

THE COST OF *keeping cool*

If you want to cut your power bills this year you might want to change the way you keep cool. Story by **Graham Readfearn**

Hungry for power, they relentlessly stalk our homes with a promise to cheat Brisbane's sub-tropical climate with the simple push of a button. From the humble single unit to "multi-head split-systems" and "fully-ducted" versions, air-conditioning is being bought and installed in homes at an unprecedented rate.

But while these boxes of coils, compressors, fans and electronics might help Brisbanites stay cool, they're putting the heat on energy bills, electricity consumption and greenhouse gas emissions.

According to Energex, the Queensland Government-owned electricity distributor for South East Queensland, the region has a "love affair" with air-conditioners. Energex estimated that each week 1500 air-conditioners are installed in the region. About 80 per cent of all homes now have air-conditioning and some 80,000 homes have at least four units installed.

So what's the problem with staying cool? Like all other appliances in Queensland homes, most of the electricity to power them comes from burning coal, releasing greenhouse gases into the atmosphere. As demand for electricity rises, so does the demand for new poles and wires to carry it. More demand means more maintenance which, in turn, means higher electricity prices (about half the price of electricity is made-up of costs related to maintaining the network). Over the next five years, Queensland's two electricity distributors are spending more than \$15billion on "infrastructure, maintenance and operations to cope with increased electricity demand."

But another acute headache, explains Energex spokesman Graham Metcalf, strikes during warm and sticky summer

afternoons when students and workers arrive home and simultaneously reach for the on-button. "On extremely hot days local substations, especially in suburban areas, can see a doubling of peak power use – driven by air-con and other electric equipment," says Metcalf.

To meet the demand, Energex has rapidly expanded its network of poles and wires in the last five years – the equivalent of the entire demand for South Australia and Tasmania combined.

"The situation we have is that around 12 per cent of our \$8.8billion worth of assets are required just for these extreme weather events. That cost is passed on to all homes and businesses," adds Metcalf.

In a study looking at South East Queensland's use of air-conditioning, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) found that in 2005 Brisbanites alone used 119GWh of "cooling energy" in homes and buildings. To put this in context, the region's biggest power plant, coal-fired Tarong, generated about 19GWh of electricity per day last year.

But the CSIRO researchers also looked at the impact of climate change, which is predicted to add one degree to average temperatures in the region by 2030. By that time, rising temperatures and rising population will conspire to almost double the amount of energy being used for cooling.

Anne Armansin, retail energy advisor for electricity retailer Origin, says even now: "It's not inconceivable for air-conditioners to represent as much as 50 per cent of a home's overall electricity consumption."

She says air-conditioners sold in Queensland face stricter efficiency



10 Tips TO COOL YOUR AIR-CON BILLS

- 1 Roof insulation can cut inside ambient temperatures by 2°C or more, so you'll reach for the air-con less.
- 2 Ceiling fans consume about 65 watts of power compared to small air-con units which use about 500 watts.
- 3 If you are buying a new system, get the most energy-efficient air-con you can afford.
- 4 If a warm day is coming and you're at home, turn the unit on early instead of waiting for your home to warm-up. Avoid using kitchen ovens at the same time.
- 5 Isolate the areas you are cooling by closing blinds, curtains, windows and doors and check for gaps.
- 6 External shading such as blinds, canopies and trees help cut heat entering a room. You might not even need air-conditioning with these measures.
- 7 Keeping the air-moving in your home using natural breezes and fans is a cheaper and greener option.
- 8 Cool rooms to no less than 24°C. For each 1°C you can tolerate, you can save about 10 per cent in energy consumption.
- 9 Clean filters in units regularly, make sure coils and fans are unobstructed and position the louvre to discharge air upwards.
- 10 Remember to turn units off completely overnight or when you're not at home for long periods.

Sources: Energex, Origin, The Australian Institute of Refrigeration, Air Conditioning and Heating.

regulations than federal rules. But even though modern units are more energy-efficient, these gains are likely to be cancelled out by the sheer number of air-conditioners being used.

"If, in the last 10 years, you consider that energy efficiency has improved by something like 40 per cent, it would be right to say that the number of homes that have them has increased more than 40 per cent," she says.

Both Armansin and Metcalf say that

in Brisbane, sudden surges in electricity demand tend to start when temperatures reach about 28°C on humid days. But the CSIRO research did offer some hope that the predicted surge in "cooling energy" could be drastically reduced. The research suggested that increasing the number of roofs with insulation and further improving the energy efficiency of air-conditioners were two options which could help to cut power bills and, in turn, reduce the demand on the electricity network.



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