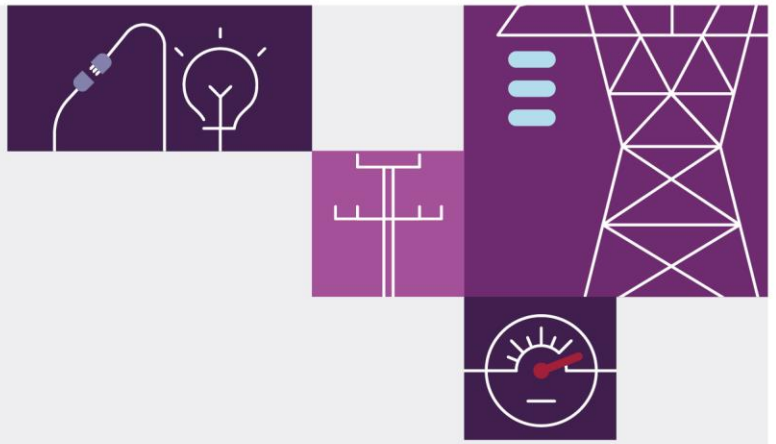


# VNI West – Final Compliance Report

June 2023

Regulatory Investment Test for  
Transmission





# Important notice

## Purpose

This report has been prepared as a final compliance report in light of the AER posting a request for information on its issues register relating to the Victoria to New South Wales Interconnector ('VNI-West') Regulatory Investment Test for Transmission (RIT-T). It updates the initial compliance report provided as Appendix A1 to the PACR published in May 2023.

## Disclaimer

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## Locations

Descriptions and visual representations of geographic locations in this document are indicative only. Locations will be determined after the conclusion of the RIT-T process, as required during detailed design, route assessment, planning and community engagement phase.

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AEMO and Transgrid acknowledge the many First Nations that host Australia's electricity grids and pay respect to Elders past, present and emerging. We respect the Indigenous history of the lands in which we currently and plan to operate, being conscious of the landscape-scale impacts of the energy transition. We wish to emphasise the importance of early and continued engagement, working closely with Traditional Owners, as the grid seeks to expand.



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# 1 Introduction

On 21 June 2023, the Australian Energy Regulator (AER) posted a request for information on its issues register relating to the Victoria to New South Wales Interconnector ('VNI-West') Regulatory Investment Test for Transmission (RIT-T) Project Assessment Conclusions Report (PACR) published on 27 May 2023.<sup>1</sup> The AER requested further explanation on the identification and ranking of credible options in the VNI West PACR, including the identification of a preferred option.

The AER is seeking further information via the issues register to understand how the PACR satisfies the requirement in clause 5.16A.4(j) of the National Electricity Rules (NER) – being, that the PACR must set out the matters detailed in the Project Assessment Draft Report (in this case the VNI West Consultation Report – Options Assessment referred to in this compliance report as the 'Additional Consultation Report', published in February 2023), as required under clause 5.16A.4(d) of the NER.

In particular, the AER is seeking further information on four issues – namely:

1. Why the PACR does not assess Option 2, Option 3, Option 3A and Option 4, which were all identified as 'credible options' in the Additional Consultation Report.
2. Why the PACR does not further consider Option 3A, which was identified in the Additional Consultation Report as the 'preferred option' that maximises the positive net economic benefits to those who produce, consume and transport in the National Electricity Market as defined in cl.5.15A.1(c) of the NER.
3. Why the PACR only considers Option 5 and Option 5A, and an explanation of the conclusion that there is only one credible option.
4. Why the PACR provides limited analysis of the New South Wales component of the VNI West project. The AER has requested further information on:
  - Option selection for routes between Dinawan and the Murray River crossing points.
  - The cost benefit analysis of these options.
  - The infrastructure to be built to the preferred crossing point.

The AER's issues register posting states that the compliance report must be published by 26 June 2023 and must identify how these issues on the register have been resolved. The AER also notes that it will publish the compliance report for VNI West once it has been received.

AVP and Transgrid provided a preliminary compliance report in Appendix A1 of the PACR.<sup>2</sup> One of the items required to be covered in the compliance report is how the RIT-T proponents 'have resolved key issues raised by the AER through the issues register'.<sup>3</sup> The AER had not published any issues in the issues register for the VNI West RIT-T at the time of the PACR publication. Given the request for information that has been posted on the issues register, we have subsequently prepared this report to respond to the issues raised by the AER (and consider this report serves as the final compliance report for this RIT-T).

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<sup>1</sup> <https://www.aer.gov.au/networks-pipelines/compliance-reporting/aemo-victoria-planning-and-transgrid-vni-west-pacr>

<sup>2</sup> Provision of the compliance report as a table as part of the PACR is consistent with the AER's Final Decision on the Cost Benefit Analysis Guidelines, see p. 40 and p.65.

<sup>3</sup> AER Cost Benefit Analysis Guidelines, section 2.1.2, p.5.

This final compliance report is structured as follows:

- Section 2 updates the preliminary compliance report included in the PACR (i.e., Appendix A1 in that report) in light of the AER posting a request for information on the issues register on 21 June 2023.
- Section 3 summarises the sequence of reports and decisions made over the course of the VNI West RIT-T which is relevant context for the AER's information request
- Sections 4 to 7 respond to the issues that the AER has requested further information on.

## 2 Updated checklist of compliance clauses

This section sets out an updated compliance checklist that demonstrates compliance with the requirements of clause 5.16A.4(j) of the NER version 200 and Table 14 of the CBA Guidelines, i.e., it updates Appendix A1 in the PACR in light of the AER posting a number of items on the issues register on 21 June 2023.

