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21 June 2024

NSW Department of Climate Change, Energy, Environment and Water (DCCEEW)
lds.review@dpie.nsw.gov.au

Dear [redacted],

Re: Review of Long Duration Storage – Consultation Paper

ATCO Australia welcomes the opportunity to provide input into the Review of Long Duration Storage (LDS) and respond to the consultation paper.

ATCO recognises the work of the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) in commissioning this review with AEMO Services into the storage requirements of the NSW market in response to the independent Electricity Supply and Reliability Check Up. ATCO is an advocate for the Electricity Infrastructure Roadmap and supports the work by NSW DCCEEW, EnergyCo, AEMO Services, and other bodies tasked with delivering it.

ATCO acknowledges the Government's intent to re-evaluate the 8-hour LDS definition. It is incumbent on government to explore different combinations of storage durations and identify the most appropriate mix to meet the forecast needs of the system in a cost-effective manner. However, it is necessary for the Government to recognise that, if advanced in isolation of accompanying policy measures, a definitional change will introduce additional uncertainty to the development of already-advanced LDS projects and may put investment into longer duration storage at risk, which is otherwise necessary to support the reliability and security of the energy system.

The key policy challenge faced by NSW is to steadily deliver a portfolio of energy generation and storage assets to manage *all* types of reliability gaps in an affordable manner. Part of this may involve utilising existing policy levers to confidently meet near-term system needs. However, it also must involve the patient preserving and expansion of the policy levers which are needed to secure and sustain private investment in complex, large scale, capital-intensive assets. Many of these assets will be best-placed to manage the longer-duration tail-risks forecast to be faced by the system over the early 2030s and beyond.

ATCO is developing the 325MW Central West Pumped Hydro (CWPH) storage project near Bathurst on Wiradjuri country. Amongst the most mature pumped hydro project in the state, CWPH will provide 8 hours of critical firm capacity ahead of the retirement of the aging coal-fired facilities. The project would also provide long-term employment opportunities in NSW region for over 80 years, in line with its expected operational life.

This submission comments on the key issues relevant to ATCO as a renewable energy storage developer in NSW. ATCO does not seek to comment on all aspects explored in the consultation paper but have provided comments on the matters where we can offer informed feedback.

The key points in this submission are:

1. **The current LDS definition provides significant value in galvanising investment in assets which the private capital market would otherwise be unlikely to support.**
2. **Assets with 8-hour storage, particularly pumped hydro energy storage (PHES), are already developed against an uncertain policy backdrop, particularly with respect to the preferred risk allocation adopted by the LDS long term energy service agreement (LTESA) program and the delay in the establishment of the Energy Security Corporation.**
3. **AEMO Services' proposal to prioritise 8-hour assets will require further detail to provide LDS developers the confidence to advance an LTESA bid. Reforming the LTESA program by splitting the LDS tender according to duration would ensure similar technologies compete on a level-playing field and a minimum objective for 2035 would help provide certainty for longer lead time projects.**

The current LDS definition provides significant value in galvanising investment in assets which the private capital market would otherwise be unlikely to support.

When introduced, the legislated LDS 8-hour minimum requirement was heralded by government and industry as a long-term commitment to providing the private sector the confidence it required to invest in the development of assets which the power system needs and will value, but which the wholesale and contract market was otherwise ill-equipped to incentivise. It unlocked investment in a pipeline of LDS assets across the state, helped to commercialise new technology types, supported the use of existing technology types at longer durations and helped to galvanise investment (alongside complimentary schemes like the Pumped Hydro Recoverable Grants program) in mature solutions like pumped hydro.

While it is not a sufficient policy measure on its own to secure investment certainty for LDS assets, it was a necessary step which helped focus the sector's attention on the type of assets needed – and the significant time, resource and development expenditure required to advance them – to meet forecast market needs over the near term to 2030 and beyond.

