Friday, 27 June 2025

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**CEC submission to Draft Victorian Transmission Plan**

Dear Alistair,

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia, representing nearly 1,000 of the leading businesses operating in renewable energy, energy storage and renewable hydrogen. The CEC is committed to accelerating the decarbonisation of Australia's energy system as rapidly as possible while maintaining a secure and reliable supply of electricity for customers.

The CEC welcomes this opportunity to comment on VicGrid's proposed draft Victorian Transmission Plan (VTP) for the next phase of Victoria's energy transition. The CEC would like to commend VicGrid on its openness and willingness to engage collaboratively with industry on this important regulatory reform and to take onboard the observations presented by CEC staff and our members.

The VTP has been launched during a period of significant change. Energy generation and storage costs are changing quickly, reflecting innovation in renewable generation and storage technologies, but also affected by geopolitical events driving supply chain issues. These changes are likely to continue to unfold in an unpredictable manner in the coming decade.

In this environment, it's imperative that VicGrid accounts for risks and uncertainties through the VTP. While the CEC and industry have a strong desire to see the best outcomes envisioned in scenario 1 come to pass, prudent contingency planning requires consideration be given to the various factors that could cause actuals to deviate from our shared goals.

The CEC makes the following suggestions for changes to the VTP, followed by more specific feedback in the remainder of the submission.

**Firstly, the Optimal Development Path (ODP) in the draft VTP does not effectively capture the full suite of potential future outcomes that may come to pass in Victoria.** By including a subset of future outcomes in scenario 1, the OPD does not effectively account for key risks and uncertainties, such as earlier than expected coal exit, higher than expected demand growth, the effects of different degrees of CER orchestration or delayed development of transmission infrastructure that may in turn result in delays to the development of offshore wind.

The CEC considers the net effect of this is an inefficient level of onshore transmission development and an undersizing of renewable energy zones (REZs) hosting capacity. We consider the small amounts of new generation enabled by this limited transmission build will be insufficient to maintain reliability and keep costs down, in all but the most optimistic scenarios.

System planners should always consider the 'asymmetry of risk' related to the build of network infrastructure. Put another way, the costs of building transmission 'too little / too late' far outweigh the costs of building 'a little too much /a little too soon':

- The costs of the former, which are often less visible to system planners, include the wholesale cost impacts of earlier than expected coal generation exit and increased dependence on gas powered generation, exacerbated by any over reliance on specific technologies where this results in delays in delivery of replacement renewable capacity.
- The costs of the latter include the bringing forward in time of transmission network build that would likely be needed anyway, measured as small increases in NPV of the network expenditure.

Its recommended that VicGrid consider this asymmetry of risk and cost in the final iteration of the VTP.

**Secondly, the VTP process has created material uncertainty for investors.** There are many renewable generation and storage projects currently in flight Victoria, many of which were attracted to the state given the historically open nature of access to the Victorian transmission system and the expectation that imminent retirement of Victorian fossil fuel generation will require new replacement capacity in the near to medium term.

The CEC remains concerned that the draft VTP, and the subsidiary Grid Impact Assessment (GIA) process, will stymie this pipeline of new investment.

Many well advanced projects find themselves suddenly inside a REZ, or across a REZ boundary, or outside a REZ, with little clarity as to how this will affect their project. While most developers are currently adopting a wait and see attitude, an overly punitive approach to grandfathering will send a clear signal to future investors that Victoria is not open to new development.

We consider there is a particular risk for Victoria if this pipeline of development evaporates and actuals in the medium term do not align with the projections of the ODP. Victoria could well find itself in the situation where investment in large scale wind and solar is suddenly needed to maintain reliability and price, but with a small or on-existing pipeline of projects ready for development.

The CEC is seeking to work with VicGrid to find measures to ensure this well established and healthy pipeline of projects in development is maintained. In terms of changes to the VTP, we consider this can be achieved by a re-weighting and general reconsideration of the core scenarios used. A contingency assessment and reporting process can also help maintain confidence and deliver an investment response from industry if future circumstances do not align with the more optimistic projections of the VTP.

**Thirdly, some of the cost assumptions underpinning the VTP appear to be inconsistent with commercial realities.** The VTP's MW sizing of onshore wind based REZ's, for example, do not reflect capex drivers and scale economies that tend toward GW scale wind farm developments. Similarly, it does not appear that the VTP has taken account of the trend

towards solar BESS hybrids. The CEC recommends these capital cost assumptions be brought into line with current realities.

Finally, the CEC encourages VicGrid to ensure the significant policy reforms of the VTP, and subsidiary instruments such as the GIA, are subject to adequate scrutiny and co-design with industry. A failure to do so will result in the destruction of an otherwise healthy development pipeline of renewable energy and storage investment in Victoria. As a starting point, we strongly recommend VicGrid adopt a longer consultation process to ensure all views are accounted for and that the final plan and documents are workable.

## Treatment of key risks and uncertainties

As identified above, the key issue to be addressed in the VTP is how to better account for key risks and uncertainties, over the medium to long term.

We consider this can be done in two key ways.

- through revisions to the selection and weighting of scenarios used in the VTP.
- through development of a 'contingency planning and reporting' process

Before describing these measures, this submission highlights some of the main drivers of change to be accounted for in the VTP, as well as exploring the key inputs and assumptions underpinning the VTP modelling we consider should be reassessed.

## Main drivers of change and uncertainty to be accounted for in the VTP

There are a raft of key risks and uncertainties that should be more effectively accounted for in the VTP, ideally through active incorporation into the ODP. These risks and uncertainties include the following.

**Uncertainties around the ongoing operational viability, economic retirement or risk of catastrophic failure of Victorian coal-fired power plants.** As we have recently seen in both Victoria and Queensland, ageing coal generation is decreasingly reliable. The VTP should actively account for reduced operation and potentially exit of these units well ahead of the current schedules of retirement.

