



Climate
Change
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Submission on discussion papers related to the preparation of an Energy White Paper

sent by email to: Secretariat.ewp@ret.gov.au

Climate Change Australia was formed as a local community group to respond to climate change issues. We aim to raise community awareness and responsibility about climate change issues and impacts, to encourage everyone to conserve energy and water, to promote the increased use of renewable energy, and to lobby all tiers of government to implement genuine and effective mitigation and adaptation measures to address climate change.

Thank you for the opportunity to provide input to the development of the Energy White Paper, and for giving an extension for the submission of these comments.

Introduction

It is understood that the Energy White Paper will set the direction for government policy in order to ensure Australia's long-term energy security and economic prosperity. The arbitrary time-frame for 'long-term' is 2030. The decisions made by governments today, particularly in relation to stationary energy and electricity supply, will influence Australia's energy industry for much longer than twenty years into the future, and governments will need to deal with peak oil.

As the next 20 years will be critical to Australia's switch to a low carbon economy, Climate Change Australia recognises the important influence of the Energy White Paper and the challenges that it will need to address. In particular, the Energy White Paper will need to drive substantial investment in renewable energy and manage the energy security risks surrounding peak oil.

High level consultative committee

Overseeing this process is the high level consultative committee, which is meant to be providing high order expertise and advice. According to the terms of reference, this committee is meant to include "representatives from peak industry and non-government organisations". While every part of the fossil fuel industry is well represented, Climate Change Australia is concerned that the committee lacks representation from the renewable energy sector, such as the Clean Energy Council (the sector's peak industry organisation) or the Alternative Technology Association (the sector's leading NGO), or even long-established industry leaders such as SolaHart.

Until this bias in the committee's composition is corrected, Climate Change Australia has no confidence in the process and suspects that the Energy White Paper will not fairly consider the future important role of renewable energy or the reality of peak oil. The current composition of the committee is not an example of good governance.

Discussion Paper – International energy

The following key factors are likely to affect global energy sector development to 2030:

- the UN Framework Convention on Climate Change, the Kyoto Protocol, and any commitments made at Copenhagen later this year to reduce greenhouse gas emissions;
- the global financial crisis, which is likely to dampen demand for both energy and also energy intensive exports such as aluminium, and provides an opportunity for alternative energy sources to be developed and to come on line;
- peak oil, and the long-term rise in the costs of crude oil and the search for alternatives.

Each of these factors is likely to present both opportunities and challenges for the Australian energy sector and economy. For example, it is likely there will be a shift to biological farming, and reduced use of energy intensive artificial fertilisers. There will also be greater demand for components needed to install renewable energy systems.

The Energy White Paper should include information from the **2009 Renewable Global Status Report** (full report at http://www.ren21.net/pdf/RE_GSR_2009_update.pdf). Relevant information from this report includes the following:

- Both the US and European energy markets added more renewable energy than new conventional power (oil, coal, gas, nuclear) in 2008. Global manufacturing capacity for solar photo-voltaic (PV) production almost doubled over 2008 to 8 GW per year (despite the closure of the BP Solar plant in Sydney). China is now the world's leading manufacturer of solar PV.
- The scale of investment in renewable energy facilities in other countries is an example of the potential for Australia. For example, in 2008 Spain installed 2.6 GW of PV (a five-fold increase compared to 2007). If installed in Australia, this would be sufficient to power every home in Melbourne.
- The renewable energy sector appears to be expanding despite the global financial crisis. The Chinese wind industry is continuing to expand so much that its anticipated annual production capacity will be 20 GW by 2010 (i.e. China will be able to replace Australia's entire installed electricity-generating capacity with wind power every six weeks). China's wind energy target of 10 GW of wind by 2010 was met two years early. In fact, China now has 12 GW of total wind capacity installed.
- In 2007, China had 67% of all of the world's installed solar hot water. It also installed the most solar hot water systems in 2007, representing 80% of the world market.

It should be clear from the above trends that Australia will be rewarded for investing in the development and manufacture of renewable energies, and that China is moving beyond the fossil fuel age.

