A SUSTAINABLE TERRITORY

The ACT Government Sustainability Framework

The ACT Government is committed to pursuing sustainability across all of its policies and programs. The Government recognises the interdependent social, economic and environmental elements of sustainability and adopts a triple bottom line approach through cabinet processes and annual reporting. It also recognises the need for a long term perspective on sustainability and engaging the community in major government decision making.

As part of ongoing work the Government has reviewed principal environmental protection legislation and released a range of policy documents supporting sustainability principles, including the:

- Review of the *Nature Conservation Act 2014*;
- Review of the *Environment Protection Act 1997*;
- *ACT Planning Strategy – Planning for a sustainable city* (2012);
- *AP2: A New Climate Change Strategy and Action Plan for the ACT* (2012);
- *Transport for Canberra – Transport for a Sustainable City 2012–2031* (2012);
- *ACT Waste Management Strategy*;
- *ACT Nature Conservation Strategy 2013-23* (2013); and
- *ACT Water Strategy 2014–44: Striking the Balance* (2014).

How is the Government Supporting the Community to reduce the ACT's footprint?

The ACT Government is committed to continuing its work to manage the environment sustainably and welcomed the Commissioner for Sustainability and the Environment's 7th ACT State of the Environment Report 2015 (SoE Report). The SoE Report provided a favourable assessment of the ACT Government's management of the environment and presented key information on the current and emerging state of the ACT environment. The SoE Report 2015 acknowledged:

- the high priority the ACT Government has placed on addressing climate change and environmental protection;
- the ongoing development and implementation of the ACT Government's wide ranging climate change mitigation strategies and projects, particularly in the area of supporting renewable energies; and

- the specific work the ACT Government has done to develop a long-term Climate Change Adaptation Strategy.

The Commissioner did, however, highlight the ACT community's high levels of resource consumption and waste production, reflecting our relative affluence, and that greater effort is needed to reduce this high per capita consumption rate.

Recommendations in the SOE Report will help direct the ACT Government's future actions and strategies to protect the environment.

Adapting to a Changing Climate

Climate projections for our region indicate warmer conditions with increased frequency of natural disasters, including drought and bushfire, and severity of extreme weather events such as wild storms, flash flooding and prolonged heatwaves. To enable us to adapt to a changing climate, and to change the way we do things to cope with a changing climate, the ACT Government is preparing an *ACT Climate Change Adaptation Strategy* (the Strategy). The Strategy will help us identify our priorities for adaptation and coordinate our work so we are effective in building resilience. The Strategy was released for public consultation over a period of six weeks, from 22 February to 3 April 2016 and is expected to be finalised late in 2016.

Reducing greenhouse gas emissions

The ACT has the most ambitious greenhouse gas reduction targets of any jurisdiction in Australia, including a legislated emissions reduction target of 40 per cent below 1990 levels by 2020.

The ACT climate change strategy, *AP2*, establishes a clear strategy for the Territory to meet its 2020 emissions reduction targets and become a sustainable and carbon neutral community. In support of this goal, the ACT Government has also adopted a 100 per cent renewable energy target by 2020. The ACT is on track to meet these ambitious targets. Emissions fell by 12 per cent between 2010-11 and 2014-15. Emissions per person have also dropped dramatically, with emissions per person in Canberra now lower than they were in 1990.

In March 2015, the Office of the Commissioner for Sustainability and the Environment released an Implementation Status Report (ISR) on *AP2*. The report found that government policy, including its greenhouse gas reduction targets, has positioned the ACT among the world's most progressive jurisdictions in terms of mitigating the impacts of climate change. The ISR provides a detailed assessment of ACT climate change policy and put forward a range of opportunities for the ACT Government to consider in the further development of its climate change actions.

The heavy lifting in emissions reduction is being achieved through innovative approaches to securing renewable energy. The ACT's large-scale solar auction set a national benchmark for the efficient and cost-effective procurement of large-scale renewable energy. The first auction delivered 40 megawatts (MW) of competitively priced solar energy generation in

the ACT. The first 20MW solar facility has been operating since September 2014, and the remaining 20MW is expected to be fully operational by early 2017.

Two similar reverse auction processes have been run for wind (concluding in February 2015 and March 2016), and have secured a total of 400MW of wind generation. One wind farm began generating in February 2016, and the remaining ACT supported wind farms will be fully operational by 2018. The resulting wind power is expected to supply half of Canberra's total electricity demand. These projects will also deliver more than $400 million in local benefits to the Territory by 2020—investing directly in jobs, trades training and research partnerships.

The final renewable energy generation required to meet the 100 per cent renewable energy target will be secured in 2016 under the Next Generation Renewables Auction. This auction which will also procure up to 200MW of wind or solar while also securing industry funding to support the roll-out of more than 36MW of solar battery storage in more than 5,000 homes and businesses by 2020. This follows the success of the Next Generation Energy Storage Pilot, which in April 2016 awarded grants to three Canberra based businesses to install 200 batteries across Canberra. Batteries installed under the Next Generation Energy Storage program will also capture and provide valuable data - opening significant research and development opportunities and ensuring the ACT is at the centre of the global renewable energy storage revolution.

