



May 26, 2023

Ms Anna Collyer  
Chair  
Energy Security Board

Lodged via email to [info@esb.org.au](mailto:info@esb.org.au)

Dear Ms Collyer and Senior Government Officials,

### Submissions in response to ESB Transmission Access Reform Consultation Paper

The CEC is the peak body for the clean energy industry in Australia, representing over 1,000 of the leading businesses operating in renewable energy, energy storage and renewable hydrogen. We are 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.

We welcome the opportunity to provide a submission in response to the ESBs Transmission Access Reform (TAR) Consultation Paper (**the paper**).

We recognise the ESB's extensive work completed to date on TAR and the wide array of options that have been diligently explored. The collaborative approach and continued industry engagement is appreciated and has fostered some valuable new reforms.

The CEC also recognises that some degree of congestion is inevitable and we do not advocate for its complete removal. This is why measures to enhance the uptake of storage are critical to ensure the overall efficient utilisation of the network and to help manage these congestion risks for generators.

However, we also consider there are risks that the degree of NEM congestion may increase to inefficient and unmanageable levels. This will occur if there is insufficient investment in transmission. It's for this reason we have consistently advocated for the prioritisation of balanced measures such as the congestion relief market (**CRM**) and enhanced information, both of which can deliver generation investment that is complementary to the development of transmission.

More generally, our focus is on getting more renewable generators connected and exporting energy into the system. We have accordingly prioritised work on the connection reform initiative (CRI) and continue to work closely with state and federal governments to progress REZ developments, as well as the Capacity investment scheme (CIS) and Rewiring the nation (RTN). These kinds of measures must be the priority, if we are to increase the penetration of renewables and meet our emissions reduction targets.

It's for this reason that we do not consider the proposed Priority Access (PA) mechanism represents a viable solution to manage congestion going forward. The key problem with the PA mechanism is that it is primarily focussed around blocking new investment, without identifying ways to increase the overall

hosting capacity of the power system. The CEC believes that the focus of industry, government, AEMO and rule makers should be on developing mechanisms to accelerate transmission buildout and encourage investment in storage and renewables, as well as increasing the overall hosting capacity of the existing network.

We also consider the scale of the PA mechanism represents a significant systemic change, however the mechanism is currently underdeveloped. This brings with it risk of unknown unknowns. We consider these uncertainties are problematic from a NEM perspective and also from the perspective of international investors who are already deprioritising investment in the NEM due to the overcomplexity of our regulatory processes and slowness to invest in critical transmission infrastructure.

We appreciate that Energy Ministers are eager to determine a pathway forward. However, it is critical that reforms are fully developed before they are introduced. Rushing reforms of this magnitude risks introducing material unintended consequences and may worsen an already unstable and uncertain investment environment.

At a critical juncture of decarbonising Australia's electricity market, we cannot stall the progress of building more renewable generation, storage and transmission with regulatory reform that increases inefficiencies and is poorly understood.

The following submission explores the following key ideas:

1. The priority access mechanism – and overarching 'Hybrid Model' - is not suitable in its current form.
2. The Congestion relief market (CRM) must remain optional and separated from any investment timescale mechanism. The CRM must only be introduced with detailed market testing and trials.
3. How the Hybrid models presents risks to the development of States based REZs and other Federal projects underdevelopment
4. Should an investment timescale mechanism proceed to be introduced, what are the critical design components that must be included
5. Recommended next steps for transmission access reform.

We are recommending that the ESB and Senior Officials:

- **Cease development of the Hybrid model**, at least in its current form where the PA mechanism is a component. Further consideration should be given to other models that might operate solely or primarily in the investment timescale and avoid 'cross over' with the operational timescale.
- **Continue further development of the CRM**, exploring all the implications and workability of a strictly voluntary / opt-in CRM as well as detailed and extensive trials within the NEM dispatch engine (NEMDE).
- **Acceleration of the enhanced information work** to continue, as well as work to help Transmission Network Service Providers (TNSPs) to get ahead of network congestion and unlock capacity from existing generators.

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## 1. PRIORITY ACCESS

The CEC has engaged with our members, to try and develop an accurate representation of industry views regarding the proposed PA mechanism. As we understand it, industry views can be represented as follows:

- There are relatively few CEC members who consider the PA mechanism should be subject to further development.
- Of those members who do support further development of the PA mechanism, we understand that this is highly qualified and should not be considered definitive support for the PA mechanism in its current form
- A much larger number of our members are opposed to the PA mechanism in its current form and do not support further work being undertaken.
- Within this group, many members also consider that further work is warranted to protect investments from subsequent curtailment.
- There is general agreement that further work is needed to accelerate transmission and storage investment as the main way to ameliorate congestion.