We note that NER clause 5.16A.4(j), which is quoted by the AER in the issues register, requires that the PACR must set out:

1. the matters detailed in the PADR as required under paragraph (d); and
2. a summary of, and the RIT-T proponent's response to, submissions received, if any, from interested parties sought under paragraph (f).

These two requirements are covered in the first table below. Specifically, the rows for NER clause 5.16A.4(j)(1) cover the first requirement, while the row for NER clause 5.16A.4(j)(2) covers the second requirement.

The second table below covers the requirements set out in Table 14 of the Cost Benefit Analysis (CBA) Guidelines.

**Table 1 Checklist of compliance clauses**

NER clause	Summary of requirements	Relevant section(s) in PACR
<b>5.16A.4(d)</b>  <b>(as required under 5.16A.4(j)(1))</b>	The project assessment conclusions report must include:	-
	(1) include the matters required by the Cost Benefit Assessment Guidelines;	Table 15
	(2) adopt the identified need set out in the Integrated System Plan (including, in the case of proposed reliability corrective action, why the RIT-T proponent considers reliability corrective action is necessary);	Section 3
	(3) describe each credible option assessed	Section 3, Appendix A2 and Appendix A3 (Appendix A3 details and explains why options considered in the additional Consultation Report were not progressed in the PACR)
	(4) include a quantification of the costs, including a breakdown of operating and capital expenditure for each credible option	Section 3.3
	(5) assess market benefits with and without each credible option and provide accompanying explanatory statements regarding the results	Section 6 and Appendix A9
	(6) if the RIT-T proponent has varied the ISP parameters, provide demonstrable reasons in accordance with 5.15A.3(b)(7)(iv)	N/A
	(7) identify the proposed preferred option that the RIT-T proponent proposes to adopt	Section 9
<b>5.16A.4(j)(2)<sup>4</sup></b>	(8) for the proposed preferred option identified under subparagraph (7), the RIT-T proponent must provide: (i) details of the technical characteristics; and (ii) the estimated construction timetable and commissioning date.	Section 3.2
	(2) a summary of, and the RIT-T proponents' response to, submissions received, if any, from interested parties sought	Volume 2: PACR. The report released in February 2023 on the PADR submissions also includes a

<sup>4</sup> This row has been updated from the equivalent table in the PACR to correct the NER reference.

NER clause	Summary of requirements	Relevant section(s) in PACR
		detailed summary of all points raised in those submissions.

**Table 2 List of binding elements on RIT-T proponents in the CBA Guidelines**

Binding elements	Provision	Classification	Relevant section(s) in PACR
1	RIT-T proponents are required to provide the AER with a compliance report when applying the RIT-T to an actionable ISP project, which must be submitted no later than 20 business days after the publication of the project assessment conclusions report	Requirement	Appendix A1 of the PACR and this subsequent final compliance report
2	In its compliance reports, RIT-T proponents are required to identify where they: <ul style="list-style-type: none"> <li>• have complied with applicable requirements;</li> <li>• have had regard to applicable considerations (including the reasons for the weight they have attached to each consideration); and</li> <li>• have resolved key issues raised by the AER through the issues register.</li> </ul>	Requirement	Appendix A1 of the PACR and this subsequent final compliance report  Sections 3 to 7 of this report respond to the request for information the AER posted on the issues register on 21 June 2023
3	RIT-T proponents are required to identify breaches of the CBA guidelines, if any, in their compliance reports and provide an explanation for the breach.	Requirement	Appendix A1 of the PACR. AVP and Transgrid consider there are no breaches of the CBA Guidelines.
4	If a compliance report contains confidential information, RIT-T proponents are required to provide another nonconfidential version of the report in a form suitable for publication.	Requirement	Appendix A1 of the PACR, and this subsequent, final compliance report do not contain confidential information
5	When a RIT-T proponent is considering whether to include new credible options that AEMO did not consider in the ISP, it must have regard to the guidance in Section 4.3.1 of the CBA Guidelines on what constitutes a credible option when justifying its decision.  When identifying new credible options, the RIT-T proponent must consider all options it could reasonably classify as credible options, taking into account factors that the RIT-T proponent reasonably considers it should take into account. In considering what it should take into account, the RIT-T proponent must have regard to the following: <ul style="list-style-type: none"> <li>• if the identified need in the ISP entails meeting a service standard, the degree of flexibility offered by that service standard;</li> <li>• the advantages of constructing credible options with option value; and</li> <li>• the benefits of constructing new credible options to meet the identified need in the ISP over broadly similar timeframes to the ISP candidate option and non-network options identified in the ISP.</li> </ul>	Consideration	Section 3 of the PACR
6	The base case is required to be where the RIT-T proponent does not implement a credible option to meet the identified need, but rather continues its business as usual activities, including for where reliability corrective action is driving the identified need.	Requirement	Section 5 of the PACR
7	'Demonstrable reasons' for departing from ISP parameters are required to be limited to where there has been a material change that AEMO would, but is yet to reflect in, a subsequent IASR, ISP or an ISP update. For example, this might include a material change in circumstances, such as where the AER has published updated VCR values that AEMO is yet to incorporate in the IASR. Where a material change is not a change in circumstances or facts (for example, a change in the RIT-T proponent's understanding or assessment of the facts, rather than a change in the facts themselves), the RIT-T proponent might choose to attain written confirmation of the change from AEMO.	Requirement	Section 5.3 of the PACR

