



Australian Government



# Securing a clean energy future

THE AUSTRALIAN GOVERNMENT'S  
CLIMATE CHANGE PLAN





# **Securing a clean energy future**

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CLIMATE CHANGE PLAN

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*The Publications Manager  
Communications and Public Affairs Branch  
Department of Climate Change and Energy Efficiency  
GPO Box 854  
CANBERRA ACT 2601  
Email: [enquiries@climatechange.gov.au](mailto:enquiries@climatechange.gov.au)*

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## Foreword

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The Australian Government has been advised by scientists that the world's climate is changing and that there will be adverse effects on our nation if the trend of rising temperatures continues.

As a hot and dry continent, Australia has more to lose from climate change than all other developed countries. There are significant risks to our environment and our economy.

The clear scientific consensus is that human activity which releases carbon pollution into the atmosphere, mainly the use of fossil fuels, is risking dangerous climate change. This is why the Government has adopted a plan for a clean energy future for Australia.

The plan will cut pollution and drive investment helping to ensure Australia's prosperity in the low pollution world of the future.

We will do this by introducing a carbon price into Australia's economy. This will put a price tag on every tonne of carbon pollution released into the atmosphere by the country's biggest polluters – around 500 businesses will be required to pay for their pollution under the carbon pricing mechanism.

The carbon price will create a financial incentive to reduce carbon pollution that will flow through our economy.

Households will be looked after with tax cuts, higher family payments and increases in pensions and benefits, to meet the costs passed through by some businesses.

The carbon price will change Australia's electricity generation by encouraging investment in renewable energy like wind and solar power and the use of cleaner fuels like natural gas.

Treasury modelling shows the economy will continue to grow strongly with a carbon price. Extensive analysis by economists and independent institutions such as the Productivity Commission has demonstrated that market mechanisms like a carbon price or an emissions trading system are the cheapest ways of reducing pollution.

The Government is committed to supporting jobs as the economy is transformed. That is why we will support jobs throughout manufacturing, including in the steel and food processing industries, and in coal mining.

Australia has boundless renewable energy resources. We need to do more to take advantage of these resources.

The Government's Renewable Energy Target, combined with the carbon price, will deliver around \$20 billion of investment in renewable energy by 2020 in today's dollars. It will mean that the equivalent of 20 per cent of Australia's electricity will come from renewable sources by 2020.

The Government will also drive this shift by creating a \$10 billion commercially oriented Clean Energy Finance Corporation to invest in renewable energy and innovative technologies to cut pollution.

The world is moving and economies which do not start cleaning up now will fall behind.

Australia has spent the last decade working out that putting a price on carbon pollution is the cheapest way to tackle climate change.

The Government's plan for a clean energy future has been negotiated by the Multi-Party Climate Change Committee.

The Committee has agreed to a comprehensive set of measures to help fight climate change.

The Government is separately investing in further measures to ease the economic transition to a carbon price, as well as taking additional steps to reduce carbon pollution. These additional Government measures are identified in Appendix D.

Carbon pricing and moving towards a clean energy future is a reform we need to keep our economy competitive, to protect our environment and to do the right thing for our children and future generations.



A handwritten signature in black ink that reads "Julia Gillard".

The Hon. Julia Gillard MP  
Prime Minister



A handwritten signature in black ink that reads "Wayne Swan".

The Hon. Wayne Swan MP  
Deputy Prime Minister and  
Treasurer



A handwritten signature in black ink that reads "Greg Combet".

The Hon. Greg Combet AM MP  
Minister for Climate Change  
and Energy Efficiency



## Key messages

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**Scientists advise that the world is warming and high levels of carbon pollution risk environmental and economic damage.** No responsible government can ignore this advice.

**The Australian Government has developed a comprehensive plan to move to a clean energy future.**

**A price on carbon pollution will create incentives to reduce pollution and invest in clean energy.** A carbon price will ensure that pollution is reduced at the lowest cost to the economy.

Under the carbon price, around 500 of the biggest polluters in Australia will need to buy and surrender to the Government a permit for every tonne of carbon pollution they produce. For the first three years, the carbon price will be fixed like a tax, before moving to an emissions trading scheme in 2015. In the fixed price stage, starting on 1 July 2012, the carbon price will start at \$23 a tonne, rising at 2.5 per cent a year in real terms. From 1 July 2015, the carbon price will be set by the market.

The carbon price will be accompanied by assistance supporting households, jobs, businesses and communities, to help them adjust, lower their carbon pollution and to protect our international competitiveness.

**To assist households with price impacts, there will be two rounds of tax cuts and increases in pensions, allowances and benefits.** Significant tax reform will mean that more than 1 million people will no longer need to file a tax return. Increasing the tax-free threshold and cutting taxes also boosts incentives to work. Over 50 per cent of carbon price revenue will be spent on households. Household transport fuel consumption will not be subject to a carbon price.

**Substantial industry assistance will be provided to support jobs and competitiveness as we move to a clean energy future** for emissions-intensive, trade-exposed industries, manufacturing, food processing, metal forgers and foundries, electricity generators and small business, as agreed by the Multi-Party Climate Change Committee. The Government is also separately investing in protecting jobs in the steel and coal industries.

**A \$10 billion new commercially oriented Clean Energy Finance Corporation will invest in renewable energy, low pollution and energy efficiency technologies** — a major increase in support.

**The Government will seek to negotiate the closure of around 2000 megawatts of highly polluting electricity generation capacity by 2020** to reduce pollution and facilitate a smooth energy market transition.

**Farmers and land managers will receive significant support to pursue climate change action on the land and enhance biodiversity** through a suite of measures including the

Carbon Farming Initiative, the Carbon Farming Futures program and a new Biodiversity Fund. Emissions from agriculture will not be subject to a carbon price.

**The Government is providing additional support to promote energy efficiency.**

Low Carbon Communities will help local councils and communities improve energy efficiency in community facilities, including a new Low Income Energy Efficiency Program.

The Government will expedite the development of a national energy savings initiative.

# Executive summary

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## *Australia's clean energy future*

*The Government's plan for a clean energy future responds to climate change science ...*

The Government has developed a comprehensive plan for a clean energy future. The need for this plan is clear, from both an environmental and an economic perspective.

This plan has been devised in response to clear scientific advice that the world is warming, that carbon pollution from human activity creates significant risks and that we can avoid the worst potential impacts by reducing carbon pollution.

*... and is economically responsible.*

Taking action on climate change is in our national interest. Australia faces acute risks from climate change. Faced with the serious negative consequences for our natural systems (including national icons like the Great Barrier Reef and Kakadu), our economy and our way of life, it would be irresponsible not to play our part in international action on climate change. Taking action sooner rather than later means that the transition to a clean energy future can be more gradual, manageable and affordable. Treasury modelling shows that, for economies like Australia, deferring action will only lead to higher long-term costs.

*The plan has four elements: a carbon price, renewable energy, energy efficiency and action on the land.*

Australia is already taking some important actions to reduce our carbon pollution. Yet even with these existing measures in place, Australia's carbon pollution is still growing by almost 2 per cent each year. This is why the Government has adopted a comprehensive plan to secure a clean energy future. The plan brings existing policies together and introduces several critical new initiatives. It has four elements: a carbon price; renewable energy; energy efficiency; and action on the land. This plan will allow households, communities, businesses and governments to work together to build a clean energy future.

## *The need for action*

*The Earth is warming...*

The evidence that the world is getting warmer is unequivocal. In Australia and across the globe, 2001 to 2010 was the warmest decade on record. In Australia, each decade since the 1940s has been warmer than the last.

*... posing serious risks for Australia and the rest of the world ...*

If we do not reduce carbon pollution, the world risks serious effects from climate change. Global average temperatures could increase by up to 6.4 degrees Celsius above 1990 temperatures by 2100. Sea levels are estimated to rise by between 0.5 and 1 metre by 2100 from 2000 levels and the acidity of the world's oceans will increase significantly. Cyclones, storms, floods and other extreme weather events are likely to change in severity or frequency. Rainfall patterns around the world will change, making some places drier and other places wetter.

Australia is a hot and dry continent. This means that amongst the world's developed countries, Australia faces acute risks. Studies indicate that warming of more than 2 degrees Celsius will overwhelm the capacity of many of our natural ecosystems to adapt. With that level of warming, for instance, the survival of the Great Barrier Reef will be in jeopardy as higher ocean temperatures and acidity levels cause major changes to coral reefs.

*... threatening our long-term prosperity.*

Climate change won't just damage the natural environment. Left unchecked, it also poses risks to Australia's economic prosperity. Climate change will impose economic costs on our society. These costs can be reduced and managed if the world takes action to reduce carbon pollution. But the longer action is delayed, the more it will cost and the worse the impacts will be.

*It is not too late to reduce the risks of climate change ...*

It is not too late to reduce the risks of climate change. How high temperatures might rise in coming decades will depend on how much carbon pollution increases.

Governments around the world have agreed to limit carbon pollution so that average global temperature rise can be held below 2 degrees Celsius above pre-industrial levels. If the global 2 degree goal is achieved, Australia will still face some impacts. However, our communities and environment will be better able to cope. It is in our national interest to do our fair share.

*... and the task is achievable.*

The task of reducing carbon pollution is achievable. Economies can be retooled so that growth and rising prosperity are decoupled from growth in carbon pollution. This will require changes to the way we live and the way we do business, especially to the ways we produce and use energy.

Studies in Australia and around the world have demonstrated that, with known technologies, pollution can be reduced while maintaining economic growth. Indeed, the retooling of our economy will deliver new technologies, new jobs and new opportunities. The Government's plan for a clean energy future is a comprehensive plan designed to translate these opportunities into reality.

## *A plan for action*

*Australia has high emissions relative to our population ...*

Australia's carbon pollution levels are very high given our population size and our economy is heavily dependent on emissions-intensive energy sources. To maintain our international competitiveness in the future as more countries take action on climate change, we need to reduce our carbon pollution and concentrate on cleaner pathways to economic growth.

Australia's carbon pollution represents 1.5 per cent of global emissions of greenhouse gases. That makes us one of the top 20 polluting countries in the world. Our annual carbon pollution is roughly the same as that of countries like Spain, France, Italy, South Korea and the United Kingdom. All of those countries have populations two to three times larger than Australia. In fact, Australia produces more carbon pollution per head of population than any developed country in the world, more even than the world's biggest economy, the United States.

*... reflecting our historical dependence on coal and other fossil fuels.*

Reflecting the availability of cheap and abundant coal, electricity generation is Australia's largest source of carbon pollution. Electricity generation is responsible for just over a third of Australia's total carbon pollution. Direct fuel combustion — reflecting the use of gas and other fuels in industry and homes — accounts for another 15 per cent. Transport and agriculture each contribute around another 15 per cent. The remaining sources are 'fugitive' emissions — mainly the methane and carbon dioxide which escapes into the atmosphere when coal is mined and gas is produced — along with pollution from industrial processes and decomposition of waste in landfills and elsewhere. Trees absorb carbon dioxide, so when land is cleared there is an increase in carbon pollution and when vegetation grows there is a decrease. The net impact of these sources — deforestation, reforestation and afforestation — contributes 3 per cent of Australia's total carbon pollution.

*Australia's emissions are rising ...*

Australia's emissions are projected to continue to grow by almost 2 per cent a year. Even taking into account existing climate change policies such as the Renewable Energy Target and the Carbon Farming Initiative, our emissions are expected to be around 22 per cent higher than 2000 levels in 2020.