**Gas cost increases associated with declining Victorian gas production and limited storage capacity.** As identified by AEMO in the recent GSOO, Victorian gas supplies are heavily constrained, while the 2024 ISP identified the increasing challenges of operating a GPG fleet in a manner complementary to a renewable dominant fleet. The VTP should more actively account for this risk of much higher than expected gas prices.

**Increased load growth driven by data centres and conversion of industrial processes.** The CEC has been advised that GW of data centre load are currently being considered for connection by Victorian network businesses. These loads can connect relatively quickly and have the potential to markedly increase demand on the Victorian system. The VTP should more actively account for this in terms of required additional generation and transmission investment.

**Capital costs associated with the evolution of renewable energy technologies over time.** The CEC recommends VicGrid consider potential changes in capital costs, especially

those associated with standalone solar and BESS and hybrid solar / wind / BESS assets. These technologies are being adopted across the NEM and have the potential to reduce the total cost of meeting Victorian demand for energy. The CEC recommends that VicGrid reassess its capital costs assumptions and approach to the market modelling – for hybrids in particular - to ensure these technologies are effectively captured in the VTP.

**Planning permit timelines, particularly for onshore wind applications**: including length of time to secure a planning permit and comply with or fulfill any post-approval obligations. These play a significant role in securing final investment decision and have consequences for connectivity certainty.

**Offshore wind timing:** Another potential risk relates to the timing of development of offshore wind in the medium- to long-term, which could face delays to delivery akin to what the onshore industry has been experiencing.

As we found in our recently published Winds of Opportunity Report, offshore wind has the potential to bring about significant investment and foster new employment opportunities for Victoria, while delivering high quality energy resources to the Victorian grid.

The CEC strongly supports the Victorian Governments' ambition for offshore wind energy in Victoria, recognising the legislated offshore targets of 2 GW by 2032, 4 GW by 2035 and 9 GW by 2040, which the Victorian Government has shared intent to underwrite via a pipeline of auctions. The CEC supports this leading Australian policy initiative and looks forward to seeing this high value renewable technology rolled out at scale in Australia.

However, it's also necessary to acknowledge the various challenges that the development of long-term energy infrastructure faces and that may impact on the timing of delivery of this ambitious plan for offshore wind in Victoria. For example, the transmission developments to enable offshore wind REZs will be affected by the same workforce and supply chain pressures already impacting many onshore transmission developments. This may be exacerbated by the first of a kind or otherwise technically challenging nature of offshore wind infrastructure, such as offshore sub-and converter station build, undersea cabling and any required onshore cable undergrounding.

**Consumer Energy Resources:** Uncertainty around the uptake and speed of CER needs closer examination.

The CEC's Consumer Energy Resources Roadmap found that a high penetration of and take up of CER and participation into virtual power plants can deliver up to $22.4b of system wide benefits. These benefits include complementing and taking pressure of the large-scale generation and transmission build as well as better utilisation of the distribution network therefore deferring any capital expenditure.

The CEC supports the Victorian government's CER and electrification policies to electrify the Victorian economy and for this electrification to be underpinned by a significant take up of distributed or behind the meter generation and storage. A key advantage for distributed energy generation and storage is that there is no significant need to build out the distribution network to support its uptake. The distribution network has significant spare capacity to accommodate its uptake and with the right incentives in place we anticipate CER will not only improve utilisation of the distribution network but it will play a major role in the coming years to achieve the Victorian Government's climate change and renewable energy targets while the large scale build out occurs. Further, Victoria's Energy Upgrade program and current review, combined with the Government's recent announcement to support residential properties transition from gas and to electrify will all drive a higher demand for distributed energy generation and storage to underpin this electrification program.

As such, the draft VTP must take a more contingency-based approach to the role of CER and electrification. Both CER and electrification—through technologies like rooftop solar, home batteries, electric vehicles, and electrified heating—are central to decarbonising the energy system and reducing reliance on fossil fuels. However, the draft plan assumes linear or fixed trajectories for their adoption, which may not effectively account for changes in the speed or scale of change driven by consumer behaviour, market innovation, or future policy shifts.

A contingency-based approach would stress-test the transmission network against a range of plausible CER and electrification scenarios, ensuring flexibility and resilience in planning. This would allow for smarter investments, reduce the risk of stranded assets, and better integrate distributed energy solutions.

## Specific inputs and assumptions

Section 2 of the draft 2025 Victorian Transmission Plan (VTP) and Appendix D in the 2024 VTP Guidelines set out the inputs and assumptions used in the VTP methodology. We understand that the inputs to the VTP modelling are primarily focussed on the Australian Energy Market Operator's (AEMO's) 2024 Inputs, Assumptions, and Scenarios Report (IASR) and the Integrated System Plan (ISP). While we appreciate that VicGrid need to base their inputs and assumptions on a robust and realistic set of numbers, the CEC does not consider that the 2024 IASR and ISP are now representative of the underlying cost drivers of expanding the power system.

Considering more up-to-date information in the public domain relating to many of the inputs and assumptions used in the market modelling, the CEC recommends that the following inputs and assumptions be reassessed in developing the scenarios for the final VTP:

**Wind capacity factors:**

Assumed capacity factors will have a material impact on the outcomes of market modelling used in the VTP and therefore the value apportioned to different volumes of renewables planted in the scenarios. We recommend these assumed values be reassessed by VicGrid.

