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11 July 2025

Ms Meg McDonald
Interim Chief Commissioner, NSW Net Zero Commission
Submitted online

Dear Ms McDonald

Ausgrid thanks the NSW Net Zero Commission for the opportunity to inform its upcoming work plan. Ausgrid operates a shared electricity network that powers the homes and businesses of more than 4 million Australians living and working across over 22,000 square kilometres through Sydney, the Central Coast and the Hunter Valley.

The NSW Net Zero Commission has an important role in providing recommendations to the NSW Government as it develops its next Net Zero Plan. Its advice plans and policies to meet the State's emissions reduction targets and the adaptation objective for NSW to be more resilient to a changing climate must ensure that the Government's commitments are sufficiently ambitious to meet the state's emissions goals. They have the ability to drive action in areas such as electrification and transport decarbonisation where further policy measures will be required.

Ausgrid is already seeing an increase in the frequency and severity of climate related events impacting our network and customers, which is expected to grow into the future. Ausgrid is driving a range of actions to support our customers, such as:

- investing to improve the network's resilience in the areas with the highest vulnerability to climate risk,
- deploying community batteries to enable more customers to benefit from renewable energy,
- hosting electric vehicle charging infrastructure to improve access to charging, and
- building the Hunter Central-Coast Renewable Energy Zone in a way that limits community impact.

We also consider there are opportunities for Ausgrid to play a larger role in reducing NSW's greenhouse gas emissions by creating Community Power Networks to share the benefits of rooftop solar more widely, deploying electric vehicle chargers in more areas, and expanding the deployment of community batteries. We encourage the Net Zero Commission to consider these opportunities further as it develops its work plan and the regulatory and policy changes which are needed to facilitate these opportunities.

More details on these initiatives can be found in the responses to selected consultation questions in Appendix A. We welcome the opportunity to further discuss our submission with the Inquiry. Please contact [redacted] for further information.

Regards,

[redacted]
Acting Group Executive - Market Development & Strategy

Appendix A: Responses to selected questions

1. **What can you tell us about your experience of the impacts of climate change and how can the commission seek to reflect and respond to this in its work?**

Impacts of climate change on the Ausgrid network

The increase in frequency and severity of climate related events is impacting the resilience of Ausgrid's electricity network. Over the 15-year period to FY25, 51 percent of customer supply outages on our network were caused by climate-related weather events. Further, as other critical sectors such as transport, telecommunications, water and heating continue to electrify, the broader customer impacts of electricity outages, and consumer expectations for how networks manage their resilience is changing and growing.

For example, the January 2025 east coast storms were among the most destructive weather events to hit Ausgrid's network since 2015, causing over 5,400 hazards including fallen powerlines, snapped poles and flood damage. While Ausgrid's field crews worked around the clock to restore power as quickly as possible, this squall line event that extended from Wednesday 15 January to Friday 17 January 2025 left more than 210,000 Ausgrid customers (over half a million NSW residents) without power for up to 7 days, resulting in many tens of thousands without internet or phone signal, and some without water supply.

The impact of climate-related weather events on our network is expected to grow into the future. We have assessed three potential climate futures using representative concentration pathways reflecting low, medium and high emissions scenarios.[1] Under the mid-range scenario, the changes in climate to 2050, when combined with Ausgrid network and load data, has been shown to project a ~1% per annum increase in asset repair and unserved energy costs across Ausgrid's distribution network, if left unmitigated.

Enabling greater electricity network investment in climate resilience

Despite this expected increase in climate-related weather risk, electricity networks have faced uncertainty over their resilience expenditure due to a lack of clarity in the National Electricity Rules (**NER**) around how resilience expenditure will be assessed. For our 2024-29 regulatory proposal to the Australian Energy Regulator (**AER**), Ausgrid spent over 80 hours talking to more than 100 customers in high-risk areas about climate risk and resilience. Through this process, our customers told us overwhelmingly that they expect essential service providers to do more – and are willing to pay for these investments. Our Voice of Community Panel, a separate randomly selected group of 60 customers from across the Ausgrid network, was also supportive of Ausgrid's proposed resilience investments.

In our 2024-29 regulatory proposal, Ausgrid proposed to allocate its resilience investment in the areas of our network who would be benefit from it most; Lake Macquarie, Central Coast and Port Stephens. These areas are disproportionately impacted by climate events and were three of the regions most severely impacted by the January 2025 storms. These areas also experience higher levels of socio-economic disadvantage, compounding the impact of prolonged outages and customers' capacity to withstand and recover from extreme events. Despite this, the AER's final determination approved just one third ($41 million) of our proposed $120 million resilience program. As a result, Ausgrid was required to reduce the scope of its climate resilience work program.

