

**Submission
No 12**

COGENERATION AND TRIGENERATION IN NEW SOUTH WALES

Organisation: CETEC Pty Ltd
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September 2 2012

Jonathan O'Dea
Chair
Legislative Assembly
Public Accounts Committee NSW

Dear Mr. O'Dea,

Re: Submission – Inquiry into Cogeneration and Trigeneration in NSW

Thank you for the invitation to provide a submission to the Inquiry into Cogeneration and Trigeneration in NSW. Please find the response **by CETEC** to the Inquiry letter from the Public Accounts Committee of NSW, dated 29th of July 2013.

CETEC's response focuses around item 'iv' of the inquiry letter, namely *"any financial, public safety and/or other risks to prospective cogeneration/trigeneration customers"*.

CETEC Pty Ltd is an independent enterprise consulting in WHS and Environmental compliance, providing scientific evaluations, testing, solutions and management in technical risks. Over the last five years, CETEC has been undertaking an analysis of cogeneration and trigeneration systems, relating to the risks associated with air quality and emissions. Our clients have included major constructors and engineers who have engaged us to evaluate and manage their short and long term risks associated with these potentially harmful emissions.

CETEC recommends that the Committee, as part of this Inquiry, strongly considers the implications of cogeneration and trigeneration to the Outdoor and Indoor Environment. CETEC has conducted a number of technical and scientific studies (including an iconic and highly credentialed Melbourne public building) to demonstrate that the exhaust gases, including nitrous oxides and nitrogen dioxide produced and exhausted from co/trigeneration systems, are significant and can raise ambient levels above those recommended by EPA levels. They also have the potential to create harmful ambient ozone. This issue has also been flagged internationally. For example, the Houston Advanced Research Centre stated that *"...widespread development of CHP projects (Cogen/Trigen) would essentially relocate the source of some of the NO_x emissions produced by the power generating sector from a few, very large point sources outside the city to many, small point sources inside the city. Implementation of CHP changes both the amount AND geographical distribution of NO_x*

emissions...

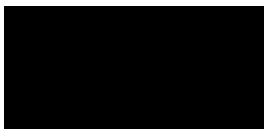
Furthermore, a 2008 study in the Office of Environment and Heritage found that “*In the period from 1992 to 2008, nitrous oxides emissions from industry in Sydney have increased by 51%. They are **projected to grow a further 13% over the next 8 years** to 2016. This scenario **DOES NOT** include any shifts in the location of electricity generation (such as cogeneration) which would exacerbate the challenge of reducing ozone levels”*

It is important to recognize that cogeneration and trigeneration in urban areas will affect environmental air quality. The impacts may be seen by occupants, facilities managers, and policy makers for many years over the life of buildings, with significant and costly outcomes. These effects may be further exacerbated in locations where there may be exposure of emissions to individuals who are potentially sensitive and/or immune-compromised, including hospitals, aged care facilities, and schools. Furthermore, while control exposure and energy consuming mechanisms such as adsorption filtration on air intakes may limit the effect of the emissions to indoor air quality, this control will not adequately manage the risk of adversely affecting the indoor air quality of neighbouring buildings, nor will it control the effect of the emissions to outdoor pollution levels.

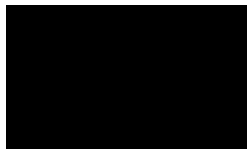
Consideration could be given to the development of processes or mechanisms which improve the current emissions from the exhaust systems. Control would be required for regional heat island effects, CO₂, CO, NO_x, NO₂, and other pollutants, including by-products the processes such as urea based technologies.

We are available to further expand on the above submission.

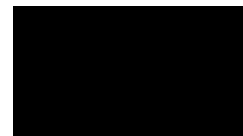
Yours sincerely,



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About CETEC:

CETEC Pty Ltd is an independent enterprise consulting in WHS and Environmental compliance, providing scientific evaluations, testing, solutions and management in technical risks.

CETEC provides a comprehensive range of technical and environmental services for the built environment to ensure you can make informed decisions about your technical risks. Our services encompass auditing, consultancy, measurement, and reporting of technical environmental risks associated with compliance to legislation and recognized Australian Standards.

CETEC wholly owns FORAY Laboratories, which are a NATA accredited laboratory.

CETEC consulting staff are all professional graduates in industrial, occupational and environmental science and engineering and will produce independent reports to audit standards. In addition to our Consulting staff, we are able to provide services to manage workplace consultation provide services as expert witness and manage organisational risk.

CETEC has completed reviews of OHS practices and policies for a number of organisations including but not limited to: Grocon, Melbourne Airport, Lend Lease, Jones Lang Lasalle, Carpet Institute of Australia, Department of Health, Department of Education, Department of Energy Efficiency and Climate Change, Southern Cross University, Reserve Bank of Australia, Sydney Water, South East Water, and Shree Ram Urban Infrastructure (India)

Our aim is to assist site managers, OH&S risk managers, building owners and senior management, to identify hazards to effectively assess and manage or elimination risks.

Dr. Vyt Garnys and CETEC staff has contributed to research, communication and policy for such ambient air parameters as lead, particulates, carbon monoxide, nitrogen dioxide, and legionella.