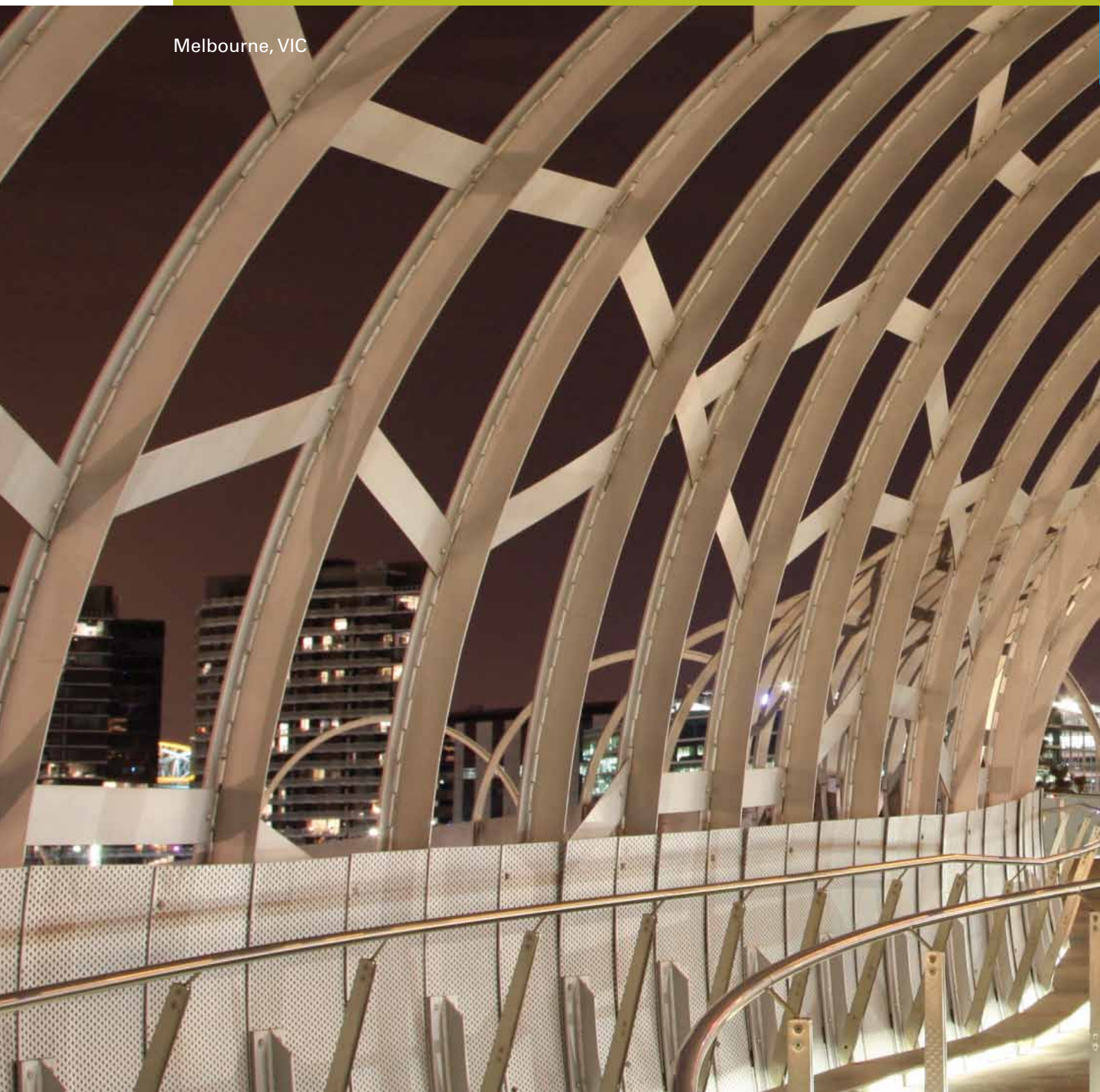


Melbourne, VIC



Chapter 4

Sustainability



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Sustainability

There is a significant opportunity for a truly forward-looking National Urban Policy to address links between consumption patterns and economic growth, in tandem with increasing capacity for enhanced performance and regeneration of natural resources, in future urban sustainability solutions—rather than merely aiming towards a damage-limitation model of reduced consumption of land and natural resources.

