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.

The Government has principal environmental protection legislation and a range of policy documents that provide the framework for supporting sustainability. These policies and action plans are reviewed as necessary to keep up to date. The key documents include:

- Climate Change Action Plan 2 (AP2): A New Climate Change Strategy and Action Plan for the ACT (2012) reviewed in 2015-16 with a new climate change strategy currently under development;
- ACT Planning Strategy – Planning for a sustainable city (2012), revision underway;
- Transport for Canberra – Transport for a Sustainable City 2012–2031 (2012), review underway;
- ACT Waste Management Strategy;
- ACT Nature Conservation Strategy 2013-23 (2013);
- *Nature Conservation Act 2014*;
- ACT Water Strategy 2014–44: Striking the Balance (2014);
- *Environment Protection Act 1997*; and
- ACT Sustainable Energy Policy – Energy for a Sustainable City 2011-2020.

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. The 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 Report 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 energy; 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 are helping to direct the ACT Government's future actions and strategies to protect the environment.

Addressing climate change through adaptation and mitigation

The Government has focused its climate change action to date on mitigation - reducing greenhouse gas emissions as the cause of global warming. However we need to know what the risks from a warming climate are and what to do about them. A key focus of the ACT Government in 2017-18 is the development of the ACT's new climate change strategy *Blueprint for a net zero emissions Territory: ACT's climate strategy to 2050* which will look at every climate strategy and policy from both a mitigation and adaptation perspective.

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, in August 2016 the ACT Government released its *ACT Climate Change Adaptation Strategy: Living with a warmer climate*.

In 2017-18 the Government will continue to implement the Adaptation Strategy's 27 short term actions to 2020 to help reduce the risk from climate change impacts and help build resilience in human and non-human communities. Progress will be included in the Minister's annual report on climate change under the *Climate Change and Greenhouse Gas Reduction Act 2010*.

There are a number of actions to transition Canberra's urban environment to be liveable and fit-for-purpose (sustainable) in a future climate. These mean changes to business as usual in urban development and a new living infrastructure strategy to sustain our 'bush capital'.

Reducing greenhouse gas emissions

The ACT has the most ambitious greenhouse gas reduction and renewable energy targets of any jurisdiction in Australia, including a legislated emissions reduction target of 40 per cent below 1990 levels by 2020 and net zero emissions by 2050 at the latest, with firm interim targets out to 2050.

AP2 establishes a clear strategy for the Territory to meet its 2020 emissions reduction targets and become a sustainable and net zero emissions community. In support of this goal, the ACT Government has legislated a 100 per cent renewable electricity target by 2020. The ACT is on track to meet these ambitious targets.

Emissions fell by 9 per cent between 2010-11 and 2015-16. Emissions per person have also dropped dramatically, with emissions per person in Canberra now lower than they were in 1990.

The heavy lifting in emissions reductions to 2020 is being achieved through innovative approaches to securing renewable energy including 40MW of solar and 600MW of wind generation, roof-top solar, voluntary GreenPower purchases, and the ACT's share of the national Renewable Energy Target. These projects will also deliver more than $500 million in local benefits to the Territory by 2020 by investing directly in jobs, trades training and research partnerships, and supporting key industry development initiatives such as the Renewables Innovation Hub. Established in December 2016, with support from the industry funded Renewable Energy Innovation Fund (REIF), the Renewables Innovation Hub is a flexible, collaborative co-working and office space bringing together innovative startups and pioneering organisations from Australia and from around the world to develop the ACT's vibrant renewable energy and cleantech sectors.

The most recent Next Generation Renewables Auction, finalised in September 2016, secured industry funding to support the roll-out of more than 36MW of solar battery storage in more than 5,000 homes and small businesses in the ACT by 2020. Batteries installed under the Next Generation Energy Storage program will capture and provide valuable data through an online platform. This opens significant research and development opportunities which, together with the ACT's other energy investments, will continue to ensure the ACT is at the centre of the global renewable energy revolution.

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 net zero 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.

Following these reviews, the ACT is now developing its next climate change strategy for reducing emissions beyond 2020 out to 2050, which will be a *Blueprint for a net zero emissions Territory: ACT's climate strategy to 2050* at the latest with firm interim targets. This will be reviewed and updated every few years to ensure it remains current and reflects the latest climate science, technical and policy options.

