



Government of South Australia

Department of Environment
and Natural Resources

2011 REVIEW OF THE
*CLIMATE CHANGE AND GREENHOUSE
EMISSIONS REDUCTION ACT 2007*

**HOUSE OF ASSEMBLY
LAID ON THE TABLE**

28 February 2012

December 2011

Under section 21 of the *Climate Change and Greenhouse Emissions Reduction Act 2007* a review of the operation of the legislation must be undertaken every four years. This report outlines the findings of the 2011 review.

CONTENTS

CONTENTS	2
EXECUTIVE SUMMARY.....	3
INTRODUCTION	4
BACKGROUND.....	4
CONTEXT.....	4
2011 REVIEW METHODOLOGY	6
PUBLICATION	6
PROGRESS IN ACHIEVING THE OBJECTS.....	7
REVIEW OF THE TARGETS.....	8
CONTEXT	8
USE OF REGULATIONS.....	10
HEADLINE TARGET: GREENHOUSE GAS EMISSIONS REDUCTION	10
INTERIM EMISSIONS REDUCTION TARGET.....	11
RENEWABLE ENERGY GENERATION TARGET.....	12
RENEWABLE ENERGY CONSUMPTION TARGET	14
EMISSIONS INTENSITY OF ELECTRICITY GENERATION.....	16
SOUTH AUSTRALIA’S STRATEGIC PLAN TARGETS.....	18
TARGETS AND THE SOUTH AUSTRALIAN ECONOMY	19
ADAPTATION TO CLIMATE CHANGE	19
REVIEW OF THE POLICIES	20
ABORIGINAL PEOPLE AND COMMUNITIES.....	20
CLIMATE CHANGE IN DECISION MAKING.....	21
COMPLEMENTARITY	21
ADMINISTRATIVE ISSUES REGISTER.....	22
APPENDIX 1	24

EXECUTIVE SUMMARY

The *Climate Change and Greenhouse Emissions Reduction Act 2007* ('the Act') places a requirement on the State Government to work with business and the community to develop and put in place strategies that will put South Australia in a position to take early action to reduce greenhouse emissions and adapt to climate change. The Act is headlined by emissions reduction and renewable energy targets.

Requirements for periodic review are specified in the Act, and this report outlines the findings of the section 21 review of the Act undertaken in 2011.

The 2011 Review provides an opportunity to review the legislation in line with key government reforms, particularly to provide greater weight to adaptation as well as take into account the significant Commonwealth Government climate change policies, particularly the carbon pricing mechanism.

In this context, the following issues have been considered by the review:

- Use of regulations to support the operation of the Act
- Review of the targets in the Act
- Consideration of the inclusion of SASP targets
- Consideration of the impacts of target setting on the economy
- Adaptation to the impacts of climate change
- Climate change in Government decision making
- Complementarity
- Minor amendments to improve the administration of the Act.

The review found that regulations have been underutilised in the past and proposes that regulations can be used to set updated targets pursuant to the Act, and to provide recognition to related climate change targets – such as those set by the Government in South Australia's Strategic Plan.

The review also proposes the development of regulations and policies under the Act to support emissions reductions and adaptation to climate change.

The next review of the Act pursuant to section 21 is due to be undertaken in 2015.

INTRODUCTION

The *Climate Change and Greenhouse Emissions Reduction Act 2007* ('the Act') places a requirement on the State Government to work with business and the community to develop and put in place strategies that will put South Australia in a position to take early action to reduce greenhouse emissions and adapt to climate change. The Act is headlined by emissions reduction and renewable energy targets.

Requirements for periodic review are specified in the Act, and this report outlines the findings of the section 21 review of the Act undertaken in 2011.

BACKGROUND

The Minister must cause a review of the Act and its operation on a four-yearly basis. The Act sets out the following requirements for undertaking the review:

Section 21 – Review of Act

- (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.

CONTEXT

The 2011 Review considers a range of issues, which have been identified by the Premier's Climate Change Council and the Government since 2009.

In 2009, the first Review of the Act was completed. The review found that there was a range of issues that could affect the operation of the Act but which were unclear at the time. This included the effects of the then proposed Carbon Pollution Reduction Scheme. Under section 21(3) the Premier's Climate Change Council ('the Council') must be consulted during the course of the review. The Council provided formal advice to the Premier that the next review of the Act should be undertaken in 2011, to allow for these issues to be more fully considered.

The Government accepted that recommendation and also agreed to include the following issues in the 2011 Review:

- The effectiveness of state based absolute emissions reduction targets
- The greenhouse gas intensity of the South Australian economy
- The effect of South Australia's target and national climate change policy settings on economic growth
- The sustainability of Government subsidies to support emission reductions
- Potential amendments to the legislation to include consideration of 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.

On 8 September 2011, the State Government released the update of South Australia's Strategic Plan ('SASP'). There are 100 targets in SASP, including nine targets under the vision – *South Australians think globally, act locally and are international leaders in addressing climate change*. In providing advice on the SASP review, the Council considered the relationship between SASP and the Act. In that advice, the Council recommended that the State Government:

- Establish a 2020 target to reduce emissions intensity of the SA economy for inclusion in the SASP or during the 2011 review of the Act and
- Ensure climate change targets expressed in SASP are reflected in the Act.

In response, the Government committed to considering these two proposals during the review of the Act.

The 2011 Review provides an opportunity to review the legislation in line with key government reforms, particularly to provide greater weight to adaptation as well as take into account the significant Commonwealth Government climate change policies, particularly the carbon pricing mechanism.

In this context, the following issues have been considered by the review pursuant to subsection 21(2) paragraph (c) of the Act:

- Use of regulations to support the operation of the Act
- Review of the targets in the Act
- Consideration of the inclusion of SASP targets
- Consideration of the impacts of target setting on the economy
- Adaptation to the impacts of climate change
- Climate change in Government decision making
- Complementarity
- Minor amendments to improve the administration of the Act.

2011 REVIEW METHODOLOGY

The first stage of the 2011 review involved preliminary research and consideration of the issues by the Government. A Discussion Paper was prepared to facilitate consultation on the review by the Department of the Premier and Cabinet, taking into account comments received from the Premier’s Climate Change Council and other South Australian Government Agencies.

On 28 September 2011 the Discussion Paper was released for a month long consultation process, providing business and the community with the opportunity to provide input. Twelve submissions on the discussion paper were received from a variety of sectors representing the diversity of views within the community surrounding climate change. The following organisations provided submissions on the review¹.

- Adelaide City Council
- Assoc Professor Karen Bubna-Litic, School of Law, UniSA
- Conservation Council of South Australia
- Environmental Defenders Office
- Paul Harris
- SA Freight Council
- Property Council of Australia
- Santos
- BusinessSA
- Adelaide Brighton Ltd
- Doctors for the Environment

These submissions are discussed throughout the report in relation to each of the proposals.

PUBLICATION

This report has been prepared to outline the findings of the 2011 review. This report will be tabled in Parliament by the Minister for Sustainability, Environment and Conservation in accordance with the requirements of the Act.

¹ In addition to those listed, one confidential submission was received.

PROGRESS IN ACHIEVING THE OBJECTS

Appendix 1 outlines progress in achieving the 11 objects of the Act since the 2009 review was completed. The appendix addresses the reporting requirements of subsection 21(2) paragraphs (a) and (b) of the Act.

Sound progress has been made against the 11 objects of the Act, with a wide range of actions being undertaken or supported by the State Government.

Under section 7 of the Act, the Government is required to provide a report on the operation of the Act, including progress against achieving the targets in the Act. That report outlines strong positive progress, and notably the achievement of the 20% renewable energy target three years ahead of schedule.

The State Government has undertaken a range of initiatives to encourage energy efficiency and conservation in residential, commercial, transport and Government sectors, as well as supporting a range of research and development initiatives.

The State Government has undertaken or supported a range of actions and initiatives aimed at encouraging the commercialisation of renewable energy and emissions reduction technologies. These have focussed on renewable energy technologies and building innovation.

The State Government has focussed on two programs to provide recognition to those who commit to addressing climate change. The Sector Agreement program recognises industries and regional leaders, while the Green Hubs program supported community groups. The sector agreement program includes sector agreements with industry and community organisations providing for a range of measures, and regional sector agreements providing for adaptation planning, were active during the reporting period.

The State Government has consulted with businesses and communities on a range of climate change issues, including through the Premier's Climate Change Council ('the Council'). The Council was established under section 9 of the Act and is currently in its second term. Current members of the Council were appointed from 1 May 2011, for a period not exceeding 3 years. The Council provides independent advice to the Minister about reducing greenhouse gas emissions and adapting to climate change.

The State Government has undertaken or supported a range of adaptation activities including the development of a draft *Climate Change Adaptation Framework for South Australia* ('the Framework').

The South Australian Government has been a key contributor to national and international policy development associated with climate change.

South Australia continued to contribute to the implementation of a *National Strategy on Energy Efficiency* (NSEE), by undertaking a range of actions. NSEE aims to accelerate energy efficiency efforts and to streamline roles and responsibilities across levels of governments.

Former Premier, Mike Rann, was Co-Chair of the States and Regions Alliance, a group of over 50 sub-national governments that are committed to accelerating action on climate change. The Alliance met annually at the Climate Leaders' Summit to make commitments to take action to tackle climate change and to report against previous commitments.

REVIEW OF THE TARGETS

This section provides information about the need to review and update the targets to ensure they are consistent with current national and international approaches. In addition, this section provides information on the impact of emissions reduction targets on the South Australian economy. This discussion is included pursuant to subsection 21(2) paragraph (c) of the Act.

Section 5 of the Act provides the following targets for South Australia:

The principal target under this Act is 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.

Two related targets under this Act are—

- 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.
- 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.

CONTEXT

The Act requires the Government of South Australia to consider a range of issues in developing climate change policy, including climate change related targets. Section 3 of the Act outlines the need to consider ecologically sustainable development, give proper weight to environmental protection and long and short term economic, environmental, social and equity consideration in deciding all matters relating to environmental protection, and to implement the precautionary principle. The Act places a requirement on the Minister to seek to achieve consistency between policies or programs developed or implemented under this Act and initiatives, standards, schemes or commitments at the national and international levels to address issues associated with climate change.

Section 5 of the Act provides the Minister with power to set sector based and additional interim targets. In doing so, the Minister must seek to obtain the advice of relevant experts and take into account relevant methodologies and principles that apply within other Australian jurisdictions. The Minister must also seek to provide consistency with best national and international practices with respect to setting the baseline and determining a method for calculating reductions in greenhouse gas emissions or the use of renewable energy.

Section 7 of the Act provides for the CSIRO to undertake a report every four years that assesses the extent to which any determination or target made or set under section 5 of the Act is being achieved and, if it appears relevant, should be revised. The next report by CSIRO is due to be undertaken in 2013.

In addition to these legislative requirements, there is a range of issues that need to be considered in determining the appropriate targets for South Australia. Briefly, these include:

- The need to ensure South Australia plays a strong role in the reduction of global emissions
- South Australia's role in delivering its share of national emissions reductions
- The economic impacts and achievability of meeting the targets
- The range of targets that could be set, for example, greenhouse gas efficiency or absolute emissions reductions

- Whether emissions reduction pathways or interim targets should be included in the legislation
- The benefits of using aspirational ‘stretch’ targets to guide the State
- The roles of various economy-wide and sector-specific targets in reducing emissions
- The relationship between the legislation and key state policy documents, such as the SASP.

Setting appropriate targets for South Australia has an important role in ensuring the state contributes its share of national emissions reductions. It is worth noting that, under a national market-based carbon pricing mechanism, emissions reductions will not be shared proportionately or equally across jurisdictions. Rather, emissions reductions will occur in jurisdictions where they can occur at lowest costs. This will be influenced by a combination of natural resource availability and economic and policy conditions.