Australian Institute of Landscape Architects

Sustainable development refers to ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Brundtland, 1987). Recent trends in population growth and urban development are intensifying the challenges facing our communities and the pressures on our built and natural environments. Our natural environment provides many benefits and services which are unable to be replicated or that would be very costly to produce ourselves. As our cities grow, we must keep these benefits in mind and ensure that we do not impose unnecessary costs on future generations.

Demand for essential goods and services such as water, energy and land continues to increase whilst supply comes under mounting pressure. At the same time, waste generation in Australia continues to grow. Road transport has been the main source of transport emissions and accounted for 86.3 per cent (69.2 Mt) of 2008 transport emissions. Emissions from road transport increased by 27.5 per cent (14.9 Mt) between 1990 and 2008. Passenger cars were the largest source of transport related emissions contributing 60 per cent of emissions from road transport (41.6 Mt) and increased by 18.2 per cent (6.4 Mt) between 1990 and 2008².

All capital cities have increased their mode share of travel by public transport in the past five years. Many cities, like Melbourne, have set targets of increased mode share to public transport of up to 20 per cent by 2020 and have demonstrated that this is achievable with an increase of public transport patronage from 9 per cent to 14 per cent in 2009. A small modal shift to public transport and active travel (walking and cycling) can reduce

greenhouse gas emissions by up to two thirds for peak travel³.

Future development of Australian cities and regions will need to consider interactions with, and impacts on, the physical environment in order to deliver the greatest net benefits for the community. The physical consequences of climate change will add to—and in some cases compound—other environmental challenges.

The Australian Government’s objective is to advance the sustainability of Australia’s natural and built environment through better resource and risk management.

The Australian Government has been pursuing a broad range of policies and programs to assist State, Territory And Local Governments as well as business and the community, to improve the sustainability of cities by minimising the environmental impacts. At the same time the Government is exploring options on the best way to introduce a carbon price to address the challenge of climate change.

² Department of Climate Change and Energy Efficiency (2010) *National Greenhouse Gas Inventory accounting for the KYOTO target*, May 2010

³ Stanley and Barrett (2010) *Moving people – solutions for a growing Australia* BIC, ARA, UITP

SUSTAINABILITY	Objectives and priorities
4. PROTECT AND SUSTAIN OUR NATURAL AND BUILT ENVIRONMENTS BY:	<p>Cities and their populations have a detrimental impact on natural ecosystems—both within metropolitan boundaries and across the broader region.</p> <p>We need to protect our natural environments to ensure they are preserved, and improve our built environments to ensure our quality of life is maintained.</p>
<ul style="list-style-type: none"> – Protecting and enhancing natural ecosystems 	<p>Australia’s natural environment is both fragile and unique. Native ecosystems are at risk of being displaced or degraded by expanding urban areas. This will have negative implications for clean air and water, biodiversity and amenity.</p> <p>To ensure our cities take full advantage of the services that our natural environment provides, and do not impose unnecessary costs to future generations, we must protect and enhance natural ecosystems, waterways and biodiversity. This can be done by avoiding and mitigating the impacts on critical environments and by incorporating quality green space, microclimate and water sensitive design into urban systems.</p>
<ul style="list-style-type: none"> – Supporting sustainable development and refurbishment of our built environment 	<p>Our built environment is a large source of energy and water consumption and waste production.</p> <p>Throughout the design, construction, operation and demolition of our built environment, consideration needs to be given to its long-term sustainability in economic, environmental and social terms.</p>
5. REDUCE GREENHOUSE GAS EMISSIONS AND IMPROVE AIR QUALITY BY:	<p>Emissions and air pollution are accelerating and changing our Earth’s natural systems, affecting our health and standard of living.</p> <p>The scale of our cities provides opportunities for significant reductions in greenhouse gas emissions. There is also scope to reduce ambient levels of air pollutants in urban areas by focusing on the major sources of these pollutants including motor vehicles, the burning of carbon-based fuels and use of materials such as plastics and paints.</p>
<ul style="list-style-type: none"> – Supporting and investing in low emissions technologies 	<p>Supporting low emissions technologies, such as hybrid and electric vehicles, is an important step in reducing our overall emissions, and stimulating innovation within our economy.</p>
<ul style="list-style-type: none"> – Putting a price on carbon 	<p>The Australian Government will move to place a price on carbon and use market mechanisms to drive emissions reductions.</p>
<ul style="list-style-type: none"> – Sustainable urban planning and regulatory reform 	<p>Cities policy can drive emissions reductions through urban design and better integrated planning policy.</p>
6. MANAGE OUR RESOURCES SUSTAINABLY BY:	<p>Our natural resources are limited and valuable.</p> <p>We must manage our resources wisely by reducing our overall consumption and improving our water, energy and food security.</p>
<ul style="list-style-type: none"> – Reducing resource consumption and waste 	<p>Cities and their populations greatly affect the environment through the demand for resources. Current patterns of consumption of non-renewable resources and production of waste are a key challenge for the future of our cities.</p> <p>We need to reduce our consumption of finite resources, use and reuse resources more efficiently and minimise waste production. This can be done through pricing, behavioural change and improvements to technology and application.</p>
<ul style="list-style-type: none"> – Improving water, energy and food security 	<p>The secure supply of water, energy and food to our cities is becoming an increasing issue as our cities expand and adapt to a changing climate.</p> <p>Options to support the security of these vital systems are continually being developed, with considerable investments being made in many of Australia’s major cities.</p>