*... but we have committed to reducing them by at least 5 per cent compared with 2000 levels by 2020, and 80 per cent by 2050.*

The Government has committed to reduce carbon pollution by 5 per cent from 2000 levels by 2020 irrespective of what other countries do, and by up to 15 or 25 per cent depending on the scale of global action. These targets will require cutting expected pollution by at least 23 per cent in 2020.

The Government also commits to a new 2050 target to reduce emissions by 80 per cent compared with 2000 levels, in line with targets announced by the United Kingdom and Germany.

Australia's targets represent a fair contribution from Australia, and provide guidance and confidence to investors working to achieve our clean energy future.

## Putting a price on carbon

*A carbon price is an effective and efficient way ...*

*... to reduce carbon pollution and move towards a clean energy future.*

*Our economy will continue to grow strongly with a carbon price in place.*

Putting a price on carbon pollution is the first element of a clean energy future. A carbon price is the most environmentally effective and cheapest way to reduce pollution.

A carbon price puts a price tag on carbon pollution. Under the carbon pricing mechanism, around 500 of the country's biggest polluters will be required to pay for each tonne of pollution they release into the atmosphere. This will create economic incentives to reduce pollution in the cheapest possible ways. These incentives will flow through the economy. The carbon price will also make lower-polluting technologies, especially clean energy technologies, more competitive by boosting investment in these technologies. In this way, introducing a price on carbon will trigger the transformation of the economy towards a clean energy future.

Our economy has successfully handled comparable structural changes over its history. In fact, transformative changes — new products and technologies, and the integration of our economy into the global economy set in train by the reforms of the 1980s and 1990s — have underpinned rising prosperity and sustainable growth in Australia.

Treasury modelling (core policy scenario) estimates that under a carbon price:

- Incomes grow: Gross National Income per person increases from today's levels (around \$56,000) by around \$9,000 per person to 2019-20. By 2050, the increase is expected to be more than \$30,000 per person in today's dollars.
- Jobs grow: national employment increases by 1.6 million jobs by 2020.
- Pollution falls: Growth in domestically produced carbon pollution slows.
- Large-scale renewable energy (excluding hydro) is projected to be 18 times its current size by 2050. Total renewable generation (including hydro) will comprise around 40 per cent of electricity generation in 2050.
- Gas-fired electricity increases by over 200 per cent by 2050.

The key elements of the carbon pricing mechanism are set out below, and are described more fully in Chapter 3 and in Appendix A.

*Key elements of the carbon pricing mechanism*

<p><b>Price</b></p> <p>Fixed price period</p> <p>Emissions trading scheme</p>	<p>A two-stage approach:</p> <p>The carbon pricing mechanism will commence on 1 July 2012, with a price that will be fixed for the first three years like a tax. The price will start at \$23 per tonne and will rise at 2.5 per cent per annum in real terms.</p> <p>On 1 July 2015, the carbon price will transition to a fully flexible price under an emissions trading scheme, with the price determined by the market.</p>
<p><b>Coverage</b></p>	<p>Broad coverage from commencement, encompassing the stationary energy sector, transport (as described below), industrial processes, non-legacy waste, and fugitive emissions.</p>
<p><b>Treatment of fuel and transport</b></p>	<p>Transport fuels will be excluded from the carbon pricing mechanism. However, where applicable, an equivalent carbon price will be applied through changes in fuel tax credits or excise.</p> <p>A carbon price will be applied to domestic aviation, domestic shipping, rail transport, and non-transport use of fuels.</p> <p>A carbon price will not apply to household transport fuels, light vehicle business transport and off-road fuel use by the agriculture, forestry and fishing industries.</p> <p>In addition, at a later date, the Government will seek to establish an effective carbon price for heavy on-road liquid fuel use from 1 July 2014. (This measure was not agreed by all members of the MPCCC.)</p>
<p><b>International linking</b></p>	<p>International linking to credible international carbon markets and emissions trading schemes from the commencement of the flexible price period. At least half of a liable party's compliance obligation must be met through the use of domestic permits or credits.</p>
<p><b>Price ceiling and floor</b></p>	<p>Price ceiling and floor will apply for the first three years of the flexible price period. The price ceiling will be set at \$20 above the expected international price and will rise by 5 per cent in real terms each year.</p> <p>The price floor will be \$15, rising annually by 4 per cent in real terms.</p>
<p><b>Carbon Farming Initiative</b></p>	<p>Kyoto-compliant credits created under the Carbon Farming Initiative can be used for compliance under the carbon pricing mechanism subject to a 5 per cent limit in the fixed price period.</p>
<p><b>Governance</b></p> <p>Climate Change Authority</p> <p>Clean Energy Regulator</p> <p>Productivity Commission</p>	<p>Establishment of the Climate Change Authority to advise on pollution caps and progress towards meeting targets and undertake reviews of the carbon pricing mechanism.</p> <p>Establishment of the Clean Energy Regulator to administer the carbon pricing mechanism.</p> <p>The Productivity Commission will undertake reviews relating to industry assistance, fuel tax arrangements and carbon pollution reduction activities internationally.</p>

## *Helping households*

*A household assistance package will benefit millions ...*

The carbon price will be accompanied by a household assistance package, which will assist millions of Australians. Over 50 per cent of carbon price revenue will be spent on households.

A carbon price will add modestly to the cost of living. The average household will see cost increases of around \$9.90 per week, while the average assistance provided will be around \$10.10 per week. The prices of most household purchases will barely be affected by the carbon price — for almost everything other than electricity and gas, the estimated price impact is likely to be less than 1 per cent. Taking electricity and gas into account, the overall impact on the Consumer Price Index (CPI) is expected to be around 0.7 per cent in 2012-13. Households will not face a carbon price on transport fuels.

*... and will compensate those who need it most to cope with the cost of living impacts of a carbon price.*

The household assistance package is targeted at those who need help the most, particularly pensioners and low- and middle-income households. Around two in three households will receive assistance that offsets their expected average price impact. About nine out of ten households will receive some assistance.

*Income tax will be reformed, freeing over 1 million people from the tax system altogether.*

Because the carbon price raises revenue, it provides an opportunity to cut other taxes. The Government will cut income taxes by raising the tax-free threshold so that, initially, up to 1 million people will no longer need to file a tax return. From 2015, a second phase of tax reform will mean that up to an additional 100,000 people will not have to file a tax return. Reducing taxes by increasing the tax-free threshold is an important change in Australia's tax mix: it involves reducing taxes on desirable things (work and income), boosting incentives to work, and replacing them with a charge on something undesirable (carbon pollution).

The tax-free threshold will be more than trebled to \$18,200 in 2012-13. From 2015, the tax-free threshold will be further raised to \$19,400. People with incomes below the new tax-free thresholds will get to keep all of their wages in their regular pay packets.



*Pensions, allowances and benefits will be increased.*

In addition to tax cuts, pensions, allowances and benefits will increase.

Other features of the household assistance package include:

- special payments for people who have high energy use due to medical needs
- shared assistance between aged care residents and providers
- the development of an opt-in program where household assistance payments can be directed towards accredited energy efficiency measures through non-government organisations.

Household assistance will be permanent and will keep up with increases in the cost of living.

Pensions and other benefits are automatically indexed to keep pace with the cost of living, while the tax changes will be set at a level to cover the expected impact of the expected carbon price to 2019-20.

The Government will ensure the ongoing adequacy of household assistance.

The household assistance package is described in more detail in Chapter 4 and in Appendix A.

## *Supporting jobs*

*Businesses will also be assisted in transitioning to a carbon price.*

To support Australian businesses to make the transition to a clean energy future, the Government has designed a number of assistance measures for the business community, from large industrial producers to small businesses. The Government will allocate around 40 per cent of carbon price revenue to help businesses and support jobs.

*Assistance measures will target emissions-intensive, trade-exposed industries, other areas of manufacturing, food processing, foundries and small business.*

The Jobs and Competitiveness Program will ensure that businesses that produce a lot of pollution and compete in international markets remain competitive, while still retaining strong incentives to reduce carbon pollution. Almost all emissions-intensive and trade-exposed activities are in the manufacturing sector. The Jobs and Competitiveness program will provide support to activities that generate over 80 per cent of emissions within the manufacturing sector.

The food processing, metal forging and foundry industries will also be assisted to support jobs in these parts of manufacturing. More general assistance for small businesses and manufacturing industries will target improvements in energy efficiency.

The Multi-Party Climate Change Committee agreed these measures.

All of these measures have been carefully designed to avoid interfering with the purpose of the carbon price: creating incentives to reduce carbon pollution.

These measures are discussed in Chapter 5.

In addition to these measures, the Government has decided to provide a Coal Sector Jobs Package and a Steel Transformation Plan (see Appendix C for details).

## *Encouraging innovation in clean energy*

*Innovation plays a pivotal role in reducing carbon pollution ...*

The transformation of Australia's energy sector towards clean energy sources will unfold over the coming decades. The carbon price will play a major role, creating powerful commercial incentives to avoid traditional high-pollution solutions and to adopt low-pollution alternatives. However, given the scale of the transformation and the imperative to change, additional measures to support innovation and investment in clean energy are required.

*... which is why the Government is providing substantial new funding to promote innovation in clean energy, including a new \$10 billion Clean Energy Finance Corporation.*

The Government will provide significant levels of financial support for innovation in clean energy technologies.

A new \$10 billion commercially oriented Clean Energy Finance Corporation will invest in renewable energy, low pollution and energy efficiency technologies.

A new Australian Renewable Energy Agency will administer \$3.2 billion in Government support for research and development, demonstration and commercialisation of renewable energy.

The Renewable Energy Target, combined with other elements of the Government's plan, including the carbon price, will drive \$20 billion of investment in large-scale renewable energy by 2020 in today's dollars.

These measures, and a range of other initiatives to promote innovation, are detailed in Chapter 6.

## *Supporting energy markets*

*The Government will underpin a secure energy market transition through an Energy Security Fund ...*

The Government will implement measures to underpin a successful energy market transition and maintain secure energy supplies. These measures will supplement the carbon price and clean energy policies.

An Energy Security Fund will be established to ensure there is a smooth transition which preserves energy security.

*... which will seek to negotiate the closure of around 2000 MW of Australia's most highly polluting generation capacity by 2020 ...*

The Government will seek to negotiate the closure of around 2000 megawatts (MW) of highly polluting generation capacity by 2020. Closing down some of our highest polluting coal-fired capacity makes room for investment in lower pollution plant — and kickstarts the transformation of our energy industry in a managed way.

Electricity generators strongly affected by a carbon price will be supported in return for adopting clean energy investment plans showing how they will reduce their pollution.

*... and provide transitional assistance to the most strongly affected coal-fired power stations.*

The Energy Security Fund is described in more detail in Chapter 7.

## *Improving energy efficiency*

*Energy efficiency is the third element in the Government's clean energy future plan.*

Using energy more efficiently can lower carbon pollution and save money — which is why energy efficiency is the third element in the Government's clean energy future plan.

The Government is helping households and businesses improve their energy efficiency and will expand these efforts. The carbon price will create a strong incentive to use energy more efficiently. A large proportion of industry and household assistance is also directly targeted at facilitating further energy efficiency improvements.

The Low Carbon Communities program will be significantly expanded to promote energy efficiency at a local level and among low-income households.

*The Government will expedite development of a national energy savings initiative.*

The Government will expedite the development of a national energy savings initiative, as recommended by the Prime Minister's Task Group on Energy Efficiency. The energy savings initiative would be a 'white certificate' scheme, creating and trading credits that reward energy efficiency activities.

The Government's plan for energy efficiency is set out in more detail in Chapter 8.