The renewable energy program, along with a suite of other measures, has the ACT well on track, to not only meet its nation leading greenhouse gas reduction targets of 40 per cent below 1990 emissions by 2020, but also to become a centre for clean energy knowledge and investment.

While *AP2* is pursuing a major step change in ACT emissions, it is also designed to achieve three additional outcomes:

- ensuring a fair society in a low-carbon economy;
- strengthening the ACT's capacity to adapt to a changing climate; and
- leading a more sustainable future.

AP2 and its supporting legislation, the *Climate Change and Greenhouse Gas Reduction Act 2010,* were reviewed in 2015-16 to update ACT climate change policy and incorporate the latest climate change science as well as changes to the national and international policy environment.

The review of *AP2*, published in November 2015, demonstrated the success of the policy to date, with detailed updates on each action. It also presented an emissions projection to 2020 showing the ACT was on track with current measures to reach its greenhouse gas reduction targets.

The review of the *Climate Change and Greenhouse Gas Reductions Act 2010* was passed through the legislative assembly in May 2016. It found the Act was meeting its objectives in reducing emissions and securing business and investment for renewable energy. The review

made seven recommendations to realign the Act with the current policy environment. Two of these recommendations were actioned in May 2016:

- to amend the principal target of zero net emissions by 2060 to 2050; and
- to legislate a 100 per cent renewable energy target (RET) by 2020 through a disallowable instrument.

During this process, the *Electricity Feed-in (Large-scale Renewable Energy Generation) Act 2011,* was also amended to increase the maximum capacity for feed-in tariff entitlement from 550MW to 650MW. This ensured the renewables required to reach the 100 per cent RET could be procured.

Improving Energy Efficiency

The *Energy Efficiency (Cost of Living) Improvement Act 2012* (EEIS) commenced operation on 1 January 2013. The objectives of the Act are to:

- encourage the efficient use of energy;
- reduce greenhouse gas emissions associated with stationary energy use in the Territory;
- reduce household and business energy use and costs; and
- increase opportunities for priority households to reduce energy use and costs.

The scheme establishes energy savings targets and mandatory energy savings obligations for energy retailers. The scheme also provides targeted assistance to low income households. Retailers report their energy sales and the activities undertaken to meet their associated Energy Savings Obligation.

Since the EEIS commenced on 1 January 2013, more than 64,000 households have participated in the Scheme. Over 25 per cent of these have been low income priority households. Over 50 Canberra suburbs have participation rates above 30 per cent.

Energy efficiency savings from the EEIS in 2020 are estimated to be $3.20 per week on average across all ACT households, with participating households saving around $5.00 per week.

By 31 March 2016 over 900,000 energy saving items have been installed, saving over 650,000 tonnes of carbon dioxide equivalent emissions. Over 290,000 efficient LED lights have been installed through ActewAGL's Downlight Upgrade program. As a result of the EEIS, approximately 20 fulltime staff and contractors have been employed to deliver various energy efficiency programs, including 10 electricians.

An independent review of the EEIS was completed in September 2014, which concluded high participant satisfaction and significant overall benefits to continuing the EEIS. An Amendment Bill to extend the EEIS to 2020 was passed on 4 August 2015. This recognises the significant success of the EEIS to date, and the potential that remains to implement cost-effective energy savings in ACT households and businesses.

The extension of the scheme was supported by a detailed cost-benefit analysis that estimates significant household and business cost savings and a net present value of $40 million to the ACT economy.

The Government's Actsmart range of programs has been supporting households, schools and businesses by providing education and expert energy efficiency advice.

The Actsmart sustainability hub was launched in February 2015, providing an online sustainability portal to engage the community on climate change matters and to provide integrated information, advice and support to Canberra and the region. The sustainability hub outlines detailed information on the action the Government is taking towards climate change, and provides self help tools, programs and advice to the community, households, schools and businesses to assist them in becoming more sustainable and to reduce emissions. Included on the portal is the Carbon Challenge, a tool to assist all ACT residents become more sustainable in their daily lives through setting household sustainability challenges and receiving advice and support to reduce living costs and emissions.

The low income program assists low income householders to improve energy efficiency in their homes and reduce energy bills by providing advice and energy efficient appliances and fittings. The program has assisted over 7,300 households with energy efficiency savings. The lifetime energy savings achieved from the energy efficient appliances and retrofits installed in 2014-15 are 540 MWh and 240 tCO2-e, equivalent to taking 65 cars off the road.

Sustainability in the Built Environment

The *ACT Planning Strategy – Planning for a Sustainable City*, released in July 2012, establishes how the Territory will develop to meet environmental, social and economic challenges.

Together with *Transport for Canberra*, the *ACT Planning Strategy* sets out a planning and transport framework to guide future growth of our city. These strategies prioritise development along the major transport corridors and in the town centres and major group centres to achieve a more compact city form.

