



Climate Change and Greenhouse Gas Reduction Act 2010

Minister's Annual Report 2013–14

PRESENTED BY
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MINISTER FOR THE ENVIRONMENT

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The ACT Legislative Assembly passed the *Climate Change and Greenhouse Gas Reduction Act 2010* (the Act) on 26 October 2010 and the Act was enacted on 5 November 2010. The Act requires the Minister to present a report to the Legislative Assembly within six months of the end of the financial year for which the report is made.

This report outlines the Government's actions against the requirements of the Act for the 2013–14 financial year.

1. Actions taken in 2013–14 under the Act

The ACT Government has shown strong leadership in environmental management by responding to climate change through a range of programs, initiatives and nation-leading reforms.

Significant progress was made on a number of critical projects that support greenhouse gas reduction targets, including:

- the passage of legislation to increase the proportion of renewable energy consumed in the Territory to 90% by 2020;
- the allocation of a further 20 megawatts of solar energy capacity to meet the new renewable energy target;
- the amendment of the *Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011* so that it can support up to 550MW of large-scale renewable energy;
- the extension of the Energy Efficiency Improvement Scheme (the EEIS) to businesses in the ACT; and
- substantial progress on the Government's commitment to be carbon neutral in its own operations by 2020.

The combined impact of projects initiated during the reporting period will provide the foundations for a sustainable Canberra that leads by example in action to address climate change. These projects are further detailed below.

A. Review climate change issues

International

The nineteenth session of the Conference of the Parties (COP 19), and the ninth session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP 9) took place in Warsaw, Poland in November 2013. Parties to the conference continued progress towards an international climate agreement to be finalised by 2015 and come into effect from 2020. Parties also agreed that all states would begin or intensify domestic preparations for their nationally determined contributions so that they are ready well before December 2015, but preferably by the first quarter of 2015.¹

The Fifth Assessment Report (AR5) of the United Nations Intergovernmental Panel on Climate Change (IPCC) was partially released during 2013–14². The Synthesis Report, the final product of the Fifth Assessment cycle, has subsequently been released. It integrates key messages from the three recent working group reports: the physical science basis (September 2013), climate change impacts, adaptation, and vulnerability (March 2014), and mitigation (April 2014).

Key messages from the reports released during 2013–14 include:

- Human influence on the climate system is clear and warming of the climate system is unequivocal. It is extremely likely that human (anthropogenic) influence has been the dominant cause of the observed warming since the mid-20th century.
- The IPCC has identified the need to reduce the level of global greenhouse gas emissions by at least 80% below 1990 levels by 2050 if the increase in average global temperatures is to be kept below 2 degrees Celsius and the most catastrophic effects of climate changes are to be avoided.
- For industrialised countries the IPCC has proposed a target of 40% reduction in greenhouse gas emissions by 2020 compared with 1990 levels.

1 United Nations Framework Convention on Climate Change (2014) Warsaw Outcomes. http://unfccc.int/key_steps/warsaw_outcomes/items/8006.php.

2 Intergovernmental Panel on Climate Change (2014) Fifth Assessment Report (AR5). <http://www.ipcc.ch/report/ar5/>.

- Significant co-benefits and synergies exist between mitigation and adaptation actions and the approaches for managing the risks should overlap and be pursued simultaneously.
- The decisions made today will have an ongoing effect on the risks and responses to climate change throughout the 21st century.

National

The *State of the Climate*³ report issued in 2014 by the Australian Government Bureau of Meteorology (BoM) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) includes the following findings:

- Australia's climate has warmed by 0.9°C since 1910, and the frequency of extreme weather has changed, with more extreme heat and fewer cool extremes.
- Annual average global atmospheric carbon dioxide concentrations reached 395 parts per million (ppm) in 2013 and concentrations of the other major greenhouse gases are at their highest levels for the past 800,000 years.
- Further changes in average rainfall are expected over southern Australia compared to the climate of 1980 to 1999:
 - » for low emissions 0% –20% decrease by 2070
 - » for high emissions 30% decrease–5% increase by 2070
(a greater degree of uncertainty and range of possible changes exists for this scenario)
 - » largest decreases in winter and spring.
- The frequency and intensity of extreme rainfall events is also projected to increase in most regions of Australia.
- Droughts are expected to become more frequent and severe in southern Australia.
- Extreme fire weather has increased and the fire season has lengthened across large parts of Australia since the 1970s.
- The number of extreme fire-weather days is projected to grow in southern and eastern Australia, compared with the climate for 1980 to 1999:
 - » for low emissions 10% –50% by 2050 and
 - » for high emissions 100% –300% by 2050.

The report concludes that reductions in global greenhouse gas emissions would increase the chance of constraining future global warming. However, adaptation is still required as the current warming trend and associated changes will continue.

B. Promote action to meet targets

The ACT Government released *AP2: A new climate change strategy and action plan for the Australian Capital Territory* (AP2) in October 2012. The climate change strategy and action plan can be viewed at www.environment.act.gov.au/cc.

The strategy is the primary mechanism of the Government to set the Territory on the path to meet its 2020 greenhouse gas reduction target and establish a strong foundation for the achievement of the overall target of zero net emissions by 2060.

The Government continues to implement the 18 actions presented in AP2. A status report on all the actions under AP2 is prepared biannually and released on the Environment and Planning Directorate's web site. The most recent version is available at www.environment.act.gov.au/climate_change.

Actions being progressed under AP2 during the 2013–14 reporting period are detailed below in Section C.

3 Bureau of Meteorology and CSIRO (2014) *State of the Climate*. http://www.bom.gov.au/state-of-the-climate/documents/state-of-the-climate-2014_low-res.pdf?ref=button.

C. Develop, adopt or promote policies and programs

Energy Efficiency Improvement Scheme

The ACT Energy Efficiency Improvement Scheme (EEIS), which commenced in 2013, is modelled to deliver around 6.2% reduction on ACT residential sector emissions in 2015 and lifetime emission savings of 742,000 tonnes. The first compliance year of the EEIS finished on 31 December 2013. Electricity retailers successfully implemented energy saving activities under the EEIS in over 18,000 households, including over 7,500 priority households.

Energy efficiency information to tenants

Consultation was undertaken with stakeholders and the community to assess whether mandating the provision of energy efficiency information to potential tenants would be effective in encouraging more energy efficiency measures in rental homes. Findings from the study were still being assessed at the end of 2014.

Trial advanced energy technology systems

Through AP2 the Government committed to conduct a trial of advanced energy technology systems. The Canberra Urban Solar Project (CUSP) aims to increase the technical and economic potential for intermittent energy sources in the ACT and will see the government partner with Australian National University and the Canberra Institute of Technology.

A project working group has been established with external stakeholders, including key research, trades-training and industry representatives. Significant funding and in-kind support has been committed by stakeholders, and a bid for Australian Renewable Energy Agency (ARENA) funding has been developed. The funding bid is being considered by ARENA.