Setting emissions reduction targets for South Australia at the right level will provide a focus for these lower cost reductions to occur in South Australia. The correct target should not result in South Australians undertaking emissions reductions which could occur for a lower cost in another jurisdiction.

Through September – October 2011 the State Government consulted on a Discussion Paper regarding the review of the Act. This paper considered the range of issues and sought feedback on proposals to amend the legislation to update the targets in the Act.

Following the release of the Discussion Paper, feedback through written submissions showed a divergence of views in the community around climate change, and particularly around setting state targets.

In addition, the Commonwealth Government’s *Clean Energy Future* climate change legislation passed through Parliament on 8 November 2011. The policy includes an initial fixed-price carbon pricing mechanism moving to a cap and trade scheme in 2015. A target has also been set to achieve an 80% reduction on 2000 emissions levels by 2050.

On 29 November 2008, COAG agreed to the Document of Shared Understanding regarding climate change mitigation measures. This document recognised the importance of developing a streamlined set of climate change measures across jurisdictions to complement the carbon price and help reduce Australia’s greenhouse gas emissions at least cost.

The Document of Shared Understanding included a detailed set of principles to guide the assessment of all jurisdictions’ mitigation measures and determine whether the policies were complementary. Mitigation measures were considered complementary if they:

- addressed a market failure that will not be adequately addressed by the pricing mechanism
- addressed a sector that is not covered by the carbon pricing policy, or
- had a clear and appropriate non-abatement objective.

The agreement required states to review their existing policies and phase out policies that were classified as non-complementary. The Commonwealth has indicated that a similar approach is likely to be taken with respect to the *Clean Energy Future* carbon pricing package.

Given the divergence of views within the South Australian community, and the upcoming CSIRO report in 2013, and the need for further consideration on the complementarity of South Australian targets, the review proposes that changes to targets should be made through regulations pursuant to the Act. This will allow for current policies to be reflected in a clear way, while also allowing for future reviews to be undertaken.

Each of the targets considered by the review is discussed in turn below.

USE OF REGULATIONS

Section 22 of the Act provides for the development of regulations. No regulations have been developed pursuant to the Act. The review identified that the regulations should be better utilised.

As outlined below, the regulations could be better utilised in relation to the targets under the Act. Climate change is a fast moving policy area. The Act places an emphasis on the reflecting current expertise in setting targets and determining policy. Enacting regulations to set targets under the Act allows targets to be revised without the need to undertake lengthy legislative amendment processes. This also allows the Act to retain a focus on a small number of headline targets, ensuring the Act remains clear and high level.

The review proposes the development of a two-tiered scheme under regulations to allow for the development of regulations to reflect climate change targets.

Section 5 provides a process for developing and updating a range of climate change targets. Once a target is made under section 5, it should be reflected in regulations pursuant to the Act. Targets set under section 5 would be first tier targets. These targets are subject to legislative reporting and review requirements.

Second tier targets will include climate change targets adopted in other State Government policies, which have not been through section 5 processes. For example, this review finds that some of the SASP climate change targets should be included in regulations under this second tier. Including these targets under regulations will provide increased recognition of the targets and increase linkages between the operation of the legislation and SASP.

Other uses for regulations to support climate change action are outlined below, including climate change adaptation.

HEADLINE TARGET: GREENHOUSE GAS EMISSIONS REDUCTION

South Australia's current target is 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 Discussion Paper proposed that the South Australian principal target should be amended to reflect the Commonwealth target of an 80% reduction by 2050. A range of issues pertaining to this target were outlined in the Discussion Paper.

The inclusion of the headline emissions reduction target provides an indication of the South Australian Government's long-term policy to reduce greenhouse gas emissions in the State, which provides increased certainty in relation to policy settings for business and the community. The recent South Australia's Strategic Plan ('SASP') community consultation processes revealed support for the existence of a headline target. Two-thirds of survey respondents rated leadership in addressing climate change as important. As a result, the existing target for a 60% reduction by 2050 was maintained in the updated SASP.

The Commonwealth Government's target is more ambitious than South Australia's current principal target by a considerable margin. Meeting the current State target requires a 2050 emissions level of 12,879 MT CO₂-e. To meet the Commonwealth's target, South Australia's 2050 emissions level would be around 6,847 MT CO₂-e. These numbers are likely to be subject to future revision. However, such revisions will not be material to the conclusion that the Commonwealth target will be harder for South Australia to reach compared with the existing target.

The Commonwealth Government has indicated that a proportion of the emissions reductions required to achieve the 2050 target may be sourced through international emissions trading units. South Australia will need to develop a methodology for accounting for these units in measuring South Australia's performance against the State target.

The review found that there are some views that an emissions reduction target in South Australian legislation may not be complementary to the national market based carbon price. A ratio target of overall emissions compared with State Product has been suggested as an alternative principal target for South Australia which may be more complementary. The headline target will be subject to a complementarity review.

Submissions received in relation to the headline target revealed a divergence of views. A significant number of the submissions supported moving to an 80% reduction target for 2050. However, a portion of these submissions supported the increase in the target but did not support the change to the baseline year. There were also some submissions that supported South Australian targets subject to the targets being complementary to Commonwealth Government policy and appropriate given South Australia's economic position. A small number of the submissions did not support a 2050 emissions reduction target for South Australia, in light of the national emissions reduction target. There were also some alternative headline targets suggested in submissions. These included a target for 80% of South Australia's electricity to come from renewable sources by 2050, a 2050 visionary target for adaptation and a 2020 measure of overall emissions compared with State Product. The submissions reflected the complexity associated with determining appropriate targets and the uncertainty in determining targets for achievement in 2050.

In its advice, the Council supported updating the target to 80% on the basis that it would provide a clear indication of South Australia's intention to reduce its greenhouse gas emissions, while providing certainty for investment in the State, and reflecting contemporary science and the level of reductions necessary at a global scale to mitigate climate change.

Given the divergence of views and issues such as complementarity which cannot be resolved at this point, the Review finds that the 60% emissions reduction target remains appropriate for South Australia. The review found that keeping the target consistent with the target in SASP is important for providing certainty.

Importantly, the current target is for a reduction of at least 60%, however South Australia is able to surpass this level of reduction if that is appropriate under the national cap and trade scheme.

An additional review of this target will be undertaken by the CSIRO in 2013 and it is appropriate to wait until after that process has occurred, and the target has been assessed for complementarity before a determination is made as to whether the target requires revision.

INTERIM EMISSIONS REDUCTION TARGET

There is currently no emissions reduction pathway or interim emissions reduction target established under the Act. The Discussion Paper outlined a range of issues associated with the introduction of an interim emissions reduction target, proposing that an interim target was not warranted.

In 2009 South Australian climate change measures were assessed for complementarity to the proposed CPRS. The power to set interim and sector based targets were classified as non-complementary, as they may be inconsistent with the national carbon pricing policy or cause confusion for industry and the community. It is possible that the setting of an interim target

would similarly be found to be non-complementary to the Commonwealth’s proposed carbon price, however this assessment needs to be undertaken.

The 2020 targets for renewable energy generation and emissions intensity of electricity generation indicate the early policy intentions for the State as well as achieving other objectives, such as supporting industry development in renewables. Given the relatively short timeframe to 2020, the Discussion Paper considered that an additional interim target may not add value.

Although there were slightly more submissions that supported not having an interim emissions reduction target, there were nearly as many submissions advocating that South Australia should introduce an interim emissions reduction target to provide a signal of the need to control peaking of global emissions this decade. An interim target would demonstrate South Australia’s commitment and leadership in national and international mitigation efforts.

In addition, there were some views that a ratio target of emissions relative to Gross State Product would be a useful measure for an interim target.

The Council also provided advice on the issue of an interim target. They advised that the State Government should work with industry and the community determine appropriate policies and targets to support emissions reductions in the short term, with a view to including such targets in regulations pursuant to the Act.

The State Government has accepted the recommendation of the Council. It will work with industry and the community to determine whether a measure of emissions intensity is a suitable interim target. The Government will need to undertake the section 5 process relating to the setting of targets, before determining, if any, what an appropriate interim target would be. If an interim target is to be introduced, it will be included in regulations pursuant to the Act.

RENEWABLE ENERGY GENERATION TARGET

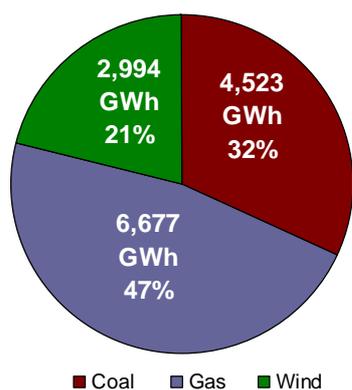
The Act contains two renewable energy targets – one relating to consumption and one to generation of renewable energy. The current targets are to reach 20% renewable energy by 2014. The Discussion Paper proposed that the current renewable energy targets in the Act should be updated as follows:

Increase the production of renewable energy generated so that it comprises at least 33% of electricity generated in the State by 31 December 2020.

This target was recently adopted in the South Australian Strategic Plan following extensive community consultation processes. The existing renewable energy generation target is consistent with the new target as the 2014 target is representative of the pathway to achieving the 2020 target. In addition, the 2014 target can be maintained in the Act as it has been achieved.

The requirement to update the generation target arises from the early achievement of the target in 2010/11, three years ahead of schedule. The target has been achieved early because of the high levels of installed wind power capacity in South Australia to date. At December 2011, installed wind capacity reached 1,203 MW, which at the time represented 54% of Australia’s total wind generating capacity. The growth in the installed capacity of wind in South Australia translates into an increasing proportion of the State’s electricity generation by wind, as depicted by the following graph:

Electricity Output by Fuel Source in South Australia in 2010-11



It is also expected that electricity produced by domestic solar photo-voltaic installations in the State would add to levels of generation from renewable energy sources.² As at 30 November 2011, there are nearly 112,000 customers approved to connect a solar system to the grid. Nearly 78,000 of these solar customers now have their solar system installed and operating.

In June 2009, the South Australian Government made a commitment to a target of having one-third of the State’s electricity generation coming from renewable sources by 2020. This target reflects the progress to date and the State’s commitment to remaining an international leader in supporting deployment of renewable energy.

In setting the 33% target, the South Australian Government was informed by expert advice received in May 2009 from McLennan Magasanik Associates (MMA) and the National Institute of Economic and Industry Research (NIEIR). There are some views that the State could aspire to a higher target for renewable energy generation. In fact, the MMA report refers to a renewable energy target of 40% being achievable by the State under certain conditions, including the development of geothermal technology as a major source of renewable energy in 2020. The report stated:

“The general conclusion from the study is that a renewable energy target of up to 40% of total generation in 2020 in South Australia is possible under some plausible and favourable circumstances but that the expected rate of technological development and the Commonwealth commitment to a 20% renewable energy target for Australia will likely see a lower level achieved. Achievement of this potential rests on the further development of the transmission system within South Australia and between South Australia and adjoining States. South Australia could also take the lead in some facilitating technologies such as energy storage to maximise the potential for its renewable energy resources.”

The MMA analysis provides some confidence in the feasibility of a 33% target as it identifies the factors that need to come to fruition for 40% to be achieved. While the study includes some conservative assumptions surrounding the 40%, further confidence is provided by an additional discount to bring it to 33%.

² Electricity production from domestic solar photo-voltaics has not been reported as the mechanisms to support the collection of data is not readily available. In its latest report of the South Australian Supply and Demand Outlook 2011, the Australian Energy Market Operator indicates that the State’s domestic solar photo-voltaic installations contribute more energy annually than diesel-fired generation.

The analysis projects continued growth in renewables generally but does not take into account adverse outcomes that have emerged in one or more of the factors being relied on to achieve 40%. The main such element is the slower than expected growth of the geothermal sector which is largely the consequence of the difficulty in raising capital in the post Global Financial Crisis environment.

