



Council for the Australian
Federation

Climate change: Best practices by State and Territory Governments in Australia

October 2008

Introduction

Through the Council for the Australian Federation (CAF), Australian State and Territory leaders are responding to the impact of global climate change on the Australian economy and its people with innovation and adaptation.

State and Territory leaders demonstrated an early commitment to climate change action. In February 2007, CAF issued the *Council for the Australian Federation Declaration on Climate Change*, which recognised the impact of human activity on global climate change and the need for a national policy approach if Australia was to mitigate against its negative impacts on the environment and economy.

On 21 February 2008, CAF met with premiers of the Canadian Council of the Federation to discuss issues of shared interest, including subnational responses to climate change. The heads of Australian and Canadian regional governments recognised that subnational jurisdictions were taking a lead role in driving the climate change policy agenda at both the national and international level, and that there were tangible benefits in the bilateral sharing of best practice policy between regional governments.

Climate change: Best Practices by State and Territory Governments in Australia has been compiled by State and Territory jurisdictions on behalf of CAF to showcase current best practice policy initiatives aimed at reducing greenhouse gas emissions and adapting to climate change. It is designed to promote collaboration and information sharing across jurisdictions.

The document is not intended to be an exhaustive list of actions by States and Territories to tackle climate change, but rather a list of key initiatives that represent best practice policy by the States and Territories.

Best practices submitted by each jurisdiction have been arranged thematically as follows:

- **Leading with best practice** shows leading practices designed to reduce the carbon footprint of government operations and also includes details on State and Territory climate change/energy plans, greenhouse gas emission targets, and reporting mechanisms.
- **Public education** outlines best practices in public outreach and education programs.
- **Response by sectors** contains leading practices by economic sectors, including agriculture, forestry, planning, transport, stationary energy, industrial processes, oil, construction, waste management, land use and local government, water, electricity, non-energy industry, and tourism.
- **Adaptation** relates to initiatives specifically designed for adaptation and includes agencies, planning documents/mechanisms, risk assessment and support tools, and monitoring and reporting mechanisms specifically related to managing adaptation to climate change.
- **Innovation and economic opportunities** includes research, innovation, energy efficiency, and conservation initiatives.

It is hoped that *Climate change: Best practices by State and Territory Governments in Australia* will help to inform climate change practitioners and readers more broadly on policy innovation currently being undertaken by Australian State and Territory jurisdictions.

Readers are encouraged to contact their State or Territory Governments if they require more detailed information about any of the agencies or initiatives featured in this document.

Leading with best practice

Government operations

ACT Purchase of a minimum of 23% GreenPower for all government operations.
Installation of renewable technology showcase (solar PV, low wattage lighting, wind turbines).
Sustainable procurement policy.
Energy audits of public buildings and Energy Efficiency Fund for retrofitting public buildings.
Improvement of fuel efficiency of vehicle fleet through purchase of smaller vehicles.

NSW New South Wales Government to be carbon neutral by 2020. As a first step, the government has developed a Sustainability Policy, which includes:

- reducing government building emissions to 2000 levels;
- requiring all government owned and tenanted buildings to obtain 4½ Star environmental performance by 1 July 2011;
- requiring minimum 4 Star water and energy products and appliances for government facilities;
- requiring all New South Wales state fleet vehicles to use ethanol blended fuel where possible; and
- requiring government agencies to purchase at least 6% of their electricity from GreenPower accredited renewable energy.

Cleaner NSW Government Fleet Program requires government agencies with the largest vehicle fleets accounting for 95% of the NSW Government fleet to develop a Fleet Improvement Plan to meet a Clean Car Benchmark and emissions reduction targets.

NT Energy Smart Buildings Policy: Aims to achieve and maintain best practice energy management in government-occupied buildings, and to save operating expenditure and greenhouse gas emissions. It sets annual energy efficiency targets for each year over a 6-year period, to an improvement of 10% by 2010/11, compared to 2004/05. All NT Government agencies with more than 50 full time employees, excluding government-owned corporations, must comply with the policy.

Government Vehicle Fleet Efficiency Target: The NT Government has a commitment to reduce greenhouse gas emissions from the NT Government's passenger vehicle fleet by 5% per kilometre travelled by the end of June 2007, compared to emission levels in 2003-04.

TravelSmart Workplace Project: Jointly funded by the NT Government and Australian Government, this project was implemented in 2006-07 and aimed to increase the use of sustainable modes of transport for journeys to and from workplaces of three NT Government agencies. The project focused on the development and implementation of green travel plans at workplace locations in Darwin and Palmerston.

QLD Climate Change Impact Statements to be included in all relevant Cabinet and budget submissions.

Energy efficient government buildings: Target of 5% energy reduction by 2010 and 20% by 2015, all government owned and occupied office buildings to be carbon neutral by 2020 and all new government buildings to achieve a mandatory 4½ Star energy efficiency rating. Provision of 5% of energy used in government buildings to be from renewable energy sources.

Energy efficient government vehicles and travel: Mandatory vehicle emission standards for government vehicle fleet, government vehicle fleet to be carbon neutral by 2020 and mandatory purchase of carbon offsets for all government air travel.

SA Government Energy Use – Carbon Neutral Government: The South Australian Government will become carbon neutral for its own operations by the year 2020. This comes on top of numerous initiatives to reduce government's own carbon emissions, including:

- purchasing 20% certified GreenPower from 2008;
- ensuring that half the government's fleet vehicles are alternatively fuelled by 2010;
- improving the energy efficiency of government buildings by 25% by 2014;
- implementing cost-effective combinations of low-emission fuels, including biodiesel blends and natural gas, in public transport;
- a carbon neutral Cabinet; and
- trialling mini-wind turbines on government buildings.

Mini Wind Turbines: Five mini-wind turbines have been installed for trial on government buildings and another 40 have been purchased to be installed at various location. Funding of \$800,000 has been provided through the Premier's Science and Research Fund to the University of Adelaide for a wind tunnel testing facility capable of testing micro wind turbines.

5 Star offices: For all new leases or leases renewed since 2006, the South Australian Government has given preference to office accommodation that meets at least a 5 Star energy rating.

TAS Government vehicle fleet to be carbon neutral by July 2010.

From 4 March 2008, all new Tasmanian Government passenger vehicles will have to meet the minimum Green Star rating of 5½, and all light commercial & 4WD vehicles will have to meet a minimum 3½ Green Star rating. Government will also immediately increase the number of hybrid and alternative-fuel vehicles in the government fleet.

From 4 March 2008, all Tasmanian Government air travel will be offset. A partnership with Greening Australia has been established and will commence operation on 1 July 2008. The partnership will ensure money spent on offsetting government travel will be invested in revegetation in Tasmania.

Tasmania's Cabinet will consider a report and implementation plan by 30 June 2008 on the installation of solar panels and hot water systems on major government owned buildings.

Tasmanian Government Procurement Policy: Climate change considerations are to be included in all major government procurement including whole of government contracts.

- VIC** The Victorian Government has a target to reduce its annual energy use by 20% by 2010. This includes the implementation of Sustainable Energy Targets to improve energy efficiency and increase the purchase of clean electricity in government buildings. The Victorian Government is progressively increasing the use of GreenPower in its operations to 25%. The government has recently announced that Victoria's Parliament House will run on 100% GreenPower.

- WA** Carbon neutral government vehicle fleet.
Government purchase of 20% renewable energy.

Climate Change and/or Energy Plan

- ACT** Climate Change Strategy *Weathering the Change 2007-2025* and *Action Plan 2007-2011* (ACT Department of Territory and Municipal Services, July 2007).
Energy Policy (currently under development).

- NSW** *NSW Greenhouse Plan 2005* (NSW Cabinet Office 2005).
Climate Change Action Plan (to update and replace the previous Greenhouse Plan; currently under development).
NSW Energy Efficiency Strategy (some specific measures still under development).

- NT** *NT's Climate Change Issues Paper*: Released on 5 June 2008, leading to the launch of the climate change strategy for the NT in February 2009.

- QLD** *ClimateSmart 2050 – Queensland's Climate Change Strategy*: \$1.4 billion investment including key initiatives such as a \$900 million Clean Coal Fund, \$50 million Renewable Energy Fund, \$55 million Smart Energy Savings Program and the \$430 million Queensland Climate Change Fund.

- SA** *Climate Change and Greenhouse Emissions Reduction Act 2007*: The legislation came into effect on 3 July 2007. It includes targets to reduce greenhouse emissions to 40% of 1990 levels by 2050 and to increase the proportion of renewable electricity generated and consumed to at least 20% of electricity generated and consumed in the state by the end of 2014.
Tackling Climate Change – South Australia's Greenhouse Strategy: The strategy was released in June 2007 and is a comprehensive document outlining reduction, adaptation, and innovation strategies for the state and includes a government action plan. This plan contains 98 priority actions and 81 supporting actions to be addressed to 2012.
Energy Efficiency Target: South Australia's Strategic Plan contains two specific energy efficiency targets, one to improve the energy efficiency for government buildings by 25% from 2000/01 levels by 2014, and a target to improve the energy efficiency of South Australian homes by 10% by 2014.

- TAS** The Tasmanian Government commissioned Dr Kate Crowley (University of Tasmania) to develop a state framework for action. The Premier tabled and committed to the framework in Parliament on 4 March 2008.
The Tasmanian Climate Change Office has been established within the Department of Premier & Cabinet (funded \$3 million over 3 years).
Government has commissioned an audit of the greenhouse gas emissions associated with government's day-to-day business. The results of the audit are expected by the end of June 2008.
The Tasmanian Climate Action Council will be established by legislation in June 2008. The high-level Council will advise government on adaptation and measures to reduce Tasmania's contribution to climate change. The inaugural Chair will be Dr Kate Crowley of the University of Tasmania.

- VIC** Victoria is currently developing a Climate Change Green Paper/White Paper that will ensure a coordinated whole of government approach to climate change policy. This will include concrete measures for the next phase of climate action to help Victoria adapt and realise the opportunities created in the transition to a low carbon economy.

Victoria's climate change website contains a list of the state's initiatives and key policy documents at www.climatechange.vic.gov.au

In 2006 Victoria launched a \$200 million package of initiatives to drive environmental sustainability: Our Environment, Our Future.

