

24 June 2025

Mr Alistair Parker
CEO, VicGrid
Uploaded to engage.vic.gov.au/vicgrid

Dear Alistair,

Thank you for the opportunity to make a public submission on VicGrid's Draft Victoria Transmission Plan (**VTP**). Your process is, for the first time, delivering transparency and rigour to transmission planning in Victoria. You and your team have done prodigious work, but we now risk a last-minute rush to rubber stamp bad legacy projects and lock-in procurement contracts that deliver little benefit to Victoria.

As you know, we have provided a detailed "not for publication" response that includes commercial-in-confidence information. We have also provided project details on Syncline Community Cable (**SCC**), the proposed 265km HV DC underground link between Melbourne and the State's northwest. (Refer: www.synclinecommunitycable.com.au)

In this "for publication" submission, we comment in Section 1 and 2 below on the specific items where VicGrid has sought feedback (Draft VTP - Part D Page 105). Our response is mostly focussed on the western side of Victoria and the VicGrid Projects shown in Figure 1.

Our overriding concerns with the VTP are as follows.

1. **Vic Grid's \$20 Bn¹ network spend has little engineering² or economic³ justification.** As a result, the likely +50% increase in household energy bills can't be guaranteed to deliver low-cost generation projects or to keep-the-lights-on.

The need for care and rigour in the VTP is also an ethical imperative, given that Victoria Police and the Magistrate's Court will enforce the roll-out of VTP projects by private companies, with farmers fined \$12,210 if they obstruct progress⁴.

2. **Cost savings of \$4.8 Bn are available from Syncline Community Cable**, a technically superior, community supported option for VicGrid (Refer Figure 2 below). VicGrid's dismissal of SCC on cost and schedule grounds is premature, since the full budget and timing for VicGrid's other projects won't be known for several years. SCC can be developed and supported by VicGrid in parallel to its other plans. That would improve, rather than hinder the pace and value-for-money of Victoria's transmission build.

¹ AFR (1 June 2025) - *Cost of Victoria's renewables grid plan understated by at least \$16b*, Patrick Durkin and Ryan Cropp

² **Engineering limitations:** Refer Draft VTP Appendix C - Table C-2: Neither "Voltage stability limits" nor "Transient stability & oscillatory limits" are considered in ODP project selection. Only "Thermal limit" analysis is done for the N-1 case during Summer Hi loading. Draft VTP has no analysis of, for example, Minimum Operating Demand (MOD), wind drought or cascading failure cases.

³ **Economic limitations:** No cost benefit analysis is presented in the Draft VTP, with a note indicating that it will be done later and Appendix D providing the methodology. With respect to costs, refer AEMO (May 2025) - Draft 2025 Electricity Network Options Report: Draft VTP costs are given the lowest Class 5B accuracy in AEMO's authoritative report, which was released one week after the Draft VTP. Where AEMO uses a VicGrid cost it is qualified by: "Estimate provided by VicGrid. [AEMO] will apply an unknown risk uplift of approximately 30% before applying these costs in the ISP".