ATCO notes the AEMO Services analysis published alongside this consultation which shows the probability of 8-hour reliability events to be only 4% in 2030[1]. ATCO is supportive of this analysis, and considers it a valuable and instructive contribution to a maturing dialogue taking place in Australia's energy sector regarding the appropriate mix of medium-to-long-to-deep storage solutions which;

- When modelled against a forecast, effectively meets a relevant reliability standard (in NSW, the Energy Security Target);

- Helps de-risk the power system by investing in assets which provide a 'buffer'– in terms of price and reliability outcomes – from shocks or tail-risks which although low probability, pose high impacts to the system, and are often closely correlated with the inherent uncertainty of the energy transition (delayed entry, early exits, external commodity price shocks);

- Explores the role that a diversified technological portfolio of LDS solutions plays in insuring the timely delivery of the Roadmap against real-word constraints in relation to OEM and EPC capacity, long-lead item order books, development delays and supply chain shocks; and

[1] Review of Long Duration Storage (Part 6 of EII Act 2020), NSW DCCEEW, May 2024, p. 17

- Minimises costs as much as possible for consumers, while maximising direct and induced economic outcomes for NSW and the communities which host these assets.

While an amendment to the 8-hour definition may give Government and its respective delivery bodies the confidence to meet the first point, ATCO notes the significant role the legislated 8-hour definition has played in galvanising investment in the type of assets which are best placed to meet the needs of the latter three points.

ATCO notes that there is already support for shorter duration technologies such as the firming LTESA and the Capacity Investment Scheme (CIS) which benchmarks value against a 4-hour duration product. The LDS LTESA is the *only* mechanism geared towards longer duration storage which is better placed to help manage medium to longer term reliability risks. It is crucial for the build of longer duration assets to be prioritised *now* to ensure their readiness to meet reliability risks in the future.

ATCO anticipates the retention of the 8-hour definition (or at the very least, the favourable consideration of 8-hour assets under an LTESA scheme) combined with the implementation of an investment mandate for the recently-legislation Energy Security Corporation which empowers the Corporation to partner or share key risks with competitive LDS assets, will assist in unlocking investment in already-advanced LDS assets across the state.

Assets with 8-hour storage, particularly pumped hydro energy storage (PHES), are already experiencing investment uncertainty, particularly the inflexibility of the LTESA program to consider risk allocations and the delay in the establishment of the Energy Security Corporation.

Current risk allocation under the existing LTESA structure and the capital expectations of government do not provide a feasible delivery path for large civil projects such as PHES. Uncertainty created by disruptive, persistent, and industry-wide trends in the contractor market make it difficult for proponents to take on development, construction and operational risks without the opportunity to mitigate the risk with an underwriting facility. A policy choice to amend the 8-hour definition, without complementary policy measures to bolster investment certainty for complex LDS assets, risks further delaying crucial investment in existing LDS projects.

Without means to adjust input costs fairly and transparently after bid date for a limited and agreed set of risks, contractors or owners are required to price conservative levels of contingency into bid variables to manage unlikely but highly impactful tail risks. This may include scope changes encountered later in development, escalation risks for key capital inputs, or high-impact, low probability events encountered over the course of construction. Therefore, the existing LTESA structure risks passing contingency costs for low-probability events that are unlikely to materialise onto consumers, and unnecessarily inflating the cost of otherwise-competitive LDS assets. This could be avoided by risk-sharing on limited items which may prove to be quite volatile until they are fixed or indexed at notice to proceed. This would require AEMO Services, or an adjacent policy body, to recalibrate their views on the flexibility for the level of bid variables to vary both up and down after bid date.

ATCO notes there is precedent in the NSW infrastructure sector on appropriate risk-sharing and pass through mechanisms which may help AEMO Services consider this approach to risk sharing allocation. Many of the risk-sharing approaches prescribed in the NSW Government's commercial principles on escalation risk for infrastructure projects[2] may be applicable in remedying some of the risks discussed above, while fairly and transparently managing the risks associated with cost exposure to AEMO Services.

