



AGL Energy Limited

T 02 9921 2999

F 02 9921 2552

agl.com.au

ABN: 74 115 061 375

Level 24, 200 George St

Sydney NSW 2000

Locked Bag 1837

St Leonards NSW 2065

EnergyCo

By email: contact@energyco.nsw.gov.au

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AGL Response to NSW Network Infrastructure Strategy Draft consultation

AGL Energy (**AGL**) welcomes the opportunity to comment on the draft NSW Network Infrastructure Strategy (**NIS**).

AGL is a leading integrated essential service provider, with a proud 185-year history of innovation and a passionate belief in progress – human and technological. We deliver 4.2 million gas, electricity, and telecommunications services to our residential, small, and large business, and wholesale customers across Australia. We operate Australia's largest electricity generation portfolio, with an operated generation capacity of 11,208 MW, which accounts for approximately 20% of the total generation capacity within Australia's National Electricity Market (**NEM**). We have the largest renewables and storage portfolio of any ASX-listed company, having invested \$4.8 billion over two decades in renewable and firming generation.

AGL understands the importance of network planning to support new renewable generation technologies with complementary functions in the transition from traditional fossil fuel-based power generation to a fully decarbonised grid.

In our inaugural 2022 Climate Transition Action Plan (**CTAP**) under the Say On Climate initiative, we clearly state AGL's updated ambition to become an integrated low-carbon energy leader, including:

1. Targeting a full exit from coal-fired generation by the end of FY35 (up to a decade earlier than previously announced).
2. Ambition to meet customer energy demand with around 12 GW new firming and renewable assets by 2036.
3. An initial target of 5 GW new firming and renewables by 2030.

AGL has committed to repurposing its large thermal generation sites into low carbon industrial Energy Hubs. Our industrial Energy Hubs at Loy Yang, Torrens Island and in the Hunter will bring together renewable energy (**RE**) production and storage with energy-intensive industries, centred around a shared infrastructure backbone.

Our plan recognises that a balance needs to be struck between responsible transition and rapid decarbonisation to keep Australia's electricity supply secure, reliable, and affordable – principles that are equally relevant for network infrastructure planning.

The current economic context for consumers

With the current cost of living crisis, consumers have a heightened awareness of rising energy prices and are feeling the impacts. Recent figures accompanying the federal budget showed that treasury predicted a 50% rise in wholesale electricity prices over the next two years that will flow on to consumer energy bills. These projected cost increases are before any network charges associated



with renewable energy zone (**REZ**) or other transmission development are projected. These economic factors combined will mean that an increase to any part of the energy cost stack will face added scrutiny by consumers. The need for economically efficient network build is now more important than ever.

NSW development within the NEM ecosystem

While NSW has laid out its rationale for developing its own strategy for network infrastructure development, it will remain important to consider any efficiencies that can be built into the development and approvals process through coordination with national planning. Given that the NSW approach must coordinate with the Australian Energy Regulator's (**AER**) Regulatory Investment Test for Transmission (**RIT-T**), it will be important to consider how the added level of state bureaucracy can lead to a faster overall process.

Treatment of emerging technologies

With the inherent uncertainty associated with emerging technologies, it will be important to regularly refresh the NIS to more accurately predict future scale and the associated transmission build required.

It will also be important to look for features of emerging technologies that can aid build efficiency. For example, flexible loads such as hydrogen production and distributed energy resources (**DER**) could be managed to optimise supply-demand balance, thereby avoiding network overbuild. Where transmission overbuild is deemed necessary, NSW should consider how future profits from the beneficiary technologies could be returned to the consumers who funded the additional transmission spend.

NSW should take a technology-agnostic approach wherever possible to keep costs to consumers down, with the example being the risk of support for more expensive offshore wind development attracting investment away from less expensive onshore wind projects.

With our ambition to become an integrated low-carbon energy leader, we understand that decarbonising the grid will be a delicate balance of competing priorities with economic efficiency just one part of the puzzle.

