

**HOUSE OF ASSEMBLY  
LAID ON THE TABLE  
3<sup>rd</sup> Session, 51<sup>st</sup> Parliament**

# **Report of the 2009 Review of the *Climate Change and Greenhouse Emissions Reduction Act 2007***

November 2009



**Government of South Australia**

Department of the Premier  
and Cabinet

**Report of the 2009 Review of the Climate Change and Greenhouse  
Emissions Reduction Act 2007**

**HOUSE OF ASSEMBLY  
LAID ON THE TABLE  
3<sup>rd</sup> Session, 51<sup>st</sup> Parliament**

**1. Introduction**

Section 21 of the Climate Change and Greenhouse Emissions Reduction Act 2007 provides that

- “(1) The Minister must cause a review of this Act and its operation to be conducted on a four-yearly basis.*
- (2) The review must include a specific report on—*
- (a) the extent to which the objects of this Act are being achieved; and*
  - (b) the extent to which additional legislative measures (if any) are considered necessary to achieve the targets set by this Act within the periods contemplated by this Act, including by the introduction of performance standards and other mandatory requirements; and*
  - (c) other matters determined by the Minister to be relevant to a review of this Act.*
- (3) The Minister must take reasonable steps to ensure that, in the conduct of the review, there is consultation with—*
- (a) the Premier's Climate Change Council; and*
  - (b) other relevant business, environment and community groups and organisations.*
- (4) The outcome of the review must be embodied in a written report.*
- (5) The Minister must cause a copy of the report to be laid before both Houses of Parliament within 6 sitting days after the report is presented to the Minister.*
- (6) Subsection (1) operates subject to the qualification that the first review must be completed by the end of 2009.”*

**2. Consultation**

The Premier's Climate Change Council was consulted during the preparation of this review report. In accordance with its consultative role under the legislation, the Council consulted with the Stakeholder Engagement Group it has established. The Group consists of nearly 100 business, environment and community organisations. The draft review paper prepared on behalf of the Minister was distributed to the Group for a 3 week consultation period.

A total of six submissions were received from members of the Stakeholder Engagement Group within the consultation period. The Australian Industry Group requested, and was granted an extension of time.

The following key issues were raised in the submissions:

Flinders University	<ul style="list-style-type: none"><li>• Support for sector agreements under s16 of the Act and in particular the</li></ul>
---------------------	--

	University Sector Agreement, to which it is a party
Engineers Australia (South Australia Division)	<ul style="list-style-type: none"> <li>• Suggests greater neutrality in the background section of the document</li> <li>• Acknowledges complex and expensive engineering issues to be solved before significant electricity can be generated from geothermal energy.</li> <li>• Suggests consideration of the sustainability of State and Federal subsidies</li> </ul>
South Australian Council of Social Service	<ul style="list-style-type: none"> <li>• Urged greater consideration in the Act for the combined effects of the cost of carbon in the economy and the extreme weather events on the most vulnerable and disadvantaged in the community.</li> <li>• Need for greater consideration for the public health, social justice and equity aspects of climate change in South Australia.</li> </ul>
Property Council of Australia (SA Division)	<ul style="list-style-type: none"> <li>• Recommends lobbying the Federal Government in relation to energy efficiency, promotion of investment in environmentally sustainable technology and SmartGrid investment</li> <li>• Amendments to the Feed-In Scheme</li> </ul>
South Australian Wine Industry	<ul style="list-style-type: none"> <li>• Inclusion of data in sector agreements on energy efficiency</li> </ul>
Local Government Association of South Australia	<ul style="list-style-type: none"> <li>• Implementation of the Local Government Sector Agreement</li> <li>• Greater focus on adaptation to climate change, particularly at a regional level.</li> </ul>
Australian Industry Group (SA Branch)	<ul style="list-style-type: none"> <li>• Agrees that there is no need for additional legislative measures at this time.</li> <li>• Cautions against the use of statements that greenhouse emission reductions can be achieved without compromising economic growth.</li> <li>• Urged consideration for voluntary guidelines rather than targets.</li> <li>• Expressed concerns that the SA emissions reduction targets could impose higher costs on SA business and consumers.</li> <li>• Urged consideration of opportunities for the rationalisation of climate change measures that the CPRS provides.</li> </ul>

Following an analysis of the submissions and advice provided by the Council, substantial amendments to the draft review report were not made.

In its advice the Council emphasised the importance of the proposed Carbon Pollution Reduction Scheme (CPRS) in dealing with some of the other issues raised in the submissions. The proposed CPRS will have a significant effect on both State and Federal Government climate change policy. Effective interaction between the Act and the CPRS will be critical to the achievement of objects under the Act. As the CPRS legislation is yet to pass through Federal Parliament, and the final design and efficacy of operation are not yet known, it is difficult to address some of the issues raised.