[1] Ausgrid; Revised Proposal Att 5.5 – Climate Resilience Business Case; https://www.aer.gov.au/documents/ausgrid-revised-proposal-att-55-climate-resilience-business-case-30-nov-2023

This year, the Australian Energy Market Commission introduced a formal framework within the NER for considering resilience expenditure. This new framework will require distribution network service providers (**DNSPs**) to "efficiently reduce the risk and impact" of climate related outages. We are optimistic these amendments will support investment in resilience programs that proactively address the growing long-term risks that climate change poses, in line with the expectations of our customers.

Ausgrid will now work with the national energy market bodies, including the AER, to ensure this new framework is supported with guidance materials that provide certainty to distribution networks and customers about which resilience activities can be undertaken and funded. At the same time, we will continue to work with the Federal and NSW Governments to prioritise adaptation and mitigation activities, and enable critical service providers, like distributors, to apply for Government funding opportunities where it is more appropriate for Governments to fund these activities. We would welcome the support of the Net Zero Commission recognising the necessary role played by electricity networks in ensuring that NSW communities' resilience to the impacts of climate change is strengthened, and in enabling resilience-enhancing investment.

2. What actions can the commission take to engage across the community to help drive the shifts needed for the net zero transition and for effective climate change mitigation and adaptation?

Communities are at the centre of everything we do. Our approach to engagement is integrated into the planning, construction, operation, and maintenance of our electricity network. Recognising that every community is unique, we apply flexible, scalable, and adaptable engagement activities tailored to individual projects. We strive to communicate openly about our activities and decisions, creating opportunities for community involvement in decisions that affect them. Our integrated project teams work to develop mitigation measures to minimise the impacts of our activities and maximise positive outcomes for communities.

The net zero transition depends on community trust and acceptance. Without genuine community support, energy infrastructure projects can face delays, cost overruns, and ongoing opposition that undermines their effectiveness. Trust is built through consistent, honest engagement that demonstrates respect for community concerns, delivers on commitments made during consultation, and shows how the transition benefits local communities. The Commission has a unique opportunity to champion the delivery of consistent engagement approaches that build this essential trust across NSW's energy transformation.

The Commission is well-positioned to advocate for the NSW Government to focus on their coordination role, to prevent engagement fatigue across the net zero transition, and to extend the model beyond current work in Renewable Energy Zones. When multiple infrastructure projects affect the same communities simultaneously, uncoordinated consultation creates confusion, frustration, and reduces the quality of community input

The Commission could also consider advocating for further changes to NSW Independent Planning Commission (**NSW IPC**) referral criteria for State Significant Developments. Ausgrid notes that, in response to the 2019 NSW Productivity Commission Review[2], the threshold for triggering a referral to the NSW IPC was increased to 50 objections. However, Ausgrid has observed that this is still leaving critical energy projects exposed to planning delays triggered by organised opposition from outside affected areas, rather than genuine local concern. Our view is that the Productivity Commission's recommended changes to clause 8A(1)(b) of the *State Environmental Planning Policy (State and Regional Development) 2011*, requiring these objections to come from people living within a specified distance of the project, should be adopted. This would give local communities a greater say over what projects are developed in their region and reduce pressure on already

[2] NSW Productivity Commission, Review of the Independent Planning Commission (December 2019), recommendation 8

constrained planning assessment resources. By advocating for these changes, the Net Zero Commission can play a crucial role in fostering more productive conversations in the community about energy transition benefits and trade-offs.

Significant work is needed to understand and address energy literacy gaps across NSW communities. Many of the most effective engagement approaches are the simplest - clear explanation of how the electricity system works, why changes are needed, and how communities benefit from reliable, affordable and clean energy.

The Commission's engagement efforts should focus on building genuine social licence for the net zero transition through honest conversation about benefits, trade-offs, and community concerns. This means moving beyond managing opposition, to creating a shared understanding of why change is necessary and how communities can benefit from and shape that change.

Ausgrid is delivering the network infrastructure for the Hunter Central Coast Renewable Energy Zone (**HCC REZ**), which will enable at least 1 gigawatt (**GW**) of new renewable energy to be connected by 2028, powering around one million homes and setting up these regions to take advantage of the energy transition through increased economic and employment opportunities. Ausgrid will deliver this project through the upgrading of approximately 85km of our existing sub-transmission network (representing 98 per cent of the project works). As demonstrated through our HCC REZ network infrastructure engagement, Ausgrid continues to work collaboratively with EnergyCo and other stakeholders to coordinate delivery and minimise cumulative impacts on the community. We recommend the Commission champion this coordinated, well-resourced approach across all aspects of NSW's net zero transition, ensuring communities experience coherent, respectful engagement that builds trust and delivers better outcomes for everyone involved.

6. The speed of deployment of electricity generation and infrastructure is a key risk to emissions reduction targets. What more could be done to fast track deployment?

