Executive Officer
Economic, Education, Jobs & Skills Committee
Parliament House
Spring Street
East Melbourne Vic 3002

29 September 2016

Re: Inquiry into Community Energy projects

The Northern Alliance for Greenhouse Action (NAGA) is pleased to take this opportunity to submit a response to the Inquiry into Community Energy Projects.

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.

The NAGA councils have a strong interest in promoting and facilitating community energy in the region and have demonstrated experience in testing and trialling innovative new models of renewable energy generation. In this submission we seek to draw upon our collective experience to address each of the Terms of Reference (ToR) of the inquiry.

1. The benefits of community energy projects

Community energy provides a wide range of social, technological, economic, environmental and political benefits, including:

Accelerating the necessary decarbonisation of Victoria's energy sector

The Victorian Government has recognised the need to decarbonise Victoria's energy sector, and has developed an ambitious Victorian Renewable Energy Target (VRET) of 25% by 2020, and 40% by 2025. Fostering community energy can help build new renewable energy capacity through creating scalable, replicable ownership and operating models.

Empowering Communities

Community energy provides a mid-point between large-scale commercial renewable energy generation and household energy production, in the form of rooftop solar. In doing so, it has the potential to not only provide additional renewable energy but to bridge a gap between the small and the large and overcome public indifference or opposition to a centralised electricity grid.

Community energy is a dominant component of the major progress made on renewable energy in industrialised countries such as Denmark and Germany (MacGill and Mey[1]). Denmark, a pioneer in community energy since the 1970s, has already nearly reached its 50% target for renewable electricity by 2020 while Germany reached 32% renewable electricity in 2015 with a target of 40-45% by 2025, and has some 850 energy cooperatives. Almost half of its installed capacity is owned by households, communities and farmers.

Community energy offers an avenue for people to engage with and tackle the issue of climate change and to take a community led response to tackling high energy prices. Moving to a renewable energy future will require high levels of community consensus and engagement, and community renewable energy can increase and mobilise public support for the renewable energy industry more broadly.

Unlocking innovative financing for renewable energy

Community energy projects can unlock new sources of funding, either by tapping into investors within community projects or through alternative purchasing models such as rates based financing. In 2015, the Coalition for Community Energy (C4CE) undertook a Collective Impact Assessment (CIA) that found that $23 million in community funding for energy infrastructure has been secured for the development and delivery of community energy projects to date in Australia[2].

Providing broader access to clean energy

A large proportion of Victorian energy consumers are unable to invest in onsite energy generation for self-supply (such as domestic solar PV), due to financial, bureaucratic or practical barriers such as lack of suitable roofspace. The emergence of new community energy models opens up opportunities for access to clean energy such as for renters, apartment dwellers and low income households.

Alleviate 'energy poverty' for vulnerable consumers

Many community energy models seek to alleviate energy poverty of vulnerable members of the community. For example, work is currently underway by the Eastern Alliance for Greenhouse Action and the Northern Alliance for Greenhouse Action to look at innovative financing mechanisms such as rates based finance for low income households. One of the main goals of such a project is to reduce power bills and increase comfort levels for participants, in the same way that the successful City of Darebin Solar $avers project has achieved.

Creating new local jobs, education and training opportunities

The CIA data collated by C4CE shows that on average community energy projects create:

- four months of work during development;
- one month during planning;
- approximately half a year in installation; and
- 37 weeks annually, on an ongoing basis.

Furthermore, although only 12 per cent of the technology is sourced locally, the majority (92 per cent) of services associated with community energy projects (e.g. installers, construction workers, electricians, administration etc.) are sourced locally.

