

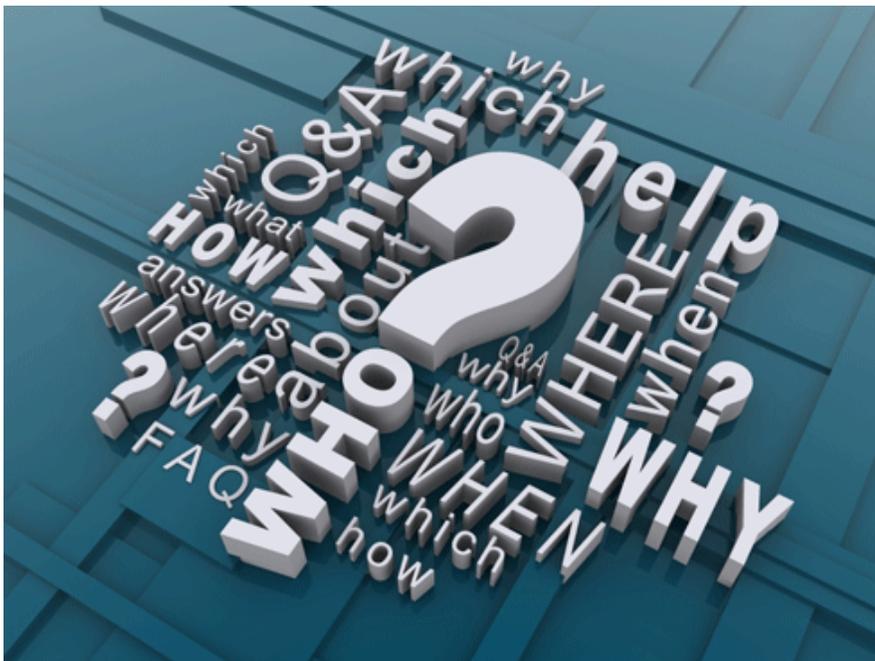


Published: 22 May 2012

Free guide to energy efficiency for business

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While some continue to debate the potential impact of the carbon tax and renewable energy targets, they seem to have overlooked a simple solution that addresses the need to 'decarbonise' our economy, reduce energy costs and improve business competitiveness. That solution is more efficient use of energy. A new website supported by federal and state governments provides a one-stop shop for businesses to find out how they can start saving.



A new online Energy Efficiency Exchange (EEX) guides Australian businesses to cost effective ways of cutting energy use and thus greenhouse gas emissions.

Credit: Warchi/istock

The attraction of energy efficiency for businesses and consumers is that it's a low-cost 'resource' that is already available. Energy efficiency also comes with a strong business case because investments in energy efficiency reduce operating costs and risks, drive innovation, and open up opportunities for new products and services.

It has long been termed a 'no-regrets' policy because it can create value and improve competitive advantage even in the absence of climate change considerations. Some of the world's leading companies have already taken the plunge and found efficiency investments to be typically lower-risk than other uses of funds and organisational resources¹.

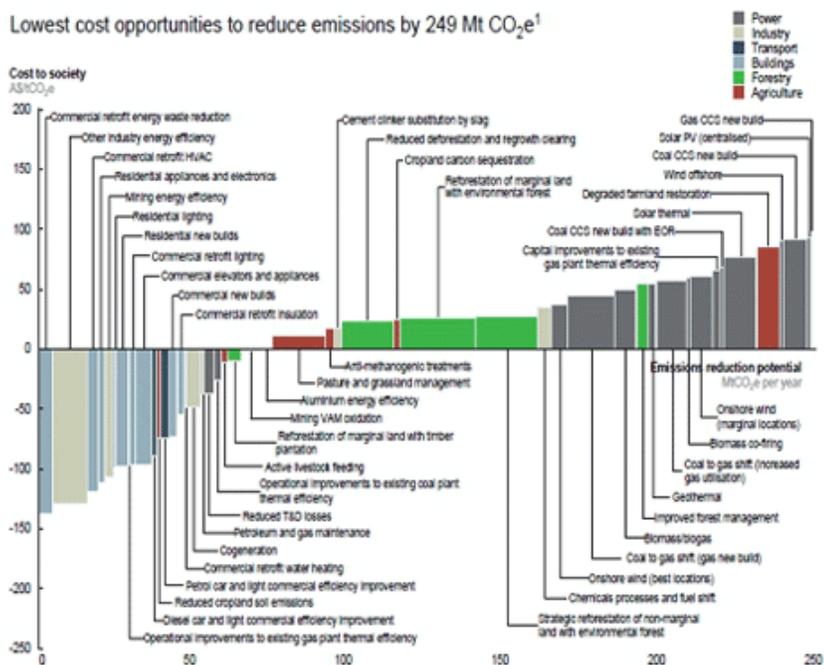
The experience of those early adopters is now available to Australian organisations through an [Energy Efficiency Exchange \(EEX\)](#) website, a comprehensive, searchable database of energy efficiency information and practical tools based on sound expert advice and industry experience.

EEX is a joint initiative of the Australian and state and territory governments. The Federal Minister for Resources and Energy, Martin Ferguson, says the aim of the website is to help businesses identify and investigate opportunities, and implement best-practice

solutions for reducing energy costs.