Binding elements	Provision	Classification	Relevant section(s) in PACR
8	If the modelling period is shorter than the life of the credible option, the RIT-T proponent is required to incorporate the operating and maintenance costs (if any) for the remaining years of the credible option into the terminal value.	Requirement	Appendix A6 of the PACR
9	When valuing the costs of compliance, there may be cases where a RIT-T proponent can lawfully pay a financial amount rather than undertake some other action for compliance. In such cases, the RIT-T proponent must consider whether the financial amount is smaller than the costs of undertaking some other action before determining whether it should treat the financial amount as part of that credible option's costs.	Consideration	N/A – options considered in the PACR do not involve cost of compliance payments of a financial amount in place of some other action for compliance.
10	For any RIT-T application where AEMO has not specified which scenario/s or weightings to apply, the RIT-T proponent must consider the AER's guidance on estimating probability-based weightings as set out in the previous RIT-T application guidelines that applied to all RIT-T projects.	Consideration	AEMO ISP scenario weightings adopted
11	RIT-T proponents must consider performing sensitivity testing by varying one or multiple inputs/assumptions. In considering whether or how to perform sensitivity testing, the RIT-T proponent must have regard to any relevant risks identified in stakeholder submissions, and whether sensitivity testing would build on the analysis already undertaken in the ISP and be proportionate and relevant to the RIT-T assessment.	Consideration	Section 6.4 of the PACR
12	The RIT-T proponent must consider using the ISP modelling period (also known as the planning horizon) of 20+ years as the default when assessing credible options to meet identified needs arising out of the ISP. If the expected profile of the market benefits and costs of the ISP candidate option are longer than the modelling period used in the ISP, the RIT-T proponent must consider whether it might be valuable to adopt a longer modelling period, whilst also considering the need for alignment with the ISP. For relatively incremental ISP candidate options, the RIT-T proponent must consider whether a shorter period would reduce the computational burden without compromising the quality of the CBA or undermining alignment with the ISP.	Consideration	Appendix A8.7 of the PACR
13	Where the modelling period is shorter than the expected life of a credible option, the RIT-T proponent is required to include any relevant and material terminal values in its discounted cash flow analysis. The RIT-T proponent is required to explain and justify the assumptions underpinning its approach to calculating the terminal value, which represents the credible option's expected cost and benefits over the remaining years of its economic life.	Requirement	Appendix A6 of the PACR
14	For the purposes of clause 5.16A.5(b) of the NER, the relevant cost is the cost for the particular stage. However, AEMO also must have regard to the full cost of the project in providing its written confirmation, under clause 5.16A.5(b) of the NER, that the status of the actionable ISP project remains unchanged.	Consideration	N/A
15	The RIT-T proponent must consider describing in each RIT-T report how it has engaged with consumers, as well as other stakeholders; and sought to address any relevant concerns identified as a result of that engagement. The RIT-T proponent must consider undertaking early engagement with consumers, non-network businesses and other key stakeholders to the extent that doing so complements rather than duplicates or hinders AEMO's engagement work in developing the ISP. The RIT-T proponent also must have regard to how it can adopt best practice consumer engagement in line with our 'consumer engagement guideline for network service providers'.	Consideration	PACR Volume 2
16	The RIT-T proponent is required to provide transparent, user-friendly data to stakeholders, to the extent this protects commercially sensitive information and is not	Requirement	Section 6 of the PACR and modelling outcomes



Binding elements	Provision	Classification	Relevant section(s) in PACR
	already provided by the ISP.		accompanying the PACR
17	In providing transparent, user-friendly data to stakeholders, the RIT-T proponent must have regard to how it can present information in line with stakeholder preferences.	Consideration	Section 6 of the PACR and modelling outcomes accompanying the PACR
18	The Draft Report is required to include, if applicable: <ul style="list-style-type: none"> <li>• Demonstrable reasons for adopting different modelling techniques to what AEMO used in the ISP.</li> <li>• An explanation as to why any non-network options proposed in response to new actionable ISP projects in the final ISP are not credible options.</li> </ul>	Requirement	N/A
19	When publishing the Conclusions Report, RIT-T proponents are required to: <ul style="list-style-type: none"> <li>• Publish, in addition to a summary of submissions, any submissions received in response to the Draft Report, unless marked confidential.</li> <li>• Date the Conclusions Report to inform potential disputing parties of the timeframes for lodging a dispute notice with the AER.</li> </ul>	Requirement	All non-confidential submissions have been published online. Section 1.4 of the PACR sets out the timeframes for lodging a dispute.
20	If a RIT-T proponent receives any confidential submissions on its Draft Report, it must consider working with submitting parties to make a redacted or nonconfidential version public.	Consideration	N/A

## 3 RIT-T and NEVA process for VNI West

The assessment of credible options and the selection of the preferred option for the VNI West project was undertaken in accordance with the requirements of the RIT-T under the National Electricity Rules subject to the Orders made by the Victorian Minister for Energy and Resources pursuant to section 16Y of the National Electricity (Victoria) Act 2005 (the NEVA) on 20 February 2023 (the February 2023 NEVA Order) and 27 May 2023 (the May 2023 NEVA Order).

We set out below the sequence of the assessment of options and publication of the RIT-T documents for the VNI West project, the February 2023 NEVA Order and the May 2023 NEVA Order and the assessment of the various options.

### December 2019 – Project Specific Consultation Report (PSCR)

AEMO Victorian Planning (AVP) and TransGrid completed the first stage of the VNI West RIT-T project in December 2019 and published for consultation a Project Specific Consultation Report (PSCR).

The PSCR sought feedback and advice on the identified need for new transmission infrastructure and explored potential investment options to address this need.

### July 2022 – Project Assessment Draft Report (PADR)

In July 2022, AVP and Transgrid jointly published the Project Assessment Draft Report (PADR) which assessed two different options to provide additional transfer capacity between Victoria and New South Wales, which reflected the 2022 ISP candidate option selected as actionable in the optimal development path (Option 1) and the use of alternative technologies (Option 2).