The approach being taken by the ACT Government to integrate land use and transport planning will contribute to the development of Canberra as a compact, assessible and efficient city. It will deliver on the Government's vision for a connected, liveable and prosperous city with strong communities and a growing economy.

The Government's focus on urban renewal and intensification around the city centre, major town and group centres and along transit corridors is an important step if we are to achieve our desire for a more compact and vibrant city.

Creating a more compact city, and encouraging active travel with more people walking, cycling and using public transport, will greatly reduce the demand for expensive roads and other urban infrastructure. The exercise involved in active travel will also improve the health and wellbeing of our community, thereby reducing the demand for additional health infrastructure and services.

The *City and Gateway Urban Renewal Strategy* is currently being prepared to set the planning directions and guidance for the Northbourne Avenue corridor and the city centre to achieve sustainable and compact urban form outcomes. The urban renewal strategy will enhance the premier approach to the National Capital by creating a liveable, connected and sustainable city centre and establishing a series of urban villages of distinctive character that represent the values and aspirations of the community and offer wider lifestyle choices and business opportunities.

The master plan program is a key initiative of the planning portfolio that supports genuine suburban renewal opportunities. The master plans respond to the Government's strategy to create a more compact, efficient city by focusing urban intensification in town centres, around group centres and along major public transport routes. This approach helps to balance where greenfield expansion occurs, again allowing consideration of the most cost effective solutions for utilising our existing infrastructure.

Master plans have or are being prepared for all of the major centres in Canberra. Each plan responds to place specific needs for each centre where the community can take advantage of the network of centres, open spaces and modes of travel to enjoy a sense of wellbeing and participate in a vibrant civic and cultural life.

Sustainability in Transport

Integrated transport networks shape the way cities grow and prosper. The ACT Government is building an integrated transport network through delivering on key government priorities including *AP2*, *Transport for Canberra* and the *ACT Planning Strategy*. These policies encourage increases in the number of people using active travel and public transport with reductions in greenhouse gas emissions and traffic congestion, as well as less air pollution.

The Government will spend over $11 million on active travel infrastructure in 2016-17 across a number of Capital Work and Capital Upgrade projects. This includes the following:

- $0.5 million for the Active Streets at Schools programme, including infrastructure improvement measures such as 'dragons teeth', children's crossings, drop-off points and community path improvements;
- $1.0 million for the construction of active travel improvements at the Woden Town Centre; and
- $1.0 million for the construction of a shared zone and upgrade path connections to the Kingston foreshore.

The Government will continue the progression of Capital Metro – Canberra's light rail project. Supporting the Government's vision of delivering a truly sustainable and creative city, Canberra Metro will be a catalyst for Canberra's change into a more global city.

The project has made solid progress in the past year with a preferred consortium announced, Canberra Metro, and contracts signed. 2016-17 will see a range of construction activities occurring including the construction of a light rail depot, along with construction in the Northbourne Avenue and Flemington Road Transport Corridors.

Canberra Metro continues to use the Infrastructure Sustainability Council of Australia (ISCA) framework to guide the project's approach to sustainability matters. The Canberra Metro consortium supports this approach and is undertaking a range of measures to ensure the project meets an ISCA rating of 'Excellent'.

Light rail is sustainable and highly suited to Canberra. In addition to its modern design features and its integration with the urban environment, Canberra's light rail will be 100 per cent powered by renewable energy. This will be achieved through this Government's renewable energy target and requirements on Canberra Metro to source additional renewable energy.

In addition, in order to lower the carbon footprint of light rail, Canberra Metro will minimise the use of imported materials and use local recycled materials and finishes in the construction.

The 2016-17 Budget also reflects the establishment of Transport Canberra and City Services which will work on the infrastructure needs of our growing city, connecting ACTION buses, light rail and active travel, with Canberra's vital local services.

The Government has allocated $57 million over three years to undertake construction of the duplication of Horse Park Drive between the Federal Highway and Wells Station Drive, and Anthony Rolfe Avenue to Mulligans Flat Road and associated infrastructure. This' coupled with the works already commenced on Horse Park Drive between Anthony Rolfe Avenue and Wells Station Drive as part of the Throsby development, will improve traffic flows in the Gungahlin area.

The Government has committed $28.9 million over three years to undertake the construction of Cotter Road Stage 2 duplication between Tuggeranong Parkway to Yarralumla Creek which will complement works completed as part of Cotter Road Stage 1 and improve safety for all road users, increase traffic capacity and ease congestion on this key east-west corridor.

The Government will continue the duplication of Ashley Drive with $3.5 million committed over two years to complete duplication works from Ellerston Avenue to Johnson Drive in order to complement and enhance works undertaken as part of Stage 1 and ongoing Stage 2 works, to address traffic congestion and commuter delays. The works will include intersection upgrades at Ellerston Avenue/Ashley Drive and Ashley Drive/Johnson Drive as well as various community path upgrades.