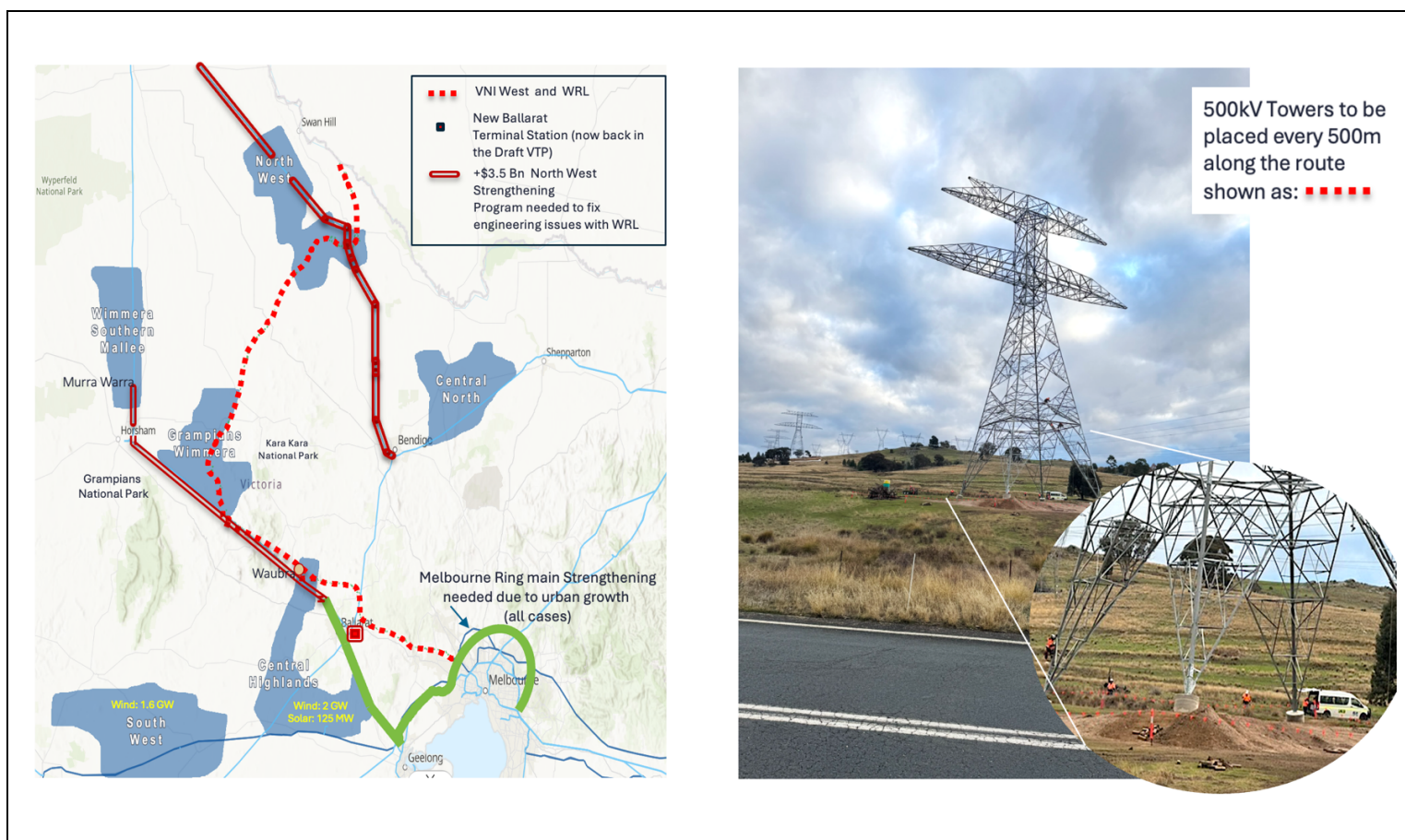
⁴ National Electricity (Victoria) Amendment (VicGrid Stage 2 Reform) Bill 2025 Introduction Print EXPLANATORY MEMORANDUM. For example, new section 93BK The Magistrate's Court must have "regard to the urgency of development of electrical transmission infrastructure, and need for increased cost and risk certainty in the development of electricity transmission infrastructure" to make an entry order and farmers will be fined \$12,210 if they don't comply.

VicGrid should consider putting major project procurement on-hold until it can complete the engineering analysis required under the National Electricity (Victoria) Amendment (VicGrid) Act 2024 (**VicGrid Act**) (Refer Section 2.1 below).

To the extent that major project agreements need to be signed for WRL and VNI West before VicGrid's work is complete, then these contracts must have a clear break provision in favour of the State, with limited capped exposure for sunk cost recovery. Given the tight market for HV electrical equipment, it would be prudent for contractors to be supported by VicGrid to place orders for long-lead-time equipment (such as 500/220kV transformers, HV CTs and 525kV HV DC cable) however these orders should novate to the State if the contract does not proceed. This equipment is relatively generic and can be free issued for other VicGrid projects across Victoria.

Syncline acknowledges the urgent need to reinforce Victoria's transmission network. The Melbourne Ring Main and re-conductoring out to Ballarat must be prioritised. This will both remove constraints for existing wind farms (e.g. Golden Plains WF) and will support urban growth in the west and east of Melbourne. These projects are shown in green in Figure 1.