We understand that cap factor assumptions have been based on the 2024 ISP. However, we note that as part of the consultation process to determine the IASR inputs for the 2026 ISP, stakeholders have identified the ISP continues to be highly sensitive to wind capacity factor assumptions, with arguments made that these assumptions are inaccurate.[1]

For example, Squadron Energy recommended that the wind capacity factor assumption for the New South Wales South West REZ (an area relatively close and with similar wind patterns to the North West, Wimerra and Central North REZs) should be increased to approximately 40% - compared with the current assumed capacity factor of 29% - which could increase the total wind hosting capacity in that REZ by an additional 2.6 GW.2

Recent consultation with CEC members suggests wind capacity factors being used in the modelling for Victoria may be considerably lower than that being observed by renewable

[1] Windlab | Submission to Draft 2025 IASR, February 2025, pp.2-4.
[2] Squadron Energy | Submission to Draft 2025 IASR, February 2025.

energy developers themselves, particularly around the Wimmera Southern Mallee, North West and South West proposed REZs.

Wind capacity factors have a direct bearing on the levelised cost of energy (LCOE) of wind generation and will also likely impact the outcomes of the market modelling undertaken by VicGrid in the development of the VTP. With that in mind, we recommend VicGrid utilise more realistic capacity factor assumptions than those provided by AEMO.

**Gas prices:**

Gas prices used in the modelling to inform the VTP will also have a material impact on the value of other forms of renewable generation and storage, particularly standalone and hybrid solar, as well as short, medium and long duration energy storage, given the substitute role these technologies can play for gas peaking and duration services.

We recommend that VicGrid reassess the assumptions regarding gas prices, having regard to the overall projected decline in supply of gas from Southern gas fields and noted issues with the ability of gas powered generation (GPG) to effectively meet demand in Victoria.

Since publication of the 2024 IASR there have been several AEMO publications that have the potential to impact the accuracy of the forecasts of gas prices from the 2024 ISP that serve as inputs into the VTP.

For example, following publication of the "better integration of gas and community sentiment into the ISP final rule"[3] by the Australian Energy Market Commission (AEMC) in December 2024, AEMO is now required by Energy and Climate Ministers to better align consideration of the gas market in forecasts of gas-powered generation (GPG) for the 2026 ISP. The intent of this additional information is to ensure electricity investments – particularly in GPG – consider and are resilient to the capacity, availability and limitations of gas as a fuel for electricity generation. To implement these new requirements, AEMO is currently consulting on its proposed methodology as part of the Draft 2025 Gas Infrastructure Options Report.4 AEMO expects that any forecast gas limitations – with reference to the 2025 Gas Statement of Opportunities – will be important to influence the capability for GPG across the NEM to contribute to the reliability of the NEM, and may influence GPG location, electricity network investments, and the role for other electricity firming solutions such as storages within the 2026 ISP. The resultant gas prices for inclusion in the 2026 ISP will be published as part of the Final IASR in July 2025.

In addition to the above, the CEC also notes the findings of the 2025 Gas Statement of Opportunities, which projects material shortfalls in gas availability from 2028 onwards.[5] Further to this, the 2024 ISP itself highlights the significant limitations in the ability of gas networks to support GPG, indicating that highly expensive local fuel storage is likely to be needed.[6] It is also worth noting the longer lead times for the manufacture and delivering of gas turbines (greater than seven years) which is likely to impact on the ability to site additional GPG.

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[3] AEMC | Better integration of gas and community sentiment into the ISP – Final rule determination, December 2024.
[4] AEMO | Draft 2025 Gas Infrastructure Options Report, May 2025.
[5] AEMO, Gas Statement of Opportunities, March 2025.
[6] AEMO, 2024 ISP Appendix 4. System Operability, June 2024.

The CEC encourages VicGrid to reassess assumptions related to the cost of gas and the extent to which GPG will play a meaningful role in the Victorian energy transition, with a view to reconsidering the role of short, medium and long duration storage. An overreliance on outdated assumptions regarding the cost of gas for GPG could result in a more expensive overall system design, if REZs are undersized and development in long duration energy storage technology costs are not accurately accounted for in the VTP.

**Timing of Coal-fired power generation retirement:**

The draft VTP outlines the timing of Victoria's remaining coal-fired power generation being with Yallourn due to retire in 2028 and Loy Yang A in the mid-2030s.

The VTP should include scenarios that better reflect the risk of prolonged unplanned outages that can occur as coal-fired power generation reaches end of life – or even the risk of permanent removal of a 'close to end of life' asset that suffers a catastrophic failure. This should be reflected in the bring forward of additional transmission investment to enable more onshore renewable generation to provide the lost MWh from coal generation exit.

The CEC has previously analysed this issue through its assessment of the impact of a delayed transition on electricity bills. In this analysis, the CEC explored the impact of unplanned outages and catastrophic failure of coal-fired power generators, demonstrating how this can markedly increase retail electricity prices if replacement renewable capacity is not available.[7]

**Demand forecasts:**

The draft VTP utilises AEMO's step-change for scenario 1 and a slightly revised green energy exports for scenario 2 as the basis for the demand scenarios. While the CEC understands VicGrid's reasons for choosing these scenarios as the basis for the draft VTP, we do not consider that they capture the structural changes that have occurred over the past few years and that may impact demand forecasts going forward.

Of note are the increases in large transmission connected industrial loads seen in other jurisdictions and how this impact must be properly accounted for in determining the appropriate transmission infrastructure investments that will be needed in the future.

For example, ElectraNet recently updated its transmission annual planning report to inform the market of the pipeline of combined load from 37 industries seeking to connect as much as 15 GW in South Australia.[8]

Much of this new load is from mining, the decarbonisation of steel manufacturing, and the expansion of data centres and artificial intelligence (AI) computation capabilities. Furthermore, AEMO through its Forecasting Reference Group is also considering how data

[7] Jacobs | The impact of a delayed transition on consumer electricity bills – Final Report, February 2025, pp.8-10.
[8] ElectraNet | Transmission Annual Planning Report, June 2025, pp.34-40.

centres and future anticipated loads are appropriately factored into the scenarios underpinning the 2026 ISP and the Electricity Statement of Opportunities (ESOO).[9]

**Uptake of CER and DER:**

Since the release of the draft IASR in December 2024, several important regulatory developments have actively shaped AEMO's evolving approach to integrating Consumer Energy Resources (CER) into its modelling for the Integrated System Plan (ISP).