DNSPs are uniquely placed to help fast track deployment of renewable energy generation and supporting infrastructure. We encourage the Commission to explore further the opportunities available within the distribution network to connect new renewable generation and storage.

As part of our role in delivering the network infrastructure for HCC REZ, we are also working with the NSW Government to explore further opportunities to leverage existing easements and network infrastructure to connect more renewables and storage in the area. Our initial analysis suggests upgrades to our existing network could unlock a further 5.3 GW of capacity with considerably less impact on the local communities than new network infrastructure projects in other areas of NSW.

At lower voltage levels, Ausgrid's network area includes 25 million square metres of rooftop area on commercial and industrial buildings that could unlock significant new solar generation with minimal grid investment. Ausgrid is planning the concept of a 'Community Power Network,' which involves the accelerated deployment of both rooftop solar PV and network battery storage in a local network area. This initiative is forecast to result in an additional 70MW of rooftop solar generation and deliver around 30% of the power needs within the pilot areas' proposed communities. We also estimate that this pilot would result in around a 25% cheaper network solution than connecting large scale, remote generation.

The Community Power Network will pool surplus solar energy generated on available rooftops in the zone to redistribute during the evening peak as an affordable form of power for all customers. Strategically placed storage across the network will provide grid balancing and power quality management functions, improve grid utilisation, and reduce the capital required by the traditional grid to meet the demands of a more electrified and

distributed energy ecosystem. Ausgrid proposes to test the concept in two different regions: one largely residential (Charmhaven on the Central Coast), and the other a mixed set of buildings including commercial, industrial, and apartments (Mascot-Botany in Sydney). Both areas selected have a high proportion of renters.[3]

Both the HCC REZ and the Community Power Networks models show the potential for renewable energy deployment that relies less on large-scale deployment of new transmission infrastructure, which, as the Draft Work Plan identifies, has been the source of much of the delay in renewable energy rollout.

Ausgrid is also undertaking other initiatives which support the rapid deployment of infrastructure to facilitate the increased use of, and access to, renewable energy. Ausgrid's community battery program, currently supported by the Federal Government and ARENA's Community Batteries for Household Solar and Community Batteries Funding Programs, has enabled the deployment of storage on the distribution network. This enables more efficient utilisation of local rooftop solar production.

Community batteries have a significant advantage in speed of deployment relative to larger 'grid-scale' batteries. Community batteries also enable customers who are unable to install their own household storage, such as renters or people living in apartments, to share in the benefits of renewable energy. However, our ability to continue deploying community batteries is limited by the requirement to seek ring-fencing waivers from the AER for each new battery. The waivers permit distribution network owned batteries to operate in the energy market and have spare capacity leased out to third parties. The NSW Government has legislated the ability to make regulations which could remove the need for NSW DNSPs to seek these waivers, but has yet to make these regulations.[4] We note the NSW Government's Consumer Energy Strategy has committed to investigating seeking a class waiver from the AER to enable DNSPs to support the uptake of community batteries, subject to meeting criteria.[5] Fast tracking the removal of this regulatory obstacle would enable DNSPs to bring forward community battery projects and enable more consumers to share the benefits of renewable energy.

7. Are the measures now in place sufficient to ensure community engagement and benefit sharing from the build out of infrastructure for the energy transition?

See question 2.

9. What are likely to prove the most effective approaches to accelerate rapid decarbonisation across freight and passenger transport?

Ausgrid is committed to supporting government and industry efforts to increase the uptake of EVs. There are over 52,000 EVs in our network area and we forecast this will grow to around 600,000 EVs by 2030. We currently manage and maintain 440,000 power poles across the Sydney Basin, Central Coast, Newcastle, and Upper Hunter. CSIRO estimates 38,000 public EV chargers will be needed in NSW by 2030. Our existing network infrastructure, already readily accessible in kerbside locations, and expert workforce can be leveraged immediately to roll-out accessible and affordable public charging options across our network. If enabled to do so, we can dramatically and rapidly increase the availability of charging infrastructure, giving NSW consumers the confidence to invest in and benefit from EVs sooner and support NSW's broader decarbonisation efforts.

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[3] See also Committee for Sydney; Sydney as a Renewable Energy Zone; https://sydney.org.au/wp-content/uploads/2025/06/Committee-for-Sydney-Sydney-as-a-renewable-energy-zone-June-2025.pdf

[4] NSW Electricity Supply Act, Section 192A

[5] NSW Consumer Energy Strategy, action 17, https://www.energy.nsw.gov.au/sites/default/files/2024-09/NSW_Consumer_Energy_Strategy_2024.pdf

Ausgrid is actively working to support the transition to EVs through a range of investments and trials. We have introduced EVs into our fleet and will deploy more in the coming years, with up to 900 vans, utes, cars and trucks to be electrified by 2029. To support the electrification of our fleet, we have deployed EV chargers at our depots. We are also supporting large customers, like Transport for NSW, who have complex needs in the electrification of their fleets.