The government has also driven significant emissions reductions and innovation in the energy sector through the *Greenhouse Challenge for Energy* policy paper and the *Energy Technology Innovation Strategy* (ETIS). ETIS provides significant funding for large scale low emissions and renewable energy technologies.

- WA** Premier's Climate Change Action Statement.

Greenhouse gas emission targets

- ACT** Target is greenhouse gas emissions to be 60% of 2000 levels by 2050.
Interim target greenhouse gas emissions to be at 2000 levels by 2025.
- NSW** Return greenhouse gas emissions to 2000 levels by 2025 and 60% below 2000 levels by 2050.
Renewable energy targets of 10% use by 2010 and 15% by 2020.
- NT** *NT Strategy for Greenhouse Action 2006*: Guides Northern Territory Government action to minimise greenhouse gas emissions and increase understanding of the impacts of climate change.
- QLD** Queensland has committed to contribute to achieving the national emissions reduction target of 60% below 2000 levels by 2050.
- SA** The *Climate Change and Greenhouse Emissions Reduction Act 2007* legislates that South Australia will reduce its greenhouse gas emissions to 40% of 1990 levels by 2050.
South Australia's Strategic Plan 2007 commits the state to achieving the Australian Kyoto target by limiting the state's greenhouse gas emissions to 108% of 1990 levels during 2008-12, as a first step towards reducing emissions by 60% (to 40% of 1990 levels) by 2050.
- TAS** In June 2008, Tasmania will legislate to reduce the state's greenhouse gas emissions by at least 60% of 1990 levels by 2050. This intention has been publicly announced.
The Victorian Renewable Energy Target (VRET) requires 10% of Victoria's electricity consumption to be from renewable sources by 2016 and the state is moving to achieve a target of 20% renewable and low emission energy generation by 2020. VRET is expected to stimulate \$2 billion of investment and around 2200 new jobs.
Victoria has introduced the Victorian Energy Efficiency Target and Scheme to help more families reduce GHG emissions and cut their power bills and which aims to reduce household emissions by 10% by 2010.
- WA** Reduce emissions to 26 Mt by 2050 (60% reduction of 2000 emissions by 2050).

Reporting

- ACT** Quarterly reporting to Chief Minister against the *Weathering the Change Action Plan 2007-2011*.
Annual GHG Inventory.
- NSW** The government will report on progress in meeting its greenhouse gas emissions targets as part of *New South Wales State Plan* reporting.
- QLD** *State of the Environment Report 2007*, which includes climate change and sustainability indicators.
- SA** The *Climate Change and Greenhouse Emissions Reduction Act 2007* requires that the Minister for Sustainability and Climate Change prepare a report on the operation of the legislation for Parliament on a biannual basis.
The *South Australia's Strategic Plan 2007* requires the government to report annually against the activities in the action plan as part of the Department of the Premier and Cabinet Annual Report.
- TAS** From the 2008-09 financial year, all Tasmanian government agencies will be required to include information on their activities to reduce their carbon emissions in their annual reports.
- VIC** Victoria's Commissioner for Environmental Sustainability is currently preparing the *State of the Environment Report*, which will be released in early 2009 and will cover the full breadth of environmental issues in Victoria.
Victoria has implemented the Environment and Resource Efficiency Plan Program (EREPPs). From 2008, all commercial and industrial sites in Victoria that use more than 100 TJ of energy and/or 120 ML of water in a financial year are required to prepare a plan that identifies actions to reduce energy and water use and waste generation, and report on energy and water use.

Public education

Public education and outreach

- ACT** Work with schools to become carbon neutral, energy efficient and sustainable.
\$20 million over 10 years to schools to become more energy efficient.
All new public schools to integrate environmentally sustainable design features.
Grant program to assist community and not-for-profit groups to improve the energy performance of their buildings and promote energy efficiency to their stakeholders.
Sponsorship of climate change awareness events organised by community and not-for-profit groups.
- NSW** The Climate Change Fund includes a \$20 million Schools Energy Efficiency Program and \$30 million Public Facilities Program to support energy and water savings projects in educational, state and local government, and other community facilities.
- NT** NT Energy Smart Schools Program: The program includes sustainability facilitation, assisted energy audits, funding for energy efficiency projects, and schools' use of environmental tracking systems. The Energy Smart Schools Program aims to reduce energy and water use within DEET schools and build sustainability into school culture and teaching.
NT Energy Smart Households Program: The program includes energy efficient hot water retrofit rebate scheme, rainwater tank rebate scheme, information and awareness, and energy efficiency hardware rebate. It aims to assist Northern Territory households to improve their energy and water efficiency.
- QLD** ClimateSmart Living education campaign to raise community awareness and highlight actions Queenslanders can take to reduce greenhouse gas emissions.
For Queensland homes: Home EnergyWise tools to assist Queenslanders improve home energy efficiency and ClimateSmart Homes rebate program to support households in remote areas of the state to switch to greenhouse-friendly appliances.
Solar Bonus Scheme that rewards domestic and other small energy customers for the surplus electricity generated from roof-top solar photovoltaic (PV) systems that is fed into the grid.
Solar Schools Program aimed at reducing greenhouse gas emissions in schools, reducing energy costs, and educating students about energy efficiency and renewable energy.
- SA** Climate Change Community Awareness and Behaviour Change Program: The government allocated \$675,000 funding for 2007-08 and developed a state-wide community awareness and behaviour change program to encourage individuals, households, and the community to reduce their greenhouse gas emissions.
Climate Change Education Resource: A climate change education resource is currently being developed and trialled for incorporation into the curriculum of all South Australian schools.
TAFE Curriculum — Renewable Energy Centre of Excellence: \$141,000 in state and federal funds were allocated to TAFE SA to set up a dedicated site for delivery of renewable energy studies, offering training in the design and installation of wind generation, solar panel and grid-connected systems, and in conducting energy audits.
Feed-in Legislation: The solar feed-in laws were passed by the Parliament of South Australia on 14 February 2008. South Australian householders and small energy consumers using grid connected solar panels will now be paid a premium for electricity they put back into the electricity grid. The legislation came into effect on 1 July 2008 for a 20-year period.
Community Energy Programs: The South Australian Government provides a number of voluntary behaviour change programs including:
 - a residential energy advisory service;
 - home energy auditor training; and
 - Business Sustainability Alliance: The Business Sustainability Alliance is an integrated cross-agency support program led by the Department of Trade and Economic Development to accelerate the uptake of sustainable business practices. This voluntary program provides a vertically integrated program that is tailored to business needs that formulate strategies and actions in addressing climate change, energy efficiency, waste management, water conservation, and lean practices. The aim of the program is to improve business productivity (multi-factor), ensure market access, and help businesses make a smoother transition to a carbon constrained economy.
Premier's Climate Change Council: A high level independent council has been formed to provide independent advice to the Premier about matters associated with reducing greenhouse gas emissions and adapting to climate change, including achieving energy efficiencies, increasing the use of renewable energy, finding ways to remove greenhouse gases and achieving relevant targets. It will take an active role in consulting with businesses, the environment and conservation movement, and the wider community.

TAS The Tasmanian Climate Change Office is running a series of workshops within public service agencies. The workshops will hear from one of Tasmania's Al Gore ambassadors and from a representative of Sustainable Living Tasmania. The public sector workshops will be followed by community forums throughout the state later in the year.

Living Environment Program: Environment Challenge Up2me challenges individuals to make small behavioural changes to reduce their environmental footprint via a web registration system (funding to end June 08, then handed to Sustainable Living Tasmania).

Premier's Climate Action Award is part of the Tasmanian Awards for Environmental Excellence.

Australian Sustainable Schools Initiative (AUSSI): 12 Tasmanian schools are participating in this Commonwealth pilot program.

VIC The black balloons of the Victorian Government's You Have the Power, Save Energy campaign are now an instantly recognisable symbol of greenhouse gas emissions. The image of black balloons emerging from households is a striking and effective way of easily helping people visualise the link between energy use and climate change.

The Victorian Government requires that energy and water retailers put a household's water, energy use, and greenhouse emission levels on bills and compare it to the average household.

The Victorian Government's Sustainable Schools Program creates an expansion of environmental education programs in schools. Initially focused on energy efficiency, the program will extend to areas of biodiversity and water use.

WA Climate Change Education Initiative: The project has been developed to enhance Western Australian primary and secondary school students' understanding of local and global climate change issues, particularly in relation to their own existing and future greenhouse gas emissions.

A person/s will be engaged to assist with the development of appropriate climate change curriculum resources for teachers and students. The resources will also provide opportunities for schools to engage their family and friends through projects that lead to behaviour changes that reduce greenhouse gas emissions. Schools participating in the project will also be encouraged to reduce their greenhouse gas emissions further.

Professional development training will be provided to teachers to ensure that they have the confidence, knowledge, and skills to deliver climate change education.

Household Audit and Education Program: \$1.5 million will be invested to provide practical information to 10,000 households on how greenhouse gas emissions can be reduced at the household level. A free audit will be undertaken for participating households to identify opportunities to reduce emissions and energy costs.

Living Smart Program: Administered jointly by the Departments of Environment and Conservation and Planning and Infrastructure, this program offers information to the public on how to reduce greenhouse gas emissions at home and in daily travel.

The program works with selected communities to achieve savings for households and large reductions in greenhouse gas emissions. Householders are able to use an online calculator to determine the size of their carbon footprint.

Response by sectors

Agriculture

NSW The government is working with researchers to investigate the potential for land management practices to increase soil carbon for major land uses and major agricultural soils of New South Wales and to develop a rapid and cost effective method for measuring soil carbon. The government is researching the application of char to soil to assess likely benefits, including increased plant production, enhanced fertiliser efficiency, carbon sequestration, and reduction of nutrient and pesticide run-off.

QLD Carbon offsets through regrowth vegetation: Project to investigate the potential for regrowth vegetation as carbon offset on freehold and leasehold land.

Offsets exchange facility to be established as a mechanism to assist developers find offsets for vegetation clearing. This tool has the potential to facilitate carbon offsetting arrangements.

Participatory farming systems research projects in the grains districts of Central and Southern Queensland enable farmers to increase resilience to a variable climate while reducing greenhouse gas emissions from fertiliser application and energy use.

Research into the use of bacteria from the gut of kangaroos to reduce methane emissions by beef cattle.

Enhanced regional horticultural productivity through water use efficiency: Program to develop techniques for integrating highly efficient irrigation techniques into new precision horticulture production systems.

