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Dear ██████████,

Ausgrid submission to NSW DCCEEW's long duration storage consultation paper

Ausgrid is pleased to provide this submission to the NSW Department of Climate Change, Energy, the Environment and Water's (**DCCEEW**) consultation paper on the Review of Long Duration Storage in Part 6 of the *Electricity Infrastructure Investment Act 2020 (EII Act)* (**Consultation paper**).

Ausgrid operates the electricity network that powers the homes and businesses of more than four million Australians living and working in an area that covers over 22,000 square kilometres from the Sydney CBD to the Upper Hunter in NSW. We have already deployed community batteries in trial and pilot programs, supported by Commonwealth grants and our own Network Innovation Program. We are committed to expanding the role that can be played by batteries on the Ausgrid network to support the energy transition in a way which is faster, lower cost, and less impactful on the community. We support the NSW Government's focus in identifying additional pathways to enable deployment of storage in NSW to meet future reliability needs.

Our submission sets out our support for the reforms proposed in the Consultation Paper, including the proposed reduction in the minimum duration of storage infrastructure from 8 to 4 hours. It also sets out complementary reforms to accelerate battery deployment, including:

- Resolving the regulatory treatment of distribution network storage in NSW by creating regulations under Section 192A of the NSW Electricity Supply Act 1995 to enable Distribution Network Service Providers (**DNSPs**) to own and operate community batteries without an AER waiver. This is a critical step in making the development of storage capacity a routine network activity, removing investment uncertainty and enabling DNSPs in NSW to greatly accelerate community battery deployment.
- Clarifying the inclusion of aggregated community batteries across multiple sites in NSW's definition of long duration storage; and
- Granting regulation-making powers to the Minister to improve the flexibility of the NSW Electricity Infrastructure Investment Act 2020 and enable regulatory settings to respond to changing storage needs as they evolve during the energy transition.

We would welcome the opportunity to discuss our submission further. Please contact Simon Moore, Senior Policy Advisor, at ██████████ for further details.

Regards,

A handwritten signature in black ink, appearing to read "Tim Jarratt", with a horizontal line above it.

Tim Jarratt
Group Executive Market Development & Strategy

Attachment A: Ausgrid's electricity storage plans

The Australian Energy Market Operator's (**AEMO's**) Draft 2024 Integrated System Plan (**ISP**) highlights the massive growth in storage capacity needed by and beyond 2050 to support variable renewable energy as coal plants retire. Ausgrid's network provides significant opportunities to increase storage capacity through the roll-out of community batteries, which can support the resilience of the power system and enable more consumers to play a role in the energy transition.

Distribution networks, like Ausgrid, have a number of advantages that allows for building battery storage more cheaply and more quickly than alternatives. We have capital ready to deploy, established supply chains, a skilled workforce, suitable land and streamlined planning processes when building on our own land, all of which can see rapid deployment and reduce costs borne by consumers in delivering the energy transition. However, current regulatory settings restrict our ability to expand our community battery roll-out to meet the needs of NSW consumers and the wider energy system.

Under Ausgrid's Network Innovation Program, Ausgrid has already rolled out three community batteries at Beacon Hill, Bankstown, and Cameron Park. We have also recently rolled out community batteries at Narara, Cabarita, Warriewood and North Epping under the Commonwealth Government's Community Batteries for Household Solar Program, with two more batteries at Bondi and Cammeray, to be installed over coming months. Our existing community batteries have a storage duration of up to two hours. Future community batteries could be designed for storage duration of up to four hours. We are exploring the potential for battery aggregation to meet minimum capacity requirements. Aggregated solutions could have capacities in excess of the 30MW AEMO dispatch threshold.

