



Improving energy efficiency and reducing costs at your hotel – example from New South Wales

There has never been a better time to invest in improving the energy efficiency of your hotel. Hotels provide many more facilities and services than they used to and many of these use a significant amount of energy.

The good news: If your hotel is a multi-story building constructed in the early 2000s or before, even modest changes can make an enormous difference to energy efficiency and pay for themselves in cost savings very quickly.

What your NABERS Energy rating means

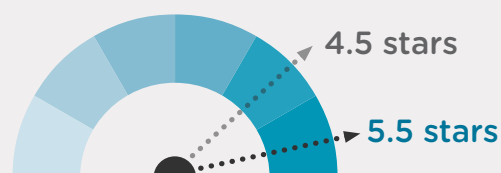
The NABERS rating for your hotel quantifies its energy performance based on the efficiency of common areas, guest rooms, back of house facilities and on-site amenities. Your NABERS rating can then be used to identify potential cost savings and building improvements. You can also use it to promote the environmental credentials of your hotel, helping you to attract greater investment and increase guest loyalty and engagement.

NABERS star rating guide

★ ★ ★ ★ ★ ★	MAKING A START
★ ★ ★ ★ ★ ★	OPPORTUNITIES FOR UPGRADES
★ ★ ★ ★ ★ ★	MARKET STANDARD
★ ★ ★ ★ ★ ★	HIGH PERFORMANCE
★ ★ ★ ★ ★ ★	SUPERIOR PERFORMANCE
★ ★ ★ ★ ★ ★	MARKET LEADER

How much could I save?

The case study below is based on simulations of the performance of a typical hotel building following implementation of a package of energy efficiency measures. The study finds that energy savings of up to **53%** are possible which would improve the NABERS rating from **4.5 stars** to **5.5 stars**.



Two things that will have a significant impact on your building's performance:

1. The operational parameters you set – the hours of operation, set temperatures for heating and cooling, natural ventilation patterns and use of artificial lighting
2. The building's microclimate, that is, the extent to which it is shaded by buildings or natural features, the thermal storage of surrounding areas and how much heat is reflected versus absorbed by the building's exterior.



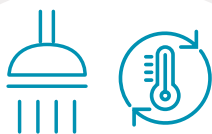


CASE STUDY:

Energy efficiency upgrades at the Fraser Suites in Sydney

The Fraser Suites hotel was built in 2006 and has 43 floors including 8 parking levels underground. It was certified as a 4.5-star NABERS energy rating in May 2021, which is classified as 'good'.

Simulations conducted by the UNSW found that energy savings of 53% are achievable if the following package of energy efficiency measures is implemented:



Install water-efficient faucets, to reduce water and energy consumption for hot water. Install heat exchangers to recover heat from the waste water.

Saves 18% of total natural gas consumption

Energy savings of **53%**

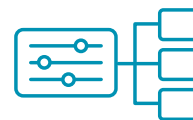


Use daylight-linked controls and replace inefficient light sources.
Saves 3% of total electricity consumption



Use ceiling fans and introduce night ventilation to the HVAC system.

Saves 14% of total electricity consumption



Install a state-of-the-art building automation and controls to interlock the use of HVAC, hot water and lighting systems with weather conditions and operational needs.

Saves 18% of total electricity consumption

* The information is based on analysis of a 'typical' hotel building in Sydney and an upgrade simulation conducted by experts at the University of New South Wales (UNSW) on behalf of Department of Climate Change, Energy, the Environment and Water (DCCEEW). Access the full energy efficiency upgrade report [here](#). A complete renovation package can lead to energy savings of 57.5%, resulting in an energy consumption of 69.3 kWh/m²a, compared to the baseline of 163.1 kWh/m²a.

Improving your NABERS rating

More than 80% of the energy consumed in hotels is associated with heating, ventilation, cooling, lighting, and appliances. If you want to improve your NABERS rating, here are some key things to consider.

Simple cooling solutions:



Ceiling fans are cost effective, and reduce the apparent temperature felt on skin by three degrees, often without the need to run an air conditioner.



Opening windows at night, in spaces where that's an option, is a great way to let hot air out and cooler air in.

Efficient lighting:

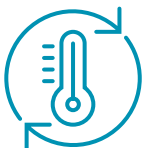


Are you using energy-efficient lighting such as LED lamps and lights?



Replacing inefficient lighting and using daylight linked controls can significantly cut energy use for lighting.

Heating and hot water production:



Lowering heating and hot water requirements is a priority for most hotels. Does your hotel have heat pumps? Adding a ground source heat pump can improve energy efficiency.



Installing water-efficient taps can also reduce the energy needed for hot water.

Windows can make a big difference:

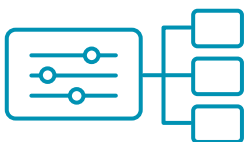


Are these up to contemporary standards? Do they need replacing? Double glazed windows provide a constant barrier between the outside and inside temperature, meaning they keep heat out when it's hot and in when it's not. External shading can also keep heat out.

Automatic settings and sensors balanced with 'common sense' settings:



Have you checked any automatic settings for cooling, heating and lighting and made sure they are switched off when not needed?



Linking together controls for HVAC, hot water and lighting systems with weather conditions and hours of operation are some of the most important tools in improving energy efficiency.

Find out more about how you can improve your energy consumption:

Visit our website

nabers.gov.au/ratings/spaces-we-rate/hotels

Contact the NABERS team

nabers@environment.nsw.gov.au