Business Energy Efficiency Improvement Scheme

The Government considered the regulatory impact statement on the extension of the scheme to businesses. Having noted the potential benefits, the Government agreed to extend the EEIS to business in May 2013 and implementation began on 1 July 2013.

ACTSmart Energy Assist

The ACTSmart Business Energy and Water program provides advice and financial assistance for efficiency upgrades to small businesses in the ACT to help them reduce energy and water consumption. The program commenced on 1 July 2012.

A one year trial for medium businesses commenced in August 2013 to provide advice, collect information and identify opportunities for developing a forward program for this sector. The trial will be reviewed in late 2014.

Adapting to climate change

In May 2014 the Government released the brochure, *Adapting to a changing climate: Directions for the ACT*, as the ACT's first stage in adopting a climate change adaptation strategy.

The brochure sets out the climate change adaptation direction for the ACT with the ACT Adaptation Strategy on climate change to be released in late 2015. The ACT will address priority areas for adaptation including; human health and wellbeing, disaster and emergency management, settlements and infrastructure, water, natural resources and ecosystems and agriculture.

Low Emission Vehicle Strategy

A discussion paper on actions the Territory could take to lower vehicle emissions was released for public consultation on 24 June 2014. The discussion paper recommended ten actions based around three strategies. Findings will inform the Low Emission Vehicle Strategy, expected in mid 2015.

Waste Management Strategy

The Directorate continued to implement elements of the *ACT Waste Management Strategy 2011–2025*. Following a market sounding process in the first half of 2013, the Government began developing a detailed business case for a new Material Recovery Facility and an energy-from-waste facility. This new waste infrastructure has the potential to increase the diversion of recoverable waste from landfill from 70-75% at present to 90-95% when fully operational.

In the first half of 2014 Minister Corbell announced the Government would auction up to 23MW of Feed in Tariff entitlements to support the establishment of these facilities.

Large scale renewable energy

In August 2013, feed-in tariff (FiT) entitlements were awarded under the Large-scale Solar Auction to Zhenfa Canberra Solar Farm One Pty Limited for a 13 MW solar farm proposed to be developed at Mugga Lane, and OneSun Capital 10MW Operating Pty Ltd for a 7 MW solar farm proposed to be built at Uriarra. Zhenfa has received development approval and is expected to start construction shortly. OneSun Capital is in the development assessment stage.

In September 2012 it was announced the FRV Royalla Solar Farm Pty Ltd has been awarded a grant of FiT entitlement for its 20 MW proposal in Royalla. Construction at this site was substantially completed in early 2014. Power generation from this facility began in August 2014. This solar farm is currently the largest photovoltaic installation in Australia.

In November 2013 the ACT Government passed The Climate Change and Greenhouse Gas Reduction (Renewable Energy Targets) Determination 2013 (No 1), providing for a 90% renewable energy target. Further details are provided in Section K.

On 17 April 2014 a request for proposals for a reverse auction for FiT entitlements for up to 200MW of wind generating capacity was released by the ACT Government. Proposals closed in September 2014. Successful proposals can be located anywhere in the National Electricity Market, which covers all jurisdictions except Western Australia and the Northern Territory, but must satisfy a local ACT region investment criterion.

Whole-of-government approach to measure, monitor and report GHG emissions

The project to implement an Enterprise Sustainability Platform (ESP) was completed in June 2014. The ESP is for whole-of-government sustainability data collection and reporting for electricity, natural gas and water. It will enhance transparency and accountability of ACT Government agencies for their GHG emissions. The ESP will provide a baseline for government greenhouse gas emissions in pursuit of the goal of carbon neutrality in 2020 and enable the ongoing monitoring and evaluation of initiatives to increase energy efficiency in government buildings and operations.

Through the ESP, the Government will be able to develop a three-year emission profile for ACT Government operations and develop ongoing carbon budgets for each ACT Government Directorate to help achieve the 2020 target.

Carbon Neutral Government Fund

The Carbon Neutral Government Fund (the Fund) is an energy efficiency investment program available to ACT Government agencies. In 2013–14 all applications to the Fund (3) were successful, with \$1,537,694 approved. Two projects are established, but the third is unlikely to proceed due to changes to third party financing arrangements. The application process for this TAMS project resulted in some of the activities being undertaken outside the Fund program (refer to the TAMS annual report). Savings from the two established projects are captured in figures below for the Fund program for the year.

The successful projects were both put forward by the Education and Training Directorate. \$93,000 was provided for solar heating at an ACT special needs school and \$895,000 was provided for LED lighting upgrades at a range of primary and high schools. Savings from the two established projects are captured in figures below for the Fund program for the year.

To date, replacement of internal lighting with LED lighting in more than 40 government buildings and schools, have an estimated cost saving of \$1 million per year and have reduced electricity use by 30% at project sites.

Thirteen ACT Government projects to the value of \$6.2 million have been conducted under the Fund since 2009. These projects have ongoing annual cost and energy savings from the date of implementation. The estimated collaborative total of project reductions or savings for the 2013–14 year is:

- \$1.48 million in cost savings
- 7,338 tonnes CO₂-e
- 7,542 megawatt hours of electricity
- 3,230 megajoules of natural gas

Capital Metro

The Capital Metro Agency was established on 1 July 2013, with the principle objective of managing all aspects of the ongoing planning, design and delivery of Stage 1 of a light rail network for the Territory. Capital Metro is Canberra's light rail project and is an important part of the Government's vision to deliver a truly sustainable and creative city as set out in *The Canberra Plan – Towards our Second Century*.

D. Consult business and community

Climate Change Council

During 2013–14 the Climate Change Council (Council) held four formal meetings, from which the Council provided advice to the Minister on climate change issues.

The focus for the Council was mainstreaming consideration of climate change, and presentations were provided to facilitate advice on the solar energy auction, community engagement, water and transport. Council members also undertook a number of engagement activities outside Council meetings and continued to increase their presence at community events and on-line.

From 1 January 2014, two new members were appointed to the Council: Mr Toby Roxburgh, an expert in renewable energy, and Ms Dorte Ekelund, Director-General of the ACT Government Environment and Planning Directorate, as a representative of the public sector.

The Council's Annual Report for 2013–14 will be available in late 2014.

Survey of attitudes on climate change

In September 2013, the ACT Government commissioned a survey of ACT community attitudes on climate change to assist the development of a Community Engagement Strategy on climate change, Action 5 of AP2. The survey was undertaken on 1,200 households across representative demographics in the ACT. The survey identified that ACT residents have:

- a high general awareness of climate change
- a high level of support for local action on climate change and
- a willingness to commit to individual household actions.

However, respondents were generally unaware of the specific actions being undertaken by the ACT Government, with only 40% aware of the government's climate change policies or emissions reduction targets. The results of the survey were used in the development of the Community Engagement Strategy on climate change which was released in July 2014.