## *Creating opportunities on the land*

*Action on the land is the fourth element in the Government's clean energy future plan.*

The fourth element of the Government's clean energy future plan — along with a carbon price, innovation in renewable energy and energy efficiency — is action on the land. The farming, forestry and land sectors have just as important a role to play in reducing carbon pollution as governments, households and the wider business community.

*Farming emissions will not be covered by a carbon price.*

A carbon price will not apply to agricultural emissions. This means there will be no requirement for farmers to pay for emissions from livestock or fertiliser use.

*The Carbon Farming Initiative will promote action on the land ...*

Australia faces significant opportunities to reduce carbon pollution and increase the amount of carbon stored on the land. Those who pursue these opportunities will be rewarded through the Carbon Farming Initiative, which allows farmers and land managers to create credits for carbon storage and pollution reduction activities. Kyoto-compliant credits can be sold to liable parties under the carbon pricing mechanism, and all credits can be sold in the domestic voluntary market or exported to foreign purchasers.

*... which will be bolstered by new funding for biodiverse carbon stores and other policies to help farmers and land managers make the most of carbon farming opportunities.*

The Government will also provide substantial funding for a range of new land-based measures, including an ongoing fund for landholders to undertake projects that establish, restore, protect and manage biodiverse carbon stores. The Biodiversity Fund will improve the resilience of Australia's unique species to the impacts of climate change, enhance the environmental outcomes of carbon farming projects, and help landholders protect biodiversity and carbon values on their land.

An ongoing Carbon Farming Futures program will help farmers and landholders benefit from carbon farming by supporting research and development, measurement approaches and action on the ground to reduce emissions or store carbon.

The Government is also providing ongoing support for Indigenous communities to participate in carbon farming, and support for natural resource management bodies to plan for climate change.

The Government's programs for promoting action on the land are discussed in Chapter 9.

## *Next steps*

The Government intends to introduce legislation to underpin the carbon pricing mechanism into Parliament in the second half of 2011.

Before this time, interested parties will have an opportunity to comment on draft legislation, which will be released by 31 July 2011.

The Clean Energy Regulator will be established promptly after the legislation has been passed, so that it will be up and running before the carbon pricing mechanism commences.

The carbon pricing mechanism will commence on 1 July 2012.

# Chapter 1

## THE NEED FOR ACTION





# Chapter 1: The need for action

## Key messages

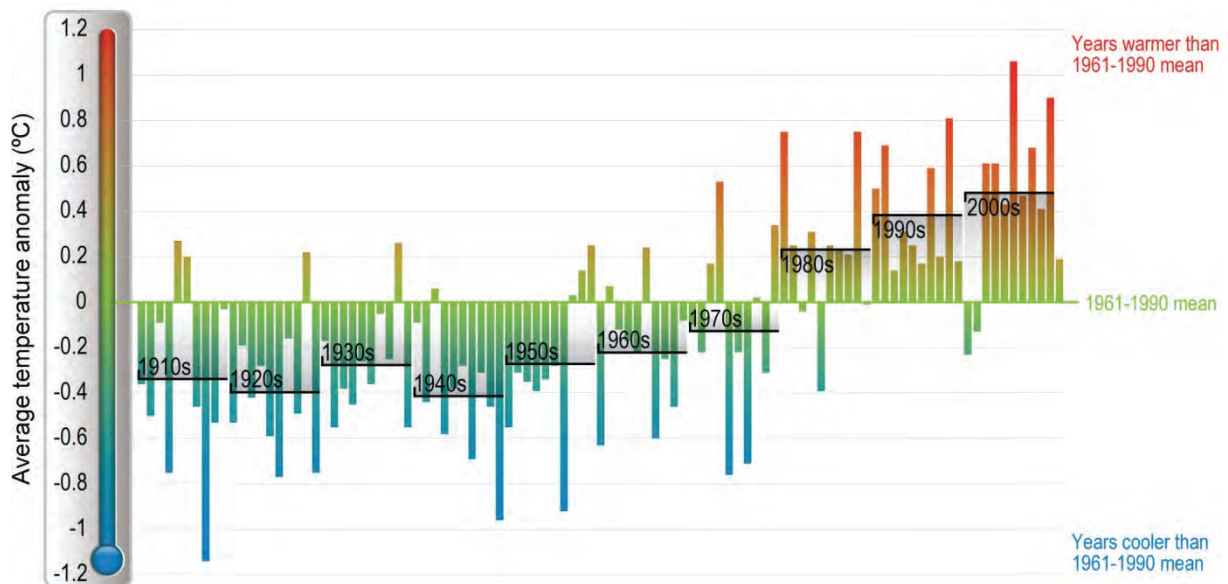
- **Scientists advise that the world’s climate is warming and that increasing levels of carbon pollution risk environmental and economic damage.**
- **Cutting carbon pollution will lower the risks and help ensure our future prosperity — but the next 10 years are critical.**
- **The economic costs of inaction are larger than the costs of tackling climate change.**

## 1.1 Climate change is real

The Australian Government has a comprehensive plan for a clean energy future. This plan has been devised in response to clear scientific advice that climate change is happening, is almost certainly caused by increasing carbon pollution from human activity and presents a real threat to our environment and way of life.

In Australia and across the globe, 2001 to 2010 was the warmest decade on record (Figure 1.1). Each decade in Australia since the 1940s has been warmer than the last.

Figure 1.1: Australian annual average temperature anomalies, 1910-2010



Source: Bureau of Meteorology

## 1.2 Human activity is contributing

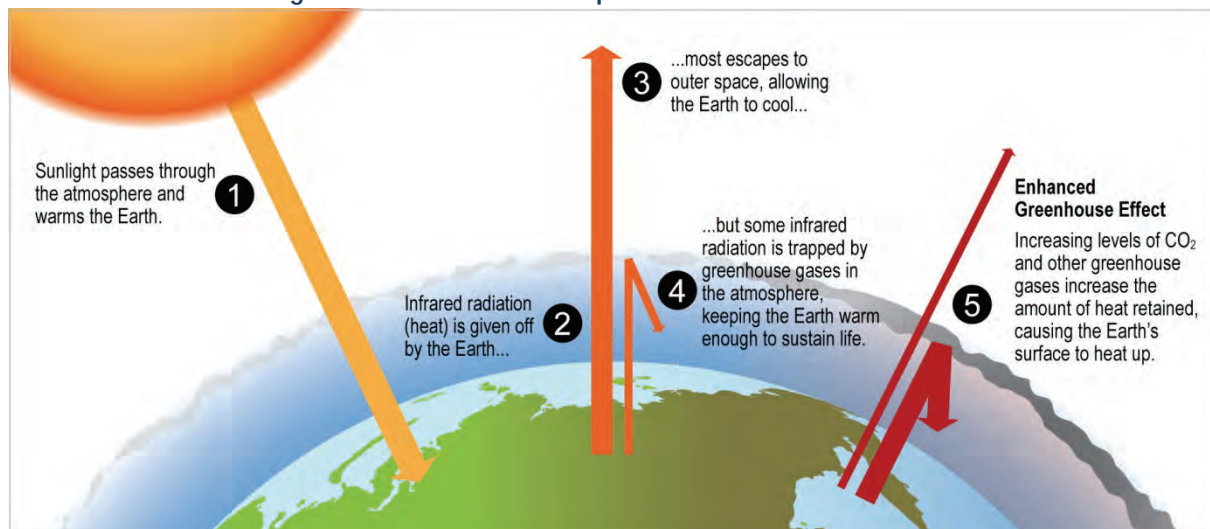
Greenhouse gases in the atmosphere trap radiation given off by the Earth (Figure 1.2). This helps keep the planet warm enough to sustain life. Since the Industrial Revolution, however, the amount of greenhouse gases in the atmosphere has risen significantly. The rising concentrations of greenhouse gases, like carbon dioxide, cause the atmosphere and the Earth's surface to heat up. Scientists have estimated that humans are responsible for nearly a third of the carbon dioxide now in the atmosphere.

*It is beyond reasonable doubt that human activities — the burning of fossil fuels and deforestation — are triggering the changes we are witnessing in the global climate (Climate Commission, The Critical Decade, 2011).*

The world economy has developed rapidly over the past 200 years, significantly expanding opportunities and lifting the living standards of billions of people. However, as the world economy has grown, it has produced large amounts of carbon pollution: the release of carbon dioxide and other greenhouse gases into the atmosphere.

When we burn fossil fuels like coal, oil or gas we generate carbon pollution. Carbon pollution also comes from clearing trees and vegetation, the breakdown of food and plant waste, some aspects of farming such as raising cattle and sheep and using fertilisers, and from some industrial processes such as making cement, aluminium or steel.

Figure 1.2: How carbon pollution warms the Earth



Source: Adapted from the Cooperative Research Centre for Greenhouse Gas Technologies

## 1.3 It will damage our environment

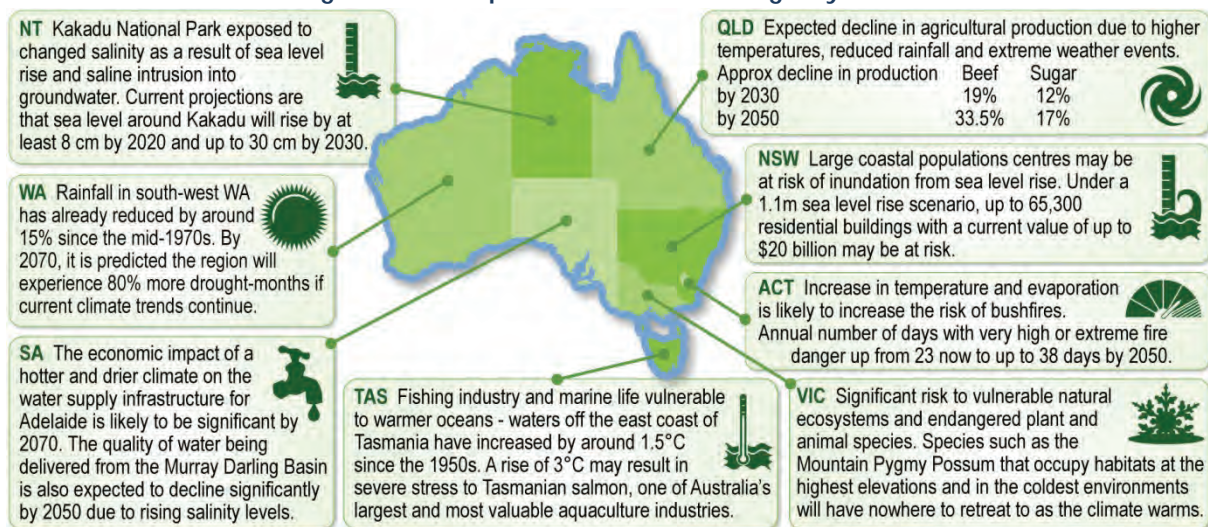
If carbon pollution is not curtailed, the world risks serious effects from climate change. Global average temperatures could increase by up to 6.4 degrees Celsius above 1990 temperatures by 2100. Sea levels are estimated to rise by between 0.5 and 1 metre by 2100 from 2000 levels and the acidity of the world's oceans will increase significantly, threatening species that cannot tolerate the more acidic environment. Cyclones, storms, floods and other extreme weather events are likely to change in severity or frequency. Rainfall patterns around the world will change, making some places drier and other places wetter.



