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Department of Climate Change, Energy, the Environment and Water
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Review of Long Duration Storage (Part 6 of the Electricity Infrastructure Investment Act 2020) – Consultation paper

Alinta Energy welcomes the opportunity to respond to Department of Climate Change, Energy, the Environment and Water's consultation on the review of long duration storage under the *Electricity Infrastructure Investment Act* (the Act).

Achieving medium-term goals, such as the 2030 storage and renewable energy generation targets under the NSW Electricity Infrastructure Roadmap, should not compromise sustained system reliability. In this respect, Alinta Energy considers changing the definition from eight to a four-hour minimum duration of Long Duration Storage (LDS) infrastructure is not in the long-term interests of consumers, given that an over reliance on shorter life LDS will have ramifications for system reliability following the retirement of the remaining coal generation fleet in NSW and other NEM jurisdictions.

Any reduction to the minimum duration of LDS would need to appropriately account for the long-term impact on system strength and reliability. The energy transition will require a diversity of energy storage options, including pumped hydro energy storage (PHES) projects which provide a range of system services beyond conventional shorter term storage options. These services include inertia, fault current, reactive power, and system restart capabilities critical for network security enabling better integration of variable renewable energy, which battery energy storage systems (BESS) cannot provide. PHES also minimises issues related to technology localisation, supply chain constraints, and global competition associated with specific technologies.

Given the long-lead times of PHES, but the critical role they will play in providing system strength and essential system services (ESS) including inertia, the implications of reducing the storage capability in the definitions of LDS in the Act would need to be addressed through support for PHES via other policy mechanisms, noting that BESS are currently supported via the Commonwealth's Capacity Investment Scheme.

Duration of LDS infrastructure

Alinta Energy does not support a change to the LDS definition in the Act. However, if a four-hour minimum duration is adopted, we recommend that appropriate discounting of the value of such projects when assessing Long Term Energy Supply Agreements (LTESA) beyond the current Roadmap Tender Round 5. On that basis, we support the AEMO Services' recommendations that:

- The Consumer Trustee, in recommending LTESAs for LDS place weight and preference on projects providing 8 hours or more of storage; and
- Limit the Consumer Trustee's ability to recommend projects with durations under eight hours to circumstances where this is prudent to address more immediate reliability risks.

To these recommendations of the consultation paper, we would further recommend that:¹

- LTESA be reviewed to better facilitate longer lead-time projects and accommodate construction cost risk in a way that aligns with contractual risk allocation currently available in the market;
- Greater advocacy from the NSW Government that the NEM 2030 reforms to develop distinct markets for system strength and inertia.; and
- In the meantime, specific assumptions that weight technologies able to provide inertia, system strength and other system services should be considered by the Consumer Trustee (within Roadmap Tender Round 5 financial bid assessments).

Encouraging investment in LDS infrastructure

We support the intention to reduce risk for investors in LDS technology through greater regulatory certainty discussed in section 4.3 of the consultation paper.²

Alinta Energy considers longer duration LDS projects have benefits beyond the benefit of reducing economic curtailment of variable renewable energy sources (such as wind and solar) and the provision of system strength and inertia. We agree that that longer duration projects will support system resilience in the event of low probability unserved energy events and mitigate the technical curtailment of renewables. Inertia provided by PHES for example, should be valued for its contribution to system strength. While synchronous condensers have and will be located within energy networks, they cannot be relied upon solely to provide grid forming systems services and Frequency Control and Ancillary Services (FCAS).

Noting the Reliability Panel's recent review of the reliability standard and forecast duration of Unserved Energy (USE) events,³ the uncertainty that retirement of coal-fired generation will have on system strength and the intensity and depth of USE events strongly indicates support for longer-life LDS should be encouraged ahead of this uncertainty. Measures such as requiring the Consumer Trustee to explicitly consider the benefits of duration and contribution to ESS should form part of the financial value to customers in the assessment of LDS projects.

Discounting the capacity of projects with less than eight hours of storage when calculating the financial value to consumers would incorporate the distribution of USE events and recognise the value of deep storage in supporting system security and reliability, in addition to ESS.

A minimum LDS objective for 2035 would recognise the development and construction horizons of PHES technologies in providing long duration storage beyond eight hours.

We set out our responses to the relevant consultation questions below. Alinta Energy would welcome further discussion of this response with the Department, please contact Stefanie Monaco (██████████) in the first instance.

Yours sincerely



Graeme Hamilton
General Manager, Regulatory & Government Affairs

¹ Department of Climate Change, Energy, the Environment and Water, *Review of Long Duration Storage (Part 6 of the Electricity Infrastructure Investment Act 2020) – Consultation paper*, page 19.

² DCCEE (NSW), *ibid.*, page 20.

³ Reliability Panel AEMC (2024), *Review of the form of the reliability standard and administered price cap*, <https://www.aemc.gov.au/market-reviews-advice/review-form-reliability-standard-and-apc>

Section	Question	Response
4.2	Q (1): What is an appropriate minimum duration for LDS storage infrastructure in NSW for 2030? Please outline why.	Alinta Energy opposes changing the definition from eight to a four-hour minimum duration of LDS infrastructure is not in the long-term interests of consumers. Too much investment in shorter duration infrastructure will have ramifications for system reliability following the retirement of the remaining coal generation fleet in NSW and other NEM jurisdictions.
	Q (2): Should the Minister have regulation making powers to change the minimum duration of long duration storage infrastructure over time? Please outline why or why not.	<p>This power should only be established if a decision is made to reduce the definition to 4 hours, to enable a return to 8 hours in acknowledgement of system strength factors.</p> <p>The Minister should be required to publicly consult and consider consistency of outcomes and approach to cost-benefit analysis across the NEM prior to making any decision.</p>
4.3	<p>Q (3): How can the infrastructure objectives and LDS tenders be improved to support a diverse range of LDS projects? Are new measures required, such as:</p> <ul style="list-style-type: none"> - Requiring the Consumer Trustee to explicitly consider the benefits of duration in calculating financial value to consumers. - Requiring the Consumer Trustee to discount the capacity of projects with duration less than 8 hours (if allowed) as though the duration is 8 hours when calculating financial value to consumers. - Establishing a minimum LDS objective for 2035 to provide more certainty for proponents with long lead time projects. 	<p>The Consumer Trustee should explicitly consider the benefits of duration and the provision of ESS (including inertia) when calculating the financial value of LDS projects to consumers.</p> <p>Discounting the capacity of projects with less than 8 hours of storage would support system security and reliability in the long term by recognising the value of deep storage and its capacity to provide ESS at scale.</p> <p>A minimum LDS objective would be a welcome initiative. It would provide more certainty than is currently the case and recognise the longer development timeframes for PHES projects.</p>