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.

An independent review of the EEIS completed in September 2014, concluded high participant satisfaction and significant overall benefits to continuing the EEIS. The scheme was subsequently extended to 2020, with key goals of increasing third party participation and expanding into the business sector through commercial lighting and other new activities. 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.

Between the EEIS commencement date of 1 January 2013 and the first quarter of 2017 more than 76,000 households had participated in the scheme. Over 19,000 of these were low income priority households. Over 50 Canberra suburbs have had participation rates above 30 per cent. Over 1.1 million energy saving items have been delivered, saving over 694,000 tonnes of carbon dioxide equivalent emissions.

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.

Commercial lighting activities were introduced to the scheme in July 2016 and ActewAGL started delivering them through its *Big Business Light Switch* program in January 2017. EnergyAustralia became the second electricity retailer to offer EEIS activities from March 2017, also focusing on commercial lighting upgrades. In the first quarter of 2017, over 19,000 efficient lights were installed in business premises through EEIS.

As a result of the EEIS, approximately 20 fulltime staff and contractors have been employed to deliver various energy efficiency programs, including 10 electricians.

The Government's Actsmart range of programs will continue to support households, schools and businesses in 2017-18 by providing education and expert energy efficiency advice.

The Actsmart Sustainability Hub was launched in February 2015. It provides 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 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 webtool 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 7,600 households with energy efficiency savings. The annual energy savings achieved from the energy efficient appliances and retrofits installed in 2015-16 are 798 MWh and 492 tCO2-e, equivalent to taking 133 cars off the road.

The ACT Solar for Low Income Program received $2 million over four years in the May 2016 Budget to provide financial assistance for low income households to install solar panels. The initiative is in recognition of the need to maintain equity as energy prices increase and to remove barriers for low income households to benefit from household solar. Funding for the program is sourced from Tier 2 retailers contributions under the *Energy Efficiency Improvement Scheme*.

The program objectives are:

- reduced cost of living for low-income households;
- increased uptake of solar by low-income households;
- enhanced social equity by providing more equitable distribution of solar energy, and
- increased penetration of solar in the ACT.

The Actsmart Business Energy and Water Program provides advice and financial assistance to small businesses to help reduce energy and water consumption. In 2015-16 the program assessed 143 small businesses, community groups and owners corporations, with 75 claiming a rebate to upgrade to more efficient fittings or fixtures. Estimated lifetime energy savings from the upgrades installed since the program commenced in July 2012 (to June 2016) are 24,690 MWh, equivalent to the energy used by 3,375 houses a year.

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, assessable 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.

Integrating stormwater into the urban fabric will assist in the cooling of our urban environments. Stormwater management through water sensitive urban design in urban renewal projects allows for improved amenity and greater use of open space areas.

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 $7.5 million on active travel infrastructure in 2017 across a number of Capital Work and Capital Upgrade projects and in recurrent budget. This includes the following:

- $4 million for improving the community path network including pedestrian and cycling infrastructure in priority suburbs;
- $0.3 million for new bicycle enclosures at four ACT public schools;
- $0.25 million for constructing the Belconnen bikeway linking existing path networks in the area;
- $0.02 million for adding secure bike parking racks in Braddon; and
- $3.25 million for introducing safety measures, including capital works and school crossing supervisors, at 20 schools to improve road safety and encourage walking and cycling to school.

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

Light Rail Stage 1 has made significant progress in the past year with construction well underway. The 2017-18 year will see Light Rail Stage 1 near completion, with construction and landscaping well advanced along the corridor, the light rail depot construction complete, the arrival of the light rail vehicles and the beginning of testing and commissioning along the 12 km corridor from Gungahlin to the City. Building upon the project approach to sustainability using the Infrastructure Sustainability Council of Australia (ISCA) 'IS Rating' as a framework, the Canberra Metro consortium is developing the project to meet the commitment to achieve an IS Rating of 'Excellent'.

Light rail is a sustainable transport mode 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 through the ACT Government's achievement of its renewable energy target.