The Government is also currently monitoring the Eco-friendly Road Resurfacing trial undertaken in Kelleway Avenue, Nicholls. This innovative approach to road resurfacing utilises recycled materials such as printer toner and recycled road pavement for use in the final asphalt mix. Approximately 160 tonnes of asphalt was laid, saving some 2.24 tonnes of carbon dioxide.

Sustaining our natural environment

Environmental protection will continue to be a high priority for the Government during 2016-17. Conserving the Territory's environment for future generations entails balancing development needs with the responsible and efficient use of available resources.

The ACT Government continues to protect biodiversity and strengthen the resilience of the landscape to disturbances and threats including climate change. Over 70 per cent of the ACT is national park, nature reserve or designated water catchment. The ACT is home to some of Australia's largest, best connected and diverse Box-Gum Woodland, a critically endangered ecological community and only 5 per cent of the original area of ACT natural temperate grasslands remains.

The first progress report on implementation of the *Nature Conservation Strategy 2013-23* released in May 2016 highlighted the significant on-ground investment that is restoring and connecting important threatened woodlands, improving our lowland grasslands and restoring aquatic habitat in the Murrumbidgee.

Between 2013 and the end of 2015 there has been significant progress in:

- restoring priority landscapes and enhancing regional connectivity;
- building our knowledge on soils, vegetation and hydrology;
- community monitoring (citizen science) including through new mobile applications to report plant and animal sightings;
- captive breeding, plant propagation and translocation of fauna species;
- improved systems for management of biosecurity, including the threat of new weeds and pests; and
- engaging community through ParkCare and Landcare.

These achievements have only been possible by working closely with Greening Australia, catchment groups and volunteers, rural landholders, and research institutions such as the CSIRO (Commonwealth Scientific and Industrial Research Organisation) and ANU (Australian National University). Australian Government and complementary ACT Government funding, including through the National Landcare Program, have been key sources of investment.

The 2016-17 Budget provides funding for the rehabilitation of the Upper Murrumbidgee River near Tharwa to enhance native fish populations by building on the successful engineered log jam that has improved native fish populations at this site.

The ACT Government will continue the research and monitoring of the management of eastern grey kangaroo populations including monitoring the effectiveness of the trial of fertility control methods.

The ACT Government will provide ongoing funding to continue the rabbit control program and weeds control in the Territory's nature parks, conservation areas and unleased rural lands. This is in line with meeting the objectives in the *ACT Weeds Strategy 2009-2019* and the *ACT Pest Animal Management Strategy 2012-2022*.

The 2016-17 Budget also provides funding to improve the infrastructure and habitat quality of sites that will be established to offset the impact from development on Matters of National Environmental Significance.

The aim is to improve or maintain the quality and extent of ecological communities and habitat of species protected within each of the environmental offset sites. Depending on the site-specific offset commitments include:

- improving the quality of Box Gum Woodland community within the Jacka North, Taylor and Horse Park North offset sites;
- maintaining the quality of the Natural Temperate Grassland community within the North Symonston (Amtech Estate) offset site;
- improving the habitat quality for the Striped Legless Lizard and Golden Sun Moth within the AMTECH offset site; and
- protecting all co-located heritage values.

Protecting our clean air

The ACT Government is continuing to work at the national level to address emissions from wood heaters. On 15 December 2015 Environment Ministers met and agreed to the National Clean Air Agreement.

The commitments in the Agreement will deliver actions to reduce air pollution by strengthening the standards in the Ambient Air Quality National Environment Protection Measures for particulate matter (PM2.5) emissions; and the Australian Standards for new domestic wood heaters emissions (AS4013) and efficiency (AS4012).

The ACT Government continues to build on its initiatives to improve the ACT's air quality by being the first jurisdiction to legislate the stricter Australian Standards for domestic wood heaters sold in the ACT. This, combined with the licensing of fire wood merchants to ensure sustainable use of natural resources, the Wood Heater Rebate Scheme which has removed over 1,000 old wood heaters, public education programs 'Burn Right Tonight" and 'Don't Burn Tonight' and regulatory initiatives, places the ACT at the forefront nationally in reducing air pollution.

Sustainability in Catchment Management

The Government is committed to targets to limit demand for potable drinking water and increase the use of cost effective fit-for-purpose non-potable water where effective.

The *ACT Water Strategy 2014–44: Striking the Balance* released in August 2014 guides management of the Territory's water supply, management and catchment practices.

The *ACT Water Strategy* will ensure:

- improved integrated catchment management across the ACT and region;
- long term security of water supplies to meet the needs of a growing population and the environment;
- improved water conservation and water sensitive urban design to reduce per capita potable water use by 25 per cent (and by 40 per cent in new developments, extensions and refurbishments)
- strategic investment in catchment management and water security;
- integrated water cycle management in the planning and design of urban environments;
- safe and clean water for the ACT; and
- strong community involvement in water resource management.

