10 February 2022

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Dear Board Members

Capacity mechanism Project Initiation Paper – December 2021

EnergyAustralia is one of Australia's largest energy companies with around 2.4 million electricity and gas accounts across eastern Australia. We also own, operate and contract a diversified energy generation portfolio across Australia, including coal, gas, battery storage, demand response, wind and solar assets, with control of over 4,500MW of generation capacity.

The National Electricity Market, like many electricity markets around the world, is going through an unprecedented transformation. Ours is somewhat unique in we are moving away from a heavy dependence on baseload coal without being able to rely on very large gas, hydro or nuclear power generation, nor rely on interconnection from any neighbouring countries. As our coal plants retire, the energy reserves and supply 'buffer' in the system will materially reduce. This will place much more significance on dispatchable resources, that will need to have different and complementary characteristics, to ensure the lights stay on as more variable resources enter the system, including on the demand side.

A well-designed capacity mechanism, that can adapt and maximise the benefits of new technologies and approaches, can help build this buffer, and so ensure we can accelerate the pace of decarbonisation without compromising reliability or costs to consumers.

The ESB should be clear in sharing this objective. That is, any capacity mechanism should work to achieve the level of reliability that customers want, and not simply give stakeholders comfort via commissioning discrete projects or preferred technologies.

In line with this objective, we consider that a mechanism needs to:

- **directly target what the power system needs in terms of reliability**. In our view this would be dispatchable supply that has the ability to perform a range of 'jobs' that complement large volumes of variable renewable resources. We think such a signal is missing from current market-based incentives, and thus can complement, not replace, those already found in the current NEM design.
- **harness the deep understanding that market participants have of their own risks**, and the options they have to manage these risks. This applies to grid-scale generation, including coal plant in managing their fuel supply, aggregators

who can orchestrate distributed energy resources, and retailers in hedging against the consumption characteristics of their own customer base. Importantly, making retailers accountable for reliability outcomes will allow the 'right' price signals to flow through to capacity providers, and this signal will intensify in proportion to anticipated reliability shortfalls, which are dynamic and will evolve throughout the transition.

- **be implemented in a way that allows flexibility and refinement as the market evolves.** The collective experience of other capacity markets is that they require continual adjustment. The flexibility, agility and innovation under a more decentralised mechanism may therefore offer some advantages for consumers. We also consider that any mechanism be implemented expeditiously, and again decentralised options may be preferred on this basis.
- **embrace the role of AEMO and governments to set the framework and provide necessary backstops to the market, then allow participants to drive innovation and value for consumers.** The decision between centralised and decentralised mechanisms, in delivering necessary confidence in outcomes, is not binary. There should, and always will be a role for centralised administration of any electricity market which gives policy-makers and stakeholders confidence. Our view is that wherever possible this role should be focused on framework development, monitoring, enforcement and then final emergency backstop powers. These backstop powers should not be enlarged to become the primary mechanism by which reliability outcomes are delivered.
- operate within a **NEM-wide, predictable and technology-neutral framework.** The ESB should highlight unworkable design settings in terms of excluding particular technologies, or having jurisdictions opt out entirely. A capacity mechanism can only work effectively and deliver least cost outcomes where it is technology neutral and accommodates cross-border power flows. Alternative arrangements would see a continuation of selective underwriting and erosion of investor confidence, leading to less efficient outcomes and long-term customer detriment.

We acknowledge stakeholder concerns about possible incentives on coal generation and associated carbon emissions, to the extent coal plant may be necessary to maintain reliability and power system security during the transition. The ESB states it will explore incentives on aging thermal plant arising from any capacity mechanism. This should explore **how such a mechanism would work alongside other market and policy settings**, thus presenting a comprehensive analysis of price, emissions and reliability outcomes. Specifically, a capacity mechanism is only intended to achieve reliability outcomes at least cost, and should complement other policy measures designed to achieve decarbonisation objectives.

Our detailed responses to the ESB's questions are attached. If you would like to discuss this submission, please contact me on 03 9060 0612 or Lawrence.irlam@energyaustralia.com.au.

