



Nutshell

- From 2012, building energy efficiency ratings will be displayed nationally when selling or renting residential properties.
- Education needs to be improved to ensure accuracy of the system.

Who's in charge?

All new homes and renovations must meet energy efficiency requirements mandated through the National Construction Code. It's then up to the state and territory bodies to implement the code and regulate the industry. A full list of the relevant state bodies is available at nathers.gov.au/contacts.html. Other important bodies include NatHERS, which sets out the standards for software requirements, and the Council of Australian Governments, which is in charge of developing the National Strategy for Energy Efficiency in partnership with the government.

Paper castles

Are building energy ratings an accurate performance indicator or just words on paper, asks **Brendan Mays**.

Homes account for about 10% of Australia's total carbon emissions. To meet 2020 carbon reduction goals, the federal government has steadily increased energy efficiency requirements on new buildings. In addition, from next year (an exact date has not yet been confirmed) efficiency ratings are to be disclosed on all homes rented or sold.

This scheme is already in place for large commercial buildings nationwide, and for all homes in the ACT. A government study into ACT house prices found that an energy rating improvement of one star will increase market value by three per cent on average, which can amount to tens of thousands of dollars. While many factors determine overall value, the study proved that a higher energy rating will raise the purchase price.

What are energy ratings?

In May 2011, the minimum energy standard for new buildings was increased to six stars (or equivalent, depending on your state). To calculate these energy ratings, building designers use special software to ensure that the building plan is consistent with efficiency measures. As well, there are other rating methods, such as meeting the deemed-to-satisfy (DTS) provisions of the construction code (see left).

Apart from the initial design stage, typically there is no further assessment to ensure recommended energy saving requirements are installed. In some cases, owners have been shocked when independent assessors rated their homes far less energy-efficient than they were told originally (see case studies, page 24). This could be the result of an incorrect evaluation, or building and

When it comes to energy efficiency, people are not being properly educated on the most efficient ways to use buildings to their design strengths

construction issues. Either way, there are clearly discrepancies between the rating listed on paper and the actual energy efficiency for some new homes being built.

The industry speaks

Dominic Ogburn is a building consultant and training specialist with more than 25 years' experience in the building industry. He's also a NSW Fair Trading Award winner for advancing consumer protection in the industry. In his opinion, the current regulation of building energy ratings for new homes is "pathetically inadequate".

"Basically, the building industry is left to self-regulate when it comes to installing energy savings measures," he says. "It's a conflict of interest for some developers who want to employ cost-cutting measures when completing a build."

One great way to improve home energy efficiency while slashing your power bills is to take the 10% Challenge, a joint initiative from CHOICE and advocacy group DoSomething! Visit choice.com.au/10percent for more

But the buck doesn't always stop with builders. "Energy assessors typically work off the design, so you need to check whether they have the qualifications to perform post-build inspections properly," says Ogburn. "With ratings soon to be tied to property value nationally, sellers may also approach tame assessors to ensure a better rating."

Ogburn provided CHOICE with evidence of homes that don't comply with the plans provided through energy ratings software (see page 24). One building was missing compliance elements such as a rainwater tank, ceiling fans, properly installed draught seals, ventilation windows in the laundry and ceiling insulation, to name a few. "At the end of the day, consumers are paying a premium for a product that is not delivered as specified."

Dick Clarke, a building designer with 35 years' experience in energy-efficient design, is Sustainability Director for the peak industry body Building Designers Association of Australia and is a technical adviser on the *Your Home Technical Manual* produced by the Department of Climate Change and Energy Efficiency. He agrees with Ogburn that more training and education is needed within the industry. "If you have crappy installation, you will lose energy efficiency," he says. "Unfortunately, the certification process allows a conflict of interest that often downgrades the 'as built' result from the 'as designed' goal."

He also believes more post-build research is needed to help improve the energy efficiency software used in the design phase. "This will tell us not only how the buildings themselves are working, but also how people are using them." He says that people aren't being properly educated on the most efficient ways to use buildings to their design strengths.