The availability of transmission infrastructure to connect and transfer power to load centres in other States is the other key factor affecting the realisation of the higher target identified by the MMA analysis. At the same time, there are a number of offsetting factors, including an increased rate of growth in local demand (e.g. associated with mining) and potential developments in energy storage to maximise the potential for renewable energy.

Since the release of the MMA report, regulatory developments to address barriers to the connection of renewable energy distant to existing networks and interstate sharing of costs of transmission development have not progressed according to the original scope or timeframes. The effect of this is to render it more difficult to open up vast new renewable energy provinces such as the wind rich Eyre Peninsula.

The review found that the 33% target is still reasonable. The down-side of the slow progress of geothermal energy and unfavourable regulatory outcomes is counterbalanced by the up-side of achievements that were not considered by the consultants. The precursor to setting a higher target was South Australia achieving the target of 20% of energy supply coming from renewable sources three years earlier than the 2014 date. The growth in wind energy in South Australia has been faster and greater than projected.

The 20% target was met with an installed wind energy capacity of 1,150 MW, representing 99% of the installed renewable energy generation. Assuming a simple pro-rata increase, the 33% target could be met by 1,900 MW of wind energy capacity. To meet the target from wind energy requires an additional 750 MW by 2020. As at August 2011, there was approximately twice this amount of wind energy projects currently approved for development or the subject of development applications and related processes. Only half of the current portfolio of projects needs to be delivered by 2020 to meet the 33% target. Additionally there is over 1 GW of projects in development that have not yet sought planning approval.

Most of the submissions received supported the adoption of the 33% target in the Act. A few of these proposed that the renewable energy target be increased further to 40% by 2020. In addition there were a few submissions that advocated the renewable energy generation target be removed from the Act in light of Commonwealth policy.

In its advice, the Council supported the Government's new commitment to achieving one third of electricity generated from renewables by 2020.

Given these comments, the review finds that the renewable energy target of 33% should be recognised under the regulations pursuant to the Act. The current 2014 target will be retained in the Act as it is consistent with the pathway towards the 2020 target.

RENEWABLE ENERGY CONSUMPTION TARGET

The Act includes a target of having renewable energy making up 20% of electricity consumed within South Australia, by 2014. The Australian Energy Market Operator's ('AEMO') report on South Australian supply and demand in 2010/2011 states that *wind energy currently supplies*

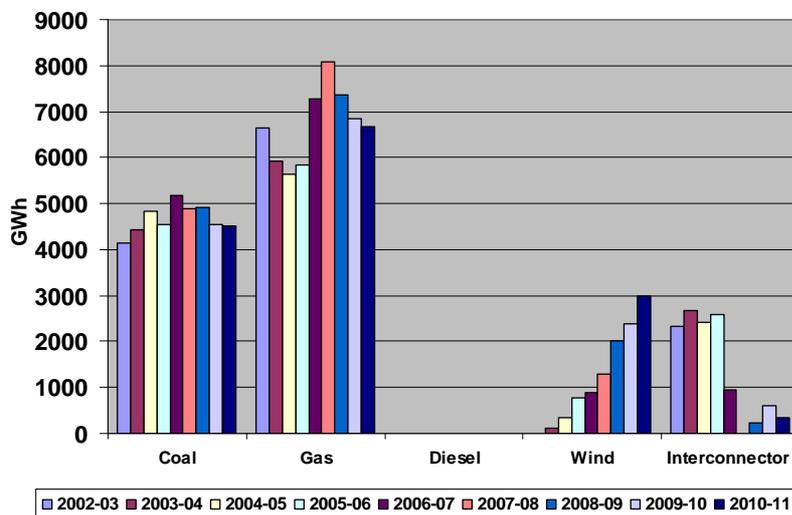
approximately 3,000 GWh annually, which equates to approximately 20% of the State’s energy consumption³.

The Discussion Paper identified several issues with the consumption target. Firstly, most consumers exercise no discretion over their renewable energy consumption. The national policy settings for increasing renewable energy seek to impose the requirement to purchase electricity from renewable energy sources on electricity retailers and other wholesale purchasers of electricity from the national market. Given these circumstances, the only effective public policy action available for achieving the target is the South Australian Government’s own consumption. The use of renewable energy for the desalination plant and the Government’s 50% renewable energy commitment, which will be an increase in 2014 from the current 20% commitment, will account for around 6% of the 20% target.

In 2009 South Australian climate change measures were assessed for complementarity. The consumption target was assessed as non-complementary to the National Mandatory Renewable Energy Target.

In addition, the Discussion Paper argued that the consumption target is not a useful statistic. Ensuring that South Australia reaches its renewable energy production target is the key and it should not matter where that consumption occurs given that it displaces fossil-fired energy in the National Electricity Market.

Historically, South Australia has been a net importer of electricity. For example, between 2003 and 2006, South Australia imported over 2,000 GWh per annum between across two interconnectors. The following graph demonstrates that the increase in wind generating capacity in South Australia has effectively substituted for net inflow of electricity. Using the data on prospective wind investment set out previously, it is reasonable to expect this trend to continue. Without a significant difference between generation and consumption, the consumption target adds little value.



Note: In 2007-08, South Australia had a net export of 5 GWh of electricity interstate.

The proposal to remove the consumption target was well supported, with the majority of submissions in favour. Just one submission advocated that the target be retained on the basis

³ AEMO 2011, *South Australian Supply and Demand Outlook*, p112

that it will promote further awareness of the issues. In addition, some submissions advocated that the Act be amended to include targets for GreenPower™ consumption – one for residential and one for business customers. GreenPower is a government accreditation program that enables an energy provider to purchase renewable energy on a customer's behalf. The unique feature of GreenPower is that the Renewable Energy Certificates associated with the renewable power generation must be surrendered to the Commonwealth Government in a way which does not allow any of them to be used by the retailers to acquit against their Renewable Energy Target (RET) obligations. Therefore renewable energy sold as GreenPower is in addition to that required under the national RET.

A GreenPower target could create demand for higher levels of renewable energy that may be considered by the Federal Government as additional under the Commonwealth carbon pricing legislation. However, a GreenPower target for the South Australian population will create upwards pressure on electricity costs to residential and business consumers that take up this option.

The Council supported the Review's finding that the consumption target is not a useful statistic. The Council advised that ensuring South Australia reaches its renewable energy production target is the key and it should not matter where that consumption occurs given that it displaces fossil-fired energy in the National Electricity Market.

In these circumstances, the Review has found that the existing consumption target is unlikely to serve any practical purpose in changing behaviours. As AEMO indicates that renewable energy consumption has reached 20%, the 2014 target will remain in the legislation. However, an updated consumption target will not be developed.

EMISSIONS INTENSITY OF ELECTRICITY GENERATION

The Discussion Paper also proposed to introduce a new target to complement the targets for emission reduction and renewable energy. This target was adopted in the 2011 update of the South Australian Strategic Plan. This target is to:

Limit the carbon intensity of total South Australian electricity generation to 0.5 tonnes of CO₂-e per megawatt hour by 2020

The competitive advantages of a low-carbon economy are starting to emerge. Australia is not positioned well at present to compete in carbon-sensitive export markets. Assuming the national target of 20 per cent renewable energy is met, the carbon intensity of electricity in Australia is projected to fall to 0.79 tonnes CO₂-e /MWh at 2020.⁴ By way of comparison the emissions intensity of electricity in South Australia is currently 0.68 tonnes CO₂-e /MWh⁵ and is projected to fall to 0.53 by 2020⁶.

Based on the latest available data from the International Energy Agency ('IEA'), there were 0.88 tonnes of carbon dioxide emissions for each megawatt hour of electricity and heat generation in Australia in 2008. In comparison, as shown in Figure 4, the IEA estimates for 2008

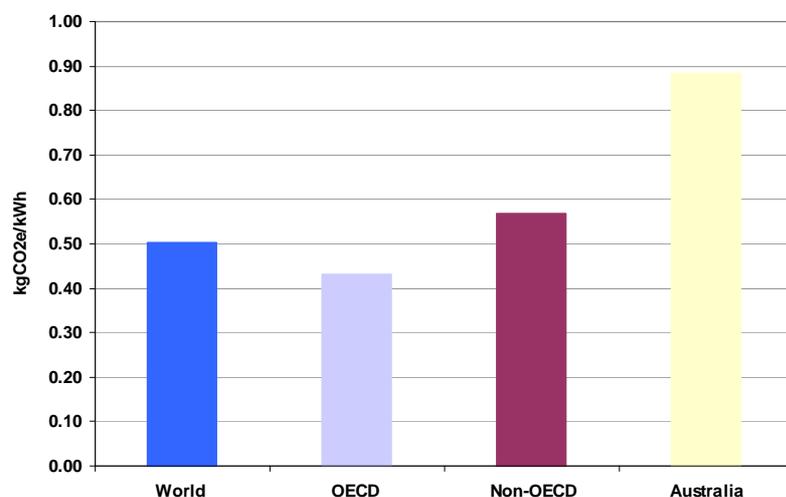
⁴ Projected Carbon Intensity for South Australian Renewable Energy Target in 2020" McLennan Magasanik Associates, January 2010

⁵ Department of Climate Change and Energy Efficiency, National Greenhouse Accounts Factors, July 2011

⁶ McLennan Magasanik Associates *ibid*.

show the world average is 0.50 and OECD average is 0.43 kilograms of carbon dioxide emissions per kilowatt hour of electricity and heat generation.⁷

CO₂ emissions from electricity and heat, 2008



Source: *IEA 2010, CO₂ emissions from fuel combustion and Department of Climate Change and Energy Efficiency 2010, National Greenhouse Account Factors*

South Australia has experienced a changing electricity generation base in recent years with the increasing contribution of wind to electricity supply. Data from the National Greenhouse Accounts shows CO₂-e emissions associated with electricity consumed in South Australia have reduced from 11,063 gigagrams in 2005 to 9,802 gigagrams in 2009.⁸

These reduced emissions have been attributed to the increased contribution of wind generation, reduced levels of imported electricity and lower average greenhouse emissions of South Australian generators relative to interstate counterparts.

The South Australian Government is committed to accelerating the de-carbonisation of the economy for two reasons. First, to minimise the costs to the economy of a carbon price. Secondly, to better prepare our industries to compete in carbon sensitive markets.

An independent report prepared by McLennan Magasanik and Associates (MMA) in February 2010 concludes that the carbon intensity of South Australia’s electricity generation can fall to 0.5 tonnes of CO₂-e /MWh by 2020⁹. As noted above, this level is two-thirds of the level projected for the rest of Australia. The report is available from the RenewablesSA website at www.renewablesa.sa.gov.au

Setting a target of 0.5 tonnes of CO₂-e/MWh is ambitious yet achievable. In effect, the State’s reliance on renewable and gas-fired electricity generation frees it from the relatively high carbon intensity of the Australian economy as a whole.

The majority of submissions supported the introduction of this target. The Council advice supports this proposal and advocates that, in developing a detailed approach to monitoring

⁷ CO₂ Emissions from Fuel Combustion Highlights (2010 Edition), International Energy Agency, December 2010. IEA estimates for intensity are based on emissions from electricity generation and heat.

⁸ Scope 2 emissions – indirect emissions from purchased electricity. National Greenhouse Gas Inventory [Accessed from <http://ageis.climatechange.gov.au>]

⁹ MMA is now part of the global consultancy group SKM.

and measurement, the Government considers the lifecycle emissions associated with electricity generation.

The review finds that the target to limit the carbon intensity of total South Australian electricity generation to 0.5 tonnes of CO₂-e per megawatt hour by 2020 should be recognised under regulations pursuant to the Act.

As part of the SASP reporting requirements, the State Government will develop a methodology to measure progress against the target. The government will consider lifecycle emissions impacts, as well as a number of legislated requirements in developing the methodology. An independent body will assess this approach in 2013 as part of the next report undertaken under section 7 of the Act.