In addition, in order to lower the carbon footprint of light rail, Canberra Metro is minimising the use of imported materials and using local and recycled materials and finishes in the construction where suitable.

Transport Canberra and City Services will work on the infrastructure needs of our growing city, connecting Transport Canberra buses, light rail and active travel, with Canberra's vital local services.

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.

During 2017-18, trials of alternative energy buses will be underway in the Transport Canberra bus network.

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 conservation and use of natural resources.

The ACT Government continues to protect biodiversity and strengthen the resilience of the landscape to disturbances and threats including climate change. Over 60 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 Yellow Box-Blakely's Red Gum Woodland, a critically endangered ecological community. Additionally, a large proportion of the few remaining sites supporting natural temperate grasslands in the ACT is protected as nature reserve.

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, connecting and maintaining 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, some of which such as the Eastern Bettong and Eastern Quoll are Australian firsts;
- 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 The Woodlands and Wetlands Trust, 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 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 deliver targeted weed control in the Territory's nature parks, conservation areas, urban parks and places and unleased rural lands. This is in line with meeting the objectives in the *ACT Weeds Strategy 2009-2019.*

The 2017-18 Budget also provides funding to work with the Woodlands and Wetlands Trust in the development of design concepts for a Woodlands Learning Centre in Throsby. The Centre would be a nation-leading facility dedicated to introducing the public to our unique and endangered woodland environments by relying on smart technology and field based experiences.

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 Actsmart Wood Heater Replacement Program 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.

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, ACT Healthy Waterways (Basin Priority Project), a $93.5 million joint Commonwealth and ACT Government initiative, recognises the importance of improving water quality and protecting our waterways for future generations. Healthy Waterways 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.

Coupled with Healthy Waterways is an innovative public education campaign – H2OK Keeping our Waterways Healthy. It encourages people to be vigilant and prevent pollutants entering ACT and Region water bodies, impacting on water quality and consequently reducing amenity and recreational value of these important natural assets.

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 was 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 bulky waste household collection service will continue in 2017-18, providing one free collection per dwelling to eligible concession card holders. Additionally, a grant of $160,000 will be provided to GIVIT, a not-for-profit organisation to establish an ACT program to donate unwanted goods to people in need, including people whose lives have been disrupted by domestic violence and natural disasters.

In 2015–16 the Actsmart Business Recycling Program accredited 348 sites, recycling approximately 14,000 cubic metres of mixed recyclables, representing 1129 t CO2-e avoided and equivalent to taking 305 cars off the road for a year, 19,480 cubic metres of paper and cardboard, representing 4869 t CO2-e avoided and equivalent to taking 1316 cars off the road for a year and 1597 cubic metres of organic material, which is equivalent to 876 t CO2-e avoided and 237 cars off the road for a 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.

In the 2015-16 Budget the Government funded a two year feasibility study to investigate long-term options for the management and treatment of waste in the ACT – the Waste Feasibility Study.

The key output of the Waste Feasibility Study is to provide advice to Government in 2017-18 about options on how to progress its waste policy goal and objectives. These options will provide different pathways to transforming and transitioning the way waste is managed in the ACT.

As a part of the ACT Waste Feasibility Study and following extensive industry and community consultation, the ACT Government reviewed its waste regulatory framework and 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 was passed by the ACT Legislative Assembly on 4 August 2016 as the *Waste Management and Resource Recovery Act 2016*. The Act will commence on 1 July 2017.

The Act provides for modern, comprehensive and robust regulation across all commercial waste activity, rewarding responsible practices in waste collection, transportation, recovery and reuse and discouraging the disposal of waste into landfill. The regulatory framework established by the Act directly supports the achievement of the resource recovery objectives in the *ACT Waste Management Strategy 2011-2025.*

The Government has allocated $25.291 million in 2017-18 through to 2021 to expand the landfill cells at Mugga Lane Resource Management Centre. These works will continue the provision of the ACT's landfill needs beyond 2020, when current capacity is expected to expire.

The Government will rehabilitate the West Belconnen Resource Management Centre before its closure and subsequent transfer to the Ginninderry development in 2020. The Government will also progressively rehabilitate landfill cells at the Mugga Lane Resource Management Centre which have reached maximum capacity. The rehabilitation of ACT landfills is a mandatory requirement under the *Environment Protection Act 1997*. Both projects will be delivered over four years, from 2017-18 through to 2020-21, at a total cost of $34.845 million.

