NSW CLIMATE CHANGE FUND

Annual Report 2007-2008

Department of **Environment & Climate Change** NSW

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Minister's Foreword

The NSW Government's comprehensive plan of action to address climate change includes programs to reduce greenhouse gas emissions, transform our energy and water systems to make them sustainable and prepare for the local impacts of climate change that cannot be prevented. Our overall challenge is to play our part in reducing emissions, while changing the way we live and how our economy operates to continue to build prosperity and opportunity and protect our environment.

The NSW Climate Change Fund is an important element of the NSW Government's plan of action. It provides crucial financial support to help NSW families, businesses and governments cut the costs of tackling climate change as we make the transition to a low carbon future.

Through the Climate Change Fund, the NSW Government is acting as catalyst to bring energy and water saving skills and technologies into the mainstream, so that decision-makers in homes, businesses, councils and communities automatically consider efficiency and savings when determining how to meet their water and energy needs.

The Climate Change Fund is demonstrating the viability of new technologies and equipment to save water, energy and emissions and it is building knowledge, skills and capacity within NSW to make the most of the economic opportunities that are emerging in the shift to a low carbon economy.

Established on 1 July 2007, the NSW Climate Change Fund has broadened the scope of the previous Water and Energy Savings Funds by extending funding directly to householders through the rebate program and placing an emphasis on the key themes of energy efficiency and renewables and water conservation and recycling. To 30 June, 2008, it is supporting 227 projects to save more than $26 million on water and energy bills, 260,000 tonnes of greenhouse gas emissions and 16 billion litres of water a year.

Importantly, the Climate Change Fund is also stimulating investment in water and energy infrastructure. By enabling people to use less electricity and water to achieve the same outputs, it is putting downward pressure on bills and the demand for water and energy resources. Through the rebate component alone, the Climate Change Fund saved NSW families in 2007–2008 more than $2.3 million on utility bills each year, 650 million litres of water and 14,684 tonnes of greenhouse gas emissions.

Given the vital importance of the Fund's mission, the NSW Government has committed to increasing the size and scope of the Climate Change Fund for the next financial year. From 2008–2009, the Fund will begin a transformational $150 million energy efficiency program and an ambitious $100 million cleaner coal initiative. As you will see in the following pages, the current achievements of the Climate Change Fund are remarkable and it is certain to play a crucial role in helping NSW take major and rewarding steps on our journey to environmental and economic sustainability.

Carmel Tebbutt | Deputy Premier and Minister for Climate Change and the Environment

Executive summary

The NSW Climate Change Fund was established on 1 July 2007 under the *Energy and Utilities Administration Act 1987* to support household, business and government in saving water, energy and greenhouse gas emissions.

This is the first Annual Report for the NSW Climate Change Fund, covering the 2007–2008 financial year of operations. It includes details of funding allocations and analysis of performance for each of the Fund's programs and streams. The first year of the NSW Climate Change Fund established rebates for householders for rainwater tanks, hot water systems and ceiling insulation and funding programs for businesses, government, schools and communities. It also provided ongoing support to ensure previously funded projects and initiatives are completed.

The NSW Climate Change Fund replaced the Water and Energy Savings Funds, established in 2005 to support the legislative requirement for certain high water and energy users and local councils to prepare Water and Energy Savings Action Plans. This annual report covers the progress and performance of pre-existing programs, as well as the new programs established in 2007–2008.

In meeting its purposes identified in the *Energy and Utilities Administration Act 1987*, the NSW Climate Change Fund is helping all sectors of the NSW community address the causes and impacts of climate change. The NSW Climate Change Fund is helping to overcome the major barrier to investment in efficiency by bridging the gap between the upfront cost of water and energy upgrades and the savings on utility bills. It is encouraging NSW householders to make purchasing decisions for their homes that will save water and energy and reduce household running costs in the long-term. At the same time, it is increasing awareness and understanding of the importance of climate change and the role of water and energy savings in mitigating its impacts.

The NSW Climate Change Fund is stimulating private sector investment in water and energy efficiency and is encouraging business to adopt new technologies and practices. It has enabled manufacturing, retail, mining and service industries to upgrade equipment and processes to improve operational efficiency and reduce costs. It has also helped to establish 70 localised stormwater harvesting and recycling projects to reduce demand on potable water supplies.

The first year of operation for the NSW Climate Change Fund has established a strong platform on which to build on these achievements. By demonstrating the practical application of a range of water and energy savings in operation and delivering measurable results, the NSW Climate Change Fund will encourage a wider uptake across all sectors of the NSW community, stimulate markets for change and position NSW well for a low-polluting economy.

Highlights

- 22,271 hot water system, ceiling insulation and rainwater tank rebates taken up by NSW households
- 226 water and energy savings actions plans approved, bringing total plans approved to 445
- Round 1 of Green Business Program awarded $11.7 million to 24 projects
- First rounds of Public Facilities Program and Renewable Energy Development Programs opened, and Round 3 of Central Coast Water Savings Fund held
- School Energy Efficiency Program pilot undertaken in five schools
- Completion of 35 projects established under the Water and Energy Savings Funds
- Establishment of the Climate Change Fund Advisory Committee in August 2007 to advise the Minister on priorities for the Fund.

Overall performance of the NSW Climate Change Fund

Savings in energy and greenhouse gas emissions (tCO_2-e) from projects and programs for energy efficiency and renewables
14,805 MWh and 14,684 tonnes by households using rebates plus 86,564 MWh and 92,430 tonnes from funded projects
3,328 MWh, 3,279 tonnes and 354 kW by communities from funded projects
23,236 MWh, 22,035 tonnes and 5,622 kW by local and state government and schools from funded projects plus 13,747 MWh, 26,416 tonnes and 3,325 kilowatts if cost effective actions implemented from savings action plans prepared by local councils and government agencies
127,083 MWh, 126,882 tonnes and 48,210 kW by business from funded projects plus 714,626 MWh, 904,684 tonnes and 52,805 kilowatts if cost effective actions implemented from savings action plans prepared by business
Savings in water from projects and programs for water conservation and recycling
649,755 kL from rebates plus 513,000 kL from funded household projects
852,000 kL by communities from funded projects
1,684,000 kL by local and state government and schools from funded projects plus 1,258,233 kL if cost effective actions implemented from savings action plans prepared by local councils and government agencies
12,548,000 kL by business from funded projects plus 6,088,767 kL if cost effective actions implemented from savings action plans prepared by business
Savings in annual water and energy bills
$2.3 million in household bills from rebates plus $13.7 million from funded projects
$2.2 million in community facilities bills from funded projects
$5.2 million in government bills from funded projects plus additional $3.6 million if cost effective actions implemented from savings action plans prepared by local councils and government agencies
$35.2 million in business bills from funded projects plus additional $69.3 million if cost effective actions implemented from savings action plans prepared by businesses
Funding expended and allocated
$37 million expended to 30 June 2008
$116 million allocated up to 30 June 2008 including new allocation in 2007–2008 of $11.7 million for Green Business Program
Cost effectiveness of funding dollars spent
$14-$45/MWh for energy efficiency and $17-$26/MWh for renewables projects
$0.33-$0.61/kL for water efficiency, $0.58-$0.95/kL for harvesting and $0.32-$2.49/kL for recycling projects
Numbers of entities assisted
183 entities for 227 funded projects, of which 23 are to assist householders, 30 projects for communities; 60 projects for local, state government and schools and 114 projects for businesses
Additional 22,271 households assisted through rebates

Analysis of the broader economic benefits of the NSW Climate Change Fund and its impact on energy intensity within NSW will be undertaken when more projects are completed.

From 2008–2009, the NSW Climate Change Fund will fund the development and roll out of new energy efficiency initiatives announced in the $150 million NSW Energy Efficiency Strategy which includes programs for low income households, business, skills training and community awareness.

Other new initiatives under the Climate Change Fund from 2008–2009 include Fridge Buyback and washing machine rebates as part of the Residential Rebate Program.

Introduction

Introduction

Climate change mitigation and adaptation is critical for the future well-being of the people, economy and environment of NSW. Research to inform the new Climate Change Action Plan being developed by the NSW Government anticipates that increased global temperatures caused by higher levels of carbon pollution in our atmosphere will result in more very hot days for NSW, less rainfall, more frequent and more severe droughts, more extreme storms and higher sea levels. These changes are likely to have significant impacts on agriculture, water supply, settlements and infrastructure, natural resources, biodiversity and human health.

Climate change is identified by the NSW public as a major issue of concern and an issue on which they expect government to take a lead. Almost 40 per cent of respondents to DECC's *Who Cares about the Environment?* 2007 social research survey mentioned climate change, water supply/water conservation concerns or the environment as the most important issues for State Government attention[1].

People in NSW are concerned about climate change and are particularly worried about its impacts on future generations[2]. While the majority of people agree that climate change is everyone's responsibility, understanding of what actions individuals can or should undertake to reduce or mitigate climate change impacts is low. The NSW Climate Change Fund is helping to address these problems. It is saving water and energy by stimulating investment in savings initiatives and it is helping to increase knowledge, awareness and understanding of climate change and opportunities to address it. Through its many programs and streams, the NSW Climate Change Fund is providing evidence of the potential for energy efficiency, alternative power generation, water conservation and recycling to maintain or improve productivity and quality of life while reducing emissions and saving water. By demonstrating new technologies in action and providing an incentive to encourage uptake of efficient alternatives, it is helping to bring climate change action in NSW into the mainstream.

NSW has long been an early leader on climate change. It was the first Australian state or territory to introduce emissions reduction targets – a return to year 2000 levels of greenhouse gas emissions by 2025, and a cut of 60 per cent by 2050 – and it was the first jurisdiction in the world to introduce an emissions trading scheme.

The NSW Government's response to climate change is coordinated by DECC. It includes strategies to adapt to the impacts of unavoidable climate change, reduce NSW greenhouse gas emissions and increase the economic benefits that NSW can derive from the low carbon economy. The NSW Climate Change Fund is a key measure to contribute to the Government meeting NSW State Plan priorities which include:

- Priority E1: A secure and sustainable water supply for all users
- Priority E2: A reliable electricity supply with increased use of renewable energy
- Priority E3: Cleaner air and progress on greenhouse gas emissions

To achieve the NSW Government's ambitious longer term emissions reduction goals, the Climate Change Action Plan will provide a strategic framework for the State to address both the challenge of reducing our emissions, as well as adapting to unavoidable climate change. Through a combination of measures, and action from all levels of government, business and industry, individuals, families and communities, NSW can rise to the challenges that climate change will bring.

[1] NSW DECC *Who Cares about Water and Climate Change in 2007*, Sydney 2007.

[2] Thermometer Survey 2008.

What is the NSW Climate Change Fund?

The NSW Climate Change Fund was established on 1 July 2007 under section 34E of the *Energy and Utilities Administration Act 1987* ('the Act') (see Appendix A) and is administered by the Department of Environment and Climate Change NSW (DECC).

The primary goal of the NSW Climate Change Fund is to reduce greenhouse gas emissions and the impacts of climate change by supporting the development and uptake of energy and water saving technologies and practices in homes, businesses, government facilities, schools and the community.

By providing an incentive for investment in the key measures of energy efficiency and renewables and water conservation and recycling, the NSW Climate Change Fund is enabling the people, businesses and communities of NSW to take action on climate change.

The Fund achieves its aims through funding a number of programs or streams:

- Residential Rebate Program
- Green Business Program
- Public Facilities Program
- Renewable Energy Development Program
- Recycling and Stormwater Harvesting Program
- School Energy Efficiency Program
- Rainwater Tanks in Schools Program
- Central Coast Water Savings Fund
- Projects funded under the former Water and Energy Savings Funds
- Administrative support for the delivery of Water and Energy Savings Action Plans
- Funding for the *Water for Life* Education Program
- Funding for the Sydney Water Demand Management Program.

The NSW Climate Change Fund also provides NSW's contribution to national energy regulation.

From 2008–2009, the NSW Climate Change Fund will fund the development and roll out of new energy efficiency initiatives announced in the $150 million NSW Energy Efficiency Strategy. These initiatives include:

- $63 million Low Income Household Refit Program
- $15 million Small Business Energy Efficiency Program
- $20 million to expand Sustainability Advantage to 800 more businesses
- $20 million for skills training
- establishing an economy-wide energy savings target
- new energy efficiency targets under the Greenhouse Gas Abatement Scheme
- $15 million community awareness program
- a legal requirement for the State's largest energy users to implement cost effective energy savings measures
- energy efficiency support for State Government agencies.

Other new initiatives under the NSW Climate Change Fund from 2008–2009 include Fridge Buyback and a $150 washing machine rebate as part of the Residential Rebate Program.

From 2008–2009 the NSW Climate Change Fund will also fund the NSW Clean Coal Fund, to be administered by the Department of Primary Industries.

From 2008–2009 to 2012–2013, the NSW Climate Change Fund will deliver more than $700 million of funding.

The specific purposes of the Fund outlined in section 34F of the Act are to provide funding:

- to reduce greenhouse gas emissions and the impacts of climate change associated with water and energy activities
- to encourage water and energy savings and the recycling of water
- to reduce the demand for water and energy, including addressing peak demand for energy
- to stimulate investment in innovative water and energy savings measures
- to increase public awareness and acceptance of the importance of climate change and water and energy savings measures
- for contributions made by the State for the purposes of national energy regulation.

How is it funded?

The main source of funding for the NSW Climate Change Fund continues to be the annual contributions from water and electricity providers, as occurred previously under the Water and Energy Savings Funds. These include electricity distribution network service providers such as EnergyAustralia, Integral Energy and Country Energy and water suppliers Sydney Water, Gosford City Council and Wyong Shire Council.

Under the Act, the Minister for Climate Change and the Environment requires water utilities and network service providers to make contributions to the NSW Climate Change Fund via the annual gazettal of Contributions Orders. The Water Contributions Order requires the concurrence of the Minister for Water and the Minister for Local Government and the Energy Contributions Order requires the concurrence of the Minister for Energy and the Treasurer.

Additional monies to the Fund are unallocated funding from the former Climate Action Grants Program under the Greenhouse Innovation Fund, funding from the Environmental Trust and interest earned on cash balances.

This Annual Report

This Annual Report has been prepared in accordance with the requirements of the Act (section 34H). Activities under the NSW Climate Change Fund are reported for the first financial year of operations (1 July 2007 to 30 June 2008). This report also covers the operation of pre-existing elements of the NSW Climate Change Fund, such as the former Water and Energy Savings Funds, from their commencement up to 30 June 2008.

As required by the Act, the Report provides information on fund allocations and anticipated benefits, with reference to the key performance indicators and purposes of the Fund. Outcomes for homes, communities, government and schools, and business are highlighted, followed by performance data presented by program.

Key performance indicators

The key performance indicators for the NSW Climate Change Fund are:

- savings in water, energy (consumption, peak demand) and greenhouse gas emissions
- savings in annual energy and water bills for households, businesses, government and other organisations
- cost effectiveness (per funding dollar spent)
- funding allocated
- number of entities assisted.

Taking action

Overview

The NSW Climate Change Fund is supporting climate change action in homes, communities, government, schools and businesses.

By helping to cover the upfront costs of investment in water and energy savings, the NSW Climate Change Fund is overcoming one of the key barriers to improved efficiency. It is supporting the adoption of water and energy efficient technologies, helping to reduce operating costs and increasing understanding of the role of water and energy efficiency in addressing the causes and effects of climate change.

By delivering funding to put energy efficiency, renewables, water conservation and recycling into practice, the NSW Climate Change Fund is demonstrating the potential of these measures to contribute to the State's climate change response. It is stimulating water, energy and emissions savings in NSW and providing an important platform on which to measure and assess the effectiveness of a range of water and energy savings initiatives across all sectors of NSW.

The following pages detail the achievements of the NSW Climate Change Fund by sector. They include analysis of the cost effectiveness and savings benefits of supported technologies and processes to help inform consumer choices and purchasing decisions and identify how and where the greatest opportunities for savings can be made.

Savings shown include actual savings for completed projects and estimated savings for projects still underway.

Table 1

Funding and expected outcomes by sector

Sector	No projects	Funding Approved	ML savings /year	MWh savings/year	tCO_2-e savings /year	kW savings/year	$ savings (water bills)*	$ savings (electricity bills)*
Energy efficiency and renewables								
Business	51	27,143,539	92	127,063	126,861	48,210	184,886	10,165,032
Householders	9	9,633,088	0	101,369	107,114	4,962	0	14,247,398
Communities	2	167,700	0	3,328	3,279	354	0	499,200
Government	12	7,767,661	0	23,236	22,035	5,622	0	1,858,856
	74	44,711,988	92	254,996	259,289	59,149	184,886	26,770,486
Water conservation and recycling								
Business	63	38,199,258	12,455	20	21	0	24,910,479	1,600
Homes	14	12,759,782	1,163	0	0	0	1,733,775	0
Community	28	5,721,353	852	0	0	0	1,703,408	0
Government	48	14,449,528	1,684	0	0	0	3,368,990	0
	153	71,129,921	16,154	20	21	0	31,716,653	1,600
Total								
Business	114	65,342,797	12,548	127,083	126,882	48,210	25,095,365	10,166,632
Homes	23	22,392,870	1,163	101,369	107,114	4,962	1,733,775	14,247,398
Community	30	5,889,053	852	3,328	3,279	354	1,703,408	499,200
Government	60	22,217,189	1,684	23,236	22,035	5,622	3,368,990	1,858,856
	227	**115,841,909**	**16,247**	**255,016**	**259,311**	**59,149**	**31,901,539**	**26,772,086**

*$1.34/kL – homes; $2.00/kL – business, communities and government. 15c/kWh– homes and communities; 8c/kWh – business, government. The 'homes' category includes Residential Rebate Program savings.

NSW Homes taking action

Homes snapshot

Energy Efficiency and Renewables	7,832 rebates for hot water systems and ceiling insulation paid, saving 14,684 tonnes of greenhouse gas emissions a year 7 projects focusing on energy efficiency, 2 projects on education, saving 92,429 tonnes of greenhouse gas emissions a year
Water Conservation and Recycling	14,439 rainwater tank rebates paid saving 650 million litres of water a year 14 projects supported, including 3 recycling, 3 harvesting, 7 efficiency and 1 groundwater project, saving 513 million litres of water a year

NSW households acted on climate change in 2007–2008 with the help of the NSW Climate Change Fund. The enthusiastic uptake of hot water system, ceiling insulation and rainwater tank rebates in the first year of operation helped householders save water, electricity and greenhouse gas emissions through improved efficiency and alternative supply.

