2 Climate change and its impacts are minimised to protect the environment, the economy and community wellbeing

Photo: D. Smith.

DECC is introducing strategies to minimise the impacts of climate change, reduce greenhouse gas emissions and ensure the people of NSW prosper in a low-carbon economy.

Context

Climate change is an environmental and economic issue, which has become an increasingly important priority for the NSW community. The probable effects of climate change include higher temperatures and more extreme weather patterns. These effects are likely to affect agricultural practices, water availability, built environments and infrastructure, natural resources, biodiversity and human health. DECC is developing strategic partnerships with all levels of government, business and industry, individuals, families and communities to help reduce emissions and deal with unavoidable impacts.

As climate data and modelling improve, continued research helps DECC and others in the community to understand the ways in which NSW may be affected by future climate change and determine appropriate responses. To ensure access to the best available science, DECC has established the Climate Change Science Research Network to provide independent technical advice on climate change and to help shape NSW's climate change science agenda.

DECC has been conducting regular social research on the NSW community's attitudes to the environment since 1993. For the first time since the first survey, climate change has appeared as a priority issue for State Government attention in 2008–09. Seven percent of respondents mentioned climate change as one of the two most important issues for the State Government at present. In addition, 39% of people surveyed mentioned 'climate change', 'water' or 'environment' in their two most important overall issues for State Government attention.

NSW was the first Australian state or territory to introduce long-term emissions reduction targets – a return to year 2000 amounts of greenhouse gases by 2025, and a cut of 60% in emissions by 2050. This target is included in the *State Plan – A New Direction for NSW*. The NSW Climate Change Fund and NSW Energy Efficiency Strategy, introduced in 2007–08, are two important recent initiatives to help households, business and government save energy and water and reduce greenhouse gas emissions. A separate annual report is published for the Climate Change Fund.

DECC coordinates and drives the implementation of whole-of-government policies for NSW on climate change. DECC is presently leading development of the NSW Climate Change Action Plan to replace the NSW Greenhouse Plan.

As a consequence of the Australian Government's commitment to establish a national emissions trading scheme, the NSW Government reviewed its own climate change mitigation measures to ensure that they will complement and not duplicate the planned Carbon Pollution Reduction Scheme.

Outcomes

DECC aims to minimise the impacts of climate change by:

- contributing to a reduction in greenhouse gas emissions
- preparing for unavoidable climate change
- helping businesses and others to access the economic opportunities of green technologies and other technologies
- supporting individuals, families and communities in living more sustainably.

Key drivers

DECC's work in the area of climate change is informed by the:

- *State Plan – A New Direction for NSW* (www.nsw.gov.au/stateplan/)
- NSW Energy Efficiency Strategy (www.environment.nsw.gov.au/households/energy.htm)
- *NSW Biodiversity and Climate Change Adaptation Framework* (www.environment.nsw.gov.au/threatenedspecies/climatechange.htm)
- NSW Climate Change Fund (www.environment.nsw.gov.au/grants/ccfund.htm)
- NSW Independent Pricing and Regulatory Tribunal's Report on the Review of NSW's Climate Change Mitigation Measures (www.ipart.nsw.gov.au).

Performance indicators

DECC measures performance in the area of climate change programs through the following performance indicators:

- Residential rebates paid under the NSW Climate Change Fund
- Approved energy savings action plans and water savings action plans
- Approved coastal and estuary management plans
- Approved floodplain risk management plans
- Businesses participating with DECC to improve resource recovery and sustainability
- National Australian Built Environment Rating System – commercial market penetration.

Photo: You Shoot.

Reduce greenhouse gas emissions

National initiatives

The proposed national Carbon Pollution Reduction Scheme (CPRS), which is supported by the NSW Government, will be the principal measure in Australia for reducing greenhouse gas emissions. In May 2009, the Australian Government announced changes to the proposed CPRS, including a one-year delay in the start date, to 2011, to respond to the impacts of the global recession.

Through the Council of Australian Governments, all states and territories agreed to review their existing climate change mitigation measures with the objective of ensuring that policies and programs will not duplicate the CPRS and are consistent with its aims. DECC played a major role in providing input to the NSW review, which was completed by the Independent Pricing and Regulatory Tribunal during 2008–09, and helping to shape the NSW Government's response to the review.

DECC also contributed to the development of other national climate change policies and programs, including the National Strategy on Energy Efficiency and the expanded Renewable Energy Target. To ensure that NSW can capitalise on this investment, DECC worked with other state government agencies during 2008–09 to develop a new three-point plan which will make it easier to establish clean, renewable energy projects in NSW. This plan, which includes the creation of wind farms, is a major step in attracting green investment and green jobs in NSW.

NSW Energy Efficiency Strategy

The NSW Government announced the $150-million NSW Energy Efficiency Strategy in December 2007, which is being overseen by DECC. The purpose of the strategy is to reduce greenhouse gas emissions, lower energy consumption and save money by avoiding the need to construct more infrastructure.

The strategy includes a number of measures:

- a new legislatively-based Energy Savings Scheme from 1 July 2009, which requires electricity retailers to save energy in households and businesses and is administered by the Independent Pricing and Regulatory Tribunal.
- the Low-income Household Refit Program – this $63 million program will audit the amount of energy used in the homes of 220,000 low-income families and provide free energy savings kits. Householders will have energy-efficient light bulbs, water-saving showerheads and low-flow tap aerators installed in their homes and be advised on other ways to save energy. It is estimated these measures will help cut the average annual power bill by up to 10% or $95.
- the Small Business Energy Efficiency Program – this $15 million program will advise 6,000 small and medium businesses on-site, offering rebates for measures such as lighting upgrades and improvements to air conditioning and refrigeration systems. As a result, the average small business is expected to save $7,850 on power bills over 10 years.
- expansion of the Sustainability Advantage Program – an extra $20 million will allow DECC to work with an additional 800 medium to large businesses on leading-edge waste reduction and energy and water saving measures. This will cut energy use in these businesses by at least 10%.
- public sector energy savings – NSW Government agencies are now required to reduce energy consumption. The NSW Government Sustainability Policy includes a target to reduce emissions from energy use in government-owned or tenanted buildings to 2000 levels by 2019–20. The NSW Government is also committed to being carbon-neutral by 2020.

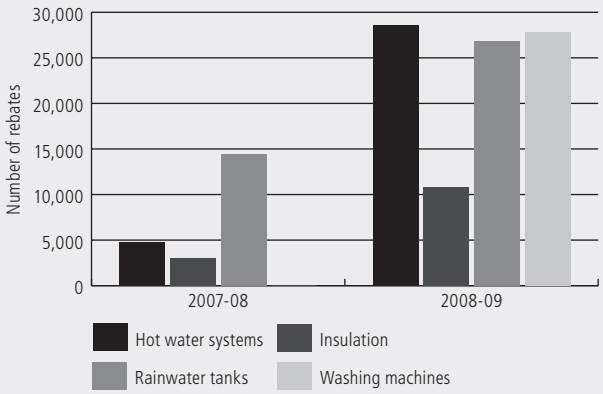
PERFORMANCE INDICATOR

Residential rebates paid under the NSW Climate Change Fund

Definition: The $100 million Residential Rebate Program, which was introduced on 1 July 2007, targets the highest water and energy uses in NSW homes. This indicator reports the cumulative number of rebates since the program began. The program helps NSW residents afford measures to make their homes more water and energy efficient. Rebates are provided for rainwater tanks, energy-saving hot water systems, ceiling insulation, and efficient washing machines. Rebates for rainwater tanks and washing machines in the Sydney Water area of operations are administered by Sydney Water Corporation. DECC administers all other rebates across the state.

A detailed breakdown of rebate uptake by local government area is available at www.environment.nsw.gov.au/rebates.