Notably, the AEMC's final determination on "Improving Consideration of Demand-Side Factors in the ISP," published in December 2024, has led to a significant step forward. For the first time, AEMO's Draft 2025 Electricity Network Options Report includes detailed information from Distribution Network Service Providers (DNSPs) on local network opportunities that enable the coordinated operation of CER and other distributed energy resources (DER). AEMO also outlines a clear pathway for embedding DNSP data into the 2026 ISP.

These advances, along with the momentum generated by the National Consumer Energy Resources Roadmap and the Federal Government's Cheaper Home Batteries Program—which mandates VPP-capable systems—position CER to play an increasingly critical role in future energy planning. This marks a clear shift toward recognising and leveraging CER as a mainstream, dispatchable resource capable of meeting growing consumer demand while supporting grid stability and decarbonisation.

At the same time, a range of regulatory and market reforms are being actively pursued to accelerate the uptake and orchestration of CER. These reforms aim to streamline integration, enhance customer participation, and create clearer market signals that support the more dynamic role CER is expected to play in the energy system. By addressing existing complexities and enabling greater consumer engagement, these changes may help unlock the full potential of CER and support the levels of orchestration envisioned in the ISP.

Given this dynamic landscape, the CEC recommends that VicGrid actively expand its assessment of CER orchestration within its Victorian Transmission Plan (VTP) scenarios. Orchestrated CER should be treated as a key variable in contingency planning, allowing for more flexible and resilient network development pathways.

**Storage assumptions:**

There appears to be a discrepancy between the storage modelled in the draft VTP to 2040 (approximately 4.1 GW of short and long duration energy storage supported by 3.6 GW GPG to meet periods of peak demand or low renewables output), versus the Victorian Government's legislated target of 6.3 GW by 2035. Furthermore, the CEC is concerned that the amount of storage projected to 2040 is low with a heavy focus on 2-hour duration rather than the longer durations of 4-plus hours that are rapidly becoming standard. We note that Western Australia recently amended its Energy System and Market Rules to try and incentivise energy storage of at least six hours duration – or even more – to be eligible for payments to make their capacity available during peak periods.10 Prior to this change, the electric storage resources duration requirement to participate in the capacity market was four hours.

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[9] AEMO | Forecasting Reference Group (FRG) – Records of meetings 2025, FRG meeting pack 1 and FRG meeting pack 3.
[10] Energy Policy WA | Electricity System and Market Amendment (Tranche 8) Rules 2025.

We also recommend that the VTP give greater consideration to the role of long duration energy storage (LDES) in meeting future energy needs. LDES is uniquely positioned to provide both the firming and sustained energy supply capabilities that will be critical to maintaining reliability once large coal fired generation retires. Actively including LDES in the allowable mix of technologies assessed through the VTP is also likely to deliver an optimally balanced mix of energy solutions. Storages of 8 hour duration are already being developed in the NEM, with NSW currently leading the way with its LDES LTESAs. We strongly encourage VicGrid and the Victorian government to consider what measures might be adopted to increase uptake of LDES in Victoria.

Finally, we also recommend that VicGrid undertake more sophisticated assessment of the full potential of energy storage, such as BESS and pumped hydro, to increase REZ hosting capacity, improve network utilisation and improve power system security. AT present, it appears as though the VTP takes a relatively simplistic approach to the market modelling of BESS, potentially positing this technology as an 'access competitor' to other forms of generation. In practice, if properly coordinated and remunerated, energy storage can act as a complement to renewable generation and markedly increase the utilisation (load factor) of transmission network infrastructure. Special protection schemes can also be developed around BESS, to markedly increase the security and transfer capacity of network infrastructure.

We strongly recommend the VTP adopt a more sophisticated approach to the treatment of energy storage, across short, medium and long duration, to ensure this valuable technology is properly accounted for.

**Capex inputs, particularly treatment of solar-BESS hybrids**

The draft VTP notes use of AEMO's 2024 ISP and the CSIRO's Gencost for generation capex, which was forecast to show a significant reduction in both onshore and offshore wind capex that has not eventuated. The CEC notes that wind project capex (both onshore and offshore) are still trending upwards albeit at a slower pace and it is unclear how and when this capex will in fact reduce.

Further, the actual reduction in solar panel and battery capex over the past two years has outpaced that forecast in the CSIRO Gencost projections. The CEC is also concerned that the model does not adequately account for solar-BESS hybrids and that treating these facilities separately may be affecting the outcomes.

**Remove the technology specific limitations REZ capacity**

The CEC notes VicGrid's intent to 'level the playing field' so that technology that is faster to be developed (for example, standalone solar) does not have an unfair advantage over technology types which are slower to be developed (for example, wind), but which may have a higher associated dispatch weighted price or greater contribution to reliability.

However, the CEC is also concerned that setting caps and/or limits for each technology at an early stage, using broad assumptions, may result in uneconomical/sub-optimum outcomes. That is, rather than be determined at this stage, the CEC considers total REZ hosting capacity be determined through the interaction of developers with the REZ access right assessment process.

Private developers have access to up-to-date information about project costs, project financing, offtake demand (volume, shape, type, etc.) as well as resource, land access, and are therefore better placed to determine the most feasible and/or economical project choice.

The CEC recommends VicGrid consider setting REZ generation caps based on network hosting capacity, influenced by the capabilities of the technologies proposed by developers, with a process to reassess this capacity if more projects can be accommodated.

