

# SUBMISSION

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ENVIRONMENT AND NATURAL  
RESOURCES COMMITTEE

Ms Jenny Lindell, MP  
Chair  
Environment and Natural Resources Committee  
Level 8, 35 Spring Street  
MELBOURNE VIC 3000

Dear Ms Lindell

## **Inquiry into the Energy Services Industry**

I wish to thank-you for your invitation to provide a submission to the Victorian Parliamentary Environment and Natural Resources Committee (ENRC) inquiry into the energy services industry.

As you are aware, I have a number of defined statutory roles under the *Commissioner for Environmental Sustainability Act 2003*, which are to report on the natural environment, encourage ecologically sustainable development, enhance knowledge and understanding of environmental issues and encourage sound environmental practices across government.

The outcomes of the ENRC inquiry will be of particular interest to the State of Environment (SoE) report. The SoE report is expected to provide significant commentary on energy efficiency, which was highlighted as an issue of concern during recent public consultation. The report will also include an analysis of trends and will provide recommendations for future action.

Following clarification with ENRC staff on the scope of the inquiry, the attached submission addresses both supply and demand-side issues relating to energy efficiency. The submission focuses on points 4 and 7 of the inquiry Terms of Reference.

The submission acknowledges that cheap electricity has provided Victoria with significant benefits associated with being the leading manufacturing State, however it has also created one of the greatest barriers to Victoria embracing a sustainable energy pathway for the future. In order to address the sustainability challenges of living in a brown coal State, the Government must facilitate a portfolio approach encompassing the breadth of technologies and options available, including establishing price signals, supporting the development and implementation of energy efficiency and renewable energy technologies, encouraging the evolution of distributed energy, and setting clear timetables for the implementation of technologies, as well as targets to guide Victoria's total reductions in greenhouse gas emissions.

In addition to the points raised in the submission, it is also pertinent to highlight the policy conflict that dominates the response of all Australian governments at this time, as this has implications for the development of the energy efficiency services industry. This country's low priced energy offsets the other cost advantages of Asian economies that are now expanding their manufacturing base at exponential rates. Also, Australian coal makes up a significant export to these same economies and while carbon remains unpriced Australia and similar net exporters

bear no additional penalties. In essence Australia's existing manufacturing infrastructure and the country's balance of payment depends on abundant cheap coal.

The Prime Minister has argued that he will not export Australian jobs by signing Kyoto. No state will move ahead of the others and lose competitive advantage in the competition for manufacturing industries, hence the need for agreement between all on emissions trading and mandatory renewables before any steps are taken. Yet the EU as one trading bloc is clearly not going to permit unpriced carbon into their markets from countries outside of the Kyoto protocol framework and this potentially signals a new set of trade restrictions to replace those removed by the WTO efforts.

However the over-riding imperative will be the climate driven imperatives, probably through insurance regimes and other non-governmental interventions, that will force initiatives to be taken by governments in this country at some time in the medium future. In spite of public support for greenhouse abatement measures, all governments in Australia seem to be relying on comprehensive technological solutions, rather than efficiency gains, innovation and demand management driven by market based instruments. I would argue that it would be a correct strategy to begin positioning Victoria for the array of new technologies and services that will be needed when governments inevitably combine market based approaches with technological development.

I wish to again thank-you for the opportunity to provide comment on the ENRC inquiry into the energy services industry, and for the additional few days grace in providing this submission. Please do not hesitate to contact me on (03) 9637 8173 if you require further information or clarification.

**Yours sincerely**

**Dr Ian McPhail**  
**Commissioner for Environmental Sustainability**

**3 /11 /2005**

## Commissioner for Environmental Sustainability

### Submission to the Victorian Parliamentary Environment and Natural Resource Committee's inquiry into the energy services industry

This submission addresses the following Terms of Reference of the ENRC inquiry into the energy services industry:

4. the main barriers to, and drivers for, the development and uptake of energy efficiency services in the residential, commercial and industrial sectors;
7. the roles of State Government and Federal bodies in developing and regulating an energy efficiency services industry, including the impact that a future greenhouse gas emissions trading scheme might have.