Master Builders Australia also stresses that education is critical as the industry develops. Robert Appleton, National Director, Technical & Regulatory Policy, points out that "NatHERS increased ▶

Sprung a leak

Jan Brandjes worked in some of the coldest climates on earth, including the Arctic, before coming to Australia to work in the building energy efficiency field. His company provides real-life testing of airflow issues that are typically calculated using energy efficiency software. This is designed to provide an accurate representation of whether builders have met the gap-sealing requirements that form part of energy efficiency compliance.

When Jan first came here, he was surprised at the lack of air-sealing in Australian homes. "I've tested hundreds of homes and found them to be consistently leaky. Because you lose most of your heating or cooling through air leakage, this has a strong effect on a building's energy efficiency." He also points out that it's about getting the right airflow balance, not about making homes too tight.

Jan says many of the problems can be fixed easily and for much less than adding other energy saving measures such as solar. "In many cases, exhaust fans in the bathroom and unsealed downlights are causing a lot of air leakage. This can easily be fixed." For a new home under construction, this cost can be as little as \$300, or \$1000-\$1500 for existing homes. Jan also believes that energy rating software assumes that Aussie homes are built a lot tighter than they really are. However, he's quick to point out that the fault lies in a lack of education, and would like to see more industry training along with better consumer understanding.





These homes didn't comply with the plans provided through energy ratings software

the energy ratings requirements without a great deal of warning, which has created problems in several areas. As with any new regulations, there will be issues that need ironing out, but over time the market will adjust to meet the requirements."

The Department of Climate Change and Energy Efficiency has stated software is a tool for the design stage only and isn't designed to measure actual activity. Any issues with build specifications not matching the design are compliance issues. It also states that issues surrounding building energy ratings analysis will be addressed as part of the ongoing National Strategy for Energy Efficiency.

Litigation issues

The Association of Building Sustainability Assessors (ABSA) CEO, Alison Carmichael, says energy ratings of new homes and the corresponding thermal comfort of the end product depends very much on the building being constructed to plan. "Construction methods have a substantial impact on the result. You may buy the highest-performing thermal windows, but if they're not fitted with draught stopping, you can end up with substantial air leakage and lower levels of thermal performance than predicted."

The ACT recently moved to bring energy assessors under official licensing

requirements. This means they'll be subject to stricter regulation and held accountable for any errors they make that affect the energy rating of a building in the ACT. There are now two classes of energy assessors: Class A is qualified to inspect buildings on site, while Class B can only work from designs.

CHOICE VERDICT

New home builders, renovators and existing home owners can visit livinggreener.gov.au for advice on creating an energy-efficient home. Using an independent assessor to assist throughout the building or renovation cycles, or as an evaluation method for existing home

owners, may also be an option – just make sure your assessor is qualified to perform the tasks you require.

In the longer term, CHOICE believes a change to the law that sees new home owners formally select an appropriately qualified building surveyor could also help in cases of big housing developments. Mandatory post-design energy compliance checks would improve efficiency standards, but this would see up-front costs rise. Further improvement to assessor and builder education, energy testing measures, software and consumer knowledge are essential to ensuring the integrity of the system. ■

Case studies

Seeing stars

Jenny Edwards is a ratings assessor in the ACT. She typically assesses homes at the design stage for energy efficiency requirements and is licensed by the ABSA.

She recently bought a home with a rating of three stars with good orientation and sensible levels of window glazing. However, its thermal potential was significantly overstated due to 21 unsealed downlights and two exhaust fans without dampeners not being included in the assessment. The house also received a good score for

wall insulation even though the walls were uninsulated, and ceiling insulation was patchy or non-existent.

Jenny's revised calculation put the home at about a one-star rating. She advises home buyers and builders to check the qualifications and experience of their energy assessors and to consider energy efficiency ratings as early in the design or purchase process as possible.



Compliance complaint

One house in north-western Sydney required more than \$100,000 worth of additional work to meet minimum government building and energy compliance issues, despite being certified for occupation. The buyers, Gillian and Stephen Kozicki, discovered this when they asked Dominic Ogburn (page 23) to audit the house. The vendor then exercised a contractual right to rescind the sale at the last minute. This left Gillian and her family looking for a hotel room, and later renting until they found a replacement home. After great time and

expense, she complained to the Building Professionals Board, and after eight months, minor disciplinary action was taken. Gillian believes the regulation of the industry is completely unacceptable and wants to see the system improved.

