

4 August 2022

Ms Anna Collyer  
Chair  
Energy Security Board  
Via email: [info@esb.org.au](mailto:info@esb.org.au)

Dear Ms Collyer

### **Submission on Capacity Mechanism High-level Design**

CleanCo Queensland welcomes the opportunity to provide comments to the Energy Security Board (ESB) on the Capacity Mechanism High-level Design Consultation Paper.

CleanCo was established by the Queensland Government in 2018. We deliver renewable and low-emission energy solutions and play a critical role in supporting new energy developments to help Queensland businesses thrive in a net zero future. Given the nature of our existing assets and focus of our future investment, we have a strong interest in how the National Electricity Market (NEM) transforms to a low emissions future.

#### Overall comments

CleanCo remains of the view that the case for the introduction of a capacity mechanism in the NEM has not been made. While a capacity mechanism may increase certainty about what capacity is required and when, depending on the final design, it also has the potential to increase costs. There is also the risk that the capacity mechanism has negative impacts on the operation of the energy market and the investment signals that are provided through existing price settings.

However if a capacity mechanism is ultimately implemented, it will have a significant impact on how the market operates and how new investments are made. This submission seeks to provide constructive feedback on how the high-level design features could be refined to enable effective implementation.

This feedback recognises the guiding principles provided by Energy Ministers and how these impact the specific design features outlined in the Consultation Paper. CleanCo has reservations that opt-in and out arrangements could result in inefficient outcomes for the NEM overall but ultimately, it is a matter for individual jurisdictions to account for these outcomes. In relation to emissions reduction, CleanCo does not see a capacity mechanism as the right avenue to deliver this objective. However in the absence of any specific mechanism, CleanCo sees merit in the design of the capacity mechanism having regard to emissions reduction, particularly the level participation of fossil fuel-based generation.

#### Participation of new and existing capacity in the mechanism

CleanCo considers that it is appropriate that both new and existing capacity should be able to participate in a capacity mechanism. The NEM is an electricity system in transition and the capacity mechanism to be designed by the ESB needs to deliver both the physical reliability and security of the system in the immediate term as well as facilitating investment in new, dispatchable capacity. CleanCo agrees that focusing solely on new

capacity could result in higher cost capacity being procured and, particularly in the early stages of operation of the mechanism, risks that capacity is not delivered in time.

However, CleanCo is of the view that the participation of the pool of existing fossil fuel capacity must be on the basis that its role should actively diminish over time through the design of the mechanism, rather than just through the exit of capacity. This should be done in a way that promotes the timely exit of existing plant but has an emphasis on incentives for new capacity to enable the delivery of the required reductions in emissions levels over time.

#### Forecasting and procuring capacity

CleanCo agrees that a centralised forecasting approach undertaken by AEMO is the most appropriate. CleanCo also agrees that the capacity to be forecast and procured should be regionally based and based on the existing NEM regions (**Question 2**). This is particularly in light of the guiding principles regarding the recognition of State-based schemes and opt-in and out arrangements. This will ensure that the capacity requirements and the type of capacity that can be procured to meet that requirement is regionally specific. Noting the ESB's views regarding the treatment of intra-regional transmission capacity and interactions with transmission access reform, CleanCo supports further consideration of whether there are benefits from capacity being forecast and procured at a sub-regional level.

In regard to procurement, CleanCo supports consideration of a hybrid approach where retailers have a role in procurement (**Question 11**). The concern with a fully centralised approach is that it may not capture the efficiencies (and likely lower cost) of the market procuring capacity. In addition, the centralised approach offers less scope for retailers to manage the costs associated with the capacity mechanism. In this regard the second method outlined by the ESB (**Question 12**) is the preferred approach. Under this method, the retailer participation can be optional and level of retailer participation could be capped to give AEMO certainty about any residual auction processes. This approach could also play a role in providing greater certainty as part of the forecasting aspect as it gives some additional transparency about future demand requirements (**Question 1**).

#### How much capacity is required and when is it required?

When determining in what periods capacity is to be required, an important consideration is the level of value that will be apportioned to the capacity mechanism. In simple terms (and assuming that increasing costs to consumers is not viable), the implementation of the capacity mechanism will take some value from the energy market and transfer it to the capacity market. How much value is transferred between the markets is a relevant consideration to how often capacity will be required to be procured. It will also have implications for the incentives for existing capacity to supply, for new investments to be made and any potential changes to the settings in the energy market. As part of the detailed design of the capacity mechanism, CleanCo supports specific modelling/analysis being undertaken to understand the interactions between the value of the capacity mechanism and the changes required (if any) to the market price settings (**Question 37**).

The Consultation Paper also recognises the challenges in determining capacity requirements in a changing market. However, there is an inherent linkage between the requirements for capacity and the performance obligations on capacity providers and how capacity payments will be disbursed. The ESB has outlined a clear preference for Option 3, which effectively provides some rewards to capacity providers for being available throughout the year and greater rewards for being available when system stress events (i.e. LOR2 and LOR3) occur. CleanCo sees this as a reasonable approach to defining when capacity is to be delivered and would

remove some of the uncertainty about determining specific at-risk periods in advance. It also means that potential capacity providers within each region can account for the specific characteristics within that region when considering whether to participate in the capacity mechanism.

