

To	NABERS Energy	Date	20th August 2012
Attention	Built Environment Section	Email	nabers.energy@environment.csw.gov.au
From	WSP Built Ecology	Project No	
Project		No. of pages	
Subject		Copies	

Submission – Review of the NABERS ruling “Proportioning of Energy used by Cogeneration or Tri-generation Systems” (PECTS)

We intend to provide feedback on each of the 5 issues identified within the above paper in the following sections of this memo. However, prior to commenting on each of these systematically, we have the following general feedback with regards to the intent of this paper.

Section 3 of the aforementioned *PECTS* paper notes that:

“NABERS is underpinned by a fundamental principles which is to measure the externally supplied energy used to operate a building and then rate its performance against the market average”

To decouple carbon emission from a NABERS Energy rating of a building is to overlook that at its inception NABERS Energy was created to benchmark the environmental performance of a building – as assessed by the building energy related greenhouse emissions. For this reason, although the energy consumption (MJ/m²) is noted on the NABERS Energy certificate for a building, the actual determination of the star rating has always been a building’s carbon emissions intensity. The original scheme was actually called the Australian Building Greenhouse Rating Scheme (not energy rating scheme).

It is this connection between carbon emissions and the NABERS Energy Rating that has resulted in the adoption of mandatory NABERS Energy Ratings for state and federal government tenancies.

At WSP, our consultants, and particularly those that specialise in reducing the environmental impact of the built environment, undertake their role within project teams to achieve positive environmental outcomes. Our team prioritises controls and systems that improve the energy efficiency of buildings as the first imperative when reducing the energy related carbon emissions of a building.

Energy efficiency is generally considered the most cost effective method to reducing the carbon emissions within the built environment and it is very unlikely that a low-emission energy generation technology would be installed without first designing energy efficient building systems.

In some legacy projects it is difficult to access tenant areas. In these buildings low-carbon generation technology is sometimes implemented to achieve higher building carbon reductions than could otherwise be obtained. However – it is very unlikely that low carbon generation is installed before accessible building systems are upgraded (chillers, boilers, pumps, common lighting, building controls). Designers do not consider co-generation/ trigeneration a fix-all answer - certainly the complexities surrounding network connection and building electrical infrastructure means that onsite generation is not a simple solution

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Issue 1 – Potential double counting of emissions and corresponding double benefit under NABERS when the co/ trigenerated electricity is delivered by the grid.

WSP Built Ecology are in agreement with the NABERS Position on the above issue.

Issue 2 – How should on-site energy generation be treated within a NABERS rating?

We would like to confirm why the definition of “on site” electricity generation should exclude systems that export usable energy beyond the buildings and its grounds. Surely this is still onsite electricity?

We are unsure why the tenancy ratings should be required to define the amount of low-emission energy consumed where the base building does not. What if the tenant (not base building) installs an onsite electrical generation system (renewables or low-emission)?

We also seek confirmation if only low-emission generation sources would be identified on the rating certificate or would renewable energy also be identified?

In some cases, particularly within large tenancies, there may be a large energy demand within the tenancy that cannot be reduced. This often occurs when a tenancy has a large data centre. The tenant may decide to install a low-emission technology to reduce the carbon impact of this data centre – however in this NABERS Proposal, the tenant’s NABERS Rating would be inferior to other NABERS Ratings which do not use low emission technology.

Within a base building too, the tenant plays an important role in facilitating the installation of low zero emission technology. Often a base building will install such systems at the tenant’s request – and a tenant is expected to pay for this technology through either a single contribution or through a higher rental agreement.

The way the current NABERS Position is taken is to consider only energy that is produced on the user side of the meter (whether this be tenant or base building) without acknowledging collaborative approaches to energy generation within a building or precinct.

Issue 3 – How should usable energy generated by co/trigeneration systems and exported offsite be treated within a NABERS Energy Rating?

WSP Built Ecology is in agreement with the approach proposed by NABERS. However, we request that it is clarified that excludable exported energy should also include pumping energy associated with reticulating thermal energy offsite.

Issue 4 – How should low/ zero emissions energy externally supplied to a building be treated in a NABERS Energy Rating?

WSP Built Ecology is concerned that the NABERS Position will discourage the implementation of shared energy systems.

Whilst we acknowledge that the provision of a simple and equitable methodology for incorporating low/ zero emission energy generation systems within the NABERS Energy rating system is valuable, we work in an environment where carbon abatement measures are more likely to be implemented where they can be demonstrated as commercially feasible.

Sometimes, the economic viability of a low emission technology is enhanced when a technology can be implemented on a larger scale – such as a share or precinct energy solution. From an overall carbon abatement perspective – the implementation of innovative solutions to improve a building’s environmental performance rating should be encouraged.

The benefits associated with a decentralised approach to energy generation – such as those associated with co/trigeneration and renewable energy generation are numerous including:

- The fuel source is generally lower carbon intensity than grid electricity
- The utilisation of waste thermal heat improves the energy efficiency of electrical generation
- Sharing resources promotes a sustainable culture which is imperative to improving the environmental impact of the built environment
- Although gas fired generation is the commonly adopted low-carbon energy generation technology, providing the electrical and mechanical infrastructure within a building to facilitate the sharing of energy also creates a platform for other energy generation options (for example – fuel cells, renewable energy, biofuels or a yet to be developed technology). Incorporating a precinct approach to improving NABERS Energy Ratings will

promote a smart network of buildings that may be used to improve energy security and reduce carbon emissions on a much larger scale than can be achieved through single and ad hoc building energy generation systems.

For all the reason noted above – NABERS should be trying to encourage, not discourage, a shared approach to energy generation.

We note that although the NABERS Position does not exclude precinct energy solutions in the future – in its current form it does not permit the inclusion of such schemes. We request that NABERS develop a standard that will allow projects that are currently being planned to be eligible to claim reduced carbon emissions. As designers on projects which often utilise NABERS as a key performance indicator, it would be very beneficial for NABERS to provide guidelines such that the risks of attaining NABERS target ratings after practical completion are minimised.

Issue 5 – How should NABERS communicate the use of low/ zero emission electricity in a rating to assist industry in understanding both the environmental performance and energy efficiency of a building?

Should the NABERS Proposal be implemented – we ask that NABERS confirm how this will be addressed within commitment agreements; PCA Quality Standards and local, state and federal government tenancy guidelines. Currently within these guidelines - Green Power is not permitted to be included. Will this be the same with low/ zero emission energy?

Without this clarity we will be unable to confirm that a building/ tenancy has been designed in line with these guideline.

As a rating tool that was developed to benchmark the carbon emissions within the built environment –we ask that NABERS is considerate of the positive environmental outcomes associated with shared energy systems and addresses these within the NABERS Rating tool to promote their uptake.