SA Awareness raising and capacity building: Primary Industries and Resources SA (PIRSA) has published a guide to climate change and adaptation in agriculture in South Australia that provides farmers with an introduction to the issues, challenges and opportunities of climate change and a range of response options for their consideration.

Drought and extreme events: The Planning for Recovery program aims to facilitate a positive transition process from drought relief to a focus on improving the preparedness and minimise the effects of adverse events in the future, including climate change. The program provides support to businesses, up to \$14,000, to develop and implement high quality business plans, which will in turn deliver significantly improved economic, production, family and natural resource management outcomes in the short and long-term. The program will help farmers to reduce the decline in the condition of their core farm assets and provide a stronger platform from which recovery can be accelerated.

Designated Primary Production Areas (DPPA): South Australia's limited options for high-value production, especially irrigated and cool climate production, will be further narrowed by climate change. This impact will be most pronounced in peri-urban regions, where access to traditional (and secure) production areas is being steadily eroded by urban encroachment. PIRSA's DPPA project will identify key production assets (natural resources and/or existing farm infrastructure and investment) for current conditions and future scenarios. DPPAs will be incorporated into planning policy to ensure that land use decisions affecting these assets are fully informed.

Climate and drought response R&D: The South Australian Research and Development Institute (SARDI) is undertaking a number of climate-related research projects including:

- trials of a range of economically important crops, including wheat, lucerne and grapes to develop varieties that are productive in drought and in the warmer, drier conditions developing under climate change in South Australia's agricultural areas;
- research on permanent horticulture to develop strategies to minimise the impact of drought on production; and
- research into better use of plant available water in low rainfall cropping and pasture systems to maximise production.

TAS In partnership with the Food Industry Council of Tasmania, the government has already commissioned a report on the future impact of climate change on Tasmania's food and beverage industries. This report will examine issues including the impact of likely changes in consumer preferences and market conditions.

To underpin climate change adaptation across all sectors, including the agricultural sector, the Tasmanian Government is sponsoring the Climate Futures for Tasmania Project for almost \$1 million. A partnership with Hydro Tasmania and the Antarctic Climate and Ecosystems Cooperative Research Centre, this project will identify the likely impacts of climate change specific to Tasmanian sectors and regions.

In addition, the Tasmanian Government has undertaken a Climate Change and Coastal Risk Management Project to assess climate change risks in the coastal environment, including a preliminary assessment of the likely impacts of climate change on the Tasmanian east coast rock lobster fishery.

VIC The Victorian Government has recently released its \$205 million Future Farming strategy. Future Farming delivers new support and services for farm businesses and rural communities to help them make decisions about their future and meet the challenges of uncertain prices and demand, and the impacts of climate change.

Victoria has developed action priorities for greenhouse and agriculture, including developing a more accurate profile of greenhouse gas emissions for the agricultural sector; and through the Greenhouse & Climate Change in Agriculture Partnership, developing strategies and tools to reduce greenhouse gas emissions from Victoria's agricultural sector.

WA Sectoral Emissions Reduction Strategy: The Premier's Climate Change Action Statement of May 2007 commits to the development of greenhouse gas emissions reduction strategies for key sectors of the Western Australian economy. Such strategies are one suite of abatement activities that will contribute towards achieving Western Australia's long term emissions reduction target of 60% of 2000 levels by 2050. Sectors initially identified for such strategies are Transport, Waste, Stationary Energy, Agriculture and Forestry, Mining, Oil and Gas, Building, Tourism, and Households. A consultant has been appointed to develop abatement cost curves for each sector, analysing opportunities, cost, and timing of emissions reduction measures. Abatement cost curves will be developed in a consistent and coherent manner in order to ensure comparability of the identification of low, medium, and high cost options across the economy. A "business as usual" scenario will be developed for each sector, and the analysis of abatement potential will need to take into account the introduction of a national emissions trading scheme, the identification of complementary measures, both at national and at state level, and the measures announced in the Premier's Climate Change Action Statement.

Adaptation Blueprint: The WA Government is developing a blueprint for agriculture and forestry adaptation to climate change. This will increase the resilience of agricultural crops and systems to cope with long term climate change and seasonal variability and identify the necessary responses to climate change in Western Australia's native forest and plantation strategies.

Forestry

ACT Undertake a sequestration audit.

NSW Since 2003, carbon credits have been able to be created from the capture of carbon in forests which are then able to be used by energy suppliers and other liable parties in the New South Wales Greenhouse Gas Reduction Scheme (GGAS) to meet their greenhouse benchmark targets.

Government researchers have been working to develop a reliable tool for estimating carbon sequestration by environmental plantings.

The government has been conducting research on identifying carbon retained in harvested wood products to verify and calculate the potential of these sinks.

NT West Arnhem Land Fire Abatement Project: With private industry and Northern Territory Government support, Indigenous people of West Arnhem Land are implementing strategic fire management practices to reduce annual greenhouse gas emissions from savanna fires in the region.

QLD Domestication of tree species suitable for carbon sequestration in Queensland's harsh inland environment.

SA Urban Forests Million Trees: This scheme aims to plant 3 million local native trees in a series of urban forests across greater metropolitan Adelaide by 2014. Carbon biosequestration is a stated objective of the scheme.

River Murray Forest Park: A South Australian Government initiative launched in August 2007 to plant 2.5 million trees to create a River Murray native forest between Morgan and Renmark in the Riverland. Carbon biosequestration is a stated objective of the scheme.

Forest Property Act 2000: By identifying carbon rights the *Forestry Property Act 2000* provides a legal framework to encourage biosequestration and facilitate bilateral trading in carbon rights.

South Australia is monitoring the outcomes from two different plantation climate change research trials, one now 16 years old, the other 5 years. These will provide valuable data on species adaptation to a change in climate as well as assist in identifying and selecting species suitable for commercial crops, carbon sequestration, and shrubs for feed in adverse times (e.g. drought). This latter project also incorporates economic feasibility studies for incorporating biomass and biosequestration options into existing farming systems.

TAS As part of the Permanent Forest Estate Policy and the Regional Forest Agreement, Tasmania has protected over 44% of its land area from commercial activities. This protection covers 47% of Tasmania's native forests and 80% of its old growth forests.

The Tasmanian Government has asked the Garnaut Review to include an independent and transparent assessment of the role of the forest sector in addressing climate change drawing on the best available science. The government's approach to the forest sector and climate change will be guided by the review's findings.

VIC The Victorian Government's project Plantations for Greenhouse aimed to support landholders in growing plantations for a carbon sequestration benefit in addition to all of the regular economic and environmental benefits of plantations. The project resulted in 1,400 hectares of sawlog plantations, which will absorb around 500,000 tonnes of CO₂ over the next 30 years.

WA See Adaptation Blueprint.

Planning

- ACT** The ACT has undertaken a reform of its planning system including:
- a restructured Territory Plan;
 - a new piece of legislation, the *Planning and Development Act 2007*;
 - an updated development assessment process; and
 - replacement of Preliminary Assessments with an Environmental Impact Statement (EIS) process.
- Water Ways: *The Water Sensitive Urban Design General Code* reflects the need to manage and conserve water under drought and climate change. The guidelines include:
- targets to be achieved for potable water use reduction, stormwater quality and runoff rates;
 - the reduction of potable water consumption for all new developments; and
 - the improvement of stormwater runoff quality and quantity and encouraging wastewater reuse.
- NSW** See Construction.
- QLD** Commitment to developing a State Planning Policy for climate change.
- SA** Transit Orientated Development (TOD): A cross agency steering group has developed a set of TOD principles and developed a TOD potential assessment tool. This criterion-based tool has been applied to 148 sites (all stations on metropolitan rail corridors) to determine a TOD potential for each site. Final draft of the TOD principles, assessment tool, register of sites and a strategic directions document was presented to the cross agency steering group in December 2007.
- Planning SA is undertaking two pilot projects with the City of Onkaparinga and the City of Salisbury to help identify suitable sites near public transport and activity centres, which would be best suited for increases in housing densities.
- The desirability to increase higher density housing in specific locations was outlined in the 2006 Planning Strategy.
- Land Management Corporation (LMC) is actively investigating and supporting planning and the viability of outer suburban TODS and seeking to achieve TODS in its land releases and in significant projects such as Playford North.
- Land Releases: LMC undertakes structure planning prior to residential land release, with a requirement of successful tenderers to prepare a master plan for approval by LMC and endorsement by the relevant council. These plans address land use integration with traffic and transport, social and utilities infrastructure, open space provision, solar-oriented design, affordable housing provision, and sustainability requirements.
 - Joint Ventures: LMC continues to produce high amenity market leading residential suburban developments in partnership with the private sector at Mawson Lakes and Northgate.
 - Lochiel Park: LMC has planned and constructed the subdivision for the nation leading 'green village' of some 100 dwellings at Lochiel Park on behalf of the government.
 - Playford North: LMC has led a whole of government project planning process to release greenfield land for development in conjunction with regeneration of adjacent existing suburbs, addressing affordable housing, social and community issues, housing and public realm improvements, and energy and water sensitive design.
- TAS** The Tasmanian Climate Change and Coastal Risk Management Project, assessing climate change risks in the coastal environment, included a specific assessment of coastal infrastructure risks.
- VIC** *Melbourne 2030* is the 30-year plan for the future of Victoria's largest city. Sustainability is one of the seven guiding principles of the plan, resulting in a focus on the creation of a more compact city based around multifunctional activities centres of critical density which are connected by public transport.
- Our Environment, Our Future: Sustainability Action Statement 2006*, the Victorian Government's environmental framework, is focused on improving the liveability of Victorian cities and towns, in particular through:
- Better buildings: Improving environmental ratings across new office and residential buildings, while conducting a pilot program to provide information on the environmental performance of residential buildings at point of sale or lease.
- WA** Network City: A new whole of government vision for sustainable planning for the Perth and Peel regions. The guiding theme is managing growth by sharing responsibility between industry, community, and government. Its key objectives include, but are not limited to, delivering a safe, reliable, and energy-efficient transport system that provides travel choice; and protecting and enhancing the natural environment, open spaces, and heritage. Key new planning directions include:
- protecting biodiversity and areas of environmental significance; and
 - preparing transport plans aimed at reducing car dependency.
- Transit-oriented development: The Department for Planning and Infrastructure is committed to encouraging the use of transit-oriented development principles to link land use and public transport across Perth as a part of the Network City vision. Concepts such as activity centres and higher residential densities along high-frequency public transport routes is one way to reduce vehicle dependence.

