Consumer perspectives of energy performance certificates (EPCs)

An EPC provides information on a building's energy performance and gives it a comparative rating. These schemes have potential benefits for homes in Aotearoa New Zealand, but what do New Zealanders know about them? What consumer insights might help design and implement an effective EPC system in this country?

Energy performance certificates (EPCs) provide an independent rating of a building's energy performance based on an analysis of house plans and specifications and/or a house visit. A home is rated either with a letter (such as A to G, where A is the best) or a number of stars (often 1 to 10, where 10 is the best). The rating usually covers heating and cooling and in some cases water heating and lighting. Plug loads are excluded as they are more occupant dependent.

A rating scheme offers benefits on several levels:

- Home buyers and tenants can compare the energy efficiency of different properties and be better informed when buying or renting.
- EPCs can recommend specific retrofits to improve performance, providing an incentive and guidance.
- EPCs provide detailed information for policy makers that can be used to set targets for energy efficiency and emissions reductions and support the move to net-zero energy. Progress monitoring can make use of EPC databases.

EPCs are mandatory in countries such as the UK and EU states and are widely used in Australia.

BRANZ research into EPCs

A BRANZ research project examined EPC systems, particularly schemes in Australia and the UK, and considered their fit for Aotearoa New Zealand.

The research included a study of consumer knowledge and practices around energy conservation and insights that could help the design and implementation of EPCs in Aotearoa New Zealand.

Focus groups of around 20 people were held in Christchurch (because of its diverse building stock from post-earthquake rebuilding) and Wellington (which has a building stock more nationally representative with predominantly older homes). Participants ages ranged from late 20s to late 50s with a mix of genders and a range of ethnic backgrounds and education but no expert knowledge of buildings or energy.

Energy behaviours

Energy efficiency is important to everyone, with the central concern being cost saving. Specific behaviours mentioned by participants included quick showers, turning lights off on exiting rooms and using draft stoppers.

Energy use overall was strongly tied to culture. Participants who grew up in New Zealand exemplified the common practice of heating one room at a time:

Last night, we dragged out a little oil heater, and it just turns on in the morning 15 minutes before we wake up just to take the chill off our room. I grew up in an old bungalow where we had no heating in our bedrooms unless we were doing our study or something, not heating rooms at night.

As kids we used to wake up with ice inside of the windows. My first four homes weren't insulated at all.

These comments contrasted with someone who grew up in the United Kingdom:

I always keep the house as warm as possible. Coming from the UK, I grew up with central heating, and when we built the house in New Zealand, we put central heating in. Interestingly … over the years, we've used it less. We now only use it when it gets really cold.

Others noted the important role government subsidies have had:

We've had [solar hot water] for probably 10 years now … there was a subsidy to help you put it in … My windows were going rotten in the frame so we needed to replace them, so if you're going to spend that money, you might as well [install double glazing] and extra insulation as well. Again, it was with subsidies. When the subsidies were being offered it made it viable … we wouldn't have been able to afford it without the subsidies.

Consumer sovereignty

Participants liked having control over energy use such as through energy apps that allowed greater visibility of consumption. They valued options such as a choice of bill frequency and a free power hour:

You can get a bill every 2 weeks, which is quite good because you can see where you're spiking … also you can designate your free hour of power as long as it's not in the sort of critical time when everyone's using power.

Others exercised energy control through retrofitting double-glazed windows:

We've got underfloor and ceiling insulation, but I just know the windows are so bad, it's a really old home … Why wouldn't we do double glazing if we're going to do the windows anyway? I just think it's smart.

Discussing EPCs

An example of a UK EPC (Figure 1) was shown. Participants responded positively to the simple and highly visual format with bright colours:

It uses a nice traffic light, people understand traffic lights, green is good, red is stop/not, and … I've got potential to move up.

It's empowering and I think the 'hows' are really helpful.

When considering the use of letters in the rating, there were mixed opinions:

I don't know if that would relate too much to me.

I think it does for me because that's the grades I got at school.

I recognise that A to F is a 'good to bad' kind of scale.

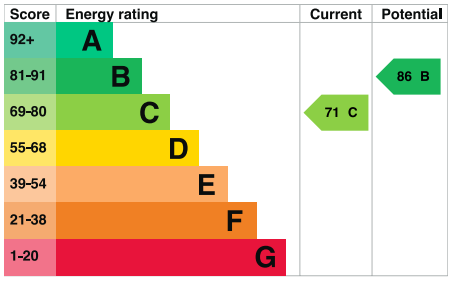

Figure 1. The 'traffic light' energy efficiency rating component of a UK EPC. You can find an example of the full document here.