Regards

Lawrence Irlam
Regulatory Affairs Lead

Responses to ESB questions

1. Considering the design principles from Energy Ministers, are there any additional assessment criteria the Board should use when assessing identified issues and possible solutions?	The criteria appear to be sound and broad enough to capture the design principles that are not explicitly mentioned, for example: • Affordability and duplication of costs (principles 2 and 6) — these should be addressed where the mechanism targets appropriate levels of reliability, allocates risk efficiently, minimises burden and does not exclude lower cost technologies. • providing more certainty on closure dates, ensuring timely investment in replacements and mitigating reliability risks (principles 8 to 10) — these should be covered under the 'optimal level of reliability' criterion. The criteria may not cover principles 12 to 14 which recognise jurisdictional matters, including the ability for them to opt out or into any national arrangements. The ESB is currently focused on deciding between high level designs hence it may be possible to accommodate jurisdictional-specific features in the next detailed design phase. The ESB's criterion 5, covering compatibility with emissions reduction targets, will be important in addressing stakeholder and jurisdictional concerns around potential life extensions for exiting coal plant. These concerns would extent to gas and possibly storage where it charges from predominantly emission-intensive sources or NEM regions. Rather than simply assessing the incentive effects arising from a capacity mechanism, the ESB should make recommendations on how a capacity mechanism should function alongside existing incentives, or how existing decarbonisation incentives need to be strengthened in order to facilitate a faster transition, while achieving objectives in terms of price, emissions reduction and reliability. That is, it would make little sense to design or evaluate a capacity mechanism based on whether it achieves emissions reductions. Different market incentives are required for each element of a service that customers value. An analogy would be to amend the LRET to exclude variable renewable technologies because they do not provide necessary system services. The ESB needs to consider, for example, how a capacity mechanism could enable a policy like the LRET, or similar policies with a decarbonisation objective, to be strengthened as it addresses reliability and cost concerns. There are many examples where such interventions work in tandem. The current RRO, under the NEG, was designed to work alongside an 'emissions guarantee' in the form of the Clean Energy Target. The NSW Roadmap includes LTESAs for long duration storage, specific 'firming' LTESAs as a backup, and a further set of obligations on retailers which will enlist capacity on the demand side. Many overseas markets such as the UK operate capacity mechanisms alongside emissions performance standards and carbon price floor support.

	Generally our expectation is that any capacity mechanism will not deliver reliability objectives in a least cost manner unless it applies equally across all NEM jurisdictions and is technology neutral. Given how cross-border flows contribute to reliability, emissions and price outcomes, we consider that it would be challenging to design a mechanism that harnesses competitive outcomes, whether a decentralised market or via centralised tendering, where jurisdictions opt out, or make decisions on eligible technologies. As noted in our covering letter, the accommodation of jurisdictional preferences relates to the reform objective, namely targeting reliability outcomes at least cost, and not simply a 'confidence' mechanism that delivers specific technology investment with cost and reliability as a by-product. Noting that government involvement is a spectrum rather than a binary condition, a further measure of success would be to design a mechanism that can complement and stem the current trend of selective underwriting, rather than duplicate or replace it.
2. Do you agree with the proposed approach to how the ESB will incorporate and address the Energy Ministers' design principles?	Each of the Ministers' 14 design principles reflect valid questions and concerns. However addressing each in turn would be counterproductive and unnecessary. Some are vague and overlapping. We agree that they should be converted into a clearer and more succinct set of criteria, subject to periodic check-ins with relevant jurisdictions, and this would be accommodated in the ESB's proposed staged consultation approach. Engagement with a specific jurisdictional working group is also prudent. Stakeholders would benefit from some level of transparency in how jurisdictions' thinking may evolve over this year, which could be reflected in minutes of the meetings of this working group, or a joint 'town hall' meeting with senior government representatives. Stakeholders have the opportunity to discuss issues with jurisdictional governments and Ministers privately and separately from the ESB's process. However they should be encouraged to initiate and engage in transparent debate as part of the ESB's consultation. This ensures all stakeholders are equally 'up to speed', misconceptions are not left lingering, and concerns are not raised by particular jurisdictions, at the behest of stakeholders, after the ESB has completed substantive analyses.
3. Are there specific design choices from international capacity markets the ESB should explore in a NEM context?	A common lesson from other markets is that they have been frequently reviewed and amended over time, including as part of scheduled reviews, as expected outcomes have not materialised. Design choices that allow flexibility or are resilient to change are therefore likely to be more favourable, particularly in the initial phases of any new market. Uncertainties arise as technologies change in terms of cost and their capabilities. The needs and expectations of customers can also be shaped by progressive changes in the technology mix, as well as by exogenous shocks. Storage and DER are two sets of technologies subject to particularly rapid change. Their potential role in providing 'firm' capacity has important implications on capacity market design:

	• BEIS is currently conducting a scheduled review of the UK capacity mechanism.[1] Its call for evidence paper has suggested that its mechanism may not accommodate the lead times for pumped hydro storage. Other markets have more broadly grappled with differential incentive needs for new and existing plant e.g. with split auctions and different durations of contract payments. • the need to rely on DER and long duration storage in providing firm capacity is expected to increase substantially. The materiality of these challenges may still be small in other markets. • The ESB has already identified that centralised mechanisms face challenges in accommodating emerging technologies, particularly as there is limited historic data to determine derating factors. These affect supply side considerations but also demand side as distributed technologies affect load and hence the timing and duration of 'at risk' periods. This reflects generally on the challenges in forecasting system needs like that for the ESOO which would underpin any centralised market design. The NSW Government has opted for a decentralised mechanism around DER capacity through its Peak Demand Reduction Scheme. The Government considers this to be a world first design. It involves a certificate-based obligation on retailers, recognising this is a preferable avenue to harnessing capacity from behind-the-meter and a means to encourage innovation, including scale benefits. Importantly, retailers are able to determine whether to procure certificates or pursue customer-facing options to meet capacity/ demand reduction targets and their share of liabilities. The close relationship between retailers and their customers in terms of predicting and self-avoidance of capacity shortfalls is something that should be reflected in the ESB's design considerations. Another domestic example of setting investment incentives on the back of retailer obligations, and of other pertinent features such as certificate trading, is in the LRET. Stemming from rapid changes in the technology mix, there is a lag between understanding future reliability challenges and implementing an appropriate response through market settings. While not a criticism of the ESB, it is telling that it has now sought to engage stakeholders in a discussion of 'at risk' periods, particularly the notion that these can arise in the Australian winter, after already consulting for so long on the need for resource adequacy mechanisms. It is clear that the future NEM will have high levels of renewable generation, increasing the influence of weather on reliability outcomes. We expect overseas markets are equally grappling with all of these issues. We encourage the ESB, including in tandem with the Reliability Panel, to try and elevate the discussion of reliability risks, and the inherent limitations in forecasting these risks. We consider that there is some level of complacency around AEMO's ESOO and ISP assessments, which share the same pitfalls as setting plant derating factors and defining 'at risk' periods which the ESB is now exploring through this consultation. As outlined further below we see merit in considering Reliability Options, which the ESB has identified as used in Ireland and Italy. This could potentially address issues around defining 'at risk' periods and provide market-based incentives for non-performance.

[1] https://www.gov.uk/government/consultations/capacity-market-2021-call-for-evidence-on-early-action-to-align-with-net-zero#full-publication-update-history

4. Are there other international examples of valuing capacity that the ESB should consider?	As above.
5. What design choices do stakeholders consider would work well for the NEM?	NEM characteristics that may warrant particular attention are: • the geographical diversity of power flows and the importance of inter-regional trade. This underlines the importance of jurisdictions not opting in or out of any mechanism. • the NEM is dealing with changing operational profiles and eventual exit of large increments of baseload coal. As the ESB identifies in section 5.7 of its report, allowing these generators to signal their capabilities through any mechanism will provide critical, and credible, information for the market as well as policy-makers. Excluding coal (and any other technology) results in this information being lost, possibly requiring an out-of-market solution, or relying on PASA or notice of closure requirements which have shorter horizons. • the importance of managing network congestion, combined with expected 'efficient' overbuilding of VRE to manage seasonal demand and across jurisdictional boundaries. We consider this would be best dealt with by giving participants more flexibility in self-determining their availability, as part of managing their congestion risk in general. • the prevalence of rooftop solar in Australia and associated opportunities for distributed storage, including EVs, in providing orchestrated DER capacity. As noted above, this lends itself to more decentralised options particularly via the role of retailers. • the politicisation of reliability issues and differing interests of jurisdictional governments. Mechanisms should provide for market transparency and reporting, with clearly defined intervention powers by AEMO to back up the market.
6. Are there design choices from these international examples that stakeholders consider will not work well in the context of the NEM?	As above.
7. Do you have any views on whether there are other design areas the ESB will need to	The ESB has adequately identified the core design areas. There are important adjacencies or contextual factors that are likely more important for detailed design considerations, or as part of the institutional arrangements that underpin the mechanism, including:

consider in the design of a capacity mechanism?	• Certainty and stability for participants in order to invest. This goes to the processes and credibility of how parameters are determined, including any interactions between, and specific roles of, jurisdictional governments and independent market bodies. • Flexibility in dealing with changing technologies, participant behaviours and external shocks. While somewhat counter to stability, any mechanism will need to be subject to transparency measures and monitoring to ensure customers and policy-makers can see and judge market outcomes. There should also be appropriate review points, or emergency intervention mechanisms, where outcomes are demonstrably undesirable. • Generally the extent to which AEMO will retain existing functions. This includes making forward projections under the ESOO, PASA assessments and RERT activities. There may be benefits in aligning AEMO's forecasting practices, including derating methods under a centralised mechanism. Alternatively, there could be benefits in having AEMO continue its practices independently and in parallel with decentralised markets. • As noted above the ESB should consider the extent to which these mechanisms work alongside separate policies that achieve decarbonisation objectives. • Certain design elements may better integrate with other interventions contemplated by the ESB, including jurisdictional reserves and potentially exit mechanisms for coal plant. • Any transitional issues in moving away from the current RRO.
8. Has the ESB accurately reflected the trade-offs to be considered for each core design area?	It is not clear which trade-offs the ESB is referring to in section 5 of its paper. However it appears to have outlined the main decisions on each of the core elements within the options it has proposed. As per our response to question 10, the ESB should consider the ability of generators, storage and DER providers to self-determine their availability. On a fundamental level, the ESB is seeking feedback on how a potential capacity mechanism could be designed to achieve two limbs of Ministers' overall policy objective: 1. Ensuring investment in an efficient mix of variable and firm capacity that <u>meets reliability at the lowest cost</u> by: o facilitating the timely entry of new generation, storage and flexible resources o facilitating or complementing the orderly retirement of ageing thermal generation o complementing other market arrangements addressing resource adequacy.

	2. Increasing government and community confidence that the market will deliver resource adequacy and thereby reducing the need for interventions over the longer term.[2] There is arguably a trade-off between these two objectives. The ESB articulated its view of the key choice between decentralised and centralised mechanisms, in terms of efficient risk allocation versus certainty of having 'steel in the ground': > Some choices decentralise the allocation of risk to market participants, where liable entities (retailers and market customers) will balance the risk of paying for over procurement with the risk of facing a penalty for non-compliance. Conversely, others use a centralised forecasting and/or procurement approach. This increases certainty for jurisdictions and market bodies but increases the risk of all consumers paying for over-procurement. There are trade-offs to be considered between any of these options.[3] In our view, design choices that are more decentralised will provide for more efficient investment and also be more effective in ensuring reliability is maintained. This is a more genuine and sustainable pathway to gaining the confidence of policy-makers. Importantly, the ESB needs to explore the nature of stakeholder 'confidence' in that centralised mechanisms may involve over-procurement and higher costs, but this is not necessarily traded off for higher levels of reliability. Having one body as the central procurer means that forecasting errors inherent in their process, including the causes, frequency, timing and duration of reliability events, are magnified across the whole market. Perversely, this could expose participants to additional uncertainty in the energy only market. The benefit of a decentralised model is that this inherent risk and its impacts should be reduced. Importantly, where accountability for reliability is put primarily onto retailers, they are able to take steps via existing measures in the energy only market as well as manage their risk exposure in the capacity market. Note the issue we raise here in terms of potential over-procurement by a central agency is in addition to forecast error. That is, even if such an agency had access to the same information and methods as 'the market' under a decentralised mechanism, its aversion to risk would lend it to over-procure, which is typically the concern and experience with centralised mechanisms. Centralised procurement can also distort market outcomes by increasing the risk of investments that might otherwise take place outside of such a mechanism, or in previous procurement rounds. Where there is a significant divergence between the capacity shortfalls determined by a central agency and those anticipated market participants, this is an added source of uncertainty and eventually erodes the value of investment, in a similar way as direct ad hoc government procurement would.

[2] ESB, *Capacity mechanism Project initiation paper*, December 2021, p. 6.
[3] ibid, p. 4.