Ausgrid is also working to enable public charging infrastructure through a range of models. We lease access to our power poles and kiosks to third parties, though this model faces high costs for both operators and Ausgrid and is progressing slowly. We now have 288 chargers on Ausgrid assets. However, we are prevented from scaling up the roll-out of these chargers by regulatory arrangements, in particular by ringfencing restrictions as discussed further below.

EV charging infrastructure (EVCI) faces a 'chicken and egg' problem

As is often the case with market transformation and the early stages of a technology adoption curve, electric vehicle charging infrastructure (**EVCI**) faces a 'chicken and egg' problem. Capital investment is needed to set up and maintain charging stations, but without a critical mass of EVs, appetite from competitive players to invest in infrastructure is limited. However, without more public chargers, consumers remain hesitant to switch to EVs, reinforcing a negative feedback loop. The result of this is that Australia has fallen behind in providing EVCI – there are currently 76 EVs per public charge point in Australia, compared to a global average of 11.[6] Where private investment has been made, challenges with ongoing maintenance means chargers are often not operational when users need to charge, further undermining consumer confidence. While the global transition to EVs continues to accelerate, Australia is increasingly lagging in EV take up, with the limited availability of public charging a key factor.[7]

This is particularly problematic when considering the accessibility of charging options for those who are unable to install their own private EV chargers due to a lack of off-street parking, rental agreements or strata restrictions. Approximately 30% of customers[8] in Ausgrid's network area have limited opportunities to charge their vehicles at home. NSW DNSPs have the infrastructure and workforce to address this shortfall, resolve the chicken and egg challenge while accelerating a competitive market for charging services.

Addressing the lag in charging infrastructure for an emerging market

NSW DNSPs are seeking to address this market failure in a way which maintains existing market structures and supports improved outcomes for consumers. Ausgrid, together with the two other NSW DNSPs, Endeavour Energy and Essential Energy, is proposing to install 22,500 kerbside public AC EV chargers across our networks, dramatically increasing the availability of efficient and cost-effective charging options to residents right across NSW. Of the 22,500 kerbside AC EV chargers under this proposal, Ausgrid is proposing to install 11,000 kerbside chargers on our existing power poles in the next five years. The NSW DNSPs are seeking to deliver the kerbside EV charging infrastructure and maintenance as part of the regulated services we currently provide (as outlined further below) but require regulatory and/or legislative change to enable this.

Leveraging the benefits of an enduring, electrical infrastructure provider

By installing chargers on our power poles, we can ensure the infrastructure installed on our network is deployed safely and efficiently and take advantage of the locational flexibility and accessibility offered by our widespread infrastructure already located in kerbside locations. Co-locating ECVI with existing assets results in cheaper installation costs for customers than if this roll-out were led by other providers, while also preserving public amenity. We have already collaborated with NSW councils including Inner West and Randwick, and

[6] Electric vehicle charging – Global EV Outlook 2025 – Analysis - IEAA
[7] ENA, Street Smart: Scaling Up Kerbside EV Charging in Australia, 2025, p. 3
[8] https://www.nsw.gov.au/media-releases/ev-kerbside-charging-grants-to-reduce-charging-worries

commercial providers to develop pole-mounted chargers that drastically reduce the cost and disruption of installation and avoid excavation of streets and footpaths. As a business with durable long-term funding, we avoid the risk of chargers becoming abandoned or 'orphaned' assets. We can also better ensure their reliability as our field teams are setup and regulated to operate and maintain our infrastructure on a 24/7 basis and are geographically dispersed right across our network.

Providing economic charging equity to Australians who can't charge at home

Many of the residents who will benefit most from the savings EVs will bring, like renters and people living in strata complexes, face additional barriers to taking up an EV due to a lack of accessible and low-cost charging, and as a result they may delay their purchase of an EV. A recent survey of Ausgrid customers found that Metro Sydney residents (72%) and flat/apartment dwellers (79%) are more likely to base their decision to adopt EVs on the availability of public charging than regional participants (56%) or those in houses (63%) and semi-detached homes (67%), highlighting that limited private parking in metro and high-density areas makes public chargers essential. Renters (68%) also said availability of charging would influence their decision to adopt an EV, indicating a significant opportunity to install chargers in/near rental and multi-unit dwellings.[9] A single charger on an Ausgrid pole could service the weekly charging needs of a small block of 10 apartments at a substantially lower cost than retrofitting an existing apartment building and be deployed much quicker as it would avoid the need for a potentially lengthy strata approval process.

