PREM09/0164
PREM09D00327.2

Hon. Mike Rann MP
Premier of South Australia

Honourable Senator Mathias Cormann
Chair
Senate Select Committee on Fuel and Energy
PO Box 6100
CANBERRA ACT 2600

Dear Senator Cormann

Thank you for the opportunity for the South Australian Government to provide a submission to the Senate Select Committee's Inquiry into Fuel and Energy.

The South Australian Government has long recognised that a broad-based cap and trade emissions trading scheme is a key element of Australia's climate change mitigation strategy and will play an important role in Australia's energy future.

A cap and trade emissions trading scheme will allow Australia to integrate with the international emissions reduction architecture. It will also introduce a domestic carbon price, which will encourage Australia's transition to a low emissions economy and ensure that emissions are reduced at least cost. South Australia welcomes and fully supports the Commonwealth's Carbon Pollution Reduction Scheme (CPRS).

However, there is no doubt that the limiting and pricing of carbon emissions will be one of the most significant economic reforms in Australia's history. It will have a profound impact on the future mix of fuel and energy in Australia. As such, the South Australian Government has provided input to the CPRS development process, including a submission to the CPRS Green Paper in August 2008, in which both recommendations and issues of concern were noted.

In particular, South Australia has strongly advocated that the transition driven by the CPRS be accompanied by sufficient assistance to strongly affected households, regions and businesses to ensure a smooth transition to a low carbon economy. The South Australian Government believes that the CPRS should be accompanied by a range of cost-effective complementary measures aimed at correcting market failures and should allow a means of recognising voluntary actions taken by households and other parties.

The South Australian Government is leading the nation in terms of encouraging the generation and use of alternative sources of energy. Through the targets contained in South Australia's Strategic Plan and the *Climate Change and Greenhouse Emissions Reduction Act 2007*, South Australia is providing industry with direction and a conducive climate for investment and technology development.

Office of the Premier
State Administration Centre 200 Victoria Square Adelaide South Australia 5000 GPO Box 2343 Adelaide SA 5001
Telephone +61 8 8463 3166 Facsimile +61 8 8463 3168 Email premier@dpc.sa.gov.au www.premier.sa.gov.au

In 2006, the South Australian Government committed to generate 20 per cent of the State's electricity from renewable energy by 2014. With the strong investment in renewable energy generation within South Australia over this period, we anticipate that this target will be reached ahead of time. As such, the Government has recently announced a new renewable energy generation target, increasing the target to 33 per cent of the State's electricity generation by 2020. This is an ambitious target, but independent reviews have suggested that it is achievable, assuming geothermal technology is advanced in this timeframe.

South Australia is well suited to wind generation, hosting 56 per cent of the grid-connected wind generation capacity in Australia. Individuals and businesses are also supportive of renewable energy generation, with South Australia providing over 25 per cent of the domestic grid connected solar photovoltaic power in Australia. Solar generation has been encouraged by the South Australian Government through the introduction of feed-in legislation in 2008. This legislation ensures that small-scale, domestic solar photovoltaic systems connected to the grid are paid for the amount of electricity exported to the grid. The South Australian Government has also installed solar panels on some major public buildings, in particular along the North Terrace precinct, and small-scale wind turbines on several government buildings.

More than 90 per cent of Australia's geothermal investment is occurring in South Australia, with Geodynamics achieving proof of concept in March 2009 for its hot fractured rock technology. They are intending to provide hot rock derived power to the township of Innamincka this financial year. Having hot rock geothermal power will be a major advantage as it can provide consistent baseload power to the electricity grid (unlike wind and solar which are intermittent sources of renewable energy). The only other two Australian geothermal projects to have reached final investment decisions for deep drilling are also located in South Australia, namely Petratherm's Paralana Project and Panax Geothermal's Otway Project.

South Australia supports Australia's national interest in developing a strong geothermal sector by providing leadership for the Australian Geothermal Energy Group, membership to the International Energy Agency's Geothermal Implementing Agreement and coordination of all international inputs for the geothermal chapter of the Intergovernmental Panel for Climate Change (IPCC) Special Report on Renewable Energy (due to be published in Copenhagen in 2010).

Other forms of renewable energy are also being explored in South Australia, with some potential wave energy sites along the South Australian coast. Earlier this year, Carnegie Corporation was granted a wave power licence to test sections of coastline. This is a first for South Australia and an exciting opportunity to further diversify renewable energy generation sources.

To ensure that South Australia maintains a leadership position with respect to renewable energy production, and to position South Australia as a leader in green jobs growth, RenewablesSA has been established with a key focus on encouraging renewable energy investment in South Australia. This includes identifying potential projects, as well as hurdles and obstacles to investment.