*Climate change is occurring, is very likely caused primarily by the emission of greenhouse gases from human activities, and poses significant risks for a range of human and natural systems (US National Academies of Science).*

Australia is a hot and dry continent. This means that, among the world's developed countries, Australia faces acute risks. Projections by the CSIRO and the Bureau of Meteorology show that, if the world does not take action to tackle climate change, average temperatures across Australia will increase by between 2.2 degrees and 5 degrees Celsius by 2070 (compared with 1990). Studies indicate that warming of 2 degrees Celsius will overwhelm the capacity of many of our natural ecosystems to adapt. For instance, the survival of the Great Barrier Reef will be in jeopardy as higher ocean temperatures and acidity levels cause major changes to coral reefs. Other examples of the expected impacts of climate change across Australia are given in Figure 1.3.

Figure 1.3: Impact of climate change by state



Source: Department of Climate Change and Energy Efficiency, Impacts in Australia Fact Sheets, 2011

## 1.4 Risks to economic prosperity

Climate change won't just damage the natural environment. Left unchecked, it also poses risks to Australia's economic prosperity. Climate change will impose economic costs on our society. These costs can be reduced and managed if we take action to reduce carbon pollution. But the longer we delay action, the more it will cost and the worse the impacts will be.

Economic costs of climate change will come from floods, droughts, heatwaves and other extreme weather events. Climate change will lead to sea level rises that can damage coastal property and infrastructure. Australia is predominantly a coastal society. About 85 per cent of the population lives near the coast, which means that these regions are of immense economic, social and environmental importance. The Australian Government has estimated that coastal assets valued at more than \$226 billion are at risk of damage from inundation and erosion by 2100.

Away from the coasts, climate change will have implications for agriculture. Irrigated agricultural production in the Murray Darling Basin could decline by up to 92 per cent by

2100 as a result of longer and more frequent droughts from unmitigated climate change (Garnaut Climate Change Review, 2008). With the Murray Darling Basin accounting for a large share of Australia's farm production, this could undermine our capacity to grow and produce our own food.

Projected increases in temperature and heatwaves will affect human health. There is likely to be an increase in the number of heat-related deaths. For example, the early 2009 heatwave in south-eastern Australia saw an increase in heat-related illness and deaths in Victoria and South Australia. Other health risks will come from severe weather events like bushfires, food-borne infectious diseases and increases in air pollution.

### Economic impacts of climate change

- Economic modelling for the Garnaut Climate Change Review in 2008 estimated that the negative impacts of unmitigated climate change may reduce Australia's gross national product by around 2 per cent by 2050 and by around 7 per cent by 2100. Most of this would be due to reduced performance or failure of infrastructure. This estimate is conservative, because this modelling only included costs that were readily quantifiable.
- A recent analysis by the Department of Climate Change and Energy Efficiency of the risks in a scenario with a 1.1 metre sea level rise on coastal assets found that more than \$226 billion worth of homes, industrial properties and road and rail infrastructure would potentially be exposed to inundation and erosion impacts around the turn of the century.
- The recent flooding in Queensland and Cyclone Yasi provide an insight into the types of events that Australia could increasingly face. These events are estimated to have cost the economy about \$12 billion in lost output.

## 1.5 Taking action can make a difference

It is not too late to reduce the risks of climate change. How far temperatures rise in coming decades will depend on how much carbon pollution increases.

On a global level, concentrations of carbon pollution in the atmosphere are measured in parts per million. Before the industrial revolution, this concentration stood at around 280 parts per million. Two centuries of population growth and economic development later and that number has risen to around 390 parts per million.

Governments around the world have agreed to limit carbon pollution so that average global temperature rise can be held below 2 degrees Celsius above pre-industrial levels, which is broadly consistent with global concentrations of 450 parts per million. If this is achieved, Australia will still face some impacts. However, our communities and environment will be better able to cope with those effects.

Modern industrial society relies heavily on fossil fuels for energy and transport, and many industrial processes also release greenhouse gases. The world's developing economies are industrialising rapidly, lifting millions of people out of poverty, but adding to carbon pollution.

If the world were to continue as it has in the past, in a 'business as usual' fashion, scientists project that the concentration of carbon pollution in the atmosphere would rise to up to around 940 parts per million by the end of the century: a level which could see temperatures rising up to a dangerous 6.4 degrees Celsius above 1990 temperatures.

Yet the task is achievable. Economies can be retooled so that economic growth and rising prosperity are decoupled from growth in carbon pollution. This will require changes to the way we live and the way we do business, especially to the ways we produce and use energy. Studies in Australia and around the world have demonstrated that, with known technologies, carbon pollution can be reduced without significantly slowing economic growth. Indeed, the retooling of our economy will deliver new technologies, new jobs and new opportunities. The Australian Government's plan for a clean energy future will translate these opportunities into reality.

*The evidence shows that ignoring climate change will eventually damage economic growth. Our actions over the coming few decades could create risks of major disruption to economic and social activity, later in this century and in the next, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century. And it will be difficult or impossible to reverse these changes. Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries. The earlier effective action is taken, the less costly it will be (The Economics of Climate Change: The Stern Review, 2007).*

Taking action now to reduce the risks of climate change is like paying an insurance premium. Most Australians take out house insurance, even though the odds of their houses being destroyed are low. These Australians have made the judgment that an insurance premium is a reasonable price to pay to ensure that they are never exposed to having no home and no money to pay for a new one. There is a high probability that, if carbon pollution is not reduced, then Australia will face very serious negative impacts from climate change. There is a small probability that these impacts would be so large as to be catastrophic for our natural systems and economy. Faced with these odds, the cost of reducing carbon pollution is a small price to pay to reduce the risks of climate change. It would be imprudent not to take out insurance and adopt a 'wait and see' approach, exposing our economy, our society and our natural heritage to unacceptable risks.

Treasury modelling has estimated that stabilising greenhouse gas concentration levels at around 450 parts per million would come at a cost equivalent to reducing growth in global living standards by 0.1 per cent a year. This is a small insurance premium to pay when weighed against the risks of doing nothing.

The Climate Commission reported in May this year that 2010-2020 is the critical decade for action on climate change. Australia faces an opportunity during this decade. If we reform the economy to reduce carbon pollution and play our part in global efforts to tackle climate change, we can underwrite our future prosperity. By acting now, Australia can look forward to long-term prosperity, while protecting the environment for ourselves and for future generations.



# Chapter 2

A PLAN FOR ACTION





## Chapter 2: A plan for action

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### Key messages

- **Australia needs to reduce its carbon pollution.**
- **The rest of the world is taking action.**
- **Australia should do its fair share and cannot risk falling behind.**
- **The Government's clean energy plan will cut pollution by at least 5 per cent compared with 2000 levels by 2020, which will require cutting net expected pollution by at least 23 per cent in 2020.**
- **The Government has a new long-term target to cut pollution by 80 per cent below 2000 levels by 2050.**

## 2.1 Australia's pollution profile

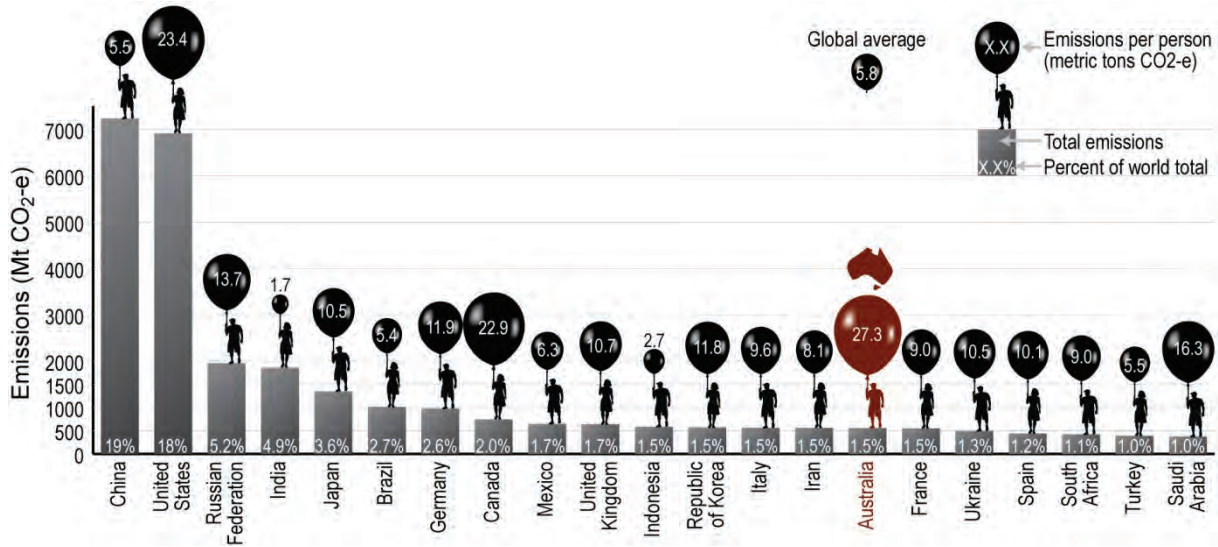
The starting point for the Government's clean energy future plan is understanding the profile of Australia's carbon pollution — how much pollution we put into the atmosphere and how it is generated — and understanding the structure of our economy, which explains the special nature of our challenge. Australia's carbon pollution levels are very high given our population size, and our economy is highly dependent on highly polluting energy sources. To maintain our international competitiveness in the future as more countries take action on climate change, we need to reduce our carbon pollution and generate cleaner pathways to economic growth.

Australia emitted 565 million tonnes of carbon pollution in 2009, the latest year with available figures. On a per person basis, that is the equivalent of every Australian adult driving a medium-sized petrol-powered car almost 200,000 kilometres during the year.

### 2.1.1 Given our population, our pollution is high

Australia's carbon pollution represents around 1.5 per cent of global greenhouse gas emissions. That makes us one of the top 20 polluting countries in the world. Our annual carbon pollution is roughly the same as that of countries like Spain, France, Italy, South Korea and the United Kingdom. All of those countries have populations two to three times larger than Australia. In fact, Australia produces more carbon pollution per person than any other developed country in the world; more even than the world's biggest economy, the United States (Figure 2.1).

Figure 2.1: Global comparison – overall and per person emissions in 2005



Source: Climate Analysis Indicators Tool, Version 8.0 (World Resources Institute, 2010). Note land use change is excluded.

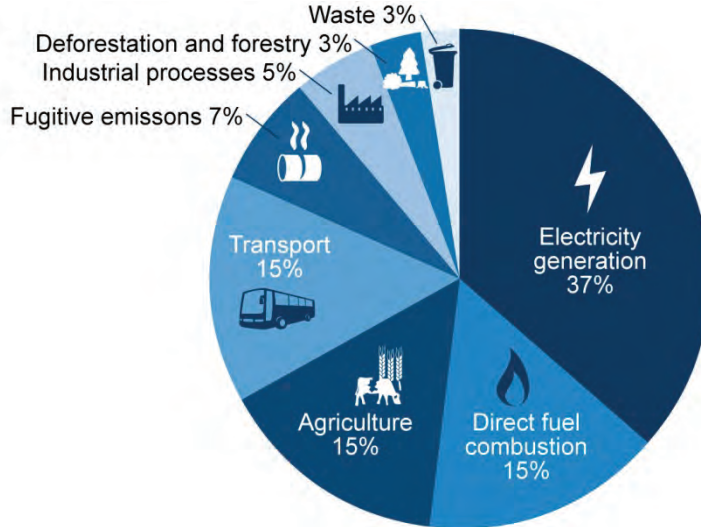
### 2.1.2 Where the pollution comes from

The profile of Australia's carbon pollution is driven by our use of fossil fuels. Our pollution per person is high because we have an energy sector that is very emissions-intensive. For every kilowatt hour of electricity generated in Australia, considerably more carbon pollution is released than in most other countries.