Many more households also participated in 23 residential projects supported through other components of the NSW Climate Change Fund. These projects include household audit and refit programs in North Wollongong and the Murray region, upgrades to aged care residential facilities, rebates for greywater systems and the Fridge Buyback pilot. Together, these 23 projects will save participating households 513 million litres of water a year and 92,429 tonnes of greenhouse gas emissions.

The NSW Climate Change Fund also supports Sydney Water's Demand Management Program. In 2007–2008, Sydney Water distributed 60,353 water saving kits to Sydney homes and audited and retrofitted more than 35,000 homes under the WaterFix program. For full details of Sydney Water's Demand Management Program are reported in Sydney Water's Water Conservation and Recycling Report 2007–2008 available from www.sydneywater.com.au

Residential rebates

A total of 22,271 rebates were paid for rainwater tanks, insulation and hot water systems in 2007–2008, saving an estimated 650 million litres of water, 14,684 tonnes of greenhouse gas emissions and more than $2.3 million on energy and water bills a year.

An analysis of rebate uptake demonstrates that the environmental benefits are the main driver for many households. For details of rebate uptake, savings achieved and cost effectiveness, see the Performance by Program section of this Annual Report on page 22.

Maximising the savings

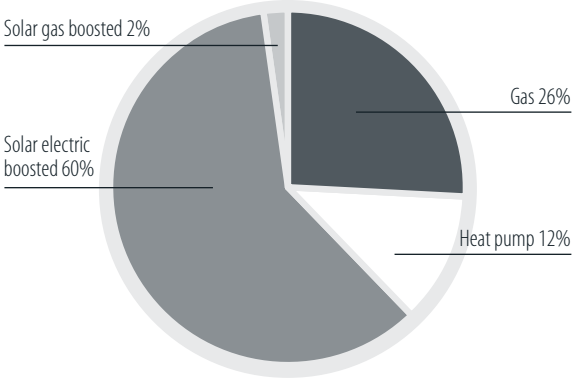
Hot water systems

The most important consideration when choosing a hot water system is the size. To maximise emission and running cost savings, the system should be large enough to provide hot water to meet the household's needs. A system that is too big costs more to buy and run and will generate more greenhouse gas emissions. Hot water professionals can advise on the appropriate size of a system for the household. Installing water efficient fixtures, such as showerheads and taps and insulating hot water pipes to prevent heat loss will maximise the efficiency of all hot water systems. Householders switching to electric-boosted solar hot water systems can also save more in running costs by switching to an off-peak tariff, which has the added benefit of reducing peak demand.

Solar hot water systems provide the greatest emission savings and account for 60 per cent of the hot water systems installed in NSW in 2007–2008 with the help of the rebate. Switching from an electric hot water system to a solar hot water system saves an average of 3.0 tonnes of greenhouse gas emissions a year. Switching from electric to a heat pump system saves 2.4 tonnes and switching to gas saves 2.9 tonnes a year. Figure 1 shows the breakdown of hot water system rebate uptake by system type.

Figure 1

Hot water system rebates paid by system type



Maximising the savings

Ceiling insulation

The energy and emission savings from ceiling insulation are maximised through insulating the entire ceiling area. This means that minimal heat transfer can occur through any part of the roof, maximising comfort and minimising the amount of energy required to heat or cool the home. Other ways to improve thermal comfort and the benefit of insulation is by excluding draughts, using door snakes and weather-stripping on doors and windows and curtains to keep in warmth on winter nights and to keep out heat from the sun in summer. Using heating and cooling as efficiently as possible reduces emission and costs, including choosing low energy options for heating and cooling, such as fans and setting the temperature right. Turning the air conditioner thermostat up one degree can make a 10 per cent difference on bills.

Rainwater tanks

Water savings from a rainwater tank are maximised by the roof catchment area and connecting the tank to toilets and washing machines. Using the tank water indoors not only replaces potable water for every day uses, it also ensures there is room in the tank to collect more water every time it rains.

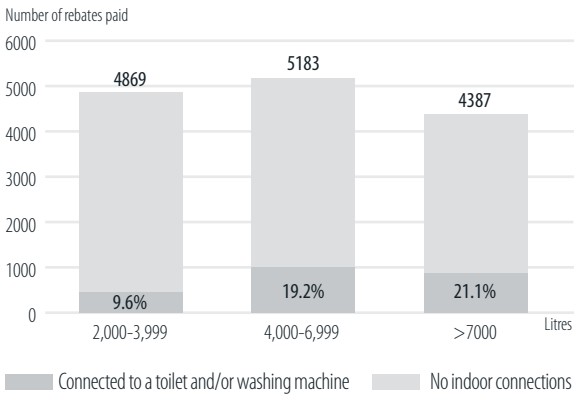
The ideal tank size and roof area for a household depends on a number of factors, including local rainfall, the number of people using the tank water and the space available. For rainwater tank rebates paid in 2007–2008, the median tank size was 4,800 litres and the average connected roof area was 145 square metres.

If a three person family in the Sydney region were to connect a 4,800 litre tank to a 145 square metre roof area, and connect the tank to both the toilet and washing machine, they would save almost 60,000 litres of water a year.

Almost 17 per cent of rainwater tanks under the rebate scheme were connected. Figure 2 shows the breakdown of tank installations by tank size and percentage connected.

Figure 2

Rainwater tank rebates by tank size and connection



Providing the incentive

Analysis of rebate uptake in 2007–2008 shows the Residential Rebate Program is helping to achieve significant water and energy savings in NSW homes and is an effective incentive to encourage householders to make the most water and energy efficient purchasing choice. The rebates are significantly reducing the payback period for installing ceiling insulation, rainwater tanks and more climate-friendly hot water systems and are helping to bridge the gap between the upfront costs and savings on bills.

However, with long payback periods remaining for some investments, NSW households are demonstrating through the rebate program a strong commitment to reducing their climate change impacts in their choice of the more environmentally-friendly option.

On average, the rebates covered 20-25 per cent of the cost of installation. Table 2 shows the median cost of installation for each of the rebates per household and the average rebate amount.

Table 2

Installation costs and average rebate

Rebate	Median purchase and installation cost	Average rebate amount
Rainwater tank	$2,087	$498
Hot water system	$3,500	$689
Ceiling insulation	$984	$291

Cost savings from a new hot water system depend on the running costs of both the new system and the electric system being replaced. Table 3 shows the average savings on energy bills, and the average payback period for each hot water system type, based on the systems installed and the systems replaced in 2007–2008 with the help of the rebate.

Table 3

Hot water system cost savings and payback periods

System type	Savings on energy bills per year	Payback period without rebate	Payback period with rebate
Gas	$50	12.0 years	6.0 years
Heat pump	$128	18.1 years	11.9 years
Solar – electric-boosted	$170	16.1 years	11.3 years
Solar – gas-boosted	$255	15.7 years	12.0 years

Note: these figures are based on the assumption that the hot water system would be replaced with a new electric hot water system if one of the above systems was not chosen and there are no real increases in future electricity prices.

The proportion of systems which are continuous and off-peak, and the associated costs were taken from information provided by householders on their rebate application forms. New systems which operate on continuous electricity supply will have lower bill savings and longer payback periods.

The median amount spent on insulation was $984. Without a rebate, the insulation would pay for itself in just under six years. With the ceiling insulation rebate, the payback period drops to slightly more than four years.

At current prices, a 4,800 litre rainwater tank in the Sydney region saving 60,000 litres of water a year would pay for itself in 41 years without the rebate, and 20 years with the rebate. Payback periods are longer for tanks which are not connected to the toilet and washing machine, due to lower water savings.

It is also important to remember that both water and energy costs are expected to rise in coming years, making these sustainability options more cost effective into the future.

Looking forward

To help NSW householders save water and energy in other end uses, Fridge Buyback was introduced on 1 August 2008, providing householders with $35 to have a second fridge taken away from their home. Fridge Buyback has been allocated $2.8 million from the NSW Climate Change Fund to take 19,000 old fridges out of circulation, saving an estimated 152,000 tonnes of greenhouse gas emissions and up to $190 a year from participant's energy bills. Initially available to Sydney households, in partnership with local councils, opportunities to extend the program to regional areas of NSW are being explored.

A washing machine rebate was also introduced under the Residential Rebate Program on 1 August 2008. It provides a $150 rebate to buy a washing machine with at least a 4.5 star Water Efficiency Labelling and Standards rating (WELS). A 4.5 star water efficient washing machine can save up to 100 litres per wash compared to an old top-loader, saving a family washing more than six loads a week up to 31,000 litres of water a year.

As part of the $150 million NSW Energy Efficiency Strategy, a $63 million Low Income Household Refit Program will be launched in 2008–2009 to provide 220,000 low income households in NSW with audits and retrofits to improve energy efficiency and save money on electricity bills. Walk through audits will identify opportunities for energy and water savings. During the visit, the accredited assessor will replace old light bulbs with energy-efficient compact fluorescent lamps (CFLs), install water-efficient showerheads and tap aerators and fix leaks. The program is expected to save participating households $21 million a year on energy bills and 163,000 tonnes of greenhouse gas emissions.

The NSW Climate Change Fund will also provide more than $17 million over the next four years for energy and water savings in Housing NSW properties. The funding will enable Housing NSW to replace approximately 12,000 electric storage hot water systems with solar hot water, saving 34,800 tonnes of greenhouse gas emissions a year and provide a WaterFix to 36,000 Housing NSW properties, saving an estimated 756 million litres of water a year.

■ **CASE STUDY**

Choosing for the environment

For the Bowen family of Keiraville, Wollongong, the $600 NSW Government hot water system rebate – coupled with the Federal Government grant – made a green dream possible.

Annette Bowen and her son Keegan will save 90 tonnes of greenhouse gas emission over the life of their new electric-boosted solar hot water system, the equivalent annual power demand of 10 homes.

Even with the State and Federal rebates, Annette's choice of solar hot water was $400 more expensive. She has chosen to boost the system on a continuous tariff because it suits the family to ensure there is always hot water in the evening. However, to save electricity and emissions, Annette switches the boost off completely in summer. Using the system in this way, Annette will save $125 a year in running costs compared to her old electric water heater, equating to $3,750 over the 30 year life of the system. While she will recoup the difference in the upfront cost through lower running costs in the long-term, Annette's decision to buy solar was an environmental one.

"I chose the solar hot water system because I want to make my house as sustainable as possible," said Annette. "I can't understand why we don't have them everywhere."

"I couldn't have afforded to do it without the rebates, so it made a big difference to the choice I was able to make. But I would love to live in a sustainable house and, when I can afford it, I will be putting in tanks and insulation in as well."

Annette and Keegan Bowen.

NSW Communities taking action

Community funding snapshot

Energy Efficiency and Renewables	2 projects, saving 3,279 tonnes of greenhouse gas emissions a year through energy efficiency (2%) and education (98%)
Water Conservation and Recycling	28 projects saving 852 ML a year through recycling (69%) water harvesting (30%) and groundwater (1%)

Projects supported by the NSW Climate Change Fund will help NSW communities save an estimated 852 million litres of water, 3,328 megawatt hours of electricity, and 3,279 tonnes of greenhouse gas emissions a year, as well as reduce peak demand by 354 kilowatts. This translates to $2.2 million in savings on annual water and energy bills.

These projects demonstrate how water and energy savings can work in practice and are increasing awareness and understanding of the role of water and energy savings as part of NSW response to climate change.

The Public Facilities Program, Water and Energy Savings Funds and Central Coast Water Savings Fund have supported projects in a range of community and public facilities including golf clubs, bowling clubs, community buildings and museums.

NSW communities have also benefited from the education program, *Water for Life*, administered by the NSW Department of Water and Energy. The program is intended to reduce demand for water and increase community understanding of the range of strategies to secure greater Sydney's water supply. *Water for Life* has already realised significant improvements in the community's understanding of Sydney's water supply needs and actions they can take to save water as detailed on page 31.

Looking forward

- Round 2 of the Public Facilities Program will be held in early 2009 with the program expanded to include a Community Savers stream to fund simple, low-cost water and energy saving projects by not-for-profit community organisations
- $15 million Energy Efficiency Strategy community awareness and education program will begin in 2008–2009 to increase community awareness, knowledge and understanding about energy efficiency.

■ CASE STUDY

Community Broadcasting Association tunes listeners into savings

The 1.2 million listeners to community radio in NSW are well-informed about energy efficiency with the development and broadcast of a series of audio segments about saving energy and emissions.

With $142,000 from Round 2 of the Energy Savings Fund, the Community Broadcasting Association of Australia's Energize project established 36, one-minute and 24, five-minute audio segments focusing on energy and emission savings.

The 60-second clips contain tips and advice for energy savings around the home, including stand-by energy, purchasing energy-efficient appliances, heating and cooling and efficient refrigeration.

The more in-depth five-minute segments report on some of the many good news energy efficiency stories underway in schools, businesses and community groups across NSW. They include information about getting a NABERS office rating, emission saving initiatives at the Peats Ridge Festival and solar powering NSW Parliament House.

Broadcasting energy savings.

The audio segments were broadcast on the Association's 80 NSW radio stations and are available on CD for use by schools, local councils and community groups.

NSW Government and schools taking action

Sixty projects supported by the NSW Climate Change Fund will help government agencies, local councils and schools save more than 1,684 million litres of water, 23,236 megawatt hours of electricity, 5,622 kilowatts of peak demand, 22,035 tonnes of greenhouse gas emissions and $5.2 million in energy and water bills a year.

Local councils

Local council funding snapshot

Energy Efficiency and Renewables	6 projects saving 17,727 tonnes of greenhouse gas emissions a year through efficiency (90%) and alternative power generation (10%)
Water Conservation and Recycling	38 projects, saving 1,506 ML a year through conservation (9%) recycling (51%) and harvesting (40%)

Many local councils in NSW have taken advantage of the funding under the NSW Climate Change Fund to implement water and energy saving projects.

A total of $17.7 million has been allocated to local councils to implement 14 water and energy savings projects, saving an estimated 1.5 billion litres of water, 18,208 MWh of electricity and 17,727 tonnes of greenhouse gas emissions a year. They include:

- $1.6 million to Kogarah Municipal Council for the Beverley Park sewer-mining project
- $346,500 to Gosford City Council to upgrade Kincumber Sewage Treatment Plant to provide an alternative and permanent water supply for playing fields, parks and local industry
- $25,700 to Fairfield City Council towards the Nalawala Community Hall, Australia's largest straw-bale building
- $1.8 million to Willoughby City Council for Chatswood CBD and Civic Place Integrated Water Management System.

All local councils in Sydney Water's area of operations are required to prepare Water Savings Action Plans and councils in NSW with populations of more than 50,000 people are required to prepare Energy Savings Action Plans. Local government identified 1681 cost effective actions in savings action plans to save more than 773 million of litres of water, 9,029 megawatt hours of electricity and 17,907 tonnes of greenhouse gas emissions a year. Implementing these measures will also save councils $2.3 million in water and energy bills.

■ CASE STUDY

Rockdale's team approach

Rockdale City Council has cut water use by 80 per cent at the highest use sites identified in its Water Savings Action Plan.

A cross-departmental Water Management Team was established in 2005 to drive the council's comprehensive water conservation agenda and take responsibility for implementing actions identified in the Plan. They have included fixing leaks, retrofitting toilets and installing rainwater tanks and water efficient fixtures. As a result, water use at its highest using sites has fallen from 45 million litres in 2003–2004 to 6.5 million litres in 2006–2007.

Key performance indicators were established to manage water use at the sites, which include Bexley Swimming Centre, Rockdale Town Hall, Cook Park and Council's Administration building. Water use is monitored quarterly through bills and, where anomalies are identified, tinytag technology is used to track leaks, other waste or faults. The KPIs are reported annually through the Water Savings Action Plan Review and Council's Management Plan.

Rockdale City Council's water management team.

Participation in Sydney Water's Every Drop Counts program has helped drive the water saving agenda with Rockdale City Council securing a 5 star rating. Each member of the Water Management Team acts as a champion for water conservation within their own departments and its work has also included the development of Safe Work Method Statements which detail the ways for staff to conserve water in their everyday tasks, such as hand held watering or using water-intensive road saws. Cost savings from water reductions are fed back into a Revolving Fund to pay for future water efficiency projects.

Local councils identified 997 cost effective actions to save water in Water Savings Action Plans. The greatest potential for water savings by local government are for irrigation use.

Local council cost effective water actions by end use

End use	% of savings identified	Examples
Irrigation and outdoor	45	efficient irrigation systems, controls and moisture sensors, recycled or harvested water to supply irrigation systems, outdoor users such as swimming pools
Indoor	37	efficient fittings in amenities, waterless urinals and hot water systems
Combined end use	14	leakage monitoring and repairs, installation of meters, recycled or harvested water to supply amenities

Local councils identified 684 cost effective actions to save energy in Energy Savings Action Plans. The greatest potential for energy savings by local government is through indoor efficiency upgrades.

Local council cost effective energy actions by end use

End use	% of savings identified	Examples
Combined indoor	35	energy efficient appliances, heating and lighting controls, variable speed drives
Lighting	29	replacement of inefficient lighting, lighting controls, use of natural lighting
HVAC	16	installation of seasonal control system and monitors, replacement of complete system, automatic sensor control

Government agencies

Government agency funding snapshot

Energy Efficiency and Renewables	3 projects saving 4,023 tonnes of greenhouse gas emissions a year, through energy efficiency (68%) and alternative power generation (32%)
Water Conservation and Recycling	3 projects, saving 84 ML a year through water conservation (15%), harvesting (21%) and recycling (64%)

NSW Government agencies can apply for funding for water and energy saving projects through the $40 million NSW Treasury Loan Fund, a low-interest scheme providing upfront funding for projects which can be paid back from savings on bills. Where a project requires further funding assistance in order to proceed, government agencies are also eligible to apply to the NSW Climate Change Fund.

A total of $2.9 million has been allocated under the NSW Climate Change Fund to NSW Government agencies to implement six water and energy savings projects, saving an estimated 84 million litres of water 4,759 MWh of electricity and 4,023 tonnes of greenhouse gas emissions a year. They include:

- $630,000 to Zoological Parks Board of NSW to upgrade the Taronga Zoo wastewater treatment and reuse plant
- $700,000 to Country Energy to cover Stephens Creek Reservoir, near Broken Hill, to stop the evaporation of 143 million litres of water a year
- $1 million to the Legislature to install solar PV panels and undertake a major energy efficiency upgrade at Parliament House

Government agencies with high water and energy use sites have identified 164 cost effective actions in Water and Energy Savings Action Plans to save an estimated 485 million litres of water, 4,718 megawatt hours of electricity and more than 8,500 tonnes of greenhouse gas emissions a year. Implementing these measures will save around $1.3 million in water and energy bills.