Transport

- ACT** Partial stamp duty concession for low emission vehicles.
Replacement of public diesel powered bus fleet with compressed natural gas (CNG) powered buses.
Redesign public transport network to increase patronage.
- NSW** Clean Air, Healthy Communities Projects to:
- help companies improve the greenhouse and air quality performance of their light vehicle fleets;
 - profile the motivation for individual transport options; and
 - provide a framework for development of new cycling initiatives and Ride to School and Ride to Work programs.
- The Clean Fleet maintenance program to improve fuel efficiency and air quality and reduce greenhouse gases from diesel vehicles in the New South Wales heavy vehicle fleet such as bus lines, councils and private fleet operators.
- QLD** Alternative fuels roadmap and alternative fuels policy developed.
TravelSmart Program to deliver a \$22.6 million investment over 4 years to expand the current program which encourages people to walk, cycle and take public transport instead of driving.
South-East Queensland Cycle Network: \$235 million investment to expand walking and cycling facilities in South-East Queensland between 2005 and 2026.
Superbuses: Investment in High Passenger Capacity Vehicles (bi-articulated ‘superbuses’) for a potential trial and possible procurement.
- SA** Public transport roam zones, and after midnight services on Saturday evenings in the Adelaide metro area have been introduced.
The South Australian Government is introducing diverse regional passenger transport services (e.g. Murray Mallee service is in place, others are under consideration) to support low population density and different patterns of needs and services in regional areas.
TravelSmart programs are implemented by Commonwealth, State and Territory governments.
In South Australia, the TravelSmart Program includes:
- TravelSmart Households in the West – a component of the National Travel Behaviour Change Projects 2004–07 in partnership with the Australian Greenhouse Office;
 - TravelSmart Workplaces Program including government and non-government workplaces; and
 - TravelSmart Schools Program including the Walking School Bus and Green Travel Challenge initiatives.
- Promoting Cycling: The South Australian Government and local councils both have a role in developing South Australia’s cycling networks. The government is responsible for monitoring and coordinating the implementation of Safety in Numbers, the whole of government cycling strategy.
The South Australian Government also provides subsidy funding to assist local councils provide bicycle facilities on the local road network through the State Bicycle Fund and State Black Spot Program – Council Cycling Projects.
Safety in Numbers, a Cycling Strategy for SA 2006-10 is being implemented across government. As a result of the strategy a number of state government worksites are now providing cycling end of trip facilities.
The South Australian Government has adopted the Green Building Council’s Green Star Office Design tool for rating of all new office accommodation that will require the building owner to provide appropriate bicycle storage and shower facilities.
- TAS** The Tasmanian Government is conducting a speed limit demonstration project. The government has also announced that it will provide \$4 million over 3 years to support the development of a well-planned and integrated network of community trails which provide recreational and transport opportunities, increase the connection of our communities, and promote alternatives to using fossil fuels for transport. Walking, bike and recreational trail networks in urban and urban fringe areas will be the focus. The government is also running a CNG, LNG, and Biofuels Infrastructure Attraction and Facilitation Project to promote the uptake of alternative transport fuels and to support the development of the alternative fuels industry in Tasmania.
- VIC** *Meeting Our Transport Challenges: Connecting Victorian Communities* is the Victorian Government’s 10-year, \$10.5 billion transport plan for metropolitan and regional Victoria. The plan aims to increase public transport use through improved train and tram access, and also orbital buses to compliment the existing hub-and-spoke transport infrastructure and reduce inter-suburban car use.
Through TravelSmart, the Victorian Government is working with local councils to reduce people’s dependency on cars and encourage them to choose sustainable travel alternatives, such as walking, cycling, or catching public transport.
Our Environment, Our Future incorporates a range of actions to encourage sustainable transport in Victoria, including:
- Hybrid bus trial: \$500,000 to trial hybrid busses in Melbourne; and
 - Greening our automotive industry: \$300,000 for development of fuel efficient and low-emissions vehicles.
- WA** Cycling upgrades: WA will spend more than \$72 million on cycling facilities and delivering more than 360km of cycling networks across the state.

Bus replacement: The diesel bus fleet will be replaced by gas-powered buses, including 451 compressed natural gas buses, by 2011.

TravelSmart Household Program: This program was developed to tackle Perth's increasing travel demand while addressing climate change, air quality, sustainability, and physical activity issues. The program shows people how to reduce their car use by 10% by substituting car trips with walking, cycling, and public transport use. Participation is set to rise to more than 450,000 residents by 2008/09. For each year of operation, TravelSmart reduces car trips by 20 million, stops 60,000 tonnes of CO₂ emissions, and increases public transport patronage by 3 million people.

Also see Sectoral Emissions Reduction Strategy.

Stationary energy

ACT Promotion of renewable energy generation through Renewable Energy Showcase projects.
Methane extraction from landfill sites.

NSW In 2003, the New South Wales Greenhouse Gas Reduction Scheme (GGAS), the world's first mandatory emissions trading scheme, was introduced. It requires electricity retailers and certain other parties to meet mandatory targets for reducing or offsetting the emission of greenhouse gases from the production of the electricity they supply or use.

QLD 10% renewable and low emission energy target by 2020.
18% gas target by 2020.

SA Coober Pedy Solar Power Station: Australia's largest off-grid solar power station will be built in Coober Pedy, generating about 13% of Coober Pedy's total electricity requirement. The South Australian Government is contributing \$635,000 to the project and the Australian Government is contributing \$3.55 million under its Renewable Remote Power Generation Program.

Umawa Power Station: The Australian and South Australian Governments will provide more than \$1.2 million to upgrade the Umuwa solar power station in the far north-west of South Australia to help boost the annual electrical output of the Umuwa solar power station from 335 megawatt hours to 715 megawatt hours a year.

Geothermal Energy: Between 2005 and June 2008, the South Australian Government provided \$1.85 million in grants for Australian geothermal projects and research, including a number of tied grants to the University of Adelaide to help South Australian universities become the world's hub for excellence in 'hot rock' geothermal energy research. This also includes funding for demonstration and development projects.

Supportive regulatory regimes and attractive geology for geothermal energy development have contributed to attract:

- 23 companies to apply-for 236 licences covering 110,358 km² in South Australia;
- An additional 18 geothermal licence applications are in the process of being verified; and
- \$685 million in work programs (2002-13). This excludes the work programs associated with 18 additional licence applications, demonstration projects and up-scaling for deployment.

This is 83% of national tallies for geothermal licences and exploration investment.

Additionally, South Australia provides leadership for the Australian geothermal sector as:

- Australia's current Contracting Party to the OECD's International Energy Agency's geothermal research cluster under the auspices of the Geothermal Implementing Agreement (GIA); and
- The Secretariat, Chair, Vice-Chair and leadership for two technical interest groups of the Australian Geothermal Energy Group (AGEG).

Wind Farms: South Australia has established best practice land use planning rules for the construction of wind farms. SA has about 50% of national wind generation capacity.

TAS The Tasmanian Government has announced a substantial equity injection into Hydro Tasmania to protect and enhance Tasmania's ability to harness its abundant renewable energy and water development resources. With this new funding, Hydro Tasmania will investigate the development of an additional 1000 gigawatt hours of output, representing an increase in energy generation of about 10%. In addition, the government will soon consider a report on options for providing minimum feed-in tariffs to support householders and small energy consumers that use solar panels and other forms of domestic renewable energy and that contribute surplus energy to the electricity grid.

VIC Through the Energy Technology Innovation Strategy (ETIS) the Victorian Government is investing in clean energy generation for the future. New funding of \$127.4 million announced in 2008 for clean coal technologies takes Victoria's investment in clean coal to \$244 million since 2002. An additional \$72 million has also been committed to ETIS for proposals for large-scale, pre-commercial demonstrations of sustainable energy technologies such as solar, energy storage, biofuels, biomass conversion, geothermal energy efficiency, and clean distributed energy.

In 2008, the Victorian Government announced a 60 c/kWh net feed-in tariff to encourage the development of the solar industry in Victoria and ensure households and small businesses that feed electricity back into the grid receive a fair price.

The government is currently developing a framework for the continued development and use of fossil fuels under climate change, including providing a regulatory structure for the long term underground storage of carbon dioxide in Victoria.

The *Renewable Energy Action Plan* aims to accelerate renewable energy development in Victoria through a range of initiatives such as the Victorian Renewable Energy Target Scheme, the Wind Energy Development Act, the Geothermal Energy Resources Act and a wide range of programs aimed at removing barriers to, and driving demand for, renewable energies.

WA State government purchasing of renewable energy: The general government sector has committed to purchasing 20% of its electricity from renewable energy sources by 2010.

Industrial processes

QLD EcoBiz industry partnership program to help businesses achieve cost savings through improved environmental performance.

SA Government Sector Agreements: Section 16 of the Climate Change and Greenhouse Emissions Reduction Act 2007 provides for the Minister for Sustainability and Climate Change (currently the Premier) to enter into voluntary sector agreements (including a particular person, entity or business group). The agreements may relate to part or all of a business or entity's operations but also may be specific to an individual project or program. Therefore these agreements may assist in reducing the impact of industries processes on climate change.

The following agreements have been entered into by the South Australian Government:

- Wine Sector Agreement (signed);
- Local Government Association Agreement (signed); and
- Property Council Sector Agreement (announced).

TAS The government has already conducted a Carbon Footprint Pilot Program for businesses. The program provides assistance to companies to develop strategies that allow them to understand their carbon footprint and develop tools to reduce their emissions.

VIC The *Environmental and Resource Efficiency Plan* program requires all large Victorian commercial and industrial sites to produce plans as to how to reduce their energy and water consumption and waste production.

Victoria delivered Australia's first energy efficiency program for industry through the Victorian Environmental Protection Agency (EPA), which has seen greenhouse gas reductions of about 1.2 million tonnes each year and annual energy cost savings of \$38 million.