E. Promote actions or strategies by business entities

Since the ACT Government's ACTSmart Business Energy and Water program commenced on 1 July 2012, more than 130 local small businesses have taken advantage of advice and rebates to improve their energy and water efficiency.

Under the program, an experienced assessor visits a business to gain an understanding of its operations and challenges, and provides a report that outlines the business's energy use and makes recommendations for the business owner to consider. A wide range of businesses have received assessments and access to rebates of up to \$5000 to help replace fittings and fixtures with more efficient options.

During 2012–13, the ACT Government also decided to extend the EEIS to small and medium businesses (see Section C). This allowed energy retailers to offer energy saving measures to local businesses from 1 July 2013.

F. Promote involvement in climate change forums

The ACT Government participates in a range of national forums to achieve a nationally consistent approach on energy and climate change matters. Forums include Meetings of Environment Ministers and its predecessor, the Standing Council on Environment and Water (SCEW), the National Environment Protection Council and the recently established Council of Australian Governments (COAG) Energy Council (previously the Standing Council on Energy and Resources).

The ACT is also a party to the National Partnership Agreement on Energy Efficiency (NPA-EE) under the National Framework on Energy Efficiency, which provides for a nationally consistent and cooperative approach to energy efficiency.

G. Promote the commercialisation, generation and use of renewable energy

In February 2014 the Minister for the Environment announced a new Canberra Community Solar initiative to allow households, renters and people living in flats to pool their resources to develop new large-scale solar installations. Successful proposals will be eligible to receive a community solar feed-in-tariff, established as a 1MW capacity release under the *Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011*. Applications to the new initiative commenced in June 2014 and will remain open for up to 12 months.

See also *Large-scale renewable energy*, under section C.

H. Promote the commercialisation and use of other technologies

Waste

The Directorate continued to implement elements of the *ACT Waste Management Strategy 2011–2025*. Following a market sounding process in early 2013 the Directorate commenced developing a detailed business case for a new Material Recovery Facilities and an energy-from-waste facility.

I. Promote research and development

The ACT Government continued to support research and local partnerships through a grant of \$500,000 over two years to the Canberra Urban and Regional Futures (CURF), a joint initiative of the Australian National University (ANU) and the University of Canberra. CURF is an information platform for sustainability and climate change in the Canberra region, facilitating the sharing of information between university, research, federal, state and local government institutions.

The Government has partnered with the ANU and the Canberra Institute of Technology in the establishment, and for ongoing research into advanced energy technology systems (action 6 of AP2), through the Canberra Urban Solar Project (CUSP).

The Government has also partnered with ANU to implement action 9 of AP2. Around 25 ANU engineering students conducted surveys and modelling of Canberra town centres to identify the potential use of distributed energy systems. A final report is due for release by the end of 2014.

J. Support the development of approaches to address climate change

NSW and ACT Regional Climate Model (NARClIM)

The ACT Government has partnered with the NSW Office of Environment and Heritage to develop new, fine-scale climate projections for New South Wales and the Australian Capital Territory using a regional climate model called the NSW and ACT Regional Climate Model, NARClIM.

NARClIM will improve our ability to predict changes in temperature, wind and rainfall in the area which, in turn, will provide critical information to manage the impacts of climate change on health, settlements, agriculture, ecosystems and individual species, weather extremes and services such as water and energy supplies. Modelling results from NARClIM will become available from late 2014.

K. Consider and recommend amending Territory law, government policy or practice

Following a review of the Large-scale Solar Auction completed in October 2013, amendments were made to the *Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011* (the Act) under which large-scale feed-in tariff entitlements are granted. The amendments were passed by the Assembly in March 2014. They increased the total capacity for which feed-in tariff entitlements could be granted under the Act from 210MW to 550MW and provided greater feed-in tariff payment security for large-scale renewable generators.

The Climate Change and Greenhouse Gas Reduction (Renewable Energy Targets) Determination 2013 (No 1), providing for a 90% renewable energy target, was tabled in the Legislative Assembly and became effective on 5 November 2013.

L. Assess the impact of climate change

The Environment and Planning Directorate is responsible for monitoring the greenhouse gas emissions from the ACT community as a whole. The emissions are calculated and published in an annual ACT Greenhouse Gas Inventory (GGI), using methodologies consistent with national requirements but specific to the unique energy requirements of the ACT. The ACT GGI series includes both Scope 1 emissions produced within the Territory and indirect Scope 2 emissions, which relate to the generation of electricity used in the ACT.

In October 2013 the Directorate released the ACT Greenhouse Gas Inventory for the 2010–11 reporting period. The inventory was developed on behalf of the ACT Government by the Independent Competition and Regulatory Commission (ICRC). The inventory, which provides an assessment of both the total amount of greenhouse gas emissions and the amount of emissions per person in the Territory, is the primary mechanism by which the ACT Government tracks progress towards the 2020 emissions reduction goal.

The inventory shows that total ACT carbon dioxide equivalent (CO₂-e) emissions during 2010–11 were 4,458 kt. This represents a 40% increase in emissions from the 1990 baseline level of 3,185 kt and a 1.4% increase from the revised 2009–10 estimate of 4,398 kt.

The ACT GGI is not intended as a strict carbon accounting report but as a source of information for the ACT Government, businesses and the community about the major sources of emissions we can influence through our policies and actions. The major sources of greenhouse gas emissions in the ACT are electricity, transport fuels and natural gas.

In 2010–11, per capita emissions were 12.2 tonnes, down from 12.3 tonnes emitted in 2009–10. Per person emissions have increased from 11.3 tonnes CO₂-e in 1990, but peaked in 2005–06 at 12.7 tonnes.

The Environment and Planning Directorate also collected ACT fuel sales data under the *Environment Protection Act 1997* to improve the accuracy of transport emissions data available for the ACT Greenhouse Gas Inventory.

M. Support public education

At the heart of AP2 is the principle that everyone in the ACT has a role to play, every action counts and together we can make a difference. The focus of AP2 is on establishing the policy environment to meet our emissions reduction targets and providing the tools and incentives to make it easier for everyone in the ACT to play a role. Education and community dialogue is important. Understanding precedes concerted action, and an informed and engaged Canberra community is better placed to act for its own benefit and the benefit of future generations.

N. Any other functions

AP2 commits the Government to undertaking an annual cost of living review with a specific focus on social equity. The Cost of Living Review for 2013–14 is at Appendix A.

No other functions have been given to the Minister under the Act as at 30 June 2014.



2. Effectiveness of government actions taken to reduce greenhouse gas emissions during 2013–14

The Minister has sought or obtained information on actions undertaken by each ACT Government Directorate. All Directorates report their greenhouse gas emissions in their annual reports. Directorates have also developed resource management plans (RMPs) to address their environmental resource use.

