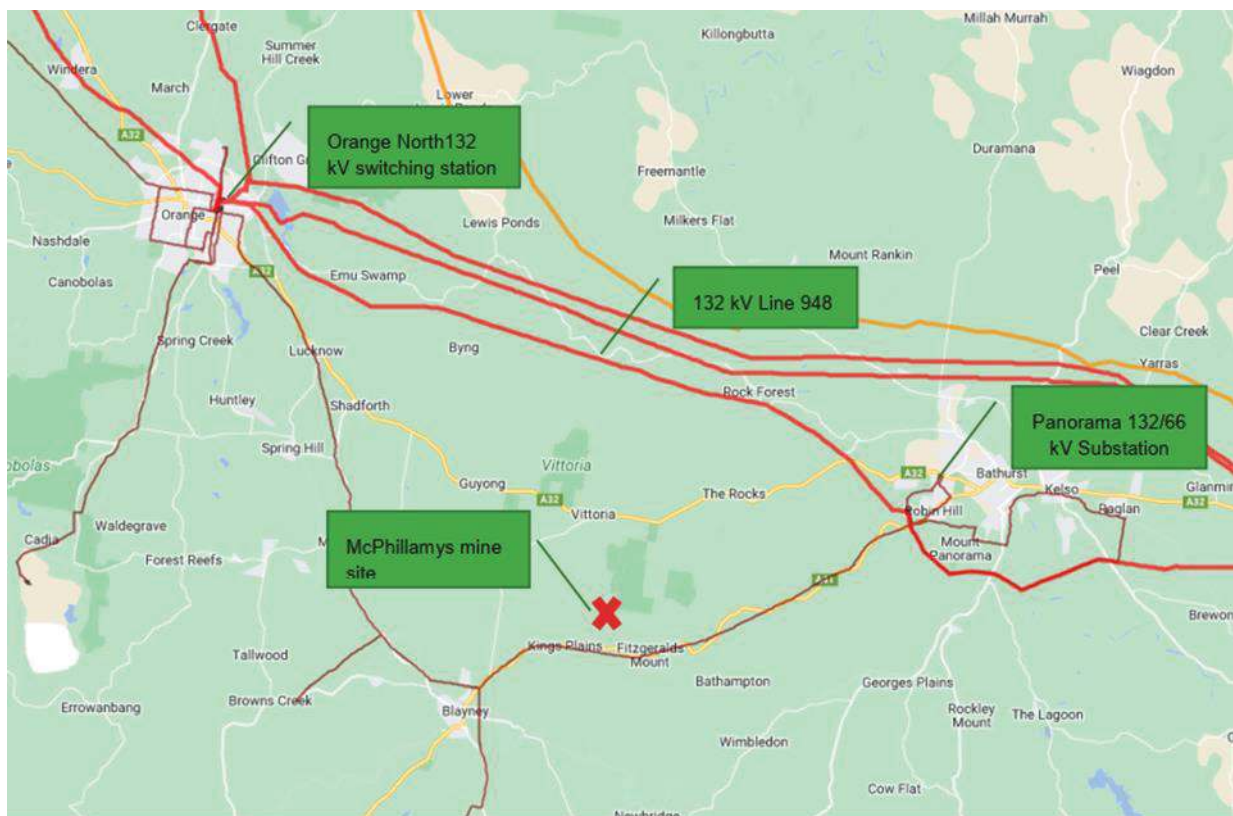
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## Summary

This Project Specification Consultation Report (PSCR) represents the first step in the application of the Regulatory Investment Test for Transmission (RIT-T) to options for addressing constraints on the transmission and distribution networks in the Panorama region of New South Wales. The constraints are expected to arise from the connection of a new spot load (McPhillamys Gold Mine) to Essential Energy's distribution network, and recent increases in the demand expected from this load. While the mine will be connected to the distribution network, the supply to the distribution network will be drawn from our nearby upstream Panorama bulk supply point (BSP).

There are currently two BSPs between our transmission network and Essential Energy's distribution network in the area, at Orange North and Panorama, as shown in Figure E-1.

Figure E-1 Location of the McPhillamys Gold Mine project relative to the Panorama and Orange North Bulk Supply Points



**The identified need for this investment is to ensure adequate supply to Essential Energy's distribution network from the transmission network, to address constraints arising from the connection of McPhillamys Gold Mine**

The McPhillamys Gold Mine is expected to be ready to connect from 2023/24 onwards, initially at 26MVA but forecast to grow to 35MVA by 2028/29. The expected additional demand from the mine will exceed the capacity of existing transmission and distribution infrastructure to supply the mine and the load in the general Panorama area, including the current capacity of the Panorama BSP.