Oil

SA While there is a diversity of views as to how much oil and gas remains to be discovered and produced to sustain prosperity, it is sensible to continue to entice investment in petroleum exploration and development while simultaneously facilitating innovation to secure safe, competitive and environmentally sustainable substitutes for oil. In this regard, the South Australian Government is taking measured, practical steps to offset threats to transport fuel supplies, including:

- Legislated frameworks to attract environmentally sustainable petroleum exploration, production, refining and transport, as well as the application of environmentally sustainable new technologies such as the production of bio-fuels, Gas-to-Diesel, and Coal-to-Diesel technologies.
- Converting a proportion of government vehicles and public transport to use compressed natural gas.
- Public transport currently operates on 5% (B5) bio-diesel and has committed to increase use to 20% (B20) bio-diesel. As at February 2008, one Mile End bus depot uses B20.
- Allowing blending and sale of up to 10% ethanol with petrol in the state.
- Targeting a doubling of the use of public transport to 10% of weekday travel by 2018 (State Strategic Plan Target 3.9). Adding buses to the O-Bahn to meet increased commuter demand is a step towards meeting this target.

WA See Sectoral Emissions Reduction Strategy.

Construction

ACT Energy Efficiency Rating (EER) advertised at time of sale for all residential buildings.
Mandate greenhouse friendly options for new dwellings.

NSW The Building Sustainability Index (BASIX) establishes targets to reduce potable water use and greenhouse gas emissions for all new residential developments.

The National Australian Built Environment Rating System, managed by the New South Wales Government, enables homes and offices to benchmark their greenhouse gas emissions, with 2½ Stars being market average and 5 Stars exceptional performance.

QLD Mandatory 4 Star energy efficiency rating for all new commercial buildings by 2010.

Phase-out of residential electric storage hot water systems within gas reticulated areas from 2010.

SA The *Design Guidelines for Sustainable Housing and Liveable Neighbourhoods* were introduced in 2005 as a suite of guidelines for new housing. The guidelines address house design, amenity targets, land tilting and service infrastructure, site layouts, housing modifications and generic design guidelines for upgrades.

Recyclable Products in Construction: South Australian Government grant programs and activities offer financial incentives to develop and/or increase the capacity of companies that produce recyclable products for use in construction.

During 2005-06, Housing SA of the Department for Families and Communities introduced the Environmentally Sustainable Design Guide as part of the suite of guidelines under the Design Guidelines for Sustainable Housing and Liveable Neighbourhoods. This guide addresses issues such as energy efficiency, passive solar design, sun shading, water conservation, urban waste water management, and building construction. All Housing SA projects are required to consider this guide and incorporate its practices where appropriate.

Lochiel Park: The government is actively promoting Lochiel Park as an exemplar green residential village, which is currently under development by the Land Management Corporation.

Greening Supply Chain: The Land Management Corporation's recently Board-endorsed Sustainability and Innovations Strategy will provide direction to greening the supply chain, taking into account greenhouse emission and climate change impacts in the housing and industrial construction industry.

TAS As part of the Tasmanian Government's new framework for reducing its own emissions, the Tasmanian Government has committed to introducing minimum Green Star ratings for all new government buildings, including the New Royal Hobart Hospital Project.

VIC In 2005 Victoria introduced compulsory 5 Star energy efficiency ratings and water saving measures for new homes, and has expanded to include home renovations and extensions.

New energy efficiency measures for commercial and public buildings were introduced from 1 May 2006. These energy efficiency measures use performance-based provisions to ensure that commercial and public buildings achieve minimum levels of efficiency. The measures are designed to reduce the use of artificial heating and cooling, improve the energy performance of lighting, air conditioning and ventilation, and reduce energy loss through air leakage.

WA 5 Star Plus mandatory requirements for new homes: In May 2006, Western Australia introduced the 5 Star building standards to minimise energy use in the heating and cooling of homes. The provisions encouraged better design in new homes resulting in environmental benefits, such as reduced energy consumption and real savings in heating and cooling. Western Australia augmented the 5 Star building standards by introducing 5 Star Plus, which builds upon the energy efficiencies of 5 Star and adds the benefits of water reduction measures for homes right across the state. 5 Star Plus is based around two new codes — the Energy Use in Houses Code and the Water Use in Houses Code — and is mandatory for new homes approved after 1 September 2007.

Also see Sectoral Emissions Reduction Strategy.

Waste management

ACT Waste management contracts and services are designed to encourage maximum reuse and recovery of recyclable materials rather than disposal to landfill (including methane recovery from landfill sites).

No waste policy and strategy aiming to move towards sustainable waste management.

Waste pricing strategy aiming to charge full costs (financial, environmental and social) of disposing of waste to provide an incentive for waste generators to use cheaper recycling alternative.

Programs engaging all sectors of the community to encourage responsible resource usage, minimal waste generation, and use of available services.

Participation in national waste initiatives aiming to develop and implement national solutions for problematic wastes.

NSW *NSW Waste Avoidance and Resource Recovery Strategy* identifies programs and policies that will achieve a reduction in waste generation and turn waste into recoverable resources.

NSW Environmental Guidelines: Solid Waste Landfills incorporate best practice landfill gas measures.

New South Wales project and trial using recycled materials for cutting greenhouse gas emissions from small to medium landfills: Investigating the use of biofiltration and a range of recycled materials as a cost-effective approach for reducing the environmental impacts of landfill gas at sites where gas capture mechanisms are not commercially viable.

SA *South Australia's Waste Strategy 2005-2010* was released in 2004 as the first comprehensive waste strategy for the state, identifying the greenhouse gains associated with use of recycled materials and increasing the efficiency with which materials are used.

South Australia has had container deposit legislation since the mid 1970s, and over the last four years has steadily established a best practice kerbside collection system throughout metro and much of regional SA. It has helped achieve an overall recycling rate of 69%. By substituting secondary-use materials for virgin materials in 2005-06 (most recent available data), South Australia's recycling efforts prevented the equivalent of approximately 1.24 million tonnes of CO₂ entering the atmosphere, up from 1.16 million in 2004-05. This is equivalent to about 21% of the annual CO₂ emissions from the entire South Australian transport sector (2002 transport sector figures), and equates to taking 287,500 passenger cars off the road. (See www.zerowaste.sa.gov.au/pdf/reports/recycling_activity_2005-06.pdf)

TAS A Tasmanian Waste Management Strategy is currently being developed (2 rounds of stakeholder consultation have been conducted to date on draft strategy document). This strategy will develop a vision for the future of waste management in the state.

VIC Released in September 2005, the Towards Zero Waste Strategy is a call for thoughtful, innovative use of products and materials, focused on the ways we design, manufacture, consume and discard them. The strategy is focused on progressing Victoria towards becoming a low waste society by 2014, through generating less waste, increasing the amount of materials suitable for recycling and reprocessing, and reducing environmental damage caused by waste.

WA See Sectoral Emissions Reduction Strategy.

Land use and local government

ACT Integrated Land Use and Transport Planning.

NSW Support and assistance for rural landholders and catchment managers to incorporate greenhouse gas emission abatement measures into land use and land management decisions.

QLD Banning broadscale clearing of native vegetation: Introduced in 2006, this initiative is estimated to result in a reduction of 20 Mt of greenhouse gas emissions per annum in 2010.

SA The Planning Strategy for Greater Adelaide (PSGA) to be complete in 2009 will incorporate enhanced strategies for adaptation to climate change, including setting specific targets for reducing water and energy use and innovations to large scale development subdivisions.

The Water Sensitive Urban Design (WSUD) project is being undertaken to provide a package of initiatives, including technical documents, information sheets (for the Greater Adelaide area), and planning policies as part of the Better Development Plans Modules for councils to use when amending their development plans.

A package of climate change initiatives is under development to feed into the PSGA. The first project will involve developing specific guidance for strategic urban and regional policy makers to enable calculations of the Ecological Footprint and Greenhouse emissions when planning for new growth and urban infill areas and for reporting purposes.

Other projects undertaken by state government include measuring the footprint of the Lochiel Park development and South Australia as a whole (see Construction).

Planning SA is providing design and advice to government agencies to effectively incorporate green technology into new buildings and begin to develop 'green stepping stone corridors' in the city. The unique project, Busstops for Green Roofs and Walls, involves incorporating green roofs and living walls in government buildings and projects.

The Hocking Place public housing project demonstrates the technique and has already won an award. It is being used to promote the concept to state and local government authorities. Several projects are now in the design stage.

The city of Adelaide is promoting green roofs on residential buildings through its Rooftop Gardens fact sheet, explaining to residents the benefits of green roof architecture, including reducing air temperatures and improving air quality.

TAS The government recently announced that it will invest \$500,000 each year in a new Climate Change Community Grants Program to help communities throughout the state reduce their emissions and adapt to the local effects of climate change. This grants program will help those in our community best able to identify on-the-ground opportunities solutions to fund innovative approaches to climate change adaptation and greenhouse gas emissions reduction. In addition, the Tasmanian Climate Change Office will have a partnerships program that supports initiatives such as cooperative work with the Premier's Local Government Council to help councils adopt the government's framework for reducing greenhouse gas emissions.

VIC The Victorian Government has been developing market based mechanisms to encourage sustainable land stewardship on private land through its ecoMarkets program.

The 2008 Green Paper, *Land and Biodiversity at a Time of Climate Change*, aims to promote discussion as to how to ensure a sustainable environment. This will inform the development of the White Paper, to be released in 2009.

Victoria's Greenhouse Regional Partnership Program commenced in 2003. The regional partnerships provide a means for local organisations to work together on reducing greenhouse gas emissions while at the same time building stronger links with relevant local and state government programs. There are now 5 greenhouse alliances operating within the state representing most geographical regions.

The Victorian *Local Government Greenhouse and Climate Change Case Study Report* provides current figures on local government climate change activity, as well as 11 case studies demonstrating innovation and best practice mitigation, adaptation and awareness raising actions by Victoria's local governments. The case studies detail processes for effective project development and delivery and exploring associated issues such as drivers, resourcing, implementation, monitoring, and review and future directions.

WA Local Government Climate Change Capacity Building: The Western Australian Government, through the Office of Climate Change, is entering into a MoU with the Western Australia Local Government Association (WALGA), under which WALGA will receive financial support to develop resources to assist local governments to prepare to adapt to climate change.

ICLEI Water Campaign: A capacity-building program for local governments funded in WA by the Department of Water.

This performance-based milestone program provides a framework that motivates and empowers local government to work toward the sustainable management of our water resources. The water campaign is a voluntary international water management program delivered by ICLEI Local Governments for Sustainability Oceania.

