

26 April 2019

Mr John Pierce AO  
Chair  
Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

Lodged online: [www.aemc.gov.au](http://www.aemc.gov.au)

Dear Mr Pierce,

**COORDINATION OF GENERATION AND TRANSMISSION INVESTMENT IMPLEMENTATION – ACCESS AND CHARGING (EPR0073): CONSULTATION PAPER**

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in renewable energy and energy storage along with more than 6,000 solar and battery installers. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC's) Consultation Paper on the access and charging reforms for the Coordination of Generation and Transmission Investment (CoGaTI) framework. The access model outlined in the December 2018 final report of the AEMC's inaugural CoGaTI review represents a significant change to the existing electricity market design. The final report had outlined that the next step to progress this model was the development of rule changes from January to June 2019.

The CEC appreciates that the AEMC is undertaking this additional step of seeking initial stakeholder feedback on the proposed access model. We also appreciate the AEMC's responsiveness to stakeholder queries by publishing the Supplementary Information Paper. These actions to engage with industry and assist our preliminary understanding of the access model are welcome. However, we feel there are many questions about the model that remain unanswered and hence, it is difficult for industry to make a fully informed assessment of the model at this time. The remainder of this submission outlines our initial thoughts on the model and highlights where further work is required by the AEMC.

**Congestion is a real concern for the renewables industry and actioning the Integrated System Plan remains key**

The National Electricity Market (NEM) is undergoing a significant transformation. By the end of 2018, approximately 14.4 gigawatts (GW) of large-scale renewable energy projects were under construction or financially committed in the NEM.<sup>1</sup> Clean energy development is only projected to continue with the Australian Energy Market Operator (AEMO)

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<sup>1</sup> CEC, Clean Energy Australia Report, 2019, pp. 11-12.

forecasting that under its neutral scenario, a portfolio of resources, including 28 GW of solar, 10.5 GW of wind and 17 GW of storage, will replace the conventional generation expected to exit the NEM by 2040.<sup>2</sup>

The electricity system will be substantially reconfigured as this new capacity is largely connecting at the edges of the network to take advantage of high-quality solar and wind resources. In some regions with strong renewable resources, the transmission network is already congested with an increasing risk of constraints for both existing and perspective renewable generators. This will be further exacerbated as more renewables connect to the grid.

There is a clear need to invest in and build transmission to keep congestion at an efficient level. AEMO's inaugural Integrated System Plan (ISP) outlines a pathway for future transmission network development. Key to addressing congestion is actioning the ISP as this will best unlock the value of current and new renewables developments. Given this, the CEC strongly supports the Energy Security Board's (ESB's) work to action the ISP. Importantly, the ISP's pathway does this at least cost while also delivering energy reliably to consumers. As such, the ISP recognises that investment in transmission does not benefit only generators and in fact, there are broader system and consumer benefits to new transmission.

### **More analysis is required of the congestion problem to better inform an appropriate solution**

While we can assume that augmenting the network as envisaged in the ISP may go some way to alleviating congestion, the CEC considers a deeper analysis of the congestion problem both currently and into the future is still warranted.

For any regulatory change it is necessary to articulate well the problem, develop a range of potential solutions to address the problem and then determine the most fitting of these solutions for that problem. Throughout the AEMC's inaugural CoGaTI review and in the current Consultation Paper, the AEMC has pointed to an increasing number of generator connections leading to increased congestion and increased congestion risk to both existing and perspective generators. However, it has not undertaken any fulsome analysis of this.

The CEC recommends that the AEMC prioritise this analysis before progressing the access model. This analysis should outline the causes, locations and magnitude of current and anticipated congestion. To better understand how congestion is affecting existing and prospective generators, this analysis should also consider case studies of curtailed incumbent generators and development projects that have failed due to congestion risk. By then linking this analysis to the transmission build outlined in the ISP, industry can better understand the congestion outlook in the NEM, how and when the ISP assists to alleviate congestion, and the degree to which further congestion management may still be needed. This analysis should also recognise that there is an economic level of congestion even in a perfect network.

An in-depth analysis of the congestion problem can then assist industry to assess the appropriateness of the proposed access model as a solution, particularly against

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<sup>2</sup> AEMO, Integrated System Plan, 2018, p. 5.

alternatives. The CEC suggests all options to address congestion should be explored. In particular, this should consider alternatives that incentivise networks directly to fund transmission rather than generators undertaking this role. Only in this way can industry have comfort that the range of potential solutions has been tested and that the final solution is the one that best addresses the problem.