Discussion Paper – Realising Australia's energy resource potential

The inclusion of a map of fossil energy resources in this paper, but not wind energy resources or solar energy resources, is another glaring example of the bias in the development of the Energy White Paper. Australia has areas of known high wind/ solar resource potential. Government has a role in encouraging appropriate investment in these areas. Earlier this year, the NSW Government identified five precincts that would be suitable for the development of wind farms, with the promise of fast-tracking development approvals for wind farms in these areas. This initiative should be repeated across the country.

In recent years, plants manufacturing both components for wind turbines (e.g. Vestas' plant in NW Tasmania) and PV cells (e.g. BP Solar's plant in Sydney) have been closed. Both cases indicate the need to improve Australia's competitiveness as an investment destination for

renewable technologies, particularly in the case of PVs given that Australia still leads the world in the research of this technology.

Discussion Paper – Governance, institutional, level and regulatory frameworks ...

Institutional arrangements and regulation

Substantial changes are needed to institutional arrangements to assist in the task of transforming Australia to a low carbon economy. Climate Change Australia sees the following as priorities:

1. A significant change that is long overdue is the **removal of government subsidies** to the fossil fuel industry. In the recent budget, more money still was provided to the fossil fuel industry than to renewables. There was, for example, no change to the \$1.8 billion a year tax concession for those who drive company cars or the \$710 million exemption that the airline industry enjoys so it doesn't have to pay fuel excise. The Energy White Paper should recommend the removal of these subsidies to the petroleum industry.

The Energy White Paper should recommend against further subsidies to the fossil fuel sector and energy intensive industries. One of the key objections that Climate Change Australia has to the Carbon Pollution Reduction Scheme Bill (currently before Parliament) is the proposed issuing of free pollution permits to energy-intensive industries such as aluminium smelters. The two smelters in NSW stand to gain more than \$300 million, which works out to be about \$200,000 for each of the 1500 people employed – using these funds to re-skill these workers and subsidise the rise of the green economy is clearly an option that is cheaper as well as friendlier to the planet's future.

2. Another potential regulatory framework that should be introduced is **mandatory fuel economy standards** for vehicles, based on standard fuel (not benzene enhanced premium fuel), similar to the standard recently announced by the Obama administration in the USA.
3. As noted above, Government has a role in encouraging investment through regulation. The promise of fast-tracking planning approvals for wind farms in the **five renewable energy precincts** in NSW provides greater certainty to potential investors.
4. The national introduction of **gross feed-in tariffs** for a guaranteed period of time would establish an improved environment for investment in roof-top PV systems. If made available to the commercial sector, the acres of unused roof top on shopping centres, factories and office blocks could be utilised for embedded power, reducing transmission line losses, and increasing reliability.
5. Another role for regulation is setting **stringent energy efficiency standards** (e.g. improving building codes, and setting and enforcing Minimum Energy Performance Standards for appliances). Energy labelling needs to be improved so that highly efficient models can be easily identified and, of course, compliance needs to be checked (see VIPAC test reports on <http://www.abc.net.au/4corners/content/2007/s1961230.htm> which revealed how some models of air conditioning units fail to meet the claims on their energy labels).

Water management

Climate Change Australia is worried by the Discussion Paper's claim that the energy industry expects to increase its demand for water by 2030. Given that Australia is the planet's driest inhabited continent, there is no place for water wastage in any sector, including the energy sector.

Cooling towers are an obvious example of wastage. Wet cooling towers which evaporate the working fluid in a thermal power station should never have been built in Australia - they need to be replaced immediately with fluid coolers or, preferably, dry coolers. Fluid and dry coolers

have the working fluid in a closed loop and isolate it from environmental exposure. This means that only a small quantity of high quality water is required. The information in the discussion paper is incorrect in stating that water with a low mineral content is needed in thermal power stations – this only applies to the working fluid. In fact, the coolant in a fluid cooler does not need to be of high quality.