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For Victorians, living in a brown coal State brings with it special sustainability challenges. Ample reserves of cheap and accessible brown coal, estimated to last for several hundred more years, have provided Victoria with one of the cheapest forms of electricity in Australia, if not the world. It is this low-priced electricity that has provided an important competitive advantage on which Victoria has established significant processing and manufacturing industries. This has brought with it obvious benefits for the economy and the broader community.

However, brown coal is also the most greenhouse gas intensive form of energy generation in Australia. Victoria's high levels of energy consumption therefore translate to significant emissions of greenhouse gases with implications for our environmental sustainability. Electricity consumption has increased seven-fold since the 1960's<sup>1</sup> and represents the single largest source of greenhouse gas emissions in the State<sup>2</sup>. The Portland and Point Henry aluminium smelters alone account for 15% of Victoria's total electricity consumption<sup>3</sup>.

The low price of electricity is one of the key drivers of energy consumption across the residential, commercial and industrial sectors of Victoria, as well as a key barrier to pursuing greater efficiency in its use. As recently noted by the Productivity Commission, the lack of a cost reflective price, due to regulatory arrangements and unaccounted environmental externalities, promotes greater consumption of energy and impedes investment in energy efficiency<sup>4</sup>. Cheap electricity creates an environment that reinforces the inertia of producers and consumers of electricity - it is easier to maintain 'business-as-usual' rather than dedicate resources to investigate and adopt more energy efficient practices. Current electricity pricing also inhibits the competitiveness of energy efficiency alternatives, particularly renewable energy technologies<sup>5</sup>, further hampering the development of the energy efficiency services sector.

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<sup>1</sup> Australian Bureau of Agricultural Research and Economic (2005) *Australian Energy Statistics - Australian consumption of electricity by state-gigawatt hours 1960-61 to 2003-04*.

<sup>2</sup> Australian Greenhouse Office (2005) *State and Territory Greenhouse Gas Emissions - an overview*.

<sup>3</sup> Vencorp (2005) *Vision 2030: 25 year vision for Victoria's Energy Transmission Networks*, October 2005.

<sup>4</sup> Productivity Commission (2005), *The Private Cost Effectiveness of Improving Energy Efficiency*, Report no. 36, Canberra.

<sup>5</sup> *Ibid*

Another important driver is the apparent lack of awareness of, or concern within the community and across business at the link between energy consumption, greenhouse gas emissions and climate change. Whereas the image of a dry tap created a sense of urgency within the community in relation to water conservation, the implications of energy use for the global environment does not invoke a similar response, perhaps because there is not the same sense of immediacy or personal connection with the issue. The low price of electricity may reinforce this disconnect, and is in conflict with the Victorian Government's efforts to implement greenhouse abatement measures and to build community awareness and understanding of climate change and the challenges Victoria faces<sup>6</sup>.

Pricing and community awareness represent just two of an array of barriers contributing to the limited uptake of energy efficiency services. Government has an important role in identifying and addressing these barriers in order to foster development of the energy efficiency services industry.

The sustainability challenge of living in a brown coal State lies in how we reconcile our heavy reliance on brown coal and cheap electricity with our conflicting need to move towards an efficient, low-carbon yet robust economy. Based on current evidence, Victoria will need to reduce its greenhouse gas emissions 50-60% by 2050 in order to contribute to the global effort of mitigating climate change, while also maintaining a strong economy that provides employment opportunities for a growing population. This is a critical issue for Victoria's sustainability and highlights the need for greater urgency in our approach to human-induced climate change and, therefore, in addressing our escalating energy consumption and associated greenhouse gas emissions.

In order to address this challenge, we will need to find a sustainable energy pathway that considers all of our options - a portfolio approach encompassing the breadth of technologies and options available, including energy efficiency. Government has a critical role in leading and facilitating this transition to sustainability.

The high-energy intensity of brown coal conversion processes, including the inefficiencies of a centralised transmission and distribution system, means that only 30% of the energy used to supply electricity reaches the end user<sup>7</sup>. This highlights the carelessness of our approach to the generation and transmission of electricity and the need for much greater efficiency.