Supplying a missing element of public charging (slow-speed, long dwell-time charging)

Ausgrid is proposing to install and maintain - but not operate - AC chargers, capable of providing up to 7kW. A 7kW charger can fully charge an EV overnight, or top-up an EV's daily use in a few hours, depending on the car. This is especially useful for overnight charging in locations where off-street parking is scarce, typical of a large proportion of Ausgrid's network which covers a range of urban and metro areas. These are distinct from 22kW or larger chargers typical for commercial fast-charging provision, and cater to a different customer base. By installing widespread kerbside EV charging, we would also be able to avoid the need for dedicated EV charging parking spaces, which has been one of the major drivers of community objection to public EV charging to date.

Ausgrid's chargers would be 'neutral hosts' allowing any EV charging service provider to retail electricity via our chargers as part of their retail offering, at no additional cost. Kerbside chargers installed under our proposed model would not affect the terms and conditions for how any existing or future kerbside chargers are installed and operated. Our proposed model would complement existing approaches, collectively expanding charging options for consumers. By supporting multiple business models, this model can foster competition, enhances accessibility, and drives broader EV adoption.

Ausgrid would own and maintain the hardware and create a competitive landscape by enabling both retailers and e-mobility service providers (**eMSPs**) to compete to sell charge to customers through Ausgrid's installed infrastructure. Existing market structures would remain, with Ausgrid remaining a regulated infrastructure provider and private companies competing in the sale of retail charging offerings to customers. Figure 1 below outlines how the proposed model would work.

Competition between charging service providers will drive competitive pricing across chargers deployed at scale, benefiting consumers and encouraging broader EV adoption. Under this model, the customer experience would also be improved as customers would be able to access any DNSP-owned charger using their retailer or EV charging company of choice, avoiding the need to sign-up to multiple platforms or charging apps.

[9] Ausgrid; publication forthcoming

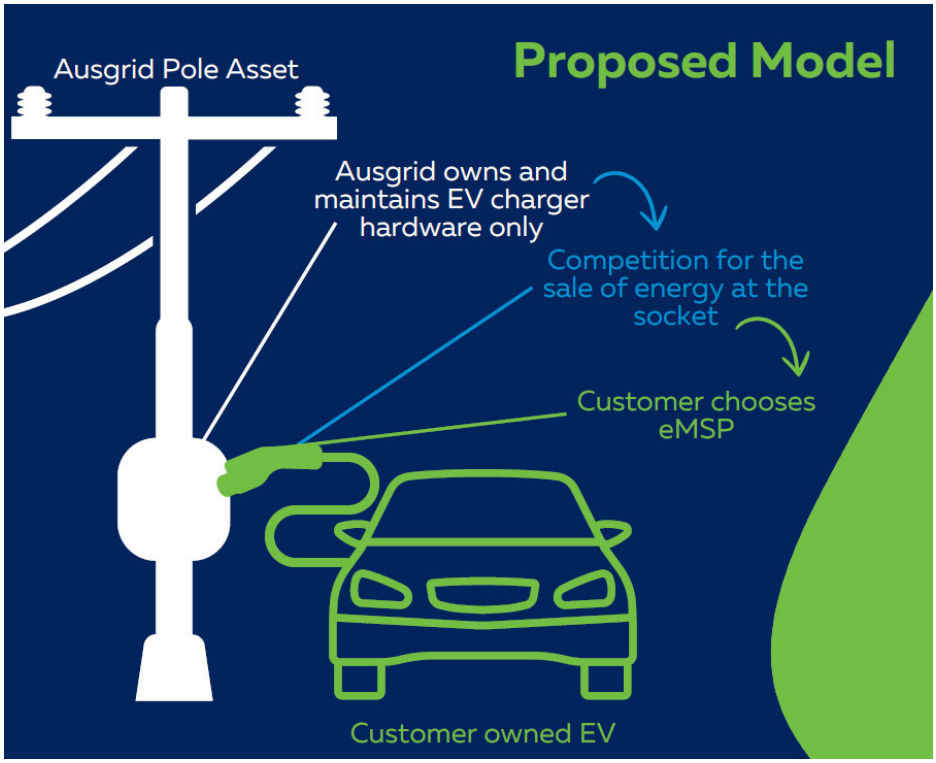

Figure 1: Proposed kerbside EVCI model

Timeline for the proposal and for delivery

Ausgrid has the capability to install 11,000 kerbside EV chargers within five years if changes to regulation or legislation are made to enable NSW DNSPs to own, install and maintain ECVI. Current workforce availability and product accessibility could allow as many as 80 chargers to be installed every week. However, ringfencing regulations under the NER, which are enforced through a ring-fencing guideline by the AER, currently prevent Ausgrid from owning and installing EV chargers on our network.