SOUTH AUSTRALIA'S STRATEGIC PLAN TARGETS

The State Government has recently undertaken an extensive consultation process to facilitate the 2011 update of the SASP, released on 8 September 2011. SASP contains 100 targets, including nine targets under the climate change vision.

SOUTH AUSTRALIA'S STRATEGIC PLAN

Vision – South Australians think globally, act locally and are international leaders in addressing climate change.

Target 59: *Greenhouse gas emissions reduction*

Achieve the Kyoto target by limiting the state's greenhouse gas emissions to 108% of 1990 levels during 2008-2012, as a first step towards reducing emissions by 60% (to 40% of 1990 levels) by 2050.

Target 60: *Energy efficiency – dwellings*

Improve the energy efficiency of dwellings by 15% by 2020 (baseline 2003/04)

Target 61: *Energy efficiency – government buildings*

Improve the energy efficiency of government buildings by 30% by 2020 (baseline 2000/01)

Target 62: *Climate change adaptation*

Develop regional climate change adaptation plans in all State Government regions by 2016.

Target 63: *Use of public transport*

Increase the use of public transport to 10% of metropolitan weekday passenger vehicle kilometres travelled by 2018.

Target 64: *Renewable energy*

Support the development of renewable energy so that it comprises 33% of the state's electricity production by 2020

Target 65: *GreenPower*

Purchase renewable energy for 50% of the government's own electricity needs by 2014

Target 66: *Emissions intensity*

Limit the carbon intensity of total South Australian electricity generation to 0.5 tonnes of CO₂/MWh by 2020

Target 67: *Zero waste*

Reduce waste to landfill by 35% by 2020 (baseline 2002/03)

The review considered the inclusion of each of the above targets in the Act. Target 59 reflects the headline target in the Act. This report proposes that targets 64 and 66 (renewable energy and emissions intensity) should be recognised through regulation (see above). Section 5 processes have already been undertaken for the target 64, and will need to be completed for target 66.

Regulations to support adaptation (discussed in the ‘Review of the Policies’ section) propose the inclusion of a requirement for regional climate change adaptation plans to be developed in all State Government regions by 2016. This reflects target 62.

The review found that the remaining targets (energy efficiency, transport, Government’s renewable energy commitment and waste) should be given recognition in regulations pursuant to the Act. This will provide increased recognition of the targets and increase linkages between the operation of the legislation and SASP.

This should be achieved through the development of a two-tiered scheme in regulations. Targets which have been subject to section 5 analysis will have greater standing than the SASP targets – which will be included for information.

TARGETS AND THE SOUTH AUSTRALIAN ECONOMY

Economic impact of SA targets on growth

During the last review pursuant to section 21 queries were raised regarding the effect of the targets in the Act on the South Australian economy. To address these issues, the Discussion Paper included a consideration of the performance of the South Australian economy since the introduction of the Act.

The Discussion Paper outlined that since the introduction of the Act, the South Australian economy has performed well while at the same time reducing greenhouse gas emissions, and therefore reducing the greenhouse gas intensity of the economy.

No review actions arose from this discussion.

ADAPTATION TO CLIMATE CHANGE

Adaptation to climate change includes activities undertaken by communities and industries to reduce the costs and take advantage of opportunities arising from these inevitable changes. This includes the management of physical exposure and resulting business impacts. To date, national and international efforts to address climate change have concentrated on mitigating or reducing greenhouse gas emissions. To effectively address the many complex challenges of climate change however, it is now accepted that mitigation and adaptation are complementary and equally necessary approaches – not alternatives.

South Australia's Strategic Plan includes a target for South Australia to adapt to the long-term physical changes that climate change presents.

Target 62: *Develop regional climate change adaptation plans in all State Government regions by 2016.*

The draft Climate Change Adaptation Framework for South Australia was released for consultation by the Premier in December 2010. That document outlines the management approach for supporting South Australian's to adapt to climate change.

The current legislation focuses on mitigation. The review found that an increased emphasis on adaptation should also be provided for.

One submission expressed caution around the resourcing implications of suggested amendments outlined in the Discussion Paper, and as a result the proposed legislative changes have been minimised. In order to support adaptation to climate change in South Australia regulations should be developed pursuant to the Act to support the development of regional climate change adaptation plans in all State Government regions by 2016. This reflects SASP Target 62.

REVIEW OF THE POLICIES

In addition to setting targets, the Act supports a range of policy measures to deal with climate change. Such policies are an important mechanism to achieve emissions reductions and adaptation to the inevitable impacts of climate change.

This section considers a range of policy issues with the view to ensuring that the Act reflects and supports the most up-to-date policies and approaches to addressing and managing the impacts of climate change. This discussion is included in the review pursuant to subsection 21(2) paragraph (c) of the Act. The review found that no legislative amendments are required as a result of this discussion, however the State Government can work to develop regulations or policies under the Act to address the issues, as outlined below.

In the Council's advice on the review of the Act the Council advocated that the Act should include a requirement to develop and maintain a set of climate change policies, addressing these and other relevant issues. The Council argued that such a requirement would provide certainty that appropriate policy responses will be developed and maintained in accordance with contemporary circumstances. Section 14 of the Act does provide the Minister with the opportunity to develop climate change policies pursuant to the Act. It is currently intended that, once finalised, the Climate Change Adaptation Framework will be adopted as a policy pursuant to this section. Consideration will be given to reflecting this under the regulations.

ABORIGINAL PEOPLE AND COMMUNITIES

The IPCC has described Indigenous communities as being at risk of being unable to adapt and cope with the impacts of climate change because of economic and social disadvantage. In addition, the IPCC comments that *many [Indigenous] communities strongly connect the health of their 'country' to their cultural, mental and physical well-being. Direct biophysical impacts, such as increases in temperature, rainfall extremes or sea-level rise, are likely to have significant indirect impacts on the social and cultural cohesion of these communities. There is recent recognition of the untapped resource of Indigenous knowledge about past climate change which could be used to inform adaptation options.*

Recent consultation with Aboriginal committees on the draft Adaptation Framework has highlighted that the IPCC comments are relevant in South Australia. The Government is currently developing a strategy for guiding climate change adaptation in Aboriginal communities and it is currently intended that once finalised this will be adopted as a policy under the Act.

CLIMATE CHANGE IN DECISION MAKING

Climate change is a multifaceted issue which affects nearly all public policy decisions. However, to date action on climate change has overwhelmingly been driven or undertaken by administrative units and Ministers with specific roles in relation to climate change or natural resources management.

It is also important to ensure the need to reduce greenhouse gas emissions and adapt to the effects of climate change is considered in all relevant Government decisions. It is also important that climate change impacts in relation to family and social, regional, business and environmental aspects of proposals are adequately considered during government decision making processes. This is particularly the case for vulnerable and disadvantaged groups.

The State Government will investigate the development of a process to factor climate change into Government decision making. Such a mechanism should be efficient and effectively targeted to ensure improved practices are implemented without an unnecessary increase in the time or resources required to develop policy and undertake reporting. Interactions with Commonwealth policy and law should also be considered when determining a process. Once finalised, this process will be adopted as a policy under section 14 of the Act.

COMPLEMENTARITY

As outlined above, the Commonwealth passed the carbon pricing mechanism on 8 November 2011. Prior to this, on 29 November 2008, COAG agreed to a set of principles to guide the assessment of emission reduction measures and determine whether the measures complement emissions trading. These complementarity principles are expected to be reviewed as part of the CoAG Select Council on Climate Change. The State Government should consider the effectiveness of state policies in light of the national market-based carbon price. Once the complementarity principles have been agreed the State Government will give consideration having them reflected in regulations pursuant to the Act.

ADMINISTRATIVE ISSUES REGISTER

Since the Act came into operation in 2007, areas for improvement in the administration of the Act have been identified. These issues are outlined in the register below.

As these items are relatively minor in nature the Government will defer the resolution of these issues until it is proposed to introduce amendments to the Act during a future review.

Administrative Issue		Suggested Amendment
1	<p>Subsection 7(5) of the Act designates the CSIRO as the body to provide an independent report that assesses the extent to which the targets and determinations made under section 5 are being achieved.</p> <p>Theoretically, this requirement is overly prescriptive and reduces competition; however this issue has not yet arisen.</p>	<p>Remove the unqualified requirement for the CSIRO to provide all independent reports under subsection 7(5).</p>
2	<p>Section 7 of the Act provides for two-yearly reporting on the operation of the Act. Section 21 provides for four-yearly review of the Act. However, section 21 also requires a report on the extent to which the objects of the Act are being achieved and an understanding of progress towards the targets.</p> <p>The reporting aspects of section 21 tend to duplicate the requirements of section 7.</p>	<p>The reporting requirements of sections 7 and 21 should address duplication.</p> <p>Section 7 should focus on reporting progress in accordance with the Act.</p> <p>Section 21 should focus on reviewing the Act for effectiveness.</p>
3	<p>Section 7 of the Act provides that every second report should include a report from the CSIRO that assesses the extent to which any determination or target made or set under section 5 is being achieved and, if it appears relevant, should be revised.</p> <p>Section 21 should focus on reviewing the Act for effectiveness.</p>	<p>The section 21 review should be undertaken in the year following the section 7 CSIRO report.</p>
4	<p>Subsection 11(4) paragraph (a) of the Act provides that any advice that the Premier's Climate Change Council provides to the Minister must be confirmed by instrument in writing. It is unclear whether this applies to informal advice of a Council member or members.</p>	<p>Clarify that it applies only to formal advice given pursuant to the Act.</p>

5	Under subsection 11(4) paragraph (c) of the Act, the Government is required to publish its response to advice received from the Premier’s Climate Change Council. There is no further mechanism to ensure the Government acts in accordance with the response set out.	Include a requirement that the Premier’s Climate Change Council Annual Report includes an update on action taken in accordance with Premier’s Climate Change Council Advice and Government responses to that advice.
---	--	--

APPENDIX 1

This appendix outlines progress in achieving the 11 objects of the Act since the 2009 review was completed. This section addresses the reporting requirements of subsection 21(2) paragraphs (a) and (b) of the Act.

Object 1: Setting of Targets

Section 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—

- 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
- by setting related targets (the *renewable electricity targets*)—
 - 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.
 - 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.

Object 2: Commit to action in South Australia

Section 3(1)(b): to promote commitment to action within the State to address climate change through—

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

Object 1 has been met by setting the above targets in section 5 of the Act.

Under section 7 of the Act, the Government is required to provide a report on the operation of the Act, including progress against achieving these targets. That report outlines strong positive progress, and notably the achievement of the 20% renewable energy target three years ahead of schedule.

In June 2009 the Premier established a new interim target for renewable energy generation:

Increase the production of renewable energy so that it comprises at least 33% of electricity generated in the State by 31 December 2020.

Due to sound progress in achieving each of the targets, as well as the proposals to review the targets outlined in the report, no additional legislative measures are considered necessary to achieve the above targets.

Voluntary targets have been set by individual industries and organisations, in conjunction with the State Government, through the development of Sector Agreements under section 16 of the Act. These targets are not exhaustive but are the primary focus of the agreements, as set out below.

