

8 March 2018

Energy Security Board

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Dear Energy Security Board

### **National Energy Guarantee Design Paper**

Hydro Tasmania has reviewed the *National Energy Guarantee Draft Design Consultation Paper* and looks forward to contributing to the development of this important national reform. The Guarantee represents an opportunity to design an enduring energy framework that responds to the needs of a changing Electricity Market and address the needs of consumers.

The following principles have informed our assessment of the Guarantee and its objectives:

- the electricity sector should **provide its share of the national emissions reduction target**;
- the reliability and emissions **requirements of the Guarantee must be balanced** to ensure appropriate long-term investment signals;
- AEMO should forecast the **size, duration and type of future reliability deficits** with the market given sufficient opportunity to deliver these additional energy resources;
- the design of the Guarantee **must support efficient long-term investments**;
- where the market does not provide a timely response to a forecast deficit there should be a **centralised capacity auction** focussed on bringing forward strategic long-term investments (not just further rounds of contracting);
- an auction could procure future capacity **under-pinned by a long-term revenue stream**;
- **market liquidity** should be maintained and if possible enhanced;
- the policy design must reflect the **benefits of interconnection and diverse resources**;
- should **complement AEMO's Integrated System Plan and regulatory frameworks**;
- compliance obligations should be **no more burdensome than is absolutely necessary**;
- and
- NEG design should **promote efficient competition** and market frameworks with low barriers to entry and competition.

In forming these views we have considered the **needs of market participants** including generators, retailers and energy customers; and the requirement to deliver **affordable, reliable, and low emissions electricity** for the Australian economy. We support the ESB's view that system security (as distinct from reliability) is best addressed outside of the National Energy Guarantee's framework.

The National Energy Guarantee offers an opportunity to address the needs of the power system and get ahead of upcoming challenges. Without reform in this area, Australia faces the prospect of approaching each summer with a tight supply/demand balance and risk of reliability shortfalls. The current market design discourages investment occurring in advance of a shortfall. It is in energy consumers' interests that this is not reinforced through the design of the Guarantee.

Attachment A covers the following issues:

1. **Overlap with parallel processes**
2. **Optimising existing assets**
3. **Further observations**
4. **AEMO capacity procurement**
5. **Interaction of the Guarantee and retail compliance**
6. **Tasmanian Wholesale Contract Regulatory Framework**
7. **Interconnection**

I look forward to continuing to work with the ESB on the development of the National Energy Guarantee. Please contact Colin Wain (03 8612 6443, [colin.wain@hydro.com.au](mailto:colin.wain@hydro.com.au)) if there is an opportunity to discuss any aspects of this letter further or if Hydro Tasmania can provide assistance or information of use to the ESB.

Yours sincerely



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## Attachment A

### 1. Overlap with parallel processes

As noted in section 1.1 of the paper the Guarantee is being considered alongside mechanisms that encourage **demand response**; the suitability of a **'day-ahead' market**; and the development of a **strategic reserve**. Each will impact the development of additional generation in the NEM and need to be carefully considered. In an ideal world, the market framework provided by the Guarantee would remove the need for additional interventions.

A further parallel process is the development of **AEMO's Integrated System Plan (ISP)**. The ISP is an opportunity to better understand the needs of the future electricity system, specifically the efficient development of generation and transmission investments. It is highly unlikely that current energy frameworks could deliver the kind of future the ISP is examining. This would require both regulatory and policy reform: re-designed Regulatory Investment Tests (RIT-T and RIT-D); and policy reform such as the Energy Guarantee. Hydro Tasmania sees this as an effective test for the design of the Guarantee: *would the policy produce sufficiently robust investment signals to deliver the efficient, long-term generation investment and energy storage anticipated in the ISP?*

To address the energy trilemma a range of technologies, long and short-term investments, demand-side, generation and energy storage solutions will be needed. This is a central challenge of good policy development: *how can the Guarantee be designed so that it doesn't favour particular business models and can provide effective competition for the strongest projects and energy solutions to come forward?* The potential competition impacts of the Guarantee are noted in the paper. In Hydro Tasmania's view, effective competition will require both an obligation on retailers to buy contracts as well as a demonstrated willingness from generators to make these contracts and capacity available to the market.