Government agencies identified 102 cost effective actions to save water in their Water Savings Action Plans. The greatest potential for water savings by NSW Government agencies is through combined end-uses including, recycling and harvesting for irrigation and monitoring.

Government agencies cost effective water actions by end use

End use	% of savings identified	Examples
Combined end use	58	recycled or harvested water for use for indoor as well as irrigation, metering and monitoring of site locations
Indoor	24	upgrade of hot water system, installation of flow restrictors in amenities modification of toilets and urinals
Irrigation	5	Efficient irrigation systems, controls and moisture sensors, recycled or harvested water to supply irrigation systems

Government agencies identified 62 cost effective actions to save energy in their Energy Savings Action Plans. The greatest potential for government agency energy savings is through energy efficiency upgrades.

Government agencies cost effective energy actions by end use

End use	% of savings identified	Examples
Combined indoor	74	energy efficient appliances, heating and lighting controls, variable speed drives, power factor correction
HVAC	9	upgrade and optimise equipment
Lighting	4	replacement of inefficient lighting, lighting controls, use of natural lighting

■ CASE STUDY

Taronga Zoo recycles wastewater

With $630,000 funding from the NSW Climate Change Fund, Taronga Zoo is upgrading its wastewater treatment plant to recycle more than 53 million litres of potable water a year.

The upgraded plant will treat water collected from a variety of sources within the zoo, including the wash-down water from animal enclosures, moats and stormwater drains. The water will be treated to a high standard so that it is suitable for reuse for toilet flushing, moats and irrigation.

The system upgrade includes a large stormwater storage tank, a gross pollutant trap, an upgraded chemical dosing plant, a clarifier to remove small particles and a new microfiltration unit to remove bacteria and other minute particles from the water. As a final precaution the water will be treated with ultraviolet light for further disinfection.

When the project is completed, the wastewater treatment and recycling system will double the stormwater harvesting and holding capacity to 1 million litres, and will increase the throughput from 130,000 litres to 250,000 litres a day.

Recycled water at the elephant enclosure at Taronga Zoo.

Schools

School funding snapshot

Energy Efficiency and Renewables	3 projects, saving 285 tonnes of greenhouse gas emissions a year, through efficiency upgrades (94%) and alternative power generation (6%)
Water Conservation and Recycling	7 projects saving 94 ML a year from water conservation (39%), harvesting (52%) and recycling (9%)

Lighting upgrades are the most cost effective way for schools to save energy. Research shows lighting in schools accounts for the largest proportion of total electricity use. There are approximately 2,200 government schools in NSW using more than 140,000 megawatt hours of electricity a year, around 50 per cent of which is for lighting. A review by the Department of Commerce and Department of Education and Training (DET) has identified that almost 2,000 government schools in NSW are using obsolete lighting technology and can achieve significant emission and energy saving benefits from a lighting retrofit.

Under the School Energy Efficiency Program, a pilot of five schools was undertaken in 2007–2008, replacing 4,400 old style fluorescent lamps with the latest high-efficiency luminaires, saving an estimated 255 tonnes of greenhouse gas emissions and 240 megawatt-hours of electricity a year.

Schools participating in the School Energy Efficiency Program are required to join Sustainable Schools and develop a School Environmental Management Plan, with online support through the Sustainable Schools Program (www.sustainableschools.nsw.edu.au).

The most cost effective ways to save water in schools are to prevent wastage, fix leaks and install water efficient devices, especially dual flush toilets, as toilets are one of the highest water users in schools. Sydney Water Research undertaken in 2001–2002 under the Every Drop Counts Business Program involving an audit of 13 schools showed that the majority of water use in schools (44 per cent) was lost through leakage. The next major water uses were toilets, followed by irrigation.

As well as dedicated programs for schools, the NSW Climate Change Fund has provided $1.6 million to NSW schools to implement 10 water and energy savings projects, saving an estimated 94 million litres of water, 269 Megawatt hours of electricity and 285 tonnes of greenhouse gas emissions a year. They include:

- $400,000 to the Council of the King's School stormwater harvesting and efficiency upgrade
- $39,900 to Rumbalara Environmental Education Centre for the *Take it easy with water* education program
- $60,000 to Climate Change Balmain-Rozelle community group to install solar panels on the roofs of six local schools

Looking forward

- Round 2 of the Public Facilities Program will be held in early 2009
- School Energy Efficiency Program will upgrade lighting in an additional 16 high schools in 2008–2009 and provide funding for student-initiated projects
- Rainwater Tanks in Schools Program will commence in 2009–2010.

NSW Business taking action

Business funding snapshot

Energy Efficiency and Renewables	51 projects, saving 126,861 tonnes of greenhouse gas emissions and 92 ML of water a year, through energy efficiency (33%), alternative power generation (57%) and education (10%). Six projects focus on power factor correction A total of 16 projects are saving an estimated 11,466 kW a year in network constrained areas
Water Conservation and Recycling	63 projects saving 12,456 ML a year through recycling (77%), water conservation (20%) and harvesting and groundwater (3%)

Businesses in NSW will save an estimated 12,548 million litres of water a year, 127,083 megawatt hours of electricity, 126,882 tonnes of greenhouse gas emissions and reduce peak demand by 48,210 kilowatts from projects approved under the NSW Climate Change Fund to 30 June 2008. Businesses will save $35.2 million in annual energy and water bills from implementing these projects.

There are many opportunities to reduce peak demand, electricity and water use in the industrial and commercial sectors, but these are not always adopted. Market barriers such as lack of information or trained personnel and investment priorities which focus on business development rather than resource efficiency are hindering the pace of change.

The NSW Climate Change Fund aims to overcome these barriers by bridging the funding gap between the cost of investment and returns on savings and stimulating the market for lasting change.

Types of projects which are being funded include:

- education and technology trial activities which have the potential to increase the adoption of efficient technologies and practices
- projects which improve the efficiency of buildings, appliances and industrial processes
- projects which reduce peak electricity demand
- projects which reduce the demand for electricity or water supplied from electricity or water supply networks – eg cogeneration, fuel switching, water recycling, stormwater harvesting.

In the business sector, the greatest savings are from initiatives in industry operations (38%), followed by combined indoor use (29%) and equipment upgrades (23%). For water, the greatest savings are in industrial use (71%), followed by irrigation (15%).

Figure 3

Estimated energy and greenhouse gas savings by end use for business funding

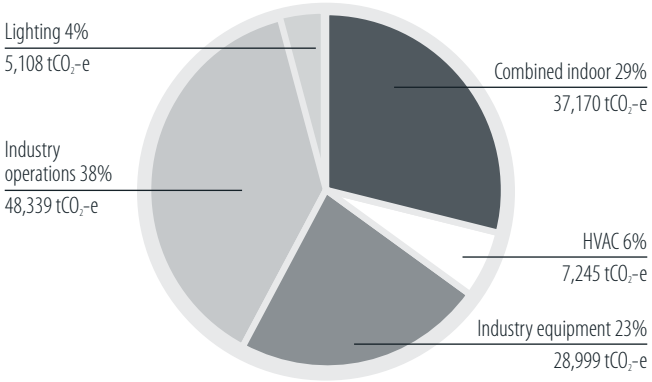
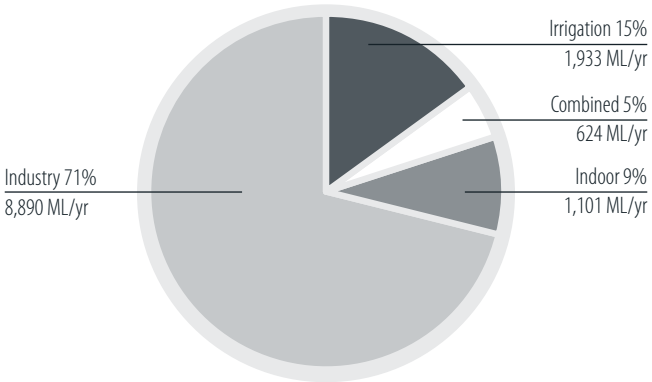


Figure 4

Water savings by end use for business funding



■ CASE STUDY

Tooheys efficient beer making

Tooheys Brewery is consolidating its position as one of the most efficient beer makers in the world with a comprehensive program of water and energy savings.

Tooheys Water and Energy Savings Action Plans identify opportunities to save almost 100 million litres of water a year and 519 gigajoules of energy.

The Lidcombe brewery operates seven days a week and produces an average of 800,000 litres of beer a day. It currently uses more than a billion litres of water a year, with a world leading ratio of 3.7 kilolitres of water to each kilolitre of beer produced. The global average water to beer ratio is 5-6 kilolitres of water per kilolitre of beer.

Tooheys had already cut water use by 334 million litres a year through improving efficiency in its bottling and canning operations. The Water Savings Action Plan has identified ways to save a further 8 per cent – or 98 million litres a year – by capturing, treating and reusing brewing wastewater.

The company's Energy Savings Action Plan identified emission savings through monitoring energy use and upgrading equipment. Tooheys is also investing $4.7 million in two major energy saving projects, with the support of the NSW Climate Change Fund.

The company secured $2 million through the Green Business Program towards a $4.2 million natural gas-fired cogeneration plant which will reduce peak demand at the site by more than 2MW, save 15,000 MWh of grid electricity and 9,500 tonnes of greenhouse gas emissions a year.

A $417,000 refrigeration system upgrade and power factor correction project is saving a further 337 tonnes of greenhouse gas emissions a year, with the backing of $150,000 from Round 2 of the Energy Savings Fund.

Tooheys Brewery.

Cost effective ways to save water and energy

NSW businesses within Sydney Water's area of operations with sites that use more than 50 million litres of water a year and sites across NSW that use more than 10 gigawatt hours of electricity a year are required to prepare Water and Energy Savings Action Plans.

Businesses have identified 1,813 cost effective measures in savings action plans to save 6,088 million litres of water, 5.1 million gigajoules of energy, 714,626 megawatt hours of electricity and more than 904,000 tonnes of greenhouse gas emissions a year. In addition, 52,805 kilowatts of reductions of peak demand have been identified of which 8,606 kilowatts have been identified in network constrained areas. Implementing the measures will save $69.3 million in water and energy bills a year. To 30 June 2008, 171 cost effective actions have been implemented.

Businesses identified 731 cost effective actions to save water in Water Savings Action Plans. The greatest potential for water savings action by NSW businesses is through indoor water efficiency upgrades.

Business cost effective water actions by end use

End use	% of savings identified	Examples
Indoor use	48	installation of water savings fixtures in amenities, flow restrictors on taps and sensor controls in urinals
Combined end use	21	monitoring and repair of leakage, metering site locations, rainwater harvesting and supply
Industrial processes/ operations	18	installation of waterless woks, optimisation of industrial processes and upgrading of industrial equipment)
Other	13	irrigation

Businesses identified 1,082 cost effective actions to save energy in Energy Savings Action Plans. The greatest potential for energy savings action by NSW businesses is through equipment upgrades.

Business cost effective energy actions by end use

End use	% of savings identified	Examples
Industrial equipment	39	installation or upgrade to efficient equipment, optimisation of existing equipment, installation of variable speed drives or controls on equipment
Industrial processes/ operations	33	reviewing and modifying industrial processes, monitoring and metering processes, cleaning and production modifications
Other	28	including lighting, HVAC

Looking forward

- $15 million Small Business Energy Efficiency Program will begin in 2008–2009 to provide 6,000 small businesses with assistance to conduct energy efficiency audits and funding to implement savings
- Sustainability Advantage program provides tailored support to medium to large businesses to help them reduce waste, energy and water use. This program will be expanded to a further 800 participants with an additional funding of $20 million from the NSW Climate Change Fund, with the objective of improving energy efficiency in participating organisations by an average of 10 per cent
- $20 million will be provided over 2008–2013 to develop new 'green' skills training and accreditation through the vocational training system (including TAFE), universities and registered training organisations for key trades and professionals such as electricians, plumbers, engineers and interior designers. Key industry sectors will include manufacturing and agriculture as well as the built environment
- Round 2 of the Green Business Program and the Renewable Energy Program will held in 2008–2009
- Recycling and Stormwater Harvesting Program will focus on pricing and regulatory arrangements and developing recycling opportunities in the Botany to Sydney Airport corridor.

■ **CASE STUDY**

Nestlé delivers food processing sector savings

The food processing sector accounts for 14 per cent of high users required to prepare Energy Savings Action Plans. The sector identified 13 per cent of cost effective measures in approved plans and accounts for 5 per cent of the identified energy savings.

Processing is the biggest energy user in the sector and process improvements have emerged as measures to achieve the greatest savings. The breakdown of measures by type in the sector are process improvements (62 per cent), upgrades to equipment (32 per cent), employee behaviour (4.5 per cent) and alternate fuel (0.8 per cent).

The most common energy efficiency measures identified in plans are heat recovery from waste processes and boiler and pipe work upgrades. Energy savings are also being achieved through refurbishing of steam traps, improving insulation and switching equipment off out of hours.

Operational efficiencies are the next major savings measure. The most common actions identified include eliminating compressed air leaks, automating system controls and installing variable speed drives.

Energy Savings Action Plan annual reports show approximately 50 per cent of measures are being implemented within the first year of plans being approved.

The potential for energy savings through employee behaviour was also emerging as a key trend, with education identified a means to achieve 4 per cent of food processing sector savings.

A combination of practical energy savings and participation in the Green Light employee education program helped Nestlé Australia reduce energy at its Blacktown processing plant by 2.1 per cent per tonne of product. The 8.6 per cent reduction in gross electricity use at the Blacktown facility far surpassed the company's overall energy reduction target of 3 per cent.

Staff are helping Nestlé save energy.

■ CASE STUDY

EP&T saving water and energy in offices

With $2.8 million from the NSW Climate Change Fund, EP&T has helped major NSW property owners and portfolio managers achieve significant energy and water savings, including Colonial First State, GPT Group, Stockland, Macquarie Asset Services and Investa.

EP&T undertook major energy upgrades in four commercial office buildings owned by Investa Property Group in the Sydney CBD and North Sydney. The works included installing energy monitoring systems, variable speed drives for the heating, ventilation and cooling systems, power factor correction and lighting controls, saving 3,116 megawatt hours of electricity a year and 3,303 tonnes of greenhouse gas emissions.

EP&T also undertook water upgrades in Colonial First State Property's commercial office buildings in Sydney CBD, North Sydney, Burwood and Parramatta. They included installing water monitoring systems, upgrading toilets from single to dual flush, installing basin flow restrictors and optimising urinal flush settings. The amenities upgrades have improved water efficiency by 20 per cent across all the sites and enabled previously undetected leaks and inefficiencies to be identified and eliminated.

Energy efficient offices, 150 George Street, Parramatta.

■ CASE STUDY

Western White Linen funded for laundry savings

Western White Linen in Blayney received $110,484 under the Green Business Program to install an Aquamiser and Energy Optimiser System to recycle water in its commercial laundry.

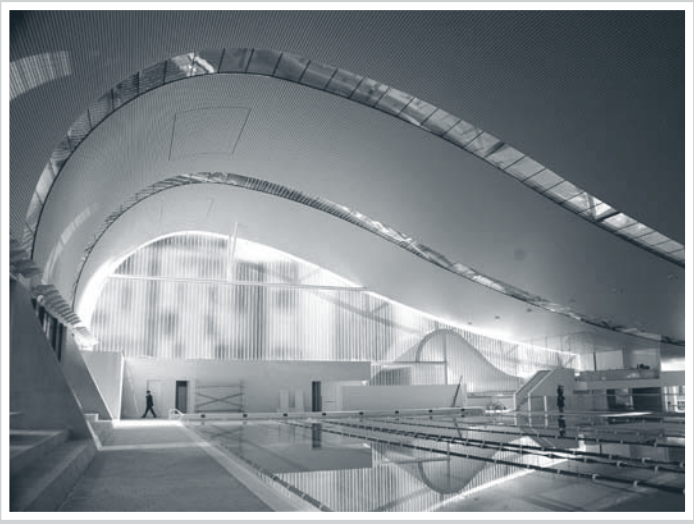
With 38 employees, Western White Linen processes approximately 1,250 tonnes of linen a year and uses 30 million litres of water. The laundry services hotels, motels, restaurants and nursing homes, and has clients from Western Sydney to Lightning Ridge and all areas in between.

The Aquamiser filtration system will recycle 40 per cent of the laundry's wastewater that would otherwise go to the sewer, while the Energy Optimiser recovers heat from the discharged hot water, saving energy in each wash cycle.

This project will save more than 12 million litres of water a year, reduce energy use by 10 per cent and save around $40,000 a year in water, sewerage and trade waste charges.

Saving water in commercial laundries.

Performance by program



Summary of program performance

The early focus in 2007–2008 was the development of guidelines, eligibility criteria and assessment procedures for the new NSW Climate Change Fund programs.

The Residential Rebate Program was launched on 1 July 2007 and funding rounds for the Green Business Program, Renewable Energy Development Program, Public Facilities Program and Central Coast Water Savings Fund were held. Administration, monitoring and support of projects funded under the previous rolling version of the Public Facilities Program, the former Water and Energy Savings Funds and the Central Coast Water Savings Fund continued and a number of projects were completed during 2007–2008.

The School Energy Efficiency Program, which is jointly delivered by DECC and the NSW Department of Education and Training, began with lighting retrofits in five NSW high schools to pilot the statewide roll-out of the program. The Recycling and Stormwater Harvesting Program, managed by the Department of Water and Energy, and the Rainwater Tanks in Schools Program are in development.

Table 4 provides a snapshot of program performance to date. Full lists of projects funded under the NSW Climate Change Fund up to 30 June 2008 are provided in Appendix D and E.

Savings shown include actual savings for completed projects and estimated savings for projects still underway.