Star ratings

Other participants felt a star rating such as that used in the Australian Nationwide House Energy Rating Scheme (NatHERS) (Figure 2) would be more appropriate:

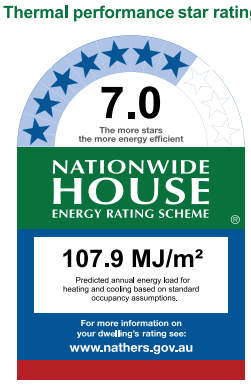

Figure 2. The thermal performance star rating component of a NatHERS certificate – the entire certificate contains a lot more information than this.

They should have a rating on a house, a 4-star rating or something … You think about that … why is that low, what do you need to bring it up?

In support of this, participants noted that one of the most recognisable aspects of energy efficiency already in existence is the star rating scheme for appliances, which some referred to as 'the stars on the fridge' (Figure 3):

When you buy an appliance … the ratings on the sticker on the front … that's how much I want to spend, and then do the comparison within that.

Those stickers are amazing because I think they really, you know, make you aware of what you're buying and what that means, so yeah, that's great.

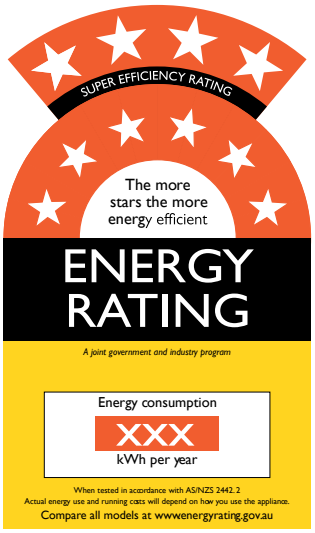

Figure 3. The star-based energy rating labels for new appliances are well recognised.

There was strong agreement that upgrading recommendations were essential, particularly the cost trade-offs:

You can compare like the cost versus benefit of different things. Would you do the more expensive thing if it's not going to save you as much money?

If you potentially could spend X amount of money to get up to there and you have got to save all this money here, how long is it going to take to get that money back? If it's going to take 10 years, people aren't going to bother, especially if you're on a limited income.

The operation of an EPC scheme

The issue of who should run an EPC scheme received a mixed response:

Not the council!

I was just going to say the council! It could be in your rates though, you know.

Everyone agreed that the EPC assessor should be someone people trusted. They used the varying quality of building inspection reports as a cautionary tale:

Some of them are really expensive and really bad and some of them are really cheap and really good. You don't know what you're going to get.

One participant suggested they would like EPCs to be part of the building process:

To me, it's [the] local authority … new buildings, that final sign-off is that Code compliance … you get issued with a certificate that it's built to the standard, that's visually represented [in the EPC] that can go with that package of information that sits alongside the house.

It was felt that any EPC scheme should be standardised across the country.

Mandatory or voluntary and on all houses or just new builds?

There was a suggestion that, if EPCs were not mandatory, people would not do it:

I wouldn't optionally choose to, no.

I wouldn't either, I wouldn't pay for that.

On the price they would pay for an EPC, many were uncertain. Some participants said they would be happy to pay between $50 and $100, while others who had lived overseas suggested that a likely cost would be about $200 to $300.

Regarding what type of house an EPC should apply to, the majority felt that new builds would be the easiest:

You could introduce something like that with all new builds, and it's just incorporated in the cost.

New builds … probably be easier than retrofits … maybe you say after 20xx, all new builds need to fall in and have this factored in, you need to have a certificate to proceed.

There was a feeling that EPCs may affect house prices:

If you're going to sell the house, they go "we're only going to pay this because your house isn't up here".

There might be a situation where, let's say you've got an F house … your house price might go down because people want to live in a B or a C and they don't want to pay that price.

Others thought that EPCs would be positive:

It would be good if you were building a house or moving into a house, you could consider these things.

I think a way to drive it is really … at the purchase of a house. The point of sale.

Conclusion

Although this BRANZ exploratory study was limited in sample size, it found potential for EPCs in New Zealand. Most participants saw value but had concerns about cost and implementation. Self-management of energy use and consumer sovereignty are very important. Energy conservation behaviour was tightly aligned with cost saving.

Key findings:

- Simple designs and traffic light colours were well understood.
- New Zealanders already connect star ratings with energy efficiency, so a star rating system might be better than a letter rating.
- There was strong support for including upgrade recommendations balancing costs against savings.
- An education campaign was seen as crucial.
- There was little clarity in who should operate an EPC scheme, with some preferring councils and others preferring another party. Trust in the EPC assessor was crucial.
- Consumers would be unlikely to undertake EPCs voluntarily.
- The majority felt that EPCs were best suited for new builds.
- There were concerns about how they may impact on house prices and increase demands on landlords.

More information

- BRANZ Research Now: Energy performance certificates #1 What are energy performance certificates (EPCs) and why are they important?
- Progressing energy performance certificates for homes
- Towards dwelling energy certification for New Zealand: normalisation issues
- About NatHERS
- UK EPCs