

ACT Sustainable Energy Policy

Energy for a sustainable city

2011-2020



ACT
Government

Environment and
Sustainable Development

© Australian Capital Territory, Canberra 2011

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced without the written permission of the Environment and Sustainable Development Directorate, GPO Box 158, Canberra ACT 2601.

Published by the Environment and Sustainable Development Directorate.
Enquiries: Canberra Connect 13 22 81.

Website: www.environment.act.gov.au

Printed on recycled paper

MINISTER’S INTRODUCTION	1
SUMMARY OF MEASURES	3
A SUSTAINABLE ENERGY POLICY	5
The need for a Sustainable Energy Policy	5
The purpose of this Policy	5
Features of the ACT energy market	6
Regulatory environment	7
The national policy context	9
How does this Policy fit with the ACT Government’s other policies?	9
GREENHOUSE GAS AND ENERGY TARGETS	10
The ACT’s emissions profile	10
Emission reduction targets	10
Clean energy and energy intensity targets	11
OUTCOME ONE: RELIABLE AND AFFORDABLE ENERGY	12
The national policy context	12
Augmenting existing energy network infrastructure	13
Emergency management and business continuity planning	13
Distributed generation	14
Increasing electricity customer choices	14
National Energy Customer Framework	14
Support for low-income households	15
Smart meters, smart grids	15
OUTCOME TWO: SMARTER USE OF ENERGY	17
The national policy context	17
A target for non-renewable energy use	18
A new energy savings initiative	18
Improved building and planning regulations	19
Continued improvement in appliance and equipment energy efficiency	19
Government leading by example	21
OUTCOME THREE: CLEANER ENERGY	22
The national policy context	22
A renewable energy target	22
A price on carbon	23
GreenPower	23
Cogeneration and trigeneration	23
Large-scale, low-emission generation capacity	24
Encouraging solar generation	24
Integration of waste and energy policies	25
OUTCOME FOUR: GROWTH IN THE CLEAN ECONOMY	26
Support innovative local businesses	26
Skills for a clean economy	26
ACT Government’s clean technology business development strategy	27

ACRONYMS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
COAG	Council of Australian Governments
FiT	Feed-in Tariff
ICN	Industry Capability Network
ICRC	Independent Competition and Regulatory Commission
LRET	Large-scale Renewable Energy Target
MEPS	Minimum Energy Performance Standards
NECF	National Energy Customer Framework
NEM	National Electricity Market
NOSEC	National Oil Supplies Emergency Committee
SCER	Standing Council on Energy and Resources
SRES	Small-scale Renewable Energy Scheme
WEST	Water and Energy Savings in the Territory
YWCA	Young Women’s Country Association

MINISTER'S INTRODUCTION

As a community, the way we respond to the challenge of climate change will be a defining legacy of this generation.

Energy consumption is fundamental to our quality of life. Energy powers our homes and schools, heats and cools our workplaces and hospitals and transports us in cars, buses and planes.

However, the way we produce and consume energy now is unsustainable. There is credible science and observable evidence indicating that human-induced greenhouse gas emissions are polluting the earth's atmosphere and leading to dangerous and irreversible climate change. Burning fossil fuels is a major contributor to those climatic changes.

In response to the challenge that climate change poses, the ACT Government has committed the ACT to achieving a set of greenhouse gas emissions reductions targets leading to zero net greenhouse gas emissions by 2060. The measures to achieve this outcome will be guided by the overarching framework outlined in the 'Canberra Plan: Toward Our Second Century' and included in both this Sustainable Energy Policy and Action Plan 2 arising from Weathering the Change, the ACT's climate change strategy.

Delivering on our ambition for a carbon-neutral ACT is possible only with a sustainable energy policy. A progressive energy policy must provide for environmental and climate protection while ensuring sustainable prosperity, social equity and energy security. At the heart of this policy are two key elements: significantly increasing energy efficiency and greater use of renewable energy.

The ACT's sustainable energy policy integrates energy policy objectives of ensuring secure, reliable and affordable supplies of energy with our climate change objectives. The ACT will be innovating and leading by greening and developing the ACT's economy for a sustainable and climate-friendly future.

Importantly, this should be considered a living policy document. An iterative approach whereby energy efficiency measures are updated to reflect



the most recent developments in technologies and our understanding of the challenge is required to most effectively meet our targets. This includes developing and implementing measures within the context of the Commonwealth Government's response to climate change. In addition, the measures in this document and possible future measures need to be considered in the context of their relative cost effectiveness, as well as their social and economic impacts.

This Sustainable Energy Policy is built on the draft policy released in late 2009 and incorporates submissions received in response to the draft. The final policy reflects changes in the policy landscape since that time.

I would like to take this opportunity to thank all those who found the time to prepare submissions and attended the public forums. All the submissions and comments received on the draft policy were considered thoroughly and, where possible, addressed in this policy.

A handwritten signature in black ink, appearing to read 'Simon Corbell', written over a white background.

Simon Corbell MLA
Minister for the Environment and
Sustainable Development
September 2011



OUTCOME ONE: RELIABLE AND AFFORDABLE ENERGY

- Measure 1:** The ACT will continue to actively promote the development of national energy policy and market frameworks that integrate social, economic and environmental policy objectives and represent the interests of the Territory.
- Measure 2:** A second connection point at Williamsdale in the south of the ACT will increase the security of the ACT's connection to the National Electricity Market. The connection is under construction and will be completed as soon as practicable.
- Measure 3:** The ACT will consider the removal of the regulated electricity tariff and thereby encourage new and innovative pricing and service arrangements, where sufficient electricity retail competition exists and where this is demonstrated to be in the interests of the ACT community.
- Measure 4:** The ACT Government will implement the National Energy Customer Framework as one of the final steps in the national energy reform process agreed to by the Council of Australian Governments (COAG).
- Measure 5:** The ACT will seek to address the impact of rising energy prices on households through ongoing monitoring of the suitability of concession arrangements, indexing concession payments based on changes in the cost of living and by investing in energy efficiency measures that can reduce energy costs for low-income households.
- Measure 6:** The ACT Government will decide whether to fast-track the roll-out of smart meters based on a cost-benefit analysis and the outcomes of the current ActewAGL trial and research and analysis undertaken through the COAG Standing Council of Energy and Resources.

OUTCOME TWO: SMARTER USE OF ENERGY

- Measure 7:** The ACT will continue its policy of timely implementation of energy efficiency reforms arising from the National Partnership Agreement on Energy Efficiency, where they are suited to the ACT.
- Measure 8:** The ACT will establish a target for the per capita usage of non-renewable electricity.
- Measure 9:** The ACT will, subject to a regulatory impact assessment, establish a new ambitious energy savings initiative, funded by energy users, providing support to low-income households and stimulating the broad-scale energy efficiency improvements of homes and small businesses across the Territory.
- Measure 10:** The Government will seek further consolidation and integration of energy efficiency and social support programs across all Government agencies.
- Measure 11:** Building on our leadership to date, the ACT Government will continue to advocate for effective national standards for buildings and building services through various national forums including the Building Ministers' Forum and the COAG Standing Council on Energy and Resources in relation to the National Partnership Agreement of Energy Efficiency. The ACT Government will advance its building and planning policies in a manner consistent with its Sustainable Energy Policy objectives.
- Measure 12:** The ACT Government will continue to support the improvement of the energy performance of appliances and equipment through measures such as the Minimum Energy Performance Standards (MEPS) program and labelling requirements for electrical and gas appliances.
- Measure 13:** The new Transport for Canberra policy will include policy measures and actions to reduce energy use in transport, based on reducing travel demand (e.g. encouraging walking, cycling, public transport, carpooling) and increasing vehicle efficiency (light and heavy vehicles).
- Measure 14:** The ACT Government will review the existing Green Vehicles duty scheme and consider how it would more effectively encourage less energy intensive vehicle purchases, and will explore new pricing and regulatory initiatives to encourage a transition to low emission vehicles in a transport pricing study in 2011-12.

Measure 15: The ACT Government will support the roll-out of electric vehicle support infrastructure through the provision of enabling assistance and will introduce electric vehicles into the ACT Government fleet in 2012-13.

Measure 16: The Government will undertake transport modelling each year to support the optimisation of transport infrastructure and undertake cost benefit analyses of supportive infrastructure for new developments across the city.

Measure 17: The Government will continue to work towards best practice in both energy management for its own operations and in its carbon neutrality objective through the development of an ACT Government Carbon Neutral Framework.

OUTCOME THREE: CLEANER ENERGY

Measure 18: The ACT will continue to actively promote the development of national energy policy and market frameworks that integrate social, economic and environmental policy objectives, including in support of renewable and low-carbon distributed energy technologies.

Measure 19: The ACT will continue to support a national carbon pricing regime as an economically efficient way of decarbonising our electricity supplies.

Measure 20: The ACT Government will continue to encourage the uptake of accredited GreenPower products within the Territory, and work towards enhancing the standing of GreenPower products through the National GreenPower Steering Committee.