We are required under the National Electricity Rules (NER) to perform joint planning with the relevant distribution network service provider to manage demand and provide prescribed transmission services. In particular, the relevant transmission and distribution network service providers must "assess the adequacy

of existing transmission and distribution networks and the assets associated with transmission-distribution connection points over the next five years and [...] undertake joint planning of projects which relate to both networks”.<sup>1</sup> This requirement includes the identification of any limitations or constraints that affect the networks of both transmission and distribution network service providers.<sup>2</sup>

The identified need for this investment is for us to ensure adequate supply to Essential Energy’s distribution network from the transmission network and address constraints that would otherwise arise from the connection of McPhillamys Gold Mine. Given the NER requirements for joint planning, we consider that this is a reliability corrective action identified need.

**Three credible options have been developed and assessed in this PSCR**

We have developed three credible options that meet the identified need by ensuring adequate capacity on our transmission network so that demand from McPhillamys Gold Mine connected to Essential Energy’s distribution network can be met. Option details, including capital cost, commissioning year and option descriptions, are set out in Table E-1.

Table E-1 Credible options considered in the PSCR that meet the identified need

Option	Option description	Capital cost	Build period	Commissioning
Option 1	66kV Connection at Panorama: New 66kV switch bay and two new 20MVar/132kV capacitor banks	\$22.4 million	32 months	2025/26
Option 2	132kV Connection at Panorama: New 132kV switch bay and a new double-circuit transmission line	\$28.0 million	43 months	2025/26
Option 3	New connection point on Line 948: New three circuit-breaker switching station	\$15.8 million	36 months	2025/26

We have also examined the potential for non-network options to meet the identified need, but do not consider non-network options can assist with meeting the identified need in a way that is economically feasible. A non-network option would effectively need to be able to meet the load of the mine that would otherwise be unserved on a continuous basis, 24 hours a day over its life at a cost that is lower than the most cost-effective network option. Given the relatively low cost of the network options and the extent of potential unserved energy, we do not consider that non-network options are likely to be economically feasible.

**Three scenarios have been considered including a scenario that has lower forecasts for the future mine load**

Three reasonable scenarios have been developed to assess the credible options considered. A key variable affecting the timing and extent of future constraints on the network is the forecast level of demand from the mine. The latest forecasts provided by Essential Energy show the mine ready for connection from 2023/24 onwards, initially at 26MVA but forecast to grow to 35MVA in 2028/29. We have adopted this forecast growth in the central and high scenarios but have also examined a low scenario in which demand from the mine remains at 26MVA.

<sup>1</sup> NER, rule 5.14.1(d)(1).

<sup>2</sup> NER, rule 5.14.1(d)(3).

In addition to differences in forecast demand, the scenarios also vary capital costs, the value of customer reliability and the discount rate. The different parameters have been combined to derive a central scenario (which is considered the most likely) as well as low and high benefits scenarios, reflect future states of the world which represent the lower and upper bounds of reasonable net benefit outcomes. The weighting of each scenario has been informed by feedback from the Transgrid Advisory Council.<sup>3</sup> A summary of the scenarios and the weighting applied is presented in Table E-2.

Table E-2 Summary of scenarios

Variable	Central	Low net economic benefits	High net economic benefits
Capital costs	Base estimate	Base estimate + 25%	Base estimate – 25%
Eventual spot load from the McPhillamys Gold Mine <sup>4</sup>	35MVA	26MVA	35MVA
VCR <sup>5</sup>	\$38.42/kWh	\$26.89/kWh	\$49.95/kWh
Discount rate	5.50%	7.50%	2.30%
Scenario weighting	90%	5%	5%

Based on the weighted outcomes of the assessment, Option 3 is found to provide the highest net benefit, as shown in the figure below, on account of the option having the lowest capital costs out of the options considered. This result is robust with Option 3 being the top ranked option in all scenarios and across the sensitivity tests conducted.

