Energy Conservation and Demand Management Program

About this program

Increasing customer energy demand is driving substantial investment in electricity infrastructure in Queensland. For example, the State Government is investing $9 billion in electricity networks in the five years from 2005 to 2010.

As announced in the 2009–2010 State Budget, the Queensland Government will invest $47.7 million in an energy conservation and demand management demonstration program to reduce the growth in energy demand, particularly in periods of peak use.

Reducing growth in energy use will decrease the need to expand or upgrade the electricity network. This will translate into more affordable electricity and lowered greenhouse gas emissions.

In collaboration with electricity distributors Energex and Ergon Energy, the program will deliver a range of initiatives across the residential and commercial sectors, including:

- Providing residential customers with energy management options for major appliances to reduce energy use in peak times.
- Collaborating with industry to deliver end-use energy conservation and demand management solutions such as more efficient air conditioning or fuel switching.
- Investigating the use of reward-based tariffs that reward customers for managing their energy use at peak times.

These initiatives aim to demonstrate the extent to which demand management can reduce growth in peak electricity demand, and provide savings in future energy infrastructure costs. This will ultimately save money for the taxpayer and the electricity customer. The initiatives will also reduce energy consumption which will mitigate greenhouse gas emissions.

The outcomes of these initiatives will inform the development of future demand management initiatives. Should this demonstration program be successful and the measures be applied more broadly by Energex and Ergon across the network, billions of dollars in savings and significant greenhouse gas reductions could be realised over the next ten years.

This is one of a range of initiatives within Queensland's revised climate change strategy, *ClimateQ: toward a greener Queensland*. The Strategy represents the next phase of Queensland's climate change response, and includes $196 million of investments and policies to further reduce the State's greenhouse gas emissions, and support community and industry prepare for, and adapt to, a changing climate.

Rationale

Peak demand in electricity use is the major driver for investment in electricity infrastructure and consequent electricity price rises.

The capacity of the electricity network can be more effectively used by reducing the total amount of electricity used (energy conservation) and shifting electricity use from peak times (demand management).

There is strong evidence nationally and internationally (particularly in the USA) and from research organisations such as the Electric Power Research Institute (EPRI) and the International Energy Agency (IEA), that early intervention by energy utilities to manage peak demand leads to long-term benefits for energy customers and utilities.

Energy distributors Ergon Energy and ENERGEX forecast that total energy consumption in Queensland will increase by 48 per cent between 2008 and 2020, and the demand for electricity at peak times, such as is experienced on hot or humid days, will increase 74 per cent in the same period.

Ergon Energy and ENERGEX must build infrastructure capacity that is only required a few days a year to meet this peak demand. In south-east Queensland it is estimated that, in the next three years, it will cost $1 billion to meet the top one per cent of energy demand. By way of example, currently 11 per cent of the ENERGEX network is required to meet a level of demand which occurs only one percent of the time.

Outcomes

The benefit of the demonstration program is a demand reduction of 40 megawatts, which itself translates into significant energy infrastructure savings.

If the Program proves successful, the Government will consider rolling it out more broadly. If that occurs, by around 2020, the Energy Conservation and Demand Management Program has the potential to deliver:

- a reduction in Queensland's peak electricity demand of over 1,100 megawatts and $4 billion in electricity infrastructure capital expenditure;
- energy savings of over 22,200 gigawatt hours;
- greenhouse gas emissions savings of over 23,200 kilotonnes; and
- water savings from reduced electricity generation of over 42,200 megalitres.

How will it be delivered?

The Queensland Government, in collaboration with electricity distributors ENERGEX and Ergon Energy, will implement the program by:

- working with households, communities and electricity distributors to fit energy-saving devices on certain household appliances, - such as air conditioners, pool pumps and hot water systems. This enables the appliances to be remotely cycled by the distributor over the few hours of peak demand. The aim is to reduce energy use in peak times without impacting on customer comfort or convenience;
- working with large commercial and industrial customers to implement conservation and demand management actions, such as improving energy efficiency through more efficient air conditioning, or fuel switching, for example from electricity to gas; and
- investigating a pricing model for electricity which rewards customers for managing their energy use at peak times. For example, a householder might use the washing machine or dishwasher earlier in the day, or later at night, and reduce demand on the electricity supply network and consequently be rewarded through a reduced tariff.

How much will it cost?

The Queensland Government is investing $47.7 million to implement the *Electricity and Demand Management Program*.

The Queensland Government funding for initiatives under the program will cease after 2009-10, when the measures are expected to be continued by the distributors as part of their regulated activities.

Key milestones

Trials will be developed for residential initiatives from March 2010 to June 2010.

Agreements signed for initial 40 megawatt demand reduction for commercial and industrial customers by June 2010.

Voluntary customers enlisted and trials commence (reward-based tariffs) by June 2010.

Voluntary customers enlisted and trials commence (energy conservation) by June 2010.

Lead agency details

Department of Employment, Economic Development and Innovation

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