9. Do stakeholders have views on the definition of reliability at risk periods?	We agree with the multifaceted characterisation of 'at risk' periods. We have found many stakeholders to be approaching resource adequacy issues in terms of the historical 'summer peak' mindset, with temperature driven maximum demands and associated derating (or outages) for system elements. Part of the difficulty in engaging on this issue is that historical data, for example the reference years underlying AEMO's projections, may not fully capture weather events or the behaviours of evolving technologies. The difficulties in defining, a priori, all the relevant events and associated periods of resource scarcity in a changing energy system need to be publicly debated. This may ultimately change the customer expectations of reliability which ultimately underpin these design discussions. It would also be useful in highlighting the limits of any market mechanism and the expected role of backstop interventions like RERT. There seems to be little value in attempting to extensively define at risk periods for a future NEM, highlighting a general shortcoming of centralised mechanisms. Setting pre-determined derating factors is linked to this, since one must predict how much capacity will be available for all technology types at those set times, and many years in advance. The market design needs to be flexible to capture this as it evolves, and in our view, this is best left to market participants under a decentralised model. In the 'physical RRO' model we have been discussing with stakeholders, 'at risk' periods would be identified in any LOR2 notice, which engages compliance and penalty provisions. Ahead of this, retailers are 'always' liable and so monitoring the likelihood of scarcity events arising at any time. Under Reliability Options, which function as cap contracts, 'at risk' periods are tied to times of scarcity pricing. The strike price of these Options can be calibrated to capture more or less 'at risk' periods, and could be set by AEMO, governments or as part of reliability settings. As per the Irish model, these Options could involve 'stop loss' limits in order to protect generators from unusual events, in the same way as the CPT operates as a backstop in the NEM currently, although with potentially the same distortions to 'pure' efficient price signals.
10. Which of the above derating methods would work best and why?	This section of the ESB's paper discusses historic or simulation-based methods for derating renewable generators and rules or similar methods relating to storage. A further option exists whereby market participants are free to self-determine how much capacity certificates to issue and thereby an implied de-rating factor. This reflects a full allocation of risk of non-performance onto parties that arguably have better insights into many of the requisite technical and commercial drivers affecting reliability. These entities would likely use a combination of historic and simulated data in arriving at their decisions. Such decisions would reflect their own individual risk appetite and measures they have to mitigate such risk, including ensuring appropriate fuel supplies, backup generation or hybrid storage, monitoring of plant condition etc. Rather than a 'once off' capacity allocation, such entities could be allowed to purchase or sell certificates ahead of time as new information comes available. Such an approach would require careful

	calibration of non-performance penalties e.g. to reflect customers' willingness to pay or last resort procurement costs under a 'causer pays' type arrangement. The ESB appears to appreciate the value in such an approach in section 5.7 of its paper. Critical information could be gained from observing if and when owners of aging coal generators withdraw certificates from the market after they are issued. The value from observing market participant dealings in certificates extends to all technology types. To the extent certificate allocations are centrally determined, this information is lost. Should there be any discomfort in allowing participants absolute freedom to self-determine their capacity ratings, the ESB could consider AEMO oversight. Plant owners should already be subject to requisite market registration requirements, providing some surety that they are solvent enough and capable in generating output when needed into the future, and could be subject to upper bounds for derating factors e.g. reflecting nameplate capacity. Deratings under a centralised approach should be based on whatever data and methods are appropriate and available given inherent uncertainties in forecasting and different technology characteristics. That said, it seems necessary to lock in a method to provide certainty for participants, which could provide for ongoing monitoring of forecasting accuracy and review triggers where errors are significant. A mechanism with a deterministic supply side may also provide more stability and predictability on the likely forward value of procurement (whether demand is centralised via auction or procured from a market via load serving entities), potentially lowering risk of investment in new capacity.
11. Are there any other issues the ESB needs to consider when developing the approach to defining capacity?	N/A
12. In the context of the NEM, what do you consider to be the main advantages and disadvantages of the three options outlined above?	The three options in relation to demand-side settings are decentralised (retailers procure directly), centralised (AEMO procures) and a hybrid decentralised model whereby AEMO centrally determines total certificate demand which liable retailers must then purchase (including under a centralised or aggregated auction). As the ESB notes, further work is required to explore how a hybrid model would allocate liabilities to retailers. We do not yet understand what advantages this would have over a fully centralised or decentralised option. Without the ability of retailers to determine their own load / certificate needs, it does not yield the efficiency benefits associated with decentralised risk allocation. AEMO would still likely over-procure capacity requirements while also placing administrative burden on retailers. The allocation mechanism creates challenges in determining what is a fair or efficient allocation of costs. Having a pre-determined liability ahead of time removes the ability of retailers to self-manage their liability through potentially cheaper demand response at times of resource scarcity.