To ensure industry is attracted to South Australia, sound and streamlined regulatory frameworks for a range of alternative energy technologies have been developed. For example, the *Planning for Wind Farms* package provides certainty for wind farm developers and has underpinned rapid growth in this industry. There is strong household demand for clean energy and the Government has purchased 20 per cent of its electricity as GreenPower since 2008 and has plans to increase that percentage over time. The new Adelaide desalination plant, due to come into operation at the end of 2010, will be powered solely by renewable energy.

The South Australian Government is also paving the way forward in developing favourable regulatory frameworks specifically to encourage promising technologies such as wave power.

With respect to geothermal energy, the South Australian Government has encouraged exploration through a favourable regulatory and legislative framework and most recently the establishment of the South Australian Centre of Excellence in Geothermal Energy Research at the University of Adelaide.

The Australian School of Petroleum at the University of Adelaide is the largest petroleum-focused university program in the Southern Hemisphere, with about 30 full-time staff, 100 undergraduate students and more than 50 postgraduate students. The South Australian Chair of Petroleum Geology and Chief Scientist for the CO_2 Co-operative Research Centre and colleagues within the Australian School of Petroleum combine to provide nation leading research into petroleum exploration, carbon capture and storage, and geothermal energy.

In addition, the University College London, ranked number 7 of the world's best universities, will soon commence executive education courses through its School of Energy and Resources (UCL SERAus) recently established in Adelaide. UCL SERAus will also commence a Masters of Science in Energy and Resources in 2010, and UCL will be opening an International Energy Policy Institute in Adelaide later in the year.

Adelaide is well placed to host these institutes with its wealth of renewable energy generation and research and development. Other areas of research being undertaken in South Australia include second-generation biofuels, such as microalgae. These fuels have the potential to reduce greenhouse gas emissions and lower our reliance on petroleum fuels, which are now predominantly imported from overseas.

Since the closure of the Adelaide Refinery at Port Stanvac in 2003, all of the State's liquid fuel is sourced as refined finished product imported by ship. South Australia has considerable diversity of supply for liquid fuel requirements, both from domestic and international sources, and at all times there is more than one ship *en route* to Adelaide. All aspects of the downstream fuel supply chain to this State are operated by the private sector. The South Australian Government notes that industry has ongoing access to robust and well functioning global crude and refined petroleum product markets, which is essential to ensure that the State's future liquid fuel requirements continue to be met.

There is always a risk to supply, with Australia becoming more reliant on international crude markets as domestic production of petroleum continues to decline, as outlined in the National Energy Security Assessment (NESA). The Commonwealth's Liquid Fuel Vulnerability Assessment (LFVA) notes that the main risks to fuel supply in South Australia are the potential for production disruption at overseas refineries, problems with shipments and sea-lanes, and problems with local berthing and terminal storage facilities. It assesses the risk of major supply disruption to South Australia as extremely low. The South Australian Government agrees with the assessments contained in the NESA and LFVA.

The South Australian Government encourages the emerging role of alternative technologies to petroleum derived liquid fuels, such as electric vehicles and biofuels, as a means of reducing greenhouse emissions and reliance on petroleum. This Government is involved in the development of electric vehicles and the supporting infrastructure requirements through the Auto Co-operative Research Centre (CRC), *Planning for Electric Vehicles in Australia Project* and work through the Council for the Australian Federation. A trial of electric vehicles in South Australia is being considered.

As a key transport sector player, the South Australian Government public bus fleet currently uses either compressed natural gas (around a quarter of the bus fleet) or a five per cent biodiesel blend that is in the process of being replaced by a 20 per cent biodiesel blend. It is intended to trial a five per cent biodiesel blend in the rail fleet later this year. The Government supports favourable arrangements with respect to Commonwealth grants and excise that encourage further biofuel production and consumption.

In order to further support a sustainable and commercial biofuels industry in South Australia, the Government is developing a business plan for the long-term, sustainable microalgae biofuels industry in this state. Microalgae absorb high concentrations of carbon dioxide in their growth and can produce as much as 6 to 10 times higher productivities than many first generation biofuel crops. They can be grown in saline, waste or brackish waters, not competing for freshwater or productive land, and are considered a potentially more sustainable biofuel source than current biofuel feedstock.

Microalgae biofuel production is technically, but currently not economically, possible. The most extensive national research in this area has been undertaken in South Australia, Queensland, and Western Australia. South Australia is recognised as a hub of microalgal research expertise, with expertise held within the local research facilities of SARDI, the University of Adelaide and Flinders University. The microalgae business plan will assess the commercial opportunities, the State's capabilities, and the role of Government in accelerating commercialisation of an export-based microalgae biofuels industry in South Australia.

Increased renewable energy and biofuel usage is essential to reduce the impact of climate change and to reduce greenhouse gas emissions. South Australia will continue to play a leading role in supporting and developing alternative clean sources of energy and fuel.

Yours sincerely

KEVIN FOLEY
Acting Premier

25 / 8 / 2009