The NSW DNSPs have been engaging with the NSW Government on this proposal for a number of months. The NSW Government's Consumer Energy Strategy included a commitment to "investigate opportunities to facilitate the delivery of kerbside EV charging infrastructure by Distribution Network Service Providers where appropriate"[10]. We understand our kerbside EVCI proposal is also being considered as part of the development of the NSW Government's refreshed EV Strategy. Ausgrid would value the opportunity to discuss our proposal further with the Commission and how it could support EV take up as the NSW Government considers our proposal.

Enabling V2G

Ausgrid is also helping to facilitate the switch to EVs through enabling vehicle to grid (**V2G**) capabilities on our network. We recently successfully connected a V2G system to our electricity network, marking a significant step towards a more flexible and resilient energy future. V2G offers substantial benefits to customers, allowing

[10] NSW Consumer Energy Strategy, September 2024, action 31.

electric vehicles to not only draw power from the grid but also to discharge energy back into it. The two-way flow of energy transforms EVs into mobile batteries, capable of supporting the network during peak times and providing a new level of energy independence for customers.

V2G transforms EVs into more than just a transportation tool. Customers can turn their EVs into income-generating assets and energy-management systems, enhancing the overall value and practicality of owning an EV. Customers can use their EV batteries to sell excess energy back to the grid during peak times and recharge at off-peak rates, creating an additional source of income. A typical car battery is approximately six times the size of an average home battery. The integration of V2G technology offers advantages similar to those offered by home batteries, but on a larger scale. This means we can better manage network stress, improve overall grid performance, and potentially defer costly infrastructure upgrades, ultimately benefiting all our customers.

14. What measures could accelerate industrial heat electrification in NSW, where technology is viable?

As part of its Consumer Energy Strategy, the NSW Government has committed to the development of an NSW Gas Decarbonisation Roadmap by late 2026. The development of the Roadmap presents a significant opportunity to accelerate electrification across all demand sectors in NSW. We encourage the Net Zero Commission to advocate for an ambitious Gas Decarbonisation Roadmap aligned to the state's emissions reduction objectives. The response to question 19, below, includes further discussion of opportunities in the development of the Gas Decarbonisation Roadmap.

There are a number of actions which could be taken by the NSW Government that would assist electricity networks to enable industrial heat electrification. We encourage the Net Zero Commission to further consider and endorse these options:

- Enable transparency of large gas users in the state. At present, electricity networks have low visibility of large gas consuming customers. Being able to identify those larger users who are expected to electrify will allow us to plan for the required hosting capacity and remove grid capacity constraints in areas with high potential electrification needs. It will also enable outreach to those customers to ensure they have the needed support to develop their electrification conversion strategy and business plans.
- Major commercial and industrial customers face challenges in electrifying processes due to common factors including high upfront costs of new equipment, and long payback periods. We often find customers are only willing to invest in the next technology when current equipment (e.g. a gas boiler) is at the end of its life. To accelerate electrification beyond this natural replacement rate will require financial support for affected businesses combined with outreach and advice to help develop business cases and institute equipment replacements in a way that minimises disruption to business activity.

19. What additional measures could accelerate electrification and increase energy efficiency of new and existing buildings?

Ausgrid recognises the many economic, social and environmental benefits that electrification will deliver for households and businesses across NSW. Residential electrification offers a unique opportunity to empower customers to reduce household energy costs, improve health outcomes and support broader decarbonisation efforts to transition NSW to net zero emissions by 2050. Increasing electrification will help to place downward pressure on electricity network charges for all customers over the long term by increasing utilisation of existing network infrastructure.

Ausgrid is supportive of all-electric new development

Ausgrid strongly supports all electrification efforts and considers that pursuing all-electric new residential and non-residential developments is an important reform to avoid the need for subsequent, costly retrofits. Ausgrid is especially supportive of prioritising electrification for new residential and small business developments, acknowledging that it is more difficult, expensive and slower to electrify many industrial sectors like manufacturing (see also question 14).

Network investment plans & current capacity can accommodate increasing electrification

Ausgrid plans the network over the long-term using a range of scenarios and forecasts, as well as ongoing stakeholder engagement with customers, Governments, regulatory bodies, councils, industry and other bodies who may be interested in connecting to the network. Our forecasts for future demand on our network consider a range of electrification scenarios, guided by robust and regularly updated inputs like the Australian Energy Market Operator's (**AEMO's**) Integrated System Plan. Ausgrid is confident that we have included sufficient investment in our forward plans to accommodate a range of electrification scenarios and do not anticipate that accelerating electrification in NSW would necessitate major changes to our medium-term investment plan and would be incorporated into our long-term planning.