Residential rebates paid under the Climate Change Fund



Interpretation: The strong uptake of rebates in 2007–08 has continued in 2008–09. Rebates for the purchase of 4.5 star washing machines were included in the program in 2008–09, saving an additional 666 ML of potable water across the state. Funded rainwater tanks have provided more than 1,200 megalitres of potable water savings since July 2007. More than 76,000 tonnes of greenhouse gas savings have been made through funding hot water systems and ceiling insulation in NSW homes since October 2007.

Many of the above programs focus on business, industry and government. These initiatives are therefore detailed further in the section 'Support business, industry and government in operating sustainably'.

Energy Efficiency Community Education and Awareness Program

Another component of the NSW Energy Efficiency Strategy, a three-year $15-million community education and awareness program, commenced in 2009. The program, which provides practical advice on how to save energy at home and work, includes:

- an advertising campaign entitled 'Save power. What can you do in your world?' and a website (www.savepower.nsw.gov.au).
- training to build education networks and assist ongoing and future energy efficiency activities.
- links to, and information about, government energy efficiency initiatives, such as rebates, to help make homes more water and energy efficient.

NSW Climate Change Fund

The NSW Climate Change Fund provides a range of programs to help households, businesses, communities, schools and the government save energy and water and reduce greenhouse gas emissions. DECC administers the fund, manages grant applications and issues residential rebates.

Under the Residential Rebate Program, hot water system and insulation rebates were introduced on 1 October 2007 to help NSW households reduce greenhouse gas emissions. Hot water system rebates provide up to $1,200 to switch from electric to solar, heat pump or gas hot water systems. DECC approved 28,586 hot water system rebates to 30 June 2009 totalling $21.2 million, which will reduce greenhouse gas emissions by an estimated 71,465 tonnes a year.

Insulation rebates cover half the cost of installing ceiling insulation, up to a maximum of $300. DECC approved 10,800 insulation rebates to 30 June 2009, allocating $3.1 million and reducing greenhouse gas emissions by 5,400 tonnes a year. The NSW Ceiling Insulation Rebate Program ceased on 30 June 2009, because the Australian Government now offers to meet the full cost (up to $1,600) of home insulation.

The rainwater tank rebate was introduced on 1 July 2007. It provides up to $1,500 for installing a rainwater tank connected to toilets or a washing machine, or both. DECC paid 26,875 rebates for rainwater tanks to 30 June 2009, allocating $14.4 million and saving an estimated 1.2 billion litres of water a year in NSW homes.

A $150 washing machine rebate was introduced on 1 August 2008. DECC paid 27,765 rebates for water efficient appliances to 30 June 2009, allocating $4.1 million and saving an estimated 666 million litres of water a year.

On 1 August 2008, the Fridge Buyback Program was introduced to provide householders with $35 to have a second fridge taken away from their home. The program has been allocated $2.8 million to take 19,000 old fridges out of circulation, and save an estimated 152,000 tonnes of greenhouse gas emissions and up to $190 a year from a household's energy bills.

Photo: M. van Ewijk.

A rebate for water efficient washing machines was introduced on 1 August 2008.

The NSW Green Business Program provides funding for projects that save water and energy in business operations in NSW. Round 1 of the Green Business Program allocated $11.7 million to 24 projects, saving an estimated 241 million litres of water, 46,082 megawatt hours of electricity and 36,277 tonnes of greenhouse gas emissions a year.

The Renewable Energy Development Program (RED) provides $40 million over five years to support the commercialisation of new renewable technologies. Round 1 of the RED Program closed in February 2008. Round 2 commenced in November 2008 when seven successful projects were awarded a total of $27.3 million. Together, these projects will generate electricity, or reduce grid electricity use by an estimated 393,000 megawatt hours, reduce summer peak demand by 11,400 kilowatts and save more than 400,000 tonnes of greenhouse gas emissions a year.

The Climate Change Fund also provides $2 million a year for the Central Coast Water Savings Fund. This fund was established in partnership with the Gosford/Wyong Councils' Water Authority in 2006 to encourage investment in water savings on the Central Coast. A total of $5.5 million has been allocated to 57 projects which will save an estimated 808 million litres of water a year. To date, 30 projects have been completed, saving an estimated 581 million litres of water a year. Round 3 of the Central Coast Water Saving Fund was held from April to June 2008. Successful projects were announced in November 2008 when $713,610 was allocated to 12 projects, saving almost 40 million litres of water a year.

PERFORMANCE INDICATOR

Approved energy savings action plans and water savings action plans

Definition: Under Part 6A of the *Energy and Utilities Administration Act 1987*, businesses and government agencies that use over a certain amount of energy and water, and certain local councils, must prepare savings action plans. Plans are only approved if they meet the guidelines gazetted by the Minister. This indicator measures the cumulative number of energy and water savings action plans that have been approved.

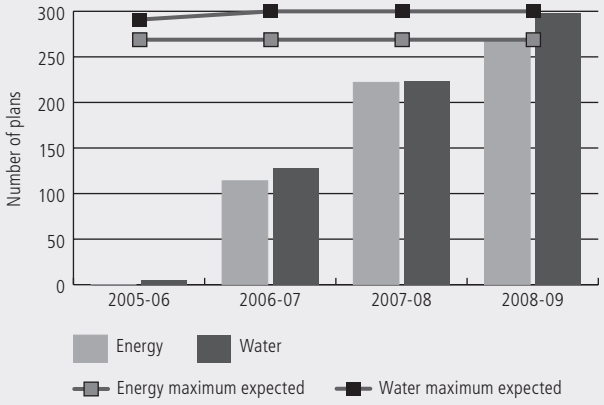
Energy savings action plans are required for:

- business and government sites using more than 10 gigawatt-hours of electricity per year in NSW
- all local councils with populations of 50,000 or more.

Water savings action plans are required for:

- business and government sites using more than 50 megalitres of water per year in Sydney Water's area of operations
- all local councils in Sydney Water's area of operations.

Savings action plans in force



Interpretation: By 30 June 2009, the final target number of energy and water savings action plans were approved ('energy maximum expected' and 'water maximum expected'). This indicates that high-use businesses and government agencies, and many councils, have met their responsibilities in planning to reduce energy and water use.

All users must report annually on the progress of their plans.

Businesses and government agencies across NSW that use specified amounts of energy were required to prepare energy savings action plans, and report on implementing measures identified in their plans in an annual report to DECC (see the performance indicator 'Approved energy savings action plans and water savings action plans'). All 267 plans were approved by 30 June 2009. They identified 2,359 cost-effective actions to reduce greenhouse gas emissions by more than 825,000 tonnes a year, and save $36.6 million on electricity bills.

Businesses and government agencies in Sydney Water's area that use specified amounts of water, and all local councils, were required to prepare water savings action plans for DECC (see the performance indicator 'Approved energy savings action plans and water savings action plans'). All 298 plans were approved by 30 June 2009, identifying 2,329 cost-effective actions to save 8.2 billion litres of water a year and $19 million on water bills.

Public Facilities Program

The Public Facilities Program (PFP) provides $30 million for water and energy saving projects in facilities which are open to, and frequently accessed by, the public, including schools, community buildings, sporting facilities, museums and art galleries. Financed under the NSW Climate Change Fund, to date the Public Facilities Program has allocated $12.4 million to 60 projects, saving an estimated 170 million litres of water and 14,000 tonnes of greenhouse gas emissions a year.

Round 2 closed on 30 April 2009, with applications invited under two funding streams:

- demonstration stream – funding for projects which demonstrate water and energy savings in educational facilities or facilities which are frequently accessed by the public
- community savers stream – funding of up to $40,000 for not-for-profit community organisations to undertake simple, low-cost water and energy saving upgrades in their facilities.