The ACT seeks to manage water quality to ensure that water leaving the ACT is of the same quality or better than that entering the ACT. Announced in 2014, the ACT Basin Priority Project (BPP), a $93.5 million joint Commonwealth and ACT Government initiative, recognises the importance of improving water quality and protecting our waterways for future generations. The BPP will deliver new water quality infrastructure in six priority catchments across the ACT: Fyshwick, Lower Molonglo, Tuggeranong, Upper Molonglo, West Belconnen and Yarralumla. The majority of these projects will create naturalized features such as rain gardens, swales, ponds and wetlands.

The ACT and Region Catchment Management Coordination Group was established in February 2015. Membership consists of local government, ACT, NSW and Commonwealth Governments, community representation through the Upper Murrumbidgee Catchment Community Committee and Icon Water. It aims to facilitate collaboration across the region to increase efficiencies and outcomes for improved catchment management, addressing actions under the thematic areas of Governance, Development, Community, Land and Biodiversity, and Water.

The Group has supported the development of a draft *ACT and Region Catchment Strategy* which has been out for consultation and is expected to be finalised in late 2016.

The Government also continues to support catchment focused citizen science through Waterwatch and Frogwatch.

Sustainability in Waste Management

The Government released the *ACT Waste Management Strategy 2011-2025: Towards a Sustainable Canberra* in December 2011. The current waste strategy outlines a comprehensive framework to increase resource recovery to over 90 percent by 2025.

The Government will continue to trial a bulky waste household collection service, which annually provides one free collection per dwelling to eligible concession card holders.

The *Actsmart Business and Office* waste management and recycling programs have resulted in waste diversion to landfill savings of over 1,000 tonnes CO2-e annually. A total of 21,197m^3 of waste was diverted from landfill by the 207 Actsmart Business accredited sites during 2013-14. This represents a reduction in emissions of 3,066 tonnes CO2-e. This is equivalent to taking 807 cars off the road for one year.

The Government will continue to provide waste education to schools and the community and produce engaging promotional materials designed to encourage greater rates of recycling.

The 2015-16 budget allocated $2.8 million over two years to develop an integrated suite of waste services, infrastructure and complementary regulations to enable the Government to achieve its waste policy goal of "full resource recovery and carbon neutral waste sector" by 2025. The ACT waste feasibility study was established to lead this initiative.

As a part of the ACT waste feasibility study the Territory has reviewed its waste regulatory framework and has developed the *Waste Management and Resource Recovery Bill 2016* to replace the *Waste Minimisation Act 2001*. The consultation draft of this bill was released in late 2015. The Bill provides for modern, comprehensive and robust regulation across all commercial waste activity, establishing a framework for managing the collection, transportation, sorting, treatment, processing and disposing of waste. A clear regulatory framework will encourage accountability and competition in the waste industry and support efforts to reduced illegal waste dumping, uncontrolled waste stockpiling and associated fires.

The Government has allocated $21 million in 2015-16, with a further $1 million in 2016-17 on the expansion of the landfill cells at the Mugga Lane Resource Management Centre. These works will continue the provision of the ACT's landfill needs.

The Government is committed to reducing waste to landfill and the associated environmental effects. Funding has been allocated over 2016-18 to pilot a green waste collection service in Kambah and Weston Creek.

Sustainability in Public Housing

All new public housing dwellings constructed by Housing ACT are built to the Liveable Housing Australia Design Standard with the aim of achieving the Gold level wherever possible. The dwellings are also constructed to achieve 6-star energy ratings under the Nationwide House Energy Rating Scheme (NatHERS). To achieve this rating, dwellings are appropriately oriented for solar gain and include wall and ceiling insulation, energy efficient glazing and shading and draught proofing to windows and doors. Energy efficient appliances are installed with the aim of reducing energy costs for public housing tenants.

The Government committed $30 million over ten years from 2007-08 to improve the energy efficiency of public housing, with approximately 8,100 dwellings (around 70 per cent of housing stock) already having works undertaken to upgrade the energy efficiency of the property. Works undertaken include the installation of ceiling and wall insulation, draught sealing, pelmets and curtain rods, energy efficient hot water systems and heating appliances.

In new constructions, and as part of major upgrades, water saving measures and sanitary fixtures are provided that reduce the consumption of potable water, and reduce the flow to the sewer and stormwater systems. These measures include the installation of water tanks, dual flush cisterns, water efficient shower heads and flow regulators/aerators.

Government funding from 2005-06 to 2008-09 also saw the installation of water efficient devices (shower heads, dual flush cisterns and flow regulators) to approximately 2,700 properties. Following on from this, Housing ACT has continued to provide these water efficient devices on failure or when properties are upgraded and particularly for stand-alone houses, which are expected to be held for the long term, where water efficiency upgrades had not yet occurred. Since 2008-09 water efficient devices were installed at 8,064 properties.

Housing ACT also sponsors and provides funds to the Actsmart Outreach Energy and Water Efficiency Program which assists low income families in the ACT to improve the energy and water efficiency of their homes. Through education and tailored home assessments, households are able to reduce their energy and water consumption and therefore the impact of their energy and water bills.

How is the Government reducing its own footprint?

