



# SMART METERS

## for Australia



**Will greenhouse emissions  
reduction potential  
be squandered?**

## The potential for greenhouse reductions

Energy Futures Australia's report for TEC, *Advanced Metering for Energy Supply in Australia* (available at [www.tec.org.au](http://www.tec.org.au)), shows that a roll-out can deliver:

- Reduction in total (non-peak) electricity use by **4%-10%**
- Reduction in greenhouse emissions by **19 million tonnes pa**
- Reduction in total national greenhouse emissions by up to **3.5%**
- This is equal to taking **4.5 million cars off the road**

International studies show other jurisdictions have achieved similar reductions:

- |   |          |
|---|----------|
| ▪ Carbon Trust, UK                      | 5% - 12% |
| ▪ Sustainability First (21 studies), UK | 5% - 14% |
| ▪ Hydro One, Canada                     | 7% - 10% |
| ▪ EnergyAustralia                       | 6% - 8%  |

## Energy and greenhouse savings squandered

Importantly, the Energy Futures Australia's report states that:

**"Installing advanced meters will, by itself, do nothing to reduce greenhouse gas emissions. Emission reductions will only be achieved if installing the meters results in changing people's behaviour so that they use less energy in total."**

Yet, this is what the roll-out is proposing:

- No in-home displays (that spearhead education and awareness raising)
- No time-of-use tariffs (to allow the meters to work differently from before)
- No direct load-control measures (that facilitate reduced consumption).

As a result, under the current plan, the cost-benefit analysis and RIS conclude that:

- 57% of consumers remain on flat tariffs
- 7-15% take up of direct load-control
- 3-7% reduction in electricity consumption because no in-home displays
- Roll-out to businesses not considered
- No gross metering of roof-top generation (only minus on-site consumption)

In addition, the MCE has indicated a slow-down in the roll-out schedule based on 'uncertainties about the costs and benefits' (MCE Communique 13 June 2008).

## **What's needed to fix the roll-out?**

The roll-out needs to focus on achieving maximum greenhouse benefits rather than merely reducing network costs. The MCE should require the following:

- Minimum functionality to include in-home displays
- Direct regulators to require retailers to offer a range of time-of-use tariffs
- Direct regulators to ensure that networks offer direct load-control programs
- Expand the roll-out to businesses
- Minimum functionality to include ability to meter gross generation
- Fast-track the roll-out to ensure savings opportunities are in place before the introduction of the emissions trading scheme

## **Background**

### **What are Smart Meters?**

Smart meters can provide highly accurate price and use signals for consumers. By raising awareness of energy use, consumers respond by reducing overall energy use. This is where greenhouse savings are achieved: by reducing average demand on top peak demand reductions.

If accompanied by time-of-use tariffs, smart meters can provide pricing that varies according to the time of the day. Seasonal and weekday/weekend variations in prices are also possible. Time-varying tariffs send price signals to customers that reflect the underlying costs of generating, transporting and supplying electricity, enabling resources to be allocated more efficiently. If provided, price-based demand management programs, such as direct load-control of energy guzzling appliances can then reduce customer demand, particularly at peak times on the electricity system.

The best meters include facility for load control of selected customers' appliances and equipment, load measurement and information displays that provide information to end-use customers about their electricity usage and costs. The information provided may include: the current electricity tariff, the current energy consumption in the customer's premises, the cost of the current energy consumption, greenhouse emissions and various messages and alerts about load control events, times at which tariff will change.

### **What's needed to capture the full benefits?**

Smart meters involve more than just a meter that can measure energy consumption at different times. They need to be supported by interactive displays that harness consumer attention, communication networks and data management systems. A smart meter without an in-home display is like a computer hard-drive without a monitor or software and is just like a 'dumb' meter that does not interact with consumers.

It is also critical that smart meters are supported by innovative tariffs that allow customers to save money by consuming more efficiently, and incentives for electricity networks to implement demand management programs, linked to the meters, to ensure that the meters are fully utilised. Without these tariffs, consumers can continue to receive 3 monthly bills that 'smear' the real costs.

The potential benefits to Australia's greenhouse emissions are outlined below:

<b>Likely Annual Reductions in Greenhouse Gas Emissions</b>		
<b>Savings in Total National Electricity Use</b>	<b>Annual Greenhouse Reductions (Mt)</b>	<b>Proportion of Total National Emissions</b>
4%	7.8	1.4%
6%	11.7	2.1%
8%	15.5	2.8%
10%	19.4	3.5%

**Roll-out or trickle-out?**

Trials of advanced metering technology and customer response to time-varying pricing are currently being carried out in most states. Victorian and NSW are progressing their own roll-outs but other states and territories are on hold. Meanwhile new houses are being installed with old meters, retailers are still sending three-monthly bills and \$23 billion is planned to be spent on inefficient new network infrastructure ('poles and wires') to service peak demand that only occurs for a few hours every year.