The VNI West transmission project (Option 1) was the proposed preferred option identified under the PADR.

### February 2023 NEVA Order

The February 2023 NEVA Order conferred upon AVP functions which included the assessment of alternate options to the preferred option, as described in the VNI PADR and the Western Renewables Link (WRL) PACR, to expedite the development and delivery of both projects.

Consistent with the February 2023 NEVA Order, AVP considered factors relevant to the expedited development and delivery of the Victorian component of VNI West, including social and environmental impacts raised by stakeholders which could impact expedition and delivery of VNI West.

This order disapplied certain provisions of the National Electricity Rules in respect of VNI West including the RIT-T. However, AVP was required to prepare and publish a PACR with Transgrid and to consult with VicGrid in relation to that PACR.

### February 2023 – Additional Consultation Report

Following the February 2023 NEVA Order, AVP and Transgrid published an additional Consultation Report on the outcomes of the alternate options assessment and accompanying material (including a standalone report summarising and responding to PADR submissions).

This Consultation Report had regard to the February 2023 NEVA Order and represented an additional step to the formal RIT-T process, over and above the minimum consultation requirements prescribed under the RIT-T process.

The Consultation Report assessed seven options in total, being Options 1, 1A, 2, 3, 3A, 4 and 5.

The new options included consideration of various connection points with WRL further west than the PADR proposed preferred option's connection north of Ballarat, to avoid land use concerns between Bendigo and Ballarat that had been identified by stakeholders.

AVP had regard to its functions under the February 2023 NEVA Order in respect of the Victorian components in assessing and ranking these options.

The additional Consultation Report identified Option 5, connecting to WRL (at Bulgana) with EnergyConnect (at Dinawan) via a new terminal station near Kerang, as the new proposed preferred option.

There was found to be a 1% difference in net benefits between the top two ranked options in the report – being 'Option 3A (to Waubra/Lexton with spur)' and 'Option 5 (to Bulgana)'.

However, once other potential environment, social and engineering constraints are considered, using multi-criteria analysis (MCA) developed to assess the Victorian component for compliance with the February 2023 Order, Option 5 clearly outperformed Option 3A (and all other options), so Option 5 was the proposed preferred option.

AVP and Transgrid then consulted with a broad range of stakeholders, Traditional Owners, local government and community members over a six-week period to seek feedback on Option 5.

#### April 2023 – Draft Project Assessment Conclusions Report (Draft PACR)

The draft PACR assessed two options – one option developed in response to stakeholder feedback on the PADR (Option 5), and one option developed in response to stakeholder feedback on the additional Consultation Report (Option 5A).

Options 1, 2, 3, 3A and 4 from the additional Consultation Report (and the VNI West PADR/2022 ISP in the case of Option 1) were not progressed in the PACR due to the Victorian components scoring lower than Option 5 across the range of objectives assessed in that report, taking the February 2023 NEVA Order into account.

No information received during the additional Consultation Report process had the ability to sufficiently improve the performance of the Victorian components of these options based on the MCA (including the net market benefits), such that any would outperform Option 5, and therefore, these options were not taken forward in the PACR.

Further analysis conducted for the PACR was instead focused on addressing concerns raised around Option 5 during the additional Consultation Report process.

AVP consulted with VicGrid, a division of the Victorian Department of Energy, Environment and Climate Action, on the draft outcomes of the alternate options analysis and the draft PACR, as required under the February 2023 NEVA Order.

AVP provided a draft of the PACR to the Victorian Minister for Energy and Resources on 3 May 2023 to inform the May 2023 NEVA Order, prior to the PACR being published, noting that AVP considered Option 5A best met the criteria under the February 2023 NEVA Order to facilitate and expedite delivery of the VNI West project, while

delivering equal highest net market benefits (approximately \$1.4 billion in NPV terms over the assessment period on a scenario-weighted basis).

On 22 May 2023, AVP provided a final draft of the PACR for VNI West Victorian Minister for Energy and Resources, noting that there were no material amendments from the previous draft PACR.

### May 2023 NEVA Order

On 27 May 2023, the Minister published the May 2023 NEVA Order.

In accordance with AVP findings on the options developed pursuant to the February 2023 NEVA Order and the draft PACR, the May 2023 NEVA Order specified that the preferred option, to the extent it relates to the declared transmission system must connect to WRL at Bulgana, via a new terminal station near Kerang and cross the Murray River proximately north of Kerang (Wamba Wamba Country) (Option 5A).

### May 2023 – Final Project Assessment Conclusion Report (Final PACR)

After the May 2023 NEVA Order was made, AVP and Transgrid prepared and published the final PACR.

Following this May 2023 NEVA Order, for an option to be credible under the RIT-T and the PACR, it must assume the Victorian configuration specified in the May 2023 NEVA Order. On that basis, Option 5A is the preferred option for the Victorian and New South Wales components, as it is the only credible option where the New South Wales component is viable with that Victorian configuration required by the order (i.e. it is only commercially or technically feasible to construct the New South Wales component so that it connects to the Victorian components at the point of crossing at the Murray River north of Kerang for Option 5A as required by the May 2023 NEVA Order).

In preparing the draft PACR, Option 5 was assessed as a credible option, however, following the May 2023 NEVA Order, Option 5 is no longer a credible option as it is based on a different Victorian configuration to that under the NEVA Order.

While no longer considered credible, Option 5 was included in the published PACR to provide greater transparency around the information provided to the Minister in the draft, prior to making the May 2023 NEVA Order, and to demonstrate how similar the two options were from a net market benefit perspective.