A key concern is that the PA mechanism - referring to both the Queue and Centrally determined tiers models - has not yet been adequately developed and tested with industry, with extensive unanswered design choices which pose risks to system security, and actively reduces operational efficiency in the energy market.

Generally, we consider these uncertainties bring with them such significant downside risk so as to make further development of the PA mechanism non-viable at this time. The amount of effort that would be required to make the mechanism workable is such that we do not consider it should be progressed. Instead, it would be preferable to reallocate limited policy design resources across industry and the market bodies to developing mechanisms that will actually support new investment – such as refinements to the system strength frameworks and connection processes, as well as measures to increase the speed of transmission buildout.

### **Priority access mechanism and the CRM**

A key concern with the PA mechanism is that it may drive significant inefficiencies in dispatch, with the CRM then posed as the mechanism that will resolve those inefficiencies.

The ESB considers the use of the PA mechanism alone “may result in even less efficient energy dispatch than today”<sup>1</sup>. While the *voluntary* CRM is then expected to ‘correct’ these inefficiencies in the energy market, the purposeful introduction of physical dispatch inefficiencies into a complex market cannot be seen as good policy.

It was never the intended purpose of the CRM to resolve material dispatch inefficiencies created by the priority access mechanism. We have no real idea as to whether the CRM can correct these inefficiencies, nor what incentives or potential risks it will create for investors and operators of generation assets.

The ESB has not yet unpacked how these interactions will play out in practice, nor have they been given sufficient time by Ministers to complete this body of work. This is problematic, especially given that the

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<sup>1</sup> Energy Security Board, *Transmission Access Reform Consultation Paper*, May 2023, p. 17

supposed ability of the CRM to rectify the inefficiencies caused by the Priority Access mechanism is key to the viability of the hybrid model.

The CRM was originally intended to operate as something resembling an ancillary service, allowing for constrained generators to trade congested capacity around constraints and generate an additional revenue stream. It was intended as a mechanism where parties would participate where a clear mutual benefit was identified in doing so. It was not designed to rectify material dispatch inefficiencies introduced into the grid by another model.

### **Implications for the connections process**

The connections process has been repeatedly identified as a key inhibitor to getting new generation into the grid. In response, the CEC, AEMO, NSPs and industry stakeholders formed the Connections Reform Initiative (**CRI**) in 2020. Since then, immense work has gone into creating the [Connections Reform Roadmap](#), and most recently, a rule change request submitted to the AEMC proposing to create clarity in the R1 registration process.

It's our concern that the PA mechanism would threaten to undermine the outcomes achieved through the CRI. The connection process in Australia is already complex, with generator and storage developers required to undertake modelling exercises and meet technical obligations to connect to the power system. Developers must navigate this while meeting planning and environmental protection requirements, negotiating financial arrangements and contracts as well as sourcing an engineering, procurement, and construction proponent (**EPC**) to build the asset.

Under both PA models, developers will now also have to land a queue or tier position at some stage of the connection process. There are potential implications associated with exactly when this queue / tier position is defined within the connection process. For example, while moving early may provide some certainty for the project, it may also represent a material sunk cost which the developer will need to wear – this risk will naturally need to be factored into financing arrangements to cover the situation that the project is delayed or doesn't progress, and therefore loses its position (assuming the queue position can't be on-sold).

Equally, while moving late to secure a queue position may address this issue, it creates another uncertainty – whether the generator will have a good position in dispatch or not – which will materially impact on project financing. Trying to land this late in the connection process, such as on the approach to final investment decision (FID), is unlikely to be viable, as it is too significant a risk to leave to so late in the process.

More generally, and as the ESB has identified, the various mechanisms create incentives to rush to particular stages of the connection process. Given the sheer volume of new connections that are expected to be processed in coming years, it's critical there are no incentives created to game the system, and to push forward more speculative projects simply so they can secure a queue position.

This latter incentive also would undermine the progress made through the CRI. Aside from the various rule changes and reviews underway, the CRI has also contributed to general process improvements in connection, including recognising the value of due diligence and the development of quality projects that contribute to system stability and operability.

We consider the above incentive to rush toward achieving a queue / tier position will reverse this progress – developers who take their time to develop quality projects and engage in meaningful negotiations with AEMO and NSPs are likely to lose out to those who focus on speed over substance.

There are a large number of risks to the efficiency of the connection process created by the PA mechanism., Following years of work to remove uncertainties and barriers in the connections process, we are deeply concerned that the introduction of PA would erode all of this hard-earned progress.