Cogeneration is actually a far more efficient means of dispelling the waste heat from the working fluid, and can completely replace the need for cooling towers. Cogeneration and even trigeneration is now in place in thermal power stations overseas, markedly increasing the efficiency of the power station installation. Allan Jones, formerly of the Borough of Woking in Surrey, makes the following claims:

In Woking, we installed a gas-fired system (far less polluting than coal), which generates electricity locally. Heat from the generation process is captured and piped underground to supply heating and hot water. This is cogeneration, and in some countries such as Denmark and the Netherlands, more than 50 per cent of their energy comes from cogeneration.

In a further step - trigeneration - waste heat is converted to chilled water for air-conditioning and refrigeration. Trigeneration has a huge impact in reducing carbon dioxide emissions since it displaces electricity that would otherwise be consumed by conventional air-conditioning, generates more low-carbon electricity and does not use greenhouse gas or ozone-depleting refrigerants.

Source: Sydney Morning Herald, 22 July 2008.

<http://www.smh.com.au/news/opinion/flicking-the-switch-from-hot-air-to-usable-heat/2008/07/21/1216492347746.html?page=fullpage#contentSwap1>

Given that Australia is expected to experience longer and more extreme droughts into the future, water should never be wasted when alternatives such as trigeneration are available.

Discussion Paper – Maximising the value of technology in the energy sector

This discussion paper makes a huge assumption that the Carbon Pollution Reduction Scheme Bill (currently before parliament) will be passed and that the tiny capped price of carbon will encourage investment in low emission technologies. Instead, if passed in its current form, it is more likely that businesses will exploit the cheaper option of purchasing carbon offsets in the Third World, and feel no pressure to reduce their carbon emissions in Australia at all.

Thus we consider that the discussion paper is too optimistic about the future importance of Carbon Capture and Storage (CCS). Wishful thinking does not have a role in the White Paper – existing proven technology must have primacy. Despite the claims made by Kevin Rudd in launching the Global Carbon Capture and Storage Institute, most commentators expect that CCS will not be available for broad deployment until 2030. It therefore may have a role in the next Energy White Paper, not this one. This Energy White Paper should concentrate on reality and the real challenge to ensure that Australia will be half-way to decarbonising the electricity sector by 2050. Climate Change Australia believes that this can only occur by phasing out the burning of coal, and the rapid adoption of efficiency measures and renewable energy.

The Energy White Paper should recommend that state and territory governments prohibit new coal fired power stations. It should also require governments to set firm retirement dates for all existing power stations. Synergies should be explored to improve efficiencies. Regeneration using solar thermal technology should become mandatory, as should cogeneration and trigeneration.

Security of electricity supply is fostered by the inclusion of embedded generators into the grid rather than centralised generators. This leads to fewer line losses and less reliance on lengthy transmission lines and major substations.

A key area requiring serious investment is demand reduction and energy efficiency. Reducing the demand for energy at the household level is better than any other means in buffering

households from the impacts of rising electricity costs per kWh.

Energy storage systems are required to smooth out intermittent power supplies (such as wind and solar) at a local level and to balance supply with the spasmodic modes of power demand. However, it should be noted that not all renewable power sources are intermittent and that coal is not the only form of baseline power available. In Spain, one concentrating solar thermal plant is capable of operating at full capacity for seven hours after dark, keeping it running past midnight without any drop off in power. Excess heat produced during the day goes into thermal storage, which is then used at night. A much larger 280 MW solar thermal plant is planned for Arizona that would have 6 hours of storage (source: *2009 Renewable Global Status Report*).

Principal role of renewables

In closing, Climate Change Australia hopes that the Energy White Paper makes it clear that renewable sources of energy will be the principal focus for investment and development in the next 20 years.

According to a Newspoll survey in December 2007 (i.e. just after the last Federal election), 87% of Australians want the government to switch our energy from coal to renewables.

There is a clear mandate for the Commonwealth Government to make the switch from coal.

Yours faithfully

Janet Cavanaugh
Secretary, Clarence Branch
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