The demonstration stream received 156 applications for water and energy saving projects from facilities including local council buildings and schools. The community savers steam received 400 applications from organisations including preschools, sport and recreation clubs, disability and support services and aged care facilities. Successful projects from both streams will be announced later in 2009.

CASE STUDY

Watering West Wyalong

West Wyalong residents have celebrated the re-opening of an old dam in McCann Park, which has been transformed into a green oasis in a drought affected landscape.

Launched by Mayor Tony Lord, this milestone signalled the completion of stage one of a stormwater capture and management project by Bland Shire Council. The project was funded by the Climate Change Fund's Public Facilities Program for $510,000.

It is estimated that 15 million litres of water will be saved each year by developing this large stormwater harvesting system, which will collect water throughout West Wyalong.

A reticulation system will pump water from the dam to two large storage tanks for irrigation. It will also transfer water to the local wetland which will be restored as a bird sanctuary. To provide the best educational and demonstrational value, Bland Shire Council will form a partnership between Lake Cowal Conservation Centre, the Lachlan Catchment Management Authority and local schools.

Photo: S. Phillips, DECC.

The community rose garden in McCann Park, West Wyalong, is sustained with harvested stormwater.

Parks and playgrounds will also be brought to life with the harvested stormwater, including the Lions Club Park, community rose garden and the cemetery.

McCann Park is being re-established as a sporting area for local residents and a great spot for passers-by to take a rest.

NSW Solar Bonus Scheme

In June 2009, the NSW Government announced details of the NSW Solar Bonus Scheme, which encourages small electricity consumers, such as households and some small business and community organisations, to adopt renewable energy by paying them for electricity generated from rooftop solar photovoltaic systems.

The new scheme, which will commence on 1 January 2010, is the most generous of any state in Australia. It will pay the owners of eligible solar PV systems 60 cents per kilowatt hour for the renewable energy they feed into the national electricity grid.

The scheme was a product of the NSW Feed-in Tariff Taskforce, chaired by the Department of Water and Energy, which was appointed to advise on the most appropriate feed-in tariff model for NSW. DECC was a member of the taskforce, which sought written public submissions in December 2008 and received 206 responses. The taskforce held a stakeholder forum in January 2009 to obtain the views of the clean energy industry, energy retailers and distributors, and green groups.

NSW Electric Vehicle Taskforce

The level of interest in pure electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs) is growing internationally and in Australia. EVs are vehicles driven solely on electrical power, whereas PHEVs operate on both electricity and petrol or diesel.

DECC is chairing the NSW Electric Vehicles Taskforce, which has been established to advise on whether the NSW Government needs to intervene in supporting the development of a market for EVs and, if so, what steps the Government can take.

Since the Premier's 1 May 2009 statement that the Government would work to speed up the introduction of electric vehicles in NSW, the taskforce has been identifying initiatives that can be fast-tracked. As an initial step, StateFleet will participate in a fleet monitoring test of a Mitsubishi electric vehicle in partnership with Mitsubishi Motors Australia.

CASE STUDY

Hybrid electric vehicle hits the road

In April 2009, the former Minister for Climate Change and the Environment, the Honourable Carmel Tebbutt, launched SWITCH, Australia's first vehicle-to-grid, plug-in hybrid-electric car. The car can feed power back into the grid and transform the way we power our cars and use energy.

Engineered by researchers at the University of Technology, Sydney (UTS) in a project funded by the NSW Government, SWITCH is an example of cutting edge research currently under way into greener transport solutions.

The research team at UTS adapted the car from a standard Toyota Prius by adding extra batteries, controls and connections so that it can charge from – or feed into – a household mains power supply. The extra batteries can store energy at off-peak times and feed power back into the grid at times of peak demand. On a large scale, this could level out peaks and troughs in power supply across regions and ensure that roll out of electric vehicles can occur without the need for major grid enhancements.

The extra batteries mean that SWITCH can run on electricity for longer. It can save up to 2.8 tonnes of greenhouse gas emissions a year, compared with an average car.

Photo: A. Weeraratne, DECC.

Driving Australia's first plug-in hybrid electric car.

This prototype can reduce petrol use and greenhouse gas emissions, but also help families save money. Based on a 30-kilometre per day commute, SWITCH would cost as little as 50 cents per day to charge with off-peak power.

While the vehicle is only at a trial stage, it is possible that new smart grid technology could control an entire fleet of cars so that they charge or supply energy at different times.

SWITCH will be trialled as a fleet vehicle by staff at DECC. The progress of the car, its fuel efficiency and electricity tariffs, will be monitored in partnership with EnergyAustralia and posted on www.environment.nsw.gov.au.

Photo: D. Smith.

Encourage the NSW community to adapt to climate change

Climate Change Action Plan

In March 2008, the Premier announced that NSW would develop a new Climate Change Action Plan (CCAP) to replace the NSW Greenhouse Plan. Since the release of the Greenhouse Plan in 2005, community, business and government roles and responsibilities for climate change have changed considerably, and there is new scientific information available.

The CCAP will establish key priorities for the next four years based on the latest science, strategic leadership and community opinion. This plan will drive climate change action across the state and will enable the NSW Government to work in partnership with all sections of the community to achieve shared goals.

DECC is responsible for leading the development of the NSW CCAP. In late 2008, DECC carried out extensive community consultation, holding 12 regional public forums. Region-specific effects of climate change were presented and discussed, with summaries for each region available at www.environment.nsw. gov.au/climatechange/regionsummary.htm.

Further targeted consultation and analysis were carried out during the first half of 2009. It is intended that a draft CCAP will be released for a final phase of consultation in the second half of 2009.

Climate impact profile

DECC, with the Department of Water and Energy, has prepared a draft NSW climate impact profile describing some of the likely impacts of future climate change on the settlements, lands and ecosystems of NSW. It is intended that the profile will be released with the draft Climate Change Action Plan later in 2009.

DECC scientists will continue to research the potential impacts of climate change on NSW natural ecosystems into 2009–10. Projects include:

- examining sea level rise trajectories and the likely impacts of sea-level rise on coastal ecosystems and communities
- investigating the loss or change of biotic communities in most areas of the state

CASE STUDY

Photographers flood king tide area

DECC had an overwhelmingly enthusiastic response to its request for photographs of the king tide which occurred on the morning of 12 January 2009. Over 2,000 images were received.

The king tide was predicted to peak in Sydney, rising to 2.05 metres high at Fort Denison, but the peak recorded was 1.96 metres high due to fair weather and the presence of a high pressure system across most of coastal NSW (tides can vary within approximately 20 centimetres of predicted levels).

The photographic coverage will help create a statewide snapshot of areas currently vulnerable to tidal inundation, many of which have not been recorded before. This will help improve community awareness of the potential future risk of sea level rise and inform future planning decisions. DECC hopes to repeat the exercise next year and establish a long-term record of such events and associated impacts.

A sample of the images received can be found on www.environment.nsw.gov.au/climatechange/kingtide.htm.

Photo: P. Watson, DECC.

The king tide in January 2009 covered most of the jetty at Woy Woy.

- looking into increased soil erosion from higher intensity summer storms
- sequestering soil carbon to help draw down carbon dioxide from the atmosphere
- investigating the potential loss of marginal landscapes and ecosystems, such as alpine areas, beaches and estuaries
- modelling future fire frequency and intensity.

Sea level rise policy statement

During the year, DECC and the Department of Planning jointly prepared a draft sea level rise policy statement. This sets out the Government's approach to sea level rise, the risks to property owners from coastal processes and assistance for councils to reduce the risks of coastal hazards.

The draft policy statement includes sea level planning benchmarks so the impacts of sea level rise can be consistently considered in land-use planning and coastal investment decision making (see www.environment.nsw.gov.au/climatechange/sealevel.htm). The adopted benchmarks are for a rise relative to 1990 mean sea-level rise predictions of 40 centimetres by 2050 and 90 centimetres by 2100. These benchmarks are based on projections developed by Australian and international experts and considered most appropriate for NSW.

