10 February 2022

Ms Anna Collyer
Chair
Energy Security Board

Dear Ms Collyer

Capacity Mechanism Project Initiation Paper (December 2021)

Hydro Tasmania welcomes the opportunity to respond to the Energy Security Board's *Capacity Mechanism Project Initiation Paper*.

Energy Ministers have directed the ESB *to '…develop the design for a market mechanism that ensures investment in an efficient mix of variable and firm capacity that meets reliability at the lowest cost.'* The implementation of a capacity mechanism in the National Electricity Market (NEM) would constitute a major amendment to current market frameworks and must be carefully considered.

Central to the ESB's work is the requirement for a market design that supports the transition of the energy sector and balances the requirements and concerns of a wide variety of stakeholders. Energy market participants (including Hydro Tasmania), investors and industry associations have continually pushed back against the introduction of a capacity mechanism. Instead many participants believe that the introduction of markets for Essential System Services coupled with adjustments to the reliability standard and settings can support future reliability and investment. This continues to be Hydro Tasmania's position.

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In our view, the success and stability of the NEM since its inception has been underpinned by several key design features:

- **Energy only design**, supported by appropriate reliability standard and settings;
- **Rich provision of information** to all participants to facilitate decentralised decision making;
- **Co-optimised spot markets** for energy and FCAS;
- **Liquid financial contracts markets** and no compulsory forward (ahead) markets; and
- **Harnessing the benefits of effective resource sharing and interconnection** between regions.

We remain concerned that fundamental changes to these core elements will risk disruption to both the market and its participants. Notwithstanding this, we acknowledge that the ESB's work on a capacity mechanism will proceed as per the direction of Energy Ministers. Accordingly, Hydro Tasmania has used the 14 design principles set forth by Energy Ministers as a framework to qualitatively assess the suitability of the high-level design options presented by the ESB. While noting that this is an initiation paper, our internal reflection is that if it is to be implemented, a Centralised Capacity Mechanism is the most likely to meet the expectations and design parameters set out by Energy Ministers. Our rationale for favouring a centralised mechanism is set out in **Attachment A**.

The perceived need to introduce a capacity mechanism signifies an anticipated failure of existing market frameworks and settings to deliver the required investments in new dispatchable low-emissions generation and storage. It is therefore, important that the Reliability Panel undertake their *Reliability Standard and Settings Review* (RSSR) alongside the ESB's Capacity Mechanism design process.

The ESB have indicated their intent to model the efficacy of any proposed capacity mechanism design, against a 'base case' scenario using the existing reliability standard and settings framework. Noting the interdependencies between the RSSR and a potential capacity mechanism design, we consider it will be crucial that the ESB draws insight from the work of the Reliability Panel, and vice versa. In undertaking this analysis, some additional sensitivities should be conducted on the ESB's 'base case' to investigate the impacts of adjustments to reliability settings such as market price cap, cumulative price threshold and/or other settings.

The ESB have also noted in the Project Initiation Paper that *'…there is a continued need to demonstrate why new market arrangements are needed to support investment for a future net-zero emission NEM.'* Hydro Tasmania strongly agrees with this observation. In our view, this problem statement should clearly identify the anticipated challenges in investment and

operational timeframes that we are seeking to resolve and how the introduction of a capacity mechanism will address those. For instance, these future challenges may include:

- Ensuring sufficient supply to manage **periods of low VRE output** (i.e. 'dunkelflaute' events);
- **Significant ramping requirements** to meet evening demand as output from solar PV diminishes;
- **Peak summer days** where power system is experiencing significant stress due to plant failures;
- Ability to manage an **over-abundance of VRE** supply;
- **Investor reluctance** to commit to long-lived capital intensive projects;
- **Build-out of critical infrastructure** identified through the Integrated System Plan; and/or
- A variety of **other future challenges** to maintaining reliable supply.

Hydro Tasmania looks forward to ongoing engagement with the ESB as this work progresses. If you wish to discuss any aspect of this submission, please contact me ((03) 8612 6443 or colin.wain@hydro.com.au).

Yours sincerely,

Colin Wain
Manager Policy Development

Attachment A – Hydro Tasmania's qualitative assessment of design options

To guide the ESB's development of a suitable capacity mechanism, Energy Ministers developed a list of 14 design principles (Attachment B). Hydro Tasmania has carefully considered the high level design options against these principles. Our initial assessment indicates that a Centralised Mechanism is most likely to deliver upon Energy Minister's expectations. This is explored in further detail in the sections below.

Principle #3 - Provide a signal to value capacity that best supports the needs of the NEM

Long-term signals are critical to supporting new investment – particularly for long-lead time investments such as pumped storage hydropower. A framework that only provides near-term signals will likely result in a sub-optimal mix of assets and will not represent a least-cost outcome for consumers in the long-run.

Decentralised approaches rely on the willingness of participants to enter into long-term contracts. While this is entirely possible under decentralised models (and was expected to occur under the Retailer Reliability Obligation), it is not clear that Energy Ministers have sufficient confidence in the market's ability to deliver a long-term reliability outlook in this way. Retailers will typically build their retail book 3-4 years ahead and in some cases it may be impractical for them to take a longer-term view due to risks of customer churn and regulatory environments. If a capacity mechanism is to be implemented in the NEM and meet the expectations of Energy Ministers, it will require more than a three year forward price signal – if it is to deliver superior outcomes to the current market.

In contrast, it would be relatively easy to incorporate long term contract support in a centralised mechanism. Centralised mechanisms such as the "Reliability Options" mechanism in the Irish market provides contracts for up to 10 years for new assets. This is critical in providing the long-term revenue certainty required to underpin investor confidence for long-lived assets. This challenge was explored in the IEA's Hydropower Special Market Report[1], and was also a key finding in the Clean Energy Council's recent publication[2] "Hydropower: the backbone of a reliable renewable energy system".

[1] https://www.iea.org/reports/hydropower-special-market-report
[2] https://assets.cleanenergycouncil.org.au/documents/resources/reports/Hydropower-The-Backbone-of-a-Reliable-Renewable-Energy-System.pdf

The flexibility of plant must be considered

The ESB have been tasked to design a capacity mechanism that can deliver *'...an efficient mix of variable and firm capacity that meets reliability at the lowest cost.'* As the ESB has noted commendably in section 5.1.2. (Derating methodology) not all capacity is the same, and each asset type will bring with it a unique set of operational capabilities. As stated above, Hydro Tasmania considers it crucial that we carefully identify the investment and operational challenges that we are seeking to overcome to inform the design of a capacity mechanism. Doing so can ensure that the market design supports investment in assets that can be called upon to respond during 'at-risk periods'. Further to this, Hydro Tasmania has previously highlighted the issue of 'perfect foresight' in the application of modelling approaches. This can tend to overestimate the effectiveness of shorter-duration storages and should be considered when designing the accreditation framework and the required mix of plant capabilities.

A centralised mechanism would allow AEMO to carefully consider the range of plausible future operating conditions, and the asset capabilities required to maintain reliability under these scenarios. It is therefore likely that a centralised forecasting and procurement approach may more easily articulate and respond to overall system needs.

Principle #4 - Complement existing energy only market design and well-functioning markets for financial contracts, and other reforms in development

A centralised 'reliability options' approach is most likely to complement the existing 'Energy Only' market as it commands a physical response, whilst retaining strong linkages to financial outcomes/spot market. Given its contract structure would be aligned and coexist with instruments in the existing contracts market (e.g. Caps) it is also less likely to disrupt existing contract markets.

Conversely, we consider that any approach that introduces physical capacity certificates (decentralised or centralised), through the introduction of a trading instrument that is not directly linked to the spot market, is far more likely to disrupt existing contract markets, and may also require re-assessing retail pricing arrangements and re-opening of industrial supply contracts.

The financial derivatives market has been fundamental to the success of the NEM. Liquid contract markets have allowed for market participants and retailers to manage their exposure to spot price volatility, and allowed the autonomy for stakeholders to contract in line with their own strategies and risk appetite. Hydro Tasmania considers this to be one of

the most important market dynamics to protect and retain when designing a potential capacity market framework.

Principle #8 - Provide greater certainty around closure dates of exiting generation; and Principle #9 - Mitigate reliability risks presented by unexpected closures of existing capacity

The proposed options are unlikely to provide greater certainty around closure dates for coal closures or mitigate the risks of such unexpected closures. We believe these issues are best addressed by the ESB's proposed provisions for managing early plant exits including provisions for jurisdictional strategic reserves.

Attachment B – Energy Minister Design Principles

1. *Be consistent with the National Electricity Objective*
2. *Focus on affordability, reliability, security, and continued emissions reduction of electricity supply*
3. *Provide a signal to value capacity that best supports the needs of the NEM*
4. *Complement existing energy only market design and well-functioning markets for financial contracts, and other reforms in development*
5. *Minimise regulatory burden for market participants*
6. *Safeguard energy consumers. In particular:*
    a. *ensure costs and revenues are efficiently and fairly allocated; and*
    b. *avoid duplication of costs to secure reliability.*
7. *Ensure sharing of resources across the NEM by supporting inter-regional contracting*
8. *Provide greater certainty around closure dates of exiting generation*
9. *Mitigate reliability risks presented by unexpected closures of existing capacity*
10. *Encourage the timely replacement of existing capacity through driving commitments to new investment within reasonable notice periods of closure of existing capacity*
11. *To the extent it does not conflict with state and territory policies, be technology neutral to ensure a focus on the ability of each resource to deliver generation on demand, for the periods when it is most needed*
    a. *Jurisdictions must be able to determine, via their regulation, provided for in the National Electricity Law framework, which technologies are eligible for participation in a capacity mechanism in their region.*
12. *Recognise relevant state and territory policies and investment schemes to account for bespoke arrangements to retain and replace existing capacity*
13. *Enable jurisdictions to opt out, via the National Electricity Law framework*
14. *Enable jurisdictions to opt in, through triggered thresholds for the mechanism.*