Table 4

Summary of program performance in 2007–2008

Program	Progress and achievements 2007–2008
Residential Rebate Program	22,271 rebates paid (comprising 3,060 insulation, 4,772 hot water and 14,439 rainwater tank rebates), saving 650 ML of water and 14,684 tonnes of greenhouse gas emissions a year
Green Business Program	Round 1 held from October to December 2007. 24 projects were allocated $11.7 million, saving an estimated 241 ML of water and 36,000 tonnes of greenhouse gas emissions a year
Public Facilities Program	Round 1 held from December 2007 to February 2008. Successful projects announced 26 September 2008
Renewable Energy Development Program	Round 1 opened December 2007. Stage 1 Expressions of Interest held from December 2007 to February 2008 and Stage 2 invited 17 project proponents to submit applications by 31 July 2008. Successful projects announced 25 November 2008
Recycling and Stormwater Harvesting Program	Program being developed by the Department of Water and Energy during 2007–2008. No payments were made in 2007–2008
School Energy Efficiency Program	Launched on 11 February 2008. Lighting retrofit in five pilot schools completed. Results being used to design strategy for broader roll out from 2008–2009. First 16 schools announced 2 July 2008
Rainwater Tanks in Schools Program	Program to commence in 2009–2010
Central Coast Water Savings Fund	$4.9 million allocated to 49 projects prior to 2007–2008, saving an estimated 735 ML of water a year Round 3 held from May to June 2008, successful projects announced 17 November 2008 16 projects were completed, saving 113 ML of water a year
Water and Energy Savings Funds	$56.8 million allocated to 96 water saving projects prior to 2007–2008, saving an estimated 14,621 ML of water a year $29 million allocated to 49 energy saving projects prior to 2007–2008, saving an estimated 204,000 tonnes of greenhouse gas emissions a year 4 energy and 15 water savings projects completed, saving 62,119 tonnes of greenhouse gas emissions, 58,603 MWh of electricity, 1,559 kW of peak demand and 442 ML of water a year
Water and Energy Savings Action Plans	111 Energy Savings Action Plans were approved, bringing total plans approved to 223 115 Water Savings Action Plans were approved, bringing total plans approved to 222 35 Energy Savings Action Plan annual reports received, with 131 cost effective actions implemented 18 Water Savings Action Plan annual reports received, with 40 cost effective actions implemented

Table 5

Program performance against key performance indicators

Indicator	NSW Climate Change Fund Program								
Annual	**Water Savings Fund**	**Energy Savings Fund**	**Green Business**	**Public Facilities**	**Central Coast Water**	**Schools Energy Efficiency**	**Rebates**	**Action Plans****	**Total**
kL savings	14,621,000		240,700		735,000		649,755	7,347,000	23,593,455
kW savings		46,560	11,307	1,282				56,130	115,279
MWh savings		189,376	46,082	4,512		241	14,805	728,372	983,388
tCO_2-e savings		204,120	36,277	3,974		255	14,684	931,100	1,190,410
GJ savings								5,216,800	
Entities assisted	83	36	17	5	37	5	22,271	347	530°
$ bill savings*^	28,943,078	21,431,810	4,167,965	371,646	1,430,942	19,280	2,308,904	72,963,776	131,637,401
Average cost effectiveness#	$0.39/kL	$15.19/MWh	$1.52/kL $20.50/MWh	$37.22/MWh	$0.67/kL				
Network constrained areas kW		8,493	2,971.3	2				8,606	20,072

Notes on assumptions:

* Water calculated using Tier 1 charges – $1.34/kL for residential, $2.00/kL ($1.34 + 50% wastewater charges) for all other sectors (source Sydney Water usages charges 2007–2008)

^ Electricity residential and community calculated at $0.15/kWh (general supply tariff all time), and business and government $0.08/kWh (general supply tariff) (source DECC data analysis average for medium to large users and DSRD electricity charges table 2006–2007, plus EnergyAustralia tariffs 2007–2008)

Cost effectiveness of funding – funding divided by ten years of savings

** Savings if cost effective measures are implemented

° Does not include individual rebates provided to successful applicants (22,271)

Residential Rebate Program

The $100 million Residential Rebate Program targets the highest water and energy uses in NSW homes and was introduced to help overcome the upfront cost barriers for people to make their homes more water and energy efficient.

The strong uptake of rebates in the first year of operation is saving NSW householders an estimated 650 million litres of water, 14,805 megawatt hours of electricity and 14,684 tonnes of greenhouse gas emissions a year. A detailed breakdown of rebate uptake by local government area is provided on the DECC website at www.environment.nsw.gov.au/rebates

Rainwater tank rebates

The rainwater tank rebate was introduced on 1 July 2007. It provides up to $1,500 for a rainwater tank connected to a toilet and/or washing machine.

The tank(s) must have a minimum 2,000 litre capacity and be purchased in full and installed between 1 July 2007 and 30 June 2009. The rebate amount is based on the size of the tank and whether it is plumbed to a toilet or washing machine, as shown in Table 6 below. Households not connected to the mains supply are eligible for a rebate for the purchase of the tank only. The rainwater tank rebate is administered by Sydney Water for its customers and by DECC for the rest of the state.

Table 6

Rainwater tank rebate

Tank(s) capacity (L)	Tank Rebate	Connection to toilet(s)	Connection to washing machine(s)	Maximum total
2000-3999	$150	$500	$500	$1150
4000-6999	$400	$500	$500	$1400
7000 +	$500	$500	$500	$1500

In 2007–2008, 14,439 rainwater tank rebates were paid, totalling $7.2 million and saving an estimated 650 million litres of water a year. In addition, 3,134 rebates were paid from the Fund to Sydney Water customers who had installed rainwater tanks before 1 July 2007 and which were eligible under Sydney Water's previous rainwater tank rebate program. These rebates totalled $1.7 million and saved an estimated 141 million litres of water a year. The average cost effectiveness of the rainwater tank rebates is $1.11 per kilolitre for funding spent.

Hot water system rebates

The hot water system rebate began on 1 October 2007. It is available to NSW householders switching from electric to solar, heat pump or gas hot water systems, purchased in full and installed between 1 October 2007 and 30 June 2009.

The rebate provides:

- $300 to switch from an electric to a gas hot water system with a 5-star or higher energy rating
- up to $1,200 to switch from an electric to solar or heat pump hot water system eligible for at least 20 RECs.

The level of rebate for solar or heat pump hot water systems is based on the amount of greenhouse gas emissions saved, determined by the eligibility of the system for Renewable Energy Certificates (RECs) under the Commonwealth's Mandatory Renewable Energy Target (MRET), as shown in Table 7 below.

Table 7

Hot water system rebate for solar and heat pumps

Number of RECs	Rebate amount
20-27	$600
28-35	$800
36-43	$1,000
44+	$1,200

In 2007–2008, 4,772 hot water system rebates were paid, totalling $3.3 million and saving an estimated 11,930 tonnes of greenhouse gas emissions a year. The average cost effectiveness of hot water system rebates is $27.55 per tonne of greenhouse gas abatement for funding spent.

Ceiling insulation rebates

The ceiling insulation rebate began on 1 October 2007. It covers half the cost of installing ceiling insulation, up to a maximum of $300. The insulation must be purchased in full and installed between 1 October 2007 and 30 June 2009 and meet minimum R-value (thermal efficiency) requirements for each local government area.

In 2007–2008, 3,060 insulation rebates were paid, totalling $889,733 and saving an estimated 2,754 tonnes of greenhouse gas emissions a year. The average cost effectiveness of ceiling insulation rebates is $32.31 per tonne of greenhouse gas abatement for funding spent.

Green Business Program

The Green Business Program (GBP) provides funding for projects that will save water and energy in business operations in NSW. The key selection criterion for the program is cost effectiveness, calculated as the funding sought divided by the total project water or energy savings over ten years.

Eligible activities include education and technology trial activities which increase the adoption of efficient technologies and practices; projects which improve the efficiency of buildings, appliances and industrial processes; projects which reduce peak electricity demand; and projects which reduce the demand for electricity or water supplied from electricity or water supply networks, such as cogeneration, fuel switching, water recycling and stormwater harvesting.

Over the life of the program, it is expected to deliver annual savings of:

- 3.5 billion litres of water
- 65,000 megawatt hours of electricity
- 13 megawatts of peak electricity demand; and
- 70,000 tonnes of greenhouse gas emissions.

Round 1 of the Green Business Program was held from October to December 2007. A total of $11.7 million was allocated 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, detailed in Table 10. For energy, avoided costs to the network total more than $4.4 million a year, of which alternative power generation projects account for 68 per cent, efficiency projects 28 per cent and power factor correction projects 4 per cent. Completed projects will save Round 1 recipients $2.9 million a year in energy and associated operational costs.

Table 8 shows the cost effectiveness of the Green Business Program Round 1 water projects by project type. The average cost effectiveness for Round 1 water projects is $1.52 per kilolitre.

Table 8

Round 1 water project – savings and cost effectiveness by project type

Project type	No. of Projects	Estimated savings (ML/yr)	Return on CCF funding
Recycling	5	80.6	$2.49/kL
Efficiency	2	59	$0.33/kL
Harvesting	1	8.6	$0.58/kL
Total Savings	**8**	**148**	**$1.52/kL**

Table 9 shows the cost effectiveness of the Green Business Program Round 1 energy projects by project type. The average cost effectiveness of Round 1 Energy projects is $20.50 per megawatt hour.

Table 9

Round 1 energy projects – estimated savings and cost effectiveness by project type

GBP Energy Projects	No. of Projects	Savings (MWh/yr)	Return on CCF funding
Efficiency measures	11	10,851	$30.26/MWh
Alternate power generation	4	35,211	$17.44/MWh
Power Factor Correction	1	N/A	N/A
Total Savings	**16**	**46,062**	**$20.50/MWh**

Table 10

Round 1 allocated funding and estimated annual savings

Program	No. of projects	Funding allocated ($)	Expected savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e /yr)	Savings peak demand (kW)
Energy	16	9,440,548	92.4	46,062	36,255.3	11,307
Water	8	2,249,730	148.3	20	21.4	0
Total	**24**	**11,690,278**	**240.7**	**46,082**	**36,276.7**	**11,307**

Public Facilities Program

The Public Facilities Program (PFP) was established in 2006 as a rolling program under the Energy Savings Fund (ESF). It became part of the NSW Climate Change Fund from 1 July 2007 and funding is now allocated via competitive funding rounds. It 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.

Applications are open to providers of non-profit public or educational facilities for projects which publicly demonstrate how water and/or energy savings can work in practice.

The key criterion for funding under the Public Facilities Program is demonstration or education value. Eligible activities include education activities which have the potential to increase the adoption of efficient technologies and practices or projects which improve the efficiency of buildings and appliances.

Over the life of the program, it is expected to deliver annual savings of:

- 2.2 billion litres of water
- 40,000 megawatt hours of electricity
- 12 megawatts of peak electricity demand
- 42,000 tonnes of greenhouse gas emissions.

A total of $1.7 million has been allocated to 7 projects under the PFP rolling program, saving an estimated 4,512 megawatt hours of electricity and 3,974 tonnes of greenhouse gas emissions a year and reducing peak demand by 1,282 kilowatts. They include five efficiency projects, one alternative power generation and one education project. They are all energy saving projects because the program was originally established as a component of the former Energy Savings Fund. They include:

- $1 million for NSW Parliament House to install solar photovoltaic panels and undertake a major energy efficiency upgrade
- $461,000 for cogeneration at the Powerhouse Museum
- $60,000 to the Climate Change Balmain-Rozelle community group for solar photovoltaic panels for six local schools.

Completed projects will save funding recipients $0.5 million a year in energy costs. Avoided costs to the network will total more than $480,000 a year. The average cost effectiveness for the Public Facilities rolling program energy projects was $37.22 per megawatt hour.

Table 11

PFP rolling program cost effectiveness by project type

Project Type	No. of projects	Savings (MWh/yr)	Return on CCF funding
Education	1	135	$53.80/MWh
Efficiency measures	4	2,407	$45.43/MWh
Alternate power generation	2	1,970	$26.22/MWh
Total savings	**7**	**4,512**	**$37.22/MWh**

Round 1 of the Public Facilities Program under the NSW Climate Change Fund was held from December 2007 to February 2008. Successful projects were announced in September 2008. Round 1 allocated $10.4 million to 49 projects, saving an estimated 171 million litres of water and 9,491 tonnes of greenhouse gas emissions a year. Four projects from the rolling program were also announced in September 2008. They were allocated $233,260 to save an estimated 540 megawatt hours of electricity, 574 tonnes of greenhouse gas emissions and 171 million litres of water a year. These projects will be reported in the 2008–2009 Annual Report.

Table 12

PFP rolling program funding and estimated savings

Program	No. of projects	Funding allocated ($)	Funding released to 30 June 08	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings peak demand (kW/yr)
PFP rolling	7	1,679,331	273,907	4,512	3,974	1,282

Central Coast Water Savings Fund

The Central Coast Water Savings Fund (CCWSF) was established in partnership with the Gosford/Wyong Councils' Water Authority in 2006 to encourage investment in water savings on the Central Coast. To 30 June 2008, $4.9 million has been allocated to 49 projects, saving an estimated 735 million litres of water a year, detailed in Table 13.

Table 13

Project savings and cost effectiveness by sector

Program	No. of projects	Funding allocated ($)	Funding released to 30 June 08	Savings (ML/yr)	Funding return
Homes	7	806,358	61,162	59	$1.36/kL
Communities	19	1,339,851	620,681	128	$1.05/kL
Government	13	1,250,570	626,140	233	$0.54/kL
Business	10	1,538,391	997,018	315	$0.49/kL
Total	**49**	**4,935,170**	**2,305,001**	**735**	**$0.67**/kL

Table 14 shows the cost effectiveness of the Central Coast Water Savings Fund by project type. The average cost effectiveness is $0.67 per kilolitre.

Table 14

Cost effectiveness by project type

Project Type	No. of projects	Savings (ML/yr)	Cost effectiveness
Efficiency	12	212.7	$0.61/kL
Recycling	12	383.7	$0.60/kL
Harvesting	23	135.0	$0.95/kL
Groundwater	2	3.6	$1.25/kL
Total	**49**	**735**	**$0.67/KL**

The Central Coast Water Savings Fund is supporting major water recycling projects, efficiency programs for schools and households, projects to harvest rainwater for reuse in sporting clubs and on playing fields and Gosford City Council and Wyong Shire Council-nominated projects. The business sector accounts for 31 per cent of funding, community 27 per cent, government 26 per cent and homes 16 per cent.

In 2007–2008, 16 projects were completed, saving 113 million litres of water a year. They include:

- $149,500 Wyong Shire Council stormwater harvesting and tertiary treated effluent reuse project for Tunkuwallin Oval
- $113,070 Hunter Councils Inc Central Coast public schools integrated water program
- $39,900 Rumbalara Environmental Education Centre 'Take it easy with water' environmental education initiative
- $23,820 Central Coast Laundry ozone laundering technology
- $19,000 Robann's Nursery rainwater harvesting and efficiency program
- $69,000 Toukley Golf Club stormwater harvesting project.

Round 3 of the Central Coast Water Savings Fund was held from April to June 2008. Successful projects were announced in November 2008. A total of $713,610 was allocated to 12 projects, saving almost 40 million litres of potable water a year. These projects will be reported in the 2008–2009 Annual Report.

Other funding programs

Renewable Energy Development Program

The Renewable Energy Development (RED) Program provides $40 million over five years to support the commercialisation of new renewable energy technologies. All projects must generate electricity or displace grid electricity use in NSW for stationary energy purposes. Renewable energy technologies supported under RED include geothermal and biogas and new designs for more established technologies.

Round 1 of the RED Program opened in December 2007. Applications were assessed in a two stage process. Stage 1 invited expressions of interest and, following assessment by the Evaluation Panel, 17 applicants were invited to submit detailed applications for Stage 2.

Successful Round 1 projects were announced in November 2008. Seven projects were allocated $27.3 million, generating or displacing grid electricity by an estimated 392,993 megawatt hours, reducing summer peak demand by 11,400 kilowatts and saving 411,111 tonnes of greenhouse gas emissions a year. These projects will be reported in the 2008–2009 Annual Report.

Recycling and Stormwater Harvesting Program

The Recycling and Stormwater Harvesting Program was established to assist businesses connect to Sydney's proposed Recycled Water Grid and support the development of localised recycling and stormwater harvesting schemes. This Program is managed by the NSW Department of Water and Energy (DWE), with strategic planning commencing in 2007–2008. No payments were made for this program in 2007–2008.

School Energy Efficiency Program

The School Energy Efficiency Program provides $20 million for lighting upgrades in up to 150 NSW high schools. It also includes the Climate Clever Energy Savers Fund to implement energy and greenhouse gas saving projects identified by schools. This Program is jointly managed by DECC and the NSW Department of Education and Training (DET).

Lighting retrofits were undertaken in five pilot schools during 2007–2008, replacing 4,400 old style fluorescent lamps with the latest high-efficiency luminaires, saving an estimated 255 tonnes of greenhouse gas emissions and 241 megawatt-hours of electricity a year.

Lighting retrofits for a further 16 high schools were announced in July 2008. The Climate Clever Energy Savers Fund will commence in 2008–2009 and will be run as a regional competitive grants program for school-initiated projects, offering up to $18,000 per high school.

Participating schools are required to join *Sustainable Schools* and develop a School Environmental Management Plan, with online support through the Sustainable Schools Program.

Rainwater Tanks in Schools Program

The Rainwater Tanks in Schools Program aims to provide a rainwater tank for every government school in NSW and will also involve water efficiency audits for selected schools to identify leaks and other water efficiency opportunities. This $20 million program will be delivered jointly by the Department of Education and Training (DET) and DECC, and commence in 2009–2010.

Water and Energy Savings Fund Projects

The Water and Energy Savings Funds were established in 2005 to provide funding for water and energy savings in NSW and complement the NSW Government's requirement for certain high water and energy users and local councils to prepare Water and Energy Savings Action Plans. The two funds are now incorporated into the NSW Climate Change Fund.

The Energy Savings Fund (ESF) supported measures to reduce overall electricity consumption and related greenhouse gas emissions in NSW, and to reduce peak electricity demand. The Public Facilities Program was introduced in 2006 as part of the Energy Savings Fund to support demonstration energy savings in public and educational facilities.

The Water Savings Fund (WSF) was announced as part of the NSW Government's Metropolitan Water Plan in October 2004 to fund water saving and recycling projects within Sydney Water's area of operations (Sydney, Blue Mountains and Illawarra). This fund was extended to the Central Coast in 2006.

Projects supported under the Water and Energy Savings Funds are continuing to be funded and administered under the NSW Climate Change Fund. A number of these water and energy savings projects were completed in 2007–2008. They include:

- $175,000 University of Newcastle Medical Science and Library compressor upgrade
- $400,000 Big Switch Projects Northern Wollongong home energy initiative
- $534,071 Northbridge Golf Club stormwater harvesting and reuse
- $200,000 Solvay Interox utilisation of treated ground water
- $269,000 Austral Bricks utilisation of alternate water source.

Energy Savings Fund projects

Two funding rounds under the Energy Savings Fund allocated $28 million to 49 projects, saving an estimated 204,120 tonnes of greenhouse gas emissions a year. They include generation, efficiency, education and power factor correction projects.