Over 100 submissions were received during public consultation on the draft policy statement. Many submissions considered how best to use the benchmarks in land use planning or coastal hazard assessments, addressed the potential use of benchmarks as regulatory standards, or raised issues concerning the liability and responsibilities of decision makers.

Finalisation of the policy statement is expected early in 2009–10. It will be accompanied by technical guidance on how to use the benchmarks in coastal hazard and flood risk assessments and land use planning.

Working with NSW Health

DECC is funding a project being undertaken by NSW Health to investigate the impacts of heat on morbidity and mortality. The project, which is an extension of work previously undertaken under the Climate Change Impacts and Adaptation Research Program, involves collecting and analysing historical temperature, hospital admission and death records in each area of NSW to determine heat-related health impacts and appropriate thresholds on which to base a heatwave warning system. One component of the project is reported on in the case study 'Beat the heat' below.

■ CASE STUDY

Beat the heat

An estimated 1,200 people die of heat-related illnesses each year in Australian capital cities, with many more receiving hospital or home care. Climate change is expected to increase the frequency and severity of extreme heat, which will particularly affect children, the elderly and those with existing health problems such as respiratory or cardiac illness or diabetes.

Overseas experience has shown that an effective early-warning system for heatwave days, combined with a public education campaign about ways to cope with extreme heat, can significantly reduce the impacts of heatwaves on health and the pressure placed on hospitals and emergency response agencies.

With DECC funding, the Southern Area Health Service trialled a 'Beat the heat; don't forget your drink' project during the summer of 2008–09. The project used television, radio and newspapers, public presentations and mailouts of posters and brochures to disseminate information that would help the community cope with extreme heat. The successful media campaign led to more than half the community hearing the message and changing their activities over the summer.

Research was also carried out on people's strategies for coping with heat, rates of hospitalisation and the demographic profile of people requiring medical care.

Photo: S. Cohen, DECC.

The frequency of heatwaves may increase under climate change.

The public awareness campaign was timely: in January and February 2009, temperatures were well above average. Temperatures in Sydney exceeded 35°C on 30 days over the summer and a new record maximum temperature of 45.2°C was experienced.

DECC and NSW Health are now working together to trial a heatwave early warning system, while targeting the health promotion campaign to other parts of the state.

Working with local government

Since there will be considerable regional variations in the type and magnitude of climate change impacts, local government will play a key role in helping communities adapt to climate change. On some issues, responses developed and delivered locally will be more effective than those developed statewide.

During 2008–09, DECC worked closely with the Local Government and Shires Associations (LGSA) to build the capacity of local councils to incorporate climate change into their planning and decision making. In particular, DECC and the LGSA negotiated a memorandum of understanding on climate change response, and have agreed to undertake a climate change survey of local councils in July 2009 to provide benchmark data for evaluation purposes.

Initiatives addressing climate change and biodiversity

Climate change is a major long-term threat to biodiversity and is listed as a key threatening process under the NSW *Threatened Species Conservation Act 1995* and the Australian *Environment Protection and Biodiversity Conservation Act 1999*. Climate change will also affect the environment's ability to provide natural resources and healthy ecosystems, and to support the industries which rely on these resources.

DECC initiatives during the year included:

- developing a draft biodiversity strategy for NSW to conserve terrestrial, freshwater and marine biodiversity (see chapter 4)
- research with CSIRO into marine and freshwater ecosystems, including researching effective sustainable development, monitoring the impacts of climate change and evaluating proposed adaptation strategies
- the Climate Change Impacts and Adaptation Research Program, which examines the impacts of climate change on biodiversity, invasive species and aquatic ecosystems (see case study below)
- researching the potential impacts of climate change on weeds, pests and diseases and the resulting impacts on native plants and animals
- research with Australian and overseas universities to evaluate the extinction risk for species under various climate change scenarios
- research to improve the understanding of projected impacts of climate change on biodiversity and the effectiveness of alternative adaptation strategies.

CASE STUDY

Effects of climate change on unplanned fires

In late 2008, a joint research project between DECC, the Centre for Environmental Risk Management of Bushfires at the University of Wollongong, and the Australian National University, was completed. This three-year project explored the predicted effects of climate change on unplanned fire in the Sydney region using computer modelling. The models integrated information on local terrain, weather and fuel characteristics with future climate predictions from the Bureau of Meteorology.

Modelling current patterns of fire in the landscape and extrapolating these patterns into the future using climate change predictions, the study:

- quantified changes in fire regimes resulting from predicted changes in climate
- quantified resulting changes in risks posed by fires to biodiversity, ecosystem functions, people and property
- predicted the effects of alternative management strategies on fires and the impact of climate change on the outcome of these strategies.

The study predicts that by 2050, Sydney and the Blue Mountains could experience an increase in the area burnt by bushfires by 7–35%, and climate change could increase risks to people and ecosystems sensitive to changes in fire frequency.

Photo: M. Woulfe.

DECC is studying the predicted effects of climate change on unplanned bushfires.

The results of the study will be used to inform decisions about future fire planning and management in NSW. The full report is available at: www.environment.nsw.gov.au/climatechange/bushfires.htm.

Great Eastern Ranges Initiative

In February 2007, the NSW Government announced the allocation of $7 million from the Environmental Trust for a three-year program to establish a conservation corridor along the 1,200-kilometre section of the great eastern ranges in NSW. The Great Eastern Ranges Initiative is improving the connectivity of the forests and woodlands that extend along the great eastern ranges in NSW through a range of voluntary conservation programs.

Over 50 partner organisations including other state agencies, catchment management authorities, local councils, conservation groups, industry groups, landholders and researchers are working together on projects to integrate activities in five regional areas. These projects are called 'Slopes to Summit' (near Albury), 'Kosciuszko to Coast', 'Southern Highlands', 'Hunter Valley' and 'Border Ranges'. Partners include the Nature Conservation Trust, Greening Australia, Bush Heritage Australia and OzGreen.

Key activities in 2008–09 included:

- partnership building, including Aboriginal land management partnerships and development of a partnership website, which will be completed in 2009–10
- conservation planning and science
- establishment of conservation agreements, wildlife refuges and covenants on private land in targeted conservation areas
- a scientific principles report on continental-scale connectivity conservation
- a draft tourism marketing strategy
- a short film to promote the Great Eastern Ranges Initiative.

Photo: I. Pulsford, DECC.

Photo: I. Pulsford, DECC.

Great Eastern Ranges Initiative partners from DECC, the Nature Conservation Trust and the Northern Rivers Catchment Management Authority discuss land management issues, as part of the Border Ranges program.

CASE STUDY

Impacts of climate change on NSW floodplain wetlands

In 2008, DECC assessed the likely impacts of climate change-induced hydrological alterations on species in NSW floodplain wetlands. Ensuring the long-term sustainability of floodplain wetlands requires an understanding of projected water availability, and of the water needs of plants and animals and their strategies for coping with stress brought about by a lack of water. The study highlighted that each species has its own survival, maintenance, reproduction and regeneration needs. The study also identified species that are particularly vulnerable to reduced water availability such as floodplain trees, colonial nesting waterbirds and fish that rely on flows to trigger spawning. A database of the water requirements of floodplain wetland vegetation, waterbirds and fish has been prepared and will be used by managers to guide water allocations and decision making. The database also contributes to ecological response models being developed for significant floodplain wetlands, such as the Macquarie Marshes.