#### **Inefficient allocation of curtailment risk**

A number of CEC members have identified that the PA mechanism inefficiently imposes curtailment risk on generators low down the queue/tier position.

A specific example of this relates to how outage limits and curtailment is applied. The PA mechanism has only been designed for system norm, and there hasn't yet been consideration given to the perverse outcomes from transmission outage events, both planned and unplanned.

Currently, generators can use outage constraint sets to understand the financial impact an outage would have, based on the revised coefficient they would receive if an outage were to occur. Developers can complete a risk analysis to determine that should an outage occur – for example, an outage lasting for six months, with a one in 100-year risk factor, resulting in a revised coefficient change from 0.4 up to 0.9 – then their subject location would still be profitable and economically viable even if the outage occurred. Importantly, the developer can identify and assess the limited set of outage limits that are likely to apply to them, focussing on those that are electrically proximate to their location.

With priority access applied, should the same scenario occur, and queue positions are upheld even in an outage event, a generator with a low queue number who is severely impacted by the outage - resulting in a high revised coefficient - will still be prioritised over others in dispatch, regardless of revised coefficients. The impact of this could see cascading dispatch inefficiencies occurring with other generators, higher up the queue, being materially curtailed to avoid overloading the grid, all to ensure the low queue number holder remains prioritised.

From a risk analysis perspective, generators can no longer just assess the risk of an outage on transmission lines in a certain electrical distance to determine the impact of an outage, instead they need to consider the impact of virtually all outage constraints in the NEM based on queue positions. Developers and generators cannot realistically prepare for this, and it will leave many proponents exposed to this risk.

This creates not only significant financial risk to generators who are unable to complete adequate risk analysis but could also present a risk to the overall operability of the grid. The overall level of curtailment under this scenario is also large.

#### **Priority access inefficiently prioritises incumbents**

We acknowledge the arguments underpinning the desire to provide incumbent generators with protection for their assets – many CEC members can be fairly classified as incumbents, and many incumbent generators have been economically impacted by new entrants causing curtailment.

However, with the 2022 Integrated System Plan (**ISP**) presenting a nine-fold increase in grid-scale wind and solar, a factor 30 increase of storage capacity and electricity usage from the grid to nearly double

by 2050<sup>2</sup>, we cannot make things harder in this next decade for new generation. Placing impediments in front of new energy and storage connecting to the grid will only hinder Australia in achieving its emissions reductions and renewable energy targets.

Priority access impedes new entrants by adding complexity, impacting project deliverables, and reducing ability to forecast risks for those who do not win a favourable queue position. By allocating a queue number which will see them placed behind incumbents, the priority access mechanism puts the risk on developers with no ability for mitigation.

While there is the option to locate in a different area, for many developers it is not that simple as there are a multitude of other factors impacting where they located, and these heightened measures will create bottle necks and flow on impacts, slowing progress in achieving the ISP.

There is also a general question as to whether these other, uncongested parts of the grid will in fact be available – major ISP and REZ projects have already faced significant delays, and there is also a risk that state governments impose limitations on open access on these projects, as has recently been propose to apply to Project Energy Connect.

### **Risk of grandfathering**

The significant design choice that has yet to be resolved is the risk of grandfathering, especially for thermal assets. While the paper has outlined initial thinking, we have concern as to the preferential treatment thermal assets will be able to obtain through priority access. Should all incumbents receive queue number '0', once priority access is introduced it will see new entrant renewable generation dispatched after thermal coal and gas capacity in a congestion scenario. This does not align with proposed changes to the NEO and national emissions reductions targets.

There is also a substantial risk of proponents rushing to connect before priority access is introduced. While there has been lots of discussion aiming to solve this issue, amongst ESB working groups and in CEC member discussions there has been no clear solution presented.

It is also unclear the perverse incentives that may be created by permitting grandfathering to occur at a connection point, comparative to a generation asset specifically. This needs to be assessed not just for the coming years, but for the potential decades ahead impact it could incur. For example, should grandfathered access rights be applied at the point of connection for a legacy thermal asset, what does this mean if the thermal asset is retired and replaced with a renewable / battery / syncon hybrid? Should this new asset continue to receive the grandfathered access rights originally awarded to the legacy thermal asset?

## **2. CONGESTION RELIEF MARKET**

As the CEC presented in our [June 2022 submission](#), we see potential in the CRM, and have undertaken significant development of this model. We appreciate that the ESB has worked collaboratively with industry to try and develop the model to the next level and welcome this engagement.

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<sup>2</sup> AEMO, 2022 *Integrated System Plan*, June 2022

However, and as outlined [above](#), by introducing the Hybrid model and CRM to fix the dispatch inefficiencies introduced by priority access, there is a risk that the underlying benefit of the CRM is undermined.