Figure 1 - VicGrid's plan for Western Victoria. Projects in red cost \$12.9 Bn and should not be contracted until VicGrid's engineering work is completed. Projects in green should be prioritised⁵



⁵ Photos of towers are from Project Energy Connect a 500kV project similar to WRL. Taken near Wagga Wagga, 15 June 2025 (Syncline Energy)

1. Feedback on VicGrid's REZ in Section 6.2 of the Draft VTP:

VicGrid should consider delaying the declaration of the Grampians REZ and Mallee REZ. We think that their inclusion in the VTP is little more than 'ex post facto' justification for the WRL project, which is already more than 5-years late and at least 500% over its latest \$737m budget⁶.

These REZ are too small and too environmentally risky to contribute materially to Victoria's energy transition. And due to their compromised locations, will likely result in a higher Levelized Cost of Energy (LCOE) compared to areas further north in the State, which have better night-time wind patterns and a lower unit construction cost.

Neither REZ is sufficiently scalable to supplement offshore wind, if the Bass Strait bid rounds are delayed or become too expensive. Recent experience in offshore wind globally indicates that VicGrid would be prudent to have a scalable fall-back option⁷.

Based on cost estimates provided in the Draft VTP and publicly available costs for WRL and VNI West, the Grampians REZ and Mallee REZ will require more than \$12.9Bn in transmission investment to mobilizes less than 800MW of second tier⁸ wind projects adjacent to the Grampians National Park.

By way of contrast with the New England REZ in NSW, EnergyCo plans to spend half that capital cost to mobilize ten times more wind generation.

1.1 ***VicGrid should implement an economically efficient process instead***

Instead of declaring the sub-scale Grampians REZ and Mallee REZ, VicGrid should work with a queue of both generation and transmission projects across Western Victoria and bring forward the lowest cost, community supported and best engineered proposals. This can be done progressively, if offshore wind or the development of Western Renewables Link (WRL) misses a clear schedule or cost milestone.

For VicGrid, that would create a flexible economically efficient process rather than a rigid and "unfair" selection of three or four potentially high-cost projects because they sit within the Grampians REZ and Mallee REZ.

1.2 ***A better connection option for projects in the Grampian REZ and Wimmera REZ***

The three or four wind farms across the Grampians REZ and Mallee REZ should instead progress on merit and not be raised above better projects through the gloved hand of VicGrid's planning support and its proposed Grid Impact Assessment (GIA) tool.

The project developers at these locations are technically expert international players, and without VicGrid's intervention will be able to export more energy with a smaller investment in transmission. Export at these locations will be limited by system strength, long before thermal capacity limits are reached - which in any event can be managed with BESS or dynamic loading and staged re-conductoring of transmission lines.

⁶ AEMO (2022) - WRL is costed at \$737million (\$2021) in the final RIT-T review. Refer - Western Renewables Link Project Analysis for the purposes of clause 5.16.4(z3) of the National Electricity Rules

⁷ Recent offshore wind turbulence: UK 2025 – Ørsted's Hornsea 4 termination and SSE's Berwick Bank delay, Denmark 2024 – No Bids, Estonia 2025 – No compliant bids

⁸ In October 2024, VicGrid characterised most of the area within the Grampians REZ as Tier 2. Refer VicGrid Draft VT Guidelines

The existing Chapter 5 of the National Electricity Rules (**NER**) and AEMO's well established Victorian PCR/PFR process are well suited to this engineering optimization task. It may require some co-ordination by VicGrid, and potentially ACCC authorization, but it would be a simple matter to pool grid investment and co-ordinate the dynamic system stability models under the existing NER Chapter 5 process.

1.3 Misuse of a REZ declaration to override community and environmental concerns

To the extent that VicGrid will override environmental objections to wind farms within a REZ, then it would be wrong to use these powers so close to the iconic Grampians National Park and Kara Kara National Park.

The VTP's consultation work on these two REZ excludes the widely held objections to WRL, which will connect them back to Melbourne. That exclusion might make it difficult for VicGrid to succeed in compulsory land acquisition proceedings and environmental appeals for REZ projects where it seeks to rely on any of its VTP consultation. Similarly, a defence of WRL in such proceedings might not succeed if it relied on the cumulative benefits of WRL and the Grampians REZ, given that WRL was explicitly 'out of scope' in VicGrid's community consultation and network optimization studies.