The Government is committed to reducing its own energy use on the path to achieving zero net greenhouse gas emissions from operations by 2020. Formal energy/carbon budgets are established for Directorates in 2016-17, requiring a more efficient use of energy within Government. Accountability to meet annual energy targets is placed on Directors-General, through a carbon neutral leadership reporting obligation in 2016-17.

The 2012-13 Budget Papers announced a *Carbon Neutral Government* Fund (CNGF). The CNGF replaces and expands the *Resource Management Fund*. The CNGF has been supplemented through the redirection of funding previously used for Greenpower purchases into the CNGF to assist the Government in funding more projects.

Between July 2010 and June 2015, the CNGF has supported 23 projects with $12.2 million funding provided as loans. These projects allow government to use energy more wisely and reduce operating costs.

Projects supported under the CNGF include upgrades to heating and cooling systems, lighting technology and water heaters across various Government schools and other buildings, energy efficient heating at two hydrotherapy pools and the installation of a solar hot water system and smart building management system at Erindale Educational and Recreation Complex.

Sustainability in Health

The ACT Health *Sustainability Strategy 2016-2020* and the *ACT Health Resource Management Plan 2016-2020* were reviewed in 2015-16. The *Sustainability Strategy 2016-2020* provides a roadmap for a collaborative sustainable future and contains actions for six focus areas – Resource Management Plan, Buildings and Infrastructure, the Digital

Health Environment, Our People, Partnerships and External Service Delivery and Procurement.

One of the key elements of the Strategy is the delivery of the *ACT Health Sustainability – Environmental Principles and Guidelines – Building and Infrastructure Projects (Ecological and Sustainable Development - ESD)*, which is developed to ensure that all capital projects and major refurbishment works can incorporate design and functionality whilst aiming to reduce carbon emissions. This document was reviewed in 2015.

As one of the largest energy consumers in the Government, ACT Health is faced with the challenge of meeting the health needs of a growing population, an increasing elderly population and more prevalent chronic disease. This situation is being addressed by delivering more sustainable buildings via the Health Infrastructure Program.

ACT Health is diverse in its nature in that facilities are spread across the Territory, therefore requiring strategic thinking around transportation of patients and models of care.

ACT Health has installed electric vehicle charge stations at six health sites across Canberra. These electric vehicle charge stations will allow for the expansion of ACT Health's electric vehicle fleet and greater flexibility with respect to electric vehicle charging facilities. ACT Health also continues to implement strategies in support of *Transport for Canberra – Transport for a Sustainable City 2012 – 2031.*

In 2015, ACT Health received approval from the CNGF to install photovoltaic (PV) solar panels (500KW) on the roof of the Southern Multi Storey Car Park (Canberra Hospital) and an LED replacement program for existing hospital infrastructure, with phase one of the LED component already completed.

A range of recent initiatives will have benefit from 2015-16 and beyond, including:

- implementation of Variable Speed Drive control on Theatre ventilation fans, with benefits likely to occur in 2016-2017;
- progressive replacement of shower heads with water-efficient models (WELS3-compliant), which will lead to reductions in gas use for heating domestic hot water;
- implementation of ultra-violet control for selected air handling systems to improve air quality and improve HVAC efficiency;
- optimisation of heating hot water boilers across ACT Health and in particular the Canberra Hospital, with saving of around 3 per cent anticipated in 2016-17; and
- emergency lighting upgrades to LED upon replacement.

ESD initiatives incorporated into the ACT Health infrastructure builds, upgrades and improvements aimed at reducing carbon emissions and energy costs include:

- whole of life cycling costing analysis;
- pursuing carbon neutrality;

- implementing energy efficient improvements (including renewable and energy efficient technologies;
- facade improvements;
- LED lighting;
- water capturing and recycling;
- investigation of solar hot water options;
- sustainable waste, water and procurement measures;
- continued use and implementation of Actsmart programs;
- implementation of whole-of-government policy on transport arrangement; and
- strengthening sustainability governance arrangements – lead by executive.

Sustainability in Schools

The Government is assisting schools to reduce water and energy consumption, waste going to landfill as well as supporting the sustainable management of school grounds through programs and best practice guides implemented through *Actsmart Schools.* All ACT schools are registered with *Actsmart Schools*.

The Government will build on the continued success of this initiative in 2016-17 by:

- delivering the *Actsmart Schools Energy Program* – conducting audits and providing advice, assisting schools to establish student energy teams and utilise a student energy kit to encourage the whole school to adopt sustainable behaviours;
- providing assistance to schools to establish and maintain a waste and recycling system by offering support to staff and student teams and providing a range of resources such as an interactive waste display and a waste PowerPoint for the waste and recycling system to be explained to the whole school community;
- providing professional development for teachers in the areas of energy efficiency, waste management and sustainable management of schools grounds;
- monitoring water usage and providing advice and assistance to schools to reduce water consumption as part of the Education and Training Directorate's *Smart Meter Program*; and
- collecting accurate data for monitoring, reporting progress and the accreditation of schools.

Projects funded under the Carbon Neutral Government Fund (CNGF) that will be completed in 2016-17 include the installation of:

- LED lamps at 31 Canberra public school sites; and

- upgrade Building Management System at Erindale College and Active Leisure Centre.