Round 1 was held from September to October 2005 and allocated $15 million to 20 projects. Round 2 was held from September to November 2006 and allocated $13 million to 29 projects.

In addition, $400,000 was allocated to EnergyAustralia's Hot Water Conversion Program, providing discounts on selected gas, solar or heat pump hot water systems, saving 40,458 megawatt hours, 35,247 tonnes of greenhouse gas emissions and $2.7 million on customers' electricity bills a year.

The average cost effectiveness for the Energy Savings Fund is $15.19 per megawatt hour.

Table 15

ESF cost effectiveness by project type

Project Type	No. of projects	Savings (MWh/yr)	Cost effectiveness
Efficiency	36	130,565	$13.71/MWh
Generation	5	39,880	$21.51/MWh
Power Factor Correction	5	N/A	N/A
Education	4	18,931	$8.51/MWh
Total	**50**	**189,376**	**$15.19/MWh**

Table 16

ESF funding, estimated annual savings and cost effectiveness by sector

Program	No. of projects	Funding allocated ($)	Funding released to 30 June 08	Savings (MWh/yr)	Funding return ($/MWh)	Savings (tCO_2-e/yr)	Savings (KW/yr)	Savings (kVa/yr)
Homes	8	5,383,624	2,658,727	86,429	6.23	92,106	4,962	
Communities	1	142,000	78,000	3,310	4.29	3,260	350	
Government	6	5,536,661	628,756	18,636	29.71	18,149	4,345	
Business	35	17,702,991	3,031,900	81,001	21.86	90,605	36,903	6,810
Total	**50**	**28,765,276**	**6,397,383**	**189,376**	**15.19**	**204,120**	**46,560**	**6,810**

In 2007–2008, four efficiency projects were completed, saving 62,119 tonnes of greenhouse gas emissions, 58,603 megawatt hours and 1,559 kilowatts of peak demand a year. At 30 June 2008, $6.4 million had been paid out for completed projects and project milestones, including payments made before 1 July 2007.

Water Savings Fund projects

Three contestable funding rounds under the WSF allocated $56.8 million to 96 business, government agency and local council water saving projects, saving an estimated 14.6 billion litres of water a year. Funded projects include a range of water efficiency, stormwater and rainwater harvesting, recycling and groundwater projects. Table 17 details the allocation of funding and savings by sector.

The Water Savings Fund has supported major recycling projects encouraging treatment and reuse of recycled water for industrial processes. They include:

- $5.18 million to Caltex Refineries and Continental Carbon Australia Kurnell industrial water recycling plant
- $1 million to Qenos Pty Ltd to upgrade its Botany plant to utilise treated recycled water from the Botany Groundwater Treatment Plant
- $157,218 to Orica Australia to modify its ChlorAlkali Plant to use recycled water from the Botany Groundwater Treatment Plant.

Three applicants offered funding under the Water Savings Fund chose not to proceed with the project.

Table 17

WSF savings and cost effectiveness by sector

Program	No. of projects	Funding allocated ($)	Funding released to 30 June 08	Savings (ML/yr)	Funding return
Homes	7	4,765,259	401,938	454	$1.05/kL
Communities	9	4,381,502	1,603,832	724	$0.61/kL
Government	35	13,198,958	3,957,246	1,451	$0.91/kL
Business	45	34,411,137	10,341,285	11,992	$0.29/kL
Total	**96**	**56,756,856**	**16,304,302**	**14,621**	**$0.39**/kL

Round 1 was held from September to December 2005 and allocated $9.9 million towards 25 projects. Round 2 was held from March to May 2006 and allocated $31.6 million to 42 projects. Round 3 was held from October to December 2006 and allocated $15.2 million to 29 projects.

Table 18 details the cost effectiveness of Water Savings Fund projects by project type. The average cost effectiveness is $0.39 per kilolitre.

Table 18

WSF cost effectiveness by project type

Project Type	No. of projects	Savings (ML/yr)	Cost effectiveness of funding
Efficiency	22	2,589	$0.41/kL
Recycling	40	10,644	$0.32/kL
Harvesting	31	1,207	$0.86/kL
Groundwater	3	181	$0.98/kL
Total	**96**	**14,621**	**$0.39/kL**

In 2007–2008, 15 projects were completed comprising six efficiency, six recycling, one harvesting and two groundwater initiatives, the 2007–2008 savings for these completed projects total 442 million litres of water. At 30 June 2008, $16.3 million had been paid out for completed projects and project milestones including payments made before 1 July 2007.

Water and Energy Savings Action Plans

Water and Energy Savings Action Plans were established in 2005 under the *Energy and Utilities Administration Act 1987* and are now administered under the NSW Climate Change Fund. Savings action plans are to be prepared by Designated Users, as gazetted in the Water and Energy Savings Orders of 28 October 2005. Savings action plans require certain high using businesses and government agencies and local councils to assess water or energy use and identify opportunities to save.

Who is required to prepare plans?

Energy Savings Action Plans (ESAPs) are required from businesses and government agencies for sites that use more than 10 gigawatt hours of electricity a year and from 46 NSW councils which have populations of more than 50,000 people. Plans are required for 207 business sites and 15 government agency sites. Since the Energy Savings Order was gazetted, 18 sites have been exempted from preparing plans because they have either closed operations, changed ownership or sustained significant reductions in energy use to bring them below the 10 gigawatt-hours a year threshold.

Water Savings Action Plans (WSAPs) are required by businesses and government agencies in Sydney Water's area of operations for sites that use more than 50 megalitres of water a year and 44 local councils. Plans are required for 220 business sites and 34 agency sites. Since the Water Savings Order was gazetted, 28 sites have been exempted from preparing plans because they have either closed operations or have sustained significant reductions in water use to bring them below the 50 million litres a year threshold.

What is required in a Plan?

Savings action plans must be completed by the Designated User in accordance with the *Guidelines for Energy/Water Savings Action Plans*. Plans undergo a detailed technical assessment to ensure baseline energy/water use, management review, technical review and description of the energy/water saving actions to be implemented meet the *Guidelines*.

Designated Users identify previous savings measures, as well as new 'cost effective' and 'potentially cost effective' savings actions. Cost effective actions are defined as water and/or energy saving measures that pay for themselves within the organisation's hurdle rate of return. Potentially cost effective actions are measures that do not meet the organisation's investment rate of return and require financial assistance if they are to proceed.

The Minister for Climate Change and the Environment approves Water and Energy Savings Action Plans. A plan expires four years after being approved. Designated Users report annually to DECC on the outcomes of their plans.

Under the Act, the Minister can mandate implementation of savings measures identified in a savings action plan by making a regulation. Under the $150 million NSW Energy Efficiency Strategy, there is a proposal for high users to be required to implement 'cost effective actions' identified in Energy Savings Action Plans. A draft regulation has been prepared and DECC is currently consulting with stakeholders.

Energy Savings Action Plans progress

A total of 223 Energy Savings Action Plans were approved to 30 June 2008. They identified 1,828 actions to save almost 1 million tonnes of greenhouse gas emissions a year and $58 million on annual electricity bills.

Table 19

Savings from cost effective (CE) actions identified in ESAPs to 30 June 2008

Note: These are annual savings in gigajoules of energy, tonnes of greenhouse gas emissions, and in financial savings.

Time period	No. of plans	Previous savings (GJ)	No. of CE actions	CE savings (GJ)	CE savings (tCO_2-e)	Potential CE savings (GJ)
2007–2008	111	4,481,700	1,634	4,566,800	843,100	5,730,550
Total to 30 June 2008	223	4,974,900	1,828	5,216,800	931,100	6,652,550

Table 20

Savings from submitted ESAP annual reports to 30 June 2008

Annual Reports received	No. CE actions identified in Plan	No. CE actions implemented	% Implementation CE actions	No. PCEs identified in Plan	No. PCEs implemented	% Implementation PCE actions
35	275	131	48	258	30	12

Water Savings Action Plans progress

A total of 222 Water Savings Action Plans were approved to 30 June 2008, identifying 1,830 cost effective actions to save 7.3 billion litres of water a year and $14.7 million on annual water bills.

Table 21

Savings from cost effective actions in WSAPs to 30 June 2008

Time period	No. of plans	Previous savings (kL)	Previous savings[1] ($)	No. of CE actions	CE savings (kL)	Potentially CE savings (kL)
2007–2008	115	2,606,666	4,152,000	907	3,027,000	3,215,000
To 30 June 2008	222	14,306,666	11,092,000	1,830	7,347,000	10,145,000

[1] These are annual savings in potable water, and in charges related to water, trade waste and sewerage.

Table 22

Savings from submitted WSAP annual reports to 30 June 2008

Annual Reports received	No CE actions identified in Plan	No. CE actions implemented	% Implementation CE actions	No. PCE actions identified in Plan	No. PCE actions implemented	% Implementation PCE actions
18	150	40	26.7	156	14	9

Other funding

Water for Life Education Program

The Water for Life Education Program was established in 2005 as part of the NSW Government's Metropolitan Water Plan. The program is supported by the NSW Climate Change Fund, and is coordinated by the NSW Department of Water and Energy. The Program aims to:

- increase community understanding of the range of strategies to secure greater Sydney's water
- reduce demand for water across households, businesses and government through water-saving and recycling behaviour.

Water for Life supports and builds upon initiatives already undertaken by government, industry, formal and informal education providers and non-government organisations to encourage responsible water management. It includes community campaigns, on-the-ground water education projects and the provision of training and resources.

Significant progress has been made since the program began three years ago. Specific achievements and progress are outlined in Table 23 below.

Independent evaluation has shown that the Water for Life Program's communications and education initiatives play an important role in the successful implementation of the Metropolitan Water Plan. As a result, a further $4 million has been allocated from the NSW Climate Change Fund to extend the Program to June 2011.

Table 23

Water for Life progress in 2007–2008

Program element	Progress to date
Increased community awareness and involvement	Per capita demand for drinking water in Sydney has been reduced by 8% – from 342L per capita/day in 2005–2006 to 315L in 2007–2008
	More people are aware of the range of strategies to secure water supply – from 68% in 2005 to 85% June 2008, with marked increases in awareness of recycling schemes, the desalination plant, accessing ground water and repair of leaking pipes
	The Water for Life website is a useful community resource – it attracted an average 15,250 page views each month during 2007–2008
	The majority of people believe individual households can make a difference – those taking action often to reduce consumption increased to 74% from 65% in 2005, and 9 in 10 believe that they can do more
	The 2008 Water for Life Education Communications Campaign has achieved the highest level of recognition of any of the Program's campaigns to date – 54% of the community took further action to save water; unprompted awareness of water-saving programs increased from 60% to 72%
Building the knowledge, skills and ability of water educators	Increased the proportion of local councils involved in water education from 23% in 2005 to 57% in 2007
	Increased the number of NSW Government water education programs delivered from 30 in 2006 to 42 in 2007
	Developed the draft Water for Life Action Plan for all Metropolitan Water Education 2007–2011 to coordinate all water education
	Launched the Water for Life Education Resource Hub offering a range of resources and tools for water educators including the Water for Life Forum and online Resource Directory
	Increased the capacity of educators to deliver water education projects from 6.3/10 in 2005–2006 to 6.9/10 in 2007
Targeted water education projects to engage priority sectors	Partnership with the Ethnic Communities Council of NSW trained 70 volunteers from non-English-speaking backgrounds who, in turn, educated more than 2,600 people about saving water. This saved an estimated 20 million litres of water a year
	Pilot program run in partnership with the ACF targeting 18 to 35 year olds reached over 300 young professionals and received wide media coverage
	Partnership with the Property Council of Australia targeted key players within each of the residential, commercial office and retail sectors, and reached over 7,000 PCA members
	Partnership with the Science and Geography Teachers Associations to develop curriculum resources for NSW schools and professional development for teachers on their use

Sydney Water Demand Management Program

The NSW Climate Change Fund supports Sydney Water's demand management initiatives listed in the Metropolitan Water Plan. Sydney Water submits invoices to DECC on a quarterly basis and reports against program indicators. Sydney Water also reports annually to IPART on its demand management performance as part of its Operating Licence requirements.

Sydney Water's demand management initiatives supported by the NSW Climate Change Fund include:

- WaterFix Residential Retrofits program
- DIY Water Saving Kits for householders
- Rainwater tank rebates
- Love Your Garden
- Every Drop Counts Business Program
- Every Drop Counts in Schools Program
- School rainwater tank rebates
- Outdoor education and long-term water use rules campaign.

Further detail on these initiatives and information on progress and achievements during 2007–2008 is reported in Sydney Water's *Water Conservation and Recycling Implementation Report 2007–08*, which is available on Sydney Water's website at www.sydneywater.com.au

Australian Energy Market Commission

The NSW Climate Change Fund provides the funding for NSW's contribution to national energy regulation initiatives, as provided for under section 34 H of the Act. In the 2007–2008 financial year, NSW paid $5.462 million to the Commonwealth as NSW's share of the Australian Energy Market Commission's (AEMC) annual operating budget. Under established funding arrangements agreed between relevant jurisdictions, NSW is responsible for 37.5 per cent of the AEMC's budget.

AEMC was established in July 2005 by the Council of Australian Governments, through its Ministerial Council on Energy. The AEMC is the national body responsible for rule-making, market development and policy advice with regard to the National Electricity Market and, from 1 July 2008, with regard to access to natural gas pipelines services and elements of the broader natural gas markets. The Ministerial Council on Energy (on which the NSW Minister for Energy sits) approves the annual budget for the AEMC. NSW's contribution to the AEMC was funded from the NSW Energy Savings Fund in 2005–2006 and 2006–2007.

Earth Hour 2008

The NSW Government supported Earth Hour 2008 with a financial contribution of $100,000 from the NSW Climate Change Fund.

More than 50 million people in 35 countries across seven continents took part in Earth Hour 2008, held from 8pm to 9pm on Saturday 29 March 2008. Of the 80,000 people who signed up to the event in Australia, more than 40 per cent were from Sydney. Post-event research showed that Sydneysiders carried out an average of five energy-saving actions during Earth Hour including turning off the lights at home (58 per cent), turning off some household appliances (47 per cent), taking the mobile phone charger off standby (37 per cent), turning off the computer (38 per cent), and turning some household appliances off standby (30 per cent).

Earth Hour is a WWF-Australia initiative in partnership with Fairfax Media and Leo Burnett, with support from the City of Sydney and, in 2008, the NSW Government. The 2008 event had a budget of $560,000 for website, advertising, program management and seed funding for interstate events.

Greenhouse Innovation Fund projects

The NSW Greenhouse Innovation Fund was established in 2005 to provide $24 million over four years to support action on climate change mitigation and adaptation activities. It includes the $10 million Climate Action Grants Program to promote the development and adoption of low greenhouse technologies, processes and practices. Unallocated funds from the Climate Action Grants Program are being transferred into the NSW Climate Change Fund and ongoing projects with an energy efficiency focus are now administered and funded under the NSW Climate Change Fund.

These include:

- $100,000 Environmental Efficiency Rating Tool being developed by Landcom to help the development industry measure environmental efficiency at subdivision and neighbourhood level
- $50,000 What Makes Energy Efficiency Strategies Succeed and What Makes Them Fail? A joint research project between the NSW and Commonwealth Governments to analyse the effectiveness of energy efficiency measures and drivers
- $205,000 Costing study into the current and likely future potential for energy efficiency – A joint initiative between the NSW Government and the University of Technology Sydney's Institute for Sustainable Futures, being undertaken by consultants McLennan Magasanik Associates in conjunction with CEEM, to develop energy efficiency cost curves for gas and electricity energy efficiency and cost-benefit analysis of meeting a NSW economy-wide energy efficiency target.

Governance and administration

Governance arrangements

Under the Act, the Minister approves payments out of the NSW Climate Change Fund if satisfied they promote a purpose referred to in the legislation. The NSW Climate Change Fund is administered by DECC.

Contestable grants under the Fund are assessed by Evaluation Panels with an independent chair and members with relevant industry and technical expertise. DECC conducts technical assessments of all applications received to assist the Evaluation Panels in their assessments. Applications are assessed according to set selection criteria given in the relevant publicly available Guides for Applicants. The Evaluation Panel makes recommendations on funding to the Minister for Climate Change and the Environment.

Under the legislation, the Minister has the power to establish Advisory Committees to advise on strategy and priority areas for the Fund. The Climate Change Fund Advisory Committee was established in August 2007 and met three times in 2007–2008. The members of the Committee for 2007–2008 and its terms of reference are listed in Appendix B.

Principles for administering the Fund

DECC applies the following key principles in administering the Fund:

- funding allocations and expenditures will ensure responsible financial management
- a strategic approach will be used in setting priorities for expenditure
- the detailed priority setting process and fund allocation will closely follow strategic Government policy (including the election commitment of the NSW Climate Change Fund and the NSW State Plan)

DECC will:

- regularly assess and review outcomes achieved through expenditure
- a program of regular reporting will provide oversight of the Fund
- the Fund will establish strong accountability and adhere to clear corporate governance principles.

Funding streams

There are four types of funding streams under the NSW Climate Change Fund:

1. Competitive grants – providing funding on a contestable basis for projects which meet specific selection criteria. These include the Public Facilities Program, Renewable Energy Development Program, Green Business Program, Central Coast Water Savings Fund and projects previously funded through the Water and Energy Savings Funds.
2. Rebate programs – funding provided in the form of rebates for specified water or energy savings measures under certain terms and conditions. These include the current commitment for the Residential Rebate Program.
3. External programs – funding from the NSW Climate Change Fund for programs undertaken by a body other than DECC to meet Government commitments or policies. These programs currently include Sydney Water Demand Management Program and the Metropolitan Water Education Plan.
4. Other programs or projects – funding for programs or projects which are not competitive grants or external programs. These include programs which are jointly delivered by DECC and other agencies, and potential new programs which may include:
    - funding of demonstration of new technologies or practices (not yet able to compete for grants because cannot clearly demonstrate water/energy savings)
    - extension of successful competitive grants
    - studies/research projects needed to effectively target Fund programs
    - projects or programs to fill gaps in Fund programs (eg sectors or approaches not yet covered).

All contestable funding rounds are advertised via the NSW Climate Change Fund subscriber e-newsletter, the NSW Climate Change Fund News, DECC's website (www.environment.nsw.gov.au/grants/ccfund) and in metropolitan, regional and ethnic newspapers. Full details on the communication activities for the Fund are given in Appendix C.

Reporting

Funding recipients must report on the progress of projects and their success in achieving the anticipated outcomes (eg water or energy and greenhouse gas savings). In the case of residential rebates, recipients must provide receipts to validate purchase and installation details.

