Submission No 25

COGENERATION AND TRIGENERATION IN NEW SOUTH WALES

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Sustainable Business Australia

The Chair
Public Accounts Committee,
Parliament House,
Macquarie Street, Sydney NSW 2000

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By email: pac@parliament.nsw.gov.au

Dear Chair,

Cogeneration and trigeneration in New South Wales

Sustainable Business Australia (SBA) welcomes the opportunity to make a submission to the Committee into cogeneration and trigeneration in New South Wales.

Context

We understand the context of the installation and operation of trigeneration and cogeneration in NSW as follows:

- Cogeneration and trigeneration are proven technologies that are building market momentum and, with the right thermal demand and economic and regulatory environment, can be expected to provide sizeable demand management opportunities.
- Cogeneration is readily available technology that is about 80% more efficient than conventional, coal powered energy generation, produces 60% less carbon emissions and can be fuelled by natural gas and renewable fuels[1].
- Trigeneration and cogeneration can also present opportunities such as addressing the issue of rising peak demand, which is a major driver for the current $9 billion per annum of network infrastructure spending.[2]
- Cogeneration and trigeneration is arguably most attractive at sites or precincts with a large baseload heating and/or cooling demand. Potential users of cogeneration and trigeneration include:
    - hospitals and health facilities
    - hotels, cinemas and hospitality venues
    - industrial / manufacturing facilities, such as brewing, sugar refining, oil refining, metals processing, pulp and paper, steel and chemical plants
    - food processing[3]
    - government offices of local, state and federal agencies
    - multi-dwelling residential
    - educational facilities, universities and TAFE
    - commercial, multi retail and missed use commercial

[1] Clean Energy Council website [accessed 14 August 2013]
[2] Productivity Commission 2013, *Electricity Network Regulatory Frameworks,* Report No. 62, 9 April 2013, Canberra, pg 505; New South Wales. Parliament. Legislative Assembly. **Public Accounts Committee. Report on the economics of energy generation**, Report 6/55 – November 2012, at 10.63
[3] AMPC, MLA; Economic and technical potential for cogeneration in industry, December 2010

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- public utilities such as RailCorp and Sydney Water

Some recent examples of announced trigeneration projects include the City of Sydney's planned 360 megawatt trigeneration networks by 2030, the University of Technology Sydney's campus master plan and the six star Green Star Commonwealth Bank Place building in Sydney.

- a complex and burdensome connection process, regulatory and financial barriers inhibit them from deploying the technology. For example:
  - depending on the current state of the network, additional network costs can be required to accommodate trigeneration.
  - under the current National Electricity Market regulations and conventions, challenges do exist to timely and financially viable connection to the grid.
  - the use of System charges are typically bias towards a fixed component which cannot be offset by cogeneration/trigeneration.
- these barriers are challenging the ability of mainstream business sectors as well as property developers and owners to integrate cogeneration and trigeneration into their current and future operations.[4]

Observations

SBA considers that NSW should act in the long-term interest of business, and the broader community, by supporting or setting in place a smart regulatory framework, and an investment environment that encourages an economically efficient and effective mix of energy-supply and energy-use technologies that have environmental integrity. Enclosed at **Appendix 1** are SBA's observations to the questions raised by the Inquiry.

We would be happy to discuss in greater detail our position should this be of value to the Public Accounts Committee.

Yours faithfully,

[redacted]

Andrew Petersen
CEO

[4] ClimateWorks Australia; City of Sydney

Who is SBA ?

Sustainable Business Australia (SBA) is the leading Australian business peak body and think-tank promoting the business role in a just and sustainable world.

SBA is a national, Sydney-based not-for-profit, non-partisan business membership association that represents a range of organisations, drawn from all sectors and industries. With our unique, cutting-edge network, we conduct relevant business forums and seminars on key and current issues each year, attracting leading keynote speakers and panellists that include SBA members from sectors relevant to the topic at the time.

SBA is also the Secretariat for the **Businesses for a Cleaner Economy** (BCE) Initiative, that began 2011 comprising major Australian and international corporations and representative associations operating across the Australian economy that strongly support the introduction of a well designed carbon price to support Australia's transition to a low-carbon economy.

In addition, SBA is the Australian delivery partner of the United Nations Environmental Programme Financial Initiative.

Our comprehensive membership includes Abergeldie Complex Infrastructure, ARUP, Australian Ethical Investors, Australian Sustainable Business Group, Australian Meat Processors Corporation, Brickworks Limited, the Council of the City of Sydney, David Jones Limited, the Environmental Planning Law Association of NSW, ERM, General Electric, Greening Australia, IKEA, LJ Hooker, the National Australia Bank Limited, Parsons Brinckerhoff, Object Consulting, Purves Environmental Fund, and Sinclair Knight Merz. And through our MoU with the community organisation, APEX Australia, we provide support for capacity building and knowledge transfer on sustainability to its 33,000 members across Australia.