'The EEX looks at key sectors and technologies such as manufacturing, transport, commercial buildings, lighting, motors, and heating, ventilation and air conditioning. It includes guidance on how to develop effective business cases on energy efficiency projects, and information on industry support programs to help companies secure energy efficiency funding,' he says.

'With industry accounting for over 80 per cent of Australia's electricity consumption, this is where the big savings in energy efficiency can be made.'



Analysis has shown that energy efficiency offers the lowest cost opportunities to reduce Australia's emissions – in fact, we could meet our 2020 emissions reduction target through energy efficiency alone?

The design and content of EEX takes into account industry feedback from the government's existing [Energy Efficiency Opportunities \(EEO\)](#) program. Businesses highlighted the need for high-quality energy efficiency information in a central location and from a reputable source.

The new website differs from many existing web-based resources in that content was researched and developed by recognised energy efficiency experts, then extensively peer-reviewed by other technical experts from industry and academia. Access is made easier by the identification of energy efficiency opportunities first by business sector then by relevant technology.

For example, users from the commercial and services sector can find [suggestions for better managing energy in commercial buildings](#) through metering and monitoring energy use and more efficient lighting and heating, ventilation and air conditioning.

These energy efficiency opportunities are linked to the relevant 'technology' web pages – in this instance, reducing energy demand through improved lighting and heating, ventilation and air-conditioning.

The authors of the 'business sector' and 'technology' pages – [Dr Michael Smith, Adjunct Professor Alan Pears and Geoff Andrews](#) – say they have ensured each energy efficiency 'sector' and 'technology' page, links to detailed best practice guides and 'how to' energy efficiency manuals.

Guidance is also provided for related areas such as procurement and supply chain issues, and energy management. A step by step guide is available for organisations wishing to set up their own energy management system to identify, plan and implement improvements in energy use. The [Energy Management section of EEX](#) also provides an introduction to the energy market, outlining demand management strategies that can assist in businesses in negotiating energy supply contracts and reducing energy costs.

Smaller and medium sized businesses may be bewildered by the range of industry and state and government programs available in relation to energy efficient practices. The EEX provides guidance in [sourcing funding support](#) for energy savings initiatives by consolidating information on government grants, tax incentives and financing models offered through the Clean Energy Future package, Low Carbon Australia and similar programs.

[Assistance with training staff](#) in energy efficiency and management is also covered.

At the moment, EEX is servicing the manufacturing, transport and commercial buildings sectors. Further pages on the mining and resource processing sectors are due to be added in mid-2012.

Case study: Culture of energy efficiency brings unexpected savings

Sydney Water delivers 1.4 billion litres of water per day, treats 1.2 billion litres of water and provides stormwater services to 474 000 properties across the metropolitan area. Most of its energy consumption is used for sewage treatment (51 per cent), followed by water pumping stations (32 per cent) and sewerage pumping stations (8 per cent).



Sydney Water's St Marys sewerage treatment and recycled water plant. Sydney Water

Sydney Water has made a commitment to become carbon-neutral for energy and electricity consumption by 2020; by that time, it aims to have eliminated, or offset, more than 400 000 tonnes of greenhouse gases each year.

It has a **six-person Energy Management Unit**, which works with the various sites and departments to identify, assess and implement opportunities to save energy, manage electrical demand management and generate renewable energy. In 2002, Sydney Water established an energy partnership with Worley Parsons and Energetics to work with its internal energy unit.

The unit provides regular briefings to senior management to ensure they are kept informed of energy prices, emerging legislative issues and the organisation's progress towards energy and greenhouse targets.

One early opportunity identified through the unit was reducing the energy consumption of the mixing equipment used to process sewage.

Most mixers operate 24 hours a day. Although each mixer consumes a relatively small amount of energy, overall they can account for 5-10 per cent of a sewerage treatment plant's total energy consumption.

During an **energy efficiency assessment workshop**, a Sydney Water employee suggested that the mixers did not need to run continuously and could be turned on and off intermittently.

Initially there were uncertainties about the impact of intermittent mixing on both the treatment process and maintenance of the motors (due to repeated stopping and starting). However, it was estimated that, if the project worked, it would achieve:

Potential savings of up to \$200 000 in energy costs if intermittent mixing were implemented across nine sewage treatment plants.

Maintenance benefits due to a reduction in 'ragging'. Ragging occurs when hair and other 'rags' within the sewage build up on the mixer impeller shafts. The process of starting and stopping the mixers allows the 'rags' to fall off the impeller shafts before they have time to bind together.

Through trialling and implementing intermittent mixing at three sites, Sydney Water technicians found the stopping and starting of the motor was not a maintenance issue. There were also no negative process issues or build-up of grit in tanks.

After this monitoring and verification phase, the energy management unit was able to estimate the potential cost-benefit for eight other sites and develop a case study document to promote uptake of the intermittent mixing alternative. This is one of the [key steps for influencing company culture](#), as outlined in EEX.

1 PEW Center on Global Climate Change (2012) *From Shop Floor to Top Floor: Best Business Practices in Energy Efficiency* .

2 *Low Carbon Growth Plan for Australia (2010)* ClimateWorks' report, p.10.

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