### Planning permit and post-approval timeframes

By virtue of its absence it appears that planning permit and post-approval timeframes are assumed unproblematic in the Draft VTP. Moreover, planning permit and post-approval timeframes are absent in the GIA and do not appear to be a consideration for either grid connection timeframes or for social licence. The CEC understands that VicGrid has some certainty as to which onshore wind projects are likely to be captured in the draft REZs and how far progressed those projects are, which to some extent alleviates concern about planning and post-approval timeframes. However, excluding the complex challenges associated with securing planning permit and post-approval consents – which is known to be a lengthy and fraught process in Victoria – does not anticipate half the challenge of Victoria's renewable energy transition.

The outworking of these inputs and assumptions in the VTP modelling is draft proposed REZs that are geographically small in area and have low indicative hosting capacities. In the absence of an understanding of the expected REZ access regime and/or guidelines, it is unclear whether project proponents would be inclined to go through a complex access rights and/or tender process if the likelihood of failure is high – given the small amount of hosting capacity on offer. The CEC is unclear whether the cost of creating a complex regulatory and administrative regime around the planning, declaration and management of REZs will be worth the benefits for developers connecting into such small REZs. As such there is a risk that these new arrangements may have the opposite effect to that intended – increasing the level of uncertainty and deterring renewable energy investment in Victoria – with project proponents abandoning their plans in Victoria in favour of other jurisdictions.

To mitigate this impact, the CEC would encourage VicGrid to consider decoupling the REZ size and hosting capacity from the modelling and consider increasing the sizes of the REZs. Expanding the size of the REZs will create contingency for VicGrid to account for a range of possible futures, encourage market competition to ensure the best possible outcomes for consumers, provide optionality for a balance of generation sources and provide flexibility to respond to changes in the economics of technologies and projects.

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## Scenario changes and contingency planning framework

The CEC considers there are two key ways the VTP could be amended to account for future risk and uncertainty. These two measures are complementary and should be considered together.

### Scenario change and re-weighting

Currently, scenario 1 forms the basis of the ODP in the VTP.

We recommend that the key change drivers and input/assumptions noted above be better reflected in new scenarios, with an ODP designed around weighting attached to each component scenario.

As an example, we discuss how this approach might be adopted by reference to offshore wind.

As discussed above, the CEC is supportive of the current legislated target of 9GW of offshore wind by 2040. However, we also note the potential risks associated with delivery of this target, due to similar kinds of transmission build delays we see affecting onshore development.

Given this, we recommend two approaches could be taken:

- Firstly, scenario 3 in the VTP could be incorporated into a weighted multi scenario ODP, instead of utilising only scenario 1.
- Secondly, within this weighted scenario, a more pronounced delay in offshore wind delivery could be countenanced, perhaps in the range of 5 + years
- Finally, different delays could be attached to different stages of the overall offshore wind targets, with different delays attached to the 2032 vs the 2035 target volumes, to reflect potential issues with first of a kind build.

As Offshore Wind Energy Victoria (OWEV) is yet to publish auction details and timelines for achieving the targeted 9GW beyond the initial auction, we consider the risk of a delay is credible, with considerable detriment for Victoria's energy supply.

Similar approaches could be developed for other variables. In particular, we consider that changes in demand growth represent a key uncertainty in the near to medium term, driven by the potential uptake of large data centres. Such assets can be constructed relatively quickly and consume very large volumes of power and, as traditional loads, are not subject to security constrained dispatch.

We recommend that scenario 2 therefore be accounted for in a weighted, multi-scenario ODP.

**Contingency planning and reporting**

Contingency planning is often used by Governments as a risk management tool for exceptional risks that, though considered unlikely, would have catastrophic consequences on the delivery of a specific outcome.

A contingency plan is a predefined set of actions that will be implemented in response to specific future trigger events that have the potential to put delivery of the project or plan at risk.

As discussed above, there are a range of factors that could impact the ODP, including changes in demand, gas prices, earlier than expected coal retirement, changes in capital costs of different technologies, the degree of CER uptake and orchestration and offshore wind development timelines.

Accounting for these uncertainties through a contingency planning process would entail VicGrid focussing on the assumptions underpinning the model that, if actuals diverged from projections, would signal a need to reassess the mix of necessary generation, transmission and storage capacity to meet demand.

For example, the CEC suggests that demand growth would be a key variable to regularly assess divergence of forecasts from actuals. If a material divergence of actual demand from that forecast in the ODP was identified, this could trigger a 'bring forward' of transmission projects to already identified in the VTP, to allow additional renewable generation to connect (either inside or outside of a REZ) and meet the increase in demand.

Similarly, if the 2 GW in the first tranche of offshore wind was looking unlikely to be connected to the transmission network by the target date of 2032, VicGrid could identify a further subset of transmission projects to be brought forward into the ODP to enable other capacity to be connected elsewhere in the transmission network.

The CEC suggests that REZ generation targets should also be revised if contingency triggers were hit. We suggest the Final VTP should include a range of hosting capacities that could be accommodated in each REZ, to account for alternative scenarios where contingent projects are brought forward. This may also require the REZ boundaries to be reassessed to accommodate additional projects.

A contingency planning process would need to allow for the construction lead time of new transmission network, as well as the different renewable and storage projects needed to meet demand. As such, indicator metrics would need to be chosen where a divergence of actuals from projections could occur sufficiently ahead of the identified need, so as to allow sufficient time for development of the assets needed to meet demand.

A contingency planning framework also necessitates clear and regular monitoring of the key trigger variables, on a six monthly or at the most annual basis, to determine whether the trigger point threshold has been met to bring about a change in the ODP and bring forward any contingent projects to allow the transmission investment needed to ensure sufficient resources are available to meet the VTP objectives. This would also ne necessary to provide renewable project developers with clear indications as to likely network development.

## Planning and environment timeframes and coordination

As noted above, the Draft VTP excludes discussion on planning permit and post-approval processes. This is a significant exclusion for several reasons, notably that proponents who have not satisfied their post-approval obligations will not achieve FID for their project, and it does not appear that there is a benefit to planning and environment assessment timeframes for a project being inside a REZ.