New income streams for communities

Community energy can deliver new income streams to fund community development projects over the life of a project. For example, the Abbotsford Convent, together with The People's Solar, recently crowd-funded $120K to install a 99kW system on site. Its success means that the iconic site now owned by the

[1] https://theconversation.com/power-to-the-people-how-communities-can-help-meet-our-renewable-energy-goals-60702
[2] http://c4ce.net.au/nces/wp-content/uploads/2015/04/Appendix-C_CIA-Final-Report_FINAL.pdf

not-for profit Abbotsford Convent Foundation (ACF) – including 11 heritage buildings housing more than 100 artist studios, cafes, galleries, a radio station and a school – can reduce its combined annual electricity bill of $130,000 by around $15,000 a year. The savings from the project will be reinvested into maintaining and protecting the Convent's gardens and grounds – 16.8 acres on the Yarra River – and ensuring it remains an "inner-city" arts sanctuary.

Further benefits of community energy are detailed in the National Community Energy Strategy developed by C4CE.

2. The challenges communities face in establishing energy projects

Community energy projects face a number of challenges largely due to the energy market being originally designed for large-scale centralised fossil fuel generation. Moving to a decarbonised, distributed, renewable energy supply requires significant structural readjustments. The immediate challenges include:

Licensing issues

To date, an important obstacle to establishing community energy projects in Victoria has been the requirement to have a licence to generate, distribute and sell electricity. This is a barrier not faced by projects in NSW and other states. NAGA is hopeful that the current reviews of the Victorian Government General Exemption Order review and the ESC licensing framework review will resolve these barriers.

Finding suitable host sites

Most community energy models are for behind the meter applications, or often referred to as "behind the meter, below the load" models. In this approach, the host site agrees to purchase the energy over the life of the project, thus avoiding the issue of selling the energy back through the grid. The scale needs to be less than the minimum load profile to minimise grid connection issues and costs. A significant challenge for community groups wishing to establish a project is to find a host site that meets all the requirements. This often requires finding sites with suitable roof space, enough daytime load (often needing 7 days a week and a minimum 40kw system), paying standard retail rates for electricity and willing to pay for the electricity produced.

Value of community energy not financially recognised

Community energy projects operate with marginal financial incentives. This is due to a range of cost barriers such as connection fees, as well as the current Victorian feed in tariff being so low. Hopefully, with the current inquiry into the true value of distributed generation, there will be a fairer price for small and medium scale renewable energy generators. As community renewable projects are often medium-sized (i.e. between domestic and utility scale) they lack the economics of larger renewable projects, and the targeted RET support and simple PV grid connection process available to households.

Lack of capacity

Community energy groups are often faced with lack of access to early-stage funding to get a project from an idea to the point that it has a solid business case. In addition, they are also mostly volunteers often with limited knowledge about the complex energy sector.

Payment in Lieu of Rates Formula

This is the prescribed mechanism for calculating the amount that small-scale energy generators pay to local governments in lieu of rates. This currently presents a barrier to the development and ongoing operational viability of community energy generators as small-scale generators are charged at comparable rates to large-scale operators.. One method to reach this would be to waive the $40,000 component of the default PiLoR formula for community projects; the threshold criteria for this exemption could have a narrow definition around installed capacity (100kW-10MW) and community-ownership.

The need to create certainty for community wind in Victoria

The development of wind energy across the state is still largely hindered by the prohibitive clauses in VC82. Whilst we welcome the reduction of the 2 km setback to 1km in February of this year, there is still the need for the no-go zones and the 5 km setback around 15 regional towns across the state to be removed.

The rules of the energy market

Current energy market rules mean there are really only two main viable business model for renewables – behind the meter solar, or large-scale wind or solar. Community groups have developed models for both of these approaches (see discussion about models below), but it means that a mid-scale community solar farm or bioenergy projects are currently not cost effective, constraining what communities can do. Particular challenges facing the economic viability of mid-scale renewables projects include:

- the difficulty negotiating a good power purchasing agreement (PPA) with a retailer;
- the cost of grid-connection; and
- the high cost of using the grid, even if just transporting energy a short distance.

Despite recent attempts to affect change in the energy market through rule changes, the AEMC is not required to consider the social and environmental benefits when making decisions. This is a huge barrier for proponents of new energy models and advocates of decarbonisation.