<p>7. INCREASE RESILIENCETO EMERGENCY EVENTS AND NATURAL HAZARDS BY:</p>	<p>Australian cities and regions, both coastal and inland, will likely face increased challenges from climate change and other natural environmental hazards. These may include extreme weather and storm events, sea level rise, cyclonic activity, increasing temperatures, heatwaves and bushfires. Other vulnerabilities include exposure to human-induced events and disasters.</p>
<p>– Climate change science and research</p>	<p>It is important to continue to develop our understanding of climate change so that we can better predict and plan for the effects and impacts that our cities face.</p>
<p>– Mitigation and adaptation</p>	<p>We need to continually work to adapt and minimise the exposure of our cities and regions to risk, and ensure our urban areas are planned and built to enable responses to be timely and appropriate to mitigate negative consequences.</p> <p>The infrastructure investments in our cities are often very large and planned to endure many decades and more. Many of our cities are located in areas that are expected to be subject to sea level rise and increasingly extreme weather events, with potentially damaging impacts on infrastructure.</p> <p>In order to ensure new infrastructure investments are not unduly vulnerable to climate change, the siting of infrastructure, operational life and design standards need to be carefully considered, alongside matters such as heat stress, inundation, and extreme storms event.</p>

Protect and sustain our natural and built environments

One of the key challenges for decision-makers is to conserve and to protect our natural assets while facilitating human habitation. Although the impact of most human activity is unintentional, human habitation can threaten the ecosystems and environments that are essential to our way of life.

In cities, natural areas and places of open space also provide for recreation and relaxation, visual amenity and urban liveability, and thereby also contribute to physical and mental health. Poor planning decisions and other factors which detract from our natural and built environments can impact negatively on the health and wellbeing of communities.

Protecting and enhancing natural ecosystems

The Australian Government has a long standing commitment to protecting the natural environment through the application of the *Environment and Biodiversity Protection Conservation Act (1999)* that enables protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places.

The Australian Government is also working to manage impacts of human settlement and habitation such as waste generation on the environment through the *National Waste Policy*.

The Australian Government, through programs such as *Caring for our Country*, funds environmental management of our natural resources by supporting communities, farmers and other land managers to protect Australia’s terrestrial and aquatic environments and sustainably produce food and fibre.

Supporting sustainable development and refurbishment of our built environment

The high intensity nature of our cities provides opportunities to exploit economies of scale in reducing our impact on the environment. How cities are planned, their density and spread, and the buildings and infrastructure within them, provide an enormous opportunity to reduce greenhouse gas emissions.

Along with opportunities for improvement in specific sectors such as waste, water and energy, cities can significantly influence sustainability outcomes through larger systems such as land use and settlement patterns, for example through the location of employment areas in relation to residential areas, and the availability of public

transport. Similarly, the design and construction of the urban form, whether it is a transit-oriented development, water sensitive urban design project or suburban block development, has long-term consequences for the sustainability and resilience of our cities.

The construction and operation of buildings account for almost half of the world's greenhouse gas emissions. It is estimated that investing in a more energy efficient building sector has the potential to reduce the sector's greenhouse gas emissions by between 30–35 per cent by 2030.