The ESB should consider options that enable potential capacity providers to determine whether they are available for the whole delivery year or specific periods, including intra-day periods that reflect the nature of different renewable energy resources. This might be as simple as replicating the approach in the PJM where capacity providers can choose between year-round provision or in either winter or summer periods but we recommend an approach tailored to regional conditions in the NEM. While noting the ESB's views on additional complexity, this is likely to become an important consideration in the NEM as the levels of renewable energy and the split between renewable energy sources differs between regions. CleanCo highlights the importance of a flexible and evolving approach to how these matters are incorporated in the capacity mechanism, particularly in light of the potential for shifts over time in demand throughout the day and between times of the year, as well as the incidence of renewables droughts (noting these will be more relevant at much higher levels of renewable energy).

#### Treatment of different types of capacity

In addition to the treatment of existing versus new capacity, the proposed capacity mechanism will need to account for a range of other dimensions in relation to technology including the "firmness" and reliability of different capacity types, the increasing role of energy storage with different durations and relative levels of emissions from different types of capacity. The Consultation Paper focuses heavily on the firmness of different capacity types in discussion regarding de-rating of capacity and how eligibility of capacity providers will be assessed. This is appropriate in the absence of other parameters but may risk attributing a higher value to existing and/or fossil fuel based capacity and lower value on new and/or lower emissions capacity.

It is evident from Sections 5.5 and 5.6 that de-rating methodologies used in existing capacity markets will generally see each megawatt (MW) of coal and gas capacity having more value than each MW of renewable energy and in many cases, storage. While recognising the limitations, renewable energy generation can be predictable and reliable in its output, with forecasting becoming more accurate on both long and short term timescales. This is in contrast to existing dispatchable capacity which is becoming less reliable as it ages.

CleanCo also supports the ESB's assessment that demand response can play an important role in the capacity mechanism and encourages the consideration of how a wide pool of demand response could be included in the forecasting and procuring of capacity.

As identified earlier, CleanCo recognises that existing capacity has an important role to play in a capacity mechanism, particularly in its early stages. However, the design of the capacity mechanism must be future-focused and actively promote the transition to a NEM with higher levels of renewable energy and lower emissions. In this regard, CleanCo suggests consideration be given to ways this can be done as part of the detailed design.

One way of achieving this could be allowances for existing and new capacity to participate in auctions, including placing limits on the participation of the pool of existing capacity and undertaking specific auctions for new capacity (**Question 15**). For the nearest term auctions, it is likely that existing capacity would meet most of the identified capacity requirement (as new investment may not be able to mobilise in time) but when considering future auctions, specific tranches of the capacity to be procured could be quarantined for new

investment. As the capacity mechanism matures, these tranches could be expanded to favour new investment, with reduced participation from the pool of existing capacity. Where existing plant is scheduled to close, it is likely to be lumpy and open up a significant capacity requirement in that year. Consideration should be given to specific auctions around delivery years where there are confirmed closures and whether only new investment can participate to fill the gap.

Alternatively (or perhaps additionally), capacity de-rating could include an emissions factor (**Question 16**). This would see the relative number of certificates that capacity can be allocated being a function of its firmness and emissions. While this would add additional complexity to the de-rating process, it would go some way to addressing the relative advantage that fossil fuel generation would have under a firmness-only approach.

While there may be a range of options to deliver new dispatchable capacity, it is highly likely that energy storage will be the preferred new entrant technology. For this reason, CleanCo supports specific consideration for the right design features that will support the delivery of new storage capacity. The options to be developed will need to account for the differences in applications for energy storage as well as storage duration. The ESB's suggestions regarding the provision of long-term contracts is a reasonable starting point and will help to provide the necessary certainty for new investments to be made. It is important to note that the certainty required will differ between projects, for example, the certainty required for a 2-hour battery will be different to long duration pumped-storage project. The relative requirements for different storage types and the incentives for new investment in the energy market should be considered when determining the length of contracts to be provided (**Question 17**).

CleanCo has not taken a specific position as to the level of price and quantity certainty is necessary to underpin new investment (**Question 18**). In general, there should be an objective of providing the minimum level of support necessary for investments to be made. There is likely to be a higher level of certainty in the forecasting of the amount of capacity required over time, so there is a case for giving a level of quantity certainty to new investments.

The case for price certainty needs additional consideration. The provision of a high degree of price certainty new investments via power purchase agreements has been a proven method of facilitating investment in renewable energy projects (noting that price certainty has generally been delivered through commercial arrangements). However, a key concern with the capacity mechanism is over-paying for capacity and locking in prices over a long-term contract introduces risk in this respect. Any provision of price certainty needs to account for this risk and ideally, prices should be determined via competitive processes.