The announcement and legislation of the Energy Security Corporation (ESC) is welcomed by ATCO, with respect to the potential role it may play in helping capital-intensive and longer-lead time technologies

[2] Commercial principles on escalation risk for infrastructure projects, Infrastructure NSW, September 2022.

such as PHES come to market. ATCO look forward to supporting and contributing to the ESC's investment mandate, but while industry awaits the mandate, LDS technology investors and developers continue to experience investment uncertainty. The role of the ESC in de-risking the development activities of longer duration assets beyond the current LTESA and Recoverable Grant Programs needs to be clearly defined and communicated to industry before considering a definition change.

AEMO Services' proposal to prioritise 8-hour assets will require further detail to provide LDS developers the confidence to advance an LTESA bid. Reforming the LTESA program by splitting the LDS tender according to duration would ensure similar technologies compete on a level-playing field and a minimum objective for 2035 would help provide certainty for longer lead time projects.

ATCO note AEMO Services' *'The value of long-duration storage'*[3] advice provided to the NSW Government in February 2024, and published alongside this round of consultation. ATCO note the recommendations made by AEMO Services if the minimum duration amendments were to be pursued, namely to:

- *"Require the Consumer Trustee, in recommending LTESAs for long-duration storage, to preference projects of 8 hours or more; and/or*

- *Limit the Consumer Trustee's ability to recommend projects with a duration of less than 8 hours to circumstances where this is prudent to address near-term reliability risks."*

ATCO welcome these recommendations, and consider them prudent. However on their own, they are likely to be insufficient for an LDS developer to fully understand how an 8-hour asset may be assessed against a 6 or a 4-hour asset, or on what grounds a longer duration asset might be preferred ahead of a shorter duration asset. Without subsequent guidance provided to the market on how the preferencing and limiting may be applied, a 4+ hour LTESA tender will leave 8+ hour assets uncertain how their bid may be assessed, and less likely to advance otherwise high-quality projects to bid into future LDS LTESA rounds.

An alternative policy approach could consider reforming the LTESA program to allocate support products according to tranches of duration. This could include establishing different definitions of storage with corresponding minimum durations such as short (up to 4 hours), medium (4-8 hours) and long (8+ hours). This would ensure that technologies of similar duration and type (in terms of their risk profiles, lead times and costs) are competing against each other on a level-playing field. It may also provide AEMO Services or the Energy Security Corporation to appropriately discern between assets with shorter and longer operational lives, and in turn, the certainty and dependability that longer duration, long lived assets like PHES can provide the system, often operating in exceedance of 80 years. While this may require some reworking of the current LTESA program, it might be warranted for the program to be inclusive of different storage durations and ensure that longer duration technologies are not disadvantaged in the assessment process.

Further, establishing a minimum capacity objective for 2035 would help in providing certainty for longer lead time projects, and the confidence to steadily deploy development capital over a reasonable time period. A 2035 target provides longer lead time technologies such as PHES a signal to participate in the program to help meet reliability needs even after 2030 and should enable more precise planning by AEMO and NSW Government.

[3] The value of long-duration storage, AEMO Services, February 2024.

About ATCO

ATCO is a global integrated energy, housing, transportation, and infrastructure company and has been operating in Australia for over 60 years. Our Australian footprint includes the ownership and operation of Western Australia's natural gas distribution network, power stations in Karratha, WA and Osborne, SA, as well as the development of renewable and hydrogen assets. We have a long history of partnering with communities and Indigenous groups, energising industries, and delivering customer-focused infrastructure solutions.

If you have any questions or would like to discuss any of the comments made in this submission, please contact Hugh Smith, General Manager – Regulatory Strategy & Policy at [redacted] or [redacted].

Yours sincerely,

Chris Judd
Executive General Manager, Energy Infrastructure
ATCO Australia
[redacted]