Climate Change and Resource Efficiency Policy Branch
NSW Office of Environment and Heritage

Thank you for the opportunity to provide input to the Climate Change Fund Draft Strategic Plan 2017 to 2022.

CLEANaS is the Clean Energy Association of Newcastle and Surrounds, a not-for-profit association formed in 2012 by a group of locals passionate about clean energy. CLEANaS is dedicated to driving the uptake of clean energy that our region can transition from our current dependency on fossil fuels to a more competitive and sustainable local economy. We will achieve this by working with our partners to demonstrate profitable community-led and community-owned clean energy projects; raise the profile of clean energy in the local economy through education and awareness raising; and by improving access to financing mechanisms and affordable technologies so that investment and activity grow. Our initiatives must deliver a win-win for local community investors, local enterprise and, of course, our environment.

Accelerating advanced energy: Attract investment in advanced energy and save emissions

Unlock investment under the Renewable Energy Target - Maximise investment under the national Renewable Energy Target

This plan proposes to support up to 540 MW of renewable energy projects over five years. This amount must be increased five-fold. NSW is far behind other states when it comes to attracting renewable energy investment and jobs. For comparison in the ACT "… the first round 2014 Amendment Bill to the Act was passed, entitling the Minister to issue feed-in tariffs (FiTs) for up to 550MW of generation capacity…'.
http://www.environment.act.gov.au/__data/assets/pdf_file/0009/796599/ACT-Wind-Auction-Review-Summary-report-final.pdf
NSW with a population about 20 times larger than the ACT should act accordingly.

Green Bonds

Green Bonds raise funds for new and existing projects with environmentally sustainable benefits. Green bonds can be issued to institutional investors, retail investors or a mix of the two. The Victorian government recently issued Green Bonds through Treasury Corporation

of Victoria (TCV). The Green Bonds proceeds will go to financing and refinancing Victorian State investments in energy efficiency, renewable energy generation, low carbon public transport and water treatment.
http://www.premier.vic.gov.au/victorian-green-bonds-an-australian-and-world-first/

TCorp (the commercial arm of NSW State Treasury) could create and administer Green Bonds to provide financing for various state-backed infrastructure projects in energy efficiency, renewable energy generation, low carbon public transport, etc. This would free up the Climate Change Fund for use in initiatives not eligible for commercial financing. If the green bond was issued for retail investors (similar to Waratah Bonds) this would allow broad-based community investors to be engaged in supporting green initiatives such as renewable energy projects.

Energy Market Reform

Energy market reform should be a strong priority for the NSW government. The NSW Government needs to advocate this with the COAG Energy Council.

We support the government's initiative to sponsor energy market reforms to improve network connection processes. For Community Energy projects not focussed on behind-the-meter this is key impediment to medium-sized projects. This reform would hopefully include the gas network in addition to the NEM.

National Electricity Objective

There is currently no requirement or mechanism to ensure that emissions reduction and energy market policies operate together. Nor does the governance of the NEM draw on the expertise of the bodies responsible for advising on and implementing emissions reduction policy.
http://www.chiefscientist.gov.au/2016/12/media-release-future-security-of-the-national-electricity-market/

As an initial step both the National Electricity Objective and the National Gas Objective need to be amended to include an environmental or emissions reduction objective. These objectives guide the AEMC, AEMO and the AER in executing their respective responsibilities.

Ancillary services market

The reliability and security of the national electricity system is a key part of the National Electricity Objective. Ancillary services supporting this reliability and security are currently provided by thermal generators in the NEM. As synchronous generators such as thermal coal generators are increasingly displaced by non-synchronous generators such as wind and

solar, little has been done to ensure that ancillary services are maintained throughout the NEM. For example wind and solar are not currently configured to provide ancillary services.

The price of electricity in the NEM does not distinguish between sources of electricity or the contribution those sources make to the security and reliability of the system as a whole. The creation/expansion of an ancillary service markets would help address these issues.

Settlement Period

In the wholesale electricity market generation is dispatched and priced every 5 minutes, but the market is only "settled" every 30 minutes. This allows for the market to be "gamed" by generators (typically gas), who might push the price to the market cap for one five minute period, knowing that the benefits will flow. If the price was settled every 5 minutes, then the distortions would be removed and fast-response technologies such as battery storage could be encouraged, leading to a smarter, cleaner and more secure grid.