The Fund is committed to keeping the NSW community fully informed about progress in achieving its climate change goals and expenditure and achievements under the Fund. DECC reports regularly on its progress in meeting its NSW State Plan emissions target and publishes information on the range of funding available and projects awarded funding under the NSW Climate Change Fund.

Revenue and expenditure

Revenue

Electricity distributors and water utilities were required to make contributions to the Fund through annual contribution orders gazetted on 5 October 2007 for energy and on 18 April 2008 for water.

Table 24

NSW Climate Change Fund 2007–2008 revenue

Source	Amount ($)
EnergyAustralia	18,814,000
Integral Energy	12,232,000
Country Energy	8,954,000
Sydney Water	30,000,000
Gosford City Council	1,050,000
Wyong Shire Council	950,000
Greenhouse Innovation Fund	1,787,000
Environmental Trust	2,000,000
Interest	6,789,417
Miscellaneous	11,374
Total	**82,587,791**

Expenditure

Actual expenditure was $57.1 million in 2007–2008. The proportion of program administration expenditure is 4.3 per cent. Expenditure for each of the components of the Fund is presented in Table 25 below.

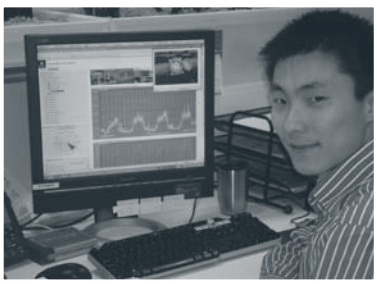
Table 25

NSW Climate Change Fund 2007–2008 expenditure

Program/component	Recipient	Expenditure in 2007–2008 ($, GST exc)
Residential Rebate Program	Residents	12,694,284
Green Business Program	Business	0[1]
Public Facilities Program	Various	278,158
Renewable Energy Development Program	Business	1,345
Recycling and Stormwater Harvesting Program	Various	0[1]
School Energy Efficiency Program	Schools	588,182
Central Coast Water Savings Fund	Various	1,402,425
Water and Energy Savings Funds (funding allocated prior to establishment of CC Fund)	-	-
– contestable	Various	16,930,612
– non-contestable	Various	250,545
Metropolitan Water Education Program	DWE	2,000,000
Sydney Water Demand Management Program	Sydney Water	15,028,523
Australian Energy Market Commission (for national energy regulation purposes)	AEMC	5,465,655
NSW Climate Change Fund administration (includes Residential Rebates administration and administration of Savings Action Plans)	DECC	2,463,628
Total		**57,103,357**

[1] While funds were committed to these programs, initial payment will occur for 2008–2009 once detailed funding agreements are finalised.

Appendices



Appendix A
Legislative requirements

The *Energy and Utilities Administration Act 1987*, which establishes the NSW Climate Change Fund, describes the purposes of the Fund and lays out a number of other requirements. Relevant provisions in the legislation are provided below.

Division 2 – Climate Change Fund

34F Purposes of Climate Change Fund

The purposes of the Fund are as follows:

(a) to provide funding to reduce greenhouse gas emissions and the impacts of climate change associated with water and energy activities

(b) to provide funding to encourage water and energy savings and the recycling of water

(c) to provide funding to reduce the demand for water and energy, including addressing peak demand for energy

(d) to provide funding to stimulate investment in innovative water and energy savings measures

(e) to provide funding to increase public awareness and acceptance of the importance of climate change and water and energy savings measures

(f) to provide funding for contributions made by the State for the purposes of national energy regulation

34G Payments into Climate Change Fund

(1) There is payable into the Fund:

(a) all money received from contributions required to be made to the Fund under Division 3, and

(b) all money advanced by the Treasurer for the Fund, and

(c) all money appropriated by Parliament for the purposes of the Fund, and

(d) the proceeds of the investment of money in the Fund, and

(e) all money directed or authorised to be paid into the Fund by or under this or any other Act or law, and

(f) all money received from voluntary contributions to the Fund made by any other person or body

(2) Without limiting subsection (1) (f), State agencies are authorised by this section to make voluntary contributions to the Fund.

(3) Subsection (2) does not authorise a State water agency or a distribution network service provider to refuse to pay a contribution to the Fund that is payable under Division 3.

34H Payments out of Climate Change Fund

(1) There is payable from the Fund:

(a) any money approved by the Minister to fund all or any part of the cost of any measure that the Minister is satisfied promotes a purpose referred to in section 34F, and

(b) any money approved by the Minister to fund all or any part of the contributions that the State is required to make for the purposes of national energy regulation, and

(c) any money required to meet administrative expenses related to the Fund, and

(d) any money required to meet administrative expenses of the Minister in connection with the Minister's functions under this Act in relation to savings action plans, and

(e) any money directed or authorised to be paid from the Fund by or under this or any other Act or law

(2) In exercising the Minister's functions under subsection (1) (a) (but without limiting the generality of that paragraph), the Minister may:

(a) approve selection criteria from time to time to be applied to determine the kinds of water or energy savings measures that will be eligible for funding, and

(b) approve the funding of community grants from the Fund, being grants awarded on the basis of their merit in advancing one or more of the purposes referred to in section 34F, established through a competitive selection process, and

(c) require a person or body seeking funding for a water or energy savings measure to do either or both of the following as a precondition to applying for or obtaining funding:

(i) to submit a water savings action plan or energy savings action plan (as the case requires) that includes details about the measure,

(ii) to provide any other information requested by the Minister about the measure, and

(d) obtain and have regard to any advice, recommendations or other information provided to the Minister by a committee established by the Minister under Division 5, or by any other person or body, that the Minister considers relevant

(3) The Minister is to produce an annual report detailing fund allocations and programs and anticipated benefits, by reference to key performance indicators, to be achieved in advancing any one or more of the purposes referred to in section 34F.

(4) The annual report is to include an evaluation of the effectiveness of each program as it is completed under the Fund.

(5) The annual report is to be tabled in each House of Parliament within 6 months after the end of the financial year to which it relates.

(6) The Minister is to publish each annual report so as to promote, to the NSW public, schemes, technologies and processes that address climate change and to inform the NSW public about consumer choices and procurement decisions.

Appendix B
Climate Change Fund Advisory Committee

Table B1

Members of Climate Change Fund Advisory Committee as at 30 June 2008

Organisation	Name	Title
Australian Water Association	Paul Hackney	Senior Water Scientist - NSW Water Solutions
Big Switch Projects	Gavin Gilchrist	Managing Director
Clean Energy Council	Peter Szental	Deputy Chair of Clean Energy Council
Country Energy	Ben Hamilton	General Manager, Corporate Strategy
CSIRO Energy Technology	Dr Stephen White	Distributed Energy Manager
Department of Environment and Climate Change NSW	Simon Smith (Chair)	Deputy Director General - Climate Change, Policy and Programs
Energy Retailers Association of Australia	Mark Collette	Head of Sustainability, TRUenergy
Energy Users Association of Australia	Roman Domanski	Executive Director
EnergyAustralia	Peter Birk	Executive Manager, Development & Innovation
Integral Energy	Karen Waldman	General Manager Regulatory and Corporate Affairs
Local Government and Shires Associations	Genia McCaffery	President of Local Government Association
NSW Business Chamber	Paul Orton	General Manager
Property Council of Australia	Angus Nardi	NSW Policy Manager
Public Advocacy Interest Centre	Robin Banks	Chief Executive Officer
Sydney Water	John Nieuwland	Manager, Customer Resource Management
Total Environment Centre	Jeff Angel	Executive Director

Terms of Reference of Climate Change Fund Advisory Committee

The Climate Change Fund has been established to provide funding:

- to reduce greenhouse gas emissions and the impacts of climate change associated with water and energy activities
- to encourage water and energy savings and the recycling of water
- to reduce the demand for water and energy, including addressing peak demand for energy
- to stimulate investment in innovative water and energy savings measures
- to increase public awareness and acceptance of the importance of climate change and water and energy savings measures
- for contributions made by the State for the purposes of national energy regulation.

Under the *Energy and Utilities Administration Act 1987*, the Minister for Climate Change and the Environment may appoint Advisory Committees for the purpose of advising the Minister in the exercise of his functions.

Purpose of Advisory Committee

The Advisory Committee will have the following functions:

- advise the Minister and the Department of Environment and Climate Change NSW on strategy and priority areas for the fund
- review these priorities to take account of changing conditions and the success of various climate change activities, and
- monitor, review and report to the Minister on the overall performance of the fund against the established objectives.

Membership

The Advisory Committee is to consist of representatives from:

- Department of Environment and Climate Change NSW
- NSW Treasury
- local government
- water and electricity businesses
- water and energy services industry
- NSW water and electricity customers (including large business users and property industry) or representative groups
- environment groups
- individuals with expertise in water or energy savings measures.

Appointments to the Committee will be until at least September 2009.

Operation

The Advisory Committee is to be chaired by the Deputy Director-General, Climate Change, Policy and Programs, of DECC and will meet two or three times per year or as required. It will be serviced by DECC.

Appendix C
Communication activities

Overview

Communication activities for the NSW Climate Change Fund target:

- householders
- business and major industry
- renewable energy generators/companies
- schools
- local government
- public facility providers.

Environment Line

The DECC's Environment Line (1300 361 967) number is the primary contact number for all telephone enquiries relating to the Climate Change Fund. In 2007–2008, the Environment Line fielded 18,333 calls relating to the Fund, accounting for 25 per cent of all Environment Line information calls for the year.

Media releases

The following CCF media releases were issued by the NSW Government in 2007–2008:

- Almost 300 Water and Energy Savings Plans now approved – 14 August 2007
- Water tank rebate applications flood in – 20 August 2007
- Climate change fund gets a boost as new taskforce announced to cut emissions – 3 September 2007
- $200 washing machine rebate boost for Central Coast – 10 September 2007
- Wok swap program expands to Thai & Vietnamese restaurants – 13 September 2007
- New rebates to help families tackle climate change – 3 October 2007
- Iemma Government invests $30 million to help business go green – 30 October 2007
- Applications for tank rebates lodged every 43 minutes – 26 November 2007
- Insulation rebates prove popular in fight to keep homes cool – 29 November 2007
- $78 million boost to combat climate change – 5 December 2007
- Rain adds six weeks worth of water to dams – 7 February 2008
- $20 million boost to help NSW high schools become greener – 11 February 2008
- Thousands of NSW households saving water, energy and money – 30 March 2008
- $11.7 million funding boost to help business fight climate change – 8 April 2008
- Central Coast Water Savings Fund – Round 3 Open – 1 May 2008
- More than 20,000 green rebates taken up by NSW – 26 May 2008
- $150 million plan helps consumers save money and the environment – 18 June 2008

The following media releases were issues by funding recipients in 2007–2008

- Waterwise – Australian communities saving thousands of litres of water by re-using greywater – July 2007
- Big Switch – Solar energy savings for Woonona-Bulli residents – 7 October 2007
- Big Switch – Woonona-Bulli energy-efficient fridge program expanded – 5 December 2007
- Master Plumbers – Climate Change, Time For Action: NSW Plumbers Say 'I Will' – 1 February 2008
- Gosford Wyong Council's Water Authority – More rainwater used in washing machines and toilets – 27 February 2008
- AGL-Singleton households go gas for free and slash their greenhouse gas emissions – 6 March 2008
- $1.7 m Water Recycle Project opens new course at Northbridge Golf Club – 2 April 2008
- Waterwise – $1000 Greywater System Rebates Now Available – May 2008
- ICANZ NSW households snuggle up this winter – 16 June 2008

Website

Information and updates on the NSW Climate Change Fund are posted on the DECC website at www.environment.nsw.gov.au/grants/ccfund. The 12 web pages relating to the NSW Climate Change Fund received a total of 228,768 views. The residential rebate program webpage received 85,547 views.

Publications

The following publications were produced for the NSW Climate Change Fund in 2007–2008. Rebate brochures and applications forms are distributed to local councils and suppliers on request.

Table C1

Print publications

PUB NO.	Title	Distribution
DECC 2007/426	Central Coast Rainwater Tank Rebate Forms	7,220
DECC 2007/428	Hunter Rainwater Tank Rebate Application Form	4,740
DECC 2007/431	Hot Water System Rebate Application Form	25,055
DECC 2007/432	Residential Rebate Program DL Brochure	57,680
DECC 2007/433	Ceiling Insulation Rebate Application Form	47,950
DECC 2007/278	Rainwater Tank Rebate DL	32,072
DECC 2007/556	Green Business Program DL Brochure	1,650
DECC 2007/266	Rainwater Tank Rebate Application Forms	23,939

Table C2

Web publications

PUB NO.	Title
DECC 2007/556	Green Business Program Guide for Applicants
DECC 2007/557	Public Facilities Guide for Applicants
DECC 2007/559	Renewable Energy Development Guide for Applicants
DECC 2008/201	Central Coast Water Savings Fund Guide for Applicants

Local Promotion Program

The Local Promotion Program was established in June 2008 to support local council rebate promotions. Up to $5,000 is available to incorporate rebate information within any promotional activity, nominated by the council, which encourages householders to save water and energy.

The program aims to tap in to councils strong communication links with residents, raise awareness of rebates available and inform householders about eligibility criteria and terms and conditions.

Participating councils report on distribution and reach of promotional activities and the activities are evaluated by rebate uptake data.

Advertising

The residential rebate advertisements were translated into nine languages and published in relevant ethnic papers. Fund round advertisements are translated and reproduced in Arabic and Chinese.

- Statewide print advertising campaign for launch of tank rebates – July 2007 (Cash a rain cheque)
- Statewide print advertising campaign for all three rebates – Jan/Feb 2008 (Make yours green house)
- Statewide regional newspaper advertising Green Business Program – October 2007 (Open for business)
- Statewide print advertising schedule Renewable Energy and Public Facilities Program – December 2007 (New programs open)
- Central Coast local newspapers – May 2008 (Open for applications)
- Electronic advertisements in WME online for the Green Business Program and overall NSW Climate Change Fund in October and November 2007

Appendix D
Funding approved in 2007–2008

Notes to Appendix D tables

- Tables display funding approved by the Minister, not actual expenditure. Expenditure per program is outlined on page 36.
- Highlighted rows denote completed projects and savings are actual. Other projects are estimated savings as proposed in approved applications or signed funding agreements
- Numbers after program type relate to the funding round number
- Fund round abbreviations:
  WSF = Water Savings Fund
  CCWSF = Central Coast Water Savings Fund
  PFProll = Public Facilities Program rolling program
  ESF = Energy Savings Fund
  ED = Electricity Distributors; Schools
  GBP = Green Business Program
  EE = Schools Energy Efficiency Program

Table D1

Residential projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
CCWSF2	Gosford Council	Non-contestable rebate funding – washing machines	300,000	19.0	-	-	-
CCWSF2	Wyong Shire Council	Non-contestable rebate funding – washing machines	300,000	19.0	-	-	-
PFProll	Charles Sturt University	Facilitating energy-saving behaviours among university student residents	72,631		135	324	-
CCWSF2	Nygmpie Aboriginal Corporation	Conservation of excess rainwater by water storage	31,208	1.1	-	-	-
CCWSF2	Sanctuary Point Developments Pty Ltd	Ozone laundering in on-premise laundry in aged care facility	32,850	3.7	-	-	-
CCWSF2	University of Technology, Sydney	Pilot evaluation of water savings from toilet retrofits and shower monitors in central coast households	34,520	1.5	-	-	-
		Funded residential projects – total	**771,209**	**44.3**	**135**	**324**	**-**

Table D2

Community sector projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
PFroll	Fairfield City Council	Energy efficiency community hall	25,700	-	18	19	4
CCWSF2	Central Coast Hockey Inc	Stormwater harvesting for water based hockey field	70,000	2.8	-	-	-
CCWSF2	The Entrance Cricket Club	Eastern Road oval stormwater harvesting project	46,620	5.4	-	-	-
CCWSF2	Budgewoi Soccer Club	Tertiary treated effluent reuse project	250,000	16.0	-	-	-
CCWSF2	Doyalson-Wyee RSL Club	Club playing fields stormwater harvesting project	46,000	5.9	-	-	-
CCWSF2	Gwandalan Bowling Club Limited	Stormwater harvesting and recycle system	35,400	2.5	-	-	-
CCWSF2	Mingara Rebels Baseball Club	Adelaide Street Oval stormwater harvesting project	66,500	3.4	-	-	-
CCWSF2	Mingara Recreation Club Ltd	Stormwater harvesting from Hansen wetland	93,820	7.0	-	-	-
CCWSF2	Northern Lakes Power Junior AFC	Northlakes Oval stormwater harvesting project	70,000	4.5	-	-	-
CCWSF2	Northern NSW Christian Soccer Association	Killarney Vale athletics field stormwater harvesting project	61,000	4.9	-	-	-
CCWSF2	Uniting Care Ageing-Hunter, Central Coast and New England	Recycle water ex Bateau Bay sewerage plant	80,000	3.0	-	-	-
CCWSF2	Wyong Rugby League Club Group	Stormwater harvesting from Kanwal wetland	80,000	10.0	-	-	-
CCWSF2	Wyong Wildcats Baseball Club Incorporated	Watanobbi Oval stormwater harvesting project	76,500	5.9	-	-	-
CCWSF2	Mingara Recreation Club Ltd	Mingara swimming pools backwash recycling project	114,300	7.0	-	-	-
		Funded community projects – total	**1,115,840**	**78.3**	**18**	**19**	**4**

Table D3

Local government projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
PFProll	Dungog Shire Council	Clarence Town swimming pool solar heating	20,000	-	1	1	-
		Funded local government projects – total	**20,000**	**-**	**1**	**1**	**-**

Table D4

School projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
SchoolsEE	Five NSW Department of Education schools	Schools lighting retrofit program	650,000	-	241	255	-
PFProII	Climate Change Balmain-Rozelle	Solar for schools program	60,000	-	17	18	11
PFProII	Eurobodalla Shire Council	Eurobodalla kids' voices for cooler choices	40,000	-	11	12	1.2
CCWSF2	St John Baptist Catholic Primary School, Woy Woy	Reduction of water usage in toilet facilities	67,000	1.6	-	-	-
CCWSF2	Brisbane Water Secondary College-Umina Campus	"Our water wise school community"	28,000	4.7	-	-	-
CCWSF2	Gwandalan Public School	Tertiary treated effluent reuse project	55,000	2.3	-	-	-
		Funding for schools –total	**900,000**	**8.6**	**269**	**285**	**12.2**

