10 February 2022

Ms Anna Collyer
Chair
Energy Security Board

Submitted via email: info@esb.org.au

Dear Ms Collyer

Capacity Mechanism – Project Initiation Paper

Stanwell Corporation Limited (Stanwell) welcomes the opportunity to respond to the Energy Security Board's (ESB) Capacity Mechanism Project Initiation Paper (Initiation Paper).

Stanwell is a major provider of electricity to Queensland, the National Electricity Market (NEM) and large energy users throughout Australia. While providing reliable and affordable energy for today, we are exploring new generation and storage technologies that will help reduce emissions while also ensuring Queensland's electricity supply remains secure and reliable.

This submission contains the views of Stanwell and should not be construed as being indicative or representative of Queensland Government policy.

Stanwell acknowledges there are increasing calls from some market participants, and at the federal government level for additional signals to incentivise investment in the reliability of dispatchable generation and firm capacity. On this point, whatever the solution, be it a capacity market or some other reliability mechanism, we maintain it must facilitate both a smooth transition to higher levels of renewables and deliver sufficient levels of dispatchable capacity. As such, we appreciate the opportunity to contribute to the ESB's development of a mechanism that can deliver a cost efficient, viable, and fit-for-purpose solution.

While supporting the concept of the ESB investigating whether an explicit capacity mechanism could form part of a suite of market reforms which support both the National Electricity Objective and stakeholder confidence in market design, Stanwell is concerned that the proposed timeline is inconsistent with the work described.

The ESB proposes to move from a loosely defined high level concept, to legislation in under 12 months. This may potentially belie both the "detailed design" and the acknowledged "*continued need to demonstrate why new market arrangements that explicitly value capacity, separate from the energy price, are needed to support the investment for a future net zero*

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emissions NEM."[1] Stanwell notes the proposed capacity mechanism is only one part of a suite of inter-related reforms and needs to be considered in this light.

There appears a significant risk that a quickly designed scheme will not be fit-for-purpose – for example, a scheme to cover an hours-long peak on summer days may treat short-duration batteries and long duration pumped storage very differently to one intended to address weeks-long "wind droughts".

Further, the terms of reference contain significant contradictions which Stanwell expects will take time to work through and will likely require more than the couple of design iterations as currently envisaged in the proposed timeline. Stanwell strongly encourages the ESB to prioritise a comprehensive coherent design over potential time pressure.

Stanwell notes the first deliverable in April includes:

- High level design for a preferred option for capacity mechanism;
- Advice on implications of the design principles for the detailed design process; and
- Advice on orderly exit management contract arrangements and interaction with the preferred capacity mechanism option.

Our comments on each of these deliverables are provided below, followed by our responses to the main elements of the Initiation Paper.

High level market design

Stanwell considers that at this early stage of the process, the high-level design should focus on identifying design options to eliminate, or confirm as low risk, without the need to be committed to all elements of the design.

For example, of the three design options proposed in the Initiation Paper, Stanwell considers that 1a – a fully decentralised market – is unlikely to address stakeholder's perceived need for unilateral interventions. It would also give jurisdictions less transparency and control than the current retailer reliability obligation (based on a centralised forecast), which some jurisdictions are already over-riding. On this basis we suggest the 1a design option not have significant resources expended on its development at this time.

Each of options 1b and 2 rely on a central forecast to determine the capacity requirement and hence liabilities, but we believe at this stage, it is not necessary to determine which specific forecast will be used.

[1] Energy Security Board, Capacity Mechanism Project Initiation Paper, December 2021, p8

Implications of design principles

In recognition that the capacity mechanism is only one element of an overarching market design, Stanwell also recommends that any market design advice be explicit about both what the capacity mechanism is and is not intended to be, including whether:

- the capacity mechanism is to operate in the planning timeframe with limited interaction with real-time markets. If this is to occur, there will need to be some level of commitment – potentially in MT PASA or a successor – however planning schemes should not require ex-post adjustments. Other mechanisms such as essential services markets, and operating reserves, that are under development to address real-time challenges should also be considered;
- the capacity mechanism is to be limited to resources which meet a level of visibility and predictability to support AEMO in projecting whether forecast supply (including demand response) is adequate to meet forecast demand. While market segmentation may evolve over time, Stanwell considers this would be limited to scheduled and semi-scheduled resources under current definitions. Non-scheduled and unregistered resources as well as resources procured for strategic reserves would then be ineligible for the scheme; and
- the "'heavy lifting' for investment should continue to come through signals in the real time market".[2]

Advice on orderly exit management contracts

Stanwell understand that orderly exit management contracts are intended to require a resource to remain in the market until an agreed point in time and then exit the market.