As an example, page 10 of the Draft VTP assumes that development coordination in REZs will ‘help minimise environmental and community impacts’ without describing how. It is reasonable for renewable energy proponents, and the community, to assume or expect that ‘coordination’ in this context includes coordination of the suite of other factors associated with REZ development.

The Draft VTP acknowledges community feedback which stressed the importance of minimising impacts on biodiversity and water systems, protecting farmland, and minimising cumulative impacts on regional communities. The *Planning and Environment Act 1987* (Vic), *Environment Effects Act 1978* (Vic), and *Environment Protection and Biodiversity Conservation Act 1999* (Cth) provide the legal framework for renewable energy development in Victoria, and the process through which impact avoidance and mitigation is determined including cumulative impact.

Although the Strategic Land Use Assessment (SLUA) is an important tool to assist proponents in choosing sites for renewable energy development and transmission infrastructure, the CEC’s understanding is that proponents are still expected to undertake project development – including cumulative impact assessment – on a site-by-site basis. Maintaining individual project assessment is neither coordinated or likely to alleviate community anxieties with respect to cumulative impact. The reasons for this include that individual project assessment does not give communities a clear idea on where and at what time critical elements of development will be undertaken, such as port-to-site transport routes,

identifying which roads need to be upgraded or widened, where ancillary infrastructure will be located and how accommodation will be achieved, what REZ-wide avoidance and mitigation measures will be to protect biodiversity and waterways, and what the overarching visual and potentially noise impacts will be for the REZ.

Nor does project-by-project assessment provide any procedural assessment benefit in the Victorian planning framework. The rationale behind maintaining project-by-project assessment in a state-sanctioned geographical area for renewable energy development without a coordinated and streamlined assessment process is not clear. Proponents who choose to develop inside a REZ may eventually receive grid connection benefits, however those who seek to develop towards the point at which REZ capacity is reached will need to design and develop their project within the constraints of impacts already present within a small geographical area. A number of streamlined planning process have been developed by the Victorian government for the housing sector – notably initiatives like the amended 'deemed to comply' provisions in Clause 55, or the Precinct Zone (PRZ), in the Victorian Planning Provisions – to facilitate housing growth in key areas.

The CEC's view is that a process to facilitate faster renewable energy project development and assessment, in addition to streamlining grid connection, and that does not remove procedural fairness for residents within a REZ, is developed for all Victorian REZs. The groundwork for undertaking REZ-wide biodiversity impact assessment, and how those impacts can be avoided, minimised, mitigated and offset or compensated for, is underpinned by the development of the SLUA and updates to the Victorian Habitat Values Map. The SLUA could be built on to determine areas that additional development requirements and mitigations for those development requirements in a coordinated way.

There are other ways to use the Victorian planning process, including utilisation of the environment effects statement (EES) process, to achieve faster and more streamlined assessment of the impacts of renewable energy development, obtain planning permits and fulfill post-approval obligations in REZs. For example, Clause 52.32 of the Victorian Planning Provisions sets out the requirement for visual impact assessment and 1km set-back from residencies for wind energy facilities. The necessity for visual impact assessment could be waived for renewable energy development inside a REZ where a proponent can demonstrate that all turbines are 1km or more from a residence. And REZ-wide EES or Environmental Report processes could be undertaken by VicGrid to determine the social impacts of concentrated renewable energy development. Fundamentally, there needs to be a process that VicGrid participates in that maps out and coordinates the actual or likely impacts of renewable energy projects and anticipates how to resolve these impacts at a REZ-wide level to provide certainty to host communities and reduce the assessment timelines for developers.

Critically, the CEC notes that the draft Grid Impact Assessment (GIA) does not engage with resolving planning permit and post-approval complexities, and it is unclear what planning criteria will be a factor in GIA – if at all. The CEC's view is that criteria related to planning permit and post-approval obligations should be developed, and that this criterion sets out clear and tangible standards that a project must meet in order to be satisfactory. The CEC is considering what this criterion could be and will present this to VicGrid at a future time. For present purposes, exclusion of planning permit and post-approval considerations for both the draft VTP and GIA is a considerable gap in Victoria's renewable energy transition and one which is fundamental to achieving the RETs: none of this can proceed unless a project has a planning permit, and amendments to Victoria's planning framework are critical to deliver certain and timely assessment and determination processes.

The CEC welcomes further conversation with VicGrid on planning and environment processes. Further queries can be directed to Bronya Lipski, General Manager Planning and Environment: blipski@cleanenergycouncil.org.au

## Transitional and grandfathering arrangements

While the CEC appreciates that the purpose of this round of consultation is focussed on the modelled ODP underpinning the draft VTP, consultation with our members has identified a degree of uncertainty and anxiety for proponents in the process of developing renewable projects throughout Victoria, with many seeking clearer information on the implications of the draft VTP for projects inflight.

In the near term, reasonable and non-punitive transitional arrangements will be needed for renewable energy projects under development that sit within a REZ, straddle a REZ boundary, or sit outside of a REZ. In the longer term, it is important that the proposed Grid Impact Assessment does not act as a barrier to the timely delivery of the generation infrastructure needed outside of REZ boundaries to enable the energy transition.

With consultation on REZ access and the access and/or capacity allocation process yet to commence, it is unclear how inflight projects that find themselves both within and without the draft proposed REZ boundaries will be affected. The CEC has identified several situations where transitional arrangements and/or amendments to the proposed REZ boundaries may be required, including:

- Multiple projects that find themselves wholly encompassed within a proposed REZ boundary: this has the potential to be further complicated where the proposed capacity of the projects within the REZ is greater than the identified hosting capacity of the REZ.