The implementation of environmental and sustainable design principles in landscaping will continue to be expanded in 2016-17, focusing on outdoor learning areas. These design principles increase infiltration into the subsoil, improve water quality and the microclimate, and encourage biodiversity.

Canberra public schools will continue to re-invest their Feed-in-Tariff income in 2016-17 to support sustainability upgrades at their individual school sites, including energy and water conservation measures, recycling and waste diversion programs, landscaping and curriculum development.

To support active transport to school, improvements will be made to cycle facilities at four Canberra public schools.

A building tuning program will be undertaken at six Canberra public schools, with the aim of improving building heating ventilation and air-conditioning operating efficiency.

Sustainability in Justice and Community Safety

The Justice and Community Safety (JACS) Directorate is committed to achieving carbon neutrality and is continuing to undertake numerous measures to support Environmentally Sustainable Development (ESD) across its property portfolio. The Directorate's holistic approach to increasing environmental resource efficiencies incorporates resource awareness, identifying future opportunities and undertaking sustainability projects to contribute to a sustainable future for the ACT.

The Directorate's Resource Management Plan (RMP), which aligns to the Carbon Neutral ACT Government Framework, outlines the Directorate's approach, commitment and objectives to reducing and managing energy and resource consumption.

To facilitate the implementation of the RMP, JACS has a dedicated Sustainability Committee (established in 2011) which comprises representatives from each business unit and oversees the implementation and monitoring of initiatives targeted by the RMP to ensure practical, efficient and effective outcomes. In addition to the Committee, a devoted Environmental and Heritage Officer sits within Capital Works and Infrastructure providing training and coordination to the Directorate to achieve identified environmental targets.

The Directorate has a program of works focused on implementing energy efficiency measures. Over the last five years, JACS has dedicated over $0.2 million per year for energy efficiency works from the Capital Upgrade Program (CUP) to implement ESD measures across the property portfolio of the Directorate. Between 2013-16, this initiative has provided:

- targeted energy audits and energy efficiency projects of high energy consumption properties, including the Alexander Maconochie Centre;

- upgrading of building management systems, heating ventilation and air conditioning systems, and addressing power correction factors at high energy use sites;

- continual upgrading to energy efficient lighting and other lighting systems across owned and leased sites, including the Alexander Maconochie Centre, and the ACT Emergency Service Agency (ESA) Headquarters;

- installation and expansion of solar panels and solar hot water systems at selected sites, including the Forensic Medicine Centre, South Tuggeranong Fire and Rescue Station and Ainslie Fire and Rescue Station; and

- implementation of a pilot project to achieve carbon neutrality at the Ainslie Fire and Rescue Station.

Major refurbishment works, such as the recent adaptive reuse of Greenway Ambulance Station and ongoing construction of the new Aranda co-located Ambulance and Fire and Rescue Station include ESD in the design and upgrade process, making use of current energy and resource efficient practises including:

- smart lighting options;

- rainwater harvest systems (for the purpose of grey water application);

- installation of photovoltaic panels;

- solar hot water systems and

- waffle pod insulation used within the construction of the slabs.

The JACS Directorate is actively participating in the Actsmart Business Recycling Program to reduce waste, water and energy consumption. JACS has committed to undergoing accreditation through the Program across all business units to improve the current levels of recycling, to lower waste to landfill and increase knowledge on resource use. A staff sustainability survey has been conducted to identify behaviour change outcomes associated with delivered measures. In addition, training and information sessions are provided in sustainability leadership for JACS business unit executives and Sustainability Committee members.

Sustainability – Community and Services

Within buildings occupied by Community Services Directorate (CSD), the Directorate is committed to sustainability improvements in line with the Carbon Neutral Government Framework (CNGF).

In order to clearly identify potential areas for improvement, CSD have utilised the Actsmart Program to undertake site specific audits and provide reports. Carbon trials have been completed on a majority of sites, which have seen a reduction of 24,082 GJ or 5.3 per cent reduction in total energy across CSD sites. Where possible, CSD will implement the energy conservation measures identified within the reports, making use of the CNGF for key projects.

CSD is also committed to reducing the amount of waste generated within its buildings and has implemented the Actsmart Office Recycling Program in 80 per cent of its portfolio. CSD will continue rolling out the program and work towards Actsmart accreditation at all sites.

A Sustainability Showcase was incorporated into the construction of the West Belconnen Child and Family Centre, including solar panels and a wind turbine. To date this has resulted in the generation of over 63,000kWh of electricity.