Funding has been allocated over 2016-18 to pilot a green waste collection service in Kambah and Weston Creek with a take up rate of approximately 7,000 households as at April 2017.

The performance of the pilot will be evaluated with the learnings informing the roll out to the rest of Canberra, which is also currently funded.

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.

Through the public housing renewal program, the ACT Government is replacing 1,288 dwellings from multi-unit public housing complexes along Northbourne Avenue and in other areas of Canberra, the replacement properties are built to the same standard.

The Government has spent $30 million over the last ten years to improve the energy efficiency of public housing, with approximately 8,900 dwellings (around 75 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.

How is the Government reducing its own footprint?

The Government is committed to reducing its own energy and transport fuel use on the path to achieving zero net greenhouse gas emissions from operations by 2020. Formal energy/carbon budgets commenced 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 an annual carbon neutral leadership reporting obligation. Collectively, Directorates set a target to reduce electricity use by around 1 per cent (compared to 2015 electricity consumption).

Performance against energy targets is reported to the Head of Service on a quarterly basis. Reporting is underpinned by a comprehensive set of sustainability data captured in the Government's *Enterprise Sustainability Platform*.

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 2017, the CNGF has supported 24 projects with $13 million funding provided as loans. These projects allow government to use energy more wisely and reduce operating costs across a diverse range of public facilities.

Projects supported under the CNGF include upgrades to more efficient heating and cooling systems, lighting technology and water heaters across various Government schools, health and other public buildings, energy efficient heating at two hydrotherapy pools and the installation of a smart building management system at Erindale Educational and Recreation Complex and transitioning off gas to an electric heating and cooling system at the multipurpose North Building in Civic.

A key focus for 2017-18 is the implementation of outcomes of the review of the Carbon Neutral Government Framework, which was conducted in 2016-17.

Sustainability in Health

The ACT Health *Sustainability Strategy 2016-2020* and the *ACT Health Resource Management Plan 2016-2020,* reviewed in 2015-16, continute to provide guidance and influence service delivery. 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 2017 by the Health Infrastructure Services Branch.

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 16 electric vehicle charge stations at across 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 2016, ACT Health finalised the installation of photovoltaic (PV) solar panels (500KW) on the roof of the Southern Multi Storey Car Park (Canberra Hospital) and the LED replacement program for existing hospital infrastructure, with phase one of the LED component already completed. Phase 2 and Phase 3 are progressing.

- 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*, with 12 ACT public schools achieving five star accreditation.

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 school grounds;

- monitoring water usage and providing advice and assistance to schools to reduce water consumption as part of the Education Directorate's *Smart Meter Program*; and
- collecting accurate data for monitoring, reporting progress and the accreditation of schools.

LED lighting upgrades at 20 ACT public schools will be completed in 2016-17 utilising funds from the Carbon Neutral Government Fund (CNGF).

A major upgrade of the Building Management System at Erindale College and Active Leisure Centre will be commenced and completed in 2017-18 with funding sourced through the CNGF.

The implementation of environmental and sustainable design principles in landscaping will continue to be expanded in 2017-18, focusing on outdoor learning areas. These design principles increase infiltration into the subsoil, improve water quality and the microclimate, and encourage biodiversity.

ACT public schools will be supported in the identification of opportunities to re-invest their Feed-in-Tariff income 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 schools, improvements will be made to cycle facilities at four ACT public schools.