Accelerate advanced energy technologies - Attract investment in advanced energy demonstration projects

Most emphasis to date on renewable energy has been on variable renewable electricity generators such as wind and solar PV. Gas-fired generators are well-placed to complement variable renewable electricity generators as dispatchable generation. However, Australia's east coast gas market has undergone profound change with the expansion of our liquefied natural gas export industry. Domestic gas prices have risen considerably as Australian gas markets have become linked to international markets and supply has been tight. Furthermore, CO2 emissions from gas although being 60% of black coal, should not be considered an end solution for dispatchable generation.

http://www.environment.gov.au/system/files/resources/b24f8db4-e55a-4deb-a0b3-32cf763a5dab/files/national-greenhouse-accounts-factors-2014.pdf

Renewable technologies that provide dispatchable generation and storage technologies that enable variable renewable energy to become dispatchable need to be considered.

These include Solar Thermal power stations, Biogas and Combined Heat Power plants, and Pumped Hydro Energy Storage, and Battery Storage.

Biogas with Biomethane upgrading plant would provide a renewable alternative to natural gas. In Australia to date there has not been any upgrading of biogas to biomethane to allow it to be used in the gas grid or used as a transport fuel.

Make New South Wales the centre for advanced energy innovation - Provide start-up funding to accelerate innovation in advanced energy

Set up regional hubs for green-tech startups.

Accelerate the transition to a 21st century transport fleet - Put the New South Wales vehicle fleet on the path to doubling energy productivity

Other potential actions could include:

Investigate renewable gas (biomethane) as low emission vehicles for long haul vehicles to replace diesel.

Invest in public electric vehicle charging infrastructure between towns and cities to decrease range anxiety (which is one of the main deterrents to the adoption of electric vehicles).

Work with local councils to deploy public electric vehicle charging infrastructure within towns and cities.

Provide incentives to EV use - such as use of transit lanes in cities during peak periods.

Better urban planning together with bike lanes and safe and direct foot paths will reduce the amount of car travel and reduce carbon emissions.

Empower local communities to adopt renewable energy - Build capacity of local communities to deliver and own renewable energy

CLEANaS would like to congratulate the NSW Government on: the leadership it has shown in supporting community energy over the last few years, and for continuing to recognise the importance of community energy in the Draft Strategy Plan and broader transition to a clean energy future in NSW. CLEANaS is supportive of the initiative to 'sponsor energy market and financial regulation reforms through COAG to make it easier for community scale projects to connect to the grid and share their benefits.'

CLEANaS believes that debt or equity crowdfunding, should it become available in Australia, will remove a key barrier to the growth of broad-based community owned local renewable energy schemes. Crowd Sourced Equity Funding schemes available in other countries, such as those facilitated by Mosaic Solar in the US (www.joinmosaic.com), have demonstrated the potential for small investors to drive development of local renewable energy projects. See also our input on this under section 'Energy Market Reform' above.

The Regional Clean Energy Program has been an important first step in establishing a community energy sector in NSW. This needs to be extended and further developed into a set of policy mechanisms to support community energy development within NSW. These would include:

1. The adoption of the **Smart Energy Communities policy**. This includes:

- The establishment of at least 10 community hubs like Victoria's Moreland Energy Foundation across NSW, 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 NSW or as part of a national partnership with other jurisdictions similar to the National Landcare Program. https://d3n8a8pro7vhmx.cloudfront.net/solarcitizens/pages/1211/attachments/original/1461219971/Community_Powerhouses_Policy_-_Homegrown_Power_Plan.pdf?1461219971

2. The establishment of **a community energy target**. We suggest that a target of 5-10% of NSW's renewable supply by 2025 should aim to be delivered from community energy projects.

3. That a **policy mechanism be developed to help meet this target**. Big gains can be made by creating a fit-for- purpose financial policy mechanism for community energy projects in order to leverage community, public and private finance.

4. Proactive encouragement of **partial community ownership or sophisticated benefit sharing schemes** for the large-scale renewable energy projects delivering through the Contracts for Difference process proposed in Section 2.1 of the Draft Strategic Plan.

Community support to clean energy and environmental issues within our region is strong and there are many examples where community has come together to support these activities through donations of time and money. Local people want to see the expansion of renewable energy and reduced reliance on conventional energy services. They also want to see the local economy diversify so as to capitalise on green economic opportunities including green jobs and markets. They also want to take control of their energy costs and have access to the means of managing their energy risks.

This requires investment, and CLEANaS believes that community is ready and willing to lead the way as long as there are clear and tangible shared benefits with strong local ownership and control.

Local investors for local benefit!

Our aim is therefore to involve broad-based community investors in profitable renewable energy projects which not only deliver a return on the investment but which also provide other tangible benefits to the local community. These other benefits include, strengthening the local renewable energy industry, reducing energy costs and risks to local business and social services, providing local people with an opportunity to engage in addressing global issues.