Chief Minister, Treasury and Economic Development Directorate (CMTEDD)

Policy/ Program Title	Description of policy/program
Chief Minister and Treasury	
Resource Management Plan	The Directorate has developed a Resource Management Plan (RMP) that provides guidance on sustainability issues in CMTD, and includes an annual action plan of activities to address management of water, electricity and gas consumption, waste production and recycling initiatives.
Ecological Sustainable Development Working Group	Ecological Sustainable Development Working Group is responsible for overseeing the implementation of activities identified in the annual action plan in the RMP and supporting the development and implementation of staff engagement and communication strategies to promulgate sustainable practices to staff. In undertaking this, it works with other committees such as the Workplace Consultative Committee and Health and Safety Committee as appropriate.
Energy efficient lighting upgrade program	<p>ACT Property Group has conducted a study on the current lighting system and its energy consumption at Nara Centre, and has calculated the estimated reduction in electricity consumption from replacing fluorescent lights with energy saving LED alternatives.</p> <p>The project will be undertaken using funding lent to ACTPG by the Carbon Neutral Government Fund (CNGF) for LED lighting upgrades in ACT government facilities.</p>
Commerce and Works (CWD)	
Resource Management Plan	The Directorate has developed a RMP that provides guidance on sustainability issues in CWD, and includes an annual action plan of activities to address management of water, electricity and gas consumption, waste production and recycling initiatives.
Commerce and Works Green Committee	The objective is to progress actions from the RMP in consultation with Staff and Executive to improve the Directorate's environmental performance.
Energy efficient lighting upgrade program	ACTPG has conducted a study on current lighting system and energy consumption in Macarthur House (which CWD partially occupies). This facility has been identified by ACT Property Group for a program of replacing fluorescent lights with energy-saving LED alternatives.

Policy/ Program Title	Description of policy/program
Economic Development	
Resource Management Plan	The Directorate has developed a RMP that provides guidance on sustainability issues in EDD, and includes an annual action plan of activities to address management of water, electricity and gas consumption, waste production and recycling initiatives.
Sustainability Team	The objective of the Sustainability Team is to progress actions from the RMP in consultation with Staff and Executive to improve the Directorate's environmental performance.
Cultural Facilities Corporation	
Theatre lighting technology upgrade	<p>Upgrade Theatre lighting and lighting fixtures to improve energy efficiency.</p> <p>The initiative aligns with key principles of the ACT Sustainable Energy Policy namely:</p> <ul style="list-style-type: none"> – A strong focus on smarter use of energy by improved energy efficiency. <p>Funding has been secured for theatre lighting technology upgrade as part of a two-year capital project for the Canberra Theatre Centre. This was achieved as part of the 2014–15 ACT Budget, which was announced on 3 June 2014. The new lighting technologies have 60% less power consumption.</p>
Exhibition Park Corporation	
LED Lighting Project	<p>Replace existing 'hi-bay' and fluorescent lighting in the major pavilions and offices with LED lighting.</p> <p>All areas subject to replacement lighting are measured for their electricity usage prior to replacement and again post replacement. Real benefits to be achieved by comparison of costs with the same time in 2013. Replacement program is still underway and is due for completion by 30 September. Preliminary indications are that lighting costs in the affected areas may be reduced by up to 60%.</p>
Land Development Agency (LDA)	
New suburb development	<p><i>Wright and Coombs</i></p> <p>The LDA has overseen the development two new suburbs the Molonglo Valley: Wright and Coombs. LDA has facilitated the provision of rebates for solar hot water in Wright, energy efficient heating and cooling in Wright and Coombs, and mandated solar hot water in Coombs. Wright and Coombs also achieved certification from Urban Development Institute of Australia's Enviro Development tool in the following categories: ecosystems, waste, energy and community.</p> <p><i>Green Star–Communities</i></p> <p>Green Star – Communities is a sustainability rating tool currently under development by the Green Building Council of Australia. The LDA has undertaken pilots of this tool in its developments in Lawson and West Belconnen.</p> <p><i>Energy efficient lighting</i></p> <p>The LDA, in conjunction with TAMS undertook two energy efficient lighting trials during 2013-14. Energy efficient open space lighting was trailed in SouthQuay Greenway development. A trial of LED streetlights in the suburb of Lawson was also undertaken.</p>

Policy/ Program Title	Description of policy/program
Shared Services	
Fleet Management	<p>Twelve full electric vehicles are currently in service across Directorates, all with zero tailpipe emissions. The support of electric vehicles includes:</p> <ul style="list-style-type: none"> – installation of 16 Territory owned level 2 charge stations; and – Green Power off-set for charge stations. <p>Based on historical data from SGfleet an emission reduction of 2 tonnes of CO₂ per vehicle per year is achieved.</p>
Information and Communications Technology (ICT) Sustainability	<p>A Whole of Government ICT Sustainability Plan has been drafted to enhance the environmental sustainability of the ACT Government's ICT operations.</p> <p>The Plan is currently being finalised following consultation with Directorates. Notwithstanding, progress has been made in regards to achieving the Plan's targets in parallel. In 2013–14, progress included:</p> <ul style="list-style-type: none"> • <i>PC and printer power management software</i>: The 2014–15 Budget includes funding for the deployment of power management software to ACT Government networked PCs and printers.
Data Centres	<p><i>Lease of a new data centre and closure of Callam Offices data centre</i></p> <p>The new data centre has been procured under a 10-year lease. Shared Services ICT is currently migrating all business systems hosted at Callam to the new facility (DC1). This is expected to be completed by the end of September 2014, with the closure of the Callam data centre scheduled for December 2014.</p> <p>Overall there will be an estimated 50% efficiency gain in DC1 compared to the Territory's current data centres. This will begin to be achieved in 2014-15.</p> <p><i>Virtualisation</i></p> <p>Virtualisation is a technology which allows a reduction in physical server infrastructure and consequently a reduction in overall power consumption. Shared Services ICT is achieving greater than 85% in the new data centre.</p> <p>As a result of an aggressive virtualisation policy there is a significant reduction in the number of physical servers, this in turn is resulting in reduction of carbon emissions.</p> <p>Power consumption monitoring equipment has been procured and installed in all data centres. This will allow accurate efficiency reporting in the future.</p>

Capital Metro Agency (CMA)

Policy/ Program Title	Description of policy/program
Resource Management Plan	CMA has prepared an internal RMP to provide a framework to consistently monitor and improve the environmental performance of the agency. The RMP also provides a framework to assist with staff education to increase awareness of the environmental impact of their everyday work activities.
Operations	During 2013–14, CMA established internal policies around printing, waste, electronic document management systems and staff transport to reduce emissions impacts.