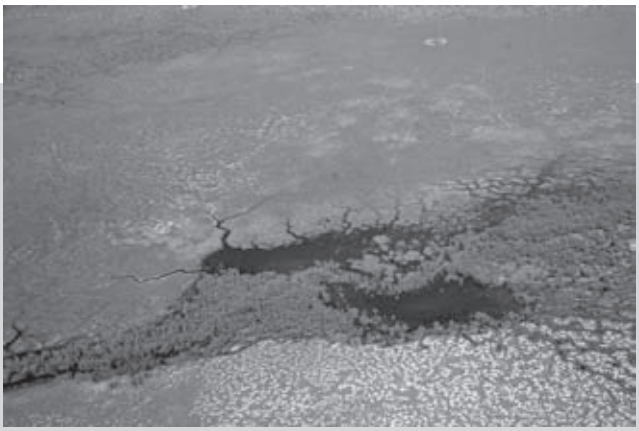


Photo: R. Thomas, DECC.

DECC's database records the ecological needs of floodplain species and will guide water allocations to wetlands such as the Macquarie Marshes.

Climate change research into pests and weeds

Understanding the effects of climate change on the distribution, abundance and impacts of invasive species is a priority research area identified in DECC's *Adaptation strategy for climate change impacts on biodiversity*. During 2008–09, a collaborative research project involving DECC, Macquarie University and the Australian Research Council modelled the distribution of key weed species in Australia and in their native habitats. Distribution patterns for selected weed species were modelled for two climate change scenarios to 2020 and 2050 and compared with the predicted distribution of these species under current climates.

For example, three hawkweed species (Hieracium spp.) have only been recorded in a restricted area at high altitudes in Australia. The distribution model predicts that under the current climate they could spread to a range of other areas, while under future climates it is predicted that their distribution would recede.

Interim results are now available for seven weed species – visit www.environment.nsw.gov.au/weeds/climatechange.

Long-term NSW coastal ocean monitoring

DECC is participating in the Integrated Marine Observing System (IMOS) being implemented nationwide. IMOS provides equipment and data services to support marine climate research in Australia's coastal oceans. IMOS utilises the research capacity of 11 educational institutions and government facilities across Australia.

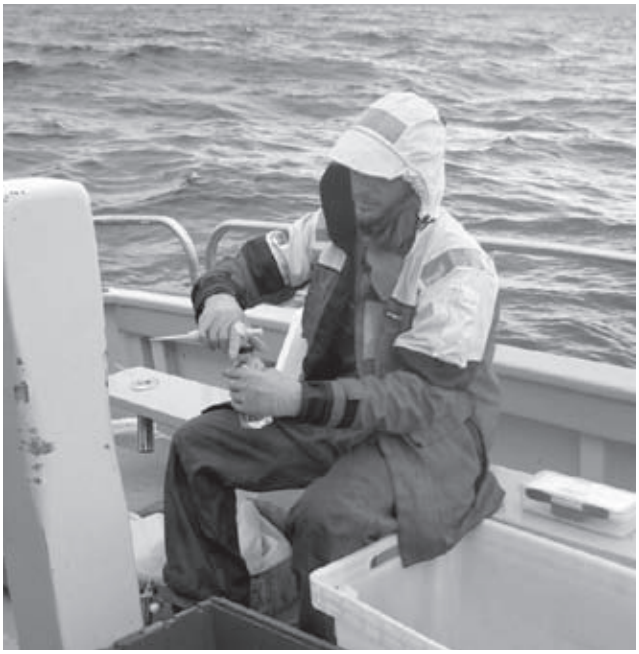


Photo: P. Davies, DECC.

DECC marine scientist preserves water samples for later analysis through IMOS.

Photo: P. Davies, DECC.

DECC and University of NSW marine scientists rack NISKIN bottle samplers for discreet depth water sampling at a coastal monitoring stations offshore of Port Hacking, as part of IMOS.

A National Reference Station mooring was established off Port Hacking near Sydney to monitor changes in ocean temperature, salinity, currents, water clarity and chlorophyll. This will be complemented by monthly water quality sampling to determine the amount and variety of nutrients and plankton, and acidification. The National Reference Station mooring complements a CSIRO sampling station at the same site which began collecting data in 1942, providing the longest record of its type in Australian waters.

Through IMOS, it is hoped a better understanding of the East Australian Current will be gained. This current dominates the ocean on the south-east coast of Australia. There is a sense of urgency for expanded monitoring and research in this region as the Tasman Sea is predicted to experience the fastest increase in water temperature of any regional sea in the world. Warmer water expands faster, increasing the relative sea level.

Through IMOS, key fish species are also being tagged and monitored.

In 2008–09, IMOS expanded its monitoring capability in NSW to include additional equipment at two sites off Bondi, one off Jervis Bay and one off Port Hacking.

Photo: D. Wiecek, DECC.

Minimise and manage increased risks to life, property and the environment

Coastal, estuary and floodplain management

DECC works closely with local councils, catchment management authorities and communities across the state to ensure the long-term protection, conservation and restoration of coastal, estuarine and floodplain environments.

DECC's Coastal Management Program aims to identify and manage the risks from coastal hazards, including predicted sea level rise. This program provides funding support and technical advice to assist councils to prepare coastline management plans and associated studies. In 2008–09, DECC allocated $2.9 million in grants to 16 councils for 31 projects under this program.

Under the Estuary Management Program, DECC provided technical and financial assistance to councils to prepare and implement estuary and coastal zone management plans, focusing on actions to improve the health and condition of estuaries. Over three-quarters of the state's estuaries are covered by estuary management plans. DECC allocated $3.6 million in 2008–09 for 56 projects to 31 councils under the program.

Under the Urban Floodplain Management Program, DECC provided technical and financial assistance to councils to prepare and implement floodplain risk management plans to enable them to manage flood risk in their local communities. DECC expended $9.29 million in 2008–09 on grants to 70 councils across NSW.

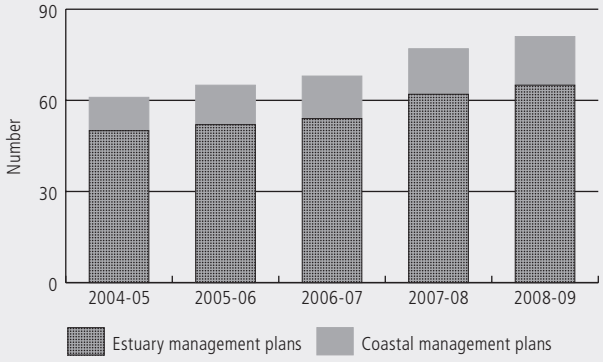
In 2008–09, DECC completed the Macquarie River Narromine to Oxley Station rural floodplain management plan in conjunction with the Department of Water and Energy. The plan covers a floodplain of over 2,500 square kilometres immediately upstream of the Macquarie Marshes and incorporates an area of considerable agricultural development (cotton, dryland wheat crops, cattle and sheep grazing).

PERFORMANCE INDICATOR

Approved coastal and estuary management plans

Definition: The cumulative number of coastal and estuary management plans approved indicates the high level of council and community support for developing and implementing plans that meet the objectives of the *Coastal Protection Act 1979* and the NSW Coastal Policy. DECC provides technical advice to, and funding assistance for, local councils to prepare coastal and estuary management plans.

Coastal and estuary management plans completed



Interpretation: Three new estuary management plans, and one new costal management plan, were completed in 2008–09, bringing the cumulative total to 81 coastal zone management plans completed by councils in partnership with the NSW Government.