2. Feedback on VicGrid's ODP in Section 8.1 of the Draft VTP

Vic Grid's singular network development pathway is too rigid, given the rapidly evolving supply chains and technology developments globally. A more flexible Optimized Development Plan (**ODP**) is proposed by Syncline with alternative pathways and technologies supported, and market tested in late-2026 to select the optimized plan. This approach is consistent with VicGrid's "least-regrets" obligations under the s. 56(2) of the VicGrid Act.

The market test can be done without delaying the commissioning of either SCC or WRL and VNI West.

2.1 Engineering for a 1970s grid, supported by inexact cost estimates

The selection of a single ODP is not justified by VicGrid's limited analysis, which covers only the most basic transmission **thermal constraints** in an N-1 scenario for a single "Summer Hi" load case.

The limited Summer Hi modelling case will over-build the transmission 'pipe' size and underestimate the need for investments in dynamic stability solutions and firewalls against cascading failures. Similarly, it ignores the higher capacity factor and dynamic stability benefits of modern HV DC technology and favours legacy HV AC technology.

Fifty years ago, this type 'thermal limits' analysis would have been adequate in a system dominated by base-load coal generators and a market demand concerned with rising air-conditioner loads on the hottest summer day.

In today's grid, the engineering focus should additionally be on dynamic modelling and low demand cases, for example:

- Dunkleflaute scenarios, a German word meaning an extended period of low wind and solar generation,
- Minimum Operating Demand cases, caused by high penetration of rooftop solar,
- Voltage stability limit cases; and
- Transient stability & oscillatory limit cases, caused by variable renewable generation and long overhead HV AC transmission lines.

We acknowledge that VicGrid plans to undertake some of this work over the next few years, however the analysis will be done only against its existing “Base Line” of ODP projects without revisiting other potentially better options. The result is that additional costly projects will be added on as expensive band aid fixes to an already sub-optimal base case.

Perhaps even more damning, the ODP projects were selected from a narrow set of alternatives using the most uncertain Class 5b estimates of the upfront capital cost. There is no whole-of-life assessment of opex, energy losses or social and environmental costs. And this class of cost estimate is too uncertain to select confidently between options.

There is also no analysis in the VTP of the network in the context of other States. The analysis needs to be done by VicGrid to determine both the interconnector flow requirements and the dynamic implications as NSW’s builds-out its transmission network with Project Energy Connect (PEC), Hume Link and Snowy Hydro storage. These links will become critical to keeping Victoria’s lights on should the offshore wind roll-out be delayed. Syncline’s modelling of WRL and VNI West indicate that they may not be adequate to support the required interstate energy flows.

As a result of this limited engineering analysis and the inexact cost estimates, VicGrid’s proposed ODP is not demonstrated to meet the requirements of the VicGrid Act, specifically:

- to promote the *long-term interest of consumers of electricity with respect to price, quality, safety, and security of supply* - S. 56(1)(a)(i); and
- to promote the *reliability safety and security of the national electricity system* - S. 56(1)(a)(ii).

A much more thorough basis is needed before a single project development pathway can be identified and projects like SCC are excluded.

2.2 WRL and VNI West were excluded from scrutiny in the VTP

VicGrid is careful not to ‘re-prosecute’ the 460km overhead transmission project made up of VNI West and WRL, which it wrongly claims in the VTP will be operational by 2027 (WRL) and 2029 (VNI West).

Neither project has been subject to a cost benefit analysis or engineering assessment in the context of the VTP. And it is now almost certain that WRL has a cost-benefit ratio of less than 1, and that this will likely fall to a 50-cent return for each dollar spent once WRL’s full cost is known.

