



# DRIVING TRANSFORMATION

**M**aking the necessary reductions in greenhouse gas emissions to avoid dangerous climate change will require a transformation in the way we create and use energy. A price on carbon has been a favoured approach for driving the transformation to a low emissions economy, however; it is not the only mechanism available. This edition of the Monitor examines some emerging policies for driving the transformation to low emissions technology.

## FINANCING RENEWABLE ENERGY

The US scheme 'Financing Initiative for Renewable and Solar Technology' (FIRST), which originated in the Californian County of Berkeley in 2007 to finance solar panels, has since expanded to eight other US states. Under this scheme, the city issues a bond to cover the cost of installing the panels. The homeowner then repays the government over the course of 20 years via a small line item on the property tax bill. The home owner can finance the additional tax costs with the savings they will make on their electricity bills. If the house is sold, the tax burden is passed on to the new owner who inherits the panels. The FIRST scheme takes advantage of the electricity savings delivered by solar panels to overcome their high upfront costs.

Other jurisdictions have considered feed-in tariffs as a means of encouraging the take up of small scale renewable energy. In March 2009 the ACT Government became the

first Australian Government to implement a gross feed-in tariff for small scale renewable energy. The tariff ensures that households and businesses which install a renewable energy generation system are paid a premium for all the electricity they generate. This is different to the net feed-in tariff implemented in other Australian States which only pay a premium on the export energy delivered to the grid.

Under the ACT scheme, for each unit of electricity generated, the household or business is paid a greater rate than the retail price for buying electricity over the grid. For systems up to 10kW a premium price of 50.05 cents per kWh is paid. Systems between 10kW and 30kW are paid a rate of 40.04 cents per kWh. These rates are funded by a 0.12c kWh charge on all ACT electricity subscribers.

### WANT TO KNOW MORE?

To learn more about Berkeley's FIRST scheme see: [www.ci.berkeley.ca.us](http://www.ci.berkeley.ca.us)  
For more information on the ACT Government's gross feed-in tariff go to: [www.environment.act.gov.au](http://www.environment.act.gov.au)

## FINANCING ELECTRIC VEHICLES

In 2009 a number of car companies released fully electric vehicles including Mitsubishi's i-MiEV and Nissan's Leaf. Although the upfront costs of electric vehicles are typically very high, they offer lower operating costs than petrol driven vehicles. Not only does the electricity they run on cost less than petrol but the maintenance costs are generally lower. The i-MiEV will initially sell for AUD \$60,000. Most of the high upfront costs for electric vehicles are due to the cost of the battery; a lithium ion battery can cost up to \$12,000.

A recent study by the University of California estimates that by 2030 electric vehicles could account for 86% of all US vehicles. However, the study states that this will only be possible if drivers do not have to pay for the batteries themselves. The study argues that by separating the cost of the battery from the cost of the car and financing the battery through a pay-per-mile service contract electric vehicles can achieve rapid market penetration. The approach this study proposes is the same model proposed by electric car start-up Better Place which has plans to establish electric car recharging infrastructure in a number of countries, including Australia, and tie this infrastructure to a battery leasing arrangement. Like the Berkeley solar financing option, a pay-per-mile service contract for electric car batteries could help drivers overcome the high upfront costs of electric vehicles by leveraging their low, lifetime running costs.

Note: recent analysis prepared for the City of Sydney has shown that Australia's Capital Cities could halve their greenhouse emissions by 2030 if they adopt a suite of emissions reduction strategies, including electric vehicles being half of all vehicles on the road.

### WANT TO KNOW MORE?

For more information on the University of California study see: [cet.berkeley.edu](http://cet.berkeley.edu)  
To see the City of Sydney report go to: [www.sydneymedia.com.au](http://www.sydneymedia.com.au)



Despite the global financial crisis, all indications are that renewable energy infrastructure continues to expand.