Reflecting the availability of cheap and abundant coal, electricity generation is Australia's largest source of carbon pollution (Figure 2.2). Electricity generation is responsible for just over a third of Australia's total carbon pollution. Direct fuel combustion — reflecting the use of gas and other fuels in industry and homes — accounts for another 15 per cent. Transport and agriculture each contribute around another 15 per cent. The remaining sources are 'fugitive' emissions — mainly the methane and carbon dioxide which escape into the atmosphere when coal is mined and gas is produced — along with pollution from industrial processes and decomposition of waste in landfills and elsewhere. Trees absorb carbon dioxide, so when land is cleared there is an increase in carbon pollution and when vegetation grows there is a decrease. The net impact of these sources — deforestation, reforestation and afforestation — contributes 3 per cent of Australia's total carbon pollution.



Figure 2.2: Australia's carbon pollution profile



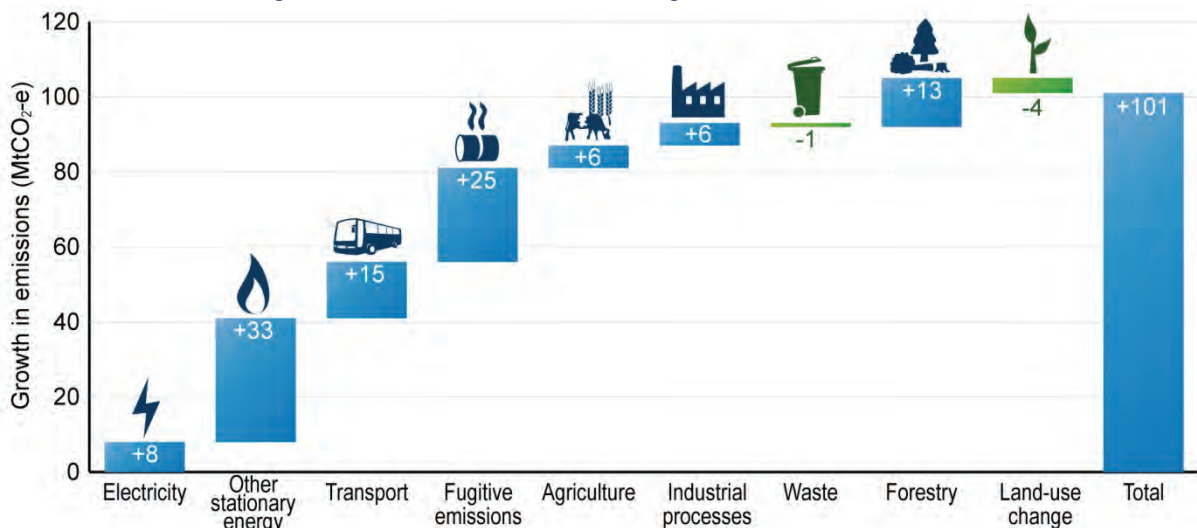
Source: 2009 emissions from the National Greenhouse Gas Inventory 2011, DCCEE analysis.

### 2.1.3 How pollution is growing

Australia's carbon pollution is increasing rapidly. Even taking into account existing climate change policies such as the Renewable Energy Target and the Carbon Farming Initiative, our carbon pollution is projected to rise to 679 million tonnes in 2020 in the absence of further action. That represents an increase of 22 per cent over the two decades from 2000 to 2020.

Our levels of carbon pollution are not only rising but, without a plan to cut carbon pollution, they are projected to rise faster in the future than in the past. Growth in carbon pollution over the next decade is expected to be dominated by emissions associated with the extraction and processing of energy resources driven by strong export demand. Fugitive emissions from coal mines and oil and gas projects, as well as direct fuel combustion emissions from liquefied natural gas projects, account for almost half of the growth in Australia's total emissions from 2010 to 2020 (Figure 2.3).

Figure 2.3: Sectoral emissions growth 2010 to 2020



Source: Treasury modelling, 2011 (medium global action scenario).

## 2.2 Setting targets to reduce pollution

Carbon pollution reduction targets set goals for the nation. They should be environmentally meaningful, economically manageable and practical, and should represent our fair share of global reductions. Pollution reduction targets provide certainty for businesses to plan investments, for governments to design policies and for households to understand how their actions contribute to national progress.

The scientific advice is that stabilising concentrations of carbon pollution in the atmosphere at 450 parts per million provides a reasonable chance of avoiding the most dangerous impacts of climate change by limiting global temperature rises to less than 2 degrees Celsius.

At the United Nations 2009 Copenhagen Climate Change Conference, and at the 2010 conference in Cancun, more than 100 countries have agreed to limit carbon pollution so that the average global temperature rise can be held below 2 degrees Celsius above pre-industrial levels, which is broadly consistent with global concentrations of 450 parts per million. The United States and China, the world's biggest polluters, have committed themselves to this ambition. With this global goal in place, countries from around the world have set targets to reduce their carbon pollution.

### 2.2.1 Australia's targets for the decade ahead

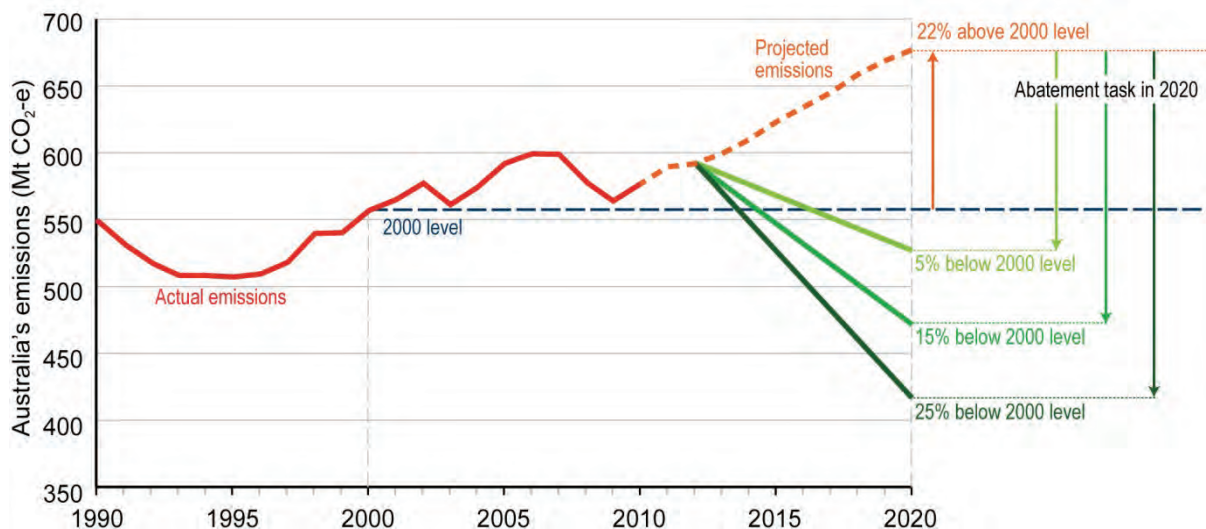
The Government has committed to responsible targets to reduce carbon pollution and to play our part in the global effort to avoid dangerous climate change. The Government has committed to reduce carbon pollution by 5 per cent from 2000 levels by 2020 irrespective of what other countries do, and by up to 15 or 25 per cent depending on the scale of global action.

Meeting the 5 per cent target will require abatement of at least 159 Mt CO<sub>2</sub>-e, or 23 per cent, in 2020 (Figure 2.4).<sup>1</sup> This is equivalent to taking over 45 million cars off the road by 2020.

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1 The Carbon Farming Initiative (CFI) helps to lower domestic emissions. However, in the absence of a domestic carbon pricing mechanism, this does not contribute to meeting Australia's abatement challenge. Without a domestic carbon pricing mechanism in place, credits created under the CFI would be either sold to foreign purchasers or used in the domestic voluntary market (for example, by companies seeking to be carbon neutral). If CFI credits are exported, then the purchasing country is entitled to count the abatement, not Australia. If CFI credits are used and cancelled in the voluntary market, the Government has committed that this abatement would be additional to meeting our targets.

Figure 2.4: Projected growth in emissions and the abatement challenge



Source: Treasury modelling, 2011 (medium global action scenario).

## 2.2.2 A new long-term target

As part of its plan to secure a clean energy future, the Government has adopted a new long-term target: to reduce carbon pollution by 80 per cent compared with 2000 levels by 2050.

This is consistent with the findings of the Intergovernmental Panel on Climate Change's Fourth Assessment Report that, to stabilise concentrations of carbon pollution at 450 parts per million, 2050 targets for developed countries should be between 80 to 95 per cent below 1990 emissions. Treasury modelling shows this target can be achieved with modest cost to our economy.

The Australian Government's long-term target is also consistent with targets announced by other developed countries, including the United Kingdom and Germany.

It is in Australia's national interest to contribute to reducing global pollution because our climate's future is inextricably linked to global climate action. The new long-term target will drive Australia's transformation to a clean energy future. It will give businesses and investors the certainty they need to start retooling our economy to maintain growth while lowering carbon pollution.

## 2.3 Choosing the best policies

Once countries sign up to targets and pledges to reduce carbon pollution, their governments, businesses and citizens have choices about what actions to take. Around the world, a considerable array of policies and actions are being implemented to tackle climate change.

### 2.3.1 Action around the world

Globally, more money is now being invested in new renewable power than in new fossil fuel electricity generation and more than 85 countries have renewable energy targets either legislated or planned. China is now the world's largest manufacturer of solar panels and wind turbines. China has the most renewable energy generation capacity of any country. The United States is moving to regulate carbon pollution, including from large industrial facilities. President Barack Obama has announced a new Clean Energy Standard which aims to double the share of clean energy in America's electricity supply by 2035.

Many countries have put a price on carbon pollution, including through emissions trading schemes that create economic incentives for industry to reduce pollution. Some policies have been in place for many years. Thirty-one European countries — including the United Kingdom, Germany and France — have a price on carbon pollution through emissions trading schemes. New Zealand started emissions trading in 2008. Carbon taxes are also in place in the United Kingdom, India, Switzerland, Denmark, Finland, Norway, Sweden, the Netherlands, Costa Rica and Ireland.

#### Productivity Commission study of key economies' climate change policies

- The Productivity Commission has identified over 1000 climate change policies in eight key economies, including Australia. These countries comprise over half of the world economy and are among Australia's top trading partners.
- The study shows that many countries are taking action to reduce carbon pollution.
- In electricity generation, Australia's current policies are reducing carbon pollution by around 3 to 5 per cent below what would have happened if no action had been taken. This is comparable to the impact of current policies in China and the United States.
- However, Australia is not a global leader. The Commission's estimates show Australia is well behind the United Kingdom and Germany, where current policies are reducing pollution by electricity generators by around 8 to 15 per cent and 18 to 20 per cent respectively.
- The Productivity Commission study strongly supports market-based mechanisms for cutting pollution. Using the market to put a price on pollution was found to be a much cheaper policy approach than government regulation or subsidies. Emissions trading schemes in the European Union and New Zealand had the lowest costs for every tonne of carbon pollution reduced of the over 1000 policies studied.

### 2.3.2 Action in Australia: a plan for a clean energy future

Australia needs to decouple growth in pollution from growth in the economy. We need to reduce our dependence on existing pollution-intensive technologies. We need to use cleaner forms of energy, including renewable energy. We need to learn how to use energy more wisely. And we need to make the most of opportunities to reduce pollution and store carbon on the land.