Community Services Directorate (CSD)

Policy/ Program Title	Description of policy/program
Women in construction	<p>Two adaptable dwellings in Richardson were built by Housing ACT, in conjunction with Ruiz Constructions, over 10 months between August 2013 and May 2014. In all, 14 tradeswomen worked on the project, constructing the two and three bedroom properties housing people with disabilities. Environmentally Sustainable Design was a large focus of the project.</p> <p>Under the Nationwide Housing Energy Rating Scheme (NatHERS) the two dwellings reached 7.4 and 7.1 stars. This far exceeds the 6 star minimum rating for Housing ACT properties.</p> <p>In order to achieve this rating the properties included:</p> <ul style="list-style-type: none"> • Double glazing – reducing heat transfer; • Reverse brick veneer – internal brickwork skin providing thermal mass. Storing heat in winter, thermal barrier in summer. Reducing the demand for heating and cooling; • High windows – increasing natural light and reducing need for artificial lighting. <p>The energy ratings achieved equate to a simulated energy consumption of 99.9MJ/m²/annum (7.4 stars) and 116.4MJ/m²/annum (7.1 stars). Compared to the standard 6 star NatHERS rating for Housing ACT buildings this is a reduction of 65.1MJ/m²/annum and 48.6MJ/m²/annum respectively.</p>
Community Energy Efficiency Program (CEEP)	<p>CSD received a \$3.21 million CEEP allocation supporting a total project of \$6.52 million for 12 community facilities over a four year period from 2012 to 2016. CSD cofunds 51% of the committed \$6.52 million with a total expected energy reduction of 3,586MJ/m²/annum across the 12 buildings. The project includes a \$843,513 allocation from the ACT Government loan facility – Carbon Neutral Government Fund.</p> <p>In 2013–14 energy efficiency upgrades were completed at 5 community facilities resulting in significant reductions to electricity and gas consumption. From December 2013 to June 2014 there has been a reduction of 123,399kWh (Electricity) and 817,933MJ (Gas) compared to the calculated baseline. This equates to a total reduction in greenhouse gas emissions of 279t CO₂-e.</p>

Community Services Directorate (CSD)

Policy/ Program Title	Description of policy/program
Implementation of the ACTSmart Office Recycling Program	<p>Implementation and accreditation through the ACTSmart Office Program is a key action item identified in the Resource Management Plan. A target date of December 2014 has been set to achieve accreditation at all CSD office locations. Accreditation has already been achieved at three of these sites (Therapy ACT Swanson Plaza, Therapy ACT Holder and the Canberra Nara Centre). Accreditation at Nature Conservation House and 11 Moore Street is expected in September 2014.</p> <p>In 2013–14 there was a significant increase in the amount of material diverted from landfill through the inclusion of comingled recycling and organic material bins. These changes have resulted in a 65.8% increase in comingled recycling and a 62.1% increase in organic material recycling. This equates to a total reduction in GHG of 1,842t CO₂-e when compared to 2012–13 figures.</p>

Education and Training Directorate (ETD)

Policy/ Program Title	Description of policy/program
Resource Management Plan	ETD updated its RMP which was approved by the Carbon Neutral Government Implementation Committee on 29 April 2014.
Carbon Neutral Government Fund (CNGF)	<p>In 2013–14, the Directorate was successful in its application to the Carbon Neutral Government Fund for \$895,000 (ex GST) to replace existing T8 fluorescent lamps with LED lamps at a further 12 public schools, bringing the total loan funding received for LED lamp upgrades to \$2,423,168 across 22 public schools. During the reporting year, works were completed at one school (Lake Tuggeranong College) and the procurement of lamps completed for a further eight schools. The full program of installation works will be completed in 2014–15.</p> <p>The installation and commissioning of a solar hot water system at Erindale College and Leisure Centre funded in 2012–13 was completed in the reporting year.</p> <p>An application for \$93,390 (ex GST) for the provision of solar hot water systems for the hydrotherapy pools at Black Mountain School and Cranleigh School was also successful. Preliminary scoping work for the systems was completed in the reporting period. Design, documentation and installation of both systems will be completed in 2014–15.</p>
HBCTL Solar PV Project	The installation of a 176kW solar panel system at the Hedley Beare Centre for Teaching and Learning (HBCTL) in Stirling commenced in 2013–14 and will be completed in 2014–15. Technical feasibility studies indicate that this system will provide 27 percent of the site's annual energy requirement.

Education and Training Directorate (ETD)

Policy/ Program Title	Description of policy/program
Carbon Neutral Schools Project	<p>Stage 1 of the Carbon Neutral Schools project continued to be rolled out by the Directorate in 2013–14. Designs for LED light upgrades at Canberra High School and Theodore Primary School were completed during the reporting period, with installations to be completed in 2014–15.</p> <p>Energy efficient fluorescent lamp upgrades were completed at seven schools in 2013–14 (North Ainslie, Evatt, Fadden and Weetangera Primary Schools, Alfred Deakin and Stromlo High Schools and Caroline Chisholm School (senior campus)). These lamps are expected to reduce energy use for lighting by 25 percent. Post-implementation monitoring of energy use will be undertaken in 2014–15.</p> <p>Detailed architectural investigations completed in 2013–14 identified four schools for potential ceiling insulation upgrades. Works will be trialled at North Ainslie Primary School in 2014–15, with lessons learnt to be applied to the other sites.</p>
Solar lighting program	Solar powered external lights were installed at the Canberra College Performing Arts Centre and Wanniasa Hills Primary School.
Pulse (Smart) Meters Project	<p>The Directorate continued to roll out the installation of smart meter technology at all public schools to capture electricity, gas and water consumption and solar energy generation. Installation and commissioning of the pulse meters for electricity, water and solar energy generation was completed at 35 schools in 2013–14 bringing the total number of completed schools to 86. Installation and commissioning of the gas smart meters was completed at 25 schools in the reporting year, with the remaining 61 schools to be completed in 2014–15.</p> <p>These meters provide schools with real time data on consumption and energy generation which supports both the management of resource use by schools and, through a web-based interface, the development of curriculum studies for students. The web-based interface is publicly accessible at www.watergroup.com.au/actschools.</p>
Environmentally sustainable landscapes program	Environmentally sustainable landscapes were completed at Namadgi School, Calwell High School and Melrose High School (dirt bike track planting) in 2013–14. These landscapes are designed to improve water quality and minimise irrigation demands. They are incorporated into all new school designs as well as landscape and high school frontage improvement works.
Urban waterways connections project	Connections to the Inner North Stormwater Reticulation Network, including storage tanks and water meters, were completed at Lyneham Primary School, Lyneham High School and Dickson College in 2013–14. Irrigation systems connecting to this recycled water system were also installed at Lyneham Primary School and Lyneham High School ovals. The systems will be brought on line in 2014–15.
Resource efficiency and waste program	To support waste removal and recycling programs at public schools, bin enclosures were completed at five schools during the reporting year (Bonython, Hughes, Fraser, Wanniasa Hills and Taylor Primary Schools). Bin lifters were also purchased for eight schools (Chapman, Curtin, Red Hill, Taylor and Weetangera Primary Schools, Black Mountain School, Dickson College and Southern Cross Early Childhood School) to mitigate workplace, health and safety risks relating to the emptying of bins.

