

A BIASED VIEW OF NABERS ENERGY Protocol and Pitfalls

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Introduction

- Background
- Ratings Systems – NABERS Energy
- Process Pitfalls and Performance Pitfalls



Background



Origin Update



What are the drivers

- Sustainability – “Good corporate citizen”
- Accountability in property management
- Transparent and accessible reporting



Sustainability is now mainstream

- Increasing public awareness of local, national and global “issues” (environmental, social, economic)
- Alignment of personal and corporate agendas – employees and investors



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“Two in three citizens want companies to go beyond their historical role of making a profit, paying taxes, employing people and obeying all laws; they want companies to contribute to broader societal goals as well.”

The Millennium Poll on Corporate Social Responsibility, www.iblf.org



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Accountability

The desire to report on greenhouse performance using an independent, credible measurement



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Ratings Systems



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There are a plethora of ratings systems in Australia

- Greenstar
- Basix
- NABERS
- NatHERS

To name but a few...



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Greenstar and NABERS are often confused. Greenstar is a primarily a design tool used to assist in the delivery of ecologically sustainable buildings.

It covers more than just energy.



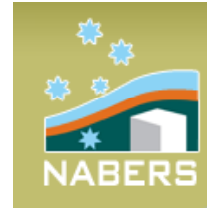
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“Green Star is a comprehensive, national, voluntary environmental rating system that evaluates the environmental design and construction of buildings”



Greenstar is predominantly aimed at new buildings and building refurbishment projects.

But what happens with the existing building stock?



What can NABERS rate?



Offices



Shopping Centres



NSW Hospitals (nearing completion)



Hotels



Homes



NSW Schools (under development)

What does NABERS for offices rate?



Image Credit: Stockland

What does NABERS for offices rate?

Rating type	Covers	Applicable to
Tenancy	Services used within the tenancy space	Tenants
Base Building	Central services and common areas	Building owner or property manager
Whole Building	A combination of the above	Building owner or property manager and tenants

Simple, accessible program – online tool at www.nabers.com.au

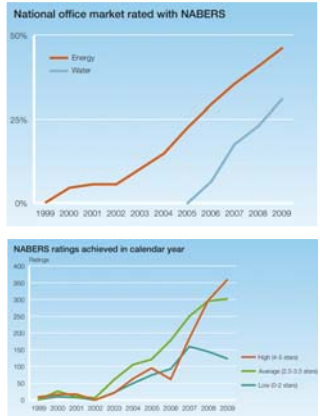
Performance, not design based



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NABERS Success

- 10 years of successful operation
- Credible industry standard
- Continued growth in building ratings
- Energy, greenhouse and water savings



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Up until now NABERS has been a voluntary scheme



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Mandatory reporting means that you will have to take NABERS more seriously than ever.

You do not want your building to be disadvantaged because of simple and avoidable mistakes



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So – what actually goes into a NABERS Energy Rating?



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NABERS Energy for Offices (Formerly ABGR)...

Benchmarks the actual greenhouse performance of office buildings by awarding a star rating on a scale of one to five.



On the surface NABERS is very simplistic. This is a positive and a negative.



Metered energy data is used and normalised for :

- Net lettable area (lease)
- Hours of occupancy (lease/survey)
- Climate (postcode)
- Equipment load (survey no. of computers)

Benchmark - kgCO₂/m² per annum



For an accredited rating you must use the services of an accredited assessor.



An accredited assessor must conduct ratings following a strict and comprehensive validation protocol



What is a Validation Protocol?

- The rules for collecting, processing and applying data
- The definitions of terms and rules for inclusions and exclusions
- They are updated by 'Rulings' determined by the National Administrator, and
- They are applied by Accredited Assessors

Using reliable data

- Data must be "Third Party Verified", that is it must be an original utility invoice, as an example
- There are rules for treating missing data
- Data accuracy is assessed
- All data must relate to the Rating Period

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The data must pertain to all fuel usage.

The data must cover a full and concurrent twelve months

This can be a problem, especially when some bills are issued infrequently.



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To determine the area, certified NLA plans are required.

Any vacancies during the ratings period must be accounted for.

Non office space must be excluded



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Hours of occupancy are critical.

In a base building rating these are normally determined from leases.



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For base building ratings, after hours air conditioning use can be taken into consideration, provided actual usage can be properly determined



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All of this information is entered into a spreadsheet, and the results are plugged into a NABERS calculator



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Process Pitfalls and Performance Pitfalls.



Make sure that you can

- Maximise your area
- Maximise your hours
- Minimise your consumption



This is not as straightforward when conducting a tenancy or whole building rating



Area is critical.
In a tenancy or whole building rating, the effective area may be lower than in a base building rating



Hours of occupancy are critical.

In a tenancy or whole building rating a full staff survey must be conducted



Minimising Energy consumption is critical.

In a tenancy or whole building rating the tenant energy consumption is included, and if they are not diligent.....



For tenancy and whole building ratings, it is also necessary to count all computers



Building owners must be in a position to report base building ratings, or they could be disadvantaged. Bad tenant = Bad rating?



When the base building power is not properly separated and/or metered from the tenants power, then a base building rating cannot be undertaken



Energy Coverage

Tenancy

- Tenant lighting & power
- Tenant-controlled supplementary air conditioning

Base Building

- Common-area lighting & power
- Lifts and escalators
- A/C and ventilation
- Generator fuel
- Car park ventilation & lighting

Whole Building: Combination of the two

So – watch out for

- Base building equipment connected to the tenant power supply
- Supplementary A/C doing part of the base building A/C work



Be careful with multiple buildings on a single site.

Makes sure power consumption can be properly apportioned.

Consider thermal metering.

Take care with common property eg. carparks



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Minimise your consumption

Non office space can't be rated, so make sure you can separate the power consumption – eg warehouses, retail etc



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Non-Utility Meter Validation

- Non-utility meters that are read by a Remote Meter Reading System can vary significantly
- Validation is required for:
 - electricity meter with a current transformer
 - gas meter
 - a meter with a Remote Meter Reading System, including an interface to a Building Management System used to transmit meter data.
- Implement a management plan

WATER METER WITH REMOTE METER READING SYSTEM AND ONBOARD DISPLAY



GAS METER WITH REMOTE READING SYSTEM AND ONBOARD DISPLAY



THREE PHASE ELECTRICITY CT METER - CAPABLE OF MANUAL OR REMOTE READING



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Minimise your consumption

Whilst only a minor component – look at installing trend log fuel gauges



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Minimise your consumption

Ideally after hours A/C should be discouraged.

Where high after hours use is envisaged, look at dedicated systems.

Make sure after hours use is properly recorded.



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Minimise your consumption

Give consideration to delivering a 'soft landings' service on new build.

Put in place proper monitoring and verification systems.

Look at establishing a building log book



Minimise your consumption

Be vigilant – don't let your BMS be used to cover up problems

Don't let contractors cut corners to solve problems

Keep an eye out for savings opportunities

Don't 'set and forget'



Summary

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- Ratings Systems – NABERS Energy
- Process Pitfalls and Performance Pitfalls