Measure 21: A target for renewable energy usage has been set in legislation under the Climate Change and Greenhouse Gas Reduction Act 2010 and this target will be reviewed following the finalisation of Action Plan 2.

Measure 22: The ACT Government will assess the feasibility of including distributed generation technology in upcoming major developments such as the proposed upgrade of Canberra Hospital and the Braddon-Reid redevelopment. The ACT Government will propose specific measures to encourage a greater awareness and deployment of distributed generation options including cogeneration, trigeneration and large scale, low emissions generation technologies.

Measure 23: Legislation in support of a large-scale Feed-in Tariff (FIT) will be introduced in 2011. A first tranche of up to 40MW will be made available through an auction process to ensure the lowest possible prices.

Measure 24: Options to create energy from waste, including through trialling of energy from waste technologies will be investigated.

OUTCOME FOUR: GROWTH IN THE CLEAN ECONOMY

Measure 25: The ACT Government will continue to support capability development in ACT companies that are developing clean technology products or services and creating sustainable businesses.

Measure 26: The ACT will continue to support national approaches to skills development that reduce cost and delays in the transition to a clean economy and create new employment opportunities, especially building the skill base of workers to succeed in the clean technology economy.

Measure 27: The ACT Government is undertaking work to identify local business and research capability in the emerging clean technology sectors. This will be used to inform business policy and program design to support the development of future growth sectors in clean technology.

This chapter provides an overview of issues underpinning the need for a more sustainable way of producing and using energy and how they relate to the Sustainable Energy Policy.

The need for a Sustainable Energy Policy

Reliable and affordable energy will underpin our Territory's wellbeing and prosperity into the future. However, we are now aware of the way our patterns of energy usage are impacting on our environment. Human-induced climate change is one of the greatest and most urgent threats confronting humanity and action on climate change has profound implications for the way we use energy.

A modern energy policy needs to consider the social, economic and environmental dimensions of energy use in tandem.

Our Sustainable Energy Policy addresses all three of these dimensions.

- **Social**—substantial upwards pressures exist on energy pricing related primarily to exogenous factors such as higher commodity prices, required investments in generation and network infrastructure and environmental policies including a potential price on carbon. This Policy seeks to mitigate the potential higher energy costs by supporting competition in energy markets and investing in the energy efficiency of our homes and businesses.
- **Economic**—the ACT Government's commitment to a sustainable Canberra embraces a prosperous economy founded on secure and affordable energy supplies and a strong clean energy sector.
- **Environmental**—mitigating the damaging effects of greenhouse gas emissions, through its relationship to the ACT climate change strategy, is fundamental to this Policy.

Achieving sustainability in our energy systems requires coordinated action

across all levels of government (national, state and territory, and local) and all sectors of the ACT community including businesses, households and individuals.

An ACT Sustainable Energy Policy needs to be strongly integrated with, and complementary to, federal policies and considerate of international trends as well as responding to the needs and ideas of our community. Accordingly, the measures it proposes may be enhanced or amended as more specific details emerge leading up to implementation.

The role of markets as major drivers of investment in our community should be recognised and policy should, where practicable, seek to correct market failures rather than work at odds with prevailing market forces.

The purpose of this Policy

The purpose of this Sustainable Energy Policy is to establish an integrated policy framework for managing the social, economic and environment challenges faced by the Territory to 2020 as they relate to energy production and use.

The framework consists of four key targeted outcomes:

- **Outcome one:** secure and affordable energy
- **Outcome two:** smarter use of energy
- **Outcome three:** cleaner energy
- **Outcome four:** growth in the clean economy

Related to each outcome are a series of measures which will underpin the Government's energy policy work program to 2020. These actions are generally framed at a strategic level rather than detailing specific program measures. Further details of specific measures, as they relate to greenhouse gas emissions abatement, will be progressed through the development of the ACT's climate change strategy, Action Plan 2 Weathering the Change.

Features of the ACT energy market

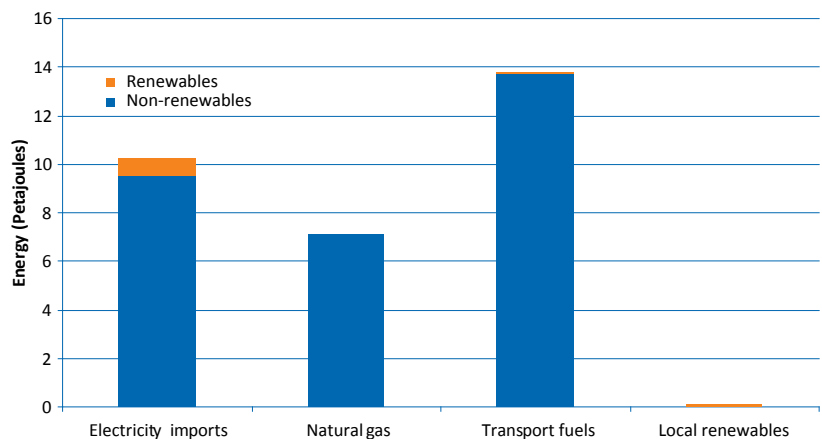
The ACT has no significant domestic electricity generation and imports all natural gas and transport fuels, the exceptions being some generation from mini-hydro, landfill methane gas and small-scale solar, which generate less than one per cent of electricity used in the Territory. The remainder of our electricity is sourced from the National Electricity Market from generators in other states.

The ACT as part of a broader Australian economy is, and will continue to be, dependent for some time to come on non-renewable fossil fuel sources such as coal, natural gas and petroleum. Over 90 per cent of the current national

electricity generation, for example, depends on non-renewable fossil fuel sources, with coal representing 76 per cent and natural gas 16 per cent.¹ While we will continue to rely on fossil fuel-based energy in the short to medium term, that dependence needs to be reduced as quickly as possible.

Australia's demand for fossil fuels for motor transport is also increasing. Ethanol and other alternative vehicle fuels including liquefied petroleum gas, compressed natural gas and emerging technologies such as hydrogen fuel cells will play an increasing role in meeting longer-term motor vehicle fuel needs.

FIGURE 1: MAJOR SOURCES OF ENERGY FOR THE ACT IN 2007–08



National renewables fraction used for 2007–08. Source: Energy in Australia 2010.

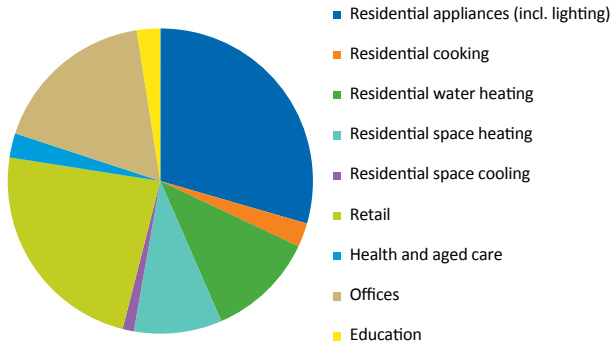
In 2008 emissions from transport-related activities accounted for 23 per cent of total ACT emissions but around 44 per cent of total energy imports. The use of ethanol, while increasing, accounted for less than 1 per cent of total transport fuels.

Transport energy use in the ACT is dominated by private passenger vehicle transport and energy usage has been relatively stable in recent years despite strong population growth. While substantial improvements have been achieved in vehicle engine efficiency in recent years, this has been partially offset by the trend to heavier vehicles.

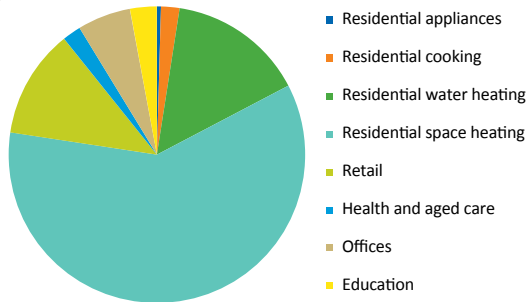
1 Energy in Australia 2010

FIGURE 2: BREAKDOWN OF THE MAJOR USES OF ELECTRICITY AND NATURAL GAS IN THE ACT

Estimated breakdown of electricity uses in 2010



Estimated breakdown of natural gas uses in 2010



Source: Pitt & Sherry 2011.

Figure 2 provides an estimated breakdown of electricity and natural gas usage in the ACT. This analysis shows that space heating is the major user of natural gas in the Territory. This is expected to grow as households move away from relatively expensive electric heating technologies. Residential water heating and retail applications such as restaurants and cafes are also large users and are expected to grow in the coming years.