### **The transformation must be supported by robust and coordinated reform**

The AEMC has outlined an ambitious timeline to implement the access model with the first phase of dynamic regional pricing in July 2022, second phase of improved information from June 2022 to July 2023, and third phase of generators funding transmission infrastructure through firm access in July 2023. This timeline requires that a final report is prepared and draft rule requests are finalised and provided to the COAG Energy Council in December 2019.

The CEC questions whether this timeline allows adequate time for the rigorous development of the access model. Given the significance and complexity of the model, the prospect of unintended consequences is heightened given the extent of fundamental change required in a short timeframe. Any reform should be thoroughly tested before implementation to ensure its scope and consequences have been carefully considered, to give confidence to industry of the robustness of the model, and to ascertain that there is a clear benefit to consumers in line with the National Electricity Objective.

The AEMC will recall the process to develop the Optional Firm Access (OFA) proposal. In February 2014, it received the terms of reference indicating approximately 15 months to mid-2015 for the AEMC to publish a final package of work on the design, testing and assessment of the OFA framework. Following extensive stakeholder engagement, the AEMC decided in May 2015 that it would not progress the proposal at that time. The CEC is concerned that the ten-month timeline to develop and assess the current access model is far shorter than what had been allocated for the OFA proposal but the AEMC is expected to go further with this process by presenting draft rule requests at the final stage.

Likewise, implementation should not be rushed. Substantial system, process and procedure changes, as well as broader industry education on the changes, would be required for such a major and complex market reform. Even if the model could be fully developed by the end of 2019, the CEC cautions that implementing the first phase in July 2022 may not provide sufficient time for this.

Moreover, the transformation underway in the NEM must be supported by coordinated reform. There are a number of discrete reform projects already underway or soon to commence. It is important that each of these reforms appropriately accounts for the others and their consequential impacts, and that the timings of these reforms align with and complement each other.

The CEC would like to draw the AEMC's attention to the following specific matters for consideration against the AEMC's ambitious development and implementation timeframe:

1. An efficient approach to staged implementation is to gain experience with a new phase to assess whether moving to subsequent phases is justified and whether adjustments to subsequent phases are required. A year between the first and third phases of the access reform proposal is unlikely to be sufficient for this.

2. AEMO is expected to release the ISP in December every one or two years. The timeline for the access model implements each of the phases in July. There appears to be a misalignment between the access model's implementation timeframe and the development of the ISP. This is particularly relevant for the second phase where improved information is intended to be used to supplement the planning arrangements for transmission.
3. Five-minute settlement is due to come into effect on 1 July 2021. Renewable energy participants and others in the NEM are working to make the required system and process changes in anticipation of this date. This requires significant time and effort for all involved. The AEMC should be cognisant that the access model would also require significant time and effort to implement. Given this would need to occur simultaneously with the five-minute settlement efforts, this places increased resource and cost pressures on industry participants. For renewables developers, integrating new reforms can be especially problematic as they focus on commissioning and connecting new projects.
4. The federal election will take place on 18 May 2019. If there is a change of government, the Labor Party has not ruled out wholesale changes to the electricity market nor amendments to the National Electricity Objective. This could have implications for the access model. Such a situation would also mean changes to representatives to the COAG Energy Council and subsequently, potential changes to its priorities and work program. The AEMC anticipates providing draft rule requests to the COAG Energy Council in December 2019. Concurrently, the ESB is expected to report back to the COAG Energy Council in 2019 on the detailed requirements needed to reform connections, access and congestion arrangements and the options to address these matters. It must be confirmed as soon as practicable that the AEMC's and ESB's work on access remain aligned and are priorities under a new COAG Energy Council.
5. Perhaps most significantly of all, the COAG Energy Council has tasked the ESB with developing advice on a long-term, fit-for-purpose market framework to support reliability that could apply from the mid-2020s. This is a holistic review that interacts with all steps of the electricity supply chain. It also has an ambitious timeframe with any changes to the post-2025 market design to be finalised by 1 July 2022. Such a far-reaching review clearly overlaps with the proposed access model. The potential scope for change resulting from the ESB's work draws into question whether the access model would still be fit-for-purpose under a potentially different market framework. It could also undermine the cost-benefit assessment of the access model given a different market framework as recommended by the ESB could exist only two to three years after the access model is implemented.

The above reiterates the CEC's earlier point that the AEMC should explore the range of alternatives. This should include additional information and congestion management options in the interim should the timeframe for a mechanism to address congestion be pushed out, for example to align with the ESB's post-2025 market design work.