Most developments will have no material impact on the network, noting all large-scale developments and electrification projects are assessed on a case-by-case basis and may need localised investment in connection assets. However, our overall investment plans typically account for any targeted network changes required from increasing electrification by customers more broadly.

Our network plans also include the expected increase in EVs on our network. As the charging needs of EVs vary across the day and with different customer requirements, it is anticipated that even if significant additional EV charging is required, above current forecasts, we will still be able to accommodate this with limited need for additional augmentations to the network.

Managing changing investment requirements in response to emerging customer requests is a business-as-usual function of Ausgrid's business and we have a degree of flexibility in managing those localised needs. Early engagement between planning bodies, developers and Ausgrid will enable us to plan collaboratively and adapt our network planning in readiness for new developments. The reliability of our network has continued to improve even as we incorporate growing demand[11], and our demand forecasts and investment plans are updated regularly as we receive new information on future customer needs.

Ausgrid continues to review customer connection costs

Some of costs of connecting new developments to our network are passed onto connecting parties (e.g. developers). Ausgrid acknowledges that this can be a significant concern to developers seeking new connections. We continue to review and update how these costs are allocated and the appropriate assistance Ausgrid can provide in connecting new customers where there is a broader network benefit. Our on-going commitment is to ensure that we charge no more than is required to facilitate that connection and changes are made incrementally based on the latest information and connection requests.

We welcome the opportunity to continue to work closely with the Net Zero Commission on developing its electrification approach. We are continuing to consider ways to further collaborate with stakeholders on network planning, including through the development of more localised energy plans with local councils. Ausgrid, along with the other NSW electricity distribution networks, Endeavour Energy and Essential Energy, has also worked with the NSW Government to develop a public, online map of available hosting capacity on

[11] Ausgrid, 2023-24 Annual Reporting RIN

our networks to help prospective customers to select their connection location and better understand where there may be spare capacity.[12]

As noted in our response to question 14, we view the development of the NSW Gas Decarbonisation Roadmap as an important contribution to accelerating electrification in NSW. We welcome the opportunity to discuss with the Net Zero Commission ways to ensure that our inputs to the Gas Decarbonisation Roadmap support an ambitious plan to facilitate NSW's efforts to meet its emissions targets.

20. How could social equity be better addressed in the transition to an electrified built environment?

Ausgrid's electrification plans are motivated by a need to improve the equity of the energy transition. Rooftop solar has been a major driver of the first wave of energy transition, lowering emissions and the energy bills of customers able to access it. However, the nature of the technology means it has been customers with access to roof spaces, and with money on hand to invest, who have been able to benefit, while others, including renters, apartment and social housing residents, and the less affluent, have not. Ausgrid has a suite of proposals aimed at spreading the benefits of solar power more broadly across our customer base. These include:

- **Community Power Networks** – see also question 6. Customers located within a Community Power Network would receive savings, whether or not they have their own solar or battery systems. The Community Power Network is expected to generate benefits of approximately $200 per household from network procurement of additional solar from commercial markets and from grid-owned local battery storage.

- **Community batteries** – see also question 6. Ausgrid's community batteries make the benefits of storage ownership available to households who do not want to, or are not able to have, behind the meter storage. Energy Storage as a Service (**ESaaS**) tariffs currently offered through partner retailers, offer a median benefit to participating households of $220/year.

- **Kerbside EV charging** – see also question 9. Enabling affordable charging for customers who do not have their own driveway or access to off-street parking will help to make the benefits of EV ownership available to more customers. Under the DNSP-led proposal we would seek to deploy EV chargers in locations which are underserved or not served by the current, commercial-led deployment model. This would include provision in lower income areas and areas characterised by apartments and terraced housing, which lack off-street parking options.

- **Tariff design and grid exports** –Ausgrid has introduced a two-way tariff for export capable customers which encourages them to consume their self-generated electricity where possible or time their grid exports to later in the day by providing a financial incentive for customers to invest in behind the meter storage. Importantly, it also ensures that customers who cannot access rooftop solar systems or behind the meter batteries do not shoulder most of the increased costs of supporting energy exports while continuing to provide a safe, reliable supply to all our customers. The two-way tariff was supported for by customer advocates including St Vincent de Paul to address equity concerns about the equitable recovery of network costs.

To transition current uses of gas in domestic and business settings to electricity, a concerted set of policy actions are required. Switching from gas to electricity reduces household energy expenses and improves environmental and health outcomes. However, upfront capital costs for replacing appliances, the drivers for

[12] This initiative was recommended under action 30 of the NSW Government's Electricity Supply and Reliability Check Up

replacement and the 'hassle factor' associated with making the change, means that the pace of electrification is not yet fast enough for emissions targets to be met. The NSW Government could support electrification and energy decarbonisation in the upcoming Gas Decarbonisation Roadmap through:

- Providing financial support and advice for households (especially vulnerable households) undertaking electrification actions (e.g. financial support and advice on energy efficiency and potential savings from moving to electrical appliances).
- Strengthening minimum housing standards for energy performance, particularly for rented residential properties.
- Accelerating the electrification of buildings with sector-specific targets including the electrification of social housing.
- Establishing a timetable for the state's distributed gas network to cease accepting new residential connections.
- Capping or eliminating gas network disconnection fees to support the transition towards electrification.