Residential appliances have also been a major growth category of electricity usage in the ACT as more and more electronic goods are purchased for the home. Increases in the stock of electrical appliances and equipment are expected to more than offset the substantial gains in appliance efficiency expected over the period of this policy. Similarly, while commercial office buildings are expected to become more efficient, the growth in the size of the ACT’s business sector is likely to result in growth in

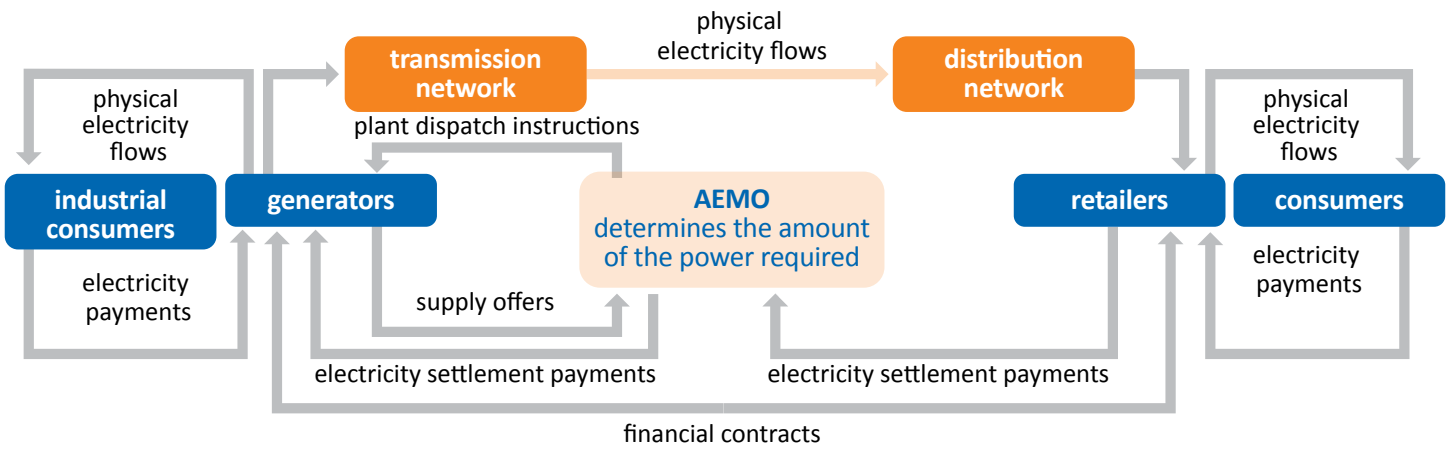
electricity consumption under business as usual conditions. While increases in efficiency can help curb the growth the energy consumption, meeting the ACT’s growing demand for energy will require the development of more sustainable energy sources.

Regulatory environment

The National Electricity Market (NEM), established in 1998, allows power flows across jurisdictional borders. The NEM operates as a wholesale spot market in which generators and retailers trade electricity through a pool managed by the Australian Energy Market Operator (AEMO).

The regulation of electricity and gas transmission networks in the NEM is the responsibility of the Australian Energy Regulator (AER). However, the ACT retains jurisdiction over technical and safety aspects of the network.

FIGURE 3: NATIONAL ELECTRICITY MARKET STRUCTURE²



ACT electricity and gas markets have been opened to competition as a result of the National Competition Policy reforms from the mid 1990s. As part of that set of reforms, the ACT established independent arrangements for the regulation of its electricity and gas markets through the *Independent Competition and Regulatory Commission Act 1997* and the *Utilities Act 2000*. Those statutory frameworks provided for licensing of utility service providers, pricing of utility services and consumer protection and technical and safety regulation.

Responsibility for electricity network regulation transferred to the AER in 2009 and a range of retail regulatory functions are likely to be moved to a new nationally consistent framework in 2012 through the adoption of the National Energy Customer Framework (NECF). The ACT Government is committed to a timely implementation of the NECF and will continue to work closely with our federal, state and territory counterparts to develop further reforms that will create a more seamless national market for electricity retailing. As a relatively small jurisdiction, the ACT stands to benefit from reforms that

reduce costs and regulatory barriers and that attract competitive participants in our electricity retail market.

Importantly, the new nationally consistent framework will continue to provide access to the Administrative and Consumer Appeals Tribunal (ACAT) for assistance in resolving complaints about utility services and for cases of financial hardship. Those consumer protection facilities will remain an ACT responsibility under the NECF.

In the transition to national regulation of energy markets, technical and safety regulation will remain with the Territory, as will consumer protection and licensing for networks.

No decision has been made to change current price regulation functions as currently administered by the Independent Competition and Regulatory Commission (ICRC). However, this will be the subject of active consideration during the term of this policy with the ACT Government to monitor market conditions with a view to the eventual removal of price controls where it can be demonstrated to be in the interests of the ACT community.

The national policy context

National responses are being developed to address our future energy needs including ongoing reform of our energy markets and support for the energy sector to transition to a low carbon economy. The principal forum for coordination of the energy policies at a national level is the Standing Council on Energy and Resources (formerly the Ministerial Council on Energy) under COAG.

Through COAG, the ACT is involved in partnerships to develop strategies and implementation plans for activities included in the National Partnership Agreement on Energy Efficiency under the National Framework for Energy Efficiency, and the National Energy Customer Framework.

New and existing policy measures in the ACT will be reassessed continually to ensure that they remain complementary to newly introduced national policies; for example, a national price on carbon. This requires a flexible and iterative approach that maintains the effort to meet the climate change challenge at the lowest economic and social cost.

Pricing carbon will provide incentives for cleaner energy and the smarter use of energy. A national carbon market will help direct abatement efforts towards the lowest-cost sources of abatement in the national economy. However, the ACT's own greenhouse gas reduction targets may require us to implement carbon reduction measures beyond that required nationally.

How does this Policy fit with the ACT Government's other policies?

This Policy is a major element of the ACT Government's climate change strategy Weathering the Change. Weathering the Change Action Plan 2 is currently under development and public consultation on proposed new measures will be conducted in 2011.

Along side Action Plan 2, the ACT is developing a planning strategy with the objective of providing a long term planning policy and goals to promote the orderly and sustainable development of the ACT, consistent with the social, environmental and economic aspirations of the people of the ACT.

The Government's new transport policy, Transport for Canberra, will set out a transport policy as we move to a more sustainable and energy efficient future. Building on the strong framework established by the 2004 Sustainable Transport Plan, Transport for Canberra will include mode share targets to shift 30 per cent of work trips to sustainable transport modes by 2026, supported by new strategies for public transport, active transport (walking and cycling), roads, freight, parking and fleet. The actions and policies in Transport for Canberra will aim to create a sustainable, integrated, safe, efficient and equitable transport system.

These strategies will align closely with the Sustainable Energy Policy and together they will provide a comprehensive and integrated framework for improving the sustainability and wellbeing of the ACT community.

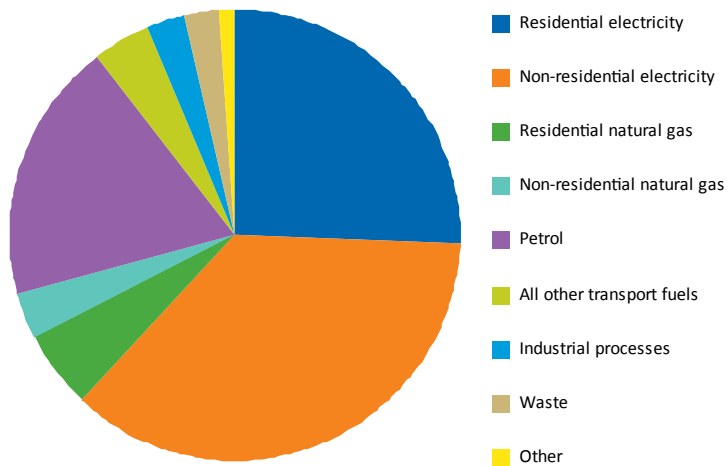
The ACT's emissions profile

Geographically, the ACT is Australia's smallest jurisdiction with a resident population of approximately 350,000 (1.6 per cent of Australia's population).

In 2008, the ACT produced 4.18 million tonnes of greenhouse gas emissions. Residential and non-residential electricity use accounted for 25 and

37 per cent respectively. Nineteen per cent of emissions came from petrol consumption with a further 4 per cent from other transport fuels. Residential and non-residential natural gas consumption accounted for around 5 and 3 per cent respectively. Only 6 per cent of emissions came from non-energy related sources such as industrial processes and waste.

FIGURE 4: THE ACT'S SOURCES OF GREENHOUSE GAS EMISSIONS



The ACT's per capita emissions are approximately 12 tonnes of carbon dioxide equivalent emissions. While this is lower than any other state or territory, this figure is increasing at a greater rate than national per capita emissions. Our low per capita emissions are due to the structure of our economy and the lack of large energy intensive industry in the ACT.

While overall ACT per capita emissions are relatively low, our residential sector emissions are relatively high on a per household basis. Our high household emissions are due in large part to higher heating requirements in the ACT compared to elsewhere in Australia.

Without action to reduce the ACT's emissions they will continue to increase, as a result, apart from anything else, of increases in the ACT's population.

Emission reduction targets

The argument for action to reduce greenhouse gas emissions is compelling. While action comes at a cost, the costs of delaying action are potentially much greater.