Sector Agreement Title	Key Goals
<p>Adelaide Brighton Cement Ltd</p>	<ul style="list-style-type: none"> • reduce greenhouse gas emissions associated with the manufacture and use of cement and lime products in South Australia • increase the use of renewable energy • encourage industry partners and other external stakeholders to implement similar measures • jointly promote the development of, and ultimately participating in, a global sector agreement for the cement and lime manufacturing sectors.
<p>Adelaide City Council (Adelaide Green City)</p>	<ul style="list-style-type: none"> • reduce greenhouse gas emissions through measuring, reporting and implementing a reduction target • show leadership in innovation and demonstrating new technologies • support the greening of buildings and improved urban design • explore options for a smarter and more efficient energy network • support more sustainable transport • encourage improved resource recovery in buildings and the public realm • support the efficient use of sustainable and/or alternative water supplies • improve and conserve the Adelaide Park Lands.
<p>Anglican Church Agreement expired 30 June 2011</p>	<ul style="list-style-type: none"> • demonstrate action to reduce greenhouse gas emissions and the ecological footprint of the Diocese, its Parishes, the Cathedral, Anglicare and other agencies, schools and church members • provide leadership to the community in caring for the environment, reducing greenhouse gas emissions and addressing the science of climate change within the Anglican philosophy • engage the broader community to reduce their ecological footprint • jointly progress projects that promote sustainability and address climate change.
<p>Barossa Regional Agreement</p>	<ul style="list-style-type: none"> • develop and implement a community education and behavioural change program • work with local industry and businesses to develop climate change action plans and take advantage of environmental opportunities • reduce greenhouse gas emissions from regional transport by improving transport and land use planning, investigating infrastructure improvements and exploring alternative transport options • promote sustainable urban design principles in regional development.

<p>Eyre Peninsula Regional Agreement</p>	<ul style="list-style-type: none"> • undertake integrated adaptive option assessments for the Eyre Peninsula • assess and identify economic opportunities for the Eyre Peninsula relating to climate change • develop knowledge through science and research • develop and implement a broad-scale community education and behavioural change program • develop and implement a climate change plan for the region.
<p>Jeffries Agreement expired 30 June 2011</p>	<ul style="list-style-type: none"> • reduce the energy consumption and greenhouse gas emissions in the composting process • increase the percentage of renewable energy used by Jeffries • increase the quantity of organic waste separated and used as high quality compost • demonstrate leadership and promoting greater collaboration between industry, government and relevant research institutions.
<p>Land Management Corporation</p>	<ul style="list-style-type: none"> • reduce greenhouse gas emissions associated with the urban development industry in South Australia. • increase the use of renewable energy sources. • promote new and alternative products that assist developers to reduce their carbon footprint.
<p>Local Government Association</p>	<ul style="list-style-type: none"> • progress more efficient public lighting • investigate collaborative opportunities and implications for increased uptake of accredited green power • support climate change adaptation and risk assessments of council assets • support climate change adaptation and risk assessments of regional and community impacts • investigate best practice investment in carbon offsets and sequestration • work towards improved energy efficiency use and standards • develop and implement community awareness, education and behaviour change programs or initiatives • improve the information sharing and collaboration between state and local government on climate change planning, policies and initiatives.
<p>OneSteel Whyalla</p>	<ul style="list-style-type: none"> • measure and report greenhouse gas emissions • encourage product and process innovation • provide industry leadership • support the development of sustainable business • identify and develop local partnerships • explore a global agreement for the steel industry.

Property Council	<ul style="list-style-type: none"> • improve building energy efficiency • reduce greenhouse gas emissions • support research, development and deployment of innovative building technologies and techniques • promote increased use of recycled water and reduced waste to landfill • accelerate the up-take of performance based rating tools for assessing building greenhouse performance • provide industry leadership in sustainable retrofitting of existing commercial buildings.
RAA	<ul style="list-style-type: none"> • educate the motoring community and industry to help reduce greenhouse gas emissions • develop an environmental management plan across the association • support the establishment of a national centre of excellence in vehicle emissions testing.
SA Water	<ul style="list-style-type: none"> • reduce greenhouse gas emissions associated with the provision of water and waste water services for South Australia • increase the use of renewable energy sources • develop measures to adapt to climate change • support necessary research.
Technology Industry Association	<ul style="list-style-type: none"> • demonstrate leadership in sustainability and reduce greenhouse gas emissions through energy efficient processes and product innovation • adopt a readily available reporting tool for greenhouse gases and measuring progress in emissions abatement which is consistent with national requirements • undertake research and development in product innovation • demonstrate leadership in electronic waste management and recycling through product stewardship • identify potential market opportunities for products and services that address emissions reduction and climate change adaptation.
Urban Development Institute Australia	<ul style="list-style-type: none"> • promote and implementing the EnviroDevelopment initiative in South Australia • develop a sustainable development reporting tool for the urban development industry • develop partnership projects with other industry bodies that reduce energy inputs and conserve resource use or waste to landfill • develop carbon footprint reduction targets for the industry.
Waste Management	<ul style="list-style-type: none"> • develop a carbon measurement tool for municipal waste collection • encourage industry participation in programs that promote greater energy efficiency in recycling • support industry education and climate change leadership through information and advice.

<p>Water Industry Alliance</p>	<ul style="list-style-type: none"> • support the implementation practical and cost-effective actions that seek to reduce emissions associated with the reclamation, distribution and use of water • undertake the development of policies, knowledge, technologies, business capability and exports that lead to improved economic development and water use efficiency in South Australia • deliver improved water security and a healthier environment by reducing the greenhouse impacts of the sector • position South Australia as a Water Sensitive State and global leader in positively responding to climate change.
<p>Wine Industry</p>	<ul style="list-style-type: none"> • increase industry awareness and use of the Australian Wine Carbon Calculator to report industry greenhouse gas emissions • analyse and consider best practice certification standards for the wine industry to gain full market advantage from emissions reduction achievements • encourage the development of Environmental Action Plans to help improve energy efficiency, reduce greenhouse gas emissions, increase the use of recycled water and reduce waste to landfill by industry participants • support research to better understand climate change adaptation priorities and opportunities in the wine sector.
<p>University Sector Agreement expired 30 June 2011, seeking renewal</p>	<ul style="list-style-type: none"> • demonstrate action to reduce greenhouse gas emissions and reduce the ecological footprint of the university campuses and related infrastructure • provide leadership in climate change research and curriculum development • educate industry and the broader community in climate change mitigation and adaptation • provide leadership in the South Australian university sector in reducing greenhouse gas emissions and progressing mitigation and adaptation measures • jointly progress projects that promote sustainability and address climate change.
<p>Vocational Education and Training</p>	<ul style="list-style-type: none"> • identify and respond to SA industry skills and training needs • build the capacity of VET practitioners to deliver training packages and qualifications • develop, promote and implement new or revised training packages and qualifications • create environmental management plans across the sector • develop pilot demonstration projects that use sustainability tools to increase energy, water and waste efficiency.

<p>Yorke and Mid North Regional Agreement</p>	<ul style="list-style-type: none"> • promote a 'whole of community', inter-agency approach to managing and mitigating climate change across the Mid North and Yorke Region • promote and showcase local initiatives aimed at addressing climate change impacts or mitigation • disseminate information on the economic, environmental and social impact of climate change relevant to this region • develop a regional climate change adaptation plan to address the risks and vulnerabilities climate change may pose to business, the environment and communities within the region • implement partnership projects with government, non-government, commercial, educational and research bodies that support adaptation management or mitigation of climate change impacts in the region.
--	--

Object 3: Energy efficiency and conservation

Section 3(1)(c): to encourage energy efficiency and conservation.

The State Government has undertaken a range of initiatives to encourage energy efficiency and conservation in residential, commercial, transport and Government sectors.

Residential

- The State Government operates a number of energy efficiency programs focussing on dwellings, including:
 - water heater installation requirements
 - air conditioning measures and Minimum Energy Performance Standards
 - energy Advisory Service
 - Home Energy Toolkits
 - Energy Friends.
- The *Residential Energy Efficiency Scheme* 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 license. Energy providers are also required to provide home energy audits to 13,000 low income households.
- Dwellings constructed under the *Nation Building Economic Stimulus Plan* achieved a minimum 6 star energy rating and included water conservation measures, and solar or heat bank hot water services.
- The *30-Year Plan for Greater Adelaide* promotes more energy efficient building design, increasing densities and locating jobs and housing closer to public transport to reduce the need for private car travel.

Commercial

- Cabinet approved the drafting of the cool roofs regulation in October 2011 and it is anticipated that the regulation will form part of a state based requirement in the Building Code of Australia (BCA) from 1 May 2012. This follows the release of the cool roofs discussion paper in December 2010 and a targeted consultation process conducted in early 2011. The cool roofs requirement will apply to all new flat roofs, of air

conditioned commercial and industrial buildings constructed in South Australia's BCA Climate Zones 4 and 5.

- The *30-Year Plan for Greater Adelaide* has policies to set aside employment lands, support development of new green technologies and industries and designates the former Mitsubishi site at Tonsley Park as a clean technology and renewable energy hub.

Transport

- The State Government has committed to a decade long, \$2.6 billion investment in public transport that will see the electrification of the rail system, extension of the Noarlunga rail line to Seaford, the extension of the tram line and the integration of all public transport to increase usage to 10% of metropolitan weekday passenger vehicle kilometres travelled by 2018.
- The State Government has supported the development of bike path projects across the state by providing subsidy funding to Councils to encourage them to improve local networks and four projects along the Adelaide to Marino Rocks Greenway. Adelaide's network of bicycle lanes and paths has been extended from around 480 kilometres in 2002 to about 909 kilometres in 2011.

Government Operations

- The State Government has a target to increase the energy efficiency of government buildings by 30% from 2000/01 levels by 2020 and has achieved a 16.7% cumulative improvement in the period from 2000/01 to 2009/10.
- The establishment of a new target to reduce emissions in the State Government Fleet by 10% by 2014/15 over the 2009/10 level based on average emissions per kilometre. The program will have a flow on effect to the secondary vehicle market when fleet vehicles are sold to the wider community after their relatively short fleet life.
- The State Government continues purchasing 20% accredited GreenPower™ through its whole of Government electricity contract. The State Government has also committed to meeting 50% of the government's own electricity needs from renewable energy from 1 July 2014. The State Government continues to purchase carbon offsets to offset the travel and energy consumption by Cabinet Ministers in the course of their duties.
- Since July 2010 a minimum of 5kW solar power systems has been installed on new school buildings and large scale refurbished buildings.
- The National Solar Schools program (NSSP) enables schools to apply for funding for solar power systems, energy efficiency installations and rainwater tanks. Since 2008, 127 schools have received NSSP funding, with a further 89 schools to be included in the 2010/11 funding round. This program will continue until 2013 and allow for schools to apply for \$30,000 in the two remaining funding rounds.
- The Green School Grant program was funded by the State Government between 2000/01 to 2009/10 and in the final round 16 schools that had consistently recorded high energy use were funded \$30,000 each to install an energy management system.

Object 4: Research and development

Section 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.

The State Government has supported a range of research and development initiatives, including:

- The *Microalgae Biofuels Industry Development Plan for South Australia*, which was finalised in December 2009. The final report makes 13 recommendations to the State Government for the development of R&D, market development measures and the creation of a flexible policy framework that supports innovative business models for commercialisation.
- Participation in national and international discussions regarding the regulation of, and investment attraction for greenhouse gas storage projects.
- Research and analysis of carbon sequestration from revegetation activities in the Murray-Darling Basin and Mid-North regions. Results from this work have been used to evaluate the suitability of the National Carbon Accounting Toolbox for State carbon accounting purposes.
- The National Soil Carbon Research program, which is a three-year project involving sampling agricultural soils in the Mid-north and Eyre Peninsula in order to identify and map the potential for soils to store carbon and determine the influence of management practices on soil carbon.

Object 5: Commercialisation of new technology

Section 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.

The State Government has undertaken or supported a range of actions and initiatives aimed at encouraging the commercialisation of renewable energy and emissions reduction technologies have been undertaken by the State Government. These have focussed on renewable energy technologies and building innovation.