Consistent with the design principles above, the resource could therefore be required to offer capacity into the capacity mechanism until the agreed date, potentially at zero dollars, and become ineligible for capacity mechanism payments after that date.

Stanwell acknowledges the ESB has identified a "*continued need to demonstrate why new market arrangements that explicitly value capacity, separate from the energy price, are needed to support the investment for a future net zero emissions NEM.*"[3] In addition, we note the ESB has flagged that a "base case" is being developed to assess the costs and benefits of potential capacity market options.

Stanwell notes the Initiation Paper does not provide any detail or parameters around what the ESB considers to be the "base case".

[2] Energy Security Board, Post 2025 Market Design Options - A paper for consultation, Part A, April 2021, p31

[3] Energy Security Board, Capacity Mechanism Project Initiation Paper, December 2021, p8

As we stated in our response to the ESB's Options Paper in June 2021, any comparative analysis of capacity market options should consider current mechanisms coupled with other market reforms underway which may have positive impacts on resource adequacy (i.e., essential system services markets and operational reserves).[4]

Developing a base case that ignores other relevant reforms underway is likely to overstate the potential benefits of a capacity mechanism, and not truly represent the net benefits to the market and customers.

Assessing the capacity mechanism

Stanwell understands the need for a mechanism that supports more dispatchable capacity that is efficient, effective, and can be easily developed, implemented, administered, and regulated across the NEM.

As we have previously stated in our response to the ESB's Options Paper, Stanwell remains concerned about the risk of developing and implementing a capacity mechanism that is overly complex and costly. The cost of any new capacity mechanism will ultimately be levied onto customers, and therefore will need to be finely designed so as to balance increased reliability with increasing costs.

Overall, the assessment criteria presented by the ESB appear to be reasonable, and for the most part reflect the design principles set out by Energy Minsters.

We believe the ESB needs to provide clear direction on the functional requirements of the jurisdictional opt-in and opt-out provisions, specifically noting the possible implications for interconnected States, including mitigation strategies. We recognise the potential incompatibility between Energy Ministers principle 7 (supporting inter-regional contracting), and the opt-in/opt-out principles presenting a significant challenge to the design of a capacity mechanism.

Stanwell requests the ESB provide clarity on how it will factor this into its assessment criteria. While jurisdictions will always have the ability to derogate, a well-designed scheme should avoid the need and highlight the risks associated with such action.

Approach to design

Stanwell has carefully assessed the design options and the risks and benefits associated with both a centralised and decentralised approach, which are discussed in more detail throughout the remainder of this submission.

While not much detail has been provided to thoroughly assess which of the proposed options would work best within the context of the NEM, based on the information that we do have, it is Stanwell's view that option 1b (the decentralised hybrid option) is likely to be the most efficient model, and still provide a level of procurement and trading flexibly.

[4] Stanwell Corporation Limited, Response to Post 2025 Market Design Options - A paper for consultation, Appendix A, June 2021, p9

A decentralised hybrid option would allow jurisdictions, via AEMO, administrative and regulatory oversight of the capacity requirement for each region, while providing the benefit of allowing market participants to procure their capacity volume through their preferred approach.

We recommend the ESB exercise a level of caution when examining overseas examples for application within the Australian NEM. In particular we note international markets have been developed to address specific market circumstances and objectives in relation to their respective reliability concerns, market structure, and government policies. While it may be useful to look at some design elements of overseas examples, we would caution against assuming the same or similar elements could or would necessarily work within the NEM.

We also recommend the ESB consider domestic arrangements for supply accreditation and certificate creation, tracking, and surrender to identify elements that could efficiently be applied to the “reliability certificate” concept.