EnergyCo's challenge will be to minimise costs and impacts of the necessary transmission build on local communities, existing energy providers and energy consumers whilst delivering all the benefits a decarbonised grid will make possible.

If you have any queries about this submission, please contact Siobhan Bradley (Policy Manager) at sbradley4@agl.com.au.

Yours sincerely,

Chris Streets

GM Policy, Market Regulation, and Sustainability (a/g), AGL Energy

Question	Response
1. In what ways can the NIS further complement, align or improve the National Transmission Planning and Investment framework under the National Electricity Rules?	<p>We propose regular coordination check points to ensure that regional and state plans align with whole of system planning.</p> <p>EnergyCo should also regularly consider how development and approval process efficiency can be improved, avoiding adding an additional layer of state approvals onto an already lengthy national RIT-T process. It will be important that the state system be streamlined to expedite national processes.</p>
2. Do you agree that the NIS should in future accompany the IIO Report?	<p>Yes. The two-year update to the NIS should also, where possible, explain any impacts of the update on the 20-year development pathway and 10-year tender plan for LTESAs covered in the IIO report. This increased transparency as the network takes shape would provide businesses and investors with necessary information on the planned transmission environment and other RE infrastructure development plans to support their business case preparation for future tenders.</p>
3. What additional emerging trends that could influence the development of NSW's electricity system, beyond the three outlined, should be considered in the NIS?	<p>We suggest the following possible additional emerging trends:</p> <ul style="list-style-type: none"> - DER, including the potential scale and penetration of DER and how orchestration might be optimised to better balance supply and demand and reduce the scale of new transmission build required. - System services – these are growing in demand. - Flexible capacity and quantifying the relative value of flexible versus inflexible capacity.
4. Has the NIS appropriately assessed the impact of a potential domestic and export hydrogen economy on transmission infrastructure? If not, what additional factors should EnergyCo consider?	<p>In the NSW hydrogen strategy, hydrogen projects are eligible for a 90% exemption from network charges if they connect in areas with spare capacity.</p> <p>The concept of spare capacity is different where new networks are being developed. The NIS should consider how future hydrogen connections should be treated with the build out of new transmission infrastructure in the REZs. If hydrogen projects are granted charge exemptions for their use of network infrastructure, it needs to be considered how the hydrogen can benefit the energy system – e.g., by providing flexible load. EnergyCo should also consider how some of the network costs might be recovered in the future. The desirability to support hydrogen projects must be weighed against the cost pressure on consumers of increasing network costs on retail bills. NSW could consider options where future profits from a hydrogen export industry can be returned to the NSW consumers who originally paid for network upgrades through their retail bills.</p>
5. What is the most effective way for EnergyCo to support the delivery of renewable energy capacity for hydrogen export projects by 2030 and 2040? For example, should we expand existing REZs or develop new dedicated REZs?	<p>There are a number of difficulties in predicting the benefit a dedicated hydrogen REZ could offer. The hydrogen industry is in its infancy making predictions of future scale uncertain. EnergyCo should consider what its ultimate purpose is in implementing such a plan. Is the purpose to avoid transmission charges for consumers or to co-locate key infrastructure with necessary geographic features benefiting a hydrogen economy? In principle, the hydrogen production sites, and new or excess renewable energy generation should be co-located where</p>



possible to minimise the scale of transmission build required. The near-term focus should be about capitalising on suitable, lowest cost resources (wind, solar, land, existing infrastructure) rather than an existing or dedicated REZ. This could also be an opportunity to think about how hydrogen could benefit the transmission network across all REZs – for example as a source of flexible demand to minimise network build.

The feasibility of a purpose-built REZ for hydrogen could be revisited in future NIS updates as the economics of hydrogen evolve and once the benefits of this approach can be clearly articulated.

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6. What is the hydrogen export potential that future NIS should aim to facilitate through its network developments by 2030, 2040 and 2050?
- Given the uncertain nature of hydrogen industry development, we propose the best course of action right now is to keep all options open. It wouldn't be economically prudent to build infrastructure assuming an industry will develop. The economics must stack up first before investing significant amounts in consumer-funded networks to support hydrogen.