### **The complexity of the access reform proposal raises several questions**

A lack of detail at this early stage of its development makes it difficult for the clean energy industry to make a full and informed assessment of the access model. Nevertheless, even

at this early stage it is clear that the model is inherently complex. While complexity is not in itself a strong rationale against pursuing the reform, the AEMC must ensure that the benefits of the reform clearly outweigh the costs associated with this complexity. It would be a perverse outcome if the reform were to introduce such sizable new complexities into the existing market design and require substantial resources to administer that it arrests the current momentum of the transformation.

The key concern for the renewables industry is that the complexity of the access model creates unmanageable risk for both existing and perspective generators. Renewable generators question whether they will be able to make informed decisions in this more complex market environment, which is particularly pertinent for new entrants to the NEM. Increased complexity and risk can lead to increased costs that would ultimately be borne by consumers.

The complexity and risk associated with the access model has direct implications for renewable generator contracting. The CEC does not agree with the AEMC's preliminary view that the impact on the contract market may be positive. In the first instance, there may be a need to reopen and renegotiate existing contracts. Current contracts contain a single settlement price, the regional reference price, so introducing a different settlement price for the generator versus the retailer or large customer and incorporating this arrangement into existing contracts would be a resource and time intensive process. Furthermore, there is the possibility that the additional complexity manifests itself in the contract market through higher risk premiums sought and even some hesitancy to enter into forward contracts, particularly if generators are uncertain as to whether they will be able to generate and receive the regional reference price.

By imposing significant new complexity into the NEM, this could also impede future generator investment in the market as it could be more difficult to assess investment options and these could be more prone to error. The increased risks borne by generators could even render them unfinanceable given financiers operate at the periphery of the electricity market, may have difficulty in weighing up the value of congestion versus firm access for a particular project and are generally likely to be more risk averse when assessing new projects in a changed market environment.

#### *Dynamic regional pricing*

Dynamic regional pricing would allow for new arrangements for determining the price payable to generators when there is a constraint. It is not intended to address congestion as it is a settlement mechanism for when congestion arises. Given this, the AEMC should give further consideration as to the appropriateness of the phased approach if this stage does not immediately address congestion.

For the complexity and risk issues outlined above and particularly relating to the way in which dynamic regional pricing creates two different settlement prices, the CEC considers more work is required to confirm that the perceived benefits of dynamic regional pricing outweigh the costs. The benefits of dynamic regional pricing are currently unclear. The AEMC points to the ability for dynamic regional pricing to resolve some concerns about disorderly bidding but has not provided any analysis of or quantified the extent to which the type of disorderly bidding that this is intended to address exists.

The CEC asks that the AEMC fully explore the potential for wealth transfers to neighbouring generators behind a constraint and gaming under dynamic regional pricing. Potential examples of this are:

1. A generator may bid below their marginal cost to undermine the bid of another generator and essentially steal revenue. If that second generator has obligations under a Power Purchase Agreement (PPA), then the loss is transferred to the PPA's customer and the second generator is not compensated for the lost production.
2. Gaming could also occur when there is a large-scale storage device behind the constraint. The AEMC considers the ability for dynamic regional pricing to resolve disorderly bidding for large-scale storage devices as one of its key benefits. However, this is an overly simplistic view and more work is required to understand gaming in the presence of large-scale storage. For example, when storage is efficiently charging behind a constraint it is storing electricity that would otherwise have been lost. A customer with a PPA contract with a generator would then be required to compensate that generator for a larger amount of energy although it is not receiving this energy as it is being used to charge the storage.

The CEC appreciates that the AEMC discusses whether the access reform would apply to distribution networks in the Supplementary Information Paper. We agreed that further consideration needs to be given to what types of generators would be included within the final access regime. Industry would also benefit from clarification on the impacts for distribution connected assets facing constraints under dynamic regional pricing particularly as deployments of distributed energy resources connected across distribution networks accelerates and starts to create similar concerns at key regional nodes and feeders.

Finally, we note that the AEMC proposes that dynamic regional pricing is applied only to generators and not loads. This misses the opportunity to optimise demand-side participation that responds to short-term pricing incentives in congested areas. This should be reconsidered as it could lead to more efficient outcomes as the demand-side is undertaking a more active role in the electricity market as the industry continues to transform.

#### *Firm access*

The AEMC intends that generators would be able to buy firm transmission rights in order to manage the risk of congestion. By purchasing firm access to the network, this would be used to underwrite the necessary network investment needed to physically provide that access. In this way, there would be a greater reliance on commercial transmission investment rather than the existing, centralised and regulated processes. The CEC cautions that there is significant detail to be worked through in relation to this proposal to give renewable generators comfort that it would deliver a net benefit.