Combating climate change means a rapid reduction in emissions of greenhouse gases at an international level with all communities making an equitable contribution. Given our relatively high per capita emissions and high standard of living, there is a moral as well as an economic imperative for the ACT to respond to the challenge of climate change by acting swiftly and effectively.

Tackling climate change requires everyone to make an equitable contribution. ACT households are among the most emissions-intensive in the world, and this means that we need to work harder and faster than many other jurisdictions to reduce our emissions. It also means that we are more exposed to carbon constraints in the national economy as they impact upon future energy prices and energy security.

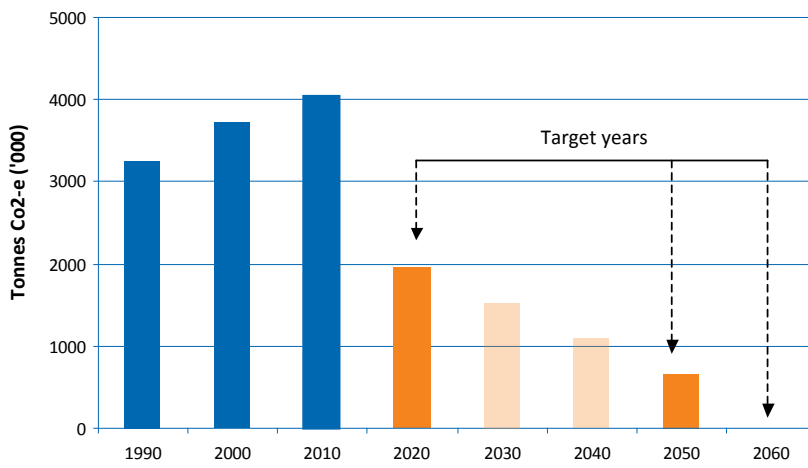
In 2010, the ACT Legislative Assembly passed the *Climate Change and Greenhouse Gas Reduction Act 2010* introducing some of the most ambitious greenhouse gas reductions targets in the world. The principal target

of the legislation is to achieve zero net emissions (carbon neutrality) by 2060. The following interim targets are also set:

- per capita emissions to peak by 2013;
- emissions reduced by 40 per cent from 1990 levels by 2020; and
- emissions reduced by 80 per cent from 1990 levels by 2050.

Figure 2 illustrates the challenge of achieving our emissions reduction target relative to historical emissions trends. The 2020 target is equivalent to an estimated 53 per cent reduction from 2010 levels. The life of this Policy therefore represents the major turnaround in the Territory's emissions trajectory.

FIGURE 5: THE ACT'S EMISSION REDUCTION TARGETS



In 2060, to become carbon neutral, these commitments will require the Territory to reduce its greenhouse gas emissions to the maximum extent possible and offset any residual emissions by undertaking or investing in accredited carbon offset projects.

Producing energy from burning fossil fuels is the major source of greenhouse gases in the ACT. Therefore, effective climate protection is impossible without a Sustainable Energy Policy that supports reduced emissions through cleaner energy generation and reduced energy usage.

The ACT is working with other jurisdictions across a broad range of areas to achieve national coordination in emissions reductions and energy policy initiatives. It is important to recognise that, while our efforts will build on effective action at the national level, participation in national activities will not be adequate in itself to meet the ACT's targets.

Clean energy and energy intensity targets

The *Climate Change and Greenhouse Gas Reduction Act 2010* also establishes a legislative basis for the development of targets for:

- the use or generation of renewable energy in the ACT; and
- per capita usage of non-renewable electricity.

Final targets related to per capita non-renewable energy usage will be informed by the Commonwealth Government's response to the Prime Minister's Task Group on Energy Efficiency Report, in which they proposed a national retailer obligation energy efficiency scheme. The ACT has established targets for the use of renewable energy of:

- at least 15 per cent by 2012; and
- at least 25 per cent by 2020.

Weathering the Change Action Plan 2 will provide an opportunity for further consultation with the community on the potential to expand upon clean energy and energy intensity targets.

The national policy context

The reliability and affordability of energy supplies has underpinned the growth of the Territory since its inception and is central to supporting the economic and social development of our community into the future.

In an Australian context, energy security is defined as the adequate, reliable and affordable supply of energy where:

- adequacy is the provision of sufficient energy to support economic and social activity;
- reliability is the provision of energy with minimal disruptions; and
- affordability is the provision of energy at a price which does not adversely impact on the competitiveness of the economy and which supports continued investment in the energy sector.

Affordability also relates to the impact of rising energy prices on the cost of living, and the standard of living for vulnerable and low-income households in our community.

While Australia is one of the world's great primary energy producers and exporters, the ACT does not itself have abundant low cost primary energy reserves. Virtually all of our energy needs are met through electricity, natural gas and transport fuel imports. Energy security in the Territory is therefore heavily influenced by external factors such as the operation of national electricity and gas markets and infrastructure. This is in turn influenced by a range of international factors such as international commodity prices and long-term supply constraints for petroleum and other fossil fuels.

The Commonwealth Government is developing an Energy White Paper, which will set out federal policies for ensuring the provision of clean, adequate, reliable and affordable energy supplies. This will

be informed by the National Energy Security Assessment, which identifies the current strategic energy security issues in the liquid fuels, natural gas and electricity sectors.

The ACT Government recognises the challenge of potential supply and demand imbalances in world oil production in the medium to long term, and the impact this may have on the price of fuels in the Territory and imported goods. The ACT Government is mindful of these factors in the development of transport and planning policies.

The ACT Government will play an active role in national energy policy processes consistent with our demonstrated commitment to the reform of the NEM.

The continual evolution and integration of Australia's energy markets will support security, reliability and affordability of energy in the ACT. The ACT will continue to promote and work towards the integration of Australia's energy markets and advocate for consumer and environmental concerns to be addressed through these processes.

The Standing Council on Energy and Resources (SCER) is the responsible body for the national oversight of the energy market governance and institutional arrangements. The ACT along with other jurisdictions is a member of SCER and has taken an active approach towards monitoring pricing trends in these markets. The SCER is considering a number of changes in the national regulatory regime to discourage any exercise of market power.

Within the ACT, the impact of policies on energy prices is also considered as part of the energy policy development processes. The development of a competitive market is an essential ingredient towards ensuring long term consumer benefits and sustainable

pricing. In 2011, the ACT Government recently decided to continue regulating electricity prices to protect consumers while considering how to ensure the development of a competitive market in the medium term.

Improving existing energy network infrastructure

The ACT has no significant transmission networks with the electricity market in the ACT focusing on the distribution and retail supply of electricity and gas.

Gas consumed in the ACT is produced in the Cooper Basin primarily located in South Australia and from Bass Strait in Victoria and is transported to the ACT by major transmission pipelines from Moomba and Dalton to the north of the ACT and from Longford via the east coast of Victoria and NSW.

Our transport fuels are imported from the major petroleum processing and distribution facilities in NSW and Victoria.

The ACT has a single secure connection to the NEM and has applied the National Electricity Law setting relevant reliability standards to ensure reliability for consumers. A second connection point at Williamsdale in the south of the ACT will increase the security of the ACT's connection to the NEM. This connection is under construction and will be completed as soon as practicable.

A fundamental part of a sustainable network is the effective regulation of its operation, maintenance and development with technical and safety standards. Technical regulation supports the implementation of new policies and technologies. It can also help to reduce costs to consumers from preventable major upgrades and repairs to utility infrastructure due to poor maintenance of the network or ongoing operational problems.

New generation technology and its integration into, and interaction with, the existing networks can present technical challenges and safety risks. Standards for sustainable energy installations will be incorporated into the regulatory framework so that high safety and reliability standards can continue to be enjoyed by owners and energy users in the ACT as new technology is implemented and improved.

Emergency management and business continuity planning

While effective regulatory oversight and management of the energy sector by governments has ensured that customers in Canberra have access to a robust energy market and enjoy reliable services of the highest standard, it is essential to plan for those rare unpredictable events that can disrupt our energy supplies on a large scale and cause hardship to the community.

The ACT Government continually develops and updates emergency plans to manage these events. These include developing, testing and simulating public communication strategies and emergency response actions in case of such events. The ACT Government also regularly participates in national emergency exercises involving other jurisdictions, energy suppliers and AEMO. These activities ensure that the ACT will be prepared if such an event ever occurs.

The ACT sits on the National Oil Supplies Emergency Committee (NOSEC), which provides an overall management response to a national liquid fuel emergency. NOSEC comprises representatives from the Commonwealth (chair), the states/territories and the downstream petroleum industry. The ACT Government is a member of NOSEC and participates in emergency simulations.

Distributed generation

Distributed generation, including embedded cogeneration and trigeneration, as well as the construction of large-scale generation capacity in the ACT, would contribute significantly to the diversity of, and to reducing the emissions intensity of, our power supplies.