## 4 Issue 1 – why did the PACR not assess Options 2, 3, 3A and 4?

The first issue the AER is seeking further information on is why the PACR did not assess Option 2, Option 3, Option 3A and Option 4, which were all identified as 'credible options' in the February 2023 Additional Consultation Report.

The Additional Consultation Report was published in February 2023 as an additional step to supplement the RIT-T assessment. The report responded to feedback on the Project Assessment Draft Report (PADR), published in July 2022, by assessing seven credible options including the two options assessed in the PADR along with five additional options.

Table 16 in the PACR outlines why each of the four options mentioned above were not included in the PACR assessment. Specifically:

- Option 2 was found to be the lowest ranked option in the Additional Consultation Report, and the additional cost of the virtual transmission line (VTL) components is not outweighed by the additional expected market benefits (shown by Option 2 having lower net benefits than Option 1 in all three scenarios). On a weighted basis, Option 2 was found to have net market benefits that were approximately 17 per cent lower than Option 5.
- The analysis in the Additional Consultation Report found that Option 3A is always ranked above Option 3 (that is, uprating Western Renewables Link (WRL) to 500 kV through to Bulgana is always net beneficial for consumers). Further, Option 3 did not rank above Option 3A in the multi-criteria analysis (MCA) assessment of the Victorian components.
- While Option 3A was found to have effectively the same level of estimated net benefits for consumers as Option 5 in the Additional Consultation Report, it ranked behind Option 5 under the MCA assessment of the Victorian components. This finding was confirmed through stakeholder consultation where only two submissions suggested that Option 3A was favoured over Option 5.
- Option 4 was found to be the worst performing purely interconnector option in the Additional Consultation Report (that is, excluding Option 2, which includes a non-network solution). This was the case under both the NPV assessment and the MCA assessment of the Victorian components. On a weighted basis, Option 4 was found to have net market benefits that were approximately 18 per cent lower than Option 5.

There was no information received from stakeholders during the Additional Consultation Report process that led to an expectation that the net benefit of these options could be significantly improved, to change the conclusions in the Additional Consultation Report. In particular, there was no basis to consider that any of these options would outperform Option 5. As a consequence, these options were not taken forward in the PACR. AVP and Transgrid considered that this approach was proportionate, in order to be able to investigate aspects of the likely preferred options further.<sup>5</sup>

<sup>5</sup> In line with NER 5.15A.3(b)(2) and the RIT-T instrument.

Subsequently and additionally, the Victorian Minister for Energy and Resources' *National Electricity (Victoria) Act 2005* (NEVA) Order issued in May 2023 specified that the preferred option, to the extent it relates to the Declared Shared Network (DSN) in Victoria, must connect to Western Renewables Link (WRL) at Bulgana, via a new terminal station near Kerang, and cross the Murray River proximately north of Kerang (Wamba Wamba Country).<sup>6</sup>

As a result, following the May 2023 NEVA Order, for an option to be credible under this RIT-T, it must assume the Victorian configuration specified in the order and the New South Wales components must be credible in light of the Victorian configuration assumed to be in-place.

A credible option needs to be both technically and commercially feasible.<sup>7</sup> The AER definition of technically feasible, as set out in the AER CBA Guidelines is:<sup>8</sup>

*"An option is technically feasible if there is a high likelihood that it will, if developed, provide the services that the RIT-T proponent has claimed it could provide for the purposes of the RIT-T assessment. In providing these services, the option **should also comply with relevant laws, regulations and administrative requirements.**" (emphasis added)*

None of the four options discussed above comply with the augmentation specified in the May 2023 NEVA Order, which is a relevant law, regulation or administrative requirement properly taken into account as provided for in the guidelines. These options are therefore not technically or commercially feasible and should not be considered as 'credible options'; only Option 5A complies with this requirement (as is discussed further below in Section 6). That is, a practical consequence of the May 2023 NEVA Order was that the only commercially and technically feasible option for the Victorian portion of VNI West was Option 5A. While Transgrid had previously considered other route options for the New South Wales portion of VNI West, after the publication of the May NEVA Order, Option 5A was the only commercially and technically feasible option for the New South Wales portion because that is where it could connect to the Victorian portion of VNI West.

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<sup>6</sup> Victoria Government Gazette no. S267, dated Saturday 27<sup>th</sup> May 2023

<sup>7</sup> NER 5.15.2(a)(2).

<sup>8</sup> AER Cost benefit analysis guidelines, August 2020, p.55

## 5 Issue 2 – why the PACR did not further consider Option 3A

The second issue the AER is seeking further information on is why the PACR did not further consider Option 3A, which was identified in the additional Consultation Report as the ‘preferred option’ that maximises the positive net economic benefits to those who produce, consume and transport electricity in the National Electricity Market as defined in cl.5.15A.1(c) of the NER.

While Option 3A was found to have effectively the same level of estimated net benefit as Option 5 in the February 2023 Additional Consultation Report, it ranked behind Option 5 using the MCA as provided for by the February 2023 NEVA Order in respect of the Victorian component.

Sensitivity analysis undertaken in the additional Consultation Report also highlighted that the net market benefit outcomes for Option 3A were less robust to changes in key assumptions than Option 5. In particular, assuming it is legislated, the Victorian Government’s offshore wind policy was found to result in Option 5 being the option that maximises net benefits for consumers (i.e., being significantly better than Option 3A). An increase in the assumed network capital costs for all options of 9% or more, or a discount rate of 6% or more, were found to also result in Option 5 delivering significantly greater net benefits than Option 3A.

No information received during the Additional Consultation Report process had the ability to sufficiently improve the performance of the Victorian component of Option 3A or its overall net market benefits such that it would change the ranking so that this option is preferred to Option 5. Therefore, Option 3A was not taken forward in the PACR, and the focus was instead on addressing concerns raised around Option 5 during the Additional Consultation Report process.

