

COGENERATION AND TRIGENERATION IN NEW SOUTH WALES

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Inquiry into cogeneration and trigeneration in New South Wales

Mirvac provides the following submission to Inquiry into cogeneration and Trigeneration in New South Wales.

Mirvac supports the NSW Public Accounts Committee in understanding the issues arising from utilising decentralised energy through co/trigeneration technology, in particular with precinct developments. This submission identifies the barriers and opportunities arising from precinct co/trigeneration for customers, owners, developers and energy providers.

This submission is based on Mirvac's experience as an owner/developer of commercial buildings utilising co/tri-generation such as 20 Bond and our recent focus on precinct residential projects including Green Square with our consortium Partners Leighton and UrbanGrowth, working with the City of Sydney. Mirvac has clearly separated the following issues along either commercial and investment or residential lines.

Mirvac would be pleased to participate in any further discussions concerning this Inquiry.

1. Can the current regulatory framework adequately support the utilisation of co/trigeneration precinct development;

Current regulations affecting the utilisation of co/trigeneration precinct development are:

RESIDENTIAL

Third Line Forcing: Full utilisation of co/tri-generation energy in precinct developments may restrict the choice of supply of thermal energy to the residential customer. If a tenant requires thermal energy, unless the developer provides a backup system, they will only have one source of supply. This third line forcing is prohibited unless the Australian Competition and Consumer Commission provides authorisation on public benefit grounds. The public benefit of utilising a low carbon source of energy would be recognised from the environmental, economic and practical gains.

If third line forcing is to be adopted and permitted then it will be essential to engage with new residents to raise the awareness of the scheme the benefits and the pricing mechanisms. .

Mirvac recommends the pricing of thermal services be IPART regulated.

RESIDENTIAL

Thermal metering: A user pays system, where individual bills are issued per customer/occupant, would require the metering of hot and chilled water (thermal metering). Thermal metering per customer is both costly and difficult if installed as retrofit. There is currently no legal requirement to meter thermal energy and without regulatory change to introduce standards of metering and obtain legal access, thermal metering is unlikely to be implemented.

RESIDENTIAL

Governance under Strata: The ability of the Body Corporate to manage consumer issues arising from precinct based co/trigeneration systems is a concern. Mirvac is concerned about the protection against increased costs to the residential customer and billing fairness. If the billing system under Body Corporate control is issued at a uniform rate or recovered by Unit Entitlements, rather than user pays, residents may not be charged a fair or reasonable amount for their energy used. Mirvac is concerned that without the protection from IPART oversight, customers are vulnerable to price rises in thermal services and, if third line forcing is in place, the inability to switch energy retailers.

COMMERICAL/INVESTMENT

Australian Energy Market regulations: Mirvac, as a commercial property owner with co/trigeneration systems installed onsite, notes that achieving economic viability does not always provide the greatest CO2 emissions reduction. To change this dynamic the system would need to export electricity to the grid so offering another source of income and consistency of supply. This solution is not used due to network and contract complexity. Network fault levels, associated mitigation costs and generation licences are a significant issue for any operator planning to export to the grid, with feed in tariffs currently too low to make it economically viable. This would also remove the need for tenants to sign up to the Trigeneration to create a base load and so the basis for the financial model. If this process can be simplified then costs would decrease, viability would increase and Co/trigeneration projects would become sustainable.

RESIDENTIAL & COMMERCIAL/INVESTMENT

Recognition of precinct low carbon energy: Currently no environmental recognition is received for low carbon power attributed to the premises for electrical or thermal precinct grid connections. There is no recognition of the real saving of a customer's carbon intensity who has purchased co/trigeneration. Mirvac would like to see carbon reduction made attributable to the buildings connected to the precinct system.

2. The operation of cogeneration/trigeneration technology in other jurisdictions and the applicability of the technology to New South Wales;

COMMERICAL/INVESTMENT

Co/trigeneration technology is highly applicable to all eastern seaboard states however Victoria would best benefit with lower natural gas prices, the ability to negotiate no 'Take or Pay' gas contracts, its high carbon intensity electricity generation and its greater ability to utilise waste heat. In comparison, 'Take or Pay' clauses on gas contracts are a significant risk for NSW operators along with the security of gas supply which is becoming a real concern. NSW has higher cooling demand and lower heating demand therefore the in NSW we convert waste heat to cooling using absorption chillers. This is an extremely inefficient process and in fact new projects are now looking to electric chillers and discharging the waste heat. Therefore the system needs to be sized on electricity load. Finding ways to make co/trigeneration waste heat provide cooling more efficiently is necessary as will finding a way to create a consistent electricity load, (see above reference to electricity grid to improve viability).