<u>Community energy challenges</u>

Community energy groups and projects face a raft of challenges in part due to the energy system and policies are not set up for democratically owned, mid-scale, decentralised energy. Furthermore rules, regulations and laws are also not set up for community enterprises.

Financing for community energy projects is a hard nut to crack within Australia.

For example, the 20/12 investor rule within the Corporations Act limits most projects to 20 'astute' investors. This in general precludes the involvement of broad-based community investors.
https://onestepoffthegrid.com.au/how-equity-crowd-funding-could-transform-the-community-energy-sector/

To seek investment from more than 20 investors, a community energy project most likely will need to be covered by an Australian Financial Services Licence, have a Prospectus, and undertake significant annual reporting. All of these add to the upfront and ongoing costs of a community solar project. For <100kW projects, the income generated from the sale of electricity is unlikely to cover these additional costs. Systems of over 400kW are generally needed to cover these costs.

http://www.embark.com.au/pages/releaseview.action?pageId=9797728

One project to date has been developed using a co-operative model which allows greater than 20 investors but does not have as onerous upfront and ongoing costs as the company model above.

The current rules of the energy and financials market mean there are 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, 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:

- Difficulty negotiating a good PPA with a retailer;
- Cost of grid-connection;
- The high cost of using the grid, even if just transporting energy a short distance. That is the lack of ability to do Local Energy Trading and the lack of a Local Generation Network Credit (see section below).

Local Energy Trading

The current charging structure in the National Energy Market (NEM) reflects the historic model of one-way flows from large, remote generators, via the transmission and distribution systems, to the customer. Everyone except very large customers used all (or nearly all) network levels. This charging structure does not produce optimal outcomes. There is little incentive to reduce peak loads, there is no flexibility to cater for partial use of the distribution system, and the potential benefits of local energy generation and use are not rewarded.

Local generators sell at wholesale and buy back at retail prices. Therefore, there is a strong

incentive for these customers (and product developers) to focus “behind the meter” & reduce grid consumption. This again has the potential for increased costs for consumers left using only grid electricity, as infrastructure costs are recouped from smaller sales volume.

Local Electricity Trading or Virtual Net Metering involves an electricity customer with on-site generation assign their ‘exported’ electricity to other site(s). This requires netting off generation from one site at another site on a time-of-use basis, so that Site 1 can ‘sell’ or assign generation to nearby Site 2. Local Electricity Trading provides an alternative to leaving the grid and provides social equity by mitigating the potential effect of spiralling customer loss from the network.

Benefits accrue to both the network and these local generators. The network provides the local generators access to bigger markets, keeps a high level of reliability, allows local generator to run systems for maximum efficiency, and supports technical requirements of consumers. In turn the local generators provides the networks with reduced transmission and distribution losses, the potential to save money on network investment, emissions reduction, increased resilience of system and technical network services.

Local Electricity Trading takes place between sites in the LV Distribution and potential HV Distribution and does not use Transmission and Subtransmission parts of the network. However, the network charges for the full network are currently levied against those wishing to partake in Local Electricity Trading. These additional charges affect the potential financial viability of Local Electricity Trading.

Local Network Charges provide reduced tariffs for electricity generation used within a defined local network area. In most circumstances, the tariff would 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. Local Network Charges should be technology neutral, calculated on performance rather than type of local generator, and applicable to range of sizes.

The introduction of reduced local network charges for partial use of the electricity network, and the implementation of local electricity trading between associated customers and generators in the same local distribution area provides a desirable alternative to customers who might otherwise choose to disconnect from the grid altogether or keep all their generation “behind the meter”, drastically reducing the amount of electricity they take from the grid.

Reducing network charges for local energy is a proactive approach to keeping networks competitive and managing the transition to an electricity market with high contributions from local energy. Local electricity trading coupled with local network charges has the potential to increase renewable energy options for the local community, supporting economic growth and local procurement of energy.

Further research and pilot projects are needed in a number of areas including project startup financing, legals, corporate governance and overheads, and investor models.

Save emissions and maximise the benefits in New South Wales - Reduce emissions in NSW to support achievement of interim and long term Commonwealth objectives

We oppose government support for research into low emissions coal technologies. Supercritical black coal has approximately 2 ½ times the CO2 emissions of Combined cycle gas turbine and represents only a 8.5 % improvement on conventional coal thermal generation.

Further research, development and effort is required in the measurement and control of fugitive methane emissions. For example one cannot base emissions levels for coal seam gas based on conservative US estimates from conventional gas extraction. EPA should be conducting their own measurements or using a trusted third party.