## GLOBAL RENEWABLE ENERGY TRENDS

A report on global investment into the sustainable energy market has revealed that renewable energy investment has increased, with a total global investment of \$155 billion in the sustainable energy market in 2008. This included \$116.9 billion invested in renewable energy projects, up 12.9% from 2007. As a result of this investment approximately 40GW of new renewable energy power generation was installed globally in 2008. This comprised 41% of total new global capacity, accounting for 6.2% of total power sector capacity. Despite the global financial crisis, all indications are that renewable energy infrastructure continues to expand.

Renewable energy projects around the world are emerging out of this investment. Recently announced projects in Australia include a 150MW solar power plant in Victoria and the 1,000MW Silverton Wind Farm.

India generates over 1000MW through wind power and has now turned its attention to solar energy, proposing to boost its solar power generation capacity from almost zero to 20 GW by 2020. Global solar capacity has been predicted by the International Energy Agency to be 27 GW by that time, meaning India could be producing 75% of global solar energy within just 10 years.

China, which has already installed 12GW of wind power capacity, has begun construction on the first of six 10 GW wind farms. China plans to install 30GW

of wind power capacity by the end of 2010; this will mean that their 2020 target for wind power generation is met a full ten years ahead of time.

Achim Steiner, UN Under-Secretary General and UNEP Executive director estimates that investment in the sustainable energy market needs to reach a half trillion dollars per annum by 2020 to ensure that a peak in GHG emissions is achieved. A continuation of this investment and development of renewable energy could potentially mean that the 2020 goals are exceeded. It is particularly notable that this growth has occurred in the absence of a global climate change agreement.

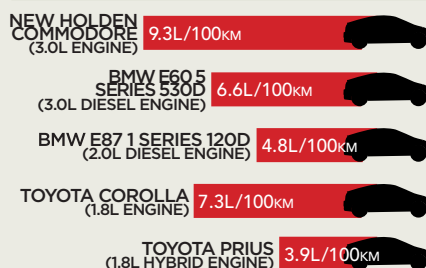
### WANT TO KNOW MORE?

To see the *Global Trends in Sustainable Energy Investment 2009* report go to: [sefi.unep.org](http://sefi.unep.org) For information on India's solar plans see: [www.guardian.co.uk](http://www.guardian.co.uk) For information on China's renewable energy progress see: [www.nytimes.com](http://www.nytimes.com)

## HOW GREEN IS THAT CAR?

On the 5 August, Australia's Innovation Minister Kim Carr, stated that cutting the base-model Holden Commodore's fuel use from 10.6 litres per 100km to 9.3L/100km by replacing its 3.6-litre V6 with a 3.0-litre version qualified it as a 'green car'. We are not sure that it does.

### CAR PERFORMANCE COMPARISON



## WHAT IS THE AUSTRALIAN CARBON TRUST?

The Australian Government has announced that Robert Hill, Minister for the Environment under the Howard Government, will head the Australian Carbon Trust. Although it is not yet clear what the full role of the Carbon Trust will be, two functions have been announced.

The first of these is the *Energy Efficiency Trust* which will provide seed funding to promote energy efficiency in the business sector. The second is the *Energy Efficiency Savings Pledge Fund* which will include a web-based energy calculator to allow households to calculate their energy use and the dollar savings that can be achieved through different energy efficiency options. Households will then be able to pledge the resulting savings to the Pledge Fund which will then buy and cancel CPRS emissions permits in order to create additional emissions reductions.

The UK established its Carbon Trust in 2001 to 'accelerate the move to a low carbon economy by working with organisations to reduce carbon emissions now and develop commercial low carbon technologies for the future.' The Carbon Trust's core role is to help companies reduce emissions by providing expert advice, finance and accreditation. It also supports emerging low emissions technology through project funding and management, investment and collaboration.

### WANT TO KNOW MORE?

For more information on the Australian Carbon Trust see: [www.climatechange.gov.au](http://www.climatechange.gov.au) For information regarding the UK Carbon Trust go to: [www.carbontrust.co.uk/](http://www.carbontrust.co.uk/)

[www.kinesis.org](http://www.kinesis.org)

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