Core design areas for any mechanism that explicitly values capacity

Based on the information available, we suggest that while short term forecasting may work for maintaining assets in the market, it may not be conducive to incentivising investment where longer term forecasting is required.

Given the proposed key objective of a reliability certificate is to strengthen the long-term investment price signal within the market, Stanwell considers a minimum term price visibility of five to eight years is needed.

With respect to participants subject to the current notice of closure requirements, four-to-five-year forecasts would be required to determine whether to maintain assets in the market, while a longer lead time may be necessary for new-build proposals.

Defining at risk periods

As more weather reliant and energy limited generation enters the market, weather events will continue to increase reliability risk for the market. While we recognise that many factors will influence the ability of a generation source to produce at 100 per cent capacity, overall, these risk factors are changing from what the market has traditionally faced.

Based on the information provided, we are working with the assumption that at-risk periods encompass a designated time span and are not tied to a specific reliability event. With this in mind, we suggest further analysis is required to define in detail, potential at-risk periods a capacity mechanism is intended to address. In our opinion, relevant at-risk periods in the context of a capacity mechanism should include prolonged or forecasted weather-related events or long-term changes in resource availably.

Stanwell contends that a capacity market should not be expected to address sudden unexpected changes in supply/demand, nor fast ramping requirements. We suggest at-risk periods should clearly identify the periods a capacity mechanism would cover and where other, shorter-term response solutions such as operating reserves, strategic reserves, and

RERT would commence. This would help to ensure a defined level of capacity to address longer-term forecasted periods, and that there is mechanism in place to address shorter-term challenges in the market.

In any case, an at-risk period would need to be clearly articulated so that market participants can form a view about the likely occurrence of such events, particularly where market participants would be required to forecast their available capacity.

Forecasting methodology

When considering the practical application of a forecasting methodology to either a centralised or decentralised capacity market, we again see benefits and risks associated with both a centralised and decentralised forecasting approach. However, we do not believe a decentralised forecasting approach would provide jurisdictions with the confidence that reliability is under control.

A centralised approach to forecasting and procurement may offer simplicity and transparency, be easier to assess market compliance, and provide a simpler system to administer and regulate. However, observation of centrally forecasted and procurement markets indicate there is an increased risk of over procurement of certificates by AEMO which would increase expense for market participants that would ultimately be passed along to consumers. Further discussion on the proposed procurement options is outlined below.

On the other hand, a decentralised hybrid option with centralised forecasting may provide some oversight to assess load and reliability based on the number of certificates released. It may also meet a lower risk threshold for over forecasting by market participants and provide 'buffers' in the event of under forecasting. However, this mechanism comes with the risk that the central body may over forecast demand and be liable for a forecasting shortfall. In that case, the forecasting shortfall would then also be passed on to consumers.

In considering these options, we note that further information is required to understand how forecasting factors, including unused or excess certificates, would be utilised within a capacity market.

Certificate creation and derating methodology

The use of a centralised forecast should simplify the process of accrediting reliability providers and assessing the derating applied to their nominal capability. When considering the derating methodologies proposed, Stanwell prefers a simulated forward-looking derating methodology for variable renewable energy.

We do note however, that this approach poses a risk for demand side resources, and we question the ability of forward-looking simulations to accurately model new entrants into the market. These are matters that will need to be considered and addressed in the detailed design process.

More information is required in relation to battery derating to determine whether AEMO would decide when a battery would run. Currently decisions on running batteries are disaggregated, which makes simulating and forecasting for derating purposes difficult.

In relation to hybrid generation facilities, as these installations are likely to be more reliable than single fuel source variable generation, for the purposes of derating, liable entities with the ability to change demand side should be included in derating. Stanwell is also supportive of hybrid facilities being treated as a single facility for the purposes of derating. This would be consistent with the AEMC's recent final determination on the *Integrating Energy Storage Systems into the NEM* rule change.

Transmission impacts may also be able to be addressed through the use of a centralised forecast. Given the impact of transmission constraints to limit the ability of a unit to supply load during an at-risk period, Stanwell has several questions relating to the use of transmission constraints in a capacity mechanism, including;

1. Whether participants outside the market would be constrained;
2. What is the subsequent impact of transmission constraints on the number of certificates sold; and
3. Whether any physical limits are to be placed on interconnector trade during high-risk periods.