Education and Training Directorate (ETD)

Policy/ Program Title	Description of policy/program
Water refill stations program	This initiative is linked to the ACT Government's Towards Zero Growth: Healthy Weight Action Plan which incorporated the removal of vending machines from public schools by the end of Term 1 2014. Water refill stations were installed at 17 public schools in the 2013–14 year. A minimum of two water refill stations will be installed at all remaining public schools in 2014–15 promoting water as the drink of choice following the phasing out of the sale of sugary drinks from all public schools by the end of the 2014. Each student is provided with a re-usable water bottle to encourage tap water as the drink of choice and reduce plastic waste.
Ride or Walk to School Program	<p>The Ride or Walk to School program is an initiative managed by the Health Directorate which aims to encourage active travel to ACT schools and reduce transport related GHG emissions. Seventeen public schools signed up to the program in the reporting year bringing the total number of participating public schools to 19.</p> <p>ACTSmart Schools undertook a pilot in three schools (Melrose High School, Harrison School and Palmerston District Primary School) to evaluate the change in their GHG emissions through their participation in the Ride or Walk to School program. A range of educational resources were developed to help schools understand and quantify the GHG emissions of different types of transport which any school participating in the Ride or Walk to School program can access.</p>
Learn to Ride facility project	To support the uptake of active travel to school a learn to ride facility was constructed at Southern Cross Early Childhood School and a dirt bike track at Melrose High School. Another learn to ride facility will be completed at Franklin Early Childhood School in August 2014.
PC Power Management Project	PC power management software was installed on 16,756 school desktop computers in 2013–14.
Annual Capital Works Program	As capital works are undertaken at public schools, including new facilities, building upgrades and refurbishments, opportunities are taken to improve the energy efficiency and water conservation of these spaces. This includes solar passive design, natural ventilation and thermal comfort, lighting upgrades, solar tubes, roof insulation and water efficient sanitary fittings in toilets.
National Solar Schools/ACT Solar Schools Project	<p>Roof mounted photovoltaic systems were installed at the final six schools in the reporting year, completing the program to install systems at all ACT public schools.</p> <p>Installation of 70kW systems at Franklin Early Childhood School and Neville Bonner Primary School were commenced during the reporting period and will be completed in 2014–15. Technical studies indicate that these systems will provide 58 and 79 percent, respectively, of each site's annual energy requirement.</p>

Environment and Planning Directorate (EPD)

Policy/ Program Title	Description of policy/program
Carbon Neutral Government (CNG)	<p>In 2013–14, a CNG Implementation Committee and its Sub-Committee on Sustainable Government Buildings were established by the Directorate to monitor progress on the implementation of the CNG Framework and coordinate a whole-of-government approach. Seven meetings were held and an annual report on progress was provided to the ACT Government Strategic Board in June 2014.</p> <p>The framework is underpinned by the Enterprise Sustainability Platform, a whole-of-government sustainability data set (tracking electricity, gas and water data) used for directorate annual reports and assessing the performance of resource management plans across Government agencies. It enables complete whole-of-government reporting of GHG emission reductions, through an annual inventory.</p> <p>All directorates have up-to-date Resource Management Plans (RMP). Each plan measures the progress of resource management strategies, contains a review process to ensure the RMP is updated before expiry and states the governance process for the RMP and performance review requirements.</p> <p>Implementation of the CNG Framework focused on building the foundations for ongoing support to Government operations, in particular the CNG Fund and GHG Inventory. The Fund is supported by the ACTSmart Government Energy and Water Program.</p>
Resource Management Plan	<p>For 2013–14, the Directorate's RMP focussed on implementing the findings from the ACTSmart Government Energy and Water report, in particular reducing energy use and monitoring water use. The Directorate's Green Team assisted by promoting sustainability and resource efficiency within the agency</p> <p>Of the 39 actions included in the RMP, seven have been completed and several others are underway.</p>
ACTSmart Government Energy and Water	<p>EPD undertook a number of assessment of its facilities under the ACTSmart Government Energy and Water program in 2013. The Directorate received a total of 116 recommendations to save energy and water. Major items included: a sensor light retrofit, the replacement of inefficient white goods, and the de-lamping of overlit areas. Of these, EPD has undertaken 77% of the costed recommendations with an estimated annual saving of \$4,700. This equates to electricity savings of 31,729 kWh and emissions savings of 33.2 tonnes CO₂-e.</p>
Waste audit	<p>A waste audit of Dame Pattie Menzies house was conducted over a week in October 2013. Findings included only 5% contamination of recycling and 1% in organics bins. However the audit also found that 86% of the waste in the general waste bins could have been recycled. EPD regularly runs recycling training and all staff are encouraged to attend.</p>
Transport	<p>To encourage less emissions intensive travel the Directorate added two electric vehicles to its fleet for when staff cannot catch the bus or ride a bike to meetings. The Directorate also participated in national Ride to Work Day to further encourage staff to make use of the Directorate's bike facilities.</p>

Health Directorate (HD)

Policy/ Program Title	Description of policy/program
ACT Health Sustainability Strategy 2010–2015	<p>During this financial year, ACT Health reviewed this Strategy to ensure currency and alignment with the Carbon Neutral ACT Government Framework 2014 and the ACT Government RMP minimum content requirements.</p> <p>Of the 114 actions contained in the RMP Action Plan, the following figures provide a status update:</p> <ul style="list-style-type: none"> • Short-term: 99% completed • Medium-term: 67% completed • Long-term: 57% completed.
ACT Health Sustainability Environmental Principles and Guidelines – Building and Infrastructure Projects	<p>These Guidelines were originally developed to provide the Health Infrastructure Program with guidance and principles on incorporating sustainability elements into building design. These Guidelines are now published on the Carbon Neutral Government website for utilisation by all Directorates.</p> <p>It is a requirement that any new buildings or capital upgrade consultants review the document and provide a detailed response against the strategies they considered for their project together with whole of life payback and attaining carbon neutrality. The Green Star checklist assists in this process.</p>
WOG Carbon Neutral Government Fund	<p>A feasibility study is currently underway to inform ACT Health of a mechanism to reduce carbon emissions for existing buildings.</p> <p>The feasibility study will be submitted to the Fund.</p>
ESP Database	<p>ACT Health was initially involved in the WOG consultation phase for the implementation of the ESP database. ACT Health required all staff from relevant areas to undertake the training. The ACT Health Infrastructure Support Section utilises the ESP to manage energy, water usage, reporting and monitoring.</p> <p>ACT Health utilises the ESP database on a monthly basis to analyse energy and water bills (-/+ variances). The ESP was also utilised to gather data for the ACT Health Annual Report.</p>
<p>ACTSmart Initiatives:</p> <p>ACTSmart Office Waste/ Recycling Program</p> <p>ACTSmart Govt Energy and Water Audits</p>	<p>ACT Health closely liaises with the Environmental and Planning Directorate to have staff trained in waste management.</p> <p>ACT Health utilises the Green Team Kit to undertake audits of its infrastructure to identify potential efficiencies.</p> <p>ACT Health continues to work with the Domestic Services contractor to ensure:</p> <ul style="list-style-type: none"> • Cleaners undertake the ACTSmart Cleaner’s training; • ACT Health staff are trained to manage waste in a more efficient manner, turn lights and computers off, consider initiatives that will result in cost savings etc; • Infrastructure is assessed to identify potential saving (lighting, HVAC etc) and modifications are made as part of the audit recommendations.