Local Government Water Conservation Plans: Local government authorities in the Perth metropolitan area will complete water conservation plans by 1 July 2008. Country authorities have until 1 July 2009. The conservation plans will help local governments conserve groundwater and improve water use efficiency so that public open space can be managed under the drier and warmer conditions experienced with climate change.

Water

ACT Think Water Act Water Strategy.

NSW The Climate Change Fund includes \$100 million for a Recycling and Stormwater Harvesting Program to assist in implementing the Sydney Recycled Water Grid; this in addition to residential rebates for the installation of rainwater tanks and grants for public facilities and businesses to use water more efficiently.

QLD Regional water supply strategies consider climate change and propose responses to mitigate climate change through:

- drought management;
- plans for water supply schemes;
- re-assessing availability of new supply sources at 10-year intervals;
- assessing the potential for increased water trading;
- continued collection of meteorologic, hydraulic, and environmental data;
- optimising supply scheme management; and
- increased water infrastructure.

Home and Garden WaterWise Rebate Scheme provides rebates for the installation of water saving devices such as rainwater tanks, dual flush toilets, washing machines, showerheads, grey water systems, pool covers, and various garden products.

Rural Water Use Efficiency Initiative is a partnership between government and industry, where government supports industry to provide services to growers to improve water management practices and efficient use of water.

Creation of the South East Queensland Water Grid, which is a network of two-way pipes to deliver water from areas of surplus to areas of shortage. The grid includes 450 kilometres of pipeline, 2 major new dams, upgrades of existing dams, less climate dependent desalination plant, and three advanced wastewater treatment plants to provide recycled water for industry and purified recycled water for urban use.

SA The 2010-2100 Climate Change impact review of Mount Lofty Ranges water resource availability has been undertaken. The SA water utility is supporting the development of a water supply modelling tool that can incorporate various emission scenarios and regional impacts to project source water availability for Adelaide's Mt Lofty Ranges catchments.

Green School Grants: \$1 million is provided each year to support environmental improvements in schools and preschools. Over 400 schools have received grants over recent years. Current funding categories include energy and water auditing, irrigation upgrades, connection to Aquifer Storage and Recovery scheme, and minor electrical retrofits.

A revegetation program involving large scale biosequestration for multiple benefits including enhancement of biodiversity and protection of water quality in the SA Water Utility's reservoir reserves.

Collaboration with local government to increase the use of aquifer storage and recovery water and reclaimed effluent waste for irrigation of playing fields.

Land Management Corporation has mandated the use of recycled water throughout its land release programs where infrastructure is available, and is facilitating the development of infrastructure in some areas where it currently is not available.

Waterproofing Adelaide Strategy: Released in 2005, this strategy sets out a blueprint for the management, conservation and development of Adelaide's water resources to 2025.

TAS As part of the Derwent Estuary Program, the Tasmanian Government has released an Issues and Options Paper on climate change impacts and response options for the Derwent Estuary.

In terms of agriculture and drought response, the Tasmanian Government runs the SMART Farming Initiative, which assists the agricultural sector to move to more environmentally sustainable practices including more efficient water use.

VIC The Our Water Our Future strategy sets out over 110 initiatives for water conservation aimed at every sector of the community. In 2007, the second phase of the strategy announced \$4.9 billion of major upgrades to the state's water system, including Australia's largest desalination plant, improved irrigation systems, and an expansion of the Victorian Water Grid.

WA State Water Strategy: Released in 2003, the State Water Strategy identifies five key focus areas to ensure a sustainable water future for Western Australia. These are:

- improving water use efficiency in all sectors;
- achieving significant advances in water reuse;
- fostering innovation and research;
- planning and developing new sources of water in a timely manner; and
- protecting the value of our water resources.

As a part of the Strategy, WA aims to recycle 20% of treated wastewater by 2012. The strategy also highlights the potential for recycling to provide water 'fit for purpose' for irrigated horticulture, green space irrigation and industry, as well as the potential for managed aquifer recharge to increase water availability in groundwater systems and maintain environmental values.

State Water Plan: Released in 2007, the State Water Plan provides a framework for the community, water users and other stakeholders to understand, engage and assess progress towards the strategic management of water in WA. The planning horizon is to 2030, integrating with land and source development timetables where possible.

Regional Water Plans: These non-statutory plans will complement the State Water Plan by consolidating available water information and current activities in a local context. They will identify activities that need to be undertaken to meet the objectives and outcomes in the Water Policy Framework established in the State Water Plan. The preparation of regional water plans will be prioritised on the basis of current water usage, resource development pressure, and knowledge of water resources in respective regions. The first Regional Water Plan is being developed for the South West.

State Groundwater Investigation Program: The Department of Water is currently investigating Western Australia's groundwater resources, with actions planned through to 2020. A sound knowledge of groundwater resources and monitoring of changes are essential for effective planning to ensure sustainable management of the state's water resources. The investigation program will bring social, economic, and environmental benefits for WA. The program is already providing:

- a better understanding of the distribution and quality of groundwater resources;
- information to better support, encourage and enhance mining, industrial, agricultural and regional development; and
- new data to improve water resource management under changing climate conditions.

The program will focus on metropolitan groundwater resources for the first three years and switch to a regional focus in the fourth year onwards to provide a balanced state-wide assessment.

Rural Water Planning Program: This program implements the rural initiatives contained in the State Water Plan. The program will:

- encourage self-sufficiency in water supply;
- improve the reliability, continuity and quality of on-property water supply; and
- provide rural communities with reliable emergency water supply arrangements.

The plan also delivers farm water planning and technical support, water deficiency arrangements, strategic public water supplies in dryland agricultural areas, and assistance schemes.

Treated Wastewater Recycling Target: The WA Government aims to recycle 20% of treated wastewater by 2012.

Waterwise Rebates Program: A broad array of rebates for purchases of domestic water saving devices. Rebates are available for products including, but not limited to, swimming pool covers, greywater re-use systems, rain sensors, subsurface irrigation systems, washing machines rated 4½ Stars or better, waterwise garden assessments, and domestic rainwater tanks with a capacity of 600 litres or more.

Electricity

TAS The Tasmanian Government has announced a substantial equity injection into Hydro Tasmania to protect and enhance Tasmania's ability to harness its abundant renewable energy and water development resources. With this new funding Hydro Tasmania will investigate the development of an additional 1000 gigawatt hours of output.

WA See Sectoral Emissions Reduction Strategy.

Non-energy industry

TAS The government has already commenced a Carbon Footprint Pilot Program. The program is providing assistance to companies to develop strategies that will allow them to understand their carbon footprint and develop tools to reduce their emissions.

WA Leading development of national climate change action plans for biodiversity and fisheries.

Tourism

QLD Climate change adaptation workshops for tourism operators and accommodation providers in both urban and regional centres.

SA Through the Tourism Roundtable partnership with the tourism industry, the South Australian Government has been exploring ways to strengthen a credible sustainability message to tourists. A study is underway into the economic impacts of climate change on five of Australia's leading tourism destinations, including South Australia's Barossa Valley.

TAS The Tasmanian Government is currently developing a program specifically for the tourism sector, similar to the Carbon Footprint Pilot Program, to provide assistance to operators to develop strategies to measure their emissions and develop tools to reduce those emissions.

WA See Sectoral Emissions Reduction Strategy.

Adaptation

Adaptation agency

ACT	Department of Territory and Municipal Services. Chief Minister's Department. ACT Planning Land Authority.
NSW	Department of Environment and Climate Change NSW.
NT	Department of Natural Resources, Environment and the Arts.
QLD	Office of Climate Change.
SA	Adaptation initiatives involve a large number of agencies across the South Australian Government, including: <ul style="list-style-type: none"> • Sustainability and Climate Change Division (within the Department of the Premier and Cabinet) • Department for Environment and Heritage • Department of Treasury and Finance • Department of Justice • Department of Water, Land and Biodiversity Conservation • Department of Primary Industries and Resources SA • SA Water • Department of Health • Department for Families and Communities.
TAS	Department of Primary Industries & Water (DPIW).
VIC	The Victorian Department of Sustainability and Environment runs the Victorian Climate Change Adaptation Program (VCCAP), which has been initiated to coordinate the adaptation work of different government departments.
WA	Office of Climate Change, Department of Environment and Conservation, coordinates whole of government activity on climate change adaptation.

Adaptation planning

ACT	Partner with New South Wales to produce an ACT Regional Vulnerability Assessment.
NSW	The <i>Climate Change Action Plan</i> will set the government's direction for reducing emissions and adapting to climate change (currently under development). Flood risk management guidelines, entitled <i>Practical Consideration of Climate Change</i> , have been produced and provided to the Floodplain Management Authorities (local councils with flood issues).
NT	EnvironmentT Grants Program: Grant program worth \$560,000 in 2008-09. Grants are available annually to individuals, community groups, local government and industry associations for environmental projects and educational activities in the Northern Territory. Six categories are available, many of which have climate change opportunities or implications: Energy Efficiency, Re-thinking Waste, Water Conservation, Environmental Management/Stewardship, Environmental Education/Capacity Building and Wildlife. For example, Lajamanu Community Education Centre was granted \$5,000 under this program in 2006-07 to assist with installing solar panels and associated equipment at the school to demonstrate to the students and community the concept and advantages of renewable energy.
QLD	<i>ClimateSmart Adaptation Plan</i> : Outlines 62 actions to progress Queensland's climate adaptation response in the areas of water planning and services, human settlements, natural environment and landscape, emergency services and human health, tourism, business and agriculture. Climate change issues to be considered in the next review of regional natural resource management plans and investment strategies. Adaptation planning projects on land, vegetation, and water management and linking with local governments and regional natural resource management (NRM) bodies in the implementation. This includes preliminary work on using the AussieGrass model for land and vegetation management, and climate risk assessment tools.
SA	As a pilot project, the South Australian Government is currently progressing an initial integrated assessment of projected climate change impacts and adaptation options for natural resource management in the Adelaide and Mt Lofty Ranges region. A case study mapping landscape values and perceived climate change impacts for NRM is being undertaken in the Southern Fleurieu Peninsula region. A case study modelling native and exotic flora distributions under climate change is being undertaken in the Adelaide and Mount Lofty Ranges Natural Resource Management region. A case study for the McLaren Vale viticulture and Fleurieu Peninsula oliveculture industries was completed in June 2008. Development of a strategy to assist the Adelaide Hills apple industry to adapt to climate change in a contested peri-urban environment.