Energy efficiency has significant potential to achieve both environmental and economic gains by improving competitiveness, reducing energy demand and importantly reducing greenhouse gas emissions. The economic and environmental potential of energy efficiency has been well documented over recent years. A recent report commissioned by the Sustainable Energy Authority Victoria indicated that the uptake of fifty % of energy efficiency technologies in a low improvement potential scenario over twelve years would lead to an increase in GDP by almost \$1 billion and a reduction of emissions from the stationary sector in the order of 9.5 million tonnes<sup>8</sup>.

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<sup>6</sup> Ibid

<sup>7</sup> Ibid

<sup>8</sup> The Allen Consulting Group (2004), *Economic impact analysis of improved energy efficiency: Phase 2 report*, Report for the Sustainable Energy Authority Victoria.

Government can facilitate improvements in energy efficiency in a number of ways, including establishing price signals, supporting the development and implementation of renewable energy technologies and distributed energy, and through setting clear timetables for the implementation of technologies as well as targets to guide Victoria's total reductions in greenhouse gas emissions.

Establishing an emissions trading scheme, in conjunction with other States and Territories, would provide a carbon price signal that would send a message to investors in industry, particularly the energy generation sector, that investment in energy efficiency and greenhouse abatement practices is the future for business in Victoria<sup>9</sup>. This would also prepare the economy to compete in the carbon-constrained future we undoubtedly face and create a greater sense of urgency to drive innovation.

Victoria also has significant potential in terms of renewable resources, yet these currently account for less than 5% of electricity consumption in Victoria<sup>10</sup>. In the absence of a national driver to expand the Mandatory Renewable Energy Target (MRET) beyond 2010 it is essential that Victoria pursue a State and Territory-based MRET, or an equivalent system, that establishes new obligations on retailers in order to foster the development and adoption of renewable energy technologies.

As identified above, the highly centralised nature of Victoria's energy supply system has significant inefficiencies, with an average 7% loss of electricity during transmission<sup>11</sup>. The evolution of distributed energy could contribute to reducing the centralisation of the energy supply system and improve the efficiency and security of supply. Renewable energy technologies, such as mini-hydro, solar panels on buildings and the recovery of methane all hold significant potential for use as distributed sources of power, as does co-generation. Natural gas-fired electricity generation, which is significantly less greenhouse gas intensive than brown coal, is also a valuable source of distributed power. Indeed, locating gas-fired plants close to the Portland aluminium smelter and other large industrial consumers of electricity would significantly improve the efficiencies of their operations by reducing transmission losses and greenhouse gas emissions.

In order to drive progress, it is also essential that government establish clear targets across the portfolio of efficiency and greenhouse gas abatement initiatives, including a timetable for the commissioning of pre- and post-combustion clean coal technologies, such as coal drying and gasification processes, and capture and storage technologies. A great deal of emphasis has been placed on the technological fix to address Victoria's escalating greenhouse gas emissions, yet significant uncertainty remains as to if and when such technologies can deliver at the commercial scale<sup>12</sup>.

In addition, progressive targets towards total reductions in greenhouse gas emissions are also vital. California has set some of the toughest targets in the world of an 80%

<sup>9</sup> The Allen Consulting Group (2004) *The Greenhouse Challenge for Energy*, Report for Victorian Department of Infrastructure and Department of Sustainability and Environment, September 2004.

<sup>10</sup> Sustainable Energy Authority Victoria (2005) *The Sustainable Energy Challenge*.

<sup>11</sup> Ibid

<sup>12</sup> It is noted that the recent IPCC (2005) *Special Report on Carbon Capture and Storage* indicated that capture and storage technologies are expected to require an additional 10 – 40% energy input to produce the equivalent amount of electricity, further increasing our demand on resources and reducing efficiency levels.

reduction by 2050 and NSW has committed to achieving a 60% cut in carbon dioxide emissions by the same year, with emissions stabilised to year 2000 levels by 2025. Such targets are essential to capture the required sense of urgency in creating a sustainable energy pathway and to drive investment in energy efficiency and renewable energy technologies.

On the demand-side, the latest results of the government's water campaign demonstrates the significant achievements that can be made when the community is aware of their connection with an issue and what they can and should do. Over the past decade, Melburnians have reduced their per capita water consumption by 22%<sup>13</sup>. Energy efficiency must be the focus of a similar campaign which develops the connections between climate change and energy use across all sectors, and which provides the information and motivation needed for efficiency improvements to be made.