Renewables

- RenewablesSA commenced in mid 2009 to provide a single focus for the Government's efforts to draw more renewable energy to the State through the implementation of a framework for attracting renewable energy investment and management of a \$20 million Renewable Energy Fund. Funding agreements have been executed to date to support the provision of grants to:
 - Establish the South Australian Centre for Geothermal Energy Research at the University of Adelaide (\$1.6 million). Additional support of \$2 million (\$1 million from RenewablesSA and \$1 million from the departments of Primary Industries and Resources (PIRSA), and Trade and Economic Development) to continue the work of the Centre was provided in June 2011.
 - Undertake the Green Grid feasibility study which examined the market, regulatory and physical conditions needed to unlock the State's vast renewable energy resources initially in the Eyre Peninsula (\$1 million).
 - Assess the feasibility of large scale solar thermal and solar photovoltaic projects as part of the Commonwealth's Solar Flagship Program (\$150,000).
 - Research, develop and demonstrate a solar thermal air-conditioning prototype suitable for residential application (\$200,000).
 - Undertake biomass collection trials in the Yorke Peninsula (\$300,000).

- Undertake a feasibility study to test the commercial viability of the pyrolysis of organic waste for electricity production (\$274,000).
- Test a locally developed, small scale automatic solar tracking device (\$100,000).
- Wind generation capacity in South Australia has continued to increase. At December 2011 South Australia's total installed capacity reached 1,203 MW, equivalent to approximately 54% of the Nation's installed wind generation capacity.
- The Solar Feed-in Scheme rewards electricity customers with eligible small-scale solar systems tariff payments for each kWh fed into the electricity grid. As at 30 November 2011, there are nearly 112,000 customers approved to connect a solar system to the grid. Nearly 78,000 of these solar customers now have their solar system installed and operating.
- Carnegie Wave Energy was awarded South Australia's first licence to trial wave energy in February 2009. It covers an area of 17,000 ha of seabed adjacent to Port MacDonnell with a view to building a 50 MW power station.
- Wave Rider Energy Ltd are progressing the establishment of a \$5 million wave pilot plant off the Eyre Peninsula.
- 86% of Australia's total \$680 million estimated investment in geothermal exploration and proof-of-concept projects to December 2010 have been in South Australia. Over \$500,000 was provided from the SA Regional Development Infrastructure Fund for half the cost of developing the transmission infrastructure for Australia's first 1 MW 'hot fractured rock' geothermal power plant. It is expected to be the first pilot plant of its kind in Australia.
- 25 companies hold a total of 208 geothermal exploration licenses (GELs) in South Australia.
- In recognition that a viable bio-energy industry requires the right combination of feedstock availability and costs, a report was prepared for the Limestone Coast Regional Development Board Inc on its alternative energy solution project.

Building Innovation

- As a result of three annual funding rounds completed to date, nearly \$1.5 million in grant funding has been committed to support 10 projects, including the installation of a green wall and green roof systems, the development of a solar façade and the installation of ceramic fuel cells, and a tri-generation plant. Three feasibility studies have been completed with results made publicly available. The construction of green wall and green roof systems was completed in mid 2011 and their performance will be monitored for 12 months.
- Climate Smart Precincts is an initiative of the Climate Group and aims to bring together leading companies and State Governments to fast-track low-carbon, climate resilient urban design. The initiative is focussed on generating precinct level demonstration projects of low-carbon technologies and lifestyles. The first workshop under the Climate Smart Precincts Initiative was held in South Australia in February. As a result of a high level of interest from the South Australian Government and initiative participants, a second Climate Smart Precincts workshop was held in August 2011.

Object 6: Recognise those who commit to action

Section 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.

The State Government has focussed on two programs to provide recognition to those who commit to addressing climate change. The Sector Agreement program recognises industries and regional leaders, while the Green Hubs program supports community groups.

- Under section 16 of the Act, 20 Sector Agreements are currently in place with industries and community groups as diverse as steel, tertiary education, local government and Regional Development Australia. Sector agreements are very well supported by industry partners and the State Government continues to receive requests to participate in the program.
- The State Government also worked with the Conservation Council to deliver the Green Hubs community engagement program. Developed and implemented by the Council, this program worked with community clubs and societies to implement practical changes to make their facilities more environmentally sustainable and influence the behaviour of their members and local communities. The Conservation Council is exploring ways to continue this program.

Object 7: Business and community consultation and early action

Section 3(1)(g): to encourage and facilitate business and community consultation and early action with respect to issues surrounding climate change.

The State Government has consulted with businesses and communities on a range of climate change issues.

Premier's Climate Change Council

- The PCCC was established under section 9 of the Act and is currently in its second term. Current members of the Council were appointed from 1 May 2011, for a period not exceeding 3 years. The PCCC provides independent advice to the Minister about reducing greenhouse gas emissions and adapting to climate change.

Community

- The State Government worked with the Conservation Council to deliver a \$230,000 Sustainability Community Grants Program to fund 28 projects to work with the community in response to climate change.

Carbon Farming

- The State Government has been encouraging the Commonwealth Government to actively consult with South Australian stakeholders on the Commonwealth's proposed Carbon Farming Initiative. NRM Landcare facilitators across Australia have undertaken training in preparation for the commencement of the Initiative.

Industry

- The Business Sustainability Alliance (BSA) is a partnership entered into by the former Department of Trade and Economic Development/Innovate SA, Zero Waste SA, Environmental Protection Agency and SA Water. The BSA has engaged over 350 businesses with a range of clean technology programs designed to accelerate the uptake of sustainable business practices. Initial results of the program have yielded annual savings of \$12.1 million and over 5,000 tonnes of greenhouse gas emissions.

- The State Government established a \$2.15 million Cleantech Partnering Program in November 2010 as part of its commitment to developing a Cleantech industry in South Australia. The program will be delivered over three years to assist small and medium enterprises to commercialise new ideas and products relevant to the rapidly growing market for environmentally responsive products. The program provides innovation grants up to \$50,000 for proof-of-concept and commercial viability testing and commercialisation grants up to \$100,000.

Education and Training

- On 1 February 2010, the State Government purchased the former Mitsubishi site at Tonsley Park with a view to establishing an integrated sustainable technologies employment precinct. A \$125 million Sustainable Industries Education Centre, which will be part of the precinct, will specialise in training more than 8,000 students a year in new green technologies associated with the burgeoning \$4.5 billion construction industry which accounts for 8.3% of overall state employment.
- The Skills for All initiative, announced on 10 February 2011, commits an additional \$194 million over the next six years to support an increase of 100,000 training places. The initiative will also provide a vehicle to meet the Commonwealth's *GreenSkills* sustainable training agenda, as well as South Australia's future sustainable training needs delivered through the Sustainable Industries Education Centre.
- The Skills in Environmental Sustainability Pilot Program has been allocated \$500,000 funding under the Governments 100,000 Jobs Strategy. The 2010/11 program provides training for existing workers in sustainable industries experiencing rapid growth.
- *Sustainable and Attainable: Tackling Climate Change* is a climate change education resource, delivered to teachers. The resource supports learning and action to address climate change in schools and preschools. The State Government is working in partnership with the Adelaide Mt Lofty Ranges Natural Resource Management Board's 'NRM Education' program to support schools to learn about, plan and take action to address climate change issues in water and biodiversity.

Object 8: Support and Facilitate Adaptation

Section 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 has undertaken or supported a range of adaptation activities.

Planning

- Guided by advice from the PCCC and the Natural Resources Management Council, the Department of the Premier and Cabinet produced a draft *Climate Change Adaptation Framework for South Australia* ('the Framework').
- The Framework was released for consultation in December 2010. The State Government is currently in the process of revising the framework based on the outcomes of consultation and is expecting to release the final framework in 2012. The Framework will assist in developing a coordinated and integrated response to climate change adaptation in South Australia. Action to address climate change will allow communities, businesses and individuals to minimise any negative impacts and also to identify opportunities.

- The Government, through SASP, has committed to a target to have regional climate change adaptation plans in all State Government regions by 2016.
- The Barossa, Yorke and Mid North, and Eyre Peninsula Regions have entered into regional sector agreements under the Act. The agreements will underpin adaptation planning in the State Government regions. Other regions are in the process of negotiating agreements.
- The State Government is participating in an integrated vulnerability assessment project with the Central Local Government Region of South Australia, Northern & Yorke Regional Development Australia, Northern and Yorke Natural Resources Management Board, and Barossa Regional Development Australia. This will identify the areas in those regions that are most susceptible to the impacts of climate change and highlight priorities for early action.
- The Planning Strategy for South Australia includes policies to:
 - Reduce the risk of damage from projected sea level rise, associated storm surges and coastal erosion by incorporating adaptation measures into relevant council development plans.
 - Require new development and land divisions in areas at risk from sea level rise to provide for protection and/or adaptation measures.

Research

- The State Government is funding the Transect for Environmental Monitoring and Decision Making (TREND) project in conjunction with the University of Adelaide. This Project will assist with the establishment of a network for climate change monitoring in South Australia for terrestrial and marine, natural and production systems. This network will provide the state with a climate change early warning system and a legacy of long term monitoring.
- The Premier's Science and Research Fund was established to facilitate investment in key science and research initiatives of strategic and sustainable value to the State. Funding of \$4.2 million is available per annum for new and continuing strategic R&D initiatives. Over the last 8 rounds, \$31.5 million has been awarded. Of this, \$7.1 million has been awarded to projects that focus on climate change or renewable energy.

Water

- The Goyder Institute for Water Research was established to provide independent scientific advice on the State's water supplies, improve the government's ability to forecast threats to water security, and develop an integrated approach to water management. The State Government is providing \$25 million over five years and this will be matched in kind by CSIRO, and the three SA universities.
- State and Local Governments, together with SA Water have undertaken a range of projects to diversify South Australia's water supply, including desalination, waste water reuse and stormwater harvesting.
- As part of the implementation of *Water for Good*, the State's water security plan, an important body of work is being developed through regional-scale studies on the impacts of climate change on water resources in South Australia. A number of initiatives are being implemented under *Water for Good* to encourage the wise use of water.
- A Demand and Supply Statement for the Eyre Peninsula was released in April 2011. The statements are being developed for the eight Natural Resource Management Regions of South Australia. They will help ensure that long-term solutions are based on a

thorough understanding of the state of local resources, the demand for them, and likely future pressures, including the impacts of climate change.

- In June 2010, South Australia released the *Long-Term Plan for the Coorong, Lower Lakes and Murray Mouth Region*. The plan aims to secure the region as a healthy, productive and resilient wetland system that maintains its international importance.

Public Health

- *SA Health Extreme Heat Plan* has been developed to ensure a planned, managed and effective response to an extreme heat event. The Emergency Management Unit in the Department of Health produced a comprehensive suite of heat health information for the general public.
- The State Government in collaboration with the University of Adelaide is currently investigating community risk factors during extreme heat events including a survey of the elderly that explores their experiences during recent heatwaves.

Emergency Management

- Eleven Zone Emergency Management Committees have been established based on the new State regional boundaries. The Committees have received funding in 2010 and 2011 under the Natural Disaster Resilience Program to undertake emergency management planning that includes consideration of climate change impacts.
- Extreme heat arrangements have been put in place by the South Australian State Emergency Service in collaboration with the Bureau of Meteorology to forecast and warn the community and the relevant agencies of forthcoming extreme heat events.