We draw strong parallels between the application of transmission constraints and location pricing within a capacity mechanism to that of a congestion management model. Stanwell has previously submitted their opposition to the introduction of a congestion management model within the NEM.

We also note that under the proposed capacity mechanism, AEMO would need to determine which liable entities could have reliability certificates based on whether they are constrained or unconstrained.

<u>Certificate trading and procurement methods</u>

When considering the procurement options, we believe much will depend on the design choice of the capacity mechanism. We agree with ESB's characterisation that a fully centralised market would lend itself to a regular auction structure, whereas a decentralised procurement market would benefit from access to bilateral trading and trading on exchange, while still providing the flexibility for additional auctions.

While we believe the hybrid decentralised approach will be the most appropriate to the NEM it will require process changes in relation to the granularity at which forecasts are published, and the imposition of minimum reliability hedge targets in the investment timeframe (five to eight years as we identified earlier in our submission).

Given the displayed customer preference to enter retail contracts close to the period, the reliability obligation may need to be separable from the financially responsible market participant obligations.

Unlike a centrally procured model, a hybrid decentralised model could require retailers to hedge a portion of their liable load early, while still providing the flexibility to defer the procurement of some of their reliability certificates to a later date at the risk of paying a higher price.

Any proposed procurement method should also include an option to 'buy back' certificates in the event of a reliability shortfall, with provision for continuous bilateral trading without the requirement to wait for AEMO auctions. This approach would still allow AEMO to hold trades and act as the central body between trades, however liable entities could secure their required capacity in the event of a reliability shortfall. This in turn would lessen the likelihood of unnecessary penalties.

We believe it is crucial these matters are carefully considered during the detailed design process.

Market power mitigation

Stanwell consider a high-level design is required before serious consideration of potential market power and any associated mitigations can occur.

The sources of potential market power are quite different in a fully centralised versus a fully decentralised capacity mechanism, or an auction-only versus bilateral trading design. In light of this, we believe the mitigation approach should be proportionally different.

Certificate creation is likely to be limited to registered energy market participants with the ability to physically support reliability. In the event creation and transfers are managed through a central registry, there will inherently be strong control on one side of the market.

Equally, the non-storable nature of reliability certificates, combined with the scheme operating in the planning timeframe, limits the likelihood of "hoarding" as unsold certificates would likely expire worthless.

Incentives and compliance

An incentive and compliance regime will be completely reliant on the preferred capacity design option.

In principle, Stanwell agrees with the characterisation of incentives and compliance as outlined in the Initiation Paper. However, a number of prior decisions would need to be made in relation to forecasting, design, trading, and procurement methods before we can properly assess which compliance triggers and penalties would work.

However, regardless of which high level design option is chosen, penalties should be sufficiently high to deter retailers from selecting to remain 'imbalanced' by not purchasing adequate capacity to cover a reliability event. Where retailers select to remain imbalanced, allocating RERT or auction costs to non-compliant retailers may act as a starting point when considering compliance penalties.

Conclusion

Stanwell acknowledges there is a need for some sort of mechanism that sufficiently values dispatchable capacity in the NEM. Any mechanism will need to provide additional signals to incentivise investment in the reliability of incumbent dispatchable generation and new firm capacity at the most efficient cost to consumers, while smoothing transition to higher levels of renewables in the market.

Based on our initial assessment of the information and options provided to date, the decentralised hybrid capacity mechanism option is likely to be the most efficient model, while still providing the required level of flexibly. In our opinion, this option would be easier for market participants to manage and enables the delivery of a more efficient market outcome.

However, we note there is still a very large body of work to be undertaken to more thoroughly develop a proposed model. The outcomes of that work are required before we can fully assess the potential opportunities and challenges of different capacity market models.

Stanwell appreciates the opportunity to contribute to the ESB's development of a mechanism to deliver a cost efficient, viable, fit-for-purpose solution, and we look forward to engaging with the ESB as this initiative progresses over the coming months.

We welcome the opportunity to discuss the matters outlined in this submission further. Please contact Ian Chapman on (07) 3228 4139.

Yours sincerely

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