

CLEAN ENERGY FINANCE CORPORATION EXPERT REVIEW

Submission

This submission (and associated information and materials) is made in response to the request for submissions from the Australian Government to supplement the consultation process on the Clean Energy Finance Corporation (CEFC) and to provide experiences on the key themes for the review to the CEFC review panel.

Background

Sustainable Sydney 2030 is the overarching plan to make Sydney a greener, more global and connected city. Principle among the 2030 targets is to reduce greenhouse gas emissions by 70% from 2006 levels by 2030.

80% of the city's greenhouse gas emissions come from centralised power generation, primarily coal, and the City cannot achieve its emission reduction targets without displacing centralised energy with decentralised energy. This will be delivered through a Green Infrastructure Plan which combines trigeneration, renewable energy, waste and recycled water infrastructure. Trigeneration will provide 70 per cent of the energy needs of the city and renewable energy will provide 30% by 2030.

Developing and implementing the Green Infrastructure Plan is happening at two levels – for the city as a whole and by the City of Sydney leading the way and installing clean energy projects for its own buildings and operations. This “show by doing” principle was adopted in Woking and London and demonstrates that if the public sector leads, others will follow.

At the first level, the Trigeneration Master Plan showed that 360MW_e in the CBD and Green Square would reduce emissions associated with buildings by up to 60% and could be implemented economically with a relatively small public sector contribution. The trigeneration system would be based on natural gas as a transitional fuel. This would enable the thermal energy networks connecting buildings together to be implemented distributing zero carbon waste heat from local low carbon electricity generation to supply heating and cooling to buildings.

Since the thermal energy networks are impervious to the type of fuel powering the trigeneration gas engines natural gas can be replaced by renewable gases in the future. The renewable gases market will be developed as an outcome of the Renewable Energy Master Plan which identifies renewable electricity and renewable gas resources within a 250km

radius of the city. The renewable gas resource will be based on converting wastes, including agriculture, farming, commercial and domestic waste, into renewable gases using advanced gasification technologies.

Rather than generating electricity only at remote locations with the majority of energy lost into the atmosphere as waste heat the gas can be converted into an energy dense liquid gas and transported into the city or to the nearest natural gas pipeline and used to supply the city's trigeneration system recovering 85% of the primary renewable energy resource. This approach could deliver a 100% renewable energy system for the city by 2030.

The City's integrated approach to a city-wide green infrastructure, for example, enables trigeneration, recycled water and waste collection to share the same network infrastructure routes and stations, recycled water to be treated by zero carbon waste heat from trigeneration and renewable gases and non potable water to be recovered from waste and used on the city's green infrastructure.

At the second level, the City has already reduced greenhouse gas emissions on its own buildings and operations from 2006/07 to 2010/11 by 18% and has just awarded contracts for its building energy and water efficiency retrofit project to reduce emissions by a further 24% over the next year and LED lighting for 6,500 of the City's street and public domain lighting which will reduce emissions for these lights by 51% over the next 3 years. In addition, a tender report on the City's major solar photovoltaics programme will be submitted to the February 2012 Council meeting which will deliver a further significant reduction in emissions on the City's buildings.

The City has also announced its preferred Energy Services Provider, Cogent Energy, to deliver the City's trigeneration project which will potentially supply all of its 230 buildings and street and public domain lighting plus the first 4 trigeneration precincts in the CBD and Green Square low carbon zones. This is a multi-MW trigeneration project covering the first two stages for each of the 4 precincts with subsequent roll out of the 360MWe or more of trigeneration as set out in the Trigenation Master Plan.

In other measures, a Sydney Better Buildings Partnership of 14 major landlords has been established to reduce the carbon footprint of big commercial and public buildings in the city.

Scope of the CEFC

1. The CEFC could facilitate investment in such a way that would not only enable projects to be delivered that would otherwise not be delivered without an element of CEFC gearing or leverage but also enable larger project programs to be rolled out much quicker than otherwise would be the case.

2. The principles beyond financial viability that could be used to prioritise investments are:
 - quantum and timescale of reduction in greenhouse gas emissions;
 - cost of carbon abatement for the CEFC element of investment;
 - demonstration of new technologies or new ways of implementing projects and carbon abatement;
 - it's contribution to balancing energy supplies, reducing coal fired spinning reserve and increasing security of supply;
 - it's contribution towards reducing peak power that is contributing to the very high network investments and associated charges and electricity bills;
 - replicability of projects; and
 - new low and zero carbon energy markets such as renewable gases from waste for injecting into the natural gas grid pipeline.
3. The opportunities for the CEFC to partner with other organisations to deliver its objectives should include local government, either directly or indirectly with or through private sector partners.

The Market Gap and Overcoming It

4. The CEFC could catalyse the flow of funds from financial institutions by making up the very often relatively small financial shortfall in the economics of a clean energy project to enable the project to happen.
5. Generally speaking, the City has not had difficulty in the availability of funds for clean energy projects up to a certain level within the City's budgets and financial constraints. However, more clean energy projects could be delivered and at a larger scale for city-wide projects with CEFC funding.
6. The primary non-financial factor that inhibits clean energy projects are the regulatory and institutional barriers to decentralised energy, both trigeneration and renewable energy. The details on how to overcome the regulatory barriers to decentralised energy similar to the removal of the regulatory barriers in the UK were detailed in the City's submission to the Prime Minister's Task Force on Energy Efficiency¹.

¹ City of Sydney Issues Paper Submission to the Prime Minister's Task Force on Energy Efficiency 30 April 2010
<http://www.climatechange.gov.au/government/submissions/pm-task-group/~media/submissions/pm-taskforce/papers/102-city-of-sydney.ashx>

7. Special factors that inhibit energy efficiency projects include:

- mindset and a lack of education or awareness of the connection between energy/emission savings and cost savings, even with a carbon price as evidenced in the UK with their climate change levy. Those parts of the organisation that is responsible for energy budgets and payment are generally not those parts of the organisation that could envisage and deliver clean energy projects. If the energy budgets are big enough and accountants have allowed for a price on carbon and other energy price increases, ie, network charges, there is generally not the incentive to reduce energy consumption or emissions, particularly if the energy budget is a relatively small part of the overall budget;
- expectation of very short simple payback criteria, ie, less than 1 year; and
- a lack of knowledge or understanding of how larger projects, such as precinct scale trigeneration or large scale renewable energy projects work in terms of their finance written down over longer periods of time, ie, 15 or 20 years, rather than much shorter periods under the simple payback criteria that organisations might be used to.

Other Issues

8. If the carbon price, CEFC and other government initiatives are successful there should be a significant reduction in emissions and increased growth in clean energy projects. This will not only improve security of supply but it should also impact on planned network upgrades that are responsible for the major increase in electricity bills (currently 50% of electricity bills and to rise to 60% by the end of the current 5 year determination period), particularly for peak supplies. This should reduce the amount of planned network investment on poles and wires on a business as usual basis not only in the current 5 year determination period but also for the next 5 year determination period. The reduction in network investment will benefit all consumers and benefit the economy generally, through the avoided investment in network upgrades.

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