CleanCo supports an approach that enables capacity in one region to meet capacity requirements in other regions and has a general preference for Option 2 as it would enable capacity to be explicitly sourced and create directly compliance requirement for capacity providers linked to the region they are supplying capacity to (**Question 41**).

#### Auction design

CleanCo agrees that the procurement of capacity should be directed at a specific delivery year and supports the undertaking of multiple auctions to procure capacity for that year. Rather than two auctions for a delivery year, the ESB could consider auctions for each year over the chosen horizon for a single delivery year, effectively "filling the book" of capacity procured over time (**Question 13**). The understanding of how much capacity may be required and who can provide it will improve as the delivery year gets closer and having more

frequent auctions will also support the trading in and out of capacity if circumstances change (e.g. an unplanned outage that would impact the ability of a capacity provider to deliver). In addition, the level of certainty at a particular time regarding a new project being delivered will vary for different technologies and more frequent auctions will be more likely to capture the varying investment timeframes. A bonding mechanism could be used to increase the certainty that capacity would be delivered on time.

There is merit in aligning the timing of auctions with the closure period (**Question 14**) but the further out the initial auction is from the delivery year, the less likely it is for new capacity to participate. While new capacity may have the intention to be operational by a certain date, there are a range of factors that will impact certainty around this, including meeting specific financial milestones and accounting for potential delays in construction and commissioning. As a result, the confidence to participate in capacity auctions will be impacted by these uncertainties. Also, as noted earlier, the exit of capacity is likely to be lumpy and the ESB should also consider how this is factored into the timing and nature of auctions for that delivery year, including specific auctions for new capacity aimed at those years.

CleanCo supports the concept of pre-qualification of capacity providers to participate in the auction process. This will give capacity providers a high degree of certainty about their participation and under a hybrid approach where retailers play a role in procurement, it will give confidence that they can contract with appropriate capacity providers. The ESB should consider whether participation should be at a plant level rather than a unit level. This could provide additional flexibility to capacity providers to manage planned and unplanned outages.

The ESB has identified the relevant considerations for the price and demand curve aspects of the auction. However, the detailed design of these aspects must account for the interactions between these features and be supported by detailed modelling, particularly when considering interactions with the price settings in the energy market.

### Compliance

CleanCo notes that the ESB is progressing Option 3 to detailed design and on balance, agrees that this is most likely to meet the guiding principle of complementing the existing market. Under this option capacity providers will be provided with revenue streams relating to ongoing performance and performance during events. CleanCo generally supports this approach as it will provide some degree of ongoing certainty for capacity providers but will also reward performance when the system is under stress (**Question 27**). While not having a preference for a specific split of value between the payment streams, CleanCo supports a heavier weighting towards event performance rather than ongoing performance as this is when the capacity is most valuable (**Question 28**).

CleanCo considers that is appropriate for payments for ongoing performance to be made on the basis of availability but additional consideration needs to be given to the basis for making payments during system stress events (**Question 31**). While noting the ESB's views on the effect on bidding behaviour, there is some merit in linking payments (at least in part) to dispatch during system stress events, perhaps a two-part payment based on availability and dispatch. While linking payment to dispatch may incentivise bidding to drive dispatch and receive payment, this must be balanced against capacity providers being available and bidding at high prices during these events. Capacity providers will receive a premium payment for capacity at these times and it is not unreasonable to require a physical "turning up" of capacity, rather than "just being there".

In suggesting this, CleanCo notes that the approach to system stress payments needs to recognise that not all capacity will be participating in the capacity market and the price outcomes in the energy market at times of system stress may be particularly important for non-participating capacity. In addition, while energy storage will play an increasing role in the market, it is inherently resource constrained. Depending on the duration of system stress events, it may be important for storage to limit its availability at certain times in order to preserve its energy levels and only be dispatched at the most critical times.

With regard to penalties for non-performance, further consideration is warranted in relation to actual penalties rather than just the forfeiture of capacity payments. At a minimum, non-performance should impact the ability of under-performing providers to participate in future years and consideration will need to be given to contracts that may have already been entered in to. However, given the physical nature of the capacity requirement, the ESB should consider whether additional financial penalties should apply. In suggesting this, CleanCo recognises that if the penalty regime is too onerous, it may risk an undersupply of capacity and/or increase its cost and this needs to be accounted for.

#### Cost recovery

CleanCo supports cost recovery via retailers and other market customers (**Question 38**). This approach aligns with the way costs are currently recovered in the energy market and is more transparent than cost recovery via network charges. CleanCo supports an approach where costs are apportioned based on load, with consideration to how costs are passed through for the ongoing versus system event payments respectively (**Question 39**). This approach offers greater incentives for the costs to be managed as retailers can manage their contribution to demand, and specific focus on demand at during times of system stress.

If you have any queries or would like to discuss this matter further, please contact our Principal Advisor, Regulatory, Andrew Burnett on 0429 800 612 or [andrew.burnett@cleancoqld.com.au](mailto:andrew.burnett@cleancoqld.com.au).

Regards,



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