In light of the advice received from the Council, the next review of the legislation will be undertaken in two years time, in 2011. Issues that will be considered in this review include:

- The effectiveness of a state based absolute emissions reduction targets
- An assessment of the greenhouse gas intensity of the South Australian economy
- The effect on economic growth of South Australia's target and the national climate change policy settings can also better assessed following a period of operation of the Scheme.
- An assessment of the sustainability of Government subsidies to support emission reductions.
- Amendments to the legislation to consider the needs of the most vulnerable and disadvantaged members of the community in relation to both the costs of carbon and the effects of climate change; and an increased emphasis on adaptation, particularly at a regional level.

### **3. Background**

The next section of this review provides commentary on progress towards the achievement of the objects of the Climate Change and Greenhouse Gas Reduction Act as at September 2009.

This assessment is made within a national and international context which differs significantly from that in place when the legislation came into operation more than two years ago.

At that time, the then Commonwealth Government had placed Australia at odds with the international community by being one of only two Governments of developed countries that had refused to ratify the Kyoto Protocol. The Government had also committed to a relatively small-scale renewable energy target and sporadic interventions into energy efficiency.

In the absence of national leadership, Australia's responsibility for responding to climate change fell to State and Territory Governments which acted collectively and individually.

The most important collective action was the design of a National Emissions Trading Scheme. Another important action was the commissioning of the Garnaut Review to provide further impetus for national action.

State and Territories also pursued interventions individually. South Australia was an early leader on several fronts – streamlined regulation for renewable energy; targets for meeting Australia's Kyoto target on a State basis and for reducing the State's global footprint.

The Climate Change and Greenhouse Emissions Reduction Act was the culmination of these efforts. Internationally, it placed South Australia among a handful of regional governments to legislate their policies and actions.

Formatted: Bullets and Numbering

The emphasis in the legislation is on voluntary action between government, the community and industry to achieve targets set under the Act. This is not to say that the legislation is not purposeful. Section 21 makes it clear that, while voluntary action is the first and preferred strategy for achieving targets, additional legislative interventions will be considered if needed to see the targets achieved.

This consideration has been affected materially by the election of the current Federal Government. One of the first actions of that Government was to ratify the Kyoto Protocol, thereby creating formal obligations for Australia to meet its greenhouse gas emissions target over the Kyoto Protocol period of 2008-12. The most important outcomes for South Australia from the process have been the setting of the new Renewable Energy Target for Australia and the design of the Carbon Pollution Reduction Scheme.

The new Renewable Energy Target effectively trebles the target put in place by the previous Commonwealth Government. Most estimates of the investment required to achieve 60,000 GWh of renewable power generation in 2020 are in the \$12-16 billion range.

As with the earlier scheme, South Australia's objective is to attract a disproportionate share of this investment.

This approach is reflected in the *Objects* of the Legislation. Section 3(1)(a)(ii) sets targets for South Australia to source 20% of its electricity generation and consumption from renewable energy by 2014. The generation target is six years ahead of the Commonwealth Government's target of 20% by 2020.

South Australia has since moved to attract an even greater share of this new national target. The Premier, as Minister for Sustainability and Climate Change, has exercised his ability under Section 5 of the Act to introduce an additional generation target. South Australia's new target is to have 33% of its electricity generation come from renewable sources by 2020.

This revision not only reflects the State's continued drive to attract a disproportionate share of national investment into renewables, it is also the logical consequence of its success to date which is expected to see the renewable energy target in the Act met ahead of the 2014 deadline. The State's performance against the renewable energy targets is discussed in more detail in the next part of the paper.

The other major change in context at the national level since 2007 is the design of the proposed Carbon Pollution Reduction Scheme (CPRS). The following comments relate to the Scheme as proposed under the legislation currently before the Federal Parliament. It is recognised that the legislation is still subject to the parliamentary process.

The fundamental objective of the CPRS is to set a fixed level of emissions of greenhouse gases from certain sectors for Australia on an annual basis. The scheme provides for the issue of a specific number of permits each year equal to the level of emissions prescribed under the CPRS.

The CPRS will effectively set a pre-determined level of emissions from certain sectors for Australia on a national basis. There are some caveats to this such as the need to account for permit banking; firms electing to pay the penalty for exceeding their permit purchases; and voluntary surrender of permits. However, the principle that the CPRS prescribes one level for emissions which acts as a maximum is broadly correct.

This outcome has significant implications for the target set under Section 5(1) of the Act – "to reduce by 31 December 2050 greenhouse gas emissions within this State by at least 60% to an amount that is equal to or less than 40% of 1990 levels."

The target is the same as that set for the CPRS. The CPRS target is to reduce greenhouse gas emissions to 60% below **2000** levels by 2050; Therefore, if South Australia performed at the average level of the rest of the nation, the CPRS could be expected to achieve the target prescribed in the Act without the need for any additional action by the South Australian Government and community.