CSD initiatives incorporated into the upgrades and improvements aimed at reducing carbon emissions and energy costs include:

- reduction of vehicle fleet numbers from 173 to 139 vehicles, this is largely due to the transition from Disability ACT to the National Disability Insurance Scheme;
- CSD currently has two Nissan Leaf electric vehicles, which produces zero CO2 tailpipe emissions as they are 100 per cent electric; and six Toyota Camry Hybrid (Petrol/Electric);
- implemented in-house trials of 1 litre 3 cylinder Ford Fiesta and 1.4 litre Fiat Punto vehicles which provide exceptional fuel economy and low exhaust emissions in urban environments;
- introduced five 5 star green rated vehicles into its fleet, and increased 4 star green rated ULP vehicles;
- reduced 3.5 star green and lower rated vehicles; and
- CSD will continue to replace 4 cylinder 1.6 – 2 litre sedan/hatch vehicles with more 3 cylinder vehicles over the next 12 months. Also the possibility of a few more Hybrid vehicles to be replacements for the larger 4 cylinder vehicles.

Sustainability – Improvements to the management and operations of our public lighting

In 2016-17 the Government will undertake a Request for Tender process for an Energy Performance Contract for the ongoing operations and maintenance of the Territory's streetlights. The streetlight network will be managed under a fixed term performance based contract, with specified outcomes for energy efficiency upgrades to LED luminaires, improved maintenance, and further conditions on the state of the network at the completion of the contract. Upgrading to LEDs will significantly improve the energy efficiency of our streetlights.

This decision follows a request for expressions of interest undertaken in 2015-16. Responses from leading international and local organisations have informed the next stage of this project. The ACT Government will approach the market in the first half of 2016-17, for a complete management solution for our streetlights, delivering energy efficiency upgrades, as well as a 'backbone' platform for future Smart City options.

The ACT Government owns more than 75,000 lights on streets, footpaths, arterial roads and in various public parks and other open spaces around the ACT. Public lighting is the ACT Government's highest use of electricity (25 per cent) and produces 18 per cent of the

Government's greenhouse gas emissions. The *Carbon Neutral Government Framework* noted the importance of energy efficiency upgrades of streetlighting.

Through improved energy efficiency, the Government will consume less electricity and significantly reduce its greenhouse gas emissions. Upgrading the Territory's streetlights will give us a safer, more sustainable, leading digital city.

Sustainability – Capital Upgrades in 2016-17

The 2016-17 Budget Capital Upgrades Program includes a number of programs aimed at improving energy efficiency and environmental wellbeing. These include:

- improving water quality through:
  - enhancing pollution control measures, including sediment and gross pollutant traps;
  - better water treatment and drinking water quality at Tidbinbilla;
  - stormwater improvement programs; and
  - rehabilitating Coombs ponds to improve water resources.
- Improving energy efficiency and the environment through:
  - upgrading heating, ventilation and cooling systems within government buildings;
  - installing energy efficiency street lighting; and
  - removing hazardous material such as asbestos.

Strengthening Community Engagement

The Government has been involving the community in all aspects of climate change and environment policies. The Government is committed to supporting the community in undertaking activities that complement the delivery of environmental priorities. The Government will continue to provide support to community partners including the Canberra and South East Region Environment Centre, the Conservation Council and SEE-Change ACT.

Annual Rural Grants and ACT Environment Grants continue to provide ACT rural landholders and community groups with grants to improve sustainable agriculture and protect and enhance habitat across the landscape.

Community volunteering for the environment is going from strength to strength. Citizen science or community monitoring by Waterwatch volunteers, ParkCare groups and individuals is increasing through use of smart phones and new apps to record and report native plants and animals, weeds and pests and water quality. In the Canberra Nature Map's first year (2015), over 200 people lodged 7,200 plant and fungi reports. In 2015 180 Waterwatch volunteers also surveyed over 200 sites across the Upper Murrumbidgee catchment.

In 2015-16 funding for community gardens was made available to not-for-profit groups to support building/expanding community gardens.

In 2014 the *Climate Change Community Engagement Strategy* was released. As one of the actions stemming from *AP2*, the Strategy reaffirms the Government's commitment to effective engagement with the community and outlines key areas of work including the development of a sustainability portal under the Actsmart banner, extension of engagement partnerships with key community representative organisations including the ACT's Climate Change Council and the preparation of a media campaign.

The ACT Climate Change Council advises the Minister for the Environment and Climate Change and the Government on reducing greenhouse gas emissions and adapting to future climate change. Comprised of experts and leading practitioners in the fields of climate science, community work, business and planning, in this role it will continue to be a key point of contact for community engagement activities for the Government.

In 2015, the Government released a sustainability web hub for accessing information on a range of sustainability issues, including climate change. Actsmart.act.gov.au is the first point for members of the community to go when looking for programs and advice to save energy and water, reduce waste and cut greenhouse gas emissions.

In October and November 2015, the ACT Natural Resource Management Body (ACT NRM) hosted participatory workshops to help identify options for climate change adaptation in priority ecosystems (natural temperate grasslands, box-gum woodlands, river corridors and wetlands). Workshops used scenario planning and adaptation pathways techniques and included a diverse range of stakeholders from: ACT and NSW government expert advisory bodies, community groups (Frogwatch, Waterwatch, Friends of Grasslands), researchers (CSIRO, ANU, University of Canberra) and non-government organisations (Greening Australia, Kosciosko2Coast, Conservation Council).