To approve WRL’s development, an EY Report⁹ was commissioned by AEMO in 2022 which identified \$2,187m (\$2021) of “benefit”. That report excludes any estimate of the WRL’s cost, and no cost/benefit

⁹ AEMO (2024) EY report - Western Renewables Link Market benefits Market modelling to forecast gross market benefits - Australian Energy Market Operator 20 March 2024

analysis is made by AEMO or EY. Most of the benefit comes in EY's modelling from expensive offshore wind being displaced by lower cost solar and onshore wind in western Victoria. This means WRL's benefits are largely negated by the VTP because offshore wind is planned to grow beyond the 2.3GW assumed by EY and the proposed Grampians REZ and Mallee REZ deliver much smaller amounts of high-cost wind and solar than EY assumed.

In addition, more than \$3.5Bn of VicGrid's proposed 'brown field' projects are included in the VTP to address well known engineering shortcomings of WRL; specifically, that the surrounding network will need to be reinforced, and a second route is needed into Melbourne to create redundancy.

Regardless of these gaps, SCC, WRL and VNI West ought to have been assessed as 'new projects' and are clearly in-scope for VTP and VicGrid is wrong to exclude them from any community, economic or engineering scrutiny. Specifically:

*"A Victorian transmission plan is a document setting out an **optimal set of projects** that address the **planning and development** needs over [15 years] related to **new major electricity transmission infrastructure to facilitate connection of renewable energy zones** to the declared shared network" VicGrid Act s59(1)*

Both WRL and VNI West are 'new' because neither project is operational nor under construction. In fact, both projects are at a very early-stage of design development and, at the time of the VTP modelling, do not have finance, finalised project agreements with VicGrid, environmental approvals, contractors appointed, or any easements secured. Local councils and community groups do not support them, and after 4-years trying, less than 10% of farmers have signed-up their land. WRL has potential for environmental damage¹⁰ and given its slow progress to date could be many years late to deliver.

2.3 SCC was neither modelled in the ODP analysis nor the cost savings properly considered

VicGrid did not model SCC in its PSS®E network assessment or consider its costs and benefits in the context of the entire VTP. This was surprising as Syncline shared its PSS®E modelling with VicGrid almost 12-months ago.

However, even if it was modelled by VicGrid, the simplistic Summer Hi static case used by VicGrid to select the ODP, would not have picked-up key network benefits of HVDC technology. Globally, grid planners select buried HV DC because it:

- Acts as a firewall against the 'cascading instabilities' that caused black outs in Spain (2025), South Australia (2016), Uruguay (2019), etc.
- Makes the grid more stable by fixing voltage and frequency instability (i.e Grid Forming). This saves on the cost of adding synchrons, reactive compensation plant and BESS.
- Ensures a more resilient and reliable system, as it is not exposed to bushfires, storms or human impacts.

¹⁰ Refer DTP (Planning) WRL REASONS FOR DECISION UNDER ENVIRONMENT EFFECTS ACT 1978 (REFERRAL NUMBER 2023-R04) "The area of interest for the project supports significant environmental values, including native vegetation and ecological values, residential and agricultural and other land uses, heritage values, visual and landscape values and other social values, potential aggregate impacts on which are of at least regional significance."

The comparison of SCC's cost with other projects in the VTP is also incomplete, because the budget and schedule of projects like WRL and VNI West is not yet known.

For example, the Environmental Effects Statement submission by AusNet for WRL will be lodged on 30 June 2025 and the cost of mitigating damage and securing offsets is uncertain. For Hume Link, a similar project but in a less built-up area, the cost of environmental offsets was \$353m¹¹. For WRL in a peri urban zone, through Australia's fastest growing Local Government Area the cost of compensating landholders may be more than \$600m by some estimates. Syncline's costs include these land acquisition and environmental offset amounts, which could alone put it at an almost \$1Bn cost advantage over WRL.

2.4 Priority projects

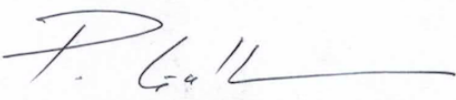
There is an urgent need for new transmission in Victoria, and we think it would be prudent for VicGrid to support more, rather than few grid options. A value-for-money outcome will then be delivered for Victorian consumers by market testing different technologies and solutions rather than a 'sole sourced' approach from incumbent private players using legacy technology. We think that SCC creates that opportunity for VicGrid.