As outlined above in response to Issue 1, separately and additionally, and informed by the draft PACR, the Victorian Minister for Energy and Resources issued the second NEVA Order in May 2023. Option 3A does not comply with the augmentation specified in the May 2023 NEVA Order and is thus not considered a ‘credible option’ under the RIT-T.

## 6 Issue 3 – why the PACR only considered Option 5 and 5A (and why there was only one credible option)

The third issue the AER is seeking further information on is why the PACR only considers Option 5 and Option 5A. As part of this, the AER has asked for an explanation of the conclusion that there is only one credible option.

The responses to Issues 1 and 2 above outline why Option 2, Option 3, Option 3A and Option 4 from the additional Consultation Report were discontinued in the PACR assessment.

Option 1 was discontinued due to it being found to be ranked significantly behind Option 5 in the additional Consultation Report in terms of both the NPV assessment and the MCA as provided for by the February 2023 NEVA Order in respect of the Victorian component.

While Option 1A was found to be ranked within 5% of Option 3A and Option 5 on a scenario-weighted basis in the Additional Consultation Report, it was also found to present greater social licence challenges associated with a line through the Bendigo to Ballarat area that stakeholders suggested was particularly problematic. It was therefore considered inferior to Option 5 using the MCA as provided for by the February 2023 NEVA Order in respect of the Victorian component, and so it too was discontinued. Option 1A was also found to be inferior in terms of net market benefits to Option 1 under the *Progressive Change* and *Hydrogen Superpower* scenarios assessed in the Additional Consultation Report. Option 5A was introduced in the PACR to explore a variant of Option 5 that is electrically similar, but with a different Murray River crossing point and higher hosting limits for renewable generation in the Murray River V2 REZ in response to Additional Consultation Report submissions.<sup>9</sup> The PACR therefore assessed two options – Option 5 (from the Additional Consultation Report but with a slightly higher V2 Murray REZ limit based on further power system model refinements) and Option 5A (introduced in response to submissions received on the Additional Consultation Report).

As outlined above in relation to Issue 1, late in the RIT-T process (and, importantly, informed by assessment undertaken for Option 5 and Option 5A presented in the draft PACR), the May 2023 NEVA Order specified that the preferred option, to the extent it relates to the DTS, must connect to WRL at Bulgana, via a new terminal station near Kerang, and cross the Murray River proximately north of Kerang (Wamba Wamba Country).

A key implication of this is that only Option 5A is considered ‘technically feasible’ given it is the only option that adheres to the Victorian augmentation specified in the May 2023 Order (i.e., for the same reasons outlined above in response to Issue 1 for the other options). Given the timing of this announcement, the published PACR continued to present the analysis for both options (but noted that only Option 5A is the preferred option in light of

<sup>9</sup> As is discussed in the PACR (see sections 3 and 7.3), a key concern raised in stakeholder feedback on the additional Consultation Report was the proposed Victoria/New South Wales border crossing area of interest. Factors including potential impacts on the critically endangered Plains-wanderer bird species, culturally sensitive areas of national significance (such as Ghow Swamp), ecotourism and recreation activities, agriculture, and community impacts were raised as concerns which could impede timely delivery.

This resulted in the development of an Option 5A, which investigates an alternative border crossing area north of Kerang, west of the known Ramsar wetlands on both sides of the border (see Figure 20 in the PACR and Figure 2 below). The investigation of this option was made possible due to further studies undertaken by Transgrid determining a potential to go to Dinawan from this alternative crossing area.



the May 2023 NEVA Order).<sup>10</sup> While no longer considered credible, Option 5 was included in the PACR to provide greater transparency around the information provided to the Victorian Minister, prior to making the May 2023 NEVA Order, and to demonstrate how similar the two options were from a net market benefit perspective.

In terms of explaining the conclusion that there is only one credible option, we note the following sentence in the PACR:<sup>11</sup>

*'Option 5A is the preferred option for the Victorian and New South Wales components, as it is the only credible option where the New South Wales component is viable with that Victorian configuration required by order.'*

The reference to “viable” reflects that Option 5A is the only technically feasible option given the May 2023 NEVA Order. Specifically, Option 5 is not considered technically feasible as it does not comply with the Victorian line specifications in the May 2023 NEVA Order (which is considered a relevant law, regulation or administrative requirement under the RIT-T). While only two options were presented in the PACR, we note that the wider combined Integrated System Plan (ISP) and RIT-T process considered a significantly larger number of options. Appendix A3 of the PACR summarises all of the options considered over the course of the RIT-T, including options considered and discounted in the 2020 and 2022 ISPs and in the original Project Specification Consultation Report (PSCR).

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<sup>10</sup> VNI West PACR Volume 1, p. 3.

<sup>11</sup> VNI West PACR Volume 1, p .5.

## 7 Issue 4 – the provision of additional information on the New South Wales component

The fourth issue the AER is seeking further information on is why only limited analysis of the New South Wales component was provided. Specifically, the AER has requested further information on:

- option selection for routes between Dinawan and the Murray River crossing points;
- the cost benefit analysis of these options; and
- the infrastructure to be built to the preferred crossing point.

For all seven options assessed in the Additional Consultation Report (Options 1, 1A, 2, 3, 3A, 4 and 5) AVP and Transgrid note that the technical characteristics and costs in New South Wales are the same with the exception of Option 2 that included an additional non-network solution in the form of a Virtual Transmission Line (VTL).

In general terms, the technical characteristics in New South Wales involve an upgrading (or enhancement) of the connection between the Dinawan substation, being delivered as part of EnergyConnect, from double-circuit 330 kV to double circuit 500 kV, and the construction of 184 km of new double-circuit transmission line from Dinawan to the Murray River near Echuca.