TAS Tasmania has established the Climate Futures for Tasmania Project (2008-2010) providing locally relevant projections (to 2100), including extreme events, impact analysis for key sectors, and the development of communications with stakeholders to assist in decision making.

The Local Government Association of Tasmania has produced a summary report (October 2007) on current and future needs of Tasmanian Councils in respect to climate change, which is being worked into an action plan to guide the Local Government Climate Change Reference Group.

Drought proofing: As part of the Climate Futures for Tasmania project the state government is preparing a plan to drought proof Tasmania. This includes a strategic plan to investigate, develop, and implement major water development projects to provide sustainable water supplies to the Tasmanian community, industry, and primary industries.

Tasmania is conducting the Climate Change Coastal Risk Management Project to develop template risk management plans for key asset types.

The Tasmanian State Government has entered into a partnership agreement with the University of Tasmania to provide collaboration on climate change mitigation and adaptation research.

VIC The Victorian Government supports the work of the Commonwealth Scientific and Industrial Research Organisation's temperature and rainfall predictions. These regionally specific predictions assist in the government's planning for assisting Victoria's regions in preparing for future changes to climate.

The Victorian Government has released a new study on the potential impacts of climate change on the state's infrastructure. *Climate Change and Infrastructure – Planning Ahead*, the first study of its kind in Australia, examines the potential risks to key infrastructure areas such as water, power, telecommunications, transport, and buildings.

WA Adaptation Impact Assistance: As a part of the Act Now for the Future Strategy, Western Australia will invest \$4.625 million in identifying regions and sectors in Western Australia most vulnerable to climate change impacts and to develop adaptation programs.

Adaptation Blueprint: The Western Australian Government is developing a blueprint for agriculture and forestry adaptation to climate change. This will increase the resilience of agricultural crops and systems to cope with long term climate change and seasonal variability and identify the necessary responses to climate change in Western Australia's native forest and plantation strategies.

Adaptation risk assessment and/or project implementation

ACT Climate Change Social Impact Analysis.
Assess climate change impacts on urban areas.

NSW The government is working with Australia's leading climate scientists to develop the best available information on the impacts of climate change for New South Wales.

The government is undertaking a collaborative education project to increase New South Wales farmers' and rural communities' preparedness for climate change.

Under the New South Wales Metropolitan Water Plan, a collaborative study is being undertaken on the impacts of climate change on water supply and demand in Sydney.

The government is funding a research project entitled Effects of Climate Change on Risks by Bushfires. The project aims to quantify potential changes in fire regimes and associated risks to biodiversity, ecosystem functions, people and their property.

QLD Queensland Climate Change Centre of Excellence established to research climate variability and impacts on key sectors.

Queensland Government partnership with the CSIRO, the University of Queensland and Griffith University to form the Urban Water Security Research Alliance. This \$50 million program over five years commenced in 2007. One of the projects is investigating the impacts of climate change on inflows to water storages in South East Queensland.

SA The South Australian Government is working with Adelaide & Mount Lofty Ranges NRM region to undertake an assessment of key areas of NRM that are vulnerable to climate change, and develop and demonstrate methodologies for creating a regional framework for wider application in managing climate change risk and developing adaptation responses.

Case studies developed in specific NRM sectors as part of this project are: biodiversity and invasive species, water, industry response strategies, coastal, landuse planning and land capability.

A coastal vulnerability assessment of low lying coastal areas on the Yorke Peninsula is being undertaken as part of the Natural Disaster Mitigation Program. All coastal land that is less than 5m in elevation has been mapped. The Port Adelaide Seawater and Stormwater Flood Risk Study, which factored potential sea level rise, identified critical infrastructure vulnerability. This has resulted in funding an early flood warning system under the Natural Disaster Mitigation Program 2007/08.

The Department of Public Health and the Research Institute for Climate Change and Sustainability at the University of Adelaide in collaboration with the South Australian Department of Health are currently assessing the impact of climate change on vector-borne and food-borne diseases, direct health effects from heatwaves (mental health, cardiovascular diseases, etc) and identifying vulnerable groups, regions and sectors. It is also exploring emergency response mechanisms.

Hazard leaders established under the State Emergency Management Plan are required to consider climate change impacts and adaptation/mitigation actions. As an example, heatwave is being considered as a sub-plan of the Extreme Weather Hazard Plan.

TAS The Climate Futures for Tasmania project will include extreme events, impact analysis for key stakeholders and communication with stakeholders.

Tasmania is undertaking projects at state and local government levels to deliver improved:

- regional and municipal planning schemes and standards, specifically with respect to coastal hazards and bushfire planning controls;
- internal decision-making frameworks for considering climate change issues; and
- asset-specific risk management plans.

VIC The Future Coasts project has been developed to assist the Victorian Government obtain an accurate understanding of the risks climate change presents to Victoria's coastline and develop strategies to help communities and industry respond and adapt.

WA Indian Ocean Climate Initiative (IOCI): A successful and enduring partnership between Western Australian government agencies, the CSIRO, the Bureau of Meteorology Research Centre (BMRC) and the Western Australia Region of the Bureau of Meteorology to support informed decision-making on climate variability and change in Western Australia. In particular, IOCI is geared to translating national and international climate science and overlaying this with specific research and interpretation programs of its own. IOCI formally began its Stage 1 programs in January 1998, with Stage 2 programs commencing in July 2003. This project provides enhanced projections of regional weather into the future to allow people and businesses, as well as government agencies, to plan and adapt to a changing climate. An extra \$4 million in funding was injected into the project in 2007.

Adaptation support tools

ACT Government agency vulnerability assessments.

NSW The second New South Wales Adaptation Conference is scheduled for June 2009. The conference aims to inform stakeholders and the community of the government's approach to addressing climate change impacts and adaptation, highlight existing programs, partnerships and projects, and identify priority areas for future work.

The government is undertaking a Regional Health Adaptive Management pilot project for the Hunter/New England area to establish integrated health strategies for addressing impacts of climate change on the Public Health System.

The government has completed high resolution terrain mapping of the New South Wales Central and Hunter Coasts using LiDAR technology. The new high resolution terrain dataset enables decision-makers to make informed decisions about risk assessment and management in low lying areas of Hunter and Central Coasts for any sea level rise scenario.

The government is undertaking a project entitled Development of a Climate Change Adaptation Risk Assessment Tool in a Graphical Information Systems (GIS) Framework. The project aims to develop a GIS-based risk assessment tool to assess specific adaptation responses required by each of the major agriculture sectors in New South Wales.

SA Wind erosion and water erosion maps based on climate change projections, for all agricultural NRM regions were completed in June 2008. Work is now underway to extend this mapping to the rest of the state.

Monitoring and reporting of climate change impacts

ACT Quarterly reporting on Climate Change Action Plan.
Annual State of the Environment Report.

NSW The Biodiversity Impacts Study (funded under the Climate Change Impacts and Adaptation Research Program) focuses on those ecological processes that have been identified as critical to species' persistence in the landscape and their ability to move to new habitats, such as dispersal or recruitment. The project is designed to establish monitoring programs to examine the impacts of climate change in alpine, rainforest, and island environments.

SA Environmental Externalities Project, which involves taking 'big picture' models and condensing it for individual rainfall stations to predict long-term climate change. This data will allow government, industry and Natural Resource Management Boards (NRMB) to plan for, adapt to and prepare mitigation policies related to climate change. Mount Lofty Ranges and South East is complete; Northern and Yorke, Kangaroo Island, Mid North, and Eyre Peninsula will commence mid 2008.

- TAS** A monitoring and reporting process will be established under the Climate Legislation to be tabled mid-2008.
- VIC** The Victorian Government is working with CSIRO and the Bureau of Meteorology to update the 2004 regional climate change projections and is expected to be completed in mid 2008. The work provides the latest information on observed climate change over Victoria and its likely causes, as well as updated projections of changes in temperature, rainfall, and other aspects of climate that can be expected over the coming decades as a result of continued global emissions of greenhouse gases.
- WA** Climate Risks and Opportunities Project: The Department of Agriculture and Food conducts research and development in key areas of climate variability, climate change, crop yield forecasting, climate forecasting, weather monitoring, and decision support systems to improve the adoption of profitable and sustainable farming systems to manage climate risks.

Innovation and economic opportunities

Research and innovation

- ACT** Developing a business and academic taskforce to network business with climate change scientists.
Partner with key research institutions to encourage research into climate change predictions, impacts, and solutions.
- NSW** A \$40 million Renewable Energy Development Fund for the demonstration of renewable energy technologies and support for the early commercialisation of renewable energy technologies. Support for two clean coal pilot projects including \$20 million for a geosequestration project initially involving the identification of possible potential carbon storage sites in NSW and \$1.9 million to support an 'ultra clean coal' demonstration plant at Cessnock.
Innovation Pathways research project to identify policy and technological pathways to achieve state greenhouse gas reduction targets at least cost and assess risks and opportunities in the transition to a low-carbon economy.
- NT** Research: A range of research projects in the Northern Territory aimed at refining the methodology for estimating emissions from savanna fires and improving understanding of greenhouse gas emissions from tropical savannas – carbon, methane, and nitrous oxide fluxes under different land management conditions.
- QLD** Clean Coal Fund to support research and demonstration of carbon capture and storage technologies.
Queensland Sustainable Energy Innovation Fund to encourage development of innovative technologies.
Queensland Government supports research into hydrogen fuel cell technologies for general use and sponsored the World Hydrogen Conference in Brisbane in June 2008.
Investment in research and development to assess the impacts of climate change on the Great Barrier Reef, including \$387,000 to support PhD research.
Investment of \$166,000 in research to produce biodiesel from algae, as an alternative fuel source.
- SA** Natural Resource Management (NRM) Research Alliance: This is a research and knowledge alliance between government agencies and the universities to deliver on natural resource management initiatives, including climate change adaptation.
The South Australian Research and Development Institute is currently investigating the adaptive responses in dryland cropping systems to increase robustness to climate change.
Chair of Climate Change and Research Institute for Climate Change and Sustainability: The South Australian Government established the Sir Hubert Wilkins Chair of Climate Change at the University of Adelaide with funding for four years (beginning in 2006/07). The Chair of Climate Change is to advise government, industry, and the community on how to tackle climate change. The Chair also draws together expertise in climate change from across the university.
- TAS** Tasmania is participating in the international Millennium Seed Bank Project with the Royal Botanical Gardens, Kew, UK, to preserve significant species of plants from around the world.
The state government is participating in the East Coast Fisheries Case Study, a national case study on the impact of climate change on Tasmania's east coast fisheries and impacts on the communities based on the fishing industry.
Carbon Footprint Pilot Program: First grant of \$50,000 provided to Australian Paper. This grant will contribute towards the cost of a full life cycle assessment of greenhouse gas emissions at individual product level – DEDT.
The Food Industry Council of Tasmania has engaged company Pitt & Sherry to conduct a study into the likely effects of climate change on the food industry in the state.
- VIC** Through the Energy Technology Innovation Strategy the Victorian Government is investing in clean energy generation for the future. New funding of \$127.4 million announced in 2008 for clean coal technologies takes Victoria's investment in clean coal to \$244 million since 2002. An additional \$72 million has also been committed to ETIS for proposals for large-scale, pre-commercial demonstrations of sustainable energy technologies such as solar, energy storage, biofuels, biomass conversion, geothermal energy efficiency, and clean distributed energy.
A Memorandum of Understanding (MoU) between Victoria and the William J. Clinton Foundation was signed in 2008 to create opportunities to reduce greenhouse gas emissions and improve energy efficiency across the state. The opportunities have been created for large-scale clean energy projects, new vehicle technologies including hybrid buses and energy efficient street lighting.
- WA** Low Emission Energy Development Fund: Western Australia has created a \$36.5 million fund to promote emission reduction and support technological advances that cut greenhouse gas emissions. Investment will be directed towards technologies in which WA has clear and natural advantages, such as geothermal, bioenergy, and clean coal technologies; and renewable energy technologies such as wind, wave, tidal, and solar. This fund creates opportunities for new technical and manufacturing jobs and for WA to lead the way in low emissions technologies.

