



ENVIRONMENT AND RESOURCES COMMITTEE

Paper No. 1

June 2009

INQUIRY INTO ENERGY EFFICIENCY IMPROVEMENTS

This Paper

This paper provides background information about the committee and its inquiry into energy efficiency improvements. It also flags the issues that the committee would like people to comment on.

The Committee

The Environment and Resources Committee is a select committee of the Queensland Parliament appointed to monitor and report on issues in the policy areas of: environmental protection; climate change; land management; water security; and energy.

Inquiry Terms of Reference

On 23 April 2009, Parliament resolved that the committee will examine and report on the economic and environmental potential provided by energy efficiency improvements for households; communities; industry; and government.

For this inquiry, the committee will consider:

- The economic and environmental costs and benefits arising from energy efficiency improvements;
- Potential barriers and impediments to improved energy efficiency;
- Potential policy options for energy efficiency improvements, with an emphasis on initiatives that are cost effective for individual producers and consumers; and
- The role of the Carbon Pollution Reduction Scheme and other Commonwealth Government initiatives in encouraging energy efficiency.

The committee is required to report their findings to Parliament by 30 November 2009.

What is Energy Efficiency?

The term 'energy efficiency' and what might be considered an energy efficiency measure or improvement has come to mean different things to different people. For this inquiry, the committee has drawn a clear distinction between energy efficiency improvements and other initiatives to conserve or limit energy use by simply doing less.

Energy efficiency measures, unlike energy conservation, aim to reduce energy consumption while at the same time maintaining or increasing the level or useful output of outcome delivered using less energy input.

Examples of energy efficiency improvements include energy-efficient lighting, heating and cooling systems as well as improved energy management practices.

Choosing to travel less by car or turning down the thermostat on air conditioners are examples of energy conservation measures, which are not part of this inquiry.

Energy in Australia

Energy is vital to our economy both as an input to production across industry sectors and for consumption by households. It is also a driver of economic growth and wealth creation contributing to the general economic and social wellbeing of all Australians.¹

By world standards, Australia is an energy intensive nation. Of the member nations of the International Energy Agency (IEA), Australia has the fifth-highest energy intensity (that is, energy use per unit of Gross Domestic Product) behind only Canada, Finland, the United States and Belgium.²

Australia is the world's twentieth largest primary energy consumer, ranking sixteenth on a per person basis.³ Despite a general slowing of energy consumption growth in recent

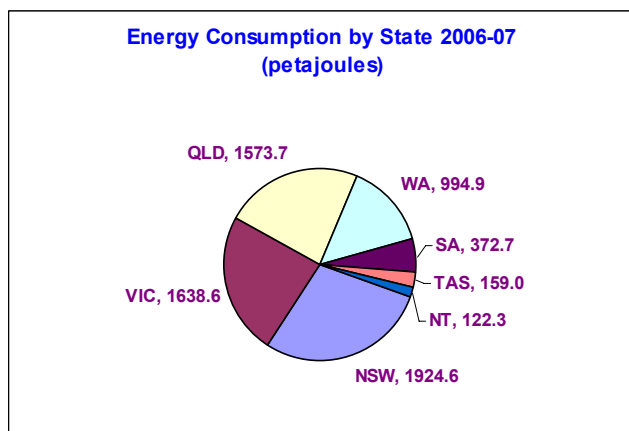
¹ Department of Resources, Energy and Tourism. 2009, *Enhancing Australia's Economic Prosperity Energy White Paper - Discussion paper: Investment, Competitive markets and Structural Reform*, DRET, Canberra, p.7.

² International Energy Agency/Organisation for Economic Cooperation and Development. 2007, *Energy Use in the New Millennium – Trends in IEA Countries*, IEA, Paris, p.33.

³ Australian Bureau of Agricultural and Resource Economics. 2009, *Energy in Australia 2009*, DRET, Canberra, 2009, p.11.

decades compared to previous trends, energy consumption continues to grow in Australia at an average of 2.3 percent annually.

The graph below shows a breakdown of energy consumption by state for 2006-07.