This concept is implicitly recognised in the Document of Shared Understanding approved by the Council Of Australian Governments (COAG) in November 2008. The Document provides a framework for limiting interventions by State and Territory Governments to areas which are complementary to the CPRS. These areas are effectively defined as areas where the CPRS price signal is not able to achieve the required outcomes on its own. State and Territory Governments have committed to reviewing their various policy interventions with a view to eventually retreating from those that do not conform to the COAG framework.

Against that background, it would be possible to take a minimalist approach to the assessment of progress towards the reduction of emissions by 60% by 2050 required by the South Australian legislation. This could be nothing more than an assessment of the effectiveness of the CPRS.

However, this minimalist approach risks overlooking important trends within the State. Aggregate emissions are a function of levels of economic activity and the greenhouse gas intensity of the various economic activities that make up Gross State Product.

The target provides a focus for assessment of the economy's transformation towards a carbon constrained economy and subsequently the continuous assessment of opportunities available to South Australia to effectively reduce greenhouse gas emissions. This will become an increasingly important component of the competitiveness of South Australia in a national and an increasingly international market place.

For this reason, an assessment of progress towards the 2050 target remains relevant because it stimulates the ongoing assessment of South Australia's ability to operate in a carbon-constrained national economy and ultimately in a carbon-constrained world.

#### **4. Achieving the Objects of the Act**

Formatted: Bullets and Numbering

The following sets out specific comment under each of the Objects of the Climate Change and Greenhouse Emissions Reduction Act as set out in Section 3.

##### **Object 1: 3(1)(a)**

*“to assist in the achievement of ecologically sustainable development in the State by addressing issues associated with climate change and, in particular—*

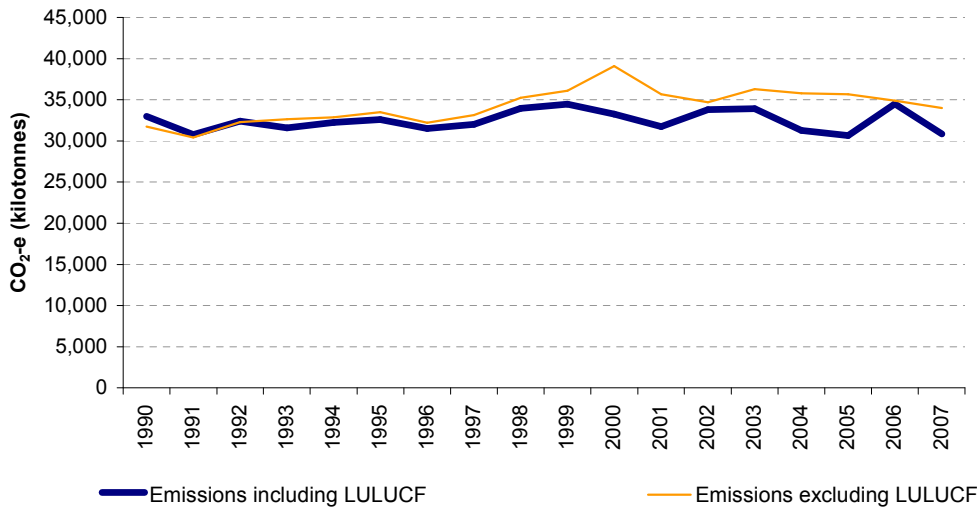
- (i) by setting a target (the **SA target**) to reduce by 31 December 2050 greenhouse gas emissions within the State by at least 60% to an amount that is equal to or less than 40% of 1990 levels as part of a national and international response to climate change; and*
- (ii) by setting related targets (the **renewable electricity targets**)—*
  - (A) to increase the proportion of renewable electricity generated so that it comprises at least 20% of electricity generated in the State by 31 December 2014;*
  - (B) to increase the proportion of renewable electricity consumed so that it comprises at least 20% of electricity consumed in the State by 31 December 2014”*

**Comment:** This object has effectively been met by setting above targets.

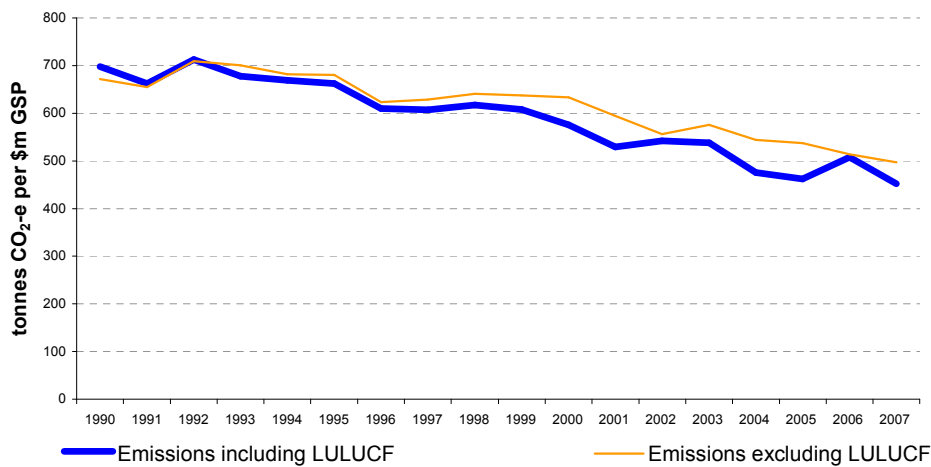
For reasons explained in the preceding section, an assessment of progress towards the 2050 target requires an understanding of the greenhouse gas intensity of the South Australian economy.