The mandatory 5-star rating program for new housing represents an important initial building block for addressing the energy efficiency of our homes. Over the next five years the program is expected to save Victoria 600,000 tonnes of greenhouse gases<sup>14</sup>. However, to place those savings into context, the Portland aluminium smelter produces in excess of 6.5 million tonnes of greenhouse gas emissions annually<sup>15</sup>.

Significantly, there are already many examples within the industry sector of the efficiency improvements that can be made at no cost or with financial savings. BP achieved its impressive goal of cutting emissions by 10 % below 1990 levels at no cost, and in fact added approximately \$650 million of shareholder value<sup>16</sup>. This is just one of many examples available which demonstrate that energy efficiency makes good economic and environmental sense. This needs to be communicated to all sectors and supported with incentives in order to address inefficiencies in the use of energy.

As the low price of electricity is a key driver in our energy consumption and a barrier to the uptake of energy efficiency technologies, it is important to note the findings of the Productivity Commission's recent inquiry (finding 14.1) that "*the real costs of supplying electricity to final users vary significantly in terms of both the time and location of its use. Regulatory arrangements governing the transmission, distribution and retail price of electricity insulate consumers from these variations and dampen demand-side responses*"<sup>17</sup>. Further consideration is required of the potential role of a more cost-reflective price, by addressing regulatory arrangements and also incorporating the cost of environmental externalities, in providing greater incentive for consumers to adopt energy efficiency measures.

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<sup>13</sup> Department of Sustainability and Environment (2005) *Progress towards securing our water future*.

<sup>14</sup> Victoria Government (2005) *Victorian Government Response to the Productivity Commission – Draft Report on Energy Efficiency*, May 2005.

<sup>15</sup> This is calculated on the basis of information contained in the *Portland Aluminium Environment Improvement Plan 2003-04* – see <http://www.alcoa.com/australia/en/home.asp>. According to the EIP, Portland Aluminium produces approximately 345,000 tonnes of aluminium annually and currently emits over 20 tonnes of CO<sub>2</sub> equivalent per tonne of aluminium (including power).

<sup>16</sup> Browne, J (2004) *Beyond Kyoto*, Foreign Affairs, vol 83(4).

<sup>17</sup> Productivity Commission (2005), *The Private Cost Effectiveness of Improving Energy Efficiency*, Report no. 36, Canberra.

The Victorian Government must also lead the way by demonstrating energy efficient practices through its own operations in line with commitments made in *Our Environment, Our Future*. The Victorian Government has shown commitment to reducing its environmental footprint by requiring departments and agencies to implement an Environmental Management System (EMS) to manage the environmental impacts of their office-based activities, including reducing energy consumption. Under Victorian legislation the Commissioner for Environmental Sustainability (CES) is responsible for undertaking an annual strategic audit of the effectiveness of Government departments and agencies' EMS to ensure impacts are being managed for improved environmental outcomes. The results of the next audit will be reported to the Minister for Environment in January 2006.

The CES is also preparing a range of reports on environmental sustainability and procurement of Victorian Government office accommodation, goods and services and the motor vehicle fleet. The Government is a significant user of energy and can demonstrate its commitment and the savings that can be made through its own procurement.

The *State of the Environment* report, also an undertaking of the CES and due for release in 2008, will be a key source of information on the health of Victoria's environment. The report is expected to provide significant commentary on energy efficiency as this issue was highlighted as a concern during public consultation. The report will also include an analysis of trends and will provide recommendations for future action.

In summary, cheap electricity has provided Victoria with significant benefits associated with being the leading manufacturing State, but has also created one of the greatest barriers to Victoria embracing a sustainable energy pathway for the future. In order to address the sustainability challenges of living in a brown coal State, the Government must facilitate a portfolio approach encompassing the breadth of technologies and options available, including establishing price signals, supporting the development and implementation of energy efficiency and renewable energy technologies, encouraging the evolution of distributed energy, and setting clear timetables for the implementation of technologies as well as targets to guide Victoria's total reductions in greenhouse gas emissions.