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7. How and at what point should generation from OSW be considered in network planning for the future editions of the NIS? What other considerations are important when it comes to OSW?
- Given the additional costs of developing OSW projects compared to onshore wind, the benefits of OSW should be clearly demonstrated before they form part of future editions of the NIS. For example, this may be the case should social licence concerns prevent onshore developments from proceeding.

OSW ocean territory-use license fees also need careful consideration so that the benefits of use of taxpayer ocean territory can be returned. This will require balancing capitalising on future anticipated ocean territory value with encouraging investment by project proponents. Fees should be transparent and reflect the best value for use of public land.

Other important considerations include the need for coordinated, shared transmission infrastructure to improve individual OSW project economics. Government would need to play a coordination role as coordination by individual project proponents could be considered anti-competitive.

A significantly scaled OSW industry in NSW could impact onshore communities near onshore grid connections. Balancing the needs of project proponents and local communities will be important. For future OSW developments, note that the UK OSW sector is considering the possibility of offshore transmission infrastructure. Perhaps a dedicated offshore REZ could be a future solution to avoid disruptions to onshore communities.

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8. How can EnergyCo best work with industry to incorporate long-duration storage projects into transmission planning for REZs in NSW?

We are supportive of a technologically neutral approach.

Long duration storage technologies are developing. Some may require certain resources and a fixed location (such as pumped hydro) while others could be located more flexibly. In addition to seeking feedback from industry on likely locations, EnergyCo may be able to indicate where storage opportunities might be valuable, to encourage a market response.

Shorter duration storage projects will also be crucial to the transition to ensure supply and system security, and to complement and enable REZ development. We suggest that the

extent to which the NIS favours long-duration storage over short-duration storage should be aligned with forecast shortages or historical analyses of RE droughts.

<p>9. Has EnergyCo identified the right principles to guide the development of the Network Infrastructure Options? How could they be improved?</p>	<p>We are generally supportive of the principles outlined in the NIS.</p>
<p>10. What are stakeholder views on taking an 'option-rich' approach to manage the inherent uncertainty in the future evolution of the energy system? Are there better approaches to manage this uncertainty?</p>	<p>An option rich approach will help to manage the uncertainty of the market transition but must still be weighed against the cost impacts of transmission overbuild on consumer electricity bills.</p>
<p>11. Do stakeholders agree that the development of network options should be designed at sufficient scale to avoid multiple projects being built in the same locality over time?</p>	<p>The treatment of overbuild needs to balance the needs of local communities (disruption) against the additional costs incurred by electricity consumers if infrastructure is overbuilt and sits unused for a period of time.</p> <p>The strategy may also want to consider other factors such as the costs of a second build /upgrades at a later date instead of building now, and the benefits to local communities if jobs return in the future to complete an upgrade.</p>
<p>12. Is the process for estimating cost and delivery schedule for these potential augmentations considering enough factors to be robust enough for a high-level comparison of options? If not, how could it be improved?</p>	<p>The process should have at least the same level of rigour as the RIT-T.</p>
<p>13. Are the scenarios used to test the benefits of the augmentations adequate? If not, how could they improved?</p>	<p>No response.</p>
<p>14. Is the methodology to estimate the projects commissionable by 2025 and 2027 adequate? If not, how could it be improved? How could EnergyCo estimate the generation projects that may be connected to the existing shared NSW network post 2027?</p>	<p>No response.</p>
<p>15. What are stakeholder views on the processes used to develop the REZ network options? How could the option development process be improved to reduce electricity prices for NSW consumers, support reliability and security, and maximise benefits for regional communities?</p>	<p>No response.</p>
<p>16. What factors additional to consumer price impacts, community feedback, land-use planning, workforce availability and supply chain considerations, should the NIS</p>	<p>The NIS should consider the generators and loads that are likely or committed to locate within the REZ, to ensure the most efficient transmission build possible. REZ transmission options should be guided by the market where relevant.</p>



consider in designing, developing, and
delivering REZ transmission network
options?