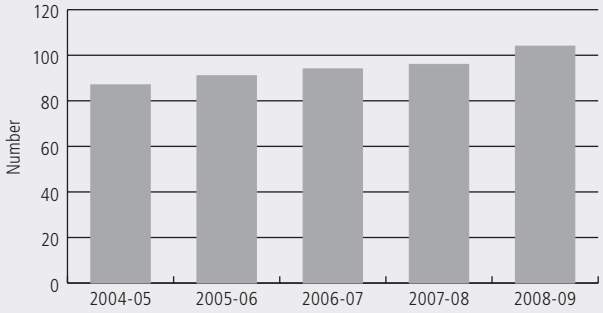
In addition, DECC progressed development of another eight rural floodplain management plans in key areas covering approximately 10,000 square kilometres of the Murray–Darling Basin. Once these plans are finalised, there will be 20 plans covering about 24,000 square km of the Murray–Darling Basin.

PERFORMANCE INDICATOR

Approved floodplain risk management plans

Definition: This indicator measures the cumulative number of urban floodplain risk management plans prepared by local councils. Councils are responsible for preparing these plans in urban or closely-settled rural areas, as they are responsible for land use planning and management under the *Environmental Planning and Assessment Act 1979* for their local government areas, and for managing floodprone land. DECC provides technical advice to, and funding assistance for, local government for preparing and implementing floodplain risk management plans. DECC also administers floodplain management programs.

Floodplain risk management plans



Interpretation: At 30 June 2009, there were 104 floodplain risk management plans completed in NSW, an increase of 17 since 2004–05. This increase, from 87 in 2004–05 to 104 in 2008-09, indicates the number of councils that are managing flood risks responsibly.

Rural valley-wide floodplain management

DECC is responsible for preparing rural floodplain management plans under the *Water Act 1912*. These plans manage the distribution of floodwaters across rural floodplains in western NSW.

The plans map floodway networks that provide for the unimpeded passage of floodwaters, including environmental water managed by DECC, to maintain flooding for environmental assets. The plans also coordinate flood control works that may redistribute flood flows and block floodplain connectivity.

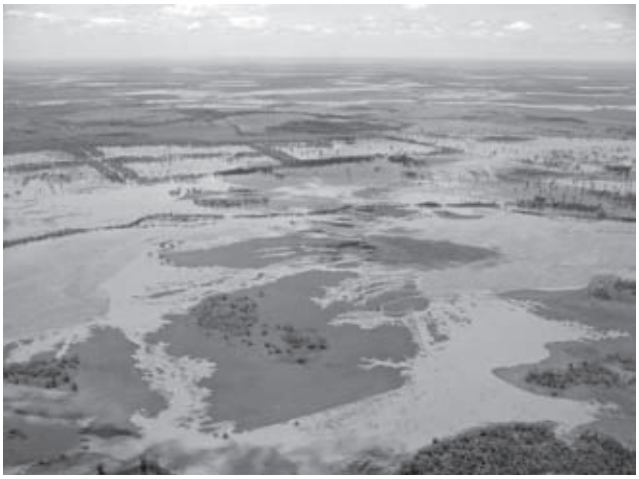


Photo: A. Falkenmire, DECC.

Flooding of Gingham wetlands near Moree.

However, during the year DECC has been developing a new approach to rural floodplain planning to address issues from a valley-wide perspective. This will eventually replace the current approach, which targets discrete areas undergoing development pressure. DECC is looking to strengthen the coordination of rural floodplain management planning with floodplain harvesting management being developed by the Department of Water and Energy.

Restoration works for the Hunter Valley Flood Mitigation Scheme

The Hunter Valley Flood Mitigation Scheme is a system of major levees and flood gates on the Hunter, Paterson and Williams rivers operated and maintained by DECC and the Hunter–Central Rivers Catchment Management Authority. It protects 3,000 buildings and 18,000 hectares of agricultural land from floods across Maitland, Singleton, Raymond Terrace, Aberdeen, Muswellbrook and Denman.

In June 2007, during major flooding on the Williams, Paterson and Hunter rivers, parts of the scheme sustained major damage. Restoration of infrastructure was completed in 2009 at a cost of approximately $4 million.

Emergency management

Increased storm intensity, sea-level rise, more flooding, higher temperatures and increased fire risk could all pose a threat to the NSW community and put pressure on emergency management resources.

The State Emergency Management Committee has formed a Climate Change Working Group. DECC is on the committee and is working closely with other NSW Government agencies to assess the impacts of climate change and plan for increased natural hazards such as bushfires, floods, coastal erosion and heatwaves.

Key work undertaken during 2008–09 included:

- the Eastern Seaboard Climate Change Initiative, supporting collaborative research into destructive weather systems such as East Coast Lows (intense low-pressure systems that often intensify rapidly overnight, making them one of the more dangerous weather systems to affect the NSW coast). The aim is to close gaps in information about the impacts of climate change and climate variability on the Australian east coast, ranges and inshore marine environments.
- a project funded by the Natural Disasters Management Program to scope future sea level rises and coastal hazards in NSW.
- a study funded by the Climate Change Impacts and Adaptation Research Program to investigate the possible impact of climate change on bushfire threats to biodiversity, ecosystems and the community in Sydney.

Cooks River bank rehabilitation

In May 2009, sections of the Cooks River foreshore were rehabilitated. The NSW Government allocated $2.9 million to restore the most badly degraded sections of the river bank at Earlwood and Hurlstone Park.

The project officers replaced 760 metres of corroded steel sheet piling, removed other portions, and landscaped the riverbank to more closely mimic natural foreshores. The project has contributed to the rehabilitation of the Cooks River, and improved public safety and access. The riverbank now has a gentler, more natural profile with sandstone blocks, mangroves, saltmarshes and native plant landscaping. Local residents and community groups have responded positively to the project.

CASE STUDY

Environmentally friendly seawall guidelines for estuaries

Urbanisation modifies natural estuarine foreshores by replacing them with reclaimed parkland, infrastructure, housing and other artificial structures such as jetties and seawalls. Seawalls in particular have become a dominant foreshore feature of urban estuaries. The pressure for additional seawalls is expected to increase to protect low-lying foreshore infrastructure from sea-level rise.

The construction of seawalls results in the loss of natural intertidal habitats, and traditional vertical seawalls have limited habitat potential. It is therefore important that seawalls are built to minimise environmental impacts, more closely mimic natural foreshores and provide greater environmental value.

To achieve this, in 2009 DECC and the Sydney Metropolitan Catchment Management Authority prepared *Environmentally friendly seawalls – a guide to improving the environmental value of seawalls and seawall-lined foreshores in estuaries*.

Photo: D. Wiecek, DECC.

The guidelines enable those involved in designing, approving, building or upgrading seawalls to improve the environmental value of seawalls and seawall-lined foreshores.

Photo: Evolving Images.

Support business, industry and government in operating sustainably

Sustainability Advantage

Sustainability Advantage is a key and growing program that helps medium to large organisations and businesses to assess their waste generation, water use and energy consumption, and devise internal strategies that improve environmental performance and bring about cost savings. The program assists 305 organisations that employ more than 100,000 people in NSW.

Members receive support in the form of workshops, training, technical advice and the setting up of industry clusters that allow participants to share ideas and find solutions to common issues. As at 30 June 2009, there are 32 clusters operating across NSW from sectors as diverse as building products, agribusiness, hospitality, health and aged care industries; the tertiary education sector; the community services area; and government. Participation from the TAFE sector alone includes nine TAFE institutes and around 100 separate campuses.

CASE STUDY

Riverina sustainability cluster

In a first for rural NSW, some of Australia's biggest agricultural industries are working together to protect the environment, saving over $2.36 million while cutting waste, energy and water use through DECC's Sustainability Advantage program.