The costs of renewable energy generation options are expected to continue to come down through to 2020 and beyond and this will greatly enhance our ability to balance our environmental, energy security and affordability objectives.

Options for promoting distributed energy are further explored in relation to Outcome three: cleaner energy.

Increasing electricity customer choices

Utility charges for energy and water services in the ACT are set by the ICRC on a periodic price path determination basis. In determining prices the ICRC considers a wide range of data and issues including the prudent and efficient costs of operating the business over the price period, required investments in distribution networks and external factors such as energy generation and transmission network pass-through costs.

While prices have trended upward in recent years, the ACT currently has among the lowest residential electricity prices in Australia. This is primarily a result of the ACT having a relatively young and well planned distribution network meaning we have not required the large network investments that have driven up prices in other jurisdictions.

In a review of the effectiveness of competition in the ACT retail electricity market released by the Australian Energy Market Commission (AEMC) in November 2010, the AEMC found that the relatively small size of the ACT retail electricity market meant that there were fewer customers over which to spread the fixed costs of entering the Territory's market compared to most other jurisdictions in Australia. The AEMC also

argued that there was a risk that new retailers would not capture a sufficient mass of new customers over which to spread their upfront fixed costs which gave an advantage to the incumbent retailer that enjoys significant economies of scale. As a consequence, the AEMC argued that the margins available to new retailers may not be the same as those earned by the incumbent retailer and that this was a major barrier to competition in the ACT.

The removal of regulated electricity tariffs and creating a more seamless national market could enhance national electricity retailers' ability and incentives to enter, and bring new products to the ACT market. New products may include time-of-use tariffs which allow consumers to make savings by shifting their consumption into off-peak periods, for example by choosing to run their washing machines and dishwashers overnight. More efficient price signals can lead to more informed consumption decisions.

Experience in the United Kingdom, where energy retailers are shifting from businesses simply trying to sell more energy into 'energy service businesses' that actively assist customers to reduce their energy consumption, provides a further indication of what is possible.

National Energy Customer Framework

The National Energy Customer Framework (NECF) is one of the final steps in the national energy reform process agreed to by COAG. The NECF involves implementing a nationally consistent framework for the regulation of the retail supply of electricity and gas.

The implementation of the NECF is aimed at promoting competition for the benefit of consumers by creating efficiencies and reducing the regulatory burden on energy businesses that operate across the various jurisdictions that make up the national energy markets. Consumers will benefit through enhanced consumer protection across a number of key areas, the increased availability of energy products and innovative pricing.

Support for low-income households

The ACT Government is conscious that there are members of the community who have difficulties meeting their energy bills. The ACT Government considers the best protection for consumers is ultimately the development of a competitive market as over the long-run this will help to drive prices down.

However, the ACT Government also accepts that there is a clear role to assist those in financial difficulty.

As market forces and Government policies shift energy generation from fossil-based to renewable sources of energy, the price of energy is expected to increase. Minimising the impact of these cost pressures is a critical element of the Sustainable Energy Policy, especially through measures that assist the community to reduce energy consumption and therefore energy bills.

A review of concession arrangements to ensure vulnerable customers are supported has been completed. The improved concession arrangements provide significant assistance for vulnerable customers. In the 2010-11 Budget, the ACT Government announced a significant increase in the Energy Concession available to consumers who hold a Centrelink Pensioner Concession Card, Centrelink Health Care Card or Veterans' Affairs Pensioner Concession Card. Further, the Budget provided for an automatic increase to the concession each year in line with CPI. The ACT is the only jurisdiction to apply an automatic increase mechanism to this type of payment. In 2010, there were approximately 22,000 households in the ACT receiving the Energy Concession.

Funding contained in the 2011-12 Budget will deliver \$8 million over four years to increase the energy efficiency of public housing dwellings across Canberra and ease cost-of-living pressures for tenants in recognition of the financial burden posed by utilities' costs.

Other sources of support for low-income households include the following:

- The ACT Government Concessions Portal is an internet-based, one-stop information service detailing concessions offered in the Territory. The ACT Government has also developed ACTSmart—a one-stop-shop for consumers to gain information and apply for ACT Government water and energy efficiency programs and rebates.
- The ACT Civil and Administrative Tribunal promotes the socially equitable supply of energy by dealing with hardship cases on a case-by-case basis.
- The Government also recently concluded a trial for the delivery of direct assistance to low-income households with energy efficient appliances delivered through community organisations such as the YWCA, the Salvation Army, St Vincent de Paul, Belconnen Community Services and Communities at Work. The findings of this trial are currently being considered for the development and implementation of such a scheme on a wider basis. In its 2011-12 Budget, the ACT Government significantly expanded the Outreach Program, to help low income households to improve their energy and water efficiency through education and retro-fit measures.

It is the intention of this Policy to enhance support for low-income households through both market reform and direct assistance.

Policies that will enhance energy efficiency for low income households are explored in relation to Outcome two: smarter use of energy.

Smart meters, smart grids

Smart meters are meters with added functionality that provide consumers with greater information about their energy consumption. Smart meters combined with in-house displays will allow consumers to monitor their energy usage in real time. Based on this additional information, consumers will

have a greater ability to make informed decisions regarding their energy use, and therefore potentially reduce their consumption.

Smart meters can also form part of broader smart grid and load management applications where utilities can provide financial incentives for customers to reduce electricity usage at times of peak demand so as to further enhance the reliability of electricity networks and reduce requirements for additional investments in network and generation infrastructure.

While the cost-effectiveness of smart meters is likely to improve over coming years as electricity costs increase, previous studies have indicated that it would not be cost-effective to retrofit smart meters to all households in the ACT. The ACT Government will decide whether to fast-track the roll-out of smart meters based on a cost-benefit analysis and the outcomes of the current ActewAGL trial and the results of studies undertaken for the Standing Council of Energy and Resources (SCER).

The ACT will also closely monitor developments in relation to smart grids, such as the outcomes of the national Smart Grid/Smart City project.

ACTIONS DELIVERING RELIABLE AND AFFORDABLE ENERGY

MEASURE 1:	The ACT will continue to actively promote the development of national energy policy and market frameworks that integrate social, economic and environmental policy objectives and represent the interests of the Territory.
MEASURE 2:	A second connection point at Williamsdale in the south of the ACT will increase the security of the ACT's connection to the National Electricity Market. The connection is under construction and will be completed as soon as practicable.
MEASURE 3:	The ACT will consider the removal of the regulated electricity tariff and thereby encourage new and innovative pricing and service arrangements, where sufficient electricity retail competition exists and where this is demonstrated to be in the interests of the ACT community.
MEASURE 4:	The ACT Government will implement the National Energy Customer Framework as one of the final steps in the national energy reform process agreed to by the Council of Australian Governments.
MEASURE 5:	The ACT will seek to address the impact of rising energy prices on households through ongoing monitoring of the suitability of concession arrangements, indexing concession payments based on changes in the cost of living and by investing in energy efficiency measures that can reduce energy costs for low-income households.
MEASURE 6:	The ACT Government will decide whether to fast-track the roll-out of smart meters based on a cost-benefit analysis and the outcomes of the current ActewAGL trial and research and analysis undertaken through the COAG Standing Council of Energy and Resources.

OUTCOME TWO: SMARTER USE OF ENERGY

There are significant and increasing opportunities for Canberrans to reduce their energy-related emissions and costs through improvements in energy efficiency and fuel switching.

Key energy efficiency opportunities in the Territory include improving the efficiency of water heating, lighting, refrigeration, space heating and cooling, ventilation improvements and standby power savings. Switching from electricity to gas for space and water heating can result in significant emissions and cost savings.

Many energy efficiency measures are cost-effective in their own right, although up-front costs can be a deterrent. In addition to the above 'technology solutions', there are significant opportunities through behavioural change such as switching off or avoiding the use of appliances when they are not needed.

Reduced demand for energy as a result of efficiency improvements will improve the reliability of networks through reduced peak loads and potentially lower energy supply costs by deferring the need for new investment in networks and generation capacity.

Energy efficiency will not only reduce energy consumption, and thereby offset potential increases in customer bills, but it can also create clean economy job opportunities for those involved in delivering required energy efficiency services.

The national policy context

Energy efficiency policies and programs are coordinated at a national level under the National Framework for Energy Efficiency.

In 2009, COAG signed the National Partnership Agreement on Energy Efficiency, which will deliver a nationally-consistent and cooperative approach to energy efficiency encompassing:

- assistance to households;
- assistance to business and industry;
- higher energy efficiency standards for homes and buildings;
- a nationally-consistent approach to expand and strengthen energy efficiency standards for appliances and equipment;
- addressing potential regulatory impediments to the take up of innovative demand side initiatives and smart grid technologies;
- governments improving the energy efficiency of their own operations; and
- vehicle efficiency measures, such as CO² emission standards.

The ACT will continue its policy of timely implementation of energy efficiency reforms arising from the National Partnership Agreement on Energy Efficiency. Subject to cost benefit analysis and an assessment of their suitability to the ACT's regulatory and policy settings.