	A hybrid option could still give some flexibility in allowing retailers to procure their target level of certificates, and generators to sell certificates, at a timing of their choosing, including through a market platform. The main advantage of a decentralised forecasting and procurement of capacity is that retailers have better information on their needs as well as the commercial driver to procure only the necessary volume of certificates, and at the best price. This directly flows from an efficient allocation of risk, including demand uncertainty but also in identifying 'at risk' periods. In this way it will work better towards achieving the level of reliability that customers desire, and at least cost. A drawback of decentralised forecasting and retailer obligations is that it will disproportionately burden entities serving smaller and less diverse loads. Even larger retailers will face risk in projecting demand far enough ahead that matches the lead-times for constructing many types of capital-intensive plant, particularly pumped hydro, where they are deemed necessary to address credible reliability risks. However this does not mean that a decentralised model provides 'weak' price signals. For example, compared to the current RRO, for decentralised models to be effective they must be 'always on' in terms of requiring retailers to be compliant all of the time, only with enforcement and cost recovery or penalties tied to actual shortfall events e.g. load shedding, LOR notices etc. By taking on additional financial responsibility for reliability outcomes, retailers will face stronger incentives to forward purchase certificates than in current contract markets where they anticipate resource scarcity. Moreover the certificates they purchase under this model must be physically backed. The homogeneity and fungibility of certificates should also allow for the formation of forward price expectations, such that investors in firm and flexible capacity can assess potential revenue streams. To be clear, the point of a decentralised model isn't to guarantee investment as under centralised procurement, it is to provide an efficient price signal to support investment where there is a shortfall. This is not a weakness in comparison to a centralised mechanism, it is a strength. Hence while centralised auctions will directly target capacity and provide stronger investment signals over longer time horizons it will potentially over procure or procure capacity that does not reflect the 'true' needs of the system, and so result in higher costs for customers. However in the context of the NEM, with demonstrated political unease at the ability of markets to deliver outcomes, a centralised mechanism is more likely to give governments confidence in some idea of pre-determined investment taking place. As noted above, however, this 'confidence' does not necessarily translate into better reliability outcomes for customers given the centralisation of determining at risk periods and associated distortions to any investment signals coming from the market at large. As is the case with plant derating and self-certification, the ESB should consider options under a decentralised model where AEMO has an oversight role, or by having 'guardrails' imposed that provide stakeholders some confidence that the market is 'working'. For example, trades of certificates would be visible, alongside a registry of certificate holdings and issuance. An obligation could be imposed whereby retailers must hold at least, say, 70 percent of total certificates on issue 6 months from the commencement of a compliance period for when

	certificates are valid. Certificate holdings (or issuances) could be subject to audit, for example if a participant was seen to be holding in excess of their likely requirements. In exploring design options, we recommend against any hybrid mechanism that involves AEMO or ministers determining 'triggers' which engage retailer compliance obligations. This would not provide sufficient certainty for investment. A further advantage of a centralised option, in terms of apparent jurisdictional preferences, is that it is more amenable to choosing desired or excluding undesired technology types. That is, centralised procurement can pre-determine eligible bidders and volumes to procure. Attempting to exclude portions of existing capacity under a decentralised model would require some sort of scaling down of retailer liabilities such that certificate demand was in proportion to new capacity, or only funds 'desirable' existing capacity (e.g. not coal generators). Alternatively, decentralised procurement could still take place on unadjusted, actual retailer load, while still penalising carbon intensive plant by scaling down the price generators receive for individual certificates in proportion to emissions intensity or similar metric. Retailers would still pay market price for these certificates, and certificates would otherwise be identical and fungible. The difference between the price retailers pay and what generators receive would be recoverable by the relevant jurisdictional government and used for other purposes, such as compensating customers in carbon-intensive parts of the NEM. A better approach would be, of course, to have a separate mechanism that targets a decarbonisation objective. This could also be output (MWh) based rather than tied to capacity, and hence proportionate to actual carbon emissions.
13. Which of the procurement approaches is best suited to the NEM and why?	Any of the approaches listed could be adopted, noting the prevalence of trading and existing platforms, and AEMO's experience in administering capacity auctions in the WEM.
14. Which of the options outlined above can be expected to work best in the context of the NEM?	Consistent with our response to question 10, our view is that market participants are best left to accommodate network congestion as part of their decisions to offer capacity, based on their knowledge of expected power flows and risk appetites. This also applies to the potential use of Reliability Options i.e. generators would offer options relative to their ability to be available for dispatch.
15. Are there any other issues the ESB needs to consider when developing the approach to transmission constraints and interconnectors?	As above we consider any capacity mechanism needs to accommodate the free flow of energy across regions. Accommodating jurisdictional wishes to opt out of a mechanism, or exclude technology types e.g. coal plants in other regions, will be highly problematic.

16. Are there any suggestions for other ways that market power could be mitigated?	We recognise that several stakeholders have concerns around market power potentially arising in changing market arrangements and this should be explored by the ESB. Note that all interventions involve compliance costs which tend to disproportionately affect smaller participants due to economies of scale and scope. In our experience regulators and market bodies rarely explore this when evaluating interventions. At the same time there are instances where large vertically integrated entities are specifically discriminated against, for example, timeframes for implementing the Consumer Data Right[4] and deferral of network charges due to covid impacts.[5] While cost differentials indirectly affect competition by creating barriers to entry, they are not the same thing as the presence or exercising of market power. Concerns stemming from concentrated ownership of pivotal assets can be overcome by maximising available supply. Models involving decentralised supply and demand are based on generators and retailers contracting to cover electricity load in aggregate. This scale and diversity will produce more competitive pressure and liquidity than models where only a portion of capacity is covered, for example where thermal plant are excluded, or where auctions are targeted at relatively small increments of new capacity. The transparency gained via decentralised trading of certificates would also provide visibility of any parts of the market and time periods where market power was exercised. Any anti-competitive behaviour could be policed under existing legislation e.g. sections 46 and 153F of the *Competition and Consumer Act*.
17. What kinds of market power issues are likely to be of the greatest concern?	As above.
18. Are there any other issues the ESB needs to consider when developing the approach to market power mitigation?	As above.
19. Which of the options for demand side incentives and compliance would work well, or not work well, and why?	Compliance penalties need to reflect customers' willingness to pay and other reliability settings in order to properly incentivise retailers, in the face of uncertainty, to contract capacity and pass on costs, procure demand management, or incur penalties, in accordance with the level of reliability that customers value. Penalties should also consider RERT costs in the case any retailer non-compliance contributed to a capacity shortfall that needed to be covered.

[4] https://www.cdr.gov.au/rollout
[5] https://www.aemc.gov.au/rule-changes/deferral-network-charges

	Penalties under the hybrid option should only be administrative and as per other AEMO directions. That is, it does not make sense to calibrate penalties as an incentive as retailers generally under this option have little flexibility in their compliance options. While unrelated to penalties and compliance considerations, the ESB should give some consideration to options for recovering centralised procurement costs, specifically the ESB presumes this would be retailers, and in proportion to regional demand. An allocation method based on 'actual' demand versus forecast, and potential inclusion of non-performing generators, should have some positive incentive properties.
20. Which of the options for supply side incentives and compliance would work well, or not work well, and why?	As above the ESB appears to be ruling out a decentralised supply side which would, in theory, do away with the need for complex derating, monitoring and enforcement. Non-performance against any certificate would attract a share of costs associated with RERT procurement to make up the shortfall. The ESB recognises the merits of at least some flexibility here in discussing the prospect of participants selling back certificates where there is a material change in plant availability, although only seems to contemplate reductions in plant capabilities. Where this has been centrally determined, plant owners would presumably want this freedom immediately in the event they disagree with AEMO's derating. Without some degree of flexibility, it does not seem appropriate to penalise non-performing plant in excess of refunding capacity revenues. Reliability Options may have merit in terms of providing a natural incentive for generators to back any instruments they sell to avoid spot price exposure.
21. Are there any other issues the ESB needs to consider when developing the approach to penalties and compliance?	Imposing caps on penalties with respect to high and sustained spot prices under Reliability Options or any penalty regime tied to spot prices will have some distortionary effects. Ideally there should be consistency between parameters in the capacity and spot market, reliability settings, VCR values and jurisdictional requirements (e.g. N-2 under the NSW Roadmap).