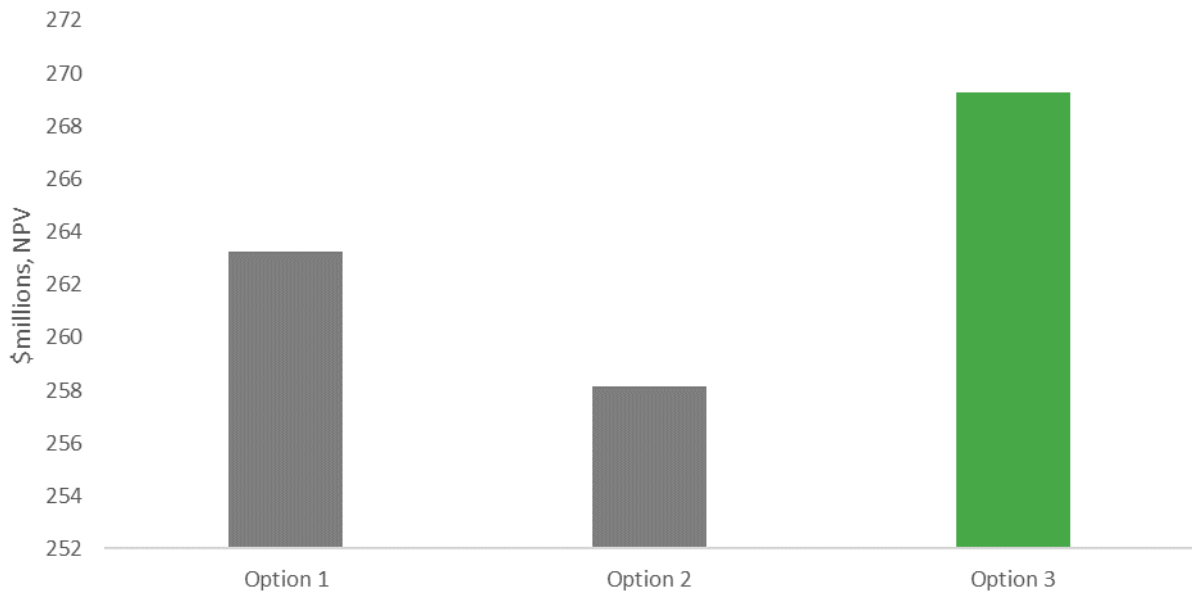
<sup>3</sup> The Transgrid Advisory Council is our principal stakeholder engagement forum. Its representatives are listed on our [website](#).

<sup>4</sup> Maximum demand in 2028/29. The demand forecasts and assumed ramp-up rate over time for the McPhillamys mine are discussed in section 2.3.1.

<sup>5</sup> The calculation of the VCR estimate and the associated high and low estimates are discussed in section 6.1.2.

## Option 3 has the highest net benefits on a weighted basis and is identified as the preferred option

Figure E- 2 Summary of the estimated net benefits, weighted across the three scenarios



We therefore consider Option 3, establishing a new three circuit-breaker switching station on 132kV Line 948, is the preferred option to meet the identified need.

### Exemption from preparing a Project Assessment Draft Report

Subject to additional credible options being identified during the consultation period, publication of a Project Assessment Draft Report (PADR) is not required for this RIT-T as we 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 \$46 million;<sup>6</sup>
- the PSCR identifying:
  - the proposed preferred option (including reasons for the proposed preferred option)
  - that the RIT-T is exempt from producing a PADR
  - that the proposed preferred option and any other credible option will not have material market benefits<sup>7</sup> except for voluntary load curtailment and involuntary load shedding

### Submissions and next steps

The purpose of this PSCR is to set out the reasons we propose that action be undertaken, present the options that address the identified need, outline the technical characteristics that non-network options would need to provide, present the results from our cost benefit analysis of the options, identify a preferred option and allow interested parties to make submissions and provide input to the RIT-T assessment.

<sup>6</sup> Varied from \$43 million to \$46 million based on the AER *Final Determination: Cost threshold review*, November 2021.

<sup>7</sup> As per clause 5.16.1(c)(6)



We welcome written submissions on the material contained in this PSCR. Submissions are due on 10 March 2023. Submissions should be emailed to our Regulation team via [regulatory.consultation@transgrid.com.au](mailto:regulatory.consultation@transgrid.com.au).<sup>8</sup>

In the subject field, please reference 'Managing expected demand in the Panorama area.'

At the conclusion of the consultation process, all submissions received will be published on our website. If you do not wish for your submission to be made public, please clearly specify this at the time of lodgement.

Should we consider that no additional credible options were identified during the consultation period, we intend to produce a Project Assessment Conclusions Report (PACR) that addresses all submissions received including any issues raised in relation to the proposed preferred option or alternative options. Subject to no additional credible options being identified, Transgrid anticipates publication of a PACR in May 2023.

Box E-1 AER determination of disputes relating to North West Slopes and Bathurst Orange Parks RIT-Ts

We note the publication on 29 November 2022 of the AER's decision on the disputes relating to the North West Slopes and Bathurst, Orange and Parkes RIT-Ts. The AER's decision has potential implications for the assessment in this RIT-T in terms of the specification of the scenarios adopted. We are currently working through the implications of the AER's decision for the approach adopted for our RIT-Ts generally, which will include discussions with the AER to confirm that any changes in our approach are consistent with the AER's decision. We will update the assessment presented in this PSCR to reflect the outcomes of that deliberation as part of the PACR.

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<sup>8</sup> TransGrid is bound by the Privacy Act 1988 (Cth). In making submissions in response to this consultation process, TransGrid will collect and hold your personal information such as your name, email address, employer and phone number for the purpose of receiving and following up on your submissions. If you do not wish for your submission to be made public, please clearly specify this at the time of lodgement.