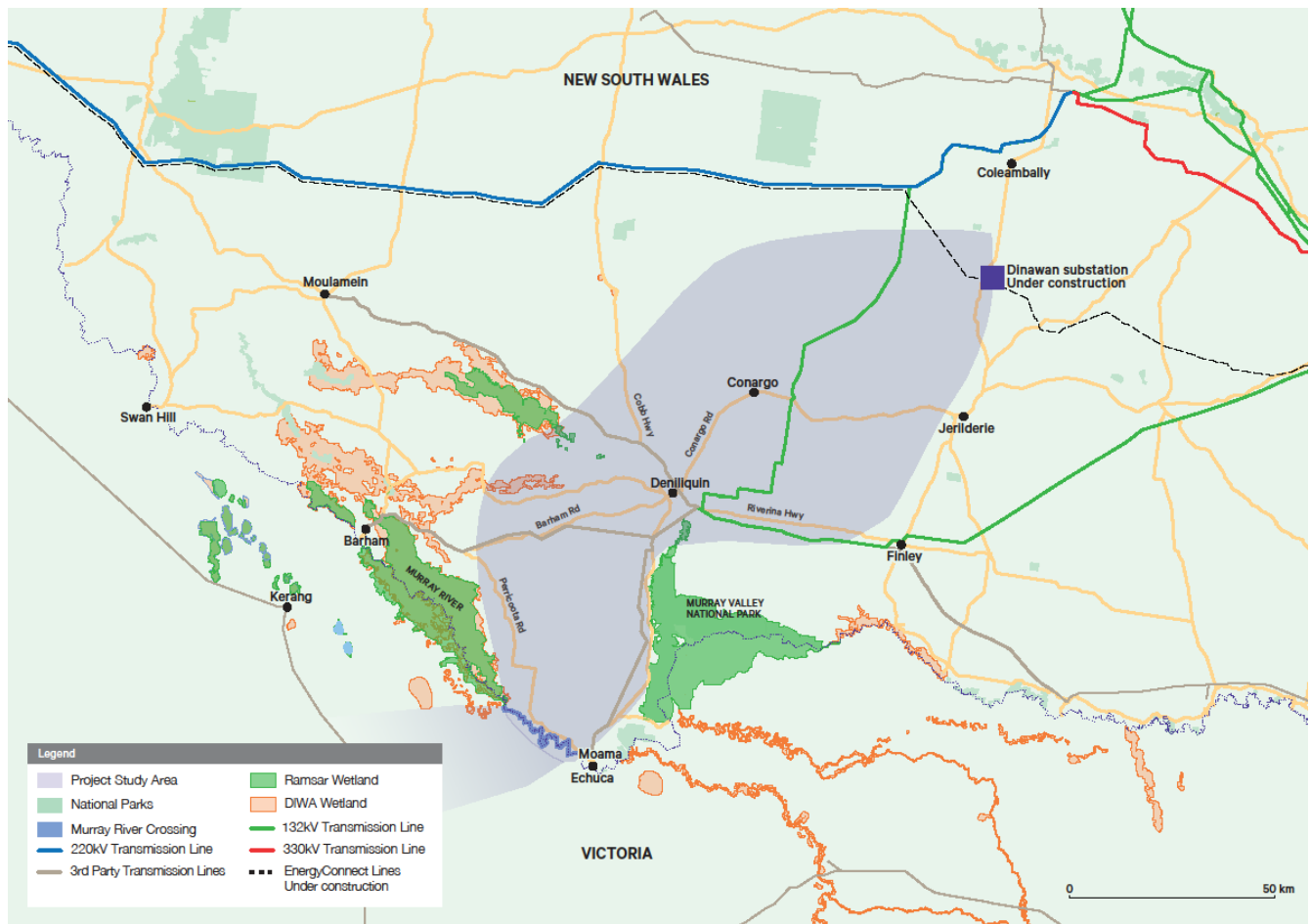
The indicative route from Dinawan to the Murray River was derived from the approximate centre of a New South Wales study area that avoids significant development constraints, including wetlands protected under the Ramsar convention<sup>12</sup>, and aligned with the area of interest for the Victorian component of VNI West.

The New South Wales study area for all options presented in the Additional Consultation Report is shown in Figure 1 below.

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<sup>12</sup> The Ramsar Convention on Wetlands of International Importance is an international treaty for the conservation and sustainable use of identified Ramsar sites (wetlands).

Figure 1 – New South Wales study area for all options in the Additional Consultation Report



The technical elements for the New South Wales component common to all options assessed in the Additional Consultation Report included:

- A new 500 kV double-circuit overhead line from the Murray River near Echuca to the locality of Dinawan.
- Construction of the Dinawan to near Wagga Wagga line as a double-circuit 500 kV line, rather than a double-circuit 330 kV line and later uprate from 330 kV to 500 kV operation (including new 500 kV bays and a transformer station near Wagga Wagga).
- Establish Dinawan 500 kV switchyard with two 500/330 kV 1,500 MVA transformers.
- Modular power flow controllers to prevent overloading on 330 kV lines between Upper/Lower Tumut and South Morang.
- 500 kV line shunt reactors at both ends of the following 500 kV circuits: (i) near Kerang – Dinawan and (ii) Dinawan – near Wagga Wagga.