The following graphs have been prepared by the Department of Premier and Cabinet using data from the Department of Climate Change and the Australian Bureau of Statistics to illustrate trends since 1990.

### Aggregate Greenhouse Gas Emissions – South Australia



### Greenhouse Gas Intensity of the South Australian Economy



The two lines above differ in that one includes the highly variable land use, land-use change and forestry (LULUCF) category, whilst the other excludes its influence. The greenhouse gas emissions shown include emissions associated with interstate electricity flows.

The recent trends in greenhouse gas intensity of economic production are particularly relevant. The data suggests there has been an acceleration of improvement in greenhouse gas intensity of the economy since 2000. The data (sourced from the

Department of Climate Change and Australian Bureau of Statistics data) is set out in the following table:

Greenhouse Gas Intensity								
	2000	2001	2002	2003	2004	2005	2006	2007
Per capita (tonnes CO <sub>2</sub> -e/person) incl LULUCF	22.07	20.94	22.16	22.08	20.24	19.66	21.90	19.40
Per \$m GSP (tonnes CO <sub>2</sub> -e/\$m GSP) incl. LULUCF	576.0	529.8	542.2	537.8	475.7	462.0	508.2	451.9
% Change Per \$m GSP (%) incl. LULUCF	-5.3%	-8.0%	2.4%	-0.8%	-11.5%	-2.9%	10.0%	-11.1%
Per capita (tonnes CO <sub>2</sub> -e/person) excl LULUCF	24.28	23.51	22.72	23.62	23.16	22.88	22.14	21.35
Per m\$ GSP (tonnes CO <sub>2</sub> -e/\$m GSP) excl LULUCF	633.5	594.8	556.2	575.3	544.3	537.5	513.8	497.5
% Change Per \$m GSP (%) excl. LULUCF	-0.6%	-6.1%	-6.5%	3.4%	-5.4%	-1.2%	-4.4%	-3.2%

The improvement reflected in the table reflects several factors. The services sector of the South Australian economy has grown at a faster rate than other sectors over the period under review. Between 1990 and 2008, the share of South Australia's services sector of the State's economy grew by 6% while the primary and secondary sector shares fell by 1% and 5% respectively. The services sector has a relatively low greenhouse gas consumption profile. Therefore its higher growth relative to the other two sectors reduces the greenhouse gas intensity of the economy on an overall basis.

The sharp improvements in greenhouse gas intensity in 2006 and 2007 are of particular interest. The improvements of 4.4% and 3.2% respectively, excluding land use and forestry can be attributed in part, to the substitution of greenhouse gas intensive electricity from Victoria by South Australian wind power. In 2003, South Australia imported 2,334GWh from Victoria over the Interconnector. This equalled three million tonnes of greenhouse gases. In 2007/08 there was effectively no net trade. Over the same period, the State's production of wind power grew from 4GWh to 1319 GWh.

In 2008/09, South Australia generated 2,078GWh of wind power or 2,157 GWh including solar and other renewables. This is equivalent to 14% of electricity consumption by users. At the time of writing, there was 278MW of wind power under construction and a further 869MW subject to firm commitments. The addition of this capacity is expected to result in the target of S3(1)(a)(ii)(A) being met ahead of the 31 December deadline of the legislation.

Since 2007, there has been relatively little export/import of power across the interconnectors. Consequently the achievement of the target of S3(1)(a)(ii)(B) is expected to align closely with the timing of the achievement of the generation target. Further details based on Electricity Supply Industry Planning Council data are set out in the following table:



<b>Renewable Energy in South Australia</b>				
	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09 (estimated)</b>
Wind Capacity (MW)	388	388	547	740
- Wind (GWh)	764	903	1,319	2,078
- Other (GWh)	102	89	75	64
- Solar (GWh)	3	4	8	15
Total Renewable Generation (GWh)	869	996	1,402	2,157
Progress towards Renewable Electricity Target by Production (%)	7%	7%	10%	14%
Net Export/Import (GWh)	2,578 import	942 import	5 export	156 import
Progress towards Renewable Electricity Target by Consumption %	6%	7%	10%	14%

The anticipated achievement of the renewable energy targets and the introduction of a new national target have encouraged the Government to set a new renewable energy generation target for South Australia. The objective is to have 33% of electricity generation within South Australia coming from renewable sources by 2020.