Further initiatives to protect and sustain our natural and built environments

To further protect and sustain our natural and built environment, the Australian Government will:

- Implement the Sustainable Communities package which will provide \$120 million to State, Territory and Local Governments, potentially in partnership with the private sector, to fund projects aimed at improved affordability and liveability in cities. The Sustainable Communities package targets the more effective planning and design of our cities and efficient use of new and existing infrastructure, and will deliver demonstration projects within capital cities and regional cities that drive urban renewal through:
 - investment in capital projects which improve public transport services and support new local jobs
 - working in partnership with the Capital City Lord Mayors on demonstration projects which enhance the liveability and sustainability of our capital cities
 - funding capital projects which support urban development or renewal projects that reduce costs and improve access to transport
 - more efficient and effective use of new and existing infrastructure through the incorporation of smart technology
 - demonstration projects to show how new investments in community facilities and

better planning can help improve quality of life in our outer and growth suburbs

- funding projects in outer suburbs and major regional cities which meet the COAG national criteria and promote improved housing and transport supply
- Invest \$29.2 million in a new Sustainable Regional Development initiative to support better sustainability planning in regions that are experiencing high growth. The Sustainable Regional Development program will support strategic assessments under national environmental law in up to seven additional regional and coastal growth areas. The program will improve environmental outcomes whilst also giving certainty to State and local governments and the private sector to invest in housing, infrastructure and resource development
- Provide \$8.0 million over two years for competitive grants to assist local communities to manage and conserve heritage places that are important to Australians. The program will also enable greater community access to heritage places of local and national significance.

Reduce greenhouse gas emissions and improve air quality

Australia has commenced a multi-decade transformation towards a low carbon economy. Putting a cap on carbon is the lowest-cost way to achieve the necessary transformation to a low carbon pollution economy. A carbon price will provide a powerful incentive for consumers and businesses to adjust their behaviour, resulting in a reduction in emissions.

Australia also continues a program of regulatory reform to progressively reduce other harmful emissions that reduce air quality.

Supporting and investing in low emissions technologies

A carbon price can be complemented by improvements to the operational efficiencies of the built environment. Reducing energy

consumption reduces operating costs for building owners, whether households or business owners. Building standards are being improved through both the regulatory environment but also through voluntary actions. The biggest challenge is the size of the stock of existing buildings and how to effectively improve their performance. Energy efficiency is a fast but cost-effective way to reducing our carbon pollution. Most Australians have opportunities to make energy efficiency improvements at home, in business and industry, or in the community.

Improving energy efficiency is conceptually the same as improving the productivity of other

resources, delivering more from the same inputs. In the past two decades Australia has improved its productivity performance, boosting growth, wealth and opportunities for our citizens. However, unlike most other developed countries, which have realised energy efficiency across a range of sectors, Australia’s energy efficiency remains relatively poor.

The Australian Government has supported the development and production of more fuel efficient and low emission motor vehicles. The Australian Government is also helping to inform consumers to help them make ‘greener’ choices when purchasing vehicles through the publication of the *Green Vehicle Guide*.

The Green Vehicle Guide

The Green Vehicle Guide (GVG) provides consumers with user friendly ratings on environmental performance of specific models, as well as fuel consumption data – thus enabling side-by-side comparisons of individual models on a common basis. The GVG covers all light vehicles (up to 3.5 tonnes) released onto the Australian market since late 2004 and is continually updated as new models are released. The Guide is reinforced by the mandatory fuel consumption label. The fuel consumption label provides consumers with the comparative fuel consumption and CO2 emissions values of individual models and enables consumers to estimate annual fuel costs.

Putting a price on carbon

Carbon pricing provides financial incentives for investment in low emissions technology research, development and commercialisation, including investments in renewable energy and improvements in energy efficiency.

Capping emissions and placing a price on carbon will be the key to this transformation. The energy that drives our economy and underpins our everyday lifestyle and wellbeing is also the greatest contributor to Australia’s carbon emissions. To transform our economy while maintaining the growth and prosperity that we currently enjoy, Australia will need a stable supply of cleaner energy, and will need to use this energy more efficiently.

Sustainable urban planning and regulatory reform

How cities are planned and managed and the associated regulatory environment will influence the sustainability of a city. Motor vehicles account for a large proportion of transport-related greenhouse gas emissions other air pollutants in our cities. These pollutants are responsible for the smog over our major cities and health problems such as respiratory and cardiovascular disease. The Australian Government regulates the mandatory air pollution standards for all new vehicles sold in Australia.