The 2010 Prime Minister's Task Group on Energy Efficiency recommended a range of new initiatives to stimulate a step change in Australia's energy efficiency improvement. The Commonwealth's response to the Task Group's recommendations will provide important context for ACT energy efficiency initiatives over the term of this Policy.

To facilitate increased efficiency in office buildings across the Territory the ACT Government is participating in the National Green Leasing Policy. This is a COAG initiative that aims to increase energy efficiency in commercial buildings by establishing minimum standards for offices leased to Australian Governments from the private sector.

In addition, the ACT Government is actively involved in the development of the National Framework for Sustainable Government Office Buildings. The Framework establishes a range of initiatives that the Australian, state and territory governments will pursue to drive a national approach to improving the sustainability of office buildings and the built environment.

A target for non-renewable energy use

The Prime Minister's Task Group on Energy Efficiency proposed a national target for energy efficiency. The Task Group's report notes that energy efficiency targets provide an overarching vision for energy efficiency by aggregating the expected outcomes of individual energy efficiency policies into a single, easily communicated target.

The ACT's *Climate Change and Greenhouse Gas Reduction Act 2010* establishes a legislative basis for the development of a target for per capita usage of non-renewable electricity. A final target for non-renewable energy usage will be developed following the finalisation of Action Plan 2.

The ACT will work to support the development of national energy efficiency improvement measures while recognising that energy efficiency targets for the ACT may be more ambitious, reflecting the affordability objectives of this Policy and the Territory's greenhouse gas reduction targets of a 40 per cent from 1990 levels by 2020, 80 per cent from 1990 levels by 2050 and carbon neutrality by 2060.

A new energy savings initiative

The ACT Government will, subject to a regulatory impact assessment, implement an ambitious new initiative to require energy businesses to pursue energy efficiency measures in the ACT. The scheme will be similar to those successfully demonstrated in the United Kingdom, South Australia, Victoria and NSW, and that under consideration by the Commonwealth Government.

Such schemes work by placing an obligation on energy businesses to assist consumers in achieving reductions in emissions through undertaking approved measures. Approved measures may include activities such as replacing inefficient appliances such as old fridges, improving insulation, investing in technologies such as solar hot water systems and more energy efficient lighting.

These energy savings schemes recognise that:

- energy efficiency is one of the cheapest ways of reducing greenhouse gas emissions;
- energy efficiency helps insulate consumers from future energy price rises;
- energy efficiency can result in 'public goods' such as reduced financial stress for low-income households, increased business productivity, and reduced pressure on capacity-constrained energy distribution networks;
- energy efficiency creates clean economy jobs; and
- a range of well-understood market failures exist that limit the uptake of cost-effective energy efficiency opportunities, even in a carbon-constrained economy.

The 2010 Prime Minister's Task Group on Energy Efficiency Report proposed a national energy savings initiative and noted that this could form the basis for a step change in Australia's energy efficiency improvement. It would aim to replace the different existing and planned state-based schemes. The ACT will work closely with the other Australian governments to develop a nationally consistent scheme that also recognises the different objectives and priorities of each jurisdiction.

The ACT energy savings initiative will include a strong focus on providing support to low-income households although this will not preclude all household consumers accessing the scheme. The scheme will be funded by energy users and will stimulate the

broad-scale energy efficiency retrofitting of homes and small to medium sized businesses across the Territory.

A further focus of the initiative will be to provide effective integrated assistance to households and small businesses struggling with expected rises in energy costs. The ACT's energy savings initiative will provide an opportunity to bring together a number of sustainability support schemes, that include energy efficiency initiatives, under a common framework. These programs include:

- Home Energy Advice Team (HEAT);
- HEAT energy audits and rebates;
- Water and Energy Savings in the Territory (WEST);
- WEST Plus;
- Outreach programs; and
- CitySwitch Green Office.

Over time, the Government will further consolidate and integrate energy efficiency and social support programs across all Government agencies.

It is envisaged that the scheme will commence in 2012 and be reviewed in 2014 with regard to complementarity and integration with national or other jurisdictional schemes.

Improved building and planning regulations

Building and planning regulations have a central role to play helping the Territory meet its medium to long term climate change and energy reduction objectives.

Sustainable building design practices will make a large contribution to reduced life cycle energy consumption and emissions and building operating costs. Sustainable planning will contribute to a more compact city with a reduced reliance on fossil fuels used in passenger transportation. Improved building and planning regulations and initiatives that provide opportunities for cost-effective emissions reductions will continue to be implemented.

The ACT was the first jurisdiction to implement new energy efficiency standards for all buildings, including a minimum performance standard of the equivalent of a 6 star energy rating for new detached dwellings. The ACT also has a long running program for the mandatory disclosure of residential energy efficiency ratings at the time of sale. Other jurisdictions are currently in various stages of implementing these reforms. Moreover, the ACT Government will also continue to work with industry to encourage designers and practitioners in the construction sector to exceed minimum sustainability standards.

Building on our leadership to date, the ACT Government will continue to advocate for effective national standards for buildings and building services through various national forums including the Building Ministers' Forum and the COAG Select Council on Climate Change in relation to the National Partnership Agreement of Energy Efficiency. This includes standards for renovations and alterations to buildings as well as those focusing on new buildings. The ACT Government will advance its building and planning policies in a manner consistent with our Weathering the Change strategy and Sustainable Energy Policy objectives.

Continued improvement in appliance and equipment energy efficiency

The ACT will continue to support the improvement of the energy performance of appliances and equipment through measures such as the Minimum Energy Performance Standards (MEPS) program and labelling requirements for electrical and gas appliances. Over time MEPS will expand to cover a greater range of equipment and appliances as well as those using non-traditional fuel sources. This will limit the availability of inefficient products for sale in the Territory. Minimum standards will also be complemented by standards to improve the efficiency of appliances installed in certain situations such as new or renovated buildings or replacement appliances.

Transport for a low-carbon city

The new Transport for Canberra policy—an updated and replacement for the 2004 Sustainable Transport Plan—will include policy measures and actions to reduce energy use in transport, based on reducing travel demand (e.g. encouraging walking, cycling, public transport, carpooling) and increasing vehicle efficiency (light and heavy vehicles). Transport for Canberra will align with other Government policies on land use and the environment, and will be released by the fourth quarter of 2011.

Transport for Canberra will include updated targets to ensure that at least 30 per cent of journeys to work will be made using sustainable modes by 2026 (public transport, cycling or walking), reducing the ACT's reliance on fossil fuels and decreasing transport emissions. It will include demand management measures to encourage more efficient travel, supportive land use planning and infrastructure to make the sustainable and healthy travel options the easy choices, and measures to make the vehicles we drive more efficient.

Low-emission vehicles

The ACT Government will actively support the shift to low-emission (and eventually zero emission) vehicles, and has already introduced Australia's first Green Vehicles stamp duty scheme based on vehicle environmental performance. In 2011-12, the ACT Government will review the existing Green Vehicles scheme to assess how it could be strengthened to encourage people to choose the cleanest, most efficient vehicle that meets their needs. New pricing and regulatory initiatives will also be explored through a Transport Pricing study in 2011-12. Opportunities for reduced fuel consumption from 'eco-driving' will also be investigated.

Electric vehicles

The ACT, along with Copenhagen and Tel Aviv, has been selected as a site for the roll-out of electric vehicle support infrastructure. The infrastructure will include battery change-over facilities as well as plug-in arrangements. The roll-out of this infrastructure, with the ACT Government providing planning and regulatory assistance, will see the ACT at the forefront of the global shift to electric vehicles. Further, the ACT Government will introduce electric vehicles into the ACT fleet from 2012. All electric vehicles used by the ACT Government will be powered by 100 per cent GreenPower.

Travel demand management

Both 'push' and 'pull' measures can be used to encourage more people to use public transport, cycling and walking in Canberra. Through the Transport for Canberra policy, the Government will continue to implement travel demand management in the coming years, including:

- constructing transit priority lanes, new bus stations and stops, and investigating mass rapid transit options like light rail for the Gungahlin to City corridor (including Northbourne Avenue);
- expanding the network of park and ride and bike and ride facilities;
- parking zone and pricing adjustments; and
- improving transport information, marketing and promotion, including Real Time Passenger Information, new smartcard ticketing, and online trip planning tools.

Transport and land-use integration

Integration of transport planning at the beginning of the planning process allows for a lower carbon emission urban form to be designed, maximising access for pedestrians, cyclists and public transport and encouraging these transport modes from the beginning. The Government is

also committed to a more compact city form, which will be further highlighted in the new ACT Planning Strategy being developed alongside Transport for Canberra.

The land release program (commercial, industrial and residential) over the period of this Policy will potentially have a significant impact on the transport network. The Government will undertake transport modelling each year to support optimisation of transport infrastructure and undertake cost-benefit analyses of supportive infrastructure for new developments across the city.