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

Additional activities in 2017-18 will include:

- a roofing upgrade at Mt Stromlo High school will include installation of substantial insulation to improve thermal comfort;
- commencement of a program to install high efficiency boilers in schools;
- progressive upgrade of utility meters at schools;
- continuation of the program to replace diesel fleet vehicles with hybrid vehicles; and
- commence a program to install ceiling fans in all remaining classrooms

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. Since 2011, JACS has undertaken a range of energy efficiency works to implement ESD measures across the property portfolio of the Directorate. To date this initiative has provided:

- targeted energy audits and energy efficiency projects of high energy consumption properties, including the Alexander Maconochie Centre;
- upgrades to building management systems, heating ventilation and air conditioning systems, and addressing power correction factors at high energy use sites;
- continual upgrades to energy efficient lighting and other lighting systems across owned and leased sites, including the Alexander Maconochie Centre, and the ACT Emergency Service Agency Headquarters;
- installation and expansion of solar panels and solar hot water systems at selected sites, including the Forensic Medicine Centre, South Tuggeranong Fire & Rescue Station and Ainslie Fire & Rescue Station; and
- implementation of a pilot project to achieve carbon neutrality at the Ainslie Fire & Rescue Station.

Major refurbishment works, such as the recent adaptive reuse of Greenway Ambulance Station, the new Aranda co-located Ambulance and Fire and Rescue Station and the ongoing works in the Court Precinct 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 recycling, to lower waste to landfill and increase knowledge on resource use.

A staff sustainability survey was conducted in 2011 which identified an array of attitudes and ideas related to improving workplace sustainability. The survey along with the subsequent development of strategic sustainability objectives in 2016 have enabled the directorate to use and implement sustainability tools and programs to influence positive behavioural changes. In addition, training and information sessions are provided in sustainability leadership for JACS Business Unit executives and Sustainability Committee members to ensure sustainability outcomes are embedded into everyday business.

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) by:

- continuing to encourage staff to adapt to energy saving work practices;
- continuing the Actsmart Office Recycling Program. CSD will continue rolling out the program and work towards Actsmart accreditation at all sites;
- LED lighting upgrades, these are complete for Bimberi Youth Justice Centre. Based on figures calculated in 2014 this should reduce costs by 33 per cent;
- solar panels with be installed at the Gungahlin and Tuggeranong Child and Family Centres which will reduce power costs and be eligible for rebates; and
- West Belconnen Child and Family Centre solar panels and a wind turbine is continuing to generate electricity returning power to the grid.

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

- reduction of vehicle fleet numbers from 139 to 110 vehicles, this is due in part to Disability ACT transitioning to the National Disability Insurance Scheme and the tracking of vehicle utilisation;
- CSD currently has two Nissan Leaf electric vehicles, which produces zero CO2 tailpipe emissions as they are 100 per cent electric; with two electric vehicle charge stations at the 11 Moore Street basement; and three Toyota Corolla, and two Toyota Camry Hybrids (Petrol/Electric). CSD also continues to implement strategies in support of Transport for Canberra – Transport for a Sustainable City 2012 – 2031;
- implemented in-house trials of Smaller vehicles i.e. Toyota Yaris, Kia Rio which provide greater fuel economy and low exhaust emissions in urban environments; Also by choosing these “small” vehicles they have a cheaper monthly rental; and

- making sure that the vehicles we are ordering have the Euro 5 air pollution standard vehicles into the fleet, with lower Tailpipe CO2 emissions.

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

In 2016-17 the Government undertook 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 approached 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. Three tenderers were selected to participate in an interactive tendering process, whilst undertaking a three-month audit of the streetlight network. An Energy Performance Contract is expected to be signed with the preferred tenderer in the second half of 2017.

The ACT Government owns approximately 80,000 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 2017-18

The 2017-18 Budget Capital Upgrades Program includes a number of programs aimed at improving energy efficiency and environmental wellbeing. These include:

- Water Demand Management;
- Rural Land Management Assets;
- stormwater;
- heating, ventilation and cooling systems within government buildings;
- street lighting; and
- buildings by the safe removal of 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.

Stemming from *AP2*, in 2014 the *Climate Change Community Engagement Strategy* was released to affirm the Government's commitment to effective engagement with the community. Actions under this commitment are continuing with an annual program of activities. Additionally, 2017 saw the creation of the Ministerially invited Sustainability Alliance, a selection of the Territory's leaders in business, professions and academia to advise the government on emerging policy matters.

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, this Council continues its community engagement activities and advice on mitigation and adaptation policy.

The Actsmart Sustainability web hub (Actsmart.act.gov.au) continues to be the entry point for members of the community 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).

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. The community gardens program has been extended into the 2017-18 financial year to enable the community to participate in achieving carbon neutrality.