It is estimated that over two million vehicles are subject to Fringe Benefit Tax claims every year⁴ at a cost to the federal government of

⁴ Rural and Regional Affairs and Transport References Committee (2009) Investment of Commonwealth and State funds in public passenger transport infrastructure and services, Final Report page 111.

approximately \$1.7 billion⁵. The *Henry Tax Review*⁶ noted that the existing fringe benefits taxation formula means that the taxable value of a car's fringe benefit falls as total kilometres driven per annum increases. With a rate set at 46.5 per cent, the statutory formula potentially provides a tax incentive for individuals to travel additional kilometres to reduce the taxable value of their car. In turn, this increases pollution and urban traffic congestion.

The Henry Review recommended that the tax and transfer system be reformed to play a greater role in promoting sustainable policy outcomes. In the case of Fringe Benefit Tax on vehicles the Henry Review recommended that the current formula be replaced with a single statutory rate of 20 per cent, regardless of the kilometres travelled.

Further initiatives to reduce greenhouse gas emissions and improve air quality

To reduce carbon emissions and improve air quality the Australian Government will:

- Introduce a carbon price as a comprehensive measure to respond to the Climate Change agenda from 1 July 2012. This will provide incentives for our cities to lower carbon emissions and improve energy efficiency
- Reduce incentives for unnecessary driving by replacing the current tax formula for valuing car fringe benefits with a single statutory rate of 20 per cent, regardless of the kilometres travelled
- Work with industry on the design and implementation of the *Tax Breaks for Green Buildings Policy* which provides incentives for firms to improve the energy efficiency of their building stock
- Support research and development of low emissions technologies

⁵ Australian Tax Office, Taxation statistics 2007-08 - Fringe benefits tax, Table 7: Fringe benefits, by employer type, taxable status and benefit type, 1997-98 to 2008-09 FBT years, retrieved 5 October 2010 from http://www.ato.gov.au/corporate/content.asp?doc=/content/00225078.htm&page=15#P1136_57143.

⁶ Henry, K. 2009 Australia's future tax system. Report to the Treasurer. Commonwealth of Australia

- Partner with governments, businesses and the community to deliver improved energy efficiency such as through investment in low emissions transport networks including electric hybrid vehicles, *Smart Grid and the Solar Cities* program
- Deliver improvement in the efficiency of new buildings and major renovations by increasing the energy efficiency requirements in the *Building Code of Australia* and introducing the *Building Energy Efficiency Disclosure Act*
- Provide leadership on national reform to ensure cities are well placed to deal with the risks of climate change impacts, including through the provision of good science and information
- Continue to work with industry and governments to improve air quality by the setting of product standards, urban design, public transport planning and climate change abatement measures



- Apply more stringent mandatory air pollution standards for all new cars, 4WDs and utes sold in Australia. These tighter emission standards – known as the Euro 5 and Euro 6 standards – will target the pollutants responsible for the smog over our major cities and health problems within our population, such as respiratory and cardiovascular disease. When fully in place the new standards will cut a new car’s maximum allowable emissions of:
 - Hydrocarbons by up to 50 per cent
 - Oxides of nitrogen by up to 70 per cent
 - Particulate matter by up to 90 per cent
- Continue the Government’s *Green Vehicle Guide* (GVG) website as a primary source for consumers wishing to make informed purchasing decisions regarding the environmental performance of new vehicles.

Manage our resources sustainably

Population growth in cities will continue to increase demand on resources, such as water, food and energy.

Water is an essential resource for our cities – their communities, environment, industries, and their economy. Population growth in cities has led to an increased demand for potable water which will continue to test capacity of water supplies to reliably meet demand in many cities into the future if not appropriately managed.

Australia’s food industry is a major sector of our economy and our export trade. It supplies the majority of our food and is also a significant contributor to regional economies, communities and to our national narrative. Australia is sheltered from immediate concerns about food shortages because we produce more food than we consume, which will help meet our future food needs and those of many import-dependent countries. However, we cannot afford to be complacent in the face of challenges such as climate change, resource constraints and an increasing population. Land use issues underpin much of the current community concerns about food security, including the potential loss of productive agricultural land to urban expansion and development.