Accordingly, the Premier has set this additional interim target under S5(3)(c) of the Act.

On 16 June 2009, the Premier tabled in Parliament two reports commissioned to satisfy the requirements under S5(4)(b) and S7 to consult with experts on the new target and to table a report on the matter in Parliament.

The two reports confirm that 33% is a credible target and model the pathways for achieving it.

One of the reports is from the National Institute for Economic and Industry Research. It provided data for the establishment of credible scenarios for reaching 33%, each with differentiated level of contributions from wind, solar and geothermal energy. This suggests that realising the target need not be dependent on the specific levels of contribution from any one of the three.

Continued growth in South Australia's renewable energy sector implies that sustained reductions in the greenhouse gas intensity of the State's economy are likely. It is not possible to forecast the impact on aggregate levels of greenhouse gas emissions as this will also be affected by the rate and nature of economic growth between now and 2050. The ability to create further sequestration of greenhouse gases via land use, land-use change and forestry are also possible.

It is factors such as the ability to create sequestration opportunities that resulted in Commonwealth Treasury modelling indicating the South Australian economy would be one of the least affected by the Carbon Pollution Reduction Scheme in terms of economic growth.

**Object 2: 3(1)(b)**

*“to promote commitment to action within the State to address climate change through—*

- (i) the development of specific targets (as appropriate) for various sectors of the State's economy; and*
- (ii) the development of various interim targets; and*
- (iii) the development of policies and programs for the reduction of greenhouse gas emissions and for other relevant purposes”*

**Comment:** The achievement of (i) is being realised through the Sector Agreement as set out in Section 16 of the Act. The relevant targets for various sectors are set out in the following table:

No specific targets have been set for various sectors under the legislation. However, through these agreements voluntary targets have been set by the individual industries or organisations in conjunction with the State Government. Voluntary targets are set out in the following table and include Agreements that are in the process of being concluded. These targets are not exhaustive but are the primary focus of the agreements listed.

Sector	Target
Wine Industry (signed)	<ul style="list-style-type: none"><li>• Three thousand registered grape growers and 500 licensed producers to receive information on the Winemakers Federation of Australia Carbon Accounting Tool.</li><li>• 20% of electricity consumed by participating facilities under the agreement to be supplied by accredited renewable energy sources.</li><li>• Sector associations and participating facilities to support the state target (the SA target) to reduce by 31 December 2050 greenhouse gas emissions within the State by at least 60% to an amount that is equal to or less than 40% of 1990 levels.</li><li>• 50% of wine grape tonnes grown and 50% of the wine grapes crushed (processed) –based on 2009 vintage – to commit to greenhouse gas emissions under the agreement.</li><li>• 40% of wine grape tones grown and 40% of the wine grapes crushed (processed) – based on 2009 vintage – to complete and lodge reports on their greenhouse gas emissions for the 2009/10 financial year.</li><li>• Based on the report for 2009/10, determine 2010/2011 and 2011/2012 industry greenhouse gas emissions</li></ul>

	reduction targets for participating facilities.
Local Government Agreement (signed)	<ul style="list-style-type: none"> <li>• Review local government sector electricity supply contract and investigate increasing Green Power purchases to 50% by 2012.</li> <li>• Complete climate change impact risk assessment and adaptation plans across 20 Council businesses by December 2009.</li> <li>• Work with Government to develop and introduce a six star minimum energy efficiency standard for thermal performance in residential dwellings by July 2010.</li> <li>• Implement broad scale community education and behaviour change program across, urban, peri-urban and regional local government areas.</li> </ul>
Property Sector (signed)	<ul style="list-style-type: none"> <li>• By December 2014 all major upgrades to government owned office accommodation buildings in CBD seek to achieve and maintain a minimum 4.0 star NABERS Energy building rating for areas greater than 2000m<sup>2</sup>.</li> <li>• By December 2014 all new leases with an area greater than 2000m<sup>2</sup> in both government owned and leased office accommodation buildings in the Adelaide CBD seek to achieve and maintain a 5.0 star NABERS Energy rating over the term of the lease.</li> </ul>
Adelaide Brighton Limited (signed)	<ul style="list-style-type: none"> <li>• Develop a 2-year program with 1 year rolling reviews to implement prioritised greenhouse gas reduction program into the business covering areas of: <ul style="list-style-type: none"> <li>- alternative fuels and raw materials (AFRM)</li> <li>- supplementary cementitious materials (SCM)</li> <li>- energy efficiency opportunities (EEO)</li> <li>- new technology</li> <li>- innovation opportunities with process design and operation</li> <li>- supply chain initiatives</li> <li>- new product development and use</li> <li>- investigations into potential carbon sequestration opportunities.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Progress development international sector agreement for the lime and cement industry by December 2009.</li> </ul>
Electronics and ICT Association (concluded)	<ul style="list-style-type: none"> <li>• Achieve 5-10% greenhouse gas emissions reduction target as part of the demonstration projects to be undertaken with industry members.</li> <li>• Develop a nationally consistent greenhouse gas emissions tool for association members.</li> </ul>
SA Water (near completion)	<ul style="list-style-type: none"> <li>• For the period January 1 2008 to December 31 2012 SA Water will constrain greenhouse gas emissions to an amount equivalent to the South Australian Kyoto target of no more than 108% of 1990 levels.</li> <li>• From 1 January 2013 SA water will progressively reduce net greenhouse gas emissions to an amount, so that by 31 December 2050, SA Water's emissions will be no greater than 40% of its 1990 levels.</li> <li>• SA Water has achieved at least 20% renewable energy use from self generated and purchased accredited renewable energy from December 2008.</li> </ul>
Jeffries Group (concluded)	<ul style="list-style-type: none"> <li>• Targeted greenhouse gas reduction for Jeffries Group of 12% per tonne of compost produced.</li> <li>• Meet or exceed the consumption of 20% renewable electricity by 2020.</li> </ul>
University Sector (concluded)	<ul style="list-style-type: none"> <li>• Secure at least 12% of Commonwealth research and development funds provided for by the Carbon Pollution Reduction Scheme to facilitate climate change research in the South Australian university sector.</li> <li>• Establish consistent environmental management plans across the five universities and establish carbon reduction targets for each campus.</li> </ul>
Urban Development Institute of Australia (near completion)	<ul style="list-style-type: none"> <li>• Develop appropriate sustainable urban development measurement tool for the urban development industry in South Australia by June 2010.</li> </ul>

