



Committee Secretary
Select Committee into the Resilience of Electricity Infrastructure in a Warming World
Department of the Senate
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19 January 2016

Dear Sir/Madam

Re: Select Committee into the Resilience of Electricity Infrastructure in a Warming World

The Northern Alliance for Greenhouse Action (NAGA) is pleased to take this opportunity to submit a response to the Select Committee into the Resilience of Electricity Infrastructure in a Warming World.

NAGA is a network of nine northern Melbourne metropolitan councils working to achieve significant emissions abatement and energy cost savings by delivering effective programs and leveraging local government, community and business action. Our council members include the cities of Banyule, Darebin, Hume, Manningham, Whittlesea, Yarra, Melbourne, Moreland, Moreland Energy Foundation Limited, and Nillumbik Shire Council. NAGA formed in 2002 to share information, coordinate emission reduction activities and cooperate on research and develop innovative projects. We work with a network of other [Greenhouse Alliances](#) across the state of Victoria.

We consider this inquiry to be an important opportunity to strategically plan for a more resilient energy system into the future, which properly considers and adapts to the risks posed by climate change. In a 2009 report prepared for the Energy Networks Association, Parsons Brinckerhof¹ estimated that the cost to energy networks from climate change is estimated to be \$2.5bn over the next 5 years. They estimated that the largest proportion of this cost arises from the requirement to augment networks to accommodate the increase in peak demand largely associated with air-conditioning use. This is likely to be a conservative estimate as the past few years has seen increased bushfire activity, increased intensity of storm events, and hotter and drier conditions.

As much of Victoria's electricity infrastructure is approaching the end of its lifecycle in the next 10 years, now is an important time for the policy settings to help drive this transition in a least cost, equitable way. NAGA considers that Victoria has an enormous opportunity to strategically upgrade its grids to ensure a decentralised and decarbonised energy system going forward, and one that is resilient to the impacts of climate change.

NAGA has recently completed a regional climate change adaptation plan for northern metropolitan Melbourne. As part of the plan, an integrated vulnerability assessment was undertaken to identify key risks to the region. One of these areas of vulnerability relate to the resilience of electricity network infrastructure, and the action plan contains actions to encourage decentralised renewable energy generation. Many of the risks posed to councils and their communities from heatwaves, bushfires and storm events are exacerbated by power failures. These risks have been realised in recent extreme weather events and act to further threaten vulnerable members of the community and disrupt council's ability to deliver services during extreme events.

Furthermore, low income households are particularly vulnerable to climate change, with high power prices and outages during heatwave events and other extreme events leading to higher morbidity and mortality risks, particularly for the aged. There is mounting evidence to demonstrate that the installation of solar PV supports greater capacity for

¹ file:///C:/Users/rob/Downloads/sub307a_pdf.pdf

cooling in households where energy costs represent a large proportion of ongoing living costs. Council staff in our regional workshops shared anecdotes of low income households avoiding using any cooling in heatwaves because of fear of a high power bill. The ability of the technology to provide low cost energy throughout the day means these householders can cool their homes without fear of ‘price shock’. NAGA is currently delivering a program with three other greenhouse alliances to deliver [solar PV for low income households](#) to reduce dependency on centralised electricity.

(a) *the role of storage technologies and localised, distributed generation to provide Australia’s electricity networks with the resilience to withstand the increasing severity and frequency of extreme weather events driven by global warming;*

Storage technologies and localised distributed generation can improve the resilience of the electricity network in a number of ways such as by:

- Reducing demand on the network at peak times, and reducing strain on the network
- Continue to operate locally during outages (i.e. where islanding technology is in place or there exists microgrids that can disconnect from the larger grid).
- Providing balancing services to the networks

Local governments in Victoria are involved in a number of trials and projects seeking to test new ways for decentralised energy to improve resilience. These include but are not limited to:

- **Community grids project:** A partnership between United Energy, Greensynch and Mornington Peninsula Shire, the program will engage and incentivise households, small businesses and community organisations on the lower Mornington Peninsula to help them reduce and/or shift their electricity usage voluntarily or through the use of solar PV and energy storage systems.
- **Mooroolbark Mini Grid Trial:** Yarra Ranges Shire partnering with Ausnet Services and Greensync to test a solar and storage mini grid trial in a suburban street.
- **Future Energy Planning:** NAGA is leading a project together with the Eastern Alliance for Greenhouse Action that seeks to build better collaboration between electricity networks and local government planners in Victoria. An important objective of the project is to identify integrated energy solutions not currently supported by the existing regulatory processes.
- **Council corporate solar and storage:** Over the past ten years NAGA members have already implemented nearly 5 MW of solar PV on council owned buildings. A number of our councils are now investigating opportunities for medium scale storage to be deployed for their own corporate facilities.
- **Solar PV for Low Income Households:** As mentioned above, NAGA and its partners are working on a project to install up to 1,100 solar PV systems on low income and vulnerable households across twenty municipalities between October 2016 and June 2019.