Health Directorate (HD)

Policy/ Program Title	Description of policy/program
Waste Management Plan	<p>This Plan was reviewed this financial year to assess currency and changes made to align the Plan with the Whole-of-Government initiatives.</p> <p>Waste management is governed by a Waste Management Committee. The contractor has carriage of implementing ACT Health measures and outputs.</p>
Transport for Canberra	<p>ACT Health has two electric vehicles in its fleet and will replace any vehicles that expire with more energy efficient vehicles (where available).</p> <p>ACT Health works with other Directorates to implement environmental sustainable options for consumers accessing the health system e.g. bus, community transport etc,</p> <ul style="list-style-type: none">• Bus timetables to and from the Canberra Hospital are displayed for patients and visitors;• New cycling facilities delivered at the Canberra Hospital.
Implementation of <i>Towards Zero Growth</i> Healthy Weight Action Plan	<p>This Plan was originally developed by ACT Health but is now being coordinated by the Chief Minister Treasury and Economic Development Directorate (CMTEDD). ACT Health continues to contribute to a variety of strategies aimed at increasing active transport, which has an important co-benefit of reducing greenhouse gas emissions through lessening car use.</p> <p>Reports on implementation are regularly provided to the ACT Government Strategic Board.</p>
Capital Upgrades Program	<p>This Program considers sustainable elements for all upgrades to existing buildings and utilises the ACT Health Sustainability Environmental Principles and Guidelines – Building and Infrastructure Projects Checklist.</p>
Climate Change Adaptation (ACT Health Summer Plan)	<p>The Summer Plan is a specialised appendix to the ACT Health Emergency Plan (HEP). The Summer plan aligns with the ACT Elevated Fire Danger Plan and ACT Extreme Heat Management Plan, both of which are hazard specific sub-plans of the ACT Emergency Plan. The Summer Plan addresses agency level (health sector) preparedness for the hazards of elevated fire danger and extreme heat that occur each summer. The risks to human health, infrastructure and the environment associated with these two hazards are amplified by the effects of climate change.</p>

Policy/ Program Title	Description of policy/program
Energy Efficiency Capital Upgrade Program	<p>JACS has created a RMP around the targets established in the Climate Change and Greenhouse Gas reduction Act 2010. One of the key objectives of the RMP is to “Reduce energy consumption and increase the amount of green or renewable energy”.</p> <p>In 2011 Capital Works and Infrastructure formed a Sustainability Committee (JSC) tasked with improving sustainable outcomes across JACS. The Sustainability Committee is currently managing an Energy Savings Project aimed at assisting all participating Business Units.</p> <p>In 2011 Capital Works and Infrastructure formed a Sustainability Committee (JSC) tasked with improving sustainable outcomes across JACS. The Sustainability Committee is currently managing an Energy Savings Project aimed at assisting all participating Business Units.</p> <p>The JSC plays an important role in the development of resource efficiency initiatives in the Directorate in terms of sustainability. Key responsibilities include:</p> <ul style="list-style-type: none"> • Monitoring the effectiveness of introduced environmental resource efficiency measures; • Establishing new measures, and consider new proposals, to be integrated into the RMP; • Ensuring alignment of the agency RMP with broader Government objectives as well as internal corporate strategic planning; and • Overseeing the implementation of environmental resource efficiency measures in the workplace, as outlined in the RMP. <p>In the 2013–14 financial year, a total of \$230K in energy efficiency initiatives have been delivered via a number of different upgrades, including:</p> <p>Alexander Maconochie Centre (AMC)</p> <ul style="list-style-type: none"> • LED lighting and control upgrade (Phase 1) – Installation of LED perimeter lighting and external street lighting (136 fittings in total). Installation of a programmable Photo-Electric (PE) Cell and removal of external lighting manual overrides from the Dynalight touch screens located throughout the prison. These upgrades will benefit the AMC by providing an estimated annual electricity reduction of 137,565kWh. • LED lighting upgrade (Phase 2) – Installation of 147 Pierlite LED retrofit kits to the existing exterior building lights. These fittings were custom built for the prison; the estimated annual electricity reduction is 25,754kWh. <p>Forensic Medicine Centre</p> <p>Installation of a 20kWh Solar System – this project was undertaken in conjunction with the ACT Law Courts & Tribunal CUP. The system is estimated to provide an annual electricity reduction of 30,349kWh and emissions savings over the systems lifetime is estimated at 730 tonnes.</p> <p>Emergency Services Agency – Communications Centre Fairbairn</p> <p>In conjunction with the Communications Centres upgrade to enhance functionality, 61 LED light fittings were installed.</p>

Policy/ Program Title	Description of policy/program
Implementation of the ACTSmart Waste Program	<p>In accordance with the Carbon Neutral ACT Government Framework, the ACT Government has made the following commitments:</p> <ul style="list-style-type: none">• By 2013, all government offices and eligible services will be signed up to ACTSmart and by 2014:<ul style="list-style-type: none">» all ACT Government offices will be accredited for waste under the ACTSmart Office Program; and» all suitable ACT Government service facilities will be accredited for waste under the ACTSmart Business Program. <p>JACS has committed to undergoing accreditation through the ACTSmart Office program across all Business Units to improve the current levels of recycling and lower waste to landfill.</p> <p>Accreditation has been awarded for following sites:</p> <ul style="list-style-type: none">• Capital Works & Infrastructure – L1, North Building, 180 London Circuit• Office of Regulatory Service – 255 Canberra Ave, Fyshwick• Victim Support – 1 Moore Street.