The additional technical elements for the New South Wales component of the VNI West project relating to Option 2 included:

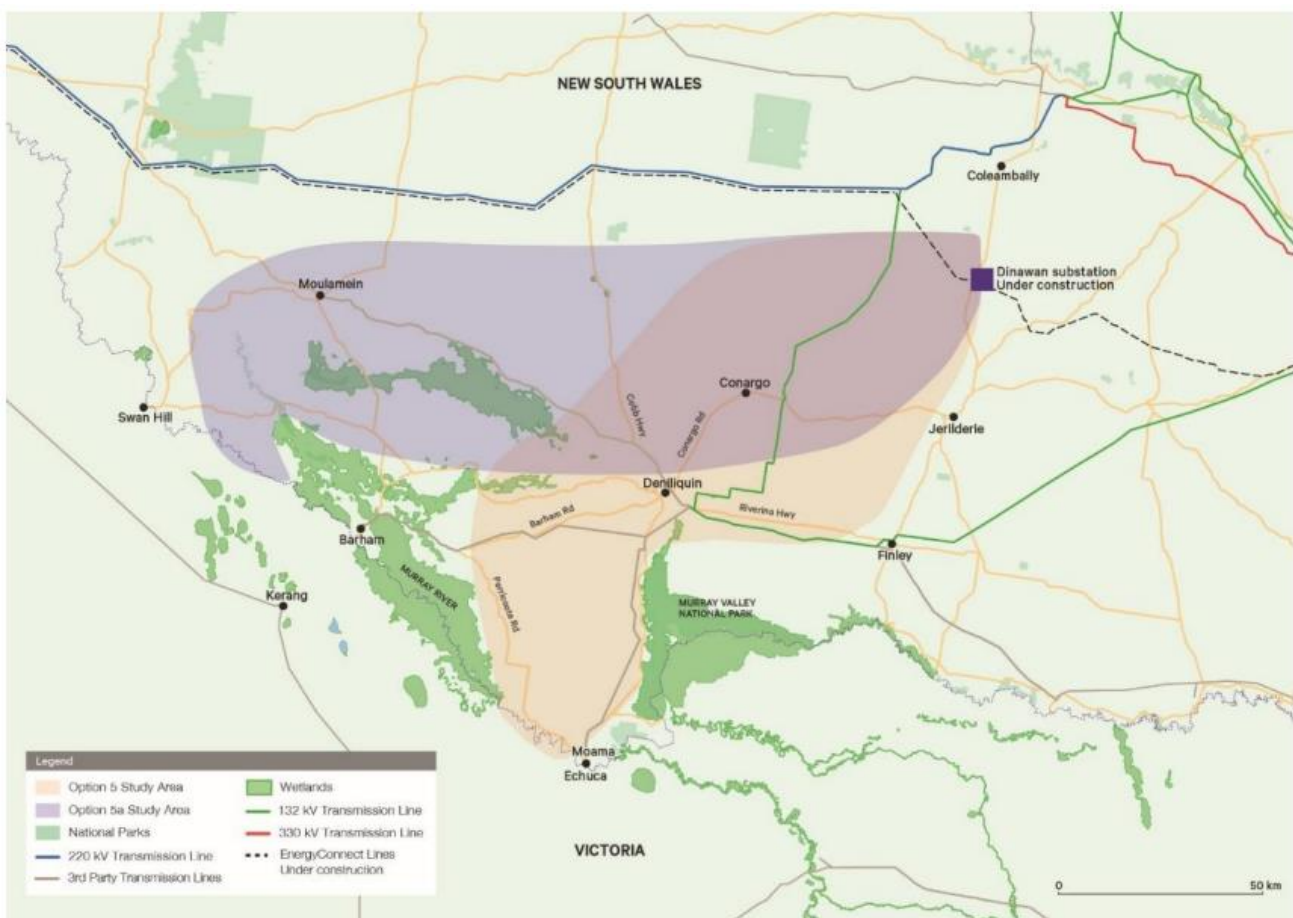
- 1 x 250 MW/125 MWh BESS at Sydney West in New South Wales.
- 1 x 330/33 kV transformer at Sydney West, and associated works.

Table 5 of the ACR provides the breakdown of the costs associated with these options (and shows that they are the same in New South Wales for all options, with the exception of Option 2 on account of the additional VTL).

Option 5A introduced in the PACR involves an additional 19 km of line length in New South Wales compared to Option 5 (in all other regards the technical characteristics of Option 5A are the same as Option 5). As outlined above in response to Issue 3, Option 5A was introduced in the PACR to explore a variant of Option 5 that is electrically similar, but with a different Murray River crossing point (which is what drives the additional 19 km of line length) and higher hosting limits for renewable generation in the Murray River V2 REZ in response to Additional Consultation Report submissions.

The two different New South Wales study areas for the two PACR options is shown in Figure 2 below.

**Figure 2 – New South Wales study areas for the two options assessed in the PACR**



In early 2023, Transgrid undertook due diligence investigations on these two potential study areas to confirm the feasibility of either river crossing. This included engagement with key regional stakeholders on material environmental and land-use matters for consideration.

Table 6 of the PACR provides the breakdown of the costs associated with both options assessed and shows that the New South Wales costs are slightly higher for Option 5A than Option 5.

The PACR presents the full cost benefit analysis of both options, including across the three relevant ISP scenarios and under a range of sensitivity tests.

In addition, while the PACR only included two options (with similar New South Wales configurations and costs), the wider RIT-T and ISP process considered a large number of different potential New South Wales investments. Appendix A3 of the PACR summarises all of the options considered over the course of the RIT-T, including options considered and discounted in the 2020 and 2022 Integrated System Plans (ISPs) and in the original PSCR.

Following the May 2023 NEVA Order, for an option to be credible under this RIT-T, it must assume the Victorian configuration specified in the order and the New South Wales components must be credible in light of the Victorian configuration assumed to be in-place. Only Option 5A complies with this requirement.