The security of energy supplies is critical in supporting economic and social activity in Australia's cities by meeting both short and long term needs. Factors affecting the supply of energy can range from short-term disruptions to supplies as a result of human and natural hazards to longer-term impacts resulting from inadequate energy sector investment. There is also a growing recognition of the importance of building resilience against hazards and balancing reliable energy supplies and environmental impacts.

The Australian Government is working with governments and industry to reduce resource consumption and waste and improve water, energy and food security.

Reducing resource consumption and waste

The *National Waste Policy* heralds a coherent, efficient and environmentally responsible approach to waste management in Australia. The policy, agreed by all Australian environment ministers in November 2009, sets Australia's waste management and resource recovery direction to 2020.

The *National Waste Policy* sets the direction for Australia over the next 10 years, to reduce waste for disposal and manage waste as a resource to deliver economic, environmental and social benefits.

The *National Waste Policy* establishes a comprehensive work program for national coordinated action on waste across six key areas:

- taking responsibility
- improving the market
- pursuing sustainability
- reducing hazard and risk
- tailoring solutions
- providing the evidence

Improving water, energy and food security

The secure supply of water, energy and food to our cities is becoming an increasing issue as our cities expand and adapt to a changing climate. Over the last few years some of our cities have experienced water shortages, which

have required stringent water restrictions to be put in place, and energy shortages which have impacted both businesses and homes. Food security may likewise be affected in the future, whether through increased transportation costs, natural disasters such as the recent floods and cyclones, or loss of fertile agricultural lands close to population centres.

Options to support the security of these vital systems are continually being developed, with considerable investments being made in many of Australia's major cities.

The Australian Government's initiative, *Water for the Future*, provides national leadership in water reform for all Australians.

It is built on four key priorities:

- taking action on climate change
- using water wisely
- securing water supplies
- supporting healthy rivers

The *Water for the Future* priorities will be delivered through a 10 year investment in strategic programs, improved water management arrangements, and a renewed commitment to deliver a range of water policy reforms in rural and urban areas.

Further initiatives to manage our resources sustainably

To manage our resources sustainably, the Australian Government will:

- Further strengthen the role of Infrastructure Australia in undertaking cost-benefit analysis of proposals for infrastructure funding, to include consideration of how to achieve better use of infrastructure to help improve the efficiency of critical infrastructure such as transport and water
- Continue implementation of the *Water for the Future* program to provide national leadership on water reform for all Australians. *Water for the Future* will enable Australia to better balance the water needs of communities, farmers and the environment

- Pursue urban water reform through COAG following the agreement at the November 2008 meeting of COAG which provides for a renewed approach to urban water reform by the Australian Government, together with States And Territories, and addresses key challenges in urban water. An agreed set of *National Urban Water Planning Principles* provides governments and water utilities with the tools to better plan the development of urban water and wastewater service delivery in a sustainable and economically efficient manner
- Implement the *National Waste Policy* which heralds a new, coherent, efficient and environmentally responsible approach to waste management in Australia. The policy was agreed by all environment ministers in November 2009, and endorsed by COAG in August 2010. It will set Australia's waste management and resource recovery direction to 2020
- Tackle climate change through putting a price on carbon and assisting households and businesses meet the costs (the details of the carbon pricing mechanism being decided through extensive consultation)
- Continue and expand the *Environmental Stewardship Program* and the investments in the *Solar Cities* program.

Increase resilience to climate change, emergency events and natural hazards

In the past decade, Australia's major cities have all been affected by extreme weather events such as long droughts, heatwaves, severe storms, bushfires, and extensive flooding. As these events are forecast to rise in frequency and intensity, Australian cities need to become more resilient by mitigating and adapting to the effects of climate change and other natural hazards and events.

Our coastal communities, which are experiencing high growth rates as a result of the 'sea-change' phenomenon, are particularly vulnerable.

Climate change science and research

The Australian Government's National Climate Change Adaptation Research Facility (NCCARF) is leading the research community in a national interdisciplinary effort to generate the information needed by decision-makers to manage the risks of climate change in areas such as water resources, health, emergency management and primary industries.

The centre is working to synthesise knowledge, coordinate research activities, broker research partnerships and provide information for decision

Wollongong, NSW



Albury/Wodonga, NSW/VIC



makers in a form relevant to their sectoral or regional needs.

The Facility is hosted by Griffith University in partnership with seven other universities and the Queensland Government.