Policy/ Program Title	Description of policy/program
Accommodation	<p>TAMS continued implementation of energy efficient lighting, including LED lighting, in buildings owned and/or occupied by ACT Government staff. In 2013–14, LED lighting installation commenced in Macarthur House and was completed in the Frewin Centre. ACT Property Group confirmed the suitability of an additional 26 buildings for LED lighting upgrades and discussions commenced with tenants on repayment arrangements.</p> <p>ACT Property Group also continued its analysis of energy use in Government buildings and identifying opportunities to increase energy efficiency through building upgrades or modification of building services such as heating and cooling temperatures or operating hours.</p> <p>TAMS also employed two Energy Efficiency Officers to work with Directorates to reduce the energy consumption of their buildings and formalised a dedicated sustainability officer role within the Directorate.</p> <p>During 2013–14 the Energy Efficiency Officers delivered a number of projects aimed at improving energy efficiency including improving the Belconnen Library heating and cooling system, and installing ultraviolet lights at the Dame Pattie Menzies north building.</p> <p>At the Belconnen Library changes were made to the programming of the building's heating and cooling system, leading to a 33% reduction in electricity consumption and a 54% reduction in natural gas consumption.</p> <p>At Dame Pattie Menzies House, ultraviolet (UVC) lights were installed in the air conditioning system in north building. This technology is expected to produce improvements in indoor environment quality as well as an increase in air conditioning efficiency. The effects of the UVC lights are being measured and if the anticipated results of a 10% energy saving in the operation of the air conditioning system are achieved the initiative will be considered for other buildings.</p>
Public transport	<p>ACTION continued its bus replacement program with 13 energy efficient and less polluting Scania Euro 5 articulated buses added to the fleet in 2013–14.</p> <p>ACTION completed capital upgrades to a number of sites around Canberra. This included installing energy efficient LED lighting, new dual flush water saving toilets, water saving shower head and taps and new air hand dryers. The dryers will decrease carbon dioxide per dry from 15.5g using the existing paper hand towels down to 5.0g with the new air dryers.</p>
Treescapes	<p>Parks and City Services (PACS) continues to implement the recommendations made by the Commissioner for Sustainability and the Environment relating to the ACT Government's tree management practices and the renewal of Canberra's urban forest. The Commissioner made 12 recommendations with priority given to improving the maintenance of existing trees, strategic planning, implementing improved public notification processes and integrating tree planting programs with tree removal.</p> <p>PACS also planted approximately 2,169 trees in urban open spaces and continuing the process of watering more than 23,000 urban trees under five years of age using non-potable water.</p>

Territory and Municipal Services Directorate (TAMS)

Policy/ Program Title	Description of policy/program
Office based initiatives	<p>TAMS has continued the roll out of the ACTSmart office waste management program for Macarthur House, and provides staff with information to encourage emission reduction through behavioural change.</p> <p>Finally TAMS has updated its RMP for the forward years focussing on identifying and implementing 'low cost, no cost' emissions activities and activating a program to have energy audits conducted on all significant TAMS workplaces to identify further emission reduction opportunities.</p>

Appendix A

Cost of Living Impact Statement 2013–14

The release of Action Plan 2 (AP2) was accompanied by a commitment to provide an annual cost of living impact statement to guide the Government's implementation of the strategy. This document represents the second statement under this commitment for 2013–14.

Total Energy Consumption

During the year ACT households consumed 7180 kilowatt hours (kWh) of electricity and 47 Gigajoules (GJ) of gas on average. This equates to an annual electricity and gas GST-exclusive bill of \$1,558 and \$1,376 respectively, based on the default standing offers offered by the major electricity and gas retailer in the ACT. This cost represents 2.03% of the annual income of a median ACT household with children⁴ after accounting for GST.

Retail electricity prices paid by ACT households compare favourably with other jurisdictions. The ACT has the lowest electricity prices nationally by a significant margin⁵. However, energy consumption tends to be higher in the ACT compared to other jurisdictions due to a combination of a colder climate and significantly higher average incomes. This means that ACT households, on average, have relatively high energy costs.

Energy Efficiency Improvement Scheme (EEIS)

Currently, EEIS is the only action identified in AP2 with a cost of living impact in 2013–14. The scheme commenced on 1 January 2013. The compliance cost of the scheme is passed through to customers in the form of higher electricity tariffs. In 2012–13, the average pass-through cost for households was \$10.16 and operated for only six months from 1 January 2013.

In 2013–14, this cost increased to \$26.93. This increase was expected reflecting the longer duration and higher targets as the scheme was ramped up beyond the initial commencement phase.

AP2 Cost Impact		
2013–14	Average EEIS pass through cost	Average Cost of Energy
Cost of Electricity (7180 kWh)	\$26.93	\$1,558
Cost of Gas (47 GJ)	\$0	\$1,376
Total Cost of Energy	\$26.93	\$2,933
Energy Costs (% of Median Household Income with children)		2.03%
AP2 Costs (% of Energy Costs)		0.8%

The average benefit to a household participating in the scheme is estimated at \$274.87 in 2013–14. This compares favourably with the average pass through cost of \$26.93 per household. The total net present value of savings which will be achieved from 2012–13 to 2017–18 by participating households, on average, is estimated at \$984.59.

It is important to note that the benefits of this scheme will only occur in participating households while the costs are distributed across all electricity customers. Savings for these participating households will continue for a number of years in excess of costs which will cease on the completion of the scheme.

4 Page 44, 2013–14 Budget paper No. 3 – 'In the ACT, the median weekly family income for families with children was \$3,060'.

5 Page iv, Electricity Price Trends – Final Report (March 2013), Australian Energy Market Commission.

Social Equity

The release of AP2 recognised that the cost of the proposed measures, while being marginal on the community as a whole, may impact differently for those on different incomes. To combat this, a number of Government policies are in place to help vulnerable households suffering financial stress due to energy bills. These include energy outreach programs, increase in concessions and requirements on energy retailers to assist consumers suffering financial hardship.

This was also recognised in the design and implementation of the Government's EEIS under AP2 which includes a low income priority household target. Retailers are required to deliver at least 25% of their energy saving obligations under the scheme from low income households. As these households constitute less than 25% of the community, the priority household target ensures that the lowest income groups are over represented among those participating in the scheme.

In 2013–14 for the lowest income households, earning less than \$20,000 per annum, savings will total \$59.28 on average, representing a net benefit of \$32.36 after the cost of the scheme (\$26.93). The overall savings accruing to the lowest income households will continue to significantly exceed the costs of the scheme in the following years as it ramps up. In 2014–15 and 2015–16, the net benefit to these households is estimated at \$35.68 and \$67.98 respectively increasing to \$87.89 in 2016–17.

Future AP2 Costs

The 20 Megawatt Royalla Solar Farm commenced generation in August 2014. The pass through cost associated with this solar farm will be reflected in the next cost of living statement and is expected to be approximately \$12 annually for households. Two more solar plants are expected to start generating in 2015–16 and combined will have a similar pass through cost impact on households. From 2017–18 household energy costs are also expected to be impacted by the pass through costs associated with generation of 200 megawatts of large-scale wind capacity. These and other future large scale renewables generation, consisting primarily of solar and wind, will deliver the majority of the capacity required to achieve ACT's 90% by 2020 renewable energy target. Achieving this target is expected to peak at a cost of approximately \$230 per household in total in 2020.