22. What should be included in a monitoring framework for NSW in the context of the transition to net zero, including any specific metrics and indicators?

Ausgrid would welcome the Net Zero Commission's support in producing electricity sector emission factor projections for the NSW grid. Federal DCCEEW produces NEM-wide information as part of the *Australia's emissions projections* series. To support our own decision-making and ensure accurate reporting of our impact on the transition to net zero, a NSW-specific series would be valuable. This could be enhanced further with provision of emission factor scenarios aligned with AEMO's Integrated System Plan scenarios.

23. The adaptation objective is for NSW to be more resilient to a changing climate. The Act allows for regulations to further define the adaptation objective. What does a more resilient NSW look like to you?

A more resilient NSW is one where the community has confidence that all stakeholders, including Governments, local councils, community organisations, and critical infrastructure providers, are working collectively to effectively manage climate change risk, both pro-actively as well as following severe weather events. As described in the response to question 1, our ability to invest in improving the resilience of our network has previously been uncertain under the NER. We welcome recent changes to the NER which clarify the ability of DNSPs to propose expenditure to reduce the risk and impact of climate related outages and will work with the AER on further guidance materials around which resilience activities can be undertaken and funded.

The NSW Reconstruction Authority, through the NSW State Disaster Mitigation Plan, defines infrastructure resilience. The supporting Disaster Adaptation Plans, which are still being developed, may encourage NSW critical infrastructure providers to undertake certain risk reduction activities, which may have implications for the investments NSW DNSPs undertake. However, unless these Plans are accompanied by clear direction from the Government that we are expected to undertake these actions, we may remain limited in our ability to take action and seek the funding required to implement these actions by the AER. We encourage the Commission to consider how its advice to Government on adaptation and resilience is translated into actionable directions that empower critical infrastructure providers, including Ausgrid, to invest in improving resilience for the community.

25. How can adaptation planning better use the NSW Government's climate change projections (NARCliM)?

Ausgrid currently utilises the NARCLIM2.0 data set, which is the latest release. We note that this data set does not include the mid-range climate scenario that is preferred by the energy regulator, the AER. We recommend that the NSW Government works to provide the mid-range dataset. In addition, factors like WindMax require further manipulation through bias correction before they can be used by entities like Ausgrid. To translate the NARCliM data for practical applications we engage the services of third-party consultants, as do many of our peer organisations. We recommend that future updates to NARCliM incorporate these bias correction steps so that non-government entities, including Ausgrid, can use the data provided directly without the need to carry out corrections.

27. What initiatives should the commission consider in assessing NSW's preparation and responses to extreme heat and humidity events in NSW?

Ausgrid participated in the development of the Greater Sydney Urban Heat Plan, which acknowledges the efforts to reduce urban heat by increasing the urban tree canopy.[13] However, a lack of clarity around the roles of different stakeholders is stalling solutions and impacting consumer outcomes.

Heatwaves are responsible for more human deaths than any other natural hazard.[14] Increasing urban canopy coverage is one tactic to address this hazard and the NSW Government has introduced a 40% urban canopy coverage target by 2036.[15] However, this solution poses a risk to existing street level DNSP assets and conflicts with Ausgrid's vegetation management protocols. Resolving this conflict would require upgrading Ausgrid assets with technologies that could withstand denser canopies (i.e. aerial bundled cable).

Our customers expect this work to happen and see Ausgrid, as the asset owner, as responsible for delivering it. But we have not been able to fund activities to protect and increase canopy cover because the economic and community benefits, such as avoided health costs, do not clearly fall within what can be assessed by the AER under the NER. There is also no clear funding pathway for Government to fill this gap.

Local councils, who are responsible for delivering the urban canopy coverage target, have limited resources to invest in these upgrades; while government grants, such as the Federal Government's Disaster Risk Reduction Fund, currently exclude privately owned businesses so cannot be accessed by many DNSPs for these programs.

Clear and explicit guidance on the roles and responsibilities for funding and delivering investments to address extreme heat and humidity in NSW, including the role of DNSPs, will go a long way to setting expectations for everyone involved in tackling these issues and developing credible pathways to unlock investment.

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[13] WSROC, Greater Sydney Heat Smart City Plan

[14] AdaptNSW, Climate Change Impacts on Heatwaves

[15] DPE, Greener neighbourhoods.