To maintain our living standards and international economic competitiveness, we need to make these changes in a measured and practical manner. It will be critical to use the most environmentally effective and economically efficient policies that can be devised. All of this is required to reduce the risks to our environment, our economy and our international competitiveness that a 'wait and see' approach would bring.

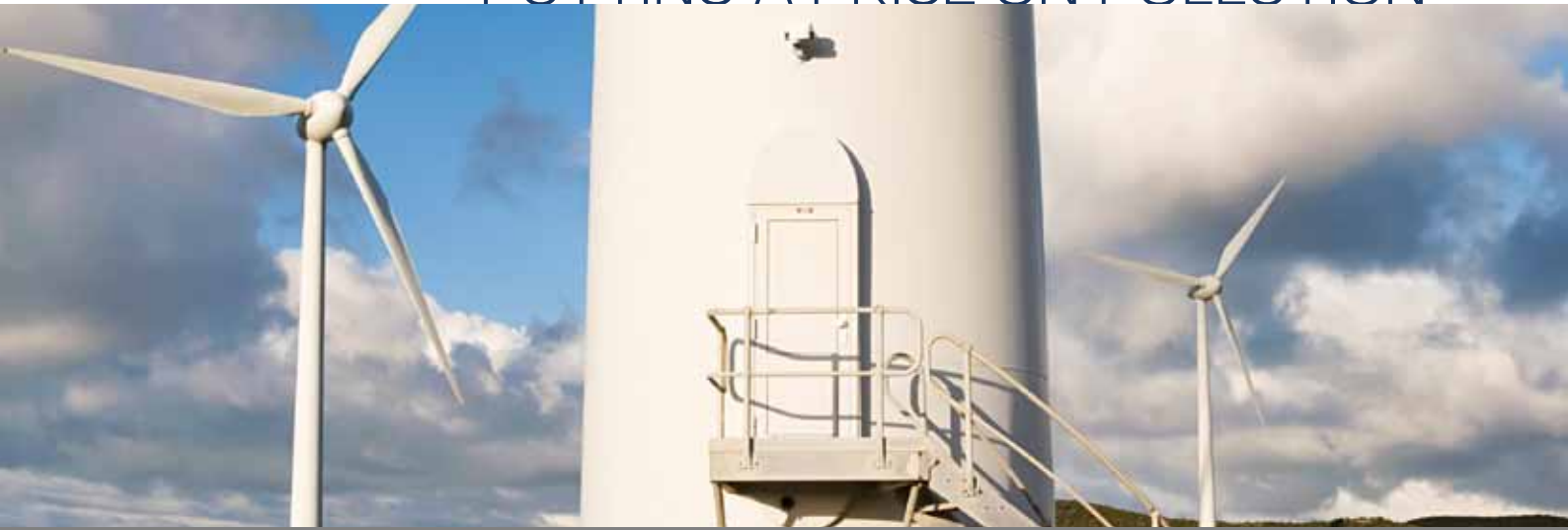
Australia is already taking some important actions to reduce carbon pollution. In 2009, the Government expanded the Renewable Energy Target, which will ensure 20 per cent of Australia's electricity comes from renewable sources by 2020. This means, by the early 2020s, the amount of electricity coming from sources like solar, wind and geothermal will be almost as large as all of Australia's current household electricity use.

Yet even with these existing measures in place, Australia's carbon pollution is projected to continue to rise by almost 2 per cent a year. This is why the Government has adopted a comprehensive plan to secure a clean energy future. The plan brings existing policies together and introduces several critical new initiatives. It has four elements: a carbon price, renewable energy, energy efficiency, and action on the land. This plan will allow households, communities, businesses and governments to work together to build a clean energy future.



# Chapter 3

## PUTTING A PRICE ON POLLUTION







## Chapter 3: Putting a price on pollution

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### Key messages

- **A price on carbon pollution will create a powerful incentive for businesses across the economy to cut their pollution by investing in clean technology and finding more efficient ways of operating. It will ensure that pollution is reduced at the lowest cost to the economy.**
- **The carbon pricing mechanism will start with a fixed price on carbon like a tax and will then transition to an emissions trading scheme.**
- **From 1 July 2012, a fixed carbon price will start at \$23 a tonne, for three years. From 1 July 2015, the carbon price will be set by the market.**
- **Households and small businesses will have no direct obligations under the carbon price.**
- **Around 500 of the biggest polluters in Australia will be required to pay for their pollution under the carbon pricing mechanism.**
- **A carbon price will not apply to agricultural emissions or emissions from light on-road vehicles.**
- **A new Climate Change Authority will provide independent advice to the Government on pollution caps, the performance of the carbon price and other initiatives.**

### 3.1 Pricing pollution: the basics

Putting a price on carbon pollution is the first element of the Government's plan for Australia's clean energy future. The other three elements are renewable energy, energy efficiency and action on the land.

A carbon price is the most environmentally effective and economically efficient way to reduce pollution.

The carbon pricing mechanism will apply directly to around 500 of the biggest polluters in Australia. The 50 largest polluters will be responsible for around 75 per cent of the pollution covered by the carbon pricing mechanism.

Every cent raised from a price on carbon will be used to provide tax cuts and increased benefits to households, support jobs in the most affected industries, and build a new clean energy future.

### 3.1.1 The spillover problem

A carbon price may seem like a complex concept. Yet at its heart lies a simple and powerful insight. Some activities impose significant costs on society. If those activities are free or costless for the people or businesses who carry them out, then the whole of society will be worse off. These negative impacts are known as 'spillover effects'. Governments can tackle negative spillover effects by regulation and pricing. Economists have demonstrated that putting an extra price on activities with negative spillover effects can improve overall social welfare and is the most efficient and cheapest way to deal with the spillover problem.

Carbon pollution is this kind of problem. Releasing carbon dioxide and other greenhouse gases into the atmosphere risks dangerous climate change. Climate change will impose significant human, environmental and economic costs on all societies. Yet, at the moment, releasing carbon pollution into the atmosphere is free in Australia.

When there is no charge for the social and economic costs of putting carbon pollution into the atmosphere, there is no reward for a business that finds a lower-pollution way of doing things. Nor is there any disincentive for a business which increases its levels of carbon pollution. A carbon price changes this by putting a price tag on pollution. This price tag will encourage businesses across the whole economy to reduce their pollution. A carbon price also creates a competitive advantage for businesses, investors, researchers and innovators who find cleaner ways of doing business. In this way, it creates powerful incentives and uses the market to deliver benefits for the whole of society.

Rather than relying on government decisions to regulate some activities or subsidise others, a carbon price leaves it to millions of businesses and consumers to find the most cost-effective ways of reducing carbon pollution. Analysis of more than 1000 different policies to reduce emissions by the Productivity Commission shows that market-based approaches like this are the most cost-effective way of reducing carbon pollution.

### 3.1.2 How a carbon price will reduce pollution

The carbon pricing mechanism will only apply to around 500 of the biggest polluters in the country. They will pay for each tonne of pollution they release into the atmosphere. If a business can lower its pollution then it will lower the carbon costs that it pays. This will create economic incentives for businesses to reduce their pollution, and to do so in the cheapest possible ways. It will also make lower-polluting technologies, especially clean energy, more competitive by boosting investment in, and take-up of, these technologies. In this way, introducing a price on carbon will trigger the transformation of the economy towards a clean energy future.

The types of changes a carbon price can deliver are:

- promoting more gas-fired or renewable electricity generation
- converting coal-fired boilers to gas-fired boilers in manufacturing plants, commercial buildings and hospitals
- making energy-efficient buildings more attractive to tenants

- providing an incentive for households and businesses to use energy more wisely
- prompting innovation in technology to reduce pollution from existing processes
- encouraging chemical plants to install scrubbers to reduce nitrous oxide emissions
- encouraging the installation of more efficient motors in industry
- encouraging the capture and use or flaring of emissions from mining and gas extraction.

### 3.1.3 Households and jobs will be supported

Every cent raised from a price on carbon will be used to provide tax cuts and increased benefits to households, support jobs in the most affected industries, and build a new clean energy future.

The carbon price will increase costs for those businesses that are covered by the mechanism. They will be able to lower this cost if they can reduce their pollution, or pass on the cost to their customers. The Government recognises that some big polluters will have trouble passing the cost on to their customers because the prices of goods and services they sell are set on international markets. An ongoing Jobs and Competitiveness Program worth \$9.2 billion over the period to 2014-15 will assist these businesses.

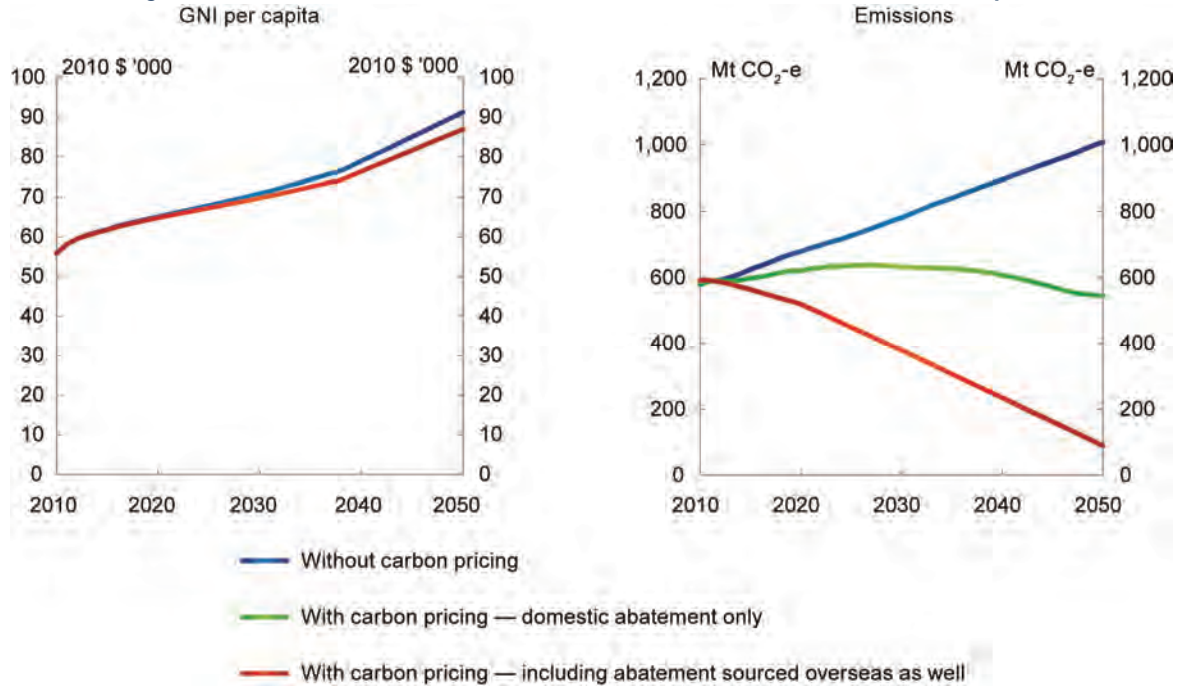
Other businesses will be able to pass on some or all of their carbon costs to customers. Treasury modelling has found that the cost of living impact for ordinary householders will be an increase of 0.7 per cent, as measured by the consumer price index in 2012-13. To help families and individuals, the Government will provide income tax cuts, higher Family Tax Benefits, and increases in pensions, allowances and other Government benefits. This package of household assistance will mean that around two out of three households will receive assistance that offsets their average cost of living impact. Many households will be better off.