Source: ABARE Australian Energy Statistics, 2009

According to the Australian Bureau of Agricultural and Resource Economics (ABARE), 5,770 petajoules⁴ of energy was consumed nationally during 2006-07.⁵

ABARE projects that the demand for energy linked to population growth and rising living standards in Australia will increase significantly by 46 percent over the next twenty years under a no new policies scenario.⁶

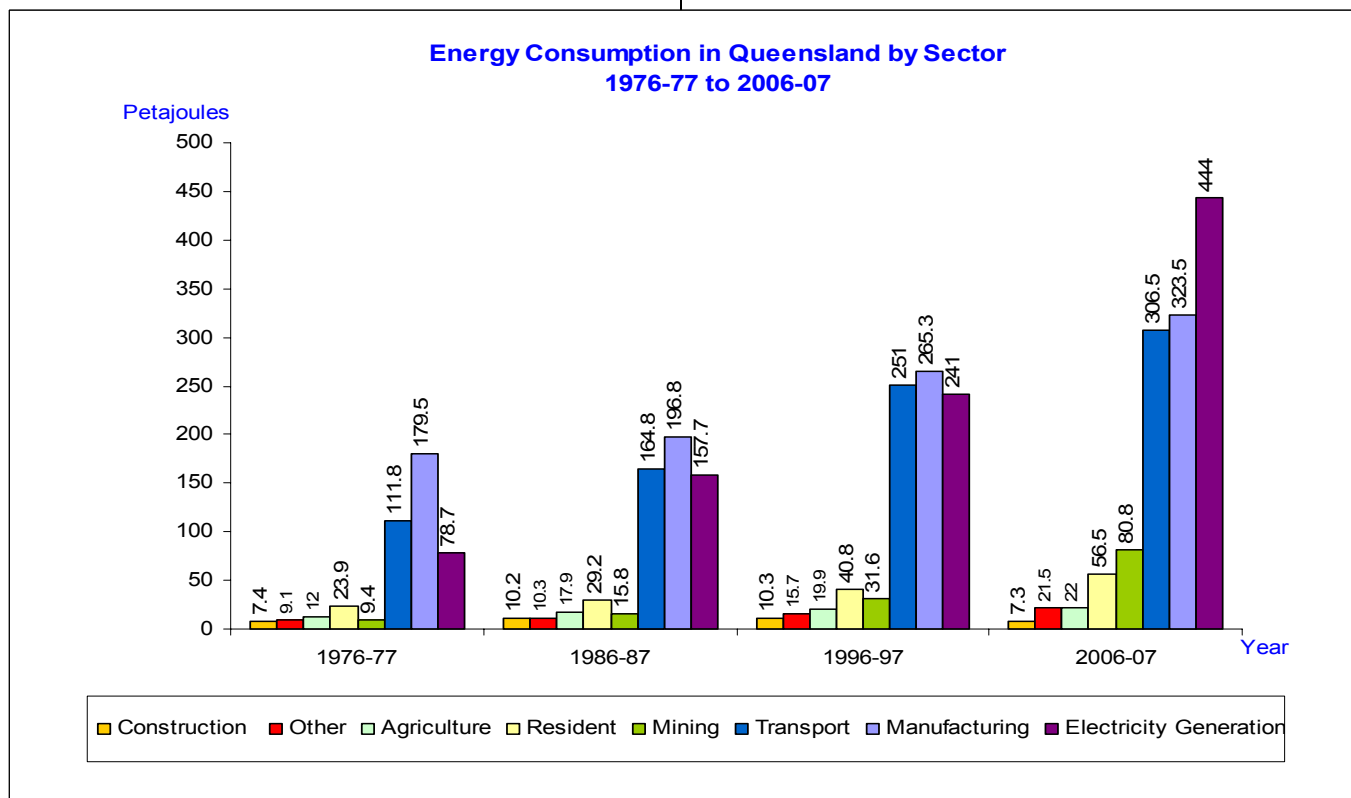
Energy in Queensland

Twenty-three percent of Australia's energy consumption during 2006-07 was consumed in Queensland.⁷ The state's major energy-consuming sectors were electricity generation (29 percent), manufacturing (24 percent), transport (24 percent), mining (7.9 percent), residential (7.7 percent), and commercial and services sectors (4.4 percent).⁸

The graph below shows the trends in energy consumption in Queensland by sector for the period 1976-77 to 2006-07 in ten yearly increments.