Natural Resources Management

- *NatureLinks* is SA's primary strategy to guide on-ground action to increase the resilience of terrestrial, marine and freshwater biodiversity to climate change through the establishment of landscape-scale biodiversity corridors. The State-wide NatureLinks Plan 2010 – 2013 has been finalised, and sets out the programs strategic directions and key outcomes. The NatureLinks Partnership Forum was held in June 2010 to further engage key stakeholder groups with NatureLinks and improve partnership arrangements for delivery.
- Over 1,000 hectares of plantings have already been established as part of the Million Trees Program. When completed, the program will have reconstructed approximately 2,000 hectares of predominantly woodland habitat. Over its lifetime, this reconstructed habitat will absorb an estimated 600,000 tonnes of CO₂-e.
- The Coast Protection Board convened a Sea Level Rise Advisory Committee to review its policies in relation to new development and sea level rise.
- Recovery planning efforts for threatened species and ecological communities in South Australia continue to identify and prioritise objectives and actions to assess threatening processes such as climate change.
- The South Australian Seed Conservation Centre is one of 14 organisations comprising the Australian Seed Bank Partnership which has been formed to safeguard Australia's flora and plant communities against extinction. As of April 2011, seed has been collected and stored for 454 (57%) of South Australia's rare and threatened plant species. This is ahead of the timeline target of 53%.
- The Trans-Australia Eco-Link is a joint initiative between the South Australian and Northern Territory Governments to establish a 3,500 kilometre-long wildlife corridor of connected landscapes and natural places from Spencer Gulf in South Australia to the Arafura Sea and Arnhem Land in the Northern Territory.

Agriculture

- The State Government, with support from the Commonwealth Government’s Natural Disaster Resilience Program, is installing a weather station at an inland location in the vicinity of Parndana, Kangaroo Island (three existing stations are all on the coast). The inland station will allow a climatology of central parts of the Island to be constructed, which will directly assist the understanding of forecasters of the meteorological variations across the Island.
- The State Government has completed a pilot study into the potential impact of climate change on land management strategies in the mid to low rainfall dry-land agricultural regions of the Northern and Yorke NRM region as a result of changes in land use from climate change.
- A State Natural Resources Management program project has commenced which is investigating the potential climate change impacts within SA cropping zones on wheat grain yields, stubble biomass and the frequency that stubble biomass levels may be insufficient to protect land from wind and water erosion.
- The State Government has continued its partnership with the Future Farm Industries Cooperative Research Centre (FFI CRC). The FFI CRC is developing more sustainable farming systems based on perennial plants that contribute to drought and climate change adaptation strategies in broad-acre farming areas.
- The 5 year Drought Response Program under the framework of National Drought Policy has been completed. The Program had an emphasis on improving the strategic planning and risk management of farmers through the “Planning for Recovery” program that provided grants to farmers to engage a strategic planning consultant to assist in the preparation of a plan and to implement projects identified in the plan that underpin preparedness for the next event.
- Monitoring continues of some of Australia’s longest climate change trials that are aimed at enhancing the adaptive capacity of afforestation in primary production landscapes. These trials provide data on specific genetic suitability for drier climates. Oil mallee trials are also underway in low rainfall regions of Murray Mallee and Eyre Peninsula. Here the aim is to provide farmers with the opportunity to diversify incomes e.g. oil or biofuel in changing climates as well as ameliorate soil erosion and biodiversity enhancement.

Land Use Planning and Development

- The *30-Year Plan for Greater Adelaide* was launched on 17 February 2010. The Plan’s primary response to the imperatives of climate change is through the creation of a new, compact and more sustainable urban form. Research across the developed world has demonstrated conclusively that more compact urban areas generate fewer greenhouse gas emissions, consume less energy and facilitate the development of more liveable urban environments during hotter and drier conditions. All volumes of the Planning Strategy for South Australia have recently been updated to include specific policies and targets to address the impacts of climate change and to prepare the groundwork for mitigation and long term adaptation.
- The State Government has released the *Water Sensitive Urban Design (WSUD) Technical Manual* providing a technical base for mandating WSUD in new residential and commercial developments for local conditions in the Greater Adelaide Region by 2013

Object 9: Provide for reporting

Section 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.

Object 9 has been met by the establishment of reporting requirements in sections 7 and 21 of the Act.

Object 10: Promote consistency with national and international policy

Section 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.

South Australia continued to contribute to the implementation of a *National Strategy on Energy Efficiency* (NSEE), by undertaking a range of actions. NSEE aims to accelerate energy efficiency efforts and to streamline roles and responsibilities across levels of governments.

- The Eco-Innovation Program is a \$3 million program to be delivered over three years from 2010/11 to help companies develop innovative solutions that promote resource efficiency and re-use to facilitate the 'greening' of South Australia's manufacturing industry.
- The CleverGreen program promotes clean technology initiatives and activities, and has included information sharing, industry cluster formation, award for industry innovators and a grant program. It helps small and medium enterprises take new cleantech products, processes and services from conception through to market. CleverGreen, to be delivered over three years from 2010/11, is a \$2.15 million grant program funded by the South Australian Government.
- South Australia has continued its involvement in the National Minimum Energy Performance Standard and labeling program for appliances and equipment.
- From September 2010, all new homes and extensions built in South Australia must achieve a 6-star level of energy efficiency through the Building Code of Australia.
- The *Complementarity Review of South Australian Climate Change Measures* was undertaken in 2009 to determine whether existing climate change initiatives in the State were efficient, effective and complementary to the proposed Commonwealth Emissions Trading Scheme. South Australia has continued to have regard to the Council of the Australian Governments' (COAG) *Document of Shared Understanding* regarding complementarity. This document recognised the importance of developing a streamlined set of climate change measures across jurisdictions to complement the carbon price and help reduce Australia's greenhouse gas emissions at least cost.

International

Since 2008, Former Premier Mike Rann served as Co-Chair of the States and Regions Alliance, a group of over 50 sub-national governments that are committed to accelerating action on climate change. The Alliance meets annually at the Climate Leaders' Summit to make commitments to take action to tackle climate change and to report against previous commitments.

In December 2010, Former Premier Rann committed to the *Cancun Statement of Federated States and Regional Governments on Low Carbon and Climate Resilient Development*. The statement, made at the meeting of the States and Regions Alliance in Cancun, committed the South Australian Government to:

- Develop specific policies to reduce greenhouse gas emissions, stimulate green jobs and promote energy security in the following areas:
 - Decreasing energy use
 - Promoting energy efficiency
 - Supporting the transition to a sustainable transport system
 - Encouraging renewable energy generation
- Explore sectoral agreements between states and regions on renewable energy, energy efficiency, alternative fuel and electric vehicles
- Provide further support to regions in developing countries.

Object 11: Contribute and respond to national and international policy

Section 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.

The South Australian Government has been a key contributor to national and international development associated with climate change:

National

- The South Australian Government is a member of the States and Territories Forum which has been established by the Commonwealth Government to progress issues relating to the development of the carbon pricing mechanism and complementary policy measures.
- The South Australian Government has been a member of the following national processes through COAG:
 - The Senior Officers Working Group on Adaptation
 - The Complementary Measures Working Group
 - Renewable Energy Target Working Group
 - The Senior Officials Group on Energy Efficiency
- The South Australian Government is also a member of the Council for the Australian Federation Working Group on Adaptation and the Forum for Engagement with the National Climate Change Adaptation Research Facility for the States and Territories.
- The State Government has continued to contribute to the development of national climate change policy including the development of the National Greenhouse and Energy Reporting System and the Renewable Energy Target.
- As a member of the Australasian Procurement and Construction Council's Government Property Group, South Australia has collaborated with other jurisdictions to develop a National Green Leasing Policy and other strategies to reduce the demand for government office space and related resources.
- South Australia in collaboration with the New South Wales Government led the development of a national workshop on co-generation, tri-generation and other distributed energy technologies that increase energy efficiency. The workshop was the first step in delivering one of the measures under the NSEE.

International

Following the Climate Leaders Summit in Cancun in December 2010, the South Australian Government committed to three Sectoral Frameworks which contain a series of commitments to work on particular policies both with partners and within the State. These Sectoral Frameworks include Renewable Energy, Efficient and New Energy Vehicles and Smart Technology. The work with partners predominantly involves working with national governments and key private sector organisations.

- The commitments under the *Renewable Energy Sectoral Framework* include: setting ambitious deployment targets; assisting the development of emerging renewable energy technologies; sharing knowledge on overcoming impediments to renewable energy take-up; and engaging business and other stakeholders to increase renewable energy deployment.
- The *Efficient and New Energy Vehicles Sectoral Framework* contains commitments to: encourage a reduction in the use of fossil fuels; increase the deployment of low emission technology; utilise low emission vehicles in the government and wider vehicle fleets; encourage information sharing; and work with business to increase sales of low emission vehicles.
- The *SMART Technology Sectoral Framework* contains commitments to: facilitate the uptake of smart technologies; work with businesses to facilitate smart cities; and adopt emissions reduction targets.

Below are some actions taken by the South Australian Government to fulfil commitments made at The Climate Leaders' Summits in 2009 and 2010.

- In 2009, the South Australian Government, in partnership with the United Nations Development Program, provided training for Timor-Leste delegates to the United Nations Framework Convention on Climate Change Conference of the Parties in Copenhagen and supported additional delegates to attend the Conference.
- In 2010, the South Australian Government provided financial assistance to the Government of Timor-Leste, through the United Nations Development Program to help deal with significant landscape degradation issues which are likely to be exacerbated under changing climatic conditions. Through the use of this funding the Directorate of Forestry is organising technical training and materials assistance to groups of unemployed people in five Districts to operate tree nurseries and implement tree-planting/ forest area rehabilitation schemes in their local areas.
- The South Australian Government and Adelaide City Council are partners in the Climate Group LightSavers project, a global trial to test the efficacy and cost savings of outdoor LEDs in cities including Guiyang, Hong Kong, Kolkata, London, Mumbai, New York, Shanghai, Tianjin and Toronto. The Adelaide City Council has provided two pilot sites for trial with the LightSavers programme: Park 2 and Bonython Park.
- The South Australian Government is also a member of the EV20 which is an initiative to accelerate the global deployment of plug-in electric vehicles. Chaired by HSH Prince Albert II of Monaco, EV20 is building a core group of 20 EV leaders – businesses and governments committed to transforming the market for electric vehicles by 2020 – and a wider network of like-minded partners. The current working group includes South Australia, Renault, TNT, Venturi, Ener1, Quebec, Amsterdam, North Rhine Westphalia and London. Over the next three years, the EV20 group will focus on activities designed to speed up market transformation by 2020, with a particular focus on vehicle fleets, financial mechanisms and government policies.



To **Minister for Sustainability, Environment and Conservation**

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

1. Purpose

To provide advice regarding the review under section 21 of the *Climate Change and Greenhouse Emissions Reduction Act 2007* ('the Act').

This advice is provided pursuant to section 11(3)(a) of the *Climate Change and Greenhouse Emissions Reduction Act 2007* as resolved by the Premier's Climate Change Council ('the Council') on 28 November 2011. Each Council recommendation is based on the majority view of the Council.

2. Background

Under section 21(1) the Minister is required to cause a review of the Act and its operation to be conducted on a four-yearly basis. Under section 21(3) steps must be taken in the conduct of the review to consult with the Premier's Climate Change Council and other relevant business, environment and community groups and organisations.

The Sustainability and Climate Change Division has undertaken the 2011 review on the Minister's behalf. The Council has provided comments during the preparation of the discussion paper developed for the purposes of consultation. It is now providing comments on the final discussion paper which was released by the South Australian Government on 27 September 2011.

In preparing this advice, the Council has had the opportunity to consider submissions received on the discussion paper from business, community and industry stakeholders, including:

- Adelaide City Council
- Assoc Professor Karen Bubna-Litic, School of Law, UniSA
- Conservation Council of SA Inc
- Environment Defenders Office
- Paul Harris
- South Australian Freight Council
- Property Council of Australia (SA Division)
- Santos Ltd
- BusinessSA
- Adelaide Brighton Ltd
- Doctors for the Environment Australia

One confidential submission was received in addition to the above.