3. 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;

RESIDENTIAL & COMMERCIAL/INVESTMENT

The economic viability of co/trigeneration is dependent not only on cost of gas but also the relationship between the cost of gas and electricity. Changes in electricity prices have a far greater impact on project returns than gas prices. Co/trigeneration projects typically have a fourteen year timeframe and operators will need to look at long term energy price predictions to get a balanced picture of the costs and returns through the life of the project. Operators will need to create an energy procurement strategy to offset some of the fuel cost risks, for example, synchronise electricity and gas purchasing to lock in the spread between the two fuels.

Advances in technology could also have a major impact on the viability co/trigeneration systems through the development of efficiencies in energy storage, fuel cells, and renewable technology.

The economic viability of co/trigeneration is also dependent upon the ability of the operator to competitively purchase gas at bulk rates. To effectively negotiate the price of gas realistically requires the purchase of hundreds of terajoules. Precinct developments requiring on average less than 100TJ of gas supply will not be able to compete in this space, so affecting competitive advantage of a localised system.

4. Any financial, public safety and/or other risks to prospective cogeneration/trigeneration customers;

RESIDENTIAL & COMMERCIAL/INVESTMENT

Mirvac as a developer has public safety concerns regarding the lack of regulation of private thermal infrastructure within public roads. Where new services such as hot or chilled water are run through public roads by a third party operator Mirvac is concerned about the risk of incidents, such as pipe failure and geysers of very hot or very cold water where there is private ownership of services.

There is potentially an increased risk of localised levels of nitrogen oxide and sulphur oxide pollution. Increases in air pollution would need to be monitored regularly to limit adverse affect to health.

Co/trigeneration technology is not rewarded for avoiding future network upgrades and dependency on the grid. To increase the uptake of co/trigeneration, developers should receive a saving or higher feed in tariffs for avoided infrastructure costs which could then be passed on as lower prices to the customer or make grid export a viable option.

5. Any supply security and reliability issues associated with cogeneration/trigeneration, especially for residential customers of these systems;

RESIDENTIAL & COMMERCIAL/INVESTMENT

Supplier of last resort provisions/Step in Rights: Mirvac is concerned that no regulation exists to protect the consumer and maintain a level of service or enforce the supplier to operate an appropriate management regime to ensure continuous supply. If the operator of the co/trigeneration system is unable to fulfil their duties then the State utilities must step in as providers of last resort.

The security of gas supply due to the geography of NSW is a concern. NSW is at the end of the gas distribution network and has no major gas fields, so leaving it vulnerable to cross border issues taking priority for supply. The reliability of the local gas network in the Sydney CBD is a concern as local gas demand may increase significantly with co/trigeneration systems. How will this be managed by NSW Government?

6. Ability of existing regulatory arrangements at NSW and Federal level to address issues.

COMMERCIAL

NABERS does not recognise the low emissions from precinct co/trigeneration energy as differentiated from infrastructure outside the building, with an improved ratings score. Recognition would again contribute to the business case to deliver these systems.

RESIDENTIAL

The BCA and BASIX do not recognise precinct system co/trigeneration energy. Another possible benefit which should be acknowledged.

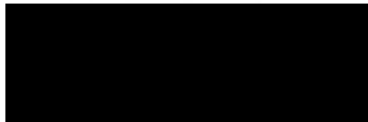
Mirvac recommends amendment to the Strata Titles Act allowing developers to connect to precinct co/tri generation systems that have IPART regulated electricity and thermal service (Hot and Chilled Water) pricing.

7. Other relevant matters;

Other matters of concern are:

- the increase in water consumption as part of the cooling and heat rejection process (e.g. cooling towers);
- political interference such as domestic reservation of gas supply affecting certainty of investment;
- the engineering complexity of co/trigeneration systems; and
- Financial viability – a gas generator may provide higher returns than a co/tri generation system with heat and cooling generation.
- Public perception of large gas using entities including co/trigeneration systems could become negative if Coal Seam mining and extraction goes ahead in NSW
- Timing of the commitment to a district co/trigeneration system is required at the 'design' stage of the planning process 6-12 months before a Development Application is submitted for council approval. Gaining assurances of unity in system design, configuration, space allocation, and commercial/contractual certainty is critical but currently problematic if there is more than one entity managing district energy systems and their viability. Mirvac recommends when designing precincts on co/trigeneration system that one provider with one set of rules is chosen to provide certainty in design, DA, and government approvals.

Yours sincerely,



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