We support the move to advocate for Commonwealth, COAG and international action consistent with the Paris agreement.

Government to lead by example to lower energy costs - Expand investment under the Government Resource Efficiency Policy

CLEANaS supports the initiative to support council to upgrade public lighting. However, it should be noted that in NSW most councils do not own the public lighting as these are often owned by the electricity network and their use charged back to the local council. LGA's generally have little or no control over upgrades/replacements. It is proposed that a revised ownership/lease model be developed to allow for upgrades to be financed and carried out.

NSW government should look into the ACT funding model for energy efficiency undertaken with government departments which has a great deal of success. This could be applied at a local government or state department level for NSW.

Reduce energy costs for households and businesses – Improve energy productivity for households and businesses

This needs to include a plan and actions to address energy efficiency in community based facilities. Community groups often have significant energy costs which need to be funded out of community memberships and fundraising. With energy efficiency measures identified and undertaken these funds can be redirected to core activities of the community groups. Energy Efficiency measures such as lighting upgrades are cost effective with short payback periods using energy savings.

Make homes more liveable and affordable for renters – Drive clean energy upgrades for rental households

We commend the NSW Government on making clean energy accessibility and affordability a focus of the Draft Strategic Plan. This is a focus for many community energy groups in NSW. We support the focus on renters including the plan to provide ratings for homes at the point of sale and lease and improve energy performances of tenanted houses.

To help drive clean energy upgrades in rentals, the NSW government should advocate tax changes to accelerate depreciation for energy efficiency and Solar PV for investment properties.

Support vulnerable communities to access energy efficiency - Support vulnerable households to reduce their energy bills

Energy poverty is the unspoken issue with vulnerable communities and will only get worse as the effects of climate change impact on these communities.

In particular, we support the focus on social housing and looking at ways that concession schemes could be used to achieve lower bills and improved energy productivity/clean energy deployment.

The Home Power Saving Program delivered low-cost energy efficiency retrofits to over 220,000 low income households across NSW. We propose to reinstate the Home Power Saving Program.

The Smart Energy Communities program outlined above has an important role in facilitating more innovative and complex clean energy models and programs for vulnerable and locked out energy users e.g. rates-based financing, rent-based financing, social access solar gardens etc

Other priorities

The raising of the Warragamba Dam wall has the potential to cause significant damage to world heritage-listed Greater Blue Mountains wilderness and national parks, by flooding 3,500 hectares. In any case the Climate Change Fund should not be used to fund infrastructure projects. Green bonds provide a mechanism for funding large green infrastructure projects that could be arranged through t-Corp.

Purpose of the fund

The purpose of the climate change fund is to reduce greenhouse gas emissions and the impacts of climate change, and to support water and energy savings. In the draft plan, the

government is only consulting on $500m of the fund's total $1.4bn over the next five years, while the bulk of the fund, $900m, is invested in projects, several of which are only tentatively linked to the purpose of the fund.

This plan proposes to support up to 540 MW of renewable energy projects over five years. By comparison, Victoria will contract an additional 1800 MW by 2020, and 5400 MW by 2025. ACT has already contracted 600 MW, 100% of their energy use by 2020.

NSW is already far behind other states when it comes to attracting renewable energy investment and jobs. Only 7.7% of the energy NSW generates comes from renewable sources, compared to SA's 41%.

This draft plan proposes slashing government investment in renewable energy by 80% - from $214m in 2015 to $40m per year over the next 5 years (Climate Change Fund draft plan, page 10).

http://www.environment.nsw.gov.au/grants/ccfund.htm

The NSW government shouldn't reduce its investment in renewable energy. Instead, making greater use of the $1.4bn fund, as it was intended, it would make a substantial contribution to transitioning NSW to clean energy, and capturing opportunities such as jobs, innovation and investment. This is the type of effort that is required for NSW to act in line with the Paris agreement do its fair share to limit climate change to 1.5 to 2°C.

Orderly Transition

We welcome the fact that the NSW Government has recognised that an energy transition is underway and that an "orderly transition will deliver reliable, affordable energy into the future while avoiding bill shocks for households and businesses." In addition to an orderly transition, we call on the NSW Government to ensure that it is a just transition, particularly for communities and workers in coal regions of NSW. Change is always difficult, but it becomes less so when those most affected by change are empowered to take control of their future. Communities experiencing the shutdown of coal-fired power stations, need to be supported to develop comprehensive local economic plans and clean and renewable energy initiatives should be a component of these plans.

Thank you for considering our submission,

Sincerely,

Alec Roberts
CLEANaS Chair
on behalf of CLEANaS