### 3.1.4 Our economy will be transformed

The carbon price is the first element of the Government's plan for a clean energy future: it will trigger a broad transformation of the economy. Our economy has successfully handled comparable structural changes over its history. In fact, transformative changes — new products and technologies, and the integration of our economy into the global economy set in train by the reforms of the 1980s and 1990s — have underpinned rising prosperity and sustainable growth in Australia.

Treasury modelling shows that, under a carbon price, the economy continues to grow (Figure 3.1).

Figure 3.1: Gross National Income with and without the carbon price



Source: Treasury modelling, 2011 (core policy scenario).

## Economic impacts of a carbon price

Treasury modelling (core policy scenario) estimates that under a carbon price:

- Incomes grow: Gross National Income per person increases from today's levels (around \$56,000) by around \$9,000 per person to 2019-20. By 2050, the increase is expected to be more than \$30,000 per person in today's dollars.
- Jobs grow: national employment increases by 1.6 million jobs by 2020.
- Pollution falls: growth in domestically produced carbon pollution slows.
- Large-scale renewable energy (excluding hydro) is projected to be 18 times its current size by 2050. Total renewable generation (including hydro) will comprise around 40 per cent of electricity generation in 2050.
- Gas-fired electricity increases by over 200 per cent by 2050.

## 3.2 Pricing pollution: the details

### 3.2.1 A two-stage approach

The Government will introduce a carbon pricing mechanism from 1 July 2012. From that date, businesses that are covered will pay a price for each tonne of carbon pollution they put into the atmosphere each year.

There will be two stages. For the first three years, the price for each tonne of pollution will be fixed, like a carbon tax. Then, from 1 July 2015, the carbon pricing mechanism will transition to a 'cap and trade' emissions trading scheme. In this second 'flexible price' stage, the carbon price will be set by the market.

#### How the carbon pricing mechanism will work

- Large polluters will report on their emissions and buy and surrender to the Government a carbon permit for every tonne of carbon pollution they produce.
- In the fixed price period, as many carbon permits as businesses require to meet their obligations will be available at the set price. This will operate like a carbon tax on around 500 polluters.
- In the flexible price period, the number of permits issued by the Government each year will be limited by a cap on annual carbon pollution.
- The price will then be determined by the market. Businesses will compete to buy the number of permits they need to meet their obligations. Businesses that value these carbon permits most highly, because the cost of reducing their pollution is higher, will be willing to pay the most for them. For some businesses, it will be cheaper to reduce emissions than buy carbon permits.
- From the start of the flexible price period, businesses will also have access to international carbon markets to buy permits which represent credible reductions in carbon pollution internationally.
- In both the fixed and flexible price period, large polluters will have to pay a price for every tonne of carbon pollution they release. These businesses will choose to reduce their emissions if they can do so at a cost that is less than the carbon price. In both periods, the market will determine the most cost-effective ways to reduce carbon pollution.

### 3.2.2 Prices will be fixed for three years

An initial stage with fixed carbon prices will provide stability and predictability. This will give businesses time to get used to the new system, to understand their obligations and to start planning ways of reducing their pollution. Businesses will reduce their pollution when it is cheaper to do so than to pay the fixed price. Thus the market will create incentives to cut carbon pollution.

The price will start at \$23 per tonne on 1 July 2012. In each of the next two years, it will rise by 2.5 per cent in real terms, assuming inflation of 2.5 per cent a year, which is the mid-point of the Reserve Bank of Australia’s target range for inflation. The carbon price will be \$24.15 per tonne in 2013-14 and \$25.40 per tonne in 2014-15.

### 3.2.3 Then prices will be flexible

The carbon pricing mechanism will move automatically to a flexible, market-driven approach on 1 July 2015. From this date, the carbon price will no longer be fixed, but will be set by the market.

During the flexible price period, an overall limit (or cap) will be placed on Australia’s annual greenhouse gas emissions from all sources of pollution covered by the carbon price. There will be no limits on individual sectors, firms or facilities.

The Government will set the cap by issuing a fixed number of carbon permits each year. Each permit will represent one tonne of pollution. This will be one of the main ways Australia ensures it meets the pollution targets outlined in Chapter 2. Some of the carbon permits issued each year will be sold by the Government at auction. Others will be allocated to businesses without charge to support jobs and competitiveness, and help strongly affected industries make the transition a clean energy future. Chapters 5, 6 and 7 provide more details on how the Government will assist industries to make the transition.

Businesses will be free to buy and sell the carbon permits they have acquired from the Government. This will create a market for carbon permits that is designed to ensure the reductions in pollution under the carbon price are achieved at the lowest cost to the economy: firms will buy permits if they cannot reduce their pollution for less than the cost of the permits.

### 3.2.4 Setting pollution caps

In the flexible price period, the Government will set annual caps on pollution. Before the start of this flexible price period, the Government will set out the caps for the first five years from 1 July 2015. Once the flexible price system is under way, the caps will be extended each year. This ensures that businesses always have five years of certainty about the pollution caps they face.

**Table 3.1: Timeline for setting pollution caps**

Deadline	Pollution cap announced for financial year(s) beginning:
31 May 2014	2015, 2016, 2017, 2018 and 2019
30 June 2016	2020
30 June 2017	2021
Pollution caps will continue to be set annually	

Further details on transition arrangements and pollution caps are provided in Appendix A, Table 2.

### 3.2.5 A new Climate Change Authority

The Government will create an independent statutory body, the Climate Change Authority, to provide independent advice to the Government on the performance of the carbon price and other initiatives.

One of the Authority's roles will be to make recommendations to the Government on the year-by-year steps, and on the longer-term path, that Australia should take towards the 2050 target. The Government will make the final decisions. The Authority will report regularly on progress, giving the public an independent assessment of whether we are on track to meet our targets.

The Authority will conduct regular, public reviews and its reports will be made public. The Government will respond to its recommendations within a limited timeframe.

The Authority will complete its first review — which will provide recommendations on the carbon pricing mechanism's first five years of pollution caps — by February 2014.

Further details on the Climate Change Authority are provided in Appendix A, Table 11.

### 3.2.6 Safety valves

For the first three years of the flexible price period, safety valves will be built into the system to avoid price spikes or plunges. This will reduce the risk for businesses as they gain experience in having a market set the carbon price.

The first safety valve is a price ceiling. This will be set \$20 higher than the expected international carbon price at the start of the flexible price period (1 July 2015). The second safety valve is a price floor. This will mean that the carbon price cannot fall any lower than \$15 a tonne in 2015-16. The floor is designed to reduce the risk of sharp downward movements in the price, which could undermine long-term investment in clean technologies. Both the price ceiling and the price floor will increase gradually each year.

These safety valves will apply for the first three years of the flexible price period. A review by the Climate Change Authority of the role of the price ceiling and price floor will occur in 2017.

### 3.2.7 Coverage of the carbon price

Carbon pollution from the following sources will be covered by a carbon price: stationary energy, waste, rail, domestic aviation and shipping, industrial processes and fugitive emissions. The Government also intends to expand the coverage of the carbon price to include heavy on-road vehicles from 1 July 2014. This measure was not agreed by the Multi-Party Climate Change Committee (see Appendix D).

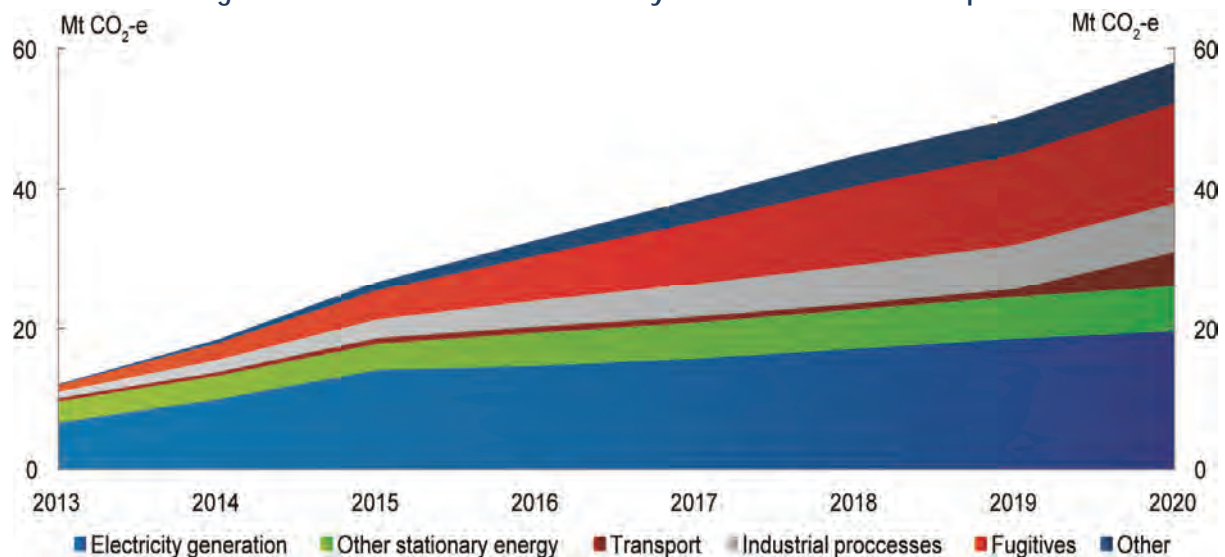
Over half of Australia's emissions will be directly covered by the carbon pricing mechanism and around two-thirds will be covered by a carbon price applied through various means.

Farming and other land-based activities will not be covered. However, the Carbon Farming Initiative will give farmers and other land managers an opportunity to generate income from taking action to reduce their pollution (see Chapter 9).

The broad coverage of the carbon price will ensure that the economy as a whole starts moving towards a clean energy future and that the cheapest ways of reducing pollution will be implemented.

Treasury modelling shows that a broad-based carbon price will encourage pollution reductions across all sectors of the economy (Figure 3.2). If sectors are excluded, it means that Australia misses out on their contributions to the pollution reduction task. In turn, this means that other sectors would need to reduce their pollution even further (at higher cost), or that Australia would need to rely more heavily on buying pollution reduction from overseas through international carbon markets. In addition, the Carbon Farming Initiative is estimated to drive emissions reductions in agriculture and forestry.

Figure 3.2: Emissions reduction by sector with a carbon price



The coverage arrangements are summarised below and detailed in Appendix A, Table 4.

## Gases

The carbon pricing mechanism will cover four of the six greenhouse gases counted under the Kyoto Protocol — carbon dioxide, methane, nitrous oxide and perfluorocarbon emissions from the aluminium sector. The remaining greenhouse gases counted under the Kyoto Protocol (hydrofluorocarbons and sulphur hexafluoride) will face an equivalent carbon price, which will be applied through existing synthetic greenhouse gas legislation.

## Large polluters

It is important to ensure that the carbon pricing mechanism is practical and minimises costs to business. For this reason, only firms that release over a certain amount of carbon pollution a year, or are large suppliers of natural gas, will pay the carbon price. Facilities that have direct greenhouse gas emissions of 25,000 tonnes of CO<sub>2</sub>-e a year or more (excluding emissions from transport fuels and some synthetic greenhouse gases) will be covered. There



will be a lower threshold for certain landfill facilities. Retailers of natural gas will be liable for carbon pollution from the use of the fuels they supply to customers.

## Transport

Households and light commercial vehicles will not face a carbon price on the fuel they use for transport. In addition, the agriculture, forestry and fishing industries will not face a carbon price on their off-road fuel use.

A carbon price will apply to fuels used in domestic aviation, marine and rail transport.