For example, if the PA mechanism causes material inefficiencies, and the CRM becomes the only way for parties to avoid these inefficiencies, questions arise as to whether the CRM remains truly voluntary.

This would go against a core design element of the CRM, being a form of ancillary market that participants voluntarily enter when it suits them.

More generally, we encourage the ESB to note the clear instruction from Ministers in the recent communique that 'Locational Marginal Pricing' (LMP) models should be put aside. In our view, care must be taken to ensure the CRM does not become equivalent or similar to earlier models of mandatory LMP, such as the Congestion Management Model, which effectively forced generators into an energy LMP. This is not the intention of the CRM – the CRM must remain voluntary, as a market to facilitate trading congestion relief, **secondary to the main market for energy which must remain traded at the regional reference price.**

The CEC encourages further work to continue for the further development of the CRM, exploring all the implications and workability of a strictly voluntary mechanism independent of priority access. Before any potential introduction, we also call for a more clearly defined trial and testing phase with industry.

### 3. HYBRID MODEL RISK TO EXISTING PROJECTS

Since the TAR process started, there has been significant progress of Renewable Energy Zones (REZ) by State jurisdictions in [New South Wales](#), [Queensland](#), [Victoria](#), and [Tasmania](#), in addition to Commonwealth development of [Rewiring the Nation \(RTN\)](#) and jointly coordinated [Marinus Link](#), and [Gippsland](#) and [Hunter](#) Offshore Wind regions. All these proposed plans are expected to significantly impact how and to what extent congestion becomes a pressing issue.

We consider that the PA mechanism should not be progressed ahead of these various Commonwealth and State based reforms. These applied state based reforms provide an opportunity to identify and tailor congestion management and transmission access, in a manner that reflects the very different energy security needs of each jurisdiction.

It is unclear how the proposed PA mechanism integrates with Federal and State reform<sup>3</sup>, and we largely see that there hasn't been sufficient consideration for fundamental market principles and potential perverse outcomes on existing projects. Moving forward, we would suggest the ESB (or the newly formed Energy Advisory Panel (**EAP**)) consider a more robust structure, such as AEMOs NEM Reform Works, when considering how to prioritise competing reform to ensure there is adequate consideration for concurrent reform.

Moreover, given the ambitious emission reduction and renewable energy targets set by jurisdictions, we see ample political drive to get State based REZs built. The ISP also champions for their development.

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<sup>3</sup> We recognise there are several references in the paper that the ESB will work with jurisdictions to prioritise state-based schemes, however this is only high level and not comprehensive enough to gain confidence.

Both factors attest to there being sufficient existing signals for REZs to be built. Conversely, introducing priority access may cause a rush to secure the lowest queue number possible (by both independent developers and States wanting to hold the ‘best’ position amongst the REZs), and see proponents who were not actually ready to build clogging up the connections process.

We also suggest the ESB more fully consider the models that have been developed in some of the states, especially NSW, as potential templates for alternative investment timescale models. A key issue with the PA mechanism is that it seeks to operate in both the investment and operational timescales. By prioritising outcomes in the investment timescale, it introduces inefficiencies into the operation of the system and dispatch of the market in real time. For example, some of the physical access models developed as part of the NSW Energy Roadmap separate these two timescales and therefore introduce less in the way of dispatch inefficiency.

We also see risks to the implementation process given the timeline that has been provided, but in achieving it and its suitability with concurrent targets. Given the volume of undetermined design choices, even if priority access was to achieve industry support, the breadth of testing and scope of implementation would at best introduced closer to 2030 – which by then, the Australian Government is aiming to already achieved 82% renewables in the NEM.

If we spend the remainder of this decade debating design choices, we will distract from achieving important emissions reduction and renewable targets while dissuading investors from building renewable generation in Australia.

#### **4. INVESTMENT TIMESCALE MECHANISM REQUIREMENTS**

The CEC remains committed to working collaboratively with Senior Officials, the market bodies and the soon to be established EAP to progress market reform needed to transition the NEM. Should Senior Officials wish to proceed with an investment timescale mechanism, the CEC considers the below design components necessary for maximising hosting capacity, supporting system security, prioritising connections, and aligning with changes to the NEO.

We also acknowledge that within the CEC membership there are varying views on the priority access mechanism. While some members do not support priority access as the best pathway forward in its current format, they are still open to considering other mechanisms to support investor confidence.