The businesses, all from the Riverina, have identified dozens of sustainability initiatives and developed approved action plans. With representation from the wine, food and agricultural service industries, the 12 organisations in the group have jointly saved 1600 MWh of electricity, over 9,600 GJ of gas and around 2,000 tonnes of greenhouse gas emissions. Some standout achievements include:

- De Bortoli Wines have completely reused winery waste water for growing forage crops which generates around $200,000 per annum in income on top of the power savings achieved.
- Bartter Enterprises have installed new high efficiency cookers that have saved 500 MWh of energy.
- Casella Wines have upgraded their refrigeration and power efficiency facilities, allowing for the removal of two 465-KW diesel generators, and have organised fruit swaps resulting in transport savings of over 100,000 kilometres.
- Rockdale Beef have implemented recycling programs saving 140 ML of water and 140 tonnes of waste, and have improved boiler and compressor efficiency, saving 300 MWh of electricity and 300 GJ of gas.

Photo: V. Bucello.

Simon Smith (right), Deputy Director General of DECC, presented certificates of recognition to members of the Riverina Sustainability Cluster at a special event at De Bortoli Wines. Pictured here (left), is Robert Kelly, Environmental Manager, Murrumbidgee Irrigation.

- Chicken Income Fund have improved productivity through a new feed spreader and heating efficiencies in chicken sheds which are saving over 9,600 GJ of gas.
- PHL Surveyors have reduced paper use by 30%, diesel use by 27% and electricity by 12%.

The program has helped participants to deliver significant financial and environmental improvements. These include, cumulatively, savings of just over 13,000 tonnes of greenhouse gases from electricity savings of 7,600 MWh and gas savings of 16,670 GJ. Around 170 ML of water have been saved and waste to landfill has been reduced by 17,100 tonnes. Annual financial savings total at least $7.5 million.

Recognising ongoing achievement is an important part of Sustainability Advantage and a recognition system that includes bronze, silver, gold and platinum membership was launched during the year. In June, the first bronze memberships were presented to 13 organisations including Converga, TAFE NSW – Northern Sydney Institute, Marquis Bathroom Products, Sydney Markets Limited, Focus Press, Schindler, Rondo Building Services Pty Ltd, Ontera Modular Carpets Pty Ltd, Koppers Australia, Tarkett, The Austral Bricks Company Pty Ltd, De Bortoli Wines and Inghams Enterprises Pty Limited.

In 2008–09, DECC aimed to increase Sustainability Advantage membership to 1000 organisations by 2013 and to increase the focus on energy and climate change. Since February 2009, the $20 million energy saver program has helped eligible businesses become more energy efficient, look into adopting alternative technologies and reduce their costs. As at 30 June 2009, the program helped NSW businesses identify opportunities that could lead to over $3 million in cost savings and reduce their greenhouse gas emissions by 21,000 tonnes.

Waste Service Performance Improvements Payments Program

DECC's Waste Service Performance Improvements Payments Program rewards councils for meeting performance standards for the efficient collection and management of waste and recycling products. Now in its third year, all 51 councils in Sydney, the Hunter, Illawarra and Shoalhaven met program requirements, sharing $12.3 million. Requirements included ensuring that councils had policies to minimise construction and demolition waste and that new commercial and multi-unit dwellings had recycling systems.

Between 2006–09, $25 million has been invested in promoting greater sustainability in council-driven waste and resource recovery systems and services. DECC has also provided tools and information to support councils in their efforts to improve waste services, including guidelines, handbooks and advice on best practice techniques (visit www.environment.nsw.gov.au/warr/localauthorities.htm).

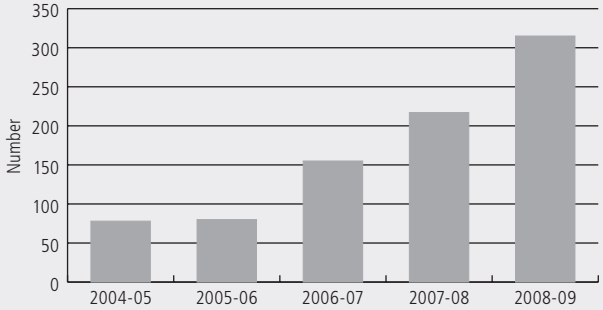
A new, extended program of local council waste and sustainability improvement payments will commence on 1 July 2009, as part of the NSW City and Country Environment Restoration Program. Through this program, the NSW Government will invest $256 million over seven years to support improvements to the use, recovery, recycling, processing and disposal of waste, and improvements in environmental sustainability practices and services.

PERFORMANCE INDICATOR

Businesses participating with DECC to improve resource recovery and sustainability

Definition: This indicator measures the cumulative number of predominantly medium to large businesses that DECC collaborates with, principally through Sustainability Advantage, to enhance their environmental performance. Ten businesses in 2008–09 worked with DECC through other partnerships. All partnerships include DECC support for resource recovery; energy, water and fuel efficiency; and corporate planning, staff education and supply chain management. The indicator does not reflect the depth of the relationship, which may vary from networking to collaboration and full partnership.

Businesses participating with DECC to improve resource recovery



Interpretation: The 2004–05 and 2005–06 figures represent the former DEC's engagement with businesses to improve resource recovery through the Industry Partnership Program, which involved 80 businesses in 2005–06. The resource efficiency work with business has been rolled into Sustainability Advantage, which also addresses other sustainability issues such as encouraging organisations to incorporate environmental actions into business plans, ensuring all business areas (such as operations, marketing and human resources) are involved in environmental actions, and working in geographic or sector-based clusters. Often, this work is medium to long-term and spans a number of years.

Hawkesbury-Nepean River Recovery Program

The Australian Government agreed to give NSW $77.4 million to undertake a Hawkesbury–Nepean River Recovery Project to save over 11 billion litres of water per year and stop over 48 tonnes of nutrient pollution per year from entering the river. Federal funding will be complemented by funds from the NSW Government, landholders and Hawkesbury City Council, providing a total of $96.8 million for this initiative to September 2011.

DECC led the development of the total bid, and is now leading two of the seven sub-projects: a water licence purchase project and a nutrient export monitoring project.

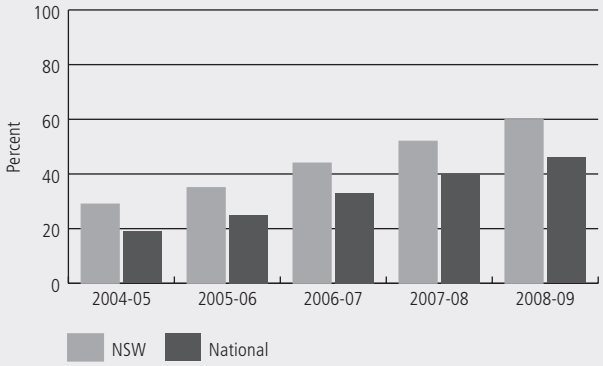
PERFORMANCE INDICATOR

National Australian Built Environment Rating System – commercial market penetration

Definition: This indicator measures the proportion of the cumulative number of national office buildings which have been rated using the National Australian Built Environment Rating System (NABERS).

NABERS measures the energy, water, waste and indoor environmental performance of a building compared with its peers. Ratings are on a one- to five-star scale, with five stars representing best performance. Ratings are voluntary. NABERS is managed nationally by DECC.

National Australian Built Environment Rating System – commercial market penetration



Interpretation: By 30 June 2009, 9.6 million m^2 of office space in Australia (46% of the total available office space) and 4.6 million m^2 of NSW office space (60% of available NSW office space) had been rated for its environmental performance using NABERS. There has been a 14% increase in rated space from 2007–08 to 2008–09 in Australia, and a 15% increase in NSW. On average, office buildings using NABERS to measure, manage and reduce their greenhouse gas emissions and water use have improved their greenhouse performance by 12% and water efficiency by 16%. Together, these buildings are achieving total annual savings of 190,000 tonnes of CO_2 and 840,000 kL of potable water.

In 2008–09, 693 NABERS energy and water ratings for offices were submitted to DECC.

NSW Government Sustainability Policy

In February 2009, the NSW Premier announced the NSW Government Sustainability Policy, including a commitment that the NSW Government will become carbon neutral by 2020. DECC is the lead agency for implementing this policy.