### 2. Optimising existing assets

The Guarantee must ensure that investments can be made at the lowest reasonable risk to developers as this can translate to lower overall costs for consumers. This includes encouraging the optimal use of existing assets where the outcome is consistent with the aims of the Guarantee. Existing hydropower is one asset type that can provide both reliable and low emissions generation. **Appropriate reinvestment and modernisation of existing hydropower assets will support transition of the sector** and efforts to address the energy

trilemma. There are substantial opportunities in the hydropower sector through the addition of energy storage or through flexible operation to support variable generation.

### 3. Further observations

As noted, the electricity sector is in a period of transition. Closure of ageing assets and growth of renewable generation are creating challenges. The steep cost reductions being observed strongly suggest that under a range of scenarios, wind and solar will be among the lowest cost additional energy sources in the NEM. The challenge will be incorporating this growth in variable generation in a manner that retains system reliability and security. This includes appropriate planning for the retirement for end-of-life thermal generation.

**There are substantial opportunities to reduce emissions in the electricity generation sector.** With appropriate settings, Hydro Tasmania believes that the sector could exceed its share of national emissions abatement and can assist in the decarbonisation of other sectors including the transport sector. The design of the Guarantee can support these opportunities if Australia's overall emissions policy can be coordinated.

AEMO holds an important role under the Guarantee due to the need to produce and maintain forecasts of expected energy demand and supply. While this role has always been significant, **the added ability to trigger reliability obligations on retailers amplifies the need to access the best available information.** The proposed 3-year notice of closure will help this, however, in some cases optimal investment will require a lead-time greater than 3 years. This is why Hydro Tasmania strongly believes that **the Guarantee must be capable of supporting efficient and long-term investment signals.**

In addition, AEMO's forecasting will need to consider and communicate the types of reliability that are needed in the NEM on a rolling basis. Each MW that exits or enters the market will have specific characteristics. As an example, demand-side responses or battery storage may be available for a shorter duration than gas peakers. AEMO's assessment will need to reflect on the duration of dispatch available in the market and identify any shortfall (or type of shortfall) that could occur under forecasts. **For the Guarantee to provide an efficient transition to a portfolio of future energy resources, it must recognise and take into account the characteristics of energy technologies.** AEMO forecasts and subsequent Guarantee compliance may need to address whether there is a shortfall of MW to cover critical peak demand or whether the time duration of this energy is important – for example to cover multiple hours/days when there is low generation from variable renewable resources.

As currently understood **there is a risk that market reactions to the Guarantee could tend towards a short-term focus given the potential for the reliability obligation to ‘bind’ in some regions for a short-period before being relaxed.** This view is not speculative, it is an observable market behaviour over the last decade where a range of investors have developed projects only as or after a shortfall has become immediately apparent. Further, the majority of investment has been underwritten by revenue streams provided through policies such as: the NSW GGas, Queensland Gas Scheme, the Renewable Energy Target and the ACT renewable auctions. As an example, the RET demonstrates participants’ lack of willingness to take long-term positions in excess of their own legislated requirements.

The temptation for participants to hold back investment until an immediate and high price signal is observed is not conducive to efficient long-term investment. The development of pumped hydro energy storage coordinated with substantial transmission investments is an example of a strategic investment that may be difficult to commercialise if reliability obligations come and go. This is due to the longer lead times and asset life associated with this type of project. Hydro Tasmania asks that these concerns are carefully considered and that the ESB reflect on the types of measures needed to support long-term investments. We believe the concerns outlined above support the need to have a fall-back procurement approach should the market fail to deliver the required long-term investment and/or mix of energy resources needed in AEMO forecasts.

#### 4. AEMO capacity procurement

Where the market fails to provide a timely response to a forecast deficit (steps 1 to 6 of section 5.2 of the paper) there should be **a competitive, reverse auction for capacity that can bring forward strategic long-term investments.** This could occur at the point the paper describes a ‘procurer of last resort’, however, Hydro Tasmania sees this as being a future focussed role as opposed to an emergency response. The objectives of this capacity procurement should be the same as the National Energy Guarantee, that is, to meet the energy trilemma in an efficient manner. However, unlike previous steps in the outlined process which are aimed at increased contracting, a centralised auction would be focussed on physical project development.

The paper considers approaches that would facilitate additional energy resources should the market fail to deliver. Hydro Tasmania agrees that **in the first instance it is the market and market participants that should be given the opportunity to respond** however, we believe that there is a need for this fall-back approach if this fails to occur.