Sharing energy across property boundaries with private wire

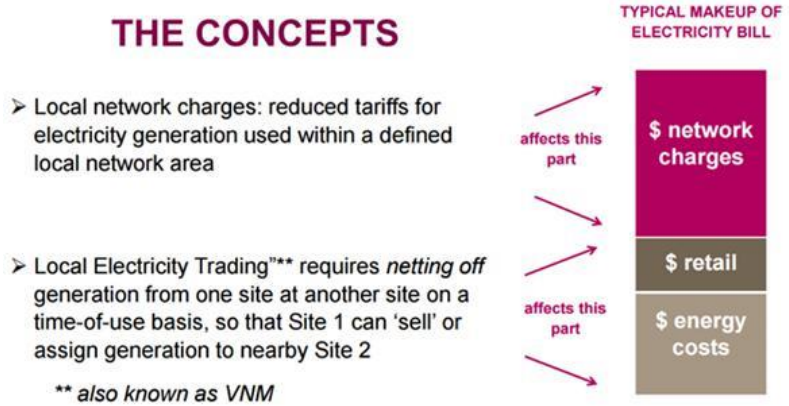
One area that still limits opportunities for local governments is licensing barriers around the use of private wire across property boundaries. These are sometimes known as "wheeling arrangements" and refer to when a distributed generator seeks to sell their excess power to their neighbours via their own wiring, avoiding the need for use of the costly distribution network. The key issue here is that the electricity may be delivered across property boundaries.

Several local governments are seeking to develop this type of model, whereby distributed generation acts as a supplementary supply. This is distinct from the idea of Virtual Net Metering or Local Energy Trading (described below) as wheeling arrangements do not typically involve the licensed distribution network and still sit behind the meter. The wheeling agent would construct and maintain any internal distribution wiring 'behind' the regulated meter.

Local Electricity Trading & Local Generation Network Credits

A better outcome than local generators installing private wires between neighbours are the emerging models of "Local Electricity Trading" (LET) and "Local Generation Network Credits" (LGNC). Local Electricity Trading is sometimes known as Virtual Net Metering and sometimes as peer-to-peer trading. This refers to an arrangement whereby generation at one site is "netted off" at another site on a time-of-use basis, so that Site 1 can 'sell' or assign generation to nearby Site, as set out in Figure 1:

Figure 1: Virtual Net Metering (ISF 2016)



This will reduce the combined energy and retail portion of electricity bills for local generation. Many local governments have particular interest in this model for selling to self. This would be a situation where a council may have a large roof with low daytime energy use that it wishes to install solar PV on to offset electricity use in another council building with high daytime energy use.

Local generation network credits are reduced network tariffs for electricity generation that is used within a defined local network area. In most circumstances, the tariff will reduce the network charge portion of electricity bills for local generators to the extent that the generation reduces long-term network costs. This recognises that the generator is using only part of the electricity network, and reduces the network charge accordingly. To date reduced network tariffs have been applied most systematically in the UK. To facilitate this a Local Generation Network Credit rule change was recently submitted to the AEMC. However the AEMC draft determination has opposed this proposed rule change despite the significant benefits to the networks, and to consumers[3].

There are a number of different models for applying LET and LGNCs:

i. generation to be transferred to another meter(s) owned by the same entity;
ii. generator customers to transfer or sell their exported generation to another customer(s);
iii. community owned renewable energy generators to transfer their generation to local shareholders; and
iv. community retailers to aggregate exported electricity generation from generator customers within a local area and resell it to local customers.

Applying these models has been advocated by many as one means where network operators could avoid decreasing utilisation of the network. Rather than encouraging users to use battery storage to save the excess energy and perhaps go off-grid, LET and LGNC means their poles and wires still have some relevance in a new energy system going forward.