Ausgrid's first three community batteries trialled storage-as-a-service in partnership with retailers, which demonstrated that annual bill savings of approximately \$200 per customer can be achieved providing a direct link from community batteries to lower consumer bills. Ausgrid is also currently trialling community-based renewable energy projects co-located with the batteries to demonstrate how storage can support greater utilisation of renewable energy and lower cost barriers to electrification. For example, Ausgrid is co-delivering with Northern Beaches Council the installation of a 100kW rooftop solar system on the new Warriewood Community Centre which will be co-located with our community battery at Warriewood.

Ausgrid considers there is potential to substantially expand the roll-out of community batteries across our network over the coming years. If funding and regulatory barriers are alleviated, our analysis indicates 5MW community batteries could be rolled out to over 200 sites across our network which has the potential to meet over 80% of our customers' expected individual battery demand.

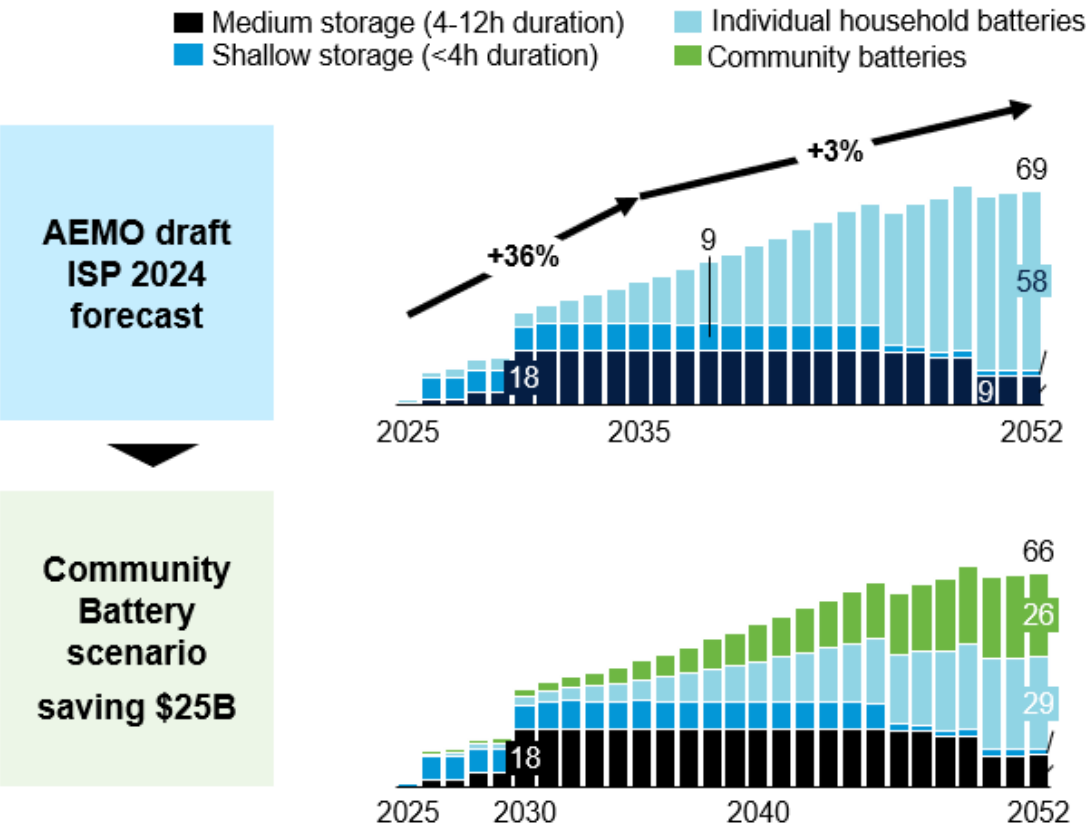
By rolling out these batteries at existing Ausgrid sites, this storage capacity would have limited impacts on the community and the environment, enabling faster implementation than installing storage at greenfield sites. By 2030, this has the potential to result in an additional 1.2GW of storage across Ausgrid's network. Where 50 per cent of the assumed household battery capacity in the AEMO's Draft 2024 ISP is replaced by longer duration community batteries, this could save NSW customers up to \$25 billion by 2052 as shown in **Figure 1**.