##### **Minimise impacts of operational timescale**

Should an investment timescale mechanism be introduced, it would need to minimise the impact it has in the operational timescale. Unlike as proposed with the Hybrid model which has the requirement for the CRM (operational timescale) to mitigate the inefficiencies created the priority access mechanism (investment timescale), any investment timescale mechanism introduced should be independent as much as possible from operational outcomes.

This would allow the CRM to remain opt-in and would also allow the investment timescale mechanism to be purpose built to generate accurate investment signals. It would also minimise the extent for operational inefficiencies.



### **Protect existing State and Federal developments**

With substantial developments having been made by all jurisdictions in the NEM, any new investment timescale mechanism cannot encroach on their progress. We would encourage States to protect their REZs by avoiding introduction of any incentive, such as priority access, that will reduce investability.

Clearer guidance is also required much earlier to determine the scale of impacts a mechanism may have on REZs. As these jurisdictional projects develop so will opportunity to learn from various examples of access rights they are generating and determine how a suitable investment timescale mechanism could compliment or build on their progress.

### **Carve out constraint sets**

As noted above, we consider that a key principle is that any investment timescale model should not cross over into the operational timeframe.

However, if officials decide to progress such a model, it must carve out certain outage constraints or suddenly emerging stability constraints. As described above in regards to outage limits, such a carve out is necessary to permit generators to plan and mitigate risks during the investment and development stage of a project.

There will always be risk and unplannable events that will occur, and this cannot be removed entirely. But ensuring diligent planning and consideration for how varying scenarios that may impact the grid will occur, and carving out certain components where the risk is too hard to plan for, is essential to attract investment to build in the NEM.

### **Support the connections process**

Any mechanism must consider the connections process more closely and not force developers to rush to complete connection applications. Currently, CRI is encouraging developers to do the work before going to AEMO, to ensure due diligence has been completed before lodging a connection application. This makes it easier to connect, and ultimately saves time.

If proponents are racing for a queue position or racing to connect for any reason, this curbs diligence and results in AEMO requiring rework, drastically slowing down the connections process.

### **Must not unduly benefit thermal assets**

To support decarbonisation of the NEM, any new investment timescale mechanism introduced should ensure it does unduly benefit thermal assets. With agreement by Energy Ministers in 2022 to include emissions reductions into the National Electricity Objective (NEO), the greenhouse gas emissions from electricity will soon be formally accounted for by regulatory decision makers. Any new reform introduced by any market body must there consider emissions impacts, and in the case of an investment mechanism, must promote or prioritise investment in clean technologies.

The current design of the priority access mechanism would see high emitting thermal assets benefit from its introduction, and able to be prioritised for dispatch indefinitely ahead of new entrants' renewable generation.

The CEC does not support any mechanism that will extend the life of fossil fuel generators. For an investment timescale model to be supported, thermal assets should either have no grandfathering of access, or should face a very steep tapering of any access rights.

### **Staged and slow introduction**

A staggered approach should be taken to introduce any new mechanism, including test environments.

By introducing mechanisms that are not interconnected allows for a safe and staggered introduction of any changes that are required. This process also needs to be well communicated to stakeholders well in advance. We would also suggest ensuring the timeline is established based on realistic and practical timelines, not to satisfy political deadlines.

### **System security**

It is important that system security is not compromised by any mechanism. Various design choices proposed by the PA mechanism could risk system security by putting additional pressure on the physical dispatch process, essentially putting the policy ahead of the physics.

Any mechanism needs to consider the practical and physical workings of the grid and ensure that while prioritising investment signals it is not also increasing stability and security risks.

## **5. RECOMMENDED NEXT STEPS**

In consideration of all points made in this submission, the CEC propose the following three actions be taken.

### **Cease development of the Hybrid model**

First and foremost, we are proposing the ESB cease development of the Hybrid model, at least under its current design with Priority Access as a key component. We consider this is generally supported by a majority of our members, on the basis that of the downside risks for perverse outcomes as outlined in this submission.

### **Careful further development of the CRM**

We are generally supportive of further work to develop the CRM, exploring all the implications and workability of a strictly voluntary mechanism independent of priority access. Before its formal introduction, we would also call for a more clearly defined trial and testing phase with industry.

### **Acceleration of the enhanced information work**

Finally, we strongly support continued acceleration of the enhanced information work, targeting a rule change proposal by the end of 2023. The clear industry consensus for this approach has shown the potential to alleviate issues in the early development planning phase and enable developers to make more clearly informed investment decisions – ultimately which will reduce curtailment.

As always, the CEC welcomes further engagement from AEMO on this reform. Further queries can be directed to Morgan Rossiter at the CEC on [mrossiter@cleanenergycouncil.org.au](mailto:mrossiter@cleanenergycouncil.org.au)

Kind regards

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