Government leading by example

The National Partnership Agreement on Energy Efficiency commits Commonwealth, state and territory governments to demonstrating clear leadership through the energy efficiency of their own operations.

The ACT Government will lead by example by achieving carbon neutrality in its own operations by 2020.

The ACT Government currently sources around 32 per cent of its electricity needs from renewable sources.

The ACT Government has also been working towards upgrading the energy performance of its offices, schools, public housing and street lighting and is assessing the construction of a benchmark green office building for its own use.

The ACT Government is developing strategies and actions to improve energy efficiency and increase use of renewable energy across ACT Government operations and services, from office-based policy and program delivery, to schools and hospitals through to municipal services such as street lighting and waste collection.

The Government will continue to work towards best practice in both energy management for its own operations to reduce its operational costs and in its carbon neutrality objective through the development of an ACT Government Carbon Neutral Framework.

MEASURES DELIVERING THE SMARTER USE OF ENERGY

MEASURE 7:	The ACT will continue its policy of timely implementation of energy efficiency reforms arising from the National Partnership Agreement on Energy Efficiency, where they are suited to the ACT. The ACT will also consider exceeding the minimum standards and other goals set through national process where appropriate.
MEASURE 8:	The ACT will establish a target for the per capita usage of non-renewable electricity.
MEASURE 9:	The ACT will, subject to a regulatory impact assessment, establish a new ambitious energy savings initiative, funded by energy users, providing support to low-income households and stimulating the broad-scale energy efficiency improvements of homes and small businesses across the Territory.
MEASURE 10:	The Government will seek further consolidation and integration of energy efficiency and social support programs across all Government agencies.
MEASURE 11:	Building on our leadership to date, the ACT Government will continue to advocate for effective national standards for buildings and building services through various national forums including the Building Ministers' Forum and the COAG Standing Council on Energy and Resources in relation to the National Partnership Agreement of Energy Efficiency. The ACT Government will advance its building and planning policies in a manner consistent with its Sustainable Energy Policy objectives.
MEASURE 12:	The ACT Government will continue to support the improvement of the energy performance of appliances and equipment through measures such as the Minimum Energy Performance Standards (MEPS) program and labelling requirements for electrical and gas appliances.
MEASURE 13:	The new Transport for Canberra policy will include policy measures and actions to reduce energy use in transport, based on reducing travel demand (e.g. encouraging walking, cycling, public transport, carpooling) and increasing vehicle efficiency (light and heavy vehicles).
MEASURE 14:	The ACT Government will review the existing Green Vehicles duty scheme and consider how it would more effectively encourage less energy intensive vehicle purchases, and will explore new pricing and regulatory initiatives to encourage a transition to low emission vehicles in a transport pricing study in 2011–12.
MEASURE 15:	The ACT Government will support the roll-out of electric vehicle support infrastructure through the provision of enabling assistance and will introduce electric vehicles into the ACT Government fleet in 2012-13.
MEASURE 16:	The Government will undertake transport modelling each year to support the optimisation of transport infrastructure and undertake cost benefit analyses of supportive infrastructure for new developments across the city.
MEASURE 17:	The Government will continue to work towards best practice in both energy management for its own operations and in its carbon neutrality objective through the development of an ACT Government Carbon Neutral Framework.

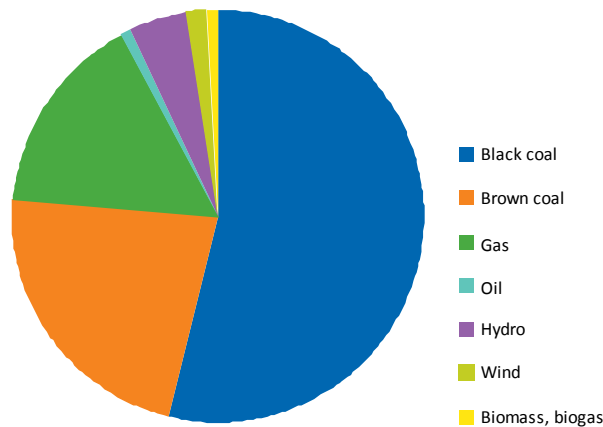
OUTCOME THREE: CLEANER ENERGY

The national policy context

The ACT imports over 99 per cent of its electricity from NSW and the broader National Electricity Market (NEM). This electricity is primarily sourced from coal and gas thermal generators in NSW and Victoria.

Nationally, in 2007-08 only around 7 per cent of electricity generation came from renewable sources such as hydro, wind and biomass. The contribution of renewable energy will increase nationally as a result of the Commonwealth renewable energy targets as well as GreenPower purchases by households, governments and the business community.

FIGURE 6: AUSTRALIAN ELECTRICITY GENERATION BY FUEL, 2007-08³



The Commonwealth's Large-scale Renewable Energy Target (LRET) applies to commercial scale generation systems while the Small-scale Renewable Energy Scheme (SRES) supports smallscale systems such as roof-top photovoltaic units and solar water heaters. For the ACT, these measures will:

- provide financial support for new renewable energy generation projects;
- increase energy prices as the additional costs associated with renewable energy are passed through to energy users; and
- reduce the emissions intensity of the electricity we import.

The ACT has opportunities to drive cleaner generation technology, such as wind and solar, through national energy market reforms as well as ACT-specific policies such as Feed-in Tariff schemes. Driving change through the national energy market reforms process is

a high priority for the ACT given that over 99 per cent of the ACT's electricity is imported from the NEM.

The ACT Minister for Energy is a member of the COAG Standing Council on Energy and Resources (formerly the Ministerial Council on Energy). Through this forum, the ACT will continue to actively promote the development of national energy policy and market frameworks that integrate social, economic and environmental policy objectives, including in support of renewable and low-carbon distributed energy technologies.

A renewable energy target

The ACT does not have substantial natural renewable energy resource advantages, such as wind, solar or geothermal resource availability, that would allow us to be marketcompetitive in large-scale renewable power generation in the national market. However, the ACT can support cost-effective renewable energy

projects through the purchase of renewable energy through the national GreenPower scheme and the deployment of smaller scale technologies such as roof-top solar.

Under the *Climate Change and Greenhouse Gas Reduction Act 2010* the ACT has established targets for renewable electricity usage in the Territory. Our renewable energy target provides a focus for policies that support renewable energy and reflects the important contribution that the increased use of renewable energy will make to our emission reduction targets.

The ACT's performance against our renewable energy targets will be monitored through the ACT Greenhouse Gas Inventory. The finalisation of Climate Change Action Plan 2 will provide an opportunity to consider an expansion to targets for renewable energy use in the Territory.

A price on carbon

A national price on carbon will drive down the emissions intensity of electricity imports by encouraging investment in new low carbon gas generation systems and reductions in the emissions from existing generation assets.

The ACT is supportive of and will continue to advocate for Commonwealth Government initiatives to put a price on carbon as an economically efficient way of promoting energy efficiency and decarbonising the NEM. The ACT Government will also advocate for the interests of low-income households in the ACT community to ensure adequate compensation is provided for resulting energy price impacts.

GreenPower

GreenPower is government-accredited, emissions-free renewable energy purchased by energy retailers from accredited renewable energy sources.

The ACT Government recognises GreenPower as a national standard for accrediting renewable energy products sold to Australian electricity customers.

Buying GreenPower is one of the most cost-effective ways of reducing emissions from electricity production. As of 1 April 2009, the first offer to any new or reconnecting ACT electricity customer must be an accredited GreenPower product. Customers can choose to accept, refuse, increase or decrease the GreenPower component ranging from 10 per cent to 100 per cent of their total electricity needs.

The ACT Government will continue to monitor and encourage the uptake of accredited GreenPower products within the Territory, and work towards enhancing the standing of GreenPower products through the National GreenPower Steering Committee.

Specific initiatives to stimulate the further uptake of GreenPower in the Territory will be investigated as part of the pathway to achieve the ACT's legislated greenhouse gas reduction targets.

Cogeneration and trigeneration

Distributed generation refers to electricity generated close to where it is used and connected directly to the distribution network. It has the potential to reduce costs associated with transmission including line losses and network investment. In addition, by increasing the utilisation of the primary energy source (eg, natural gas) through cogeneration (electricity and heat) and trigeneration (electricity, heat and cooling), it can reduce emissions and energy bills.

The ACT Government will assess the feasibility of including co/trigeneration technology in upcoming major developments such as the proposed upgrade of Canberra Hospital and the Braddon-Reid redevelopment.

These generation technologies are likely to be most applicable on larger scales (eg, hospitals, data centres, commercial buildings, apartment blocks and new suburb level developments). Integration into a new building allows for appropriate planning and avoids potentially significant costs associated with retrofitting.

A requirement that all major ACT residential and commercial development and construction projects include a detailed assessment of the benefits and viability of distributed generation options would increase the awareness of these generation technologies and the potential for their deployment in the ACT. Such a requirement will be considered as part of the Government's ongoing review of planning and environmental approval processes in the Territory. Barriers to the further uptake of distributed generation in private developments will also be investigated.