Ausgrid is also assessing opportunities to facilitate grid scale batteries to further support the delivery of the energy transition. In addition, Ausgrid is considering opportunities to create Distribution Renewable Energy Zones (**DREZs**), which will create significant additional capacity

for small and medium scale renewable generation and storage embedded within our distribution network.

Figure 1: Potential savings for consumers from community batteries

NSW storage capacity (energy) forecast to 2052, GWh



Note: Utility scale storage driven by NSW infrastructure Investment Objectives. \$25B capital cost savings scenario assumes: 50% household battery capacity (coordinated & distributed) replaced by community batteries; improved utilisation enables 10% less storage capacity; avg battery lifetime of 17 years; 2.5% CPI
Source: AEMO ISP 2024 Generation Outlook, Step Change, excludes Snowy Hydro 2.0 and deep storage (>12 hours)

Note: Utility scale storage driven by NSW infrastructure Investment Objectives. \$25B capital cost savings scenario assumes: 50% household battery capacity (coordinated & distributed) replaced by community batteries; improved utilisation enables 10% less storage capacity; avg battery lifetime of 17 years; 2.5% CPI
Source: AEMO ISP 2024 Generation Outlook, Step Change, excludes Snowy Hydro 2.0 and deep storage (>12 hours)

Attachment B: Ausgrid responses to consultation paper questions

1. What is the appropriate minimum duration for storage infrastructure in NSW for 2030? Please outline why?

Ausgrid supports the contemplated alteration of the minimum duration for storage infrastructure from 8 to 4 hours.

As the Consultation Paper identifies, 98% of modelled unserved energy incidents in 2030 are shorter than 8 hours in duration, and the majority (63%) are shorter than 4 hours. Making this change will give AEMO Services Limited and the NSW Government greater flexibility to respond to emerging reliability concerns by selecting a range of technologies. It also allows the long-duration storage provisions in the EII Act to address reliability challenges in the current decade by facilitating participation from quicker-to-build technologies, particularly smaller scale batteries like community batteries.

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?

Ausgrid supports granting these powers to the Minister. Making this change avoids the need for future legislative change as the need for long duration storage evolves over time. The rapid changes in market conditions that have occurred since the publication of the NSW Electricity Infrastructure Roadmap in 2020 show that the ability to course-correct Roadmap policy is needed. Moving the definition of the minimum duration of long duration storage infrastructure from legislation to regulation helps policymakers adapt the Roadmap to changing circumstances, enabling policy to evolve to support the delivery of the energy transition.

Ausgrid notes that NSW's reliability needs and the potential role of long-duration storage to address these needs are likely to change over time. The Consultation Paper focuses on reliability needs out to 2030, when remaining fossil fuel generation capacity is likely to still be available to address longer-duration shortfalls. As coal fired power stations close through the 2030s and the energy system becomes more dependent on renewable (including distributed renewable) generation, the potential role played by long-duration storage technologies is likely to change. Including the definition of long duration storage infrastructure in the regulations will enable policymakers to respond more swiftly to these changing reliability needs.

3. **How can the infrastructure objectives and LDS tenders be improved to support a diverse range of long duration storage projects? Are new measures required, such as:**

- **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.**

Ausgrid recognises that the values of different storage durations for consumers may change over time. We support reforms that allow the Consumer Trustee to effectively evaluate the reliability needs for storage, and to be able to adjust procurement and auction parameters between tender rounds if the reliability conditions change. The relevant test for the Consumer Trustee is not simply to apply a discounting practice that assumes, all other things being equal, longer duration is better. Instead, the Consumer Trustee should develop assessment criteria based on fitness for purpose of addressing identified reliability concerns.