	<ul style="list-style-type: none"> <li>At least 20 developers to receive information and briefings on EnviroDevelopment Standards by 2010 with four developments nominated to undergo assessment for EnviroDevelopment Accreditation.</li> </ul>
Waste Management Association of Australia (near completion)	<ul style="list-style-type: none"> <li>By February 2010 the WMAA in conjunction with the State Government will develop a consistent emissions reporting tool to be used by the association's members initially relating to the collection and handling of household waste (including green waste) in the Metropolitan Area.</li> </ul>
Anglican Church	<ul style="list-style-type: none"> <li>Complete feasibility study for Green Cathedral project by June 2009.</li> <li>Commence energy audits of 63 parishes, congregations, schools, Anglicare facilities, St Barnabas College and St Peters Cathedral in first quarter of 2009.</li> </ul>

**Object 3: 3(1)(c)**

*“to encourage energy efficiency and conservation”*

**Comment:** Significant initiatives have been taken in both respects since the Act came into operation in June 2007.

In energy efficiency, South Australia, along with Victoria, was the first State to introduce a five star minimum energy requirement for new homes. The Government has played an active role in getting that increased to six stars nationally through COAG's National Strategy on Energy Efficiency.

The Government has also looked to improve energy efficiency in the commercial building sector by using the purchasing power of its own tenancies to force building upgrades as well as the construction of new five star buildings.

The \$2.4 million Building Innovation Fund is driving innovation among private sector building owners and tenants.

The Residential Energy Efficiency Scheme (REES) commenced on 1 January 2009. This program requires South Australian gas and electricity retailers to install energy saving measures such as ceiling insulation, draught proofing, and more efficient appliances as a condition of their licence.

The two principal initiatives in energy conservation are the introduction of the feed-in scheme and support for solar water heaters.

Australia's first feed-in scheme passed through the South Australian Parliament in February 2008. The design has been largely replicated by the Queensland and Victorian Governments. New South Wales and Western Australia have indicated their intention to use the same basic scheme.

In South Australia, the introduction of the feed-in scheme has acted as a catalyst for further uptake of domestic solar systems. Since the scheme commenced in July 2008

the number of domestic grid connected solar systems has risen from 3,200 systems to 8,800 in August 2009.

South Australia has 13 residential grid-connected systems per 1,000 households, in other words, 1.3% of households own a solar system.

This ratio is the highest in Australia and more than twice the national average.

Deployment of solar hot water systems has been assisted by the introduction of Greenhouse and Flow Rate Performance Standards for Water Heaters on 1 July 2008, with full implementation occurring on 1 July 2009. The standards apply to all water heaters that are installed in new and existing dwellings to reduce their energy and greenhouse impact. As a result water heaters installed into most homes in South Australia need to be low greenhouse emission types such as high efficiency gas, solar or electric heat pump and the shower outlets connected to the installed water heater need to be water efficient. Federal rebates are available for solar hot water systems and the State Government provides additional support for low income households.

**Object 4:** 3(1)(d)

*“to promote research and development with respect to the development and use of technology to reduce or limit greenhouse gas emissions or to support adaptation to climate change, including by developing ways to remove greenhouse gases from the atmosphere”*

**Comment:** The Government has made several commitments to climate change research and development across several agencies.