Similarly, a carbon price will apply when transport fuels are used for other purposes, such as running diesel generators on a mine site.

No transport fuels will be covered directly under the carbon pricing mechanism. Where a carbon price applies, it will be achieved in a different way — through changes in fuel tax credits or changes in excise. The changes will be calculated to have the same effect as directly applying a carbon price. The changes to fuel tax credits or excise will be adjusted to ensure the carbon price on transport fuels is in step with the carbon price applying to the rest of the economy.

The Government intends to apply a carbon price to heavy on-road transport from 1 July 2014. This measure was not agreed by the Multi-Party Climate Change Committee.

### Treatment of transport fuels

A carbon price will be applied to:

- domestic aviation
- domestic shipping
- rail transport
- off-road transport use of liquid and gaseous fuels
- non-transport use of liquid and gaseous fuels.

A carbon price will not apply to:

- fuel used by households for transport
- light on-road commercial vehicles
- off-road fuel use by the agriculture, forestry and fishing industries
- gaseous fuels used for on-road transport
- ethanol, biodiesel and renewable diesel
- transport fuels when used as lubricants and solvents.

See Appendix D for additional Government measures relating to heavy on-road vehicles.

## 3.3 Linking to action by households, action on the land and global action

### 3.3.1 Recognising action taken by households

Many individuals are concerned about climate change and want to make their own direct contribution towards protecting the environment. People taking voluntary action want to know that they are making a real contribution to Australia's carbon pollution reduction activities. Voluntary action will be recognised under the carbon price in four ways. First, the Government will take voluntary action into account when setting pollution caps. Voluntary action will be treated as additional when accounting for Australia's pollution reduction targets after 2012. Second, in the carbon pricing mechanism's flexible price period, carbon permit holders may voluntarily cancel their permits. Third, a tax-deductible Pledge Fund will be established to help individuals buy and cancel carbon permits. Fourth, any purchases of accredited GreenPower from the start of the carbon pricing mechanism will be treated as voluntary action.

Further discussion of voluntary action can be found in Appendix A, Table 9.

### 3.3.2 Encouraging action on the land

Action on the land is one of the four elements of the Australian Government's plan for a clean energy future. The Carbon Farming Initiative will reward farmers and land managers who take steps to reduce pollution. It will do this by creating credits for each tonne of carbon pollution that farmers and land managers reduce or store on the land. These credits can then be sold to businesses that want to offset their carbon pollution. Credits that are Kyoto-compliant can be used to meet liabilities under the carbon pricing mechanism. In the fixed price period, liable parties will be able to meet no more than 5 per cent of their obligations using Carbon Farming Initiative credits.

Safeguards will ensure the environmental integrity of the Carbon Farming Initiative. Linking the Carbon Farming Initiative with the carbon price will create incentives for actions which reduce emissions or maintain and enhance the landscape's carbon storage capacity, and there will be important benefits for sustainability and biodiversity.

The eligibility of Carbon Farming Initiative credits under the carbon pricing mechanism is set out in Appendix A, Table 7.

### 3.3.3 International linking for a global approach

Australia's carbon price will be linked to carbon markets around the world from the start of the flexible price period. This will allow reductions in carbon pollution to be pursued globally at the lowest cost. Carbon pollution is not confined to national borders. It affects the whole planet. International linking of carbon markets will allow businesses that release carbon in one country to be matched up with businesses in other countries that are able to reduce their

carbon pollution at lower costs. International linking encourages action to reduce carbon pollution around the world, and plays an important role in helping developing countries adopt clean technologies.

International linking will start when the carbon price moves to its flexible price period from 1 July 2015. Australian businesses will be able to buy international permits from credible international carbon markets or emissions trading schemes in other countries. They will be allowed to use these permits to meet some of their local obligations. When an Australian business buys an international permit, it means that a tonne of pollution cannot be released overseas. Farmers will be able to sell their Carbon Farming Initiative credits to international markets.

Safeguards will be in place to ensure international permits are credible and do not undermine the environmental integrity of Australia's pollution reduction efforts. Until 2020, businesses will have to meet at least half of their annual obligations each year by buying Australian carbon permits or Carbon Farming Initiative credits. It will be more efficient and less costly to reduce Australia's carbon pollution by a mixture of domestic reductions and international permit purchases compared with relying on domestic action alone. International linking allows Australian businesses to pursue credible, cheaper carbon pollution reduction opportunities wherever they are available.

The price of international permits will act as an additional safety valve on carbon prices in Australia. If reducing carbon pollution in Australia is more expensive than reducing carbon pollution in another country, Australian firms will be able to purchase an international permit. With international linking, the carbon price in Australia will be set by international supply and demand for permits.

Detailed linking arrangements are described in Appendix A, Table 8.

### 3.4 Governance: making and administering the rules

Sound governance will ensure that the carbon pricing mechanism is efficient and effective. The roles of making, administering and reviewing the rules have been carefully allocated to ensure that appropriate accountabilities are in place.

The Government and the Parliament will be responsible for major policy decisions that require the balancing of environmental, economic and social factors and have far-reaching implications.

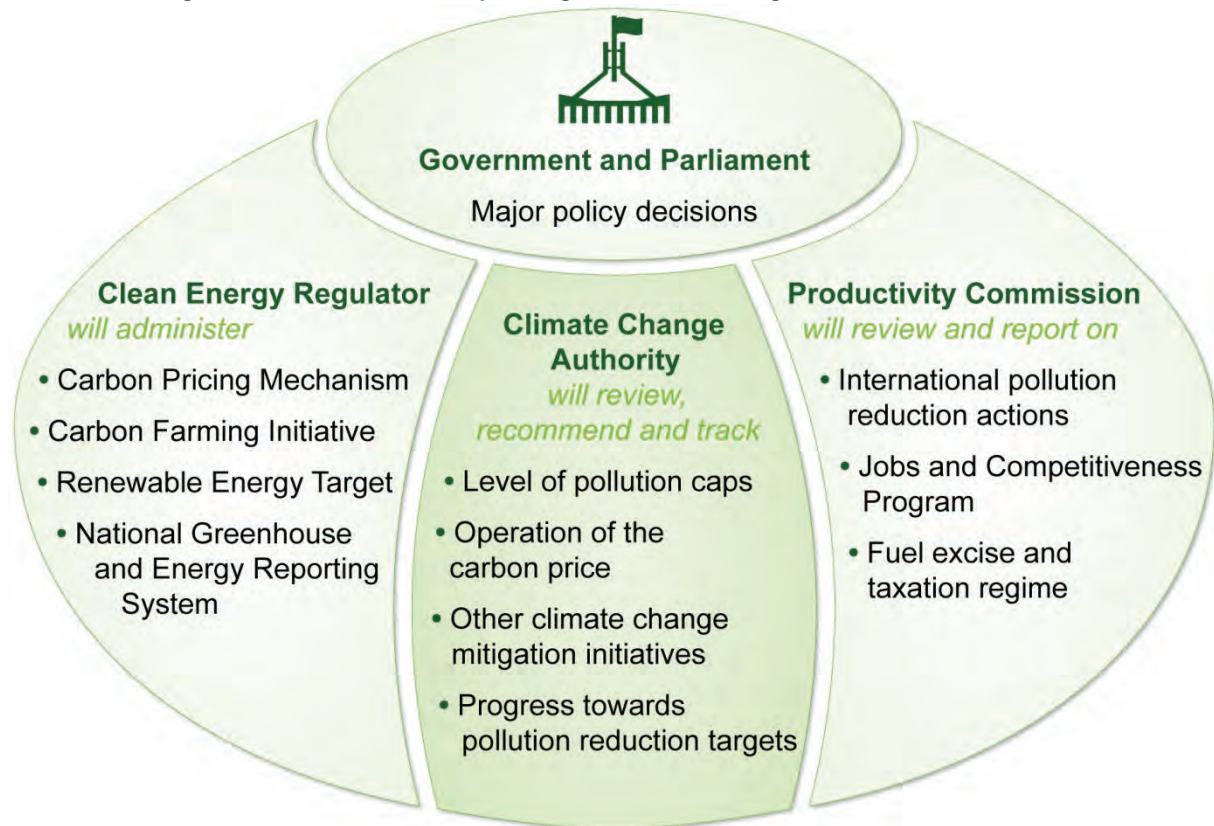
The Clean Energy Regulator will administer key elements of the carbon pricing mechanism as well as the Carbon Farming Initiative (see Appendix A, Table 12).

The Climate Change Authority will review pollution caps, the future trajectory of Australia's pollution levels and the performance of the carbon price and will track Australia's progress towards meeting its targets for reducing carbon pollution.

The Productivity Commission will review industry assistance under the Jobs and Competitiveness Program and the Coal Sector Jobs Package. It will also review the impact

of the carbon price on industry and continue reporting on actions by other countries to reduce carbon pollution (see Appendix A, Table 13).

Figure 3.3: The carbon pricing mechanism’s governance structure



### 3.5 The way forward

A carbon price will encourage the largest polluters to reduce the greenhouse gases they put into the atmosphere. A carbon price will also give economic impetus to the efforts of scientists, researchers, investors and entrepreneurs to find new less-polluting ways of doing the things we take for granted: producing and consuming the energy, goods and services of a modern economy. It will harness the power of markets to kick-start this transformation to a clean energy future and to ensure the transformation unfolds in the lowest cost way.

Carbon pricing is an economic reform that will put a price tag on activities that have significant negative spillover effects on the rest of society. In this way, the costs of carbon pollution will be factored into our behaviour and our decisions in the future. The end result will be lower carbon pollution, reduced risks of dangerous climate change and better outcomes for society as a whole. The Government is committed to this reform and is committed to introducing it in a way that is manageable for individuals, families and households, and for businesses and their employees.

The Government will support households, support jobs and competitiveness, and invest in renewable energy, energy efficiency and action on the land. Support will be provided to:

- households, so they can manage price impacts due to the carbon price (see Chapter 4)

- businesses, through the Jobs and Competitiveness Program and other measures to help manufacturing and small businesses save energy and adjust to a carbon price (see Chapter 5)
- Australian innovation in renewable energy and low-pollution technologies (see Chapter 6)
- policies to underpin the energy sector's move to a cleaner future and maintain secure energy supplies (see Chapter 7)
- initiatives to promote energy efficiency through the public, private and household sectors (see Chapter 8)
- opportunities for farmers and landholders to reduce or store carbon pollution, and to support biodiversity (see Chapter 9).

The plan involves a net cost to the Budget of \$3.8 billion over the four years to 2014-15 (\$4.3 billion including Government measures). The majority of this cost (\$2.7 billion) is provided prior to the commencement of the carbon price to assist households and businesses adjust. The ongoing fiscal cost is relatively modest, and includes the additional cost of the tax reform elements of the household assistance package. The plan will be delivered in a manner that is consistent with the Government's overall fiscal strategy. Detailed fiscal tables are provided at Appendix C.



# Chapter 4

## HELPING HOUSEHOLDS







## Chapter 4: Helping households

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### Key messages

**The Government will deliver household assistance ensuring millions of households are better off.**

- **There will be tax cuts, higher Family Tax Benefit and increases in pensions and allowances.**
- **The tax-free threshold will be more than trebled to \$18,200 in 2012-13. Together with \$445 of low-income tax offset, this means people on annual incomes of \$20,542 will pay no net tax.**
- **Household assistance for pensions, allowances and family benefits will be permanent and will keep pace with the cost of living, automatically rising in line with the consumer price index (CPI).**
- **Tax cuts will increase over time with a second round of tax cuts in 2015-16 that will further