Table D5

NSW Government agency projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
PFProII	Powerhouse Museum	Returning power to the Powerhouse	461,000	-	1,970	1,280	520
CCWSF2	Northern Sydney Central Coast Area Health Service	Gosford round 2 water savings project	29,000	12.8	-	-	-
		Funding for state government agencies – total	**490,000**	**12.8**	**1,970**	**1,280**	**520**

Table D6

Total government sector projects

	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
Funded Government sector projects (includes all local government, schools and state government site projects as outlined in Tables D3, D4 and D5)	1,410,000	21.4	2,240	1,566	532.2

Table D7

Business projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
GBP1w	University of Technology, Sydney	Cooling tower bleed water reuse in toilet flushing	60,000	6	20	21	-
GBP1w	Rous County Council	Engaging business to save potable water in the Rous Water region of north east NSW	105,000	13	-	-	-
GBP1w	Swift Electroplating (NSW) Pty Ltd	Water recycling and heavy metal recovery in electroplating processes	188,246	17	-	-	-
GBP1w	SPIK Pty Ltd	Western White Linen water recycling project	110,484	13	-	-	-
GBP1w	Warmma Pty Ltd & Sydseed Pty Ltd	WaterSTARS (sustainable treatment and reuse) program	175,000	0	-	-	-
GBP1w	University of Technology, Sydney	Sewer mining for cooling tower make up water	1,471,000	45	-	-	-
GBP1w	Coca-Cola Amatil (Aust) Pty Ltd	Rainwater harvesting for process water use	50,000	9	-	-	-
GBP1w	Coles Group Limited	Water savings initiative in Coles and Bilo Supermarkets	90,000	46	-	-	-
GBP1e	EDS Australia	Power factor correction installation	14,500	-	-	-	731
GBP1e	EcoSave Pty Ltd	Commercial-Industrial-Retail (CIR) energy & water savings program	185,085	6	1,193	1,274	128
GBP1e	Kellogg (Aust.) Pty. Ltd.	Utility management system	444,000	-	1,564	2,712	342
GBP1e	Mirvac Property Trust	Commercial building energy savings projects	112,240	-	626	669	125
GBP1e	Bunnings Group Limited	Light fixtures replacement across Bunnings Warehouse stores	1,085,436	-	3,169	3,384	711
GBP1e	VINIDEX Pty Ltd	Extrusion chiller upgrade at Smithfield	75,000	-	319	341	46
GBP1e	Drycleaning Institute of Australia NSW	Dry cleaner electricity saving project	256,200	-	855	913	475
GBP1e	Hawker de Havilland Aerospace Pty Ltd	New lighting method for manufacturing	37,500	-	180	193	-
GBP1e	Sara Lee Bakery Pty Ltd	Optimization of refrigeration system	140,587	-	1,090	1,164	729
GBP1e	QAF Feeds Pty Ltd	QAF Feedmill cogeneration plant	540,000	-	6,403	4,109	900
GBP1e	Tooheys Pty Limited	2MW cogeneration with thermal (steam and hot water) heat recovery	2,000,000	-	15,336	9,128	1,993
GBP1e	Qantas Airways Limited	Sydney Domestic Terminal outside air cooling efficiency improvement program	95,000	-	91	97	320
GBP1e	Qantas Airways Limited	Jet Base fluorescent tube lighting energy reduction program	680,000	-	1,434	1,532	367
GBP1e	Westfield Management Limited	Cogeneration energy initiative – Sydney City	2,402,500	-	6,070	6,483	2,540
GBP1e	Rockdale Beef Pty	Sustainability projects	172,500	86	330	555	100
GBP1e	Mirvac Projects Pty Ltd	Mirvac trigeneration system, Royal Newcastle Hospital Site	1,200,000	-	7,402	3,702	1,800
CCWSF2	Boral Montoro Pty Ltd	Old quarry dam water transfer	19,058	2	-	-	-
CCWSF2	Edsvend Pty Ltd	OTEK ozone laundry system installation	28,500	4	-	-	-
		Funded business projects – total	**11,737,836**	**247**	**46,082**	**36,277**	**11,307**

Table D8

2007–2008 Summary

2007–2008 allocated funding	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
Residential projects	771,209	44.3	135	324	-
Community projects	1,115,840	78.3	18	19	4
Local government projects	20,000	-	1	1	-
Funding for schools	900,000	8.6	269	285	12.2
Funding for state government sites	490,000	12.8	1,970	1,280	520
Business projects	11,737,836	247	46,082	36,277	11,307
Total	**15,034,885**	**391.0**	**48,475**	**38,186**	**11,843.2**

Appendix E Funding approved before 30 June 2007

Notes to Appendix E tables

- Tables display funding approved by the Minister, not actual expenditure. Expenditure per program is outlined in Page 36, Table 25
- Highlighted rows denote completed projects and savings are actual. Other projects are estimated savings as proposed in approved applications or signed funding agreements
- Numbers after program type relate to the funding round number
- Fund round abbreviations:
  WSF = Water Savings Fund
  CCWSF = Central Coast Water Savings Fund
  PFProll = Public Facilities Program rolling program
  ESF = Energy Savings Fund
  ED = Electricity Distributors; Schools
  GBP = Green Business Program
  EE = Schools Energy Efficiency Program
- Power factor correction projects are measured in kVA (1000s of volt amps), the measure of the customer's load on the power supply network.

Table E1

Residential projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
WSF1	Save-a-drop Products Australia Pty Limited	Save-A-Drop water saving devices	120,000	21.5	-	-	-
WSF2	Aged Care Association Australia – NSW	Residential aged care facility water and energy savings program	545,000	63.3	-	-	-
WSF2	Rainsaver Pty Ltd	Auxiliary water supply for Sydney using Rainsaver storage gutters	800,000	154.5	-	-	-
WSF2	Waterwise Systems Australia Pty Ltd	Greywater gardens: a community demonstration	127,259	18.7	-	-	-
WSF3	Aged Care Association Australia – NSW	Residential aged care facility leak detection and water savings program	500,000	45.5	-	-	-
WSF3	Fieldforce Services Pty Ltd	Enviro Saver Program (toilet rebates)	400,000	52.6	-	-	-
WSF3	Discovery Point Pty Ltd	Sustainable water recycling scheme for Discovery Point apartments and Cooks River parks	2,273,000	98.0	-	-	-
ESF1	Low Energy Supplies and Services (LESS)	Rural and regional energy and water retrofit	489,000	-	55,041	58,343	870
ESF1	EnergyAustralia	Residential refit program – Sydney	400,000	-	11,628	12,374	2,322
ESF1	Next Energy	2nd fridge buyback scheme	400,000	-	2,084	2,209	188
ESF1	Integral Energy	Smart home audit program	298,689	-	401	395	-
ESF1	Murray Regional Development Board (on behalf of MESP Consortium) Albury Council	Murray energy savings program	2,106,000	-	10,630	12,657	795
ESF1	Big Switch Projects Pty Ltd	Northern Wollongong home energy initiative	$400,000	-	267	263	112
ESF2	Australian Conservation Foundation	ACF's GreenHome – community education for sustainable living	$889,935	-	2,700	2,660	675

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
ED1	EnergyAustralia	Hot water conversion program	400,000	-	3,678	3,204	-
CCWSF1	The Hammond Care Group	Woy Woy nursing home water saving project	33,780	2.8	-	-	-
CCWSF1	Rainsaver Pty Ltd	Auxiliary water supply for the Central Coast using Rainsaver storage gutters	74,000	12.0	-	-	-
		Funded residential projects – total	**10,256,663**	**468.9**	**86,429**	**92,105**	**4,962**

Table E2

Community projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
WSF1	Centennial Parklands Foundation	Centennial Parklands water saving projects	139,980	11.0	-	-	-
WSF1	Hornsby Shire Council	Harvesting stormwater for irrigation usage at 3 local bowling clubs	206,818	11.4	-	-	-
WSF2	Sutherland Shire Council	Cronulla – Woolooware wastewater reuse scheme	881,000	414.1	-	-	-
WSF2	Northbridge Golf Club Ltd	Stormwater harvesting and re-use project	534,071	90.3	-	-	-
WSF2	Pennant Hills Golf Club Limited	Waste water treatment plant for irrigation of golf course	1,100,000	85.7	-	-	-
WSF3	Ryde Hunters Hill District Hockey Club Inc	Recycling water for use on synthetic hockey field	25,000	4.2	-	-	-
WSF3	Menai Hawks Junior Soccer Club	Buckle Reserve water harvesting and recycling project	124,250	4.4	-	-	-
WSF3	Roseville Golf Club Ltd	Water storage dam and storm water recycling system	370,170	40.0	-	-	-
WSF3	North Ryde Golf Club Limited	Sewer mining scheme for irrigation	1,000,213	62.8	-	-	-
ESF2	Community Broadcasting Association of Australia	Energize: energy savings education project	142,000	-	3310	3,260	350
CCWSF1	Lutanda Childrens Services	Water wise at Camp Toukley	11,500	0.8	-	-	-
CCWSF1	Toukley Golf Club Ltd	Toukley golf club stormwater harvesting	69,000	33.3	-	-	-
CCWSF1	Halekulani Bowling Club Limited	Halekulani bowling club's water saving scheme	24,861	6.0	-	-	-
CCWSF1	Ourimbah Lisarow R S L Club Ltd	Water saving and harvesting plan	46,500	3.7	-	-	-
CCWSF1	Toukley District Bowling Club Limited	Toukley District bowling club saves precious water	16,500	2.5	-	-	-
CCWSF1	Wyong Council	Wadalba Community School stormwater harvesting	81,350	2.8	-	-	-
		Funded community projects – total	**4,773,213**	**773**	**3,310**	**3,260**	**350**

Table E3

Local government projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
WSF1	Warringah Aquatic Centre	WAC rainwater and overflow catchment project	53,500	4.0	-	-	-
WSF1	The Irrigation Association of Australia Limited	Improving urban irrigation practice in Sydney	270,000	25.0	-	-	-
WSF1	Kogarah Municipal Council	Beverley Park water reclamation	665,000	159.1	-	-	-
WSF1	North Sydney Council	Cammeray Park and St Leonards Park water reuse project	300,000	90.0	-	-	-
WSF1	Waverley Council	Waverley groundwater irrigation project	74,900	16	-	-	-
WSF1	Mosman Municipal Council	Stormwater reuse for Balmoral Oval and Foreshore Reserve, Mosman, Sydney	140,000	15.3	-	-	-
WSF1	Ku-ring-gai Council	Sewer mining and stormwater harvesting for Gordon and Killara golf courses	831,500	125	-	-	-
WSF1	URS Australia Pty Ltd	Reducing potable water use on golf courses and parks within Ku-ring-gai LGA	40,670	13.3	-	-	-
WSF1	Lane Cove Council	Alternate water supply for Lane Cove golf course	49,550	5.6	-	-	-
WSF1	Ryde City Council	Water savings initiatives at Ryde Aquatic Leisure Centre	431,841	25.6	-	-	-
WSF2	Campbelltown City Council	Kooringa Reserve stormwater mining project	70,000	3.7	-	-	-
WSF2	The Council of the Municipality of Hunters Hill	Hunters Hill Council, rainwater harvesting and greywater diversion to infiltration trench	40,000	3.4	-	-	-
WSF2	Kogarah Municipal Council	Beverley Park water reclamation	1,000,000	113.5	-	-	-
WSF2	Auburn Council	Wyatt Park sustainable water program – stage 1	55,000	65.9	-	-	-
WSF2	Blacktown City Council	Rain water harvesting tanks and pool filter backwash water re-use	145,000	11.3	-	-	-
WSF2	Penrith City Council	Water recycling and rainwater harvesting at Penrith Council swim centres	325,490	13.7	-	-	-
WSF2	The Council Of Camden	Camden Council recycled water project	200,000	12.9	-	-	-
WSF2	Baulkham Hills Shire Council	Rainwater harvest for irrigation re-use at Kenthurst Park	28,000	4	-	-	-
WSF2	URS Australia Pty Ltd	Reducing potable water use on Auburn botanic gardens and Rosnay golf course	46,000	12.8	-	-	-
WSF2	Wollondilly Shire Council	Detailed Investigation into water use devices at the Wollondilly pool complexes	30,000	7.8	-	-	-
WSF2	Wollondilly Shire Council	Development of the Tahmoor sportsground groundwater bore for irrigation purposes	45,000	4.9	-	-	-
WSF2	Willoughby City Council	Chatswood CBD and Civic Place integrated water management system	1,881,143	103.0	-	-	-

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
WSF2	Manly Council	Effluent recycling for irrigation at Manly golf club, Manly Council depot, Keirle Park, Manly swim centre and LM Graham Reserve.	1,600,000	162.3	-	-	-
WSF3	Strathfield Municipal Council	Stormwater harvesting for irrigation of Mason Park	157,500	10.8	-	-	-
WSF3	Marrickville Council	Sydenham Detention Basin Stormwater harvesting project	133,200	11.0	-	-	-
WSF3	Waverley Council	Bronte Park Stormwater harvesting and re-use project	106,220	11.6	-	-	-
WSF3	URS Australia	Generating potable water savings across 40 'City of Sydney' irrigated landscapes	106,900	30.0	-	-	-
WSF3	City of Canada Bay Council	Sewer mining for irrigation of City of Canada Bay parks and golf courses	1,227,500	139.0	-	-	-
WSF3	Pittwater Council	Sydney Lakeside caravan park – integrated water harvesting and reuse scheme	260,568	13.3	-	-	-
WSF3	North Sydney Council	North Sydney stormwater reuse project	1,200,000	90.0	-	-	-
WSF3	Woollahra Municipal Council	Sportfield subsurface irrigation and stormwater harvesting system	270,200	12.9	-	-	-
WSF3	The Council of the Shire of Hornsby	Greenway Park water harvesting and athletics field irrigation project	274,276	18.9	-	-	-
ESF1	Southern Sydney Regional Organisation of Councils	SLI program energy efficiency implementation project	4,180,880	-	14,474	14,257	3,423
ESF1	Eco$ave Pty Ltd	Lighting retrofit and education project	206,050	-	1,170	1,240	447
ESF1	Willoughby City Council	Cogeneration at Willoughby leisure centre	200,000	-	610	255	197
ESF2	Fairfield City Council	Sustain'n'Save – Energy smart council leading the way in the Fairfield leisure centre and administration centre	111,732	-	233	230	48
ESF2	Gosford City Council	Implementation of a packaged biogas cogeneration system for the Kincumber sewage treatment plant	137,999	-	1,720	1,744	230
CCWSF1	Wyong Council	Baker Park stormwater harvesting	31,000	5.0	-	-	-
CCWSF1	Wyong Council	Maximising irrigation efficiency at Wyong Shire Council sporting fields	62,500	15.6	-	-	-
CCWSF1	Wyong Council	Taylor Park stormwater harvesting	39,600	4.5	-	-	-
CCWSF1	Wyong Council	Tunkuwallin oval stormwater harvesting and tertiary treated effluent reuse	149,000	1.6	-	-	-
CCWSF1	Gosford Council	Tertiary upgrade and tanker filling station Kincumber sewage treatment plant	346,500	92	-	-	-
CCWSF1	Gosford Council	Tertiary upgrade and tanker filling station Woy Woy sewage treatment plant	178,500	52	-	-	-
		Funded local government projects – total	**17,702,719**	**1,506.3**	**18,207**	**17,726**	**4,345**

Table E4

School projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
WSF3	The Council of the King's School	The King's School water recycling and self provision program	400,000	44.1	-	-	-
CCWSF1	Hunter Councils Inc	Central Coast public schools integrated water program	113,070	15.0	-	-	-
CCWSF1	Rumbalara Environmental Education Centre	Take it easy with water	39,900	20.0	-	-	-
CCWSF1	Wyong Council	Tuggerah Lakes secondary college/OLR primary school treated effluent recycling	111,500	6.2	-	-	-
		Funded schools projects – total	**664,470**	**85.3**	**-**	**- -**	

Table E5

NSW Government agency projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
WSF3	Zoological Parks Board of NSW	Upgrade of The Taronga Zoo wastewater treatment & reuse plant	630,000	53.5	-	-	-
WSF3	The Legislature	Parliament House water recycling, alternative supply and harvesting initiative	110,000	17.9	-	-	-
PFroll	The Legislature	Parliament House – energy reduction program	1,000,000	0.0	2,360	2,320	745
ESF2	Country Energy	Energy and water savings through minimisation of water evaporation	700,000	0.0	429	423	-
		Funded state government site projects – total	**2,440,000**	**71.4**	**2,789**	**2,743**	**745**

Table E6

Total government sector projects

	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)
Funded government sector projects (includes all local government, schools and state government site projects as outlined in Tables E3, E4 and E5)	20,807,189	1,663	20,996	20,469	5,090

Table E7

Business projects

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)	Savings (kVa/yr)
WSF1	So Natural Foods Australia Limited	Water capture and re-use of potable water from Sydney Water	115,900	32	-	-	-	-
WSF1	DPK Australia Pty Limited	Clear water recycle	525,000	175	-	-	-	-
WSF1	Solvay Interox Pty Ltd	Utilisation of treated ground water for non-potable production applications	200,000	173	-	-	-	-
WSF1	The Austral Brick Company	Utilisation of alternate water source from quarry sump for brickmaking	269,000	25	-	-	-	-
WSF1	CSR Building Products Limited	Process water recycling- fibre cement factory Sydney	102,000	127	-	-	-	-
WSF1	Ethnic Communities Council of NSW	Saving water in Asian style cooking restaurants	391,000	66	-	-	-	-
WSF1	University of Western Sydney	Smart irrigation technologies for saving potable water on vegetable farms	160,164	15	-	-	-	-
WSF1	Amcor Packaging (Australia) P/L	Botany Mill – new steam raising plant to replace existing boiler	1,661,507	160	-	-	-	-
WSF1	Energy Conservation Systems Pty Ltd	Water savings in city towers through integrated water management systems	1,000,000	87	-	-	-	-
WSF1	Port Kembla Coal Terminal Limited	Use of stormwater for dust suppression at Port Kembla coal terminal	420,000	95	-	-	-	-
WSF1	The Australian Gas Light Company	Metropolitan Sydney recycled water projects	1,487,004	3,576	-	-	-	-
WSF1	Master Plumbers & Mechanical Services Association	GreenPlumbers water & energy saving training and accreditation	263,600	237	-	-	-	-
WSF2	ABC Paper & Paper Mills Pty Ltd	ABC Paper and paper mill water recycling and re-use project	2,450,000	342	-	-	-	-
WSF2	Arnotts Snackfoods	Arnotts Smithfield wastewater recycling project	925,000	137	-	-	-	-
WSF2	NSW Department of Primary Industries	Water smart farms in the Sydney basin	3,000,000	1,228	-	-	-	-
WSF2	Ensign Services (Australia) Pty Limited	Water recycling in a commercial laundry using an Aquamiser system	145,000	48	-	-	-	-
WSF2	Inghams Enterprises	Treating water for re-use in permitted areas of poultry processing plant	200,878	20	-	-	-	-
WSF2	Macquarie University Sport and Recreation Inc.	Sustainable water for Macquarie University playing fields	350,000	21	-	-	-	-
WSF2	Astor Electroplaters Aust. Pty Ltd	Water recycling / zero discharge system	299,680	31	-	-	-	-
WSF2	Jones Lang LaSalle NSW Pty Ltd	Connection to Homebush Bay recycled water system – The Quad I & II	48,500	8	-	-	-	-
WSF2	Qenos Pty Ltd – Minimising mains water consumption	Minimising townwater consumption using treated groundwater and targeted water reduction strategies	1,068,500	922	-	-	-	-
WSF2	University of Western Sydney	A sustainable recycled water supply for the Hawkesbury Racecourse	119,000	10	-	-	-	-
WSF2	The Australian Gas Light Company (AGL)	Metropolitan Sydney recycled water project	954,602	312	-	-	-	-