An important, recent initiative is the provision of \$1.6 million to assist with the establishment of the Centre for Geothermal Research at the University of Adelaide. This is intended to help build the State’s capabilities in this area. South Australia is already home to more than 90% of Australia’s geothermal investment. The present exploration program is the subject of intense international interest.

In adaptation, the South Australian Government is providing ongoing support to the Chair of Climate Change to assist the development of a research capability in adaptation to climate change in natural and production ecosystems. Projects that the Chair is involved include:

- Research to determine the extent to which climate change might amplify other threats to biodiversity such as habitat degradation and invasive species and develop modelling systems to capture this information for predictive purposes.
- Research to determine the factors most strongly governing the interaction between humans and native fauna in Australia over the last 46 millennia. This information will be used to properly contextualise the current impact and long term consequences of climate change.

**Object 5:** 3(1)(e)

*“to encourage the commercialisation of renewable energy and of technologies that will reduce or limit greenhouse gas emissions or support adaptation to climate change”*

**Comment:** The Government has provided \$20 million to establish a Renewable Energy Fund to assist renewable energy generators to commercialise their technologies. The Commonwealth Government is making considerable sums available for this purpose. The South Australian Government will be providing funds for projects which complement Commonwealth projects rather than duplicate them.

The Government is also considering non-financial means of assisting commercialisation of renewable energy technologies such as streamlined permitting; access to infrastructure and land; and provision of relevant workplace training.

This consideration is being progressed in the context of the development of a Renewable Energy Industry Development Plan as required by S14 (1)(b) of the Act.

**Object 6:** 3(1)(f)

*“to provide recognition to bodies and persons who commit to addressing climate change by achieving reductions in greenhouse gas emissions, by increasing the use of renewable energy sources, by introducing emissions off-set programs or by adopting other relevant initiatives”*

**Comment:** An important step in providing recognition is the support the Government is giving to the Conservation Council of South Australia’s Green Hubs Program. Recognition is also provided to business, organisations and the community through the creation and implementation of sector agreements.

**Object 7:** 3(1)(g)

*“to encourage and facilitate business and community consultation and early action with respect to issues surrounding climate change”*

**Comment:** The principal mechanism in the Act for encouraging business and community consultation is the sector agreements provided for under Section 16.

The Minister has entered into agreements with the following sectors:

Agreement	Date of Signing
Wine Industry	22 May 2008
Local Government Association	4 June 2008
Property Sector	11 June 2009
Anglican Church	24 February 2009
Agreement	Date of Signing
Adelaide Brighton Limited	13 August 2009
Electronics and ICT Association	Concluded but date to be confirmed
University Sector	Concluded but date to be confirmed
RAA	Concluded but waiting Cabinet approval
Jeffries Group	Concluded but waiting Cabinet approval

At the time of writing, agreements were being negotiated with the following sectors:

- SA Water
- Urban Development Institute of Australia (SA Division)
- OneSteel Whyalla
- Land Management Corporation
- Eyre Peninsula Region

- Barossa and Light Regional Development Board
- Tourism Industry
- Water Industry Alliance
- Fairmont Homes
- Seafood Industry
- Adelaide City Council
- Waste Management Association of Australia
- Vocational Education and Training (VET) sector

In all cases, ongoing consultative mechanisms have been established for Government and those sections of industry and the community that have entered into agreements.

The Premier's Climate Change Council has also taken an active role in consulting with industry and community. The following sessions have been held under the Council's auspices:

Topic	Date
Carbon Pollution Reduction Scheme and what it means for South Australia	12 May 2008
Adaptation challenges for South Australia	12 May 2009
Adapting to Climate Change – meeting scientific and technological challenges for South Australia (joint function with Australian Academy of Technological Sciences and Engineering)	6 July 2009
Green Jobs and Training	29 September 2009

Finally, the Government has consulted directly with industry and the community over its policy position on single issues such as feed-in design; assistance under the CPRS and RET for affected industries; adaptation; and support for the renewable energy sector.

**Object 8: 3(1)(h)**

*“to support measures to facilitate adaptation to circumstances that will inevitably be caused by climate change, including by supporting measures that will improve the ability of the community, species and ecosystems to deal with the effects of climate change”*

The State Government is implementing a range of strategies to assist South Australia to be equipped to the best of its ability to adapt to climate change and capture opportunities.