Greater deployment of distributed generation technologies will be an important contributor to achieving the ACT's legislated greenhouse gas reduction targets.

Large-scale, low-emission generation capacity

The ACT has the infrastructure to support gas-fired electricity generation, either on a large-scale or as small units distributed throughout Canberra. Gas-fired power stations produce considerably fewer emissions for the same amount of electricity generated than a traditional coal-fired power station. Gas-fired power stations currently also produce power at lower prices and in a more predictable and flexible manner than renewable energy sources such as solar or wind. Gas-fired power generation complements solar and wind generation capacity by acting as a back-up source of energy during times of low sunlight and wind.

Gas-fired power stations have an important transitional role to play in

Australia over the medium to long term as we move to less greenhouse-gas-intensive energy sources while ensuring our energy requirements are met. Life cycle emissions from gas-fired power stations may also reduce over coming years as natural gas is replaced with alternatives such as biogas.

Public consultation on Climate Change Action Plan 2 will provide an opportunity to engage with the community on the costs and benefits of low-emission generation technologies in the context of meeting the Territory's greenhouse gas reduction targets.

Encouraging solar generation

The ACT introduced the most generous Feed-in Tariff (FIT) scheme in Australia on 1 March 2009. The FIT was aimed at householders and small businesses and was available for solar and wind generation. Eligible generators received a premium tariff for all of the electricity produced.

The FIT increased the volume of renewable electricity in the network and therefore decreased emissions. The small renewable generators throughout the ACT are highly visible and raise awareness in the community of the need to switch to more renewable energy sources. The ACT Government is also extending the FIT scheme to larger users.

In February 2011, the ACT Government passed legislation with the following features:

- introduction and capping of a new mediumscale generation category for generators between 30kW and 200kW (capped at 15MW);
- capping of existing microgeneration category (household roof top) up to 30kW (capped at 15MW); and
- extension of eligibility to incorporated not-for-profit community groups.

The Micro and Medium Generator categories of the Scheme were filled and closed on 13 July 2011. However, further legislation establishing a large generator

category will be introduced in late 2011. The release of the first tranche of the large scale generation category is expected to occur in early 2012, under which up to 40MW will be made available through an auction process to ensure the lowest possible prices.

Integration of waste and energy policies

Modern technologies offer possibilities to transform municipal wastes into renewable electricity.

This is already occurring at the Mugga Lane Resource Management Centre and Belconnen where methane is captured and currently used to generate around 24,000-28,000MWh of electricity each year. This reduces the ACT's overall emissions by converting the methane to electricity and displacing other forms of non-renewable power

generation. Generation capacity is expected to reduce over time in line with natural reductions in methane production at these sites.

The draft Sustainable Waste Strategy 2010-25 was released in December 2010 and provides a pathway to recover organic wastes currently sent to landfill, thereby largely eliminating emissions from landfill. By recovering and recycling wastes the strategy reduces the energy use and emissions associated with the production of the material in the waste stream, such as glass, metals and plastics.

Where it provides the highest value use, a portion of the sorted wastes may be diverted to a proposed energy-from-waste facility to generate electricity, heating or cooling as well as producing valuable by-products such as biochar.

MEASURES DELIVERING CLEANER ENERGY

MEASURE 18:	The ACT will continue to actively promote the development of national energy policy and market frameworks that integrate social, economic and environmental policy objectives, including in support of renewable and low-carbon distributed energy technologies.
MEASURE 19:	The ACT will continue to support a national carbon pricing regime as an economically efficient way of decarbonising our electricity supplies.
MEASURE 20:	The ACT Government will continue to encourage the uptake of accredited GreenPower products within the Territory, and work towards enhancing the standing of GreenPower products through the National GreenPower Steering Committee.
MEASURE 21:	A target for renewable energy usage has been set in legislation under the Climate Change and Greenhouse Gas Reduction Act 2010 and this target will be reviewed following the finalisation of Action Plan 2.
MEASURE 22:	The ACT Government will assess the feasibility of including distributed generation technology in upcoming major developments such as the proposed upgrade of Canberra Hospital and the Braddon-Reid redevelopment. The ACT Government will propose specific measures to encourage a greater awareness and deployment of distributed generation options including cogeneration, trigeneration and large scale, low emissions generation technologies.
MEASURE 23:	Legislation in support of a large-scale FiT will be introduced in 2011. A first tranche of up to 40MW will be made available through an auction process to ensure the lowest possible prices.
MEASURE 24:	Options to create energy from waste, including through trialling of energy from waste technologies will be investigated.

Support innovative local businesses

Climate change and an increased focus on renewable, energy-efficient and low-emission energy technologies will create significant opportunities for the development of new businesses and industries and associated employment prospects within the Territory and surrounding region.

A clean economy, or low-carbon economy, can be defined as one in which jobs are characterised as being:

- entirely new and created in response to an identifiable new clean (ie, low-carbon) technology initiative; or
- an infusion of clean practices within existing jobs (changing the way we do things to make them more sustainable).

The success of the ACT Government's FIT contributed to the creation of an estimated 200 new jobs such as solar panel installers. Ensuring the long-term sustainability of these and other clean economy industries will support the growth of green businesses in the ACT and their capacity to venture into other markets.

The ACT Government, through the Economic Development Directorate, delivers a range of business programs to support the growth and development of local companies. These programs have a focus on the small and microbusiness sectors operating in the Territory.

The implementation of a broad-based ACT energy savings initiative will build on existing capacities in energy, consulting and trades sectors and support the development of enhanced skills for a new workforce. Along with an infusion of capital supporting these activities, this initiative offers the opportunity for Canberra to create a new sustainable industry delivering a broad range of social, economic and environmental benefits to the community and providing ongoing support through our transition to a low-carbon economy.

The ACT Government will continue to support business development opportunities for locally-based clean economy businesses.

This support will include:

- development and promotion of local companies and local research capability;
- identifying opportunities for collaboration between local companies and local research organisations;
- leveraging Australian Government 'clean tech' industry development programs to benefit ACT companies; and
- harnessing skills development programs to support clean technology businesses.

The key objective is to provide a business program environment which will allow clean technology businesses to access general advisory support and assistance and maximise growth opportunities.

Skills for a clean economy

Progress on clean energy and energy efficiency can be hampered by capacity constraints and skill gaps in the economy. This is recognised through the development of two COAG mechanisms:

- The Green Skills Agreement, which sets out the strategic framework for building the capacity of the vocational education and training and higher education sectors to meet the needs of Australian businesses in the transition to a low-carbon economy; and
- The National Partnership Agreement on Energy Efficiency, which commits all jurisdictions to supporting the development of skills and education programs to ensure that Australia's workforce is trained and fully engaged to achieve Australia's energy efficiency potential.

The ACT will continue to support national and local approaches to skills development that reduce cost and delays in the transition to a clean economy, create new employment opportunities, and enhance the skill base of workers to provide services that support better energy performance. This will build on strong foundations that ACT training providers have laid in training for new skills and technologies.

The ACT Government also recognises that many of the skills needed for the clean economy will be found in existing trades and professions such as those in the construction, electrical and gas-fitting fields. It is therefore important that skills for the clean economy are included in standard training and regulatory frameworks for all workers in relevant occupations.

ACT Government’s clean technology business development strategy

The ACT Government in May 2011 commissioned ACIL Tasman to survey the ACT’s clean technology industry and the ACT research capability that supports that industry. The information collected provides the ACT Government with a better understanding of current industry capabilities and the existing R&D landscape for clean technology in the ACT. This will in turn help guide the development of the Government’s

Clean Technology Business Development Strategy. The Strategy and its associated initiatives are intended to form a part of the ACT Government’s overarching sustainability framework policy, Weathering the Change—ACT climate change strategy.

ACIL Tasman interviewed 20 ACT clean technology organisations, including large, small and medium sized companies and five research organisations. The information gained through these interviews has been used to prepare an up-to-date directory of clean technology capability in the ACT, both in the industry and research sectors.

The strong research and educational capacity in clean technology located in the ACT positions the Territory well to provide the services that help meet the research, education and training needs of not only the ACT but also the region and beyond.

The Economic Development Directorate also delivers the Industry Capability Network (ICN) in the ACT linking projects and opportunities to capable suppliers. The ICN has dedicated resources to the clean technology sector and administers a clean technology directory that lists projects and opportunities within the sector.

MEASURES DELIVERING GROWTH IN THE CLEAN ECONOMY

MEASURE 25:	The ACT Government will continue to support capability development in ACT companies that are developing clean technology products or services and creating sustainable businesses.
MEASURE 26:	The ACT will continue to support national approaches to skills development that reduce cost and delays in the transition to a clean economy and create new employment opportunities, especially building the skill base of workers to succeed in the clean technology economy.
MEASURE 27:	The ACT Government is undertaking work to identify local business and research capability in the emerging clean technology sectors. This will be used to inform business policy and program design to support the development of future growth sectors in clean technology.