Appendix 1

PAC Terms of Reference	Challenges or Barriers	SBA Recommendations
Whether the current regulatory framework can adequately support the utilisation of cogeneration/trigeneration precinct developments	As relevant to environmental assessment within the regulatory framework where internal combustion engines (ICE) are used in cogeneration/trigeneration plants, oxides of nitrogen (NOx) may be high (if uncontrolled) and there is concern that if there were a significant increase in number of these plants then this may exacerbate photochemical smog within the Sydney GMR. In comparison by far the greatest proportion of NOx emissions across the Sydney Airshed come from motor vehicles. Recently the NSW Environment Protection Agency (EPA) has focussed its attention on cogeneration and trigeneration, notwithstanding it presently represents a negligible source of NOx pollution. In 2009 the NSW Office of Environment and heritage (OEH) introduced provisions for projects in Sydney and the Illawarra to be either NOx neutral or required to achieve Best Available Technique (BAT) emission performance, which may mandate the use of very expensive equipment depending on the size of the plant and which may affect the economics of cogeneration and trigeneration[5].	SBA acknowledges the principle of the need to regulate activities that have unacceptable NOx emissions. It is important to note that the EPA's present regulatory approach is more stringent than requirements in many European cities. SBA therefore recommends the NSW Government investigate the overseas experience and review the current NOx requirements to determine if they are both proportionate and the most effective way to address NOx emissions. SBA also recommends that screening approaches for assessing NOx and photochemical smog impacts are introduced to remove existing uncertainty where the need for NOx emission control and type of control is assessed on case by case basis for plant over a certain size.
	The proposed NSW Energy from Waste Draft Policy Statement is, at present, unnecessarily prescriptive and counter-productive in generating renewable gases from waste and avoiding waste going to landfill.	SBA recommends a review of the categories of feedstock currently permitted under the proposed NSW Energy from Waste Draft Policy to allow a purposive rather than prescriptive test.

[5] http://www.epa.nsw.gov.au/air/cogentrigen.htm

PAC Terms of Reference	Challenges or Barriers	SBA Recommendations
The operation of cogeneration/trigeneration technology in other jurisdictions and the applicability of the technology to New South Wales	Current resource efficiency and industrial ecology aligns with a mandate to use Cogeneration and Trigeneration technologies. As stated above, cogeneration technology is already deployed in NSW, interstate as well as in developed countries overseas in a variety of contexts, including commercial buildings, industrial sites, manufacturing and food processing. However, the use of cogeneration and trigeneration technology in NSW is significantly lower than other jurisdictions. A barrier to cogeneration and trigeneration is the current regulatory frameworks. It is easier to gain approval for use of technology improvements in other states (e.g. Victoria) than in NSW.	SBA recommends consideration needs to be given to the introduction of a Victorian style approach for works type approvals under the existing NSW environmental approvals for pilot Cogeneration and Trigeneration systems, particularly where the technology is used in the case of Precinct or District schemes. This will enable earlier stage deployment of technology.

PAC Terms of Reference	Challenges or Barriers	SBA Recommendations
The economic viability of cogeneration/trigeneration technology in New South Wales including the impact of future gas prices on the running costs of cogeneration/trigeneration systems	If gas prices were to increase significantly it could have negative impacts not the subject of this inquiry, including impacts on households that use gas for heating and cooking and sectors such as plastics and food manufacturing. If gas is presently the fuel of choice for a potential cogeneration/trigeneration host (eg. in package boilers) then an increase in the gas price should theoretically promote a drive to the more efficient use of that gas via cogeneration/trigeneration. However this is compounded as wholesale power prices in the NEM presently have very little linkage to the price of gas.	SBA considers that once these barriers are addressed, the market will consider issues such as the price of gas and other fuels in determining whether cogeneration will be installed at a particular location or not.

PAC Terms of Reference	Challenges or Barriers	SBA Recommendations
Any financial, public safety and/or other risks to prospective cogeneration/trigeneration customers	There are some issues in relation to the financial incentives (including the role of accelerated depreciation) to incentivise Owner / Operators, and particularly new entrants. For example, while Environmental Upgrade Agreements (EUAs) have been an effective economic tool to assist commercial landlords investing in environmental upgrades to both the landlords and tenanted parts of properties the legislation only applies to existing (brownfield) development.	The extensive installation of cogeneration and trigeneration systems in developed and developing countries over many years has occurred without serious incident. Provided there are appropriate risk management steps taken, particularly at the design stage to factor in redundancies, the likelihood of financial, public safety and other risks of cogeneration and trigeneration systems is minimal. SBA recommends the NSW Government to work at the COAG level with other State Governments and the Federal Government to: • extend Environmental Upgrade Agreements to new (greenfield) development where EUA legislation exists and to introduce legislation for new and existing development where EUA legislation does not exist; and • give consideration of an accelerated depreciation regime to increase the attractiveness of such investments, and a mechanism to ensure they remain off balance-sheet on a third-party BOO basis.
Any supply security and reliability issues associated with cogeneration/trigeneration, especially for residential customers of these systems	There may be issues if a plant were disconnected from the supply. May be an issue for sensitive or critical infrastructure, e.g. Hospitals.	

PAC Terms of Reference	Challenges or Barriers	SBA Recommendations
The ability of existing regulatory arrangements at the New South Wales and national level to address issues which may be identified	At present there are some key aspects of the regulated parts of the National Electricity Market (NEM) and the behaviour of the Network Service Providers (NSPs) that are barrier. Electricity generation exported from decentralised energy (trigeneration and renewable energy) over the local public wires distribution network is made uneconomic by the National Electricity Rules and incurs the full Distribution Use of System charges. Further, cogeneration/trigeneration hosts are still encumbered by the fixed component of TUoS and DUoS which is detrimental to the uptake of such technologies	SBA recommends that consideration be given to the following proposals: • an exempt licence regime for trigeneration and renewable energy schemes up to 30MW; • an alternative decentralised energy licence regime for all schemes connected to the public wires distribution network; • implementation of a cost reflective Distribution Use of System charges that is representative of the distance actually travelled by the electricity to nearby consumers. This issue has been addressed by the UK's Common Distribution Charging Methodology (CDCM) 2009; • A bias-shift towards variable Use of System tariffs that can be readily offset by installing cogeneration/trigeneration.