Some of the key achievements include:

- Establishment of the Sir Hubert Wilkins Chair of Climate Change at the University of Adelaide with a focus on adaptation;
- Development of a climate change adaptation decision making framework for the Adelaide Mt Lofty Ranges NRM area



- Development of new modelling, mapping and decision tools to identify those combinations of environment, land use, social and economic factors that give the best opportunity for regions to adapt
- Analysis of (rainfall) step change in Southern Australia and forward projections.
- A review by the Coast Protection Board of South Australia of its policies in relation to new development and sea level rise.
- A project to study the management of heat stress in grapevines.
- Research into the weather conditions associated with heat waves and to develop a model to understand the frequency and duration of heat waves.
- Research on the upper Eyre Peninsula to identify features of grain farms that were likely to be resilient to climate change

**Object 9:** 3(1)(i)

*“to provide for reporting on progress being made within the State to meet the SA target, and other specific or interim targets associated with reductions in greenhouse gas emissions, and to meet targets associated with the use of renewable electricity”*

**Comment:** Reporting against progress towards the targets of the Act is contained in the discussion under Object 1.

**Object 10:** 3(1)(j)

*“to promote action within South Australia that provides consistency with national and international schemes designed to address climate change, including schemes that relate to emissions trading and emissions reporting”*

**Comment:** This is discussed in detail in Section 2 - Background.

**Object 11:** 3(1)(k)

*“to enhance the ability of the State to contribute to, and to respond expeditiously to, national and international developments associated with issues surrounding climate change”*

**Comment:** The ability of the State to respond to national and international developments has been assisted by the leading role played by South Australia in the international network of regional governments committed to Climate Change.

South Australia was one of the signatories to the Montreal Declaration in 2005. This Declaration laid the foundation for the development of an Agenda for Action ratified by regional governments in Poland in 2008 under the chairmanship of the South Australian Premier.

The Agenda addressed the need for progress in the many areas for tackling climate change which fell wholly or largely to regional governments – land and planning; adaptation; hosting renewable energy; energy efficiency; sustainable forestry and agriculture; waste management; and research, development and innovation.

South Australia has made significant progress in meeting its commitments under this Statement. For example the State Government has implemented a Residential Energy Efficiency Scheme and invested in retro-fitting old commercial buildings to reduce their energy consumption. The Government in partnership with the Federal Government is investing record amounts of funding in the public transport system, in road, rail and the bus system to reduce the number of private vehicles on our roads. With land-use the State Government is undertaking an ambitious 30 year plan for Adelaide which will

address nearly 50 per cent of South Australia's emissions. The reforms the Government is adopting will help reduce reliance on motor vehicles, foster greater public transport use and create energy and water efficient urban developments. As part of its commitment to assisting developing countries the South Australian Government is looking to further build on its existing capacity-building programs in East Timor to support the Government in preparing for the climate change negotiations in Copenhagen.

The South Australian Government continues to play an important role in the ongoing development of national policy responses to climate change through the Council of Australian Governments (COAG) and the Council for the Australian Federation (CAF).

South Australia will continue to develop its capabilities to respond to national and international developments by participating vigorously in the pursuit of an international agenda by leading regional governments.

## **5. Additional Legislative Action**

Section 21(2)(b) requires the Government to consider "the extent to which additional legislative measures (if any) are considered necessary to achieve the targets set by this Act within the periods contemplated by this Act, including by the introduction of performance standards and other mandatory requirements."

It is considered that there is no need for additional legislative measures at this time as there are sound prospects for the legislative targets to be met.

The first target is to reduce greenhouse gas levels by 2050 by at least 60% on 1990 levels. In the third part of this report, data was presented which indicated significant and accelerating reduction was occurring in the greenhouse gas intensity of the State's economy. The key assumption is that the reductions in greenhouse gas intensity can be sustained and accelerated. Some comfort in the assumption is provided from the part that the reductions that have occurred to 2007 have taken place over a period of no carbon constraint. In the short-term, the implementation of the CPRS will create a much greater drive for energy efficiency and consumption of cleaner energy. In the longer-term, it can be expected that the policy environment will spawn technology improvements in both energy generation and energy saving which allow for further reductions in greenhouse gas intensity of economic production.

These factors provide some grounds for assuming that ongoing improvements are possible insofar as electricity generation and consumption is concerned. In order to encourage further improvements in this area, the desirability of establishing an emissions intensity target for electricity for South Australia will be investigated in accordance with the requirements under section 5 of the Act.

However, it also needs to be recognised that electricity production accounts for around one-third of South Australia's total greenhouse gas emissions. Of the remaining sources, agriculture contributes 17% and transport 18%. Clearly sustained reductions in greenhouse gas emissions from the State will require progress across these areas as well.

At the time of writing, the strategies for reducing greenhouse gas emissions from these sources are less developed than that applying to electricity generation. This applies particularly to the treatment of offsets. How these will be reflected in the South Australian greenhouse gas reduction target will be addressed when the final form of their treatment under the CPRS is known.

However, the overall conclusion remains that the State is on track to meet its 2050 target without compromising economic growth and that the national policy settings will assist that outcome.

Formatted: Bullets and Numbering

The realisation of the 2014 renewable energy generation and consumption targets appear likely. The current forecasts suggest they will be achieved ahead of schedule. The basis for this view is set out in Section 2 of this paper.

As there are strong prospects for all three targets being realised, it is concluded that there is no need for additional legislative measures at this time.

20 November 2009