The Australian Government is providing \$10 million to support core functions of the Facility. In addition, through the *Climate Change Adaptation Research Grants Program* the Australian Government is providing seed-funding to address priority research identified through *National Climate Change Adaptation Research Plans*, developed by NCCARE.

Mitigation and adaptation

Planning processes have generally not taken climate change risks into adequate account and existing infrastructure has generally been designed, constructed and maintained based on historical climate data. There are significant areas of existing development at risk from sea level rise and storm surge. Similarly, the outward expansion of our cities has allowed new residential development into areas of increasing bushfire risk.

Land use planning, for example, can reduce the exposure of communities and infrastructure in vulnerable regions through the allocation of land for particular types of developments. It can also

reduce emissions through better integration of land use and infrastructure planning.

Individuals, communities, governments and the corporate sector are beginning to weigh up the impacts of land use and development decisions in light of climate change risks and environmental constraints, such as future water supply.

The Australian Government in its position paper *Adapting to Climate Change in Australia*, identified six initial priority areas for adaptation action—coastal management, water, infrastructure, natural systems of national significance, preparation for and management of natural disasters, and agriculture.

A resilience model is being considered to cover a wide range of hazards facing Australia, in particular in relation to emergency management. Planning for urban areas and urban assets should have regard to the operational needs of emergency management. It is also important to understand the vulnerabilities and dependencies in and across critical infrastructure sectors. Critical infrastructure is often privately owned or operated on a commercial basis. Therefore, often the owners or operators of critical infrastructure are best placed to understand these vulnerabilities and dependencies, and to manage associated risks. Maintaining close relationships with these sectors is a key to



governments being able to enhance resilience of critical infrastructure.

Many of our major cities are vulnerable to, and are currently experiencing, the impacts of climate change and natural disasters. The Australian Government continues to provide support to cities in becoming more resilient to climate change and natural disasters via a wide range of environmental modelling, research and planning tools, as well as through local and community infrastructure programs.

The Australian Government is committed to increasing resilience to climate change, emergency events and natural hazards through such measures as the *Natural Disaster Mitigation Program* and leading national reform to ensure cities are dealing with climate change impacts, including through the provision of research and information.

The Government is supporting State, Territory and Local Governments around Australia to prepare for the impacts of climate change. A good example is Cairns in North Queensland.

Further initiatives to increase resilience to climate change, emergency events and natural hazards

To further support cities to become more resilient to climate change, emergency events and natural hazards the Australian Government will:

- Continue to work with States and Territories to develop guidance, including spatial mapping, to help reduce exposure of urban assets to climate change risks
- Strengthen the role for Infrastructure Australia in undertaking cost-benefit analysis of proposals for infrastructure funding to consider whether proposed infrastructure projects are well placed to deal with risk of climate change impacts
- Implement the *Demonstrating Coastal Adaptation Decision Pathways* initiative, by working with partners on projects that will support effective approaches to adaptation in the coastal zone.



Cairns, QLD

Cairns Climate Change Strategy and implementation

The Cairns region, which includes many low-lying coastal communities, is one of the most vulnerable areas in Australia to climate change impacts. In addition, the Cairns region is home to internationally significant ecosystems such as the Great Barrier Reef and the Wet Tropics World Heritage Area.

In 2009, the Cairns Regional Council received \$50,000 from the Australian Government to undertake a risk assessment on council urban management systems, based on CSIRO climate change predictions and develop a climate change adaptation action plan which prioritises and recommends measures to mitigate the adaptation risks. The program raised awareness of climate change and adaptation strategies within the council, which has enabled improved decision making around climate related risks and planning and the foundation of Cairns' Climate Change Strategy 2010–2015.

To ensure Cairns and other regions are well supported in mitigating and adapting to climate change, the Australian Government is supporting climate change mitigation and adaptation through a range of measures.

In Cairns, the Australian Government has supported a number of targeted initiatives to assist in implementing the *Cairns Climate Change Strategy*. The Australian Government provided nearly \$2 million for the construction of a multi-purpose community centre for education, training and disaster coordination for the Cairns Region and the wider north community areas, which are vulnerable to cyclones, storm surge, tsunamis, bushfires and landslides. Further funding through the Regional and *Local Community Infrastructure Program* was provided for the installation of renewable energy systems on council buildings.

The Australian Government has also provided over \$1 million for flood mitigation in the Cairns CBD and financial support for a range of bushfire preparedness and prevention initiatives under the *Natural Disaster Mitigation Program*.