We are concerned that firm access may not enhance commercial arrangements in transmission planning and augmentation. There is likely to be an information and power asymmetry between a generator and Transmission Network Service Provider (TNSP) as a result of a commercial entity negotiating with a natural monopoly. This imbalance could introduce significant risks and uncertainties, potentially leading to market inefficiencies as

a result of misguided investment decisions by generators and an increased time to connect as generators negotiate access and the associated network augmentation with the TNSP.

Firm access may also have implications for project viability and financeability. At the most extreme, firm access costs are an additional expenditure for new developments that could make proposed projects unviable. Even if firm access does not directly impact viability, consideration needs to be given to the extent that this increased expenditure will then need to be recovered through higher wholesale prices.

In terms of financeability, firm access could have an impact on the financing arrangements of renewable generators. Existing financing contracts are likely to require renegotiation to accommodate the changed arrangements. Firm access will also need to be accounted for in new financing contracts. The complexity of a firm access model may result in a risk that financiers with limited understanding of the firm access framework may decline financing or refinancing on the basis that a generator has not secured firm access.

The CEC also has questions about how the firm access proposal interlinks with the Regulated Investment Test for Transmission (RIT-T). The clean energy industry is seeking clarity and assurance that firm access and the RIT-T will collectively deliver efficient network augmentation. An inefficient outcome would be that needed augmentation is delayed as a RIT-T is delayed to allow a TNSP to consider firm access requests from generators.

Relatedly, we note it is difficult to allocate rights in a meshed network so clarity is required around what part of a network firm access would apply to and how deep into the network they would apply. This is a fundamental issue to resolve as inefficiencies in funding new transmission capacity could arise where different funding arrangements for generators and consumers are used for different parts of a network asset or an augmentation. This risks leading to an effective cross-subsidy. Likewise, establishing to what part of a network firm access would apply should also consider what type of service firm access would be, namely whether it will be a prescribed service or a negotiated service.

The CEC notes the discussion in the Supplementary Information Paper around how firm access could be priced and that it is likely that firm access would introduce a number of products that reflect different types of firm access rights generators may require. Different products may then require different pricing and procurement methods. The AEMC rightly acknowledges that further consideration is needed as to what access products would be most desirable by generators but as a principle, more products only increases the complexity of the framework, which compounds the issues previously discussed. The issue of different products is further complicated when considering whether and how rights could be transferred and when considering the design and length of any transitional arrangements.

### **The access reform proposal is insufficient to support the development of Renewable Energy Zones**

The CEC has supported the establishment of Renewable Energy Zones (REZs) since the concept was first conceived in the Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future (Finkel Review). REZs could benefit the market by facilitating more efficient access to the lowest-cost generation in regions with the best quality renewable resources, increasing economies of scale and improving

efficiencies in generation output. If REZs are well-planned, regional areas could benefit from renewable energy development and investment that is strategically located in respect to towns and communities. REZs have the potential to incentivise efficient renewable energy development to optimise the energy system and accelerate the development of the Australian clean energy sector.

The December 2018 final report of the AEMC's inaugural CoGaTi review concluded that changes to the access regime will facilitate REZs as a consequence of generators and prospective generators' commercial locational investment decisions. We do not consider that this view that REZ development will occur organically as a result of a new access regime is sufficient to support their development as it does not provide any discernible incentive to locate in the REZ. Perversely, there is some concern that the current identification of a REZ without sufficient incentive to locate in the REZ could even act as a disincentive to connect in a REZ. What's more, under firm access, developers would likely compete to find the sites with the cheapest firm access. This will correspond to large substations close to the highest voltage backbone in place of the regions with the highest quality renewable resources.

More work is required on how best to encourage developers to locate new generation in REZs. We urge the AEMC to incorporate this into its 2019 CoGaTi review process. Examples of potential incentives include but are not limited to:

- System strength is managed for the generators within the REZ so that they do not need to manage this on an individual basis.
- Generators in a REZ are afforded a streamlined and prioritised connection process.
- Coordination in the REZ is facilitated and could lead to shared connection assets and even storage, which has the additional benefit of providing additional commercial revenue streams and assistance with causer pays.
- Generators in the REZ have some form of Marginal Loss Factor (MLF) stability, for example there is a floor MLF for a certain capacity within the REZ.
- Generators in a REZ can undertake streamlined planning and environmental assessments.
- Government and the networks have an active role in managing community engagement for the developments and connection assets within the REZ.

The CEC looks forward to engaging with the AEMC and others as part of the technical working group on this issue. We would also welcome the opportunity to discuss this submission with the AEMC directly. If you would like to discuss any of the matters raised in this submission, please contact me on the below details.

Yours sincerely,



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