3. The best ways to encourage and support community energy projects

Develop a community energy target as a component of the VRET

Ideally the State Government could seek to include a community energy component of the existing VRET. This could be in the vicinity of 5-10% of Victoria's renewable energy supply by 2025, or the equivalent of approximately 5400MWs.

Develop a specific policy mechanism to achieve this target

In order to realise a community energy target, a fit for purpose financial policy mechanism could be developed, such as a community energy reverse auction, a specific community Feed-In-Tariff, or similar policy mechanism.

Understand roles of local government and state government to support projects

Local and State Governments can play a much more proactive role in the development, facilitation and delivery of community energy projects. For example, greater examination of partial community ownership or sophisticated benefit sharing schemes for any government associated renewable energy projects or procurement processes. Both levels of government also own and lease significant portfolios of properties that may be suitable as host sites for community energy.

Government funding for support services such as Community Powerhouses

The Community Powerhouses policy was taken to the last election by Federal Labor. This includes:

[3] http://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures/our-research/energy-and-climate-2

- The establishment of at least 10 community hubs like Moreland Energy Foundation across Victoria, to provide expertise, advice, coordination and support for community energy initiatives in their region.
- Provision of grant funding for community energy projects
- Funding for a network to provide capacity building support and information sharing across the state.
- This policy could be implemented unilaterally by Victoria or as part of a national partnership with other jurisdictions similar to the National Landcare Program.

Removal of legislative barriers to community energy

There are many different models for community energy, each of which faces unique legislative barriers. The State Government could seek to work collaboratively with local government and community energy organisations to identify and proactively seek to remove existing legislative barriers. For example, local governments are limited in their ability to provide rates based finance under existing legislation. A change to the Local Government Act to allow for residential Environmental Upgrade Agreements would unlock significant levels of innovative financing for low-income households seeking to install solar PV and other technologies.

Enable Local Electricity Trading/Local Generation Network Credits in Victoria

Local Electricity Trading/Virtual Net Metering could unlock significant opportunities for local governments and communities to generate and sell electricity locally to neighbours. At the moment, there is no incentive or obligation for retailers and networks to offer Virtual Net Metering to customers. The State Government could look at its own jurisdictional levers to enable this, as well as using the COAG energy council to advocate in favour of the Local Generation Network Credit rule change that is currently underway.

Alternatively, the State Government could integrate a form of the local generation network credit into a new feed in tariff structure for Victoria. The Essential Services Commission (ESC) is currently considering this as part of its inquiry into the true value of distributed generation, however is waiting on the outcomes of the national rule change request.

Advocate through the COAG energy council for a new National Electricity Objective

A significant barrier to community energy, and integrating climate and energy policy in the National Electricity Market (NEM) is the current National Electricity Objective (NEO). The current NEO does not include any social or environmental objective, especially in relation to the need to reduce greenhouse gas emissions. This results in a lack of common vision amongst the energy sector, adhoc and conflicting programs and policies, and limits the ability for necessary energy market reform. NAGA understands that this is an issue currently being considered by the COAG energy council, and we encourage the Victorian Government to push for a new NEO that includes greenhouse gas emissions.

4. The challenges specific to establishing community energy projects in metropolitan areas and how to overcome them

Apartments and embedded networks

The definition of community energy could also apply to body corporates and owners of other strata titled properties who may seek to install commonly owned renewable energy systems. This model would see energy provided to both the property's common area and to the privately owned lots/apartments. Apartments now make up a significant and growing portion of the Victorian housing market. The number of apartments being approved and built in Victoria makes up nearly one third of all new dwellings approved across the state – more than at any time in our history. According to the *Better Apartments Public*

Engagement Summary, energy and resources are high of the list of issues for apartment owners (5th out of 14 issues behind only daylight, space, natural ventilation and noise).

There is currently an equity issue between house owners who can easily install solar and apartment owners, who face multiple legislative and physical barriers to installing solar. Low and medium rise apartment buildings provide a particularly good opportunity for solar. They often have large, unshaded roof space well suited to the installation of a commonly owned solar system that if distributed to the apartments, could maximise onsite energy use to create a highly efficient system.