Queensland's total energy consumption almost trebled over the thirty years. Consumption for energy generation, transport and manufacturing accounted for over 85 percent of all energy use.

Residential energy use as a proportion of total energy use actually fell over the period from 5.5 percent in 1976-07 to 4.5 percent in 2006-07.



Source: ABARE Australian Energy Statistics, 2009

⁴ A 'petajoules' is one million billion joules.

⁵ Australian Bureau of Agricultural and Resource Economics, 2009, p. 12.

⁶ Cuevas-Cubria, C. and Riwoe, D. 2006, *Australian Energy: National and State Projections to 2029-30*, ABARE Research Report 06.26 Prepared for the Australian Government Department of Industry, Tourism and Resources, Canberra, December.

⁷ Australian Bureau of Agricultural and Resource Economics, 2009, p.12.

⁸ Australian Bureau of Agricultural and Resource Economics. *Australian Energy Statistics*, <http://www.abare.gov.au>, downloaded 30 May 2009.

The Benefits of Energy Efficiency Improvements

Improving energy efficiency is widely accepted as the least-cost approach to reducing greenhouse gas emissions.

According to the IEA, energy efficiency offers a powerful and cost-effective tool for achieving a sustainable energy future. Improvements in energy efficiency can reduce the need for investment in energy infrastructure, cut fuel costs, increase competitiveness and improve consumer welfare. Environmental benefits can also be achieved by the reduction of greenhouse gases emissions and local air pollution.⁹ Energy efficiency policy and technology in buildings, appliances, transport and industry, as well as end-use applications such as lighting can be realised through best-practice, highlighting the possibilities for energy efficiency improvements and policy approaches.

The IEA concluded that between 1990 and 2004 energy efficiency improvements in IEA countries avoided around 1.2 billion tonnes of greenhouse pollution being emitted in 2004.¹⁰ They also saved at least US\$170 billion in fuel and electricity costs in the same year. In the past, the IEA has noted that Australia compares poorly to other OECD countries in the uptake of technical energy efficiency. Over the period from 1990 to 1998, Australian energy efficiency improved at an average annual rate of 0.3 percent, while the average in other OECD countries was 0.7 percent per year.¹¹

In late 2007, the Australian Government committed Australia to cutting greenhouse gas emissions by sixty percent from 2000 levels by 2050. Modelling by the IEA shows that as much as half the savings in greenhouse gas emissions required by 2050 can be achieved by adopting energy efficiency measures.¹² Better energy efficiency is also good for the economy. By reducing energy costs, businesses, households, communities and governments can realise savings in their energy spending and spend more on non-energy goods, equipment and services.

Policies to Promote Energy Efficiency

All Australian Governments have committed to implementing measures to improve energy efficiency. Government policy has largely focused on three areas: the establishment of energy efficiency provisions for the Building Code of Australia; labelling standards and minimum energy performance standards (MEPS) for appliances and equipment; and financial incentives and rebates for the implementation of energy efficient and renewable energy technologies and the phasing out of old technologies.

⁹ IEA 2009, <http://www.iea.org> downloaded 3 June 2009

¹⁰ International Energy Agency. 2007, *Energy use in the new Millennium, Trends in IEA countries*. IEA, Paris.

¹¹ IEA. 2004, *Oil, Crises & Climate Challenges, 30 years of energy use in IEA countries*. IEA, Paris.

¹² Department of Resource, Energy and Tourism. 2007, *National Framework for Energy Efficiency Consultation Paper: National Framework for Energy Efficiency – Stage Two*, DRET, Canberra, p.2.

The Federal Government released a Green Paper in July 2008 outlining its proposal for a national Carbon Pollution Reduction Scheme (CPRS) to commence in 2010 as the primary mechanism to encourage activities and investment to reduce emissions. At the time of writing, the Federal Parliament had not considered the legislative amendments necessary to establish the proposed CPRS.

The reporting deadline for this inquiry may limit the committee's consideration of the impacts of the CPRS scheme.

