

COGENERATION AND TRIGENERATION IN NEW SOUTH WALES

Organisation: TransGrid
Name: Mr Peter McIntyre
Position: Managing Director
Date Received: 5/09/2013

Mr Jonathan O'Dea
The Chair
Public Accounts Committee
Parliament House
Macquarie Street
SYDNEY NSW 2000

Dear Mr O'Dea

Inquiry Into Cogeneration and Trigeneneration in New South Wales

Thank you for the opportunity to provide a submission to the Public Accounts Committee's Inquiry into Cogeneration and Trigeneneration in NSW.

In undertaking its business responsibilities and obligations TransGrid (the owner, operator and manager of the NSW high voltage electricity transmission network connecting generators, distributors and major end users in NSW and the Australian Capital Territory)¹ is a technologically neutral organisation. Given this focus, TransGrid has relatively limited direct exposure to these technologies.

Despite this, TransGrid together with the NSW electricity distributors, through a formal joint planning process, identify opportunities and non-network options that may contribute towards implementing such generation projects, where it is economically efficient to do so. TransGrid continues to promote demand management and network support from non-network sources and defer capital expenditure *if and when prudent and cost efficient*. In fact, one of the largest demand side response programs ever undertaken in the Sydney metropolitan area was the acquisition of 40MW of network support during summer 2012/13. Consequently, it is TransGrid's view that the Inquiry's focus will be best served by seeking the direct assistance and experiences of the electricity distribution network service providers.

TransGrid acknowledges that cogeneration and trigeneration processes may defer network investment, much like any source of reduction in load growth would. Where a deferral can be realised, this benefit is passed back to the communities through transmission prices being lower than they would have otherwise have been.

TransGrid's funding of non-network solutions is based on the ability to "contract" an amount of support to alleviate a particular constraint (maximum demand) on the network at a specific time, taking into account commercial and technical performance criteria associated with that constraint. A particular challenge can be that co-generation plants are not as flexible or as available at times of maximum demand (or to adequately cover unforeseen network outages) when compared to stand-alone generation since they are usually tied to other processes. As such, commercial or financially viable contract arrangements to capitalise on these opportunities can be hard to achieve.

¹ The NSW transmission system is at the heart of the National Electricity Market (NEM), serving the NEM's largest state. Electricity is generated at power stations then transmitted by our network through 12,600+ kilometres of high voltage transmission lines and underground cables, along with 90+ substations. The electricity is finally delivered to homes, factories and businesses by electricity distributors such as Ausgrid, Essential Energy and Endeavour Energy (that comprise Networks NSW). TransGrid operates the transmission network, using the latest control and monitoring equipment to guarantee the highest level of availability and reliability of our high voltage system.

Importantly, TransGrid recommends that thorough analysis needs to be undertaken on a 'case by case' basis and close collaboration is required with both prospective and existing generator proponents with distribution network service providers in particular.

TransGrid's responses *where appropriate* upon the matters raised in the Terms of Reference are attached. TransGrid would be happy to provide any support as required to this inquiry. Should you require any further clarification, please contact Mr Mal Coble, Manager/Network Support and Consultations on [REDACTED] or at [REDACTED]

Yours sincerely



5/9/2013

Peter McIntyre
Managing Director

Attachment: Inquiry Terms of Reference

i) Whether the current regulatory framework can adequately support the utilisation of cogeneration/trigeneration precinct developments

Cogeneration/trigeneration plants require connection applications to the network owner who supplies the area. For example, the cogeneration plant installed in the Stockland building at 220 Pitt St (also known as 133 Castlereagh Street) had to lodge a connection application with Ausgrid. TransGrid understands that the project owners also had to obtain approval from the Local Government Authority, as well as from the state Environment Protection Authority.

ii) The operation of cogeneration/trigeneration technology in other jurisdictions and the applicability of the technology to New South Wales

Further, for your reference, some recent developments have occurred in Victoria. Firstly, in May 2013, there was the official opening of AGL Energy Limited's (AGL) \$45m cogeneration facility in Altona to provide electricity and steam for Qenos Pty Limited's polyethylene production requirements. The embedded plant has a nominal capacity of 21MW and is expected to produce around 171GWh p.a. This is reported to be the largest investment in a cogeneration facility for more than a decade. Importantly, AGL and Qenos have said that they have entered into an Operating and Maintenance Agreement for the next 15 years, with options to extend to 25 years.

Secondly, during August 2013, Central Melbourne's new Municipal Strategic Statement was released, that proposes, amongst other matters, to encourage precinct wide integrated trigeneration systems.

iii) 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

Based on two projects in Sydney (i.e. the Stockland building in the CBD and the Mirvac building at 101 Miller Street, North Sydney, the companies carried out full business case evaluations before deciding how best to proceed. TransGrid understands that the projects both received some monetary incentives that helped them to advance these projects.

In the year 2000, prior to the start of TransGrid's MetroGrid project (330kV cable and Haymarket substation) during the consultation process, IAI (Botany) advised of its interest in providing a relatively large capacity (approximately 100MW) cogeneration plant using steam etc. They did not proceed, and TransGrid understands the primary reason was that the price offered to them for injecting into the grid its extra capacity, was too low. It is clear that such plants are not cheap and gas prices are potentially on the rise. There is also a financial risk in deciding to build and connect to either a distribution network service provider (DNSP) or a transmission network service provider.

The owners of cogeneration plants, like any other embedded generator, may want/need to secure sales contracts for their output, unless they use it entirely for their needs, and may save on electricity costs.

iv) Any financial, public safety and/or other risks to prospective cogeneration/trigeneration customers

This will depend upon location, size/capacity of plant and physical site for installation, i.e. indoors or outdoors, amongst other factors. This matter also needs to be raised with the relevant Planning/Environmental agencies.

v) Any supply security and reliability issues associated with cogeneration/trigeneration, especially for residential customers of these systems

In 2005 the NSW Government introduced mandatory licence conditions on DNSPs in relation to supply reliability; "n-1, 1 minute" standards for sub-transmission lines or zone substations supplying loads greater than a specified minimum (e.g. 15 MVA) in urban or non-urban areas. The NSW Government requires TransGrid to provide a commensurate level of reliability in its network supplying NSW DNSPs. TransGrid ensures that these obligations are met through joint planning with DNSPs and other relevant stakeholders. This would include the consideration of any impact from cogeneration/trigeneration sources.

vi) The ability of existing regulatory arrangements at the New South Wales and national level to address issues which may be identified

TransGrid is aware that the Australian Energy Market Commission (AEMC) is currently considering a rule change proposal that commenced in 2012 jointly proposed by ClimateWorks, Seed Advisory, and the Property Council on the issue of connecting embedded generators. This proposal is primarily in relation to the process for connecting such generators to the distribution network under Chapter 5 of the National Electricity Rules.

At the time of writing this submission, the AEMC is still considering stakeholder responses that were due on 8 August 2013 following the release of its delayed draft determination (published on 27 June 2013).

The Committee can find more details at the following link:

<http://www.aemc.gov.au/Electricity/Rule-changes/Open/connecting-embedded-generators.html>

vii) Any other relevant matters

No further comment.