Ausgrid is not opposed in principle to the establishment of a 2035 minimum objective, but recognises that as with the existing minimum objective for 2030 (which was set in 2020), a target set a decade out can be overtaken by events by the time the target year is reached. Further evaluation of the reliability risks in 2035 and beyond would be required to determine an appropriate 2035 long duration objective. We note this evaluation would need to build on the data available in the Consultation Paper and AEMO's most recent update to the *Electricity Statement of Opportunities*. If a 2035 target is set, it should be reviewed periodically so it reflects changing circumstances.

Ausgrid also notes there are a range of other barriers that presently exist to distribution network-owned community batteries, and that if the intent of the proposed measures is to bring forward more storage in the years to 2030, complementary actions will need to be taken beyond the measures identified in the Consultation Paper. These barriers include:

- **Resolving the regulatory treatment of distribution network storage in NSW.**
Ausgrid's community batteries which have been built with ARENA or Commonwealth grant funding have received a class waiver from the Australian Energy Regulator (AER) allowing Ausgrid to own and operate them and recover an appropriate proportion of costs via the regulated asset base. Additional community batteries, such as those which might be incentivised via the NSW long duration storage scheme, would not receive an AER waiver under present conditions. Without a class waiver from the AER, Ausgrid would need to secure individual approvals from the AER for each funded battery, which could create investment uncertainty and extend roll-out timeframes.

Alternatively, regulations could be made under the NSW *Electricity Supply Act 1995* (ES Act) to remove these regulatory barriers to DNSPs owning and operating storage. Section 192A of the ES Act provides for regulations to be created "authorising and facilitating the ownership and operation of community-scale batteries, or classes of community batteries...by distribution network service providers", however regulations have not to date been established. Making regulations under Section 192A of the ES Act would remove investment uncertainty and enable DNSPs in NSW to greatly accelerate community battery deployment and support the storage needs of the NSW

community. Battery investments would be offset by avoiding or deferring the need for other cost-incurring network reinforcement.

- **Providing further information on future storage needs and how different technologies will be considered.** Additional analysis would be required for AEMO Services Limited to evaluate the consumer value of different technology mixes, beyond the 2030 analysis provided in the Consultation Paper. Analysis of the value of different storage characteristics (for example depth, duration, flexibility) should be featured in the NSW Government's 2024 Infrastructure Investment Opportunities report to assist in future planning by DNSPs and other potential providers of storage.

4. Should the NSW Government introduce amendments to the LDS definition to clarify it can include aggregated LDS infrastructure across multiple sites? Should aggregated LDS infrastructure need to register on AEMO's NEM Registration and Exemption List and participate in central dispatch? Please outline why or why not.

Ausgrid strongly welcomes measures to facilitate access for community batteries to the long duration storage scheme. A clearly defined recognition of the eligibility of multiple aggregated batteries, with <4 hour durations, to participate in the long duration storage scheme would be valuable and provide greater investment certainty.

The contemplated amendments may facilitate faster, cheaper and less impactful investment in renewables connected to distribution networks. As noted in Appendix A, we are currently exploring the creation of DREZ hubs aimed at co-ordinating generation and storage at locations on our distribution network with existing capacity. These renewable energy hubs would avoid the long-lead times and social licence issues associated with transmission scale projects and have a lower cost of connection. As the level of storage needed to firm DREZ generation is likely to vary, we would support a more flexible definition of long duration storage to guide NSW targets. We would be pleased to engage with the Department on the DREZ concept and the greater role distribution networks can play in enabling more renewables.

Ausgrid would not support a requirement to participate in AEMO's central dispatch for projects under the long duration storage scheme as it could create onerous barriers to participation. An approach based around participation in the Scheduled Lite mechanism, which aims to integrate non-scheduled price response resources such as virtual power plants into the National Electricity Market (**NEM**) market scheduling process, is likely to be more proportionate, pending finalisation of the mechanism's details by the Australian Energy Market Commission. Relaxing the constraints in the EII Act on central dispatch and registration on the NEM Registration and Exemption List would facilitate participation from community-scale batteries in the long duration storage scheme.