  The CEC recommends VicGrid develops transitional provisions to allow for the fair and equitable allocation of capacity between proponents, or seek to have proponents bid for the available hosting capacity

- Projects that find themselves straddling a REZ with elements within and outside of the proposed REZ boundary: given the potential for the Grid Impact Assessment (GIA) to apply to projects with more than 50 per cent of their assets located outside of a REZ boundary, we recommend VicGrid provide clarity regarding how this will be resolved. For example, will VicGrid have scope to move a REZ boundary to prevent this situation or will the onus sit on proponents to change projects to ensure no more than 50 per cent of the assets sit outside of the REZ boundary? The latter can affect optimal project layout.

- Projects electrically connected to the REZ busbar but geographically located outside the boundary of the REZ, should not be assessed differently from other projects connected to the same busbar but with their physical assets installed within the REZ. Since all generators and BESS would be sharing the same electrical point of connection (identical network characteristics), they should receive similar treatment.

- Projects that find themselves wholly outside of a proposed REZ boundary: Under the current arrangements, these proponents will be required to comply with the requirements of the GIA. The CEC encourages VicGrid to consult further with proponents that are developing projects outside of the currently proposed REZ boundaries, as there are many projects with land access agreements, development approval and community buy-in that are in areas with suitable resources that could be prevented from proceeding to final investment decision if a GIA is needed.

Some CEC members considered that projects connected to the connection assets within a REZ, but located geographically outside of a REZ boundary should not be subject to different assessment criteria from projects located geographically inside a REZ boundary.

CEC members believed the metric – an AEMO committed project – VicGrid were considering to grandfather a project was too far along the development timeline and risked the goodwill of industry that had invested in good faith under the existing open access regime that their project – if it met the needs and requirements of the local community – would be able to be connected to the grid. As such, CEC members suggested VicGrid consider other metrics that could be used to identify projects that could be grandfathered under the current open access regime. An example of this could be a weighting system with respect to the five metrics required by AEMO to be considered a committed project.

## Interaction with the access framework

The CEC notes the draft VTP in the absence of other relevant elements of the in-REZ access and connection framework and the operation of the GIA for projects located outside of REZs, provides an incomplete picture.

Consultation on the GIA closed in January 2025, and there has been no additional documentation from VicGrid to indicate how industry feedback has been incorporated into the development of this important access reform. Furthermore, those mentions of the GIA in the draft VTP allude to the GIA as it was provided for consultation without any change or update.

In conversations between VicGrid, the CEC and industry more broadly, no indication has been provided for when this element of the regulatory regime will be provided for further feedback.

As noted in this submission, the CEC is concerned that the geographical boundaries of the REZs identified in the draft VTP are small – compared with that seen in other jurisdictions – and the hosting capacities are low. Furthermore, given the relatively low transmission network build to 2035 and the scenarios being predicated on multiple conditions being met, any deviations to the ODP that necessitate the requirement for more renewable generation are likely to be located outside of a REZ and will need to comply with the GIA.

Therefore, given the central role of the GIA under the circumstances outlined in the draft VTP, it is critical that these changes to the Victorian open access regimes are executed at the right level to avoid any unintended consequences arising from insufficient renewable generation being able to connect to alleviate capacity shortages.

It is for this reason that the CEC would like to see VicGrid slow down the consultation process on the GIA and seek additional rounds of stakeholder feedback on their proposed approach to sure the appropriate balance between the siting of generation within REZs versus the ability for generation to be connected outside of REZs when its required to promote the efficient investment in, and efficient operation and use of, electricity services for the long-term interests of Victorian consumers of electricity

The CEC welcomes further engagement with VicGrid in relation to its development of the VTP and associated regulatory reforms. Further queries can be directed to James Eastcott at the following email j.eastcott@cleanenergycouncil.org.au.

## REZ specific issues and treatment of third party transmission infrastructure

The CEC has engaged with a number of members that have projects in flight in Victoria. On that basis we have identified some issues arising with regard to specific REZs.

Firstly, a number of members have made specific recommendations that REZ boundaries be extended, or otherwise be amended to allow for projects that sit geographically outside a REZ but are willing to fund private network infrastructure to connect into the shared transmission network (or REZ network).

Increasing the size of the REZs to include projects with high-quality wind resources, low population, modified land uses, reduced environmental risk and initial positive stakeholder sentiment should be considered. Expanding REZs in this way will support the contingency based approach highlighted above while encouraging market competition and provide optionality for a balance of generation sources.

Areas not included in REZs solely because of the distance to transmission should be given consideration. The financial viability of longer connection assets is a matter for proponents to address and projects still need to compete for connection capacity. VicGrid may need to assess projects with marginally higher costs, but with significantly better stakeholder outcomes through reduced cumulative impacts and highly competitive community partnership regimes.

A number of members have also advised they are progressing projects in or near specific REZs (including but not limited to the South West and Gippsland REZ) where there is broad support from landholders to extend the REZ, or to allow advanced projects to continue within the REZ. These developers have been engaging with stakeholders such as local councils, local community members and other businesses such as plantation forestry, as well with First Nations representatives and specifically impacted neighbours.

In other REZs, particularly the North West, Central Northern and Wimmera Mallee REZs, we are aware of a number of projects that are relatively well advanced, some of which include solar (a technology not currently allowed for in all of those REZs). As per the above re community buy in and those below on grandfathering and transitionals, we encourage VicGrid to adopt an open approach to enabling as many of these mature projects to continue as possible.

The CEC is also aware of a number of developers progressing projects in the Gippsland REZ, where new onshore developments have now been precluded. While the CEC appreciates the driver of managing access for offshore wind developments, we encourage VicGrid to consider how advanced developments in this onshore REZ can be progressed in a manner that is complementary to offshore developments.

Finally, we have become aware of a number of private network projects in flight in Victoria, some of which are at a relatively mature stage of development. We consider it likely that many of these projects could markedly increase reliability and price outcomes for Victorian however many of the developers of these assets find themselves facing material uncertainty as to whether the projects will be allowed to progress under the VTP.