(b) *Recommend measures that should be taken by federal, state and local governments to hasten the rollout of such technologies:*

The roll out of local distributed generation is not just about costs or technology availability. The design of local energy solutions requires collaboration between parties that have traditionally not worked in close partnership, such as local governments and electricity networks. Distributed energy resources require participation and collaboration from diverse stakeholders in order to ensure that overall system security and reliability is maintained. The energy sector could learn a lot from the water sector, where multi-stakeholder partnerships is more common, and upstream and downstream impacts and benefits are more holistically considered.

Under Victoria’s planning system local councils and the State Government develop planning schemes to control land use and development. Currently, electricity network planning and land-use planning currently occur in isolation, meaning long term, viable and sustainable options for integrating demand and supply side opportunities are lost, resulting in inefficient investment and higher prices for consumers.

Whilst both land use planning schemes and the national energy market objectives intend to serve the long term interest of the community, they cannot do so whilst operating in isolation. Despite the implications land use planning has for

local energy use and demand patterns, existing regulatory requirements do not require either sector to synchronise their respective planning processes.

The current consumer engagement processes for network planning, such as the Regulated Investment Test (RIT-D), are overwhelmingly complex and time consuming for local (and to a lesser extent state) governments to proactively engage with. For example, a number of councils have recently been consulted by their DNSP a few days prior to the RIT-D due date, with the DNSP seeking local government support for substation upgrades. This is an example of this process failure and highlights the need for coordinated and ongoing engagement between the sectors. Future regulatory settings should incentivise proactive and collective cross-sector solutions, particularly with respect to network constraints.

NAGA therefore supports the introduction of regulatory and market based approaches to ensure coordinated planning that delivers smarter, tailored integrated energy solutions that alleviate costs to consumers. This will also ensure that consumers have equitable access to a range of emerging energy services and are not constrained by outdated traditional market models.

Recent electricity network pricing determinations have demonstrated the lack of support for demand management initiatives by the Australian Energy Regulator (AER). This has led to only a small allowance being provided to network businesses to pilot and trial projects to fully assess the costs and benefits of network innovations via the Demand Management Incentive Scheme. On average, allowances under the scheme equate to just 0.09% of the total revenue allowances for each DNSP. This amount is clearly insignificant when compared with other industrialised businesses where expenditure on research and development is often higher by several orders of magnitude.

(c) *any other relevant matters.*

We understand that the [Energy Networks Association](#) has developed an industry methodology and tools to support members in managing climate risk and resilience across core network business activities and to ensure consistency in factoring climate change risk in future network investment decisions.

It is not clear to us if any of the networks have used the manual to develop their own climate change risk assessments, and also how this will orientate their business decisions towards distributed generation.

We recommend the COAG energy council request that climate change risk assessments and adaptation plans be undertaken by every electricity network in Australia. This could be an annually updated process that is transparent and published as an appendix to the Annual Network Planning reports. It should also seek to identify actions that can be undertaken in partnership with other stakeholders not just rely on traditional network solutions of infrastructure upgrades.

NAGA also considers that the National Electricity Objective (NEO) is no longer appropriate to the current and future Australian energy market. The NEO does not recognise the interest of the community at large and confines consumer interests to economic interest alone. The interpretation of 'efficient investment' has resulted in unbalanced rule making and a market bias that supports centralised infrastructure rather than demand management or other distributed generation solutions to network issues.

The NEO is to be achieved with respect to "firstly, price, quality, safety, reliability, and security of supply of electricity and secondly the reliability, safety and security of the national electricity system." In the absence of a NEO that recognises the need to increase resilience to climate change and reduce greenhouse gas emissions, incumbent fossil fuel generators, generator-retailers and network businesses have consistently used these current objectives to protect and advance their own interests and disproportionately influence regulatory reform.

Advocates for renewable energy, demand management and innovation have had to argue within this framing of the NEO, leading to limited success against incumbents arguing about threats to reliability and security of supply. This can be seen in the recent methodologies used to calculate feed in tariffs, where the terms are narrow and the environmental and social benefits are largely ignored and externalised.

Please contact Rob Law (phone: _____ or email _____) if you would like further information, case studies or any clarification regarding the issues raised in this letter.

Yours sincerely

Rob Law

NAGA Project Manager

The views represented in this submission do not necessarily represent the views of all NAGA members individually.