In all scenarios, the Melbourne Ring Main and reconductoring out to Ballarat should be urgently progressed. This will both remove constraints for existing wind farms (e.g. Golden Plains WF) and is needed to accommodate urban growth in the west and east of Melbourne. These projects are shown in green in Figure 1 (above) and listed in the Draft VTP Appendix A as Projects 1.1 to 1.4, 2.2 to 2.5, 4.1, 4.3 and 4.4.

Our team is available at any time to further discuss Syncline Community Cable or provide additional supporting analysis for the points made in this letter.

Kind regards

Phil Galloway



Managing Director

Syncline Community Cable Pty Ltd

¹¹ AER (August 224) Determination Transgrid's HumeLink Stage 2 Delivery Contingent Project Application

Figure 2 – Cost comparison of VicGrid’s ODP with and without SCC¹²

Project	Description	In the Draft VTP?	ODP 1 (\$ Bn)	VTP with Syncline (\$ Bn)	Notes on cost delta
SCC	HVDC at 2GW for 265km cable length. High-capacity factor due to MREH and JREH	No	-	3.8	SCC cost is based on tendered prices, finalized route and well progressed planning studies. MREH and JREH costs are recovered via energy arbitrage and FCAS, as per the usual business model for BESS
VicGrid cost adjustment to SCC’s tendered prices	VicGrid has proposed a 56% escalation and risk allowance on SCC’s tendered prices	No	-	2.1	To aid VicGrid we have included its proposed uplift on our estimates. However, Syncline does not accept the basis for VicGrid’s increase.
WRL and WRL Uprate	500kV double circuit for a 230km line length	Yes – by 2027 (un-costed)	4.2	-	The draft VTP leaves out WRL costs. Syncline’s estimate is \$16m/km which is a 15% uplift on Hume Link cost due to peri-urban corridor and complex terrain plus \$0.52m for land acquisition across 400 small semi-rural properties.
VNI West (North)	500kV JREH to NSW border for 134km route length	Yes – by 2029 (un-costed)	2.5	2.5	The draft VTP leaves out VNI West costs. Syncline estimate is \$12m/km based on Hume Link
VNI West (South)	500kV JREH to Bulgana for 100km route length	Yes – by 2029 (un-costed)	1.9	-	The draft VTP leaves out VNI West costs. Syncline estimate is \$12.5m/km based on Hume Link adjusted for more complex terrain in the southern section
North West Strengthening	Rebuild 585km of existing 220kV lines on north and south side of the rhombus (VTP Projects 3.1, 3.2 and 3.3)	Yes	3.5	-	ODP dates are “by 2034” Projects 3.1 and 3.3. Project 3.2 “by 2034” included subject to further work. This ‘further work’ is likely to confirm Redcliff to Kerang upgrade is needed in the ODP.
System Strength	“system strength is not the focus of the VTP...these [projects] are not included in the ODP...” Appendix A – Section 4.1	No	0.8	-	VTP cases include a North West Synchron, reactive power compensation for WRL and VNI West. Inherent in the HV DC design and costs, SCC delivers superior fault discrimination, reactive power capability and resilience
Lower energy losses from HVDC v. HVAC		No	-	(0.3)	VTP uses only Class 5b upfront capex estimates and makes no allowance for whole-of-life-costs. HVDC has lower energy losses and easement maintenance is potentially 20% of the cost of maintain 100m wide HVAC overhead line corridors.
Total cost			12.9	8.1	\$4.8 Bn saving from SCC , equivalent to saving of approx. \$880 per year on household energy bills and a Victorian State Budget saving of \$500m/year of subsidies otherwise needed to shield the State’s most disadvantaged households.

¹² Source for costs in table: (i) Draft VTP Appendix A costs are noted as Class 5b quality. AEMO adds 100% to these amounts. (ii)

Draft VTP includes a scenario 3 that has WRL and VNI West in service date delayed to 2028 and 2030 respectively. This requires New Sydenham to Keilor Link at a Class 5b cost of \$65m, (iii). AEMO (2024). Eastern Victoria Grid Reinforcement, Figure 4, (iv). AEMO (2024). Western Metropolitan Melbourne Reinforcement, Figure 8, (v). AEMO report: Western Renewables Link Project Analysis for the purposes of clause 5.16.4(z3) of the National Electricity Rules - November 2022