## Planning and environment timeframes and coordination

As noted above, the Draft VTP excludes discussion on planning permit and post-approval processes. This is a significant exclusion for several reasons, notably that proponents who have not satisfied their post-approval obligations will not achieve FID for their project, and it does not appear that there is a benefit to planning and environment assessment timeframes for a project being inside a REZ.

As an example, page 10 of the Draft VTP assumes that development coordination in REZs will 'help minimise environmental and community impacts' without describing how. It is reasonable for renewable energy proponents, and the community, to assume or expect that 'coordination' in this context includes coordination of the suite of other factors associated with REZ development.

The Draft VTP acknowledges community feedback which stressed the importance of minimising impacts on biodiversity and water systems, protecting farmland, and minimising cumulative impacts on regional communities. The *Planning and Environment Act 1987* (Vic), *Environment Effects Act 1978* (Vic), and *Environment Protection and Biodiversity Conservation Act 1999* (Cth) provide the legal framework for renewable energy development in Victoria, and the process through which impact avoidance and mitigation is determined including cumulative impact.

Although the Strategic Land Use Assessment (SLUA) is an important tool to assist proponents in choosing sites for renewable energy development and transmission infrastructure, the CEC's understanding is that proponents are still expected to undertake project development – including cumulative impact assessment – on a site-by-site basis. Maintaining individual project assessment is neither coordinated or likely to alleviate community anxieties with respect to cumulative impact. The reasons for this include that individual project assessment does not give communities a clear idea on where and at what time critical elements of development will be undertaken, such as port-to-site transport routes, identifying which roads need to be upgraded or widened, where ancillary infrastructure will be located and how accommodation will be achieved, what REZ-wide avoidance and mitigation measures will be to protect biodiversity and waterways, and what the overarching visual and potentially noise impacts will be for the REZ.

Nor does project-by-project assessment provide any procedural assessment benefit in the Victorian planning framework. The rationale behind maintaining project-by-project assessment in a state-sanctioned geographical area for renewable energy development without a coordinated and streamlined assessment process is not clear. Proponents who choose to develop inside a REZ may eventually receive grid connection benefits, however those who seek to develop towards the point at which REZ capacity is reached will need to design and develop their project within the constraints of impacts already present within a small geographical area. A number of streamlined planning process have been developed by the Victorian government for the housing sector – notably initiatives like the amended 'deemed to comply' provisions in Clause 55, or the Precinct Zone (PRZ), in the Victorian Planning Provisions – to facilitate housing growth in key areas.

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The CEC welcomes further conversation with VicGrid on planning and environment processes. Further queries can be directed to Bronya Lipski, General Manager Planning and Environment: blipski@cleanenergycouncil.org.au

## Community engagement, benefits and access connections architecture

The CEC supports measures that ensure proponents engage meaningfully, early and often and that benefits to host communities, including landholders and their neighbours are tailored to local needs and realised in an equitable manner. CEC and our members are taking significant steps to improve the social performance of industry and evolve practices. Evidenced by annual reporting under CEC's Best Practice Charter, developing educational guides and modules, supporting the implementation of the Developer Rating Scheme and advocating for nationally consistent standards for community engagement.

CEC has heard from members that work in community engagement teams are responsible for designing benefit sharing schemes that the VTP process undertaken by VicGrid is causing frustration, confusion and uncertainty.

In August 2024, consultation closed on 'Rez Community Benefits'. CEC's submission stated that "*CEC does not support the mandated Community Energy Fund as proposed in the draft plan as it is not delivered by proponents, dilutes the relationship between proponents and community stakeholders and access fee contributions are unclear.*" This remains CEC's position. CEC again recommends, as suggested in our August 2024 submission that VicGrid focuses on developing ways industry can collaborate and coordinate to deliver

legacy benefits within REZs rather than duplicating benefit sharing schemes that industry is already delivering.

As part of the overall VTP reform, the CEC understands there is a process underway to update the “Community Engagement and Benefit Sharing in Renewable Energy Development in Victoria” guide that was published in 2021 and endorsed by the CEC. CEC understands that this guide will then form Criteria 2 for projects outside of a REZ when doing a Grid Impact Assessment. While this process seems straightforward, proponents both inside and outside of REZs are undertaking engagement and designing benefit sharing funds right now. As a result of these documents not being released prior to the Draft VTP, proponents do not know what the goalposts are and whether what they are committing to deliver will be sufficient for Criteria 2 in the GIA.

CEC understands that VicGrid intends to include grandfathering arrangements for projects that are inflight but the exact metrics of when a project will be eligible for transitional arrangements are still being developed. CEC strongly recommends that VicGrid takes a holistic view to grandfathering and includes community engagement and benefit sharing schemes. Benefit sharing schemes of committed projects will be underpinned by economic modelling that is unlikely to include access fees as projects had no details on these funds. If projects with committed benefit sharing schemes are required to also pay access fees, they will likely need to rethink/re-appropriate benefit sharing funds as paying both could render the project economically unviable. Further, breaking benefit sharing funds commitments to enable paying access fees will have a negative impact on perception and attitude.

Ultimately community benefits flow through to electricity costs, and so policy frameworks for community benefits must balance the need to recognise and support the contribution played by host communities with ensuring that electricity prices remain affordable. Currently, the CEC is concerned that these considerations are not adequately balanced. The CEC looks forward to engaging on the “Community Engagement and Benefit Sharing in Renewable Energy Development in Victoria” and hopes our recommendations for reform are more adequately addressed.

The CEC welcomes further engagement with VicGrid in relation to its development of policy related to Community engagement, benefits and access connections architecture. Further queries on this topic can be directed to Nathan Hart at nhart@cleanenergycouncil.org.au.

Kind regards

Christiaan Zuur

General Manager, Market Operations and Grid