The Sustainability Policy sets targets and strategies for the NSW Government to lead by example in sustainable use of water; reduction of greenhouse gas emissions from energy, waste and fleet management; and sustainable purchasing. The policy ensures NSW government agencies:

- consider sustainability in all relevant decision making
- reduce greenhouse gas emissions
- are more efficient in their use of energy and water and reduce wider environmental impacts associated with water and energy use
- meet the challenge of rising prices expected for energy, fuel, water and waste management
- are more efficient in their vehicles use
- produce less waste and increase recycling
- use purchasing power to drive efficiency.

Implementation of the policy across DECC is discussed in Chapter 5, 'A credible, effective and efficient organisation'.

Energy Efficiency for Small Business Program

The $15 million Energy Efficiency for Small Business Program was piloted during the first half of 2008–09 with 100 businesses in various industry and business sectors. The program will help 6,000 small businesses prepare for future increases in energy costs. It will target businesses that spend up to $20,000 on electricity per year or employ up to 10 employees, and provide financial assistance for tailored energy assessments to identify no-cost and low-cost options for reducing electricity use. In addition, matched funding of up to $5,000 is available for lighting, heating, air conditioning, refrigeration, hot water systems and compressed air use.

The pilot program assessments found that businesses could save an average of $420 per year on lighting alone, with a payback period of just five years.

The program was formally launched in early 2009 with strong interest from key partners in local government, industry associations and peak bodies as well as major electricity retailers. Feedback from these stakeholders and a survey of pilot participants suggests the program is well-designed to meet the needs of small business.

Low Income Household Refit Program

The Low Income Household Refit Program is a $63 million initiative to provide free home energy assessments, energy refits and tailored advice to help save power and money in 220,000 eligible households across NSW. The program is being piloted in 1,000 homes in Western Sydney from May 2009 and will be available across NSW later in 2009.

National Built Environment Rating System

The National Australian Built Environment Rating System (NABERS) is a suite of environmental performance rating tools for Australian buildings. DECC manages NABERS on behalf of the National Steering Committee, which represents state and federal governments. Ratings include those for energy, water, waste and the indoor environment for offices; and those for energy and water for hotels and homes. New tools for retail centres, schools, hospitals and data centres; and transport ratings for offices are being developed.

In 2008–09, 394 commercial buildings received accredited NABERS energy ratings. This brings the total percentage of these buildings rated in NSW to 60%, and nationally to 46%. In addition, 38 commitment agreements were signed, committing new buildings and refurbishments to achieving high NABERS energy ratings.

Regarding water, 247 buildings received water ratings. The new NABERS energy and water ratings were embraced by the hotel industry, with eight hotels now rated. The first waste ratings for offices were also completed in 2008–09.

NABERS ratings were conducted for 96 homes as part of the Lord Howe Island Sustainable Energy Program, and for 681 homes for the Blacktown Solar Cities Program.

Training was delivered to 416 people, and the number of assessors accredited to deliver NABERS ratings increased by 35% to 529.

Mandatory disclosure requirements were endorsed by the Council of Australian Governments to come into effect in 2010. These will use NABERS nationally as the means of disclosing the energy efficiency of commercial buildings at the point of sale or lease.

Sustainable Property Guide

Photo: Evolving Images.

The Honourable Penny Sharpe, who launched the Sustainable Property Guide on behalf of the then Minister for Environment and Climate Change, the Honourable Carmel Tebbutt, with Neil Cochrane, Deputy Chief Executive Officer, Colonial First State Global Asset Management.

In 2008–09, DECC developed The Sustainable Property Guide in partnership with Colonial First State Global Asset Management. The guide is available on www.environment.nsw.gov.au/sustainbus/SustainPropertyGuide.htm as a resource for commercial building owners and their key service providers, such as managing agents and building managers. It contains comprehensive step-by-step guidance, checklists and worksheets to enable the integration of ecologically sustainable development principles into property portfolios.

Sustainable Choice

Sustainable Choice is a partnership project between the Local Government and Shires Associations and DECC, which provides local councils with the tools and resources to implement sustainable procurement. As at June 2009, 47 local councils are taking part in the program. A sustainable procurement training course for NSW local councils was launched in August 2008 and has been delivered to 327 staff from 28 councils.

Sydney Carbon Market Taskforce

The Sydney Carbon Market Taskforce was convened to advise the NSW Government on actions to position Sydney as the carbon market hub of the Asia-Pacific region. Sydney has experience in carbon trading and a sophisticated financial market, infrastructure and workforce skills. DECC provided secretariat support to the taskforce, in partnership with the NSW Department of State and Regional Development. The taskforce presented a strategic action plan to the Government in May 2009, and this document should be released later this year for discussion at a stakeholder forum.

DECC also worked with the Australian Graduate School of Management at the University of NSW to develop carbon market and climate change leadership courses for CEOs, managers and executives.

Photo: S. Garland, DECC.

Support individuals, families and communities in living more sustainably

NSW Green Skills Strategy

The Green Skills Strategy helps to develop workforce skills to tackle the issues brought about by climate change and other environmental challenges, and support the transition to a lower carbon and more sustainable society. The NSW Department of Education and Training is the lead agency and DECC contributes through industry partnership projects and strategy support.

A Green Skills Summit took place in February 2009 as part of the NSW Jobs Summit. Over 100 participants attended, and the focus was on building trade and professional links so NSW could move to a low carbon future.

The $20 million Energy Efficiency Skills Program is an important part of the NSW Green Skills Strategy. During the year DECC helped electricians, plumbers, building managers, engineers, planners and architects to improve their design, installation and maintenance skills. DECC also worked with key manufacturing industries to ensure NSW can manufacture more sustainable products with reduced energy consumption.

The program also funds education and training personnel, including TAFE teachers, to gain new knowledge and skills.

Resource recovery

At the State and Federal Ministers meeting in May 2009, a framework for an extended National Packaging Covenant was considered. The Ministers also considered the merits of a container deposit scheme.

The Environment Protection and Heritage Council has conducted a Choice Modelling Survey to investigate communities' willingness to pay to increase the recovery of packaging, particularly beverage containers. The Ministers will review the results of the survey in November 2009.

In NSW, 52% of packaging waste was recycled in 2006–07 (latest data available), up from 46% in 2004–05, amounting to more than 2.1 million extra tonnes of material being recycled. Out of 152 local councils, 119 are providing kerbside collections to assist this recovery.

The NSW Government's *Extended producer responsibility priority statement* encourages industry to manage waste from consumer goods voluntarily and be more responsible for the environmental impact of their products.

During 2008-09, DECC examined waste from electrical and electronic goods, and developed a code of practice for environmentally sound recyling methods.

The mobile phone industry participates in the 'Mobile Muster', a national mobile phone recycling scheme. In November 2008, encouraged by DECC and the Australian Mobile Telecommunications Association, the industry renewed its commitment to significantly increase recovery rates over the next five years.

CleanOut Program for household chemicals

This partnership between DECC and local government across the Sydney, Hunter and Illawarra regions deals with the safe disposal of hazardous household waste, including chemicals, poisons, gas bottles and batteries. The program helps to ensure that such waste is not placed in domestic waste bins, dumped in bushland or tipped into waterways. CleanOut staff have established temporary collection sites for the community to safely dispose of their chemical waste.

In 2008–09, there were 40 collections throughout the Sydney, Hunter and Illawarra regions. A total of 24,598 community members participated and 819,718 kg of hazardous materials were safely disposed of. These figures represent an 8% increase from 2007–08. Since the inception of the program in 2003, 3,941,088 householders have safely disposed of 112,420 kg of hazardous waste, mainly paints, oils, batteries and gas cylinders.