Narrogin Bioenergy Demonstration Plant: In a world first, Narrogin's Integrated Wood Processing demonstration plant successfully proved that renewable electricity could be generated using locally grown Mallee trees. Besides the production of renewable energy, the plant could concurrently produce eucalyptus oil and activated carbon for water filters and industrial processes. Mallee trees were selected because they actively combat salinity and the branches can be harvested every second year indefinitely without replanting, making them an ideal renewable energy source. The project is complete and the demonstration plant is no longer operating, but Verve Energy is now undertaking a study to incorporate lessons from the demonstration plant and assess options for establishing a commercial-scale plant.

Sustainable Energy Development Office Grants Program: This program provides funding for innovative sustainable energy projects in WA. The program is part of the state government's commitment to increasing the uptake of renewable energy and energy efficient products and practices. The program provides grants of up to \$50,000 for community-based sustainable energy projects and sustainable energy research and development projects.

Energy efficiency and conservation

ACT Home Energy Advisory Team (HEAT) and ACTEnergyWise programs to assist households to improve the energy efficiency of their dwelling and change behaviour.

Program to improve energy efficiency of public housing.

NSW The NSW Energy Efficiency Strategy is being developed, which will include:

- an energy efficiency audit program for low income households and small and medium-sized businesses;
- mandatory implementation of energy savings action plans by the state's highest energy users;
- cost-effective options for phasing out inefficient electric hot water heaters; and
- improvements to the government's energy efficiency performance.

Require large business, state government, and local government energy users to prepare Energy Savings Action Plans.

The Climate Change Fund provides rebates for residential installations of low-emission hot water systems and insulation, as well as grants to improve the energy efficiency of businesses, schools, and other public facilities.

NT Schools Blitz Program: Six Darwin/Palmerston schools have been involved with the schools energy blitz project, a collaborative project involving Northern Territory Government Departments of Planning and Infrastructure and Employment Education and Training, and COOLmob. Funding is also provided by the Australian Government. Schools working with the COOLmob Energy Auditor have identified projects that will make energy savings and reduce greenhouse gas emissions by between 2-5%. The impact of these strategies, such as SkyCool roof painting and retrofitting lighting reflectors, will be monitored in 2008.

COOLmob Program: The Northern Territory Government provides funding for two community-based COOLmob programs (in the Top End and Central Australia). These programs educate and empower individuals and households about how they can reduce their greenhouse gas emissions, improve their energy and water efficiency and adopt other elements of sustainable living. The program involves household energy and water audits as well as awareness raising activities.

Solar Cities: Solar Cities is designed to demonstrate how solar power, smart meters, energy efficiency, and new approaches to electricity pricing can combine to provide a sustainable energy future in urban locations throughout Australia. The iconic town of Alice Springs is part of the Solar Cities program.

Renewable Energy Rebate Program: This is the Northern Territory's administration of the Commonwealth Renewable Remote Power Generation Program. It provides financial support to increase the use of renewable generation in remote parts of Australia which presently rely on fossil fuel for electricity supply. The program is administered in the NT by the Department of Primary Industry, Fisheries and Mines.

Tourism NT – Tourism Electricity Support Program (TESP): TESP aims to assist in the attraction of new, destination-appropriate major tourism infrastructure outside the Northern Territory's main regional centres. TESP provides grants to qualifying applicants to fund electricity generation and priority is placed on applications which incorporate renewable energy generation systems or other energy efficiency initiatives. Its target is new developments.

Tourism NT – Make the Switch Program: This is a new program which encourages the Northern Territory tourism industry to minimise its environmental impact. The program provides additional assistance for the tourism industry in accessing the Renewable Energy Rebate Program to convert to renewable technologies. Its target is existing facilities.

NT Re-thinking Waste Disposal Behaviour and Resource Efficiency Interim Action Plan 2007: This plan is a collaboration between the Northern Territory Department of Natural Resources, Environment and the Arts, and the Packaging Stewardship Forum (PSF). The interim action plan involves finding opportunities to integrate resource recovery and litter management with regional development and capacity building and represents an initial step in developing a longer-term waste management framework for the NT.

NT Business Energy Efficiency Program: The program provides energy efficiency information, subsidised energy efficiency assessments, technical assistance, and government financial support to implement energy efficiency improvements, information support, capacity building, and training for tradespeople and energy assessors. This will assist small to medium Northern Territory businesses to achieve improved energy efficiencies, and thereby reduce energy-related costs to business, reduce business contribution to greenhouse gas emissions, and increase business capacity to adapt to changing national climate change policy.

QLD Smart Energy Savings Fund to support small to medium businesses adopt energy efficiency.

Smart Energy Savings Program requiring medium to large businesses to undertake energy efficiency audits and prepare an energy savings plan.

SA Residential Energy Efficiency Scheme: This scheme will commence on 1 January 2009 and requires South Australian gas and electricity retailers to, as a condition of their licence, offer financial or other incentives to households to adopt energy saving measures such as ceiling insulation, draught proofing, and more efficient appliances.

Greenhouse Performance Standard for Water Heaters: New greenhouse gas and flow-rate performance standards for residential water-heater installations took effect from 1 July 2008. The standard applies to new and renovated houses. The new standards are aimed at increasing the uptake of high-efficiency gas, solar, and heat pump water heaters.

5 Star Energy Efficiency for New Homes: The increased energy efficiency requirements for all new dwellings built in South Australia came into effect from 1 May 2006. Requirement also applies to alterations or additions to existing homes. Land Management Corporation is actively encouraging increase in energy efficiency of houses above the 5 Star requirement for land release programs and recently mandated a requirement for 25% of houses to be built at a 6 Star energy efficiency in a recent land release.

Solar Schools: 112 schools funded to fit photovoltaic panels, with a goal of 250 solar-powered schools by 2014. Through the \$1 million Green Schools grants program, schools are supported to improve their environmental sustainability. This includes setting targets for energy and water use.

Schools Energy Targets: Per site electricity consumption data and targets have been published on the Strategic Asset Management Information System (SAMIS). The targets are based on a 25% reduction on 2000/01 usage. Funding for electricity costs has been linked to these targets as part of this project.

Since 2006, \$2.5 million in Green School grants has been provided to over 300 schools to undertake energy auditing, management planning and retrofits.

TAS Policy on feed-in tariffs to be developed by mid 2008.

VIC The Victorian Energy Efficiency Target Scheme incentivises energy retailers to assist households in becoming more energy efficient.

In July 2006, the Victorian Government released the Energy Efficiency for Victoria Action Plan. The plan provides a framework to progress the state's action on energy efficiency. It encourages households, businesses, and the public sector to use energy more efficiently in order to cut costs and reduce greenhouse gas emissions. In addition, the action plan details how the state will monitor and report on progress with energy efficiency.

WA Cleaner Energy Target: WA has set an aspirational 50% Cleaner Energy Target for the South West Interconnected System by 2010, with the proportion to increase to 60% by 2020. Cleaner energy technologies such as combined cycle gas, cogeneration, and renewables will be used to achieve these targets.

Renewable Energy Target: WA has committed to establish a Renewable Energy Target for 15% by 2020, and 20% by 2025 for the South West Interconnected System.

Remote Area Power Supply Program (RAPS): This program provides rebates for the installation of renewable energy power systems used instead of fossil fuel generation in off-grid areas of WA. The Remote Area Power Supply Program has been developed and is administered by the WA Sustainable Energy Development Office. In many remote areas of WA, the availability, reliability, and cost of electricity supplies are major issues. Hybrid remote area power supply systems incorporating diesel generators, inverters, batteries, and solar or wind generating components are often cost-effective compared to running diesel generators only. Hybrid systems can also deliver other benefits such as continuous availability of power, improved power quality, and reduced diesel generator noise.

Solar Water Heater Subsidy: A program offering rebates to householders who install environmentally friendly, gas-boosted solar water heaters. Gas-boosted solar water heaters have the lowest greenhouse gas emissions and running costs of all common, residential hot water systems. Rebates for \$500 are available when natural gas-boosted solar water heaters are purchased, and rebates of \$700 for bottled LP gas-boosted solar water heaters are available when used in areas without reticulated gas.

Solar Schools Program: This program will see that over 350 of the state's schools will use some renewable energy by 2010. Students learn first-hand how photovoltaic panels installed on participating schools' rooftops turn solar energy into electricity and gain important knowledge about energy efficiency and reducing greenhouse gas emissions. WA has more than tripled its investment to \$5.1 million in this successful program.

