



Our response to AEMO media release on “Lost in transmission”

This note puts onto the public record our response to AEMO’s media release¹ responding to our Report. This media release was made at the same time that our Report was released on 2 August 2023.

7 August 2023

AEMO comment	Our response
<i>PLAN B</i> report shows it would result in lower levels of renewable generation entering the grid.	Lower? Than what?
<i>PLAN B</i> will require the acquisition and demolition of people’s homes on the outskirts of Ballarat and Bendigo.	<p>Assertion.</p> <p>We are aware of 14 homes in the outer Ballarat suburb of Mount Helen that have been built within 5 meters of the southern side of the easement for a distance of 400m with the closest house 10 metres from the existing Wemen to Ballarat line.</p> <p>There is sufficient room on the northern side of the easement to widen the easement on that side. Alternatively, a temporary line could be installed on the northern edge and the new line built a few metres further away, improving the current situation</p>

¹ <https://aemo.com.au/newsroom/media-release/aemo-responds-to-vni-west-alternative-plan>

	for these 14 homes. The position of these homes would be enhanced by relinquishing the easement that currently devalues their property and moving the line further away from their houses.
<i>PLAN B</i> would result in long periods of power system disruption in towns and rural communities.	Assertion. There will not be long periods of power disruptions as the existing lines will not be switched off and pulled down until the new Plan B lines are commissioned.
<i>PLAN B</i> would not sufficiently support renewable generation development in north-west Victoria.	Assertion. Our report provides the detail to support our conclusions to the contrary.
Generation from the sunniest and some of the windiest parts of the state would not be serviced by enough transmission. Renewable energy in the area would find it hard to reach concentrations of homes and businesses.	Assertion. Our report provides the detail to support our conclusions to the contrary.
<i>PLAN B</i> fails to deliver the improved access to the Snowy Mountains Scheme – including the upgraded capacity from Snowy 2.0.	AEMO’s modelling shows that VNI-West has an inconsequentially small impact on Snowy 2.0’s dispatch, yet AEMO continues to repeatedly insist on these lines. Why? Is AEMO not aware of its own analysis or does it not believe it?
<i>PLAN B</i> strikes a blow to the investment case for renewable	Is there any evidence that renewable projects in Victoria are targeting export to other states? Do any have off-take agreements with inter-state governments or customers? Surely not.

<p>projects in Victoria as they can't export energy to other states.</p>	<p>In addition, AEMO's modelling shows that it expects that with VNI-West Victoria can be expected to relinquish its current strong export position and will be importing 26% of its electricity by 2035. Our report finds – based on AEMO's and CSIRO's data – that relative cost differences in wind or solar between NSW and Victoria are much too small to justify the cost of interconnection. In addition as we set out using AEMO's data, the inter-state variability in wind for neighbouring REZs is smaller than intra-state variability. So where is the case for interconnection to diversify supply variability?</p>
<p>The <i>PLAN B</i> assumption that only an extra 10m of easement will be required to construct 1,040km of 220 kV double-circuit line in western and north-western Victoria, is overly optimistic. The consequences to both the supply reliability to regional communities during construction, and the outage impacts on the existing renewable generators would be significant.</p>	<p>The extra easement width is only required during construction. After the new line is completed and the old line is pulled down, the surplus easement width will be returned to the land-owner after it is rehabilitated. Plan B includes payment to the landowner for the land used by the shift, and the easement is given back for free. Should the landowner incur any additional costs they will be paid. If they object to the easement shift, there are ways to rebuild in-situ by using temporary structures on the edge of the easement. Only 6 - 8m separation is required between the conductors of Plan B lines and existing lines. After allowing for the width of both towers, the maximum shift would be less than 15m.</p>
<p>Reliability of supply to major regions will be compromised, existing renewable generators in western and north-western Victoria will lose their route to market, leading to</p>	<p>The existing line will remain in service until the new line is operating, then removed. There will be no compromise to reliability of major regions, or impacts on existing generators.</p>