72% of Australian apartment dwellers live in low-rise buildings of 3 storeys or less (ABS, 2011), and a Canadian study (Hachem, Athienitis et al., 2014) found that apartment blocks of 3 floors or less (with good passive solar and energy efficient design) have the potential to generate 96% of their energy usage from rooftop PV. Our members are receiving increasing enquiries from Owners Corporations, as well as tenants and owner occupiers seeking to install a commonly owned solar system. Sadly none of these communities has succeeded due to the challenges around the metering infrastructure costs and legislative complexity of installation.

As it stands currently, an Owners Corporation cannot conduct an energy business, and so must engage a retailer. In order to on-sell the electricity generated by any onsite renewables, it is necessary for an Owners Corporation to first create an embedded network, which involves a large upfront expense (can be tens of thousands of dollars) in changing over all of the existing meters. The cost of doing this makes the scheme financially risky for the retailer and potentially non-economic unless they charge high electricity prices to recoup the cost. The alternative is to spread the cost over a contract lasting 20 years which is not practical or palatable to either side. So existing apartment buildings are more or less excluded from installing solar panels by these rules, when they could potentially be a huge market and mitigate vast quantities of carbon emissions in the process.

A recent paper on solar PV in apartment buildings by Roberts, Bruce and MacGill notes:

> *"An additional financial obstacle to the early take-up of PV by Owners' Corporations is the tax complexity of dealing with Feed in Tariff (FiT) income. Taxation ruling IT 2505 (due to be replaced by Draft TR 2015) treats OCs as businesses and (except in South Australia, Tasmania and Northern territory), treats income to the OC from the export of PV energy as 'assessable income', meaning that it should be divided amongst the individual owners and declared on each individual's tax return. With most FiTs now reduced to a few cents per kilowatt, the taxable amounts may be small, but the administrative complexity can still be a disincentive for apartment owners. However, as the low FiTs are likely to drive PV system design towards smaller systems with 100% self-consumption, this becomes less significant."*

Overshadowing

It is recognised that new development has the potential to impact on the performance of existing solar panels through overshadowing. There are currently no statewide guidelines for assessing overshadowing impacts a proposed development may have on solar panels. Moreland City Council has developed a planning advisory note that will assess the impact of development on existing solar panels having regard to Clause 54.03-5 and Clause 55.03-5 of the Moreland Planning Scheme. However, greater clarity and protections should be given by the State Government to existing solar systems from new developments.

5. Types of renewable energy resources that could be used other than wind and solar

There are community energy groups in Victoria and across Australia developing community energy projects with a wide range of technologies, particularly sustainable bioenergy, small-hydro, pumped hydro storage, batteries and EV charging. However, the challenge is that these technologies do not have the same viable business models particularly as community solar.

We believe there is a particular role for community bioenergy, as bioenergy has a natural economy of scale at a community level – too small and the project is cost-prohibitive, too big and you have to transport the biomass feedstock too far. Bioenergy from waste is a particularly good opportunity.

In addition, community energy can also include demand side solutions. For example, there is a currently a project on the Mornington Peninsula called the Community Grids Project, which is a landmark demand response and energy storage project, focused on improving the reliability of electricity to the lower Mornington Peninsula. This project is being led by GreenSync and United Energy and has received a New Energy Jobs Fund grant from the Victorian State Government.

Significant opportunities exist for governments, electricity networks and communities to work together on demand side community energy projects as an alternative to expensive network upgrades. NAGA currently is managing a project called "Future Energy Planning" which seeks to build greater cross sector collaboration between local government and electricity networks. This project will aim to identify new opportunities for demand side response to network constraints and seek to unlock barriers to community involvement in these alternative solutions.

Please contact Rob Law (phone: 9385 8514 or email rob@mefl.com.au) if you would like further information, case studies or any clarification regarding the issues raised in this letter.

Yours sincerely

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