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)	Savings (kVa/yr)
WSF2	Bonds Industries Limited	Engineered water recovery system with inbuilt "smart" monitoring and control technology	240,000	50	-	-	-	-
WSF2	Tahmoor Coal Pty Ltd	Mine discharge water recycling – Tahmoor Colliery	2,000,000	380	-	-	-	-
WSF2	Cumberland Country Golf Club Ltd	Cumberland Country golf club irrigation pipeline	398,250	56	-	-	-	-
WSF2	Investa Property Group	Water savings initiative for fire protection systems maintenance and testing regime	107,000	11	-	-	-	-
WSF2	Merck Sharp & Dohme (Australia) Pty Ltd	Water conservation projects	25,900	12	-	-	-	-
WSF2	Orica – Reusing treated groundwater	Reusing treated groundwater in manufacturing processes	157,218	169	-	-	-	-
WSF2	Sydney Airport Corporation Limited (SACL)	Sydney Airport water recycling project	3,000,000	274	-	-	-	-
WSF2	The University of Sydney	Sustainable water at the University of Sydney	305,000	10	-	-	-	-
WSF2	EP&T Pty Ltd	Water efficiency upgrades for Colonial First Sate Property's commercial portfolio	950,000	192	-	-	-	-
WSF2	Stockland Development Corporation	Stockland shopping centre water management	120,000	13	-	-	-	-
WSF2	MowlemSodexho	Westpac rain water harvesting and water efficiency	125,725	15	-	-	-	-
WSF2	Caltex Refineries and Continental Carbon Australia	Kurnell industrial recycling plant	5,180,000	2124	-	-	-	-
WSF3	Alinta AGN Ltd.	Camellia recycled water project	225,384	90	-	-	-	-
WSF3	Irrigation & Water Technology Pty Ltd	Reduction in potable water use at production nurseries	1,567,849	265	-	-	-	-
WSF3	University of New South Wales	Campus borewater treatment plant	747,000	100	-	-	-	-
WSF3	Berri Limited (National Foods Australia)	Juice processing discharge water treatment	798,000	50	-	-	-	-
WSF3	Sydney Turf Club	Sydney Turf Club sewer mining project to produce irrigation water to replace potable water use	773,760	76	-	-	-	-
WSF3	Ethnic Communities Council	Saving water in Asian restaurants project (SWARP) Stage 2	743,780	130	-	-	-	-
WSF3	Orica Australia Pty Ltd	Treatment and re-use of spent acid regeneration plant effluent	344,902	53	-	-	-	-
WSF3	EP&T	Water reuse projects and efficiency upgrades for Investa Property Group's commercial portfolio	258,134	27	-	-	-	-
WSF3	EP&T	Water reuse and efficiency upgrades for Stockland C&I buildings.	132,900	40	-	-	-	-
WSF3	ISPT Pty Ltd	Installation of dual flush cisterns at 477 Pitt Street, Sydney	54,000	8	-	-	-	-
ESF1	Visy R & D Pty Ltd	Visy Paper Smithfield site power factor correction	108,500	-	-	-	-	1,316
ESF1	Visy R & D Pty Ltd	Optimise power use by pumps, agitators and pulp screening equipment	181,000	-	3,331	3,281	396	-

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)	Savings (kVa/yr)
ESF1	Investa Property Group	Investa greenhouse guarantee funding	500,000	-	3,783	3,726	208	-
ESF1	AMCOR Packaging (Australia) Pty Ltd	Optimising compressed air costs using a holistic approach	102,000	-	858	845	-	-
ESF1	Rockdale Beef Pty Limited	Biogas generation from waste water and manure digester	2,100,000	-	15,500	29,528	3,700	-
ESF1	Energy Response Pty Ltd	Demand side response project in constrained areas	2,500,000	-	-	-	25,000	-
ESF1	University of Newcastle	MS & Library compressor upgrade to turbocor & data centre grid connect generator	175,000	-	341	336	150	-
ESF1	Impact Employee Communications Pty Ltd	Workplace energy and water saving communications program	200,000	-	1,066	1,050	-	-
ESF1	CBD Energy Limited (formerly Capacitor Technologies Pty Ltd)	Small-medium enterprise energy management project	420,000	-	-	-	-	3,594
ESF1	United Collieries Pty Limited	United collieries power factor correction initiative: beyond compliance	27,400	-	-	-	-	225
ESF1	Bulga Coal Management Pty Limited	Motor upgrade at Bulga coal handling and preparation plant	59,045	-	228	224	30	-
ESF2	Energy Conservation Systems	Industrial/Commercial absorption cooling	500,000	-	3,670	3,141	784	-
ESF2	AGL Energy Services Pty Ltd	Holiday Inn Potts Point chiller upgrade	66,000	-	432	426	117	-
ESF2	Bartter Enterprises Pty Limited	High voltage power factor correction	93,632	-	-	-	-	858
ESF2	Burrangong Meat Processors Pty Ltd	To recover gas from effluent ponds and generate electricity to operate meat processing plant	700,000	-	3,600	3,546	600	-
ESF2	Carter Holt Harvey Wood Products Australia Pty Limited	Compressed air reduction	50,000	-	308	326	54	-
ESF2	Eco$ave Pty Ltd	Public buildings energy savings program	210,949	-	1,073	1,057	110	-
ESF2	Electrolux Home Products Pty Ltd	Power factor correction	32,404	-	-	-	-	817
ESF2	EP&T	Energy efficiency program for GPT commercial portfolio	388,355	-	1,826	1,798	393	-
ESF2	EP&T	Energy efficiency projects for Investa Property Group – commercial portfolio	120,020	-	304	299	106	-
ESF2	EP&T	Energy efficiency program for Industry Superannuation Property Trust (ISPT) – commercial portfolio	711,064	-	2,230	2,197	663	-
ESF2	EP&T	Energy efficiency program for Macquarie Asset Services Limited – commercial portfolio	343,770	-	896	883	251	-
ESF2	GPT Group	The GPT Group retail shopping centre embedded co-generation program	1,960,000	-	5,683	2,387	2303	-
ESF2	Huhtamaki Australia Pty Limited	First stand-alone multiple purpose reactor installation	190,000	-	661	651	138	-
ESF2	P & M Quality Smallgoods Pty Ltd	Energy management system	299,000	-	1,241	1,443	300	-
ESF2	Springvale Coal Pty Ltd	VVVF for Springvale's #2 bore water pump + power factor correction for shaft #3	244,425	-	1,902	1,874	207	-
ESF2	Sydney Water Corporation	Sydney Water's renewable energy generation – Stage 2	3,679,400	-	13,377	13,176	-	-

Fund round	Applicant name	Project title	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)	Savings (kVa/yr)
ESF2	The Commonwealth Steel Company Limited	VSDs for EAF dust extraction system	183,624	-	1,772	1,745	275	-
ESF2	GPT Group	Retailer energy efficiency education program	256,000	-	6,421	6,325	-	-
ESF2	Tooheys Pty Limited	Power factor correction and refrigeration improvements	150,118	-	342	337	95	-
ESF2	Ethnic Communities Council	Dry cleaner electricity saving project	420,000	-	1,467	1,445	608	-
ESF2	George Weston Foods Limited	Energy Savings with variable speed drives (VSDs) and advanced control logic	40,000	-	317	313	35	-
ESF2	Huhtamaki Australia Pty Limited	Optimising demand and generation of compressed air	152,000	-	562	553	144	-
ESF2	Goldway Energy Australia Pty Ltd	Clubs energy excellence program	215,285	-	1,310	1,290	236	-
ESF2	Impact Employee Communications Pty Ltd	Workplace energy savings communication program	324,000	-	6,500	6,403	-	-
CCWSF1	Central Coast Laundry (Martin And Angela Channell)	Ozone laundering in commercial laundries	23,820	4	-	-	-	-
CCWSF1	Sanitarium (Australian Health & Nutrition Association Limited)	Sanitarium integrated water strategy	287,363	80	-	-	-	-
CCWSF1	Aqua Jet Car Wash Pty Ltd	Recycling to save and survive	36,500	3	-	-	-	-
CCWSF1	Robann's Pty Ltd	The harvesting of rain and irrigation including methods of moisture reduction	19,000	3	-	-	-	-
CCWSF1	Ethnic Communities Council of Nsw	Saving water in Central Coast Asian restaurants	247,500	95	-	-	-	-
CCWSF1	Sara Lee Bakery Pty Ltd	Water recovery from trade waste plant	91,650	22	-	-	-	-
CCWSF1	Delta Laboratories	Recirculated chilled water system for in process cooling	60,000	5	-	-	-	-
CCWSF1	MasterFoods (Effem Foods Pty Ltd)	Process water recycling and stormwater harvesting project	725,000	97	-	-	-	-
		Funded business projects – total	**53,604,961**	**12,301**	**81,001**	**90,605**	**36,903**	**6,810**

Summary Table

Table E8

Total project funding before 30 June 2007

Before June 30 2007	Funding approved ($)	Savings (ML/yr)	Savings (MWh/yr)	Savings (tCO_2-e/yr)	Savings (kW/yr)	Savings (kVa/yr)
Residential projects	10,256,663	468.9	86,429	92,105	4,962	-
Community projects	4,773,213	773	3,310	3,260	350	-
Local government projects	17,702,719	1,506.3	18,207	17,726	4,345	-
Funding for schools	664,470	85.3	-	-	-	-
Funding for state government sites	2,440,000	71.4	2,789	2,743	745	-
Business projects	53,604,961	12,301	81,001	90,605	36,903	6,810
Total	**89,442,026**	**15,205.9**	**191,736**	**206,439**	**47,305**	**6,810**

Glossary

Glossary

ACF	Australian Conservation Foundation
The Act	*Energy and Utilities Administration Act 1987*
AEMC	Australian Energy Market Commission
Backwash	The reversal of water flow back through a water filter to remove entrapped solids
Biogas	A by-product of anaerobic digestion, which is a decomposition process by micro-organisms. This gas by-product can be harvested to convert to energy
Carbon Pollution Reduction Scheme (CPRS)	A national emissions trading scheme for greenhouse gas emissions being developed by the Australian Government to be implemented by 2010
CCF	Climate Change Fund
CCWSF	Central Coast Water Savings Fund
Compact fluorescent light bulbs (CFL)	Energy efficient light bulbs which use about one quarter of the energy compared to incandescent light bulbs
tCO_2-e	An abbreviation of 'carbon dioxide equivalent' and is the internationally recognised measure of greenhouse gas emissions
Cogeneration	The simultaneous generation of electrical and thermal energy where both forms of energy are put to productive use. Cogeneration is typically possible when facilities that produce large amounts of waste heat (usually in the form of steam or hot water) is used efficiently for space or water heating, cooling, industrial use, agriculture or conversion into electricity
DECC	Department of Environment and Climate Change, NSW
DET	Department of Education and Training, NSW
DWE	Department of Water and Energy, NSW
ED	Electricity distributors
Efficiency (energy and water)	Reducing the amount of energy or water required to provide a given level of service (eg for lighting air conditioning, toilet flushing)
Effluent (primary, secondary & tertiary treatment)	This is typically the out-flow of water or wastewater from any water processing system or device. Primary treatment is the first stage of treating sewage, usually the removal of large solids such as plastic and wood, sludge and volatile liquids. Secondary treatment is the removal of organic matter from wastewater using aerobic biological processes and tertiary treatment is the processing of wastewater which may involve further nutrient removal, filtration, aeration, constructed wetlands and higher levels of disinfection
Electrical generation	The process of converting mechanical or solar energy into electricity
ESAP	Energy Savings Action Plan
ESF	Energy Savings Fund
Flow restrictor	A device used to restrict the amount of water flow for a given use. For example, flow restrictors are often installed on taps to inhibit the amount of water people can use to wash their hands
Fluorescent lamp	A low pressure mercury discharge lamp that emits light via a phosphor coating. Tubular and compact types are available. The main types of general office luminaires use tubular fluorescent lamps
GBP	Green Business Program
GHG	Greenhouse gas
Gigajoule	A joule is a unit of energy, equivalent to a power of one watt for one second. A Gigajoule is one thousand million joules
Greywater	Can come from a variety of sources within households or businesses, and is typically sourced from baths, showers, laundries or basins. Greywater is not sourced from toilets or bidets
Groundwater	Water that has been collected in an aquifer or the water table that is below ground level
Harvesting	To collect rain or stormwater for reuse.
Heat pump	A device that pumps heat energy used in both heating and cooling systems. Heating units, heat pumps are able to extract heat energy from even the coldest outdoor air to heat the inside of a structure. When used as cooling units, they can extract heat from indoor air even if the outdoor air is much hotter
HVAC	Heating, ventilation and air-conditioning
Insulation	Most commonly refers to thermal insulation used in buildings to prevent heat energy loss in cool climates or heat energy gain in climates or structures where air conditioning is commonly used
IPART	The Independent Pricing and Regulatory Tribunal is the independent economic regulator NSW
Kilolitre (kL)	A volumetric measurement equivalent to one thousand litres, or one cubic metre
Kilowatt hour (kWh)	A quantitative measure of electric current flow equivalent to one thousand watts being used continuously for a period on one hour; the unit most commonly used to measure electrical energy. A kilowatt is one thousand watts, which is the rate for supplying or using energy
Key performance indicator (KPI)	A benchmark that has been determined as a reference so that reductions in future energy or water use can be quantified
Local government area (LGA)	The term refers to administrative divisions or areas controlled by each individual Local Government

Luminaires	A complete lighting unit consisting of a lamp or lamps, lampholders, optical elements to distribute the light, and the means for connection to a power source
Megalitres	A volumetric measurement equivalent to one million litres
Megawatt hour (MWh)	A unit of electricity equivalent to 1,000 kilowatt hours or 1 million watts
National Australian Built Environment Rating System (NABERS)	NABERS is a performance-based rating system for existing buildings. NABERS rates a building on the basis of its measured operational impacts on the environment, and provides a simple indication of how well you are managing these environmental impacts compared with your peers and neighbours
Payback period	The time taken for the savings or profit of investment to pay for the initial capital expenditure. Payback period = Capital cost/Total annual savings For example, a new lighting system costing $400 with $200 savings per year has a payback period of $400/$200 = 2 years
PCA	Property Council of Australia
Peak demand	The maximum power demand of a system at a given time, or the maximum power required to supply customers at any time. This may be at a particular time of the day or a specific hour of the day
PFP	Public Facilities Program
PFProll	Public Facilities Program rolling program was originally established as a component of the former Energy Savings Fund
Photovoltaic (PV)	A form of solar energy that directly converts light into energy
Potable water	Water that is suitable for drinking
Power factor correction (PFC)	The demand for electricity a site places on the electricity network is expressed in kVA (1,000s of volt amps) and is a measure of the customer's load on the power supply network. Power factor is the ratio of the actual power in kW divided by the kVA. The ratio is between 0 and 1, where 1 means that you are making the most effective use of your electricity supply. Power factor correction reduces your peak demand on the electricity supply network
Rainwater harvesting	Collection and storage of rainwater from roofs for reuse
Recycled water	Water taken from a non-potable source and treated to a level suitable for its intended use
Renewable energy	Energy which is generated from renewable sources, including the sun, wind, waves, water (hydroelectricity) and waste, as opposed to fossil fuels that emit greenhouse gases
Renewable Energy Certificates (RECs)	A form of 'currency' that can be earned when you install renewable energy equipment. One REC represents one megawatt hour of renewable energy generated
Retrofit	Retrofit simply means upgrading an existing system, typically to make it more energy or water efficient
Reverse osmosis (RO)	Uses a semi-permeable membrane to separate and remove dissolved solids, organics, viruses, bacteria and other materials from water. It is called RO as it requires pressure to force pure water across a membrane, leaving the impurities behind
School EE	School Energy Efficiency Program
Sewage	Sewage refers to wastewater that has been sourced from greywater or blackwater sources and can contain a high level of organic and non-organic matter
Sewer mining	Sewer mining involves tapping directly into a sewer main either before or after a treatment plant and extracting the wastewater. The wastewater is treated and reused as recycled water
Smart meter	An advanced water or energy meter that can provide more information about consumption patterns than a conventional meter
Solar energy	Solar power refers to the potential of the sun to produce energy. Solar energy can be generated using a wide variety of methods, ranging from simple water recirculating systems used to heat homes and commercial offices to sophisticated networks of solar cells that produce enough energy to supply small cities
Stormwater harvesting	Stormwater involves the collection and reuse of rainwater that would otherwise end up in the stormwater channels that lead to a river or the ocean. Harvesting stormwater generally involves two stages: storage and treatment. Stormwater usually comes in large volumes during a rainfall event, and as such, must be stored to allow for reuse. Also as stormwater is typically of low quality with a high level of pollutants it must be sufficiently treated. The most common reuse of stormwater is for irrigation
Variable speed drives (VSD)	Mechanisms that control motor speed. They can be installed on motors driving fans and pumps to adjust to speed at which they are running. This means that the amount of energy being consumed can be adjusted to match the demand and so does not waste energy
Wastewater (& wastewater recycling)	Wastewater is water that has been contaminated by some activity, includes greywater and sewage. It can be collected from a variety of sources, stored and treated so that it can be used as an alternative to the potable supply
Watt (W)	The unit for measuring electrical power. The rate of energy consumption by an electrical device when it is in use is measured in watts
WSAP	Water Savings Action Plan
WSF	Water Savings Fund
WWF	World Wildlife Fund

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