3. Discussion

The Council commends the Government of South Australia for its continued national leadership in relation to climate change. In developing this advice, the Council considered the role of the legislation. The Council's view is that the Act should address the following principles:

- The Act should provide leadership in: reducing greenhouse emissions; the transition to a low carbon economy; and adapting to climate change.
- Government interventions should be carried out at the most appropriate level of government. The Act should facilitate consideration of the effectiveness of South Australian Government climate change policies, with reference to related state, national and international measures.
- Government interventions should be carried out with clear and relevant outcomes that support sustainable development in South Australia, towards a low carbon economy.
- Where incentives for action impose a cost on the community, these incentives should be subject to a Regulatory Impact Statement process and demonstrate community and climate change mitigation and adaptation benefits. Accountability mechanisms should be put in place in relation to the achievement of those benefits.
- The Act should have a future focus, but recognise programs that have short term change initiatives, as a way of progressing towards the long term objectives.

Overall Targets for South Australia

Headline Target

The current headline target in the legislation is 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 review proposes that the principal target should be amended to reflect the Commonwealth target of an 80% reduction by 2050, with a baseline of 2000 levels.

The Council supports this proposal on the basis that it is a clear indication of South Australia's intention to reduce its greenhouse gas emissions and provides certainty for investment in the State. A target of this magnitude reflects the level of reductions necessary at a global scale to mitigate climate change and reflects contemporary science.

Interim Target

There is currently no emissions reduction pathway or interim emissions reduction target established under the Act. The discussion paper on the review states that it is not considered that the introduction of such a target is warranted.

The Council supports the Review's finding that there should be no interim emissions reduction target set in legislation, however the Council recommends that the State Government continue working with industry and the community to develop policies and targets to support emissions reductions in the shorter term. If relevant, such targets should be included in regulations pursuant to the Act.

Targets for the Electricity Generation Sector

Renewable Energy Generation Target

The review proposes that the two (generation and consumption) renewable energy targets in the Act should be replaced with the following single target:

- Increase the production of renewable energy generated so that it comprises at least 33% of electricity generated in the State by 31 December 2020.

This target was recently adopted in the South Australian Strategic Plan following extensive community consultation processes.

The Council commends the Government of South Australia for its work in reaching the current target of 20% generation of electricity from renewables three years ahead of schedule.

The Council supports the Government's new commitment to achieving one third of electricity generated from renewables by 2020.

Renewable energy consumption target

As indicated above, the review proposes to remove the consumption target.

The Council supports this finding and notes the review's finding that the consumption target is not a useful statistic. Ensuring that South Australia reaches its renewable energy production target is the key consideration and it should not matter where that consumption occurs given that it displaces fossil-fired energy in the National Electricity Market.

Emissions Intensity of Electricity Generation

It is also proposed to add a new target to limit the carbon intensity of total South Australian electricity generation to 0.5 tonnes of CO₂-e per megawatt hour by 2020. This target would complement the targets for emission reduction and renewable energy. This target was developed by the Government of South Australia based advice provided by McLennan Magasanik and Associates (February 2010). The target was adopted in the 2011 update of the South Australian Strategic Plan.

The Council supports this proposal and advocates that, in developing a detailed approach to monitoring and measurement, the Government considers the lifecycle emissions associated with electricity generation.

Policies

In addition to setting targets, the Act supports a range of policy measures which challenge our current practices. A range of further legislative amendments are proposed in the discussion paper to ensure that the Act reflects and supports the most up-to-date policies and approaches to addressing and managing the impacts of climate change. These include amendments to:

- Support adaptation to climate change
- Consider the needs of the most vulnerable and disadvantaged members of the community in relation to both the costs of greenhouse gas reductions and the effects of climate change
- Consider the needs of Aboriginal people and communities in relation to the effects of climate change
- Ensure the need to reduce greenhouse gas emissions and adapt to the effects of climate change is considered in all relevant Government decisions
- Facilitate consideration of the complementarity of South Australian Government climate change measures to the Commonwealth Government's carbon pricing policy.

In relation to these policy issues, the Council believes that the Act should include a requirement to develop and maintain a set of climate change policies, addressing these and other relevant issues. Such a requirement would provide certainty that appropriate policy responses will be developed and maintained in accordance with contemporary circumstances.

The Council supports the first four policy proposals listed above. However the Council does not support the proposal regarding complementarity in its current form. In particular, the Council is of the opinion that the agreed complementarity principles do not provide an adequate basis for the assessment of state-based climate change policies, and are open to inconsistent application.

Instead, the Council proposes that the Act should facilitate consideration of the effectiveness of South Australian Government climate change policies, with reference to related state, national and international measures.

In addition to the above listed policies, the Council recommends that the Government consider measures to support the attraction and retaining of industries that support a low carbon economy.

4. Recommendation

- 4.1. That you note the above advice.



Bruce Carter

Chair

Premier's Climate Change Council

9 December 2011

Government Response to Premier's Climate Change Council Advice

October to December 2011

This statement outlines the Government's response to advice provided by the Premier's Climate Change Council (the Council) during the October - December quarter of 2011. One piece of advice was provided during this time, related to the review of the *Climate Change and Greenhouse Emissions Reduction Act 2007* ('the Act') pursuant to section 21 of that Act.

This statement is provided pursuant to section 11(4)(c) of the Act.

Background

Under the *Climate Change and Greenhouse Emissions Reduction Act 2007* ('the Act') the Minister must cause a review of the Act and its operation on a four-yearly basis.

The purpose of the review is to consider and report on the extent to which:

- the objects of the Act are being achieved; and
- the provisions of the Act are sufficient to support action to address climate change in South Australia.

In accordance with the Act, the first review occurred in 2009. The review found that there was a range of issues that could affect the operation of the Act but which were unclear at the time. This included the

effects of the proposed Carbon Pollution Reduction Scheme. The Council advised that the second review should occur in 2011. The Government agreed to this recommendation in its response to the advice.

The process for the Act review is set out in section 21 of the Act. Specifically, the Act describes the issues which must be considered in the report and requires consultation with the Council, as well as relevant business, environment and community groups and organisations. The Council was regularly consulted during the review process. On 28 November 2011 the Council resolved to provide formal advice regarding the review of the legislation.

The Council advice covered a range of issues related to the review of the Act.

Headline Target

The current headline target in the legislation is 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 discussion paper on the review proposed that the principal target be amended to reflect the Commonwealth target of an 80% reduction by 2050, with a baseline of 2000 levels.

In its advice, the Council supported this proposal on the basis that it provided a clear indication of South Australia's intention to reduce its greenhouse gas



emissions and provides certainty for investment in the State. A target of this magnitude reflects the level of reductions necessary at a global scale to mitigate climate change and reflects contemporary science.

The Government has carefully considered the headline target in the Act. The discussion paper contemplated updating the target to reflect the national target. However, submissions received regarding this target showed a diversity of views and lack of consensus within the community about what an appropriate target would be. In addition, it was identified that maintaining consistency with South Australia's Strategic Plan was important for providing clarity and certainty to business and the community.

Uncertainties remain about the operation of the Commonwealth target – in particular there are some views that the headline target may not be complementary to the Commonwealth's carbon pricing policy.

Given the divergence of views, and issues such as complementarity to the national carbon price, which cannot be resolved at this point, the Review finds that the 60% emissions reduction target remains appropriate for South Australia.

Importantly, the current target is for a reduction of at least 60%, however South Australia is able to surpass this level of reduction under the national cap and trade scheme.

An additional review of this target will be undertaken by the CSIRO in 2013 and it is appropriate to wait until after that process has occurred, and the target has been assessed for complementarity before a determination is made as to whether the target requires revision.

Interim Target

There is currently no emissions reduction pathway or interim emissions reduction target established under the Act. The discussion paper on the review stated that the introduction of such a target would be warranted.

The Council supports the Review's finding that there should be no interim emissions reduction target set in legislation, however the Council recommends that the State Government continue working with industry and the community to develop policies and targets to support emissions reductions in the shorter term. If relevant, such targets should be included in regulations pursuant to the Act.

The State Government has accepted this recommendation. It will work with industry and the community to determine a suitable interim target. The Government will need to undertake the section 5 process relating to the setting of targets, before determining, if any, what an appropriate interim target would be. If an interim target is to be introduced, it will be included in regulations pursuant to the Act.

Renewable Energy Targets

The discussion paper proposed that the two (generation and consumption) renewable energy targets in the Act should be replaced with the following single target:

- Increase the production of renewable energy generated so that it comprises at least 33% of electricity generated in the State by 31 December 2020.

This target was recently adopted in the South Australian Strategic Plan following extensive community consultation processes.

The Council commends the Government of South Australia for its work in reaching the current target of 20% generation of electricity from renewables three years ahead of schedule.

The Council supports the Government's new commitment to achieving one third of electricity generated from renewables by 2020. As a result, the Government intends to progress the recognition of the 33% target under the regulations pursuant to the Act. The current 2014 target will be retained in the Act as it

is consistent with the pathway towards the 2020 target.

The Council's advice also supported the proposal to remove the consumption target. However, as AEMO indicates that renewable energy consumption has reached 20%, the 2014 target will be retained in the legislation. However, an updated consumption target will not be developed.

Emissions Intensity of Electricity Generation

The discussion paper also proposed to add a new target to limit the carbon intensity of total South Australian electricity generation to 0.5 tonnes of CO₂-e per megawatt hour by 2020. This target would complement the targets for emission reduction and renewable energy. This target was developed by the Government of South Australia based on advice provided by McLennan Magasanik and Associates (February 2010). The target was adopted in the 2011 update of the South Australian Strategic Plan.

In its advice, the Council supported this proposal and advocated that, in developing a detailed approach to monitoring and measurement, the Government considers the lifecycle emissions associated with electricity generation.

As part of the SASP reporting requirements, the State Government will develop a methodology to measure progress against the target. The government will consider lifecycle emissions impacts, as well as a number of legislated requirements in developing the methodology. In determining the method for calculating any reduction in greenhouse gas emissions, the Act requires that the Minister obtain the advice of relevant experts and take into account relevant methodologies and principles that apply within other Australian jurisdictions and seek to provide consistency with best national and international practices.

An independent body will assess this approach in 2013 as part of the next report undertaken under section 7 of the Act.

Policies

The Council believes that the Act should include a requirement to develop and maintain a set of climate change policies, addressing relevant issues including those outlined in the discussion paper. Such a requirement would provide certainty that appropriate policy responses will be developed and maintained in accordance with contemporary circumstances.

Section 14 of the Act does provide the Minister with the opportunity to develop climate change policies pursuant to the Act. It is currently intended that, once finalised, the Climate Change Adaptation Framework will be adopted as a policy pursuant to this section. Consideration will be given to reflecting this under the regulations. The Government is currently developing a strategy for guiding climate change adaptation in Aboriginal communities and it is currently intended that once finalised this will be adopted as a policy under the Act. The Government will also consider the development of policies to guide climate change decision making across Government and to support complementarity to Commonwealth policies. The Government considers the existing provisions sufficient to ensure contemporary policy responses are developed and implemented.

However, the Council advice also outlined concerns around proposals regarding complementarity to Commonwealth policies. In particular, the Council's opinion is that the agreed complementarity principles do not provide an adequate basis for the assessment of state-based climate change policies, and are open to inconsistent application.

The Council proposed that the Act should facilitate consideration of the effectiveness of South Australian Government climate change policies, with reference to related state, national and international measures.

The State Government is bound by Commonwealth policies in this area. The principles are expected to be

considered by the CoAG Select Council on Climate Change. In developing policies pursuant to the Act, the Minister must seek to promote action within South Australia that provides consistency with national and international schemes designed to address climate change. For these reasons, the State Government is unable to accept the alternative suggested by the Council.

The Council recommended that the Government consider measures to support the attraction and retaining of industries that support a low carbon economy. The State Government is already pursuing a range of measures to support these industries, including through the Renewable Energy Plan for South Australia and South Australia's Cleantech Strategy. The Discussion Paper on the Review of the Act outlined that the emissions intensity level of South Australia's economy has reduced significantly between 1990 and 2009. The Government will consider measures to further support these industries if necessary to reduce the emissions intensity of South Australia's economy.