Current Queensland Government energy efficiency initiatives include:

- Four-star energy efficient commercial buildings by 2010 and improved standards for energy efficiency in residential homes;
- Phase out of electric storage hot water systems with greenhouse-friendly alternatives from 2010.
- ClimateSmart Homes rebates and ClimateSmart Living education campaign;
- Home EnergyWise tools – energy efficiency self-audit tools and materials; and
- Energy Choices Program – complementary incentives that includes residential gas installation rebates, energy audit service, school energy efficiency action plans and an Energywise off-peak campaign.¹³

Information on Energy Efficiency Initiatives

The committee's website <http://www.parliament.qld.gov.au/erc> includes links to information about major Australian Government and Queensland Government energy efficiency policy initiatives and the CPRS.

AREAS FOR COMMENT

1. What have been the economic and environmental costs and benefits of energy efficiency initiatives affecting households, industries/businesses, governments and communities in Queensland?
2. In economic and environmental terms, what energy efficiency initiatives have been effective in Queensland?
3. What role do Commonwealth Government initiatives, including the proposed Carbon Pollution Reduction Scheme, play in encouraging energy efficiency?
4. What additional policies should the Queensland Government implement to encourage energy efficiency improvements?

¹³ Queensland Government. 2007, *ClimateSmart 2050: Queensland climate change strategy 2007: a low-carbon future*.

Barriers and Impediments to Energy Efficiency Improvements

A range of barriers and impediments can delay or impede the full implementation of energy efficiency enhancements. They include:

- A lack of awareness and understanding of costs and savings;
- Resistance to change;
- The lack of energy efficient alternatives;
- Expectations of low returns and high risks;
- The initial cost of the enhancement;
- The likely payback period to realise a financial return from the enhancement;
- The long lifespan of pre-existing vehicles, equipment and appliances;
- The relatively low cost of energy versus the high cost of change;
- The lack of expertise and advice; and
- Market failures due to insufficient information and the corporate risks associated with research and development.

AREAS FOR COMMENT

5. What barriers and impediments to energy efficiency enhancements exist in Queensland?
6. What policies should be considered to overcome these barriers and impediments?
7. How can governments make information on energy efficiency improvements more accessible?

How to Get Involved

Public participation is an important and necessary ingredient in the committee's work and provides an opportunity for members of the public to see, and take part in, the operation of the Queensland Parliament. You can get involved in the inquiry by:

- attending one of the committee's energy efficiency seminars;
- subscribing to receive email updates;
- providing a written submission;
- participating in the committee's hearing; or
- by learning more about energy efficiency from this paper, through the committee's website and government websites, or through your own research.

Inquiry Timetable

The committee has set the following timetable for its inquiry to meet its reporting requirements:

5 June	Release of issues paper
24 July	Townsville seminar
7 August	Brisbane seminar
14 August	Public submissions close
4 September	Brisbane public hearing
30 November 2009	Reporting deadline

Energy Efficiency Seminars

The committee will hold seminars in Townsville on 24 July 2009 and at the Parliamentary Annexe in Brisbane on 7 August 2009 to provide information about key energy efficiency options for governments, business, communities and households. **Please contact the secretariat for further details and to reserve your place.**

Alternatively, the presentations from these seminars will be available to download from ERC's website.

Brisbane Public Hearing

The committee will hold a public hearing in the Parliamentary Annexe in Brisbane to clarify issues raised in submissions and other advice for the inquiry. Members of the public are welcome to attend. The committee will advertise the hearing details in *The Courier Mail* on Saturday 22 August.

Email Updates

If you would like to receive email updates about the inquiry please advise the secretariat.

Making a Written Submission

Guidelines on making submissions, including confidential submissions are available from the committee's website or from the secretariat staff.

Written submissions should be sent to:

Rob Hansen
Research Director
Environment and Resources Committee
Parliament House
BRISBANE QLD 4000

OR by facsimile to 07 3406 7070

OR by email to: erc@parliament.qld.gov.au (attach document)

OR electronically via the committee's website at www.parliament.qld.gov.au/erc

Committee Members

Mrs Carryn Sullivan MP, Member for Pumicestone (Chair)
Mr Jeff Seeney MP, Member for Callide (Deputy Chair)
Mrs Julie Attwood MP, Member for Mount Ommaney
Mr Peter Dowling MP, Member for Redlands
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