<p>significant reductions in earning opportunities.</p>	
<p>Many of the renewable generation hosting capacity figures are unsubstantiated and well in excess of the detailed power system analysis and modelling undertaken by AEMO. Based on AEMO's initial assessment, <i>PLAN B</i> will only harness half the renewable generation claimed.</p>	<p>Assertion.</p> <p>Our report provides the detail to support our conclusions.</p>
<p>All <i>PLAN B</i> developments not involving new lines has already been investigated.</p>	<p>Is this true? If so, surely evidence of it can be quickly produced. Why has it not?</p>
<p>We agree our plan does not provide a way for generators to connected at 220 kV but they will connect at 500 kV.</p>	<p>There are no renewable generators in the NEM connecting to the 500 kV grid. In Victoria all use 220 kV lines because of the much lower cost. Even the MacArthur Stockyard Hill and Dundonnell use 220 kV or 132 kV lines until they reach the 500 kV substation. Whether its 500 kV or 220 kV lines, they have to be built between New Kerang and Red Cliffs and across to Bendigo before VNI West will work (other than as an interconnector). A 500kV connection is far more costly then 220 kV</p>
<p>The 1,000 single points of failure (SPoF) on VNI West causing a black out of Melbourne and southern Victoria can be ignored because</p>	<p>There are no SPoF's in Victoria's critical transmission network other than the double circuit 500kV line in western Victoria. In 2020, extreme winds collapsed 7 towers on that line near Cressey nearly blacking out the Portland smelter which would have then been permanently closed. Other than that section, none of Victoria's 6,000 km</p>

<p>Victoria already has more than 6,000 kilometres of existing transmission line, including double circuit lines with one set of towers supporting two transmission circuits and because there are systems to immediately protect the grid by making automatic adjustments following an extreme event to maintain secure operation. There is no evidence VNI West would increase risks.</p>	<p>of transmission lines are high capacity 500 kV double circuit 500 kV lines having SPoF's at every tower. Recommendation 10 of AEMO's Power System Frequency Risk Review dated July 2022 states that a double circuit trip of WRL will cause a cascading collapse of the five circuits supplying southern Victoria. That is likely to be immediately followed by the overloading and tripping of Heyward and existing VNI interconnectors, blacking out Southern Victoria including Greater Melbourne.</p> <p>22 towers have collapsed in Victoria since 1999, a major incident every 4 years, wildfires tripping the existing VNI blacking out hundreds of thousands of Victorians, sabotage of a critical tower in Perth in April 2023, severe lightning frequently tripping both circuits on double circuit towers across the NEM, severe flooding destroying towers in NZ. What more proof does AEMO need? AEMO is being reckless ignoring these certain risks.</p>
<p>Cost of VNI West in Victoria will be \$1,755m including \$315m to uprate WRL from its cost estimate of \$737m, totalling \$2.5bn.</p>	<p>In addition to the detailed analysis in our report we note that based on AEMO's claimed lengths of 190km for WRL and 205 km for VNI-West, the average cost/km, for the combined projects is \$6.3 million/km. Transgrid announced last week at the NSW Undergrounding inquiry that Humelink's (latest estimate) cost is nearly \$5 billion which averages \$13.9 million/km. Using comparable per kilometre costing suggest that the Victorian section of VNI-West may cost \$5.5 billion (even before counting interest during construction). And this does not include the \$3.2 billion for the essential 850 kms of 220 kV lines to make VNI-West useful in Victoria.</p>
<p>AEMO also strongly refutes the claim in the report that <i>"VNI West will more than double transmission charges, not increase them by 25% as AEMO says"</i>.</p>	<p>AEMO has now doubled its assessment of the impact of VNI-West on Victoria's transmission charges (which of course is only one development in two sections) to "as much as" 50%, from the 25% it claimed in response to our Consultation Report Submission. Though AEMO now portrays the 50% as "accounting for both the cost of</p>

<p>All up, accounting for both the cost of Western Renewables Link and VNI West, transmission charges in Victoria are estimated to increase by as much as 50%.</p>	<p>Western Renewables Link and VNI West” it’s early estimate of 25% accounted for both.</p> <p>While AEMO is starting to demonstrate a (slightly) better understanding of the impact of its proposals on prices, AEMO evidently persists in under-estimating the likely capital and operating costs, ignores interest during construction and the extensive augmentation of the 220 kV network in Victoria that will be needed to make VNI-West useful in Victoria.</p> <p>AEMO also fails to account for the effect on electricity prices of the renewables subsidies that will be needed to compensate for the curtailment that its plans deliver. It is not clear why AEMO fails to account for this, because AEMO does recognise that such subsidies will be needed to compensate renewable generators for the curtailment that its plan delivers.</p>
<p>Compared to the projects proposed in AEMO’s Integrated System Plan, <i>PLAN B</i> would have detrimental outcomes for more landholders, regional and rural communities and the renewable generation investment required to give consumers reliable and affordable power supply.</p>	<p>Assertion.</p> <p>Our report provides the detail to support our conclusions that Plan B would have significantly lower impact on landholders, regional and rural communities and the renewable generation investment required to give consumers reliable and affordable power supply, than VNI-West.</p>