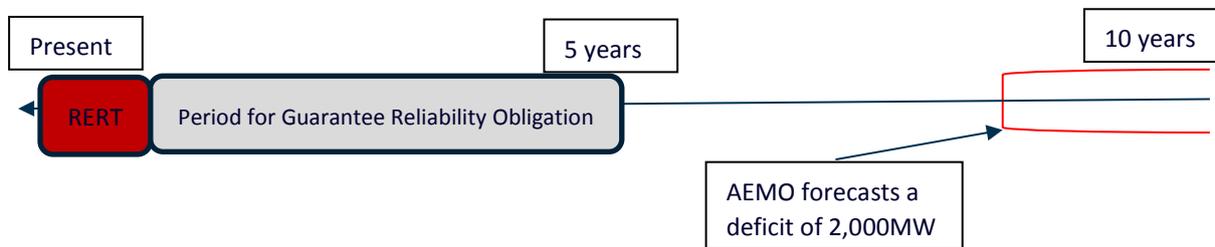
The lead-time for a procurement auction would be particularly important. Depending on their size and customer base, retailers will choose varied contracting strategies with some taking long-term positions and others shorter. As an example, a retailer focussed on the Commercial and Industrial space may take a shorter contracting approach since these customers are typically less 'sticky'. The interaction between forecasts, shortfalls and triggers for the reliability obligation will affect each retailer differently.

A central question for the ESB is: *what term of commitment will a retailer need to provide to a new facility in order to ensure that the facility will be constructed at the lowest possible cost to consumers?* Many retailers only operate retail books 2-3 years into the future. It would therefore appear unlikely that they will source wholesale contracts with sufficient duration to underwrite substantial and additional third-party capacity.

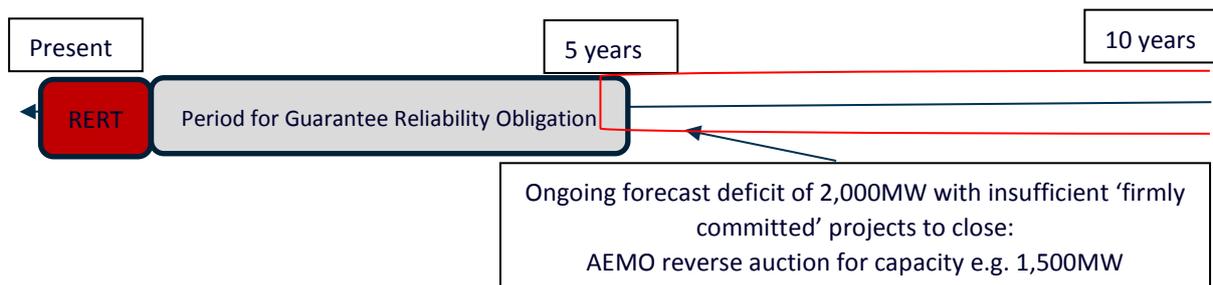
**Where there is an ongoing forecast shortfall, we believe that AEMO should have the power to conduct a reverse auction** offering up to 15-year contracts for capacity in the specified shortfall region (or adjacent regions subject to interconnector capacity). This is similar to the option considered in Box 5.3 of the paper, the 'Book-build option' however, we are not proposing this be the mechanism to meet and allocate retailers' initial Guarantee obligations. If enacted, it is important that this approach can provide a long-term revenue stream to underpin investments at low risk. This reverse auction for capacity should operate alongside AEMO's Integrated System Plan and must be sufficient that it could support "least-regret" investments as identified through the ISP.

As noted, we do not believe the role of AEMO as a procurer should be reserved solely for short-notice shortfalls (e.g. 3 months to 1 year lead-time). Instead, where there is a clear and enduring shortfall forecast it may be necessary for AEMO to act as a procurer 3-5 years in advance. This would be particularly relevant if the forecast deficit is large and the market shows little evidence of closing this 'reliability gap'. It would give all technologies and business models the opportunity to compete on a level playing field. Arguably, there is an element of flexibility that could be retained through this approach. For instance, if a 2,000MW shortfall was forecast (due to a closure for example) then it may not be necessary for AEMO to procure the full 2,000MW replacement 5 years out and a small portion of this could potentially be left for a shorter-notice response or to be administered through the remaining Guarantee reliability obligation. Avoiding over-committing through the auction approach would deal to the inherent uncertainties in forecasts.

An example of how an AEMO capacity auction could be triggered is outlined below:



As time progresses: if the market has not firmly committed projects and there was low confidence that this gap would be closed, then an AEMO auction could be triggered up to 5 years in advance of the forecast deficit:



To be effective, centralised procurement of energy resources (generation or demand response) needs to be available to a range of technologies and solutions and able to facilitate the deployment of these at reasonable cost to energy consumers. A short-term focus will favour temporary or demand-side solutions. While these may be appropriate in the short-term they may represent a higher-cost solution overall and may embed an ongoing or rolling reliance on temporary measures.

The **objectives of the procurement process should mirror those of the National Energy Guarantee**. In summary, AEMO's role as a procurer should be to bring forward:

- affordable;
- reliable;
- zero/low emissions energy; with
- long-term efficiency in the interests of consumers.

## 5. Interaction of the Guarantee and retail compliance

As noted above, retailers will have different customer bases, portfolio positions and contracting strategies. **It is important to understand the point at which the Guarantee's reliability obligation will be triggered and whether once an obligation is set for a future compliance year it will be adjusted as forecasts are revised upwards or downwards.** Hydro Tasmania's retail business Momentum operates across NEM regions and is based in Victoria. We support a compliance obligation that is no more burdensome than is absolutely necessary to achieve the policy's objectives. Noting the geographic separation of Hydro Tasmania's generation and retail businesses, the recognition of capacity transfer across interconnectors is a critical issue for our business and for the continued competitiveness of our retail arm.

We expect that once a compliance obligation has been triggered for a particular year that a retailer will have appropriate knowledge and certainty of the obligation liability they face. The obligation faced by a retailer should be in proportion to its peak load. While this could vary as the retailer gains or loses customers, the rate at which it is applied as well as the overall target for the NEM should be known. **Once the obligation for a particular year has been set, it should not be revised upwards as this would cause additional complexity and cost for retailers.**

We welcome further discussion of compliance frameworks that could recognise the potential for retail loads to change substantially between years. The opportunity to transfer a compliance obligation with a customer should they switch to another retailer is an important option to consider particularly with respect to C&I load. Further, if appropriately designed this would support the overall contracting position of the market and could alleviate concerns that the reliability obligation will favour larger and vertically integrated businesses. We note that a retailer with a high proportion of C&I customers may be reluctant to contract with sufficient length to meet reliability obligations 3 to 5 years into the future, however, a retailer with a high proportion of these customers will also be in a stronger position to contract for demand side responses which could lower their reliability obligation. Varying reliability obligations on retailers based on the composition of their customer base is likely to shift costs to other customer types and distort the objectives of the Guarantee. On this basis we believe a simple pro-rata approach based on retailers' peak demand is appropriate.

Efficient contracting outcomes and competition for 'reliability' are aligned to the needs of customers. To this end, effective competition will require both an obligation on retailers to buy contracts as well as a demonstrated willingness from generators to make these contracts and capacity available to the market. The May to July 2018 working papers should

consider measures that ensure sufficient market liquidity and promote a level playing field for market participants.

#### 6. Tasmanian Wholesale Contract Regulatory Framework

As noted in section 3.7.2, there is a Tasmanian Wholesale Contract Regulatory Instrument in operation in Tasmania. On the understanding that retailer compliance will be satisfied through financial contracting approaches, **we would understand that the Regulatory Instrument would be compatible with the Guarantee in Tasmania.** However, if there was a physical backing requirement attached to the reliability obligation then this would need to be considered further to ensure compliance.

#### 7. Interconnection

Section 5.11.3 of the paper notes that some market participants use inter-regional hedging strategies to cover retail load. **Continued recognition of the advantages of interconnection are essential to the efficient functioning of the NEM and is in the interest of consumers.** A purely jurisdictional interpretation of requirements will increase costs and abandon the benefits of an interconnected NEM. The ESB's initial advice recommended that capacity be tradeable between regions within interconnector constraints. Hydro Tasmania supports this position.

Without recognition of interconnector flows the further development of premium wind and pumped-hydro opportunities in Tasmania would be hard to justify. Hydro Tasmania expects that where a business owns adequate generation behind a link as well as the relevant Settlement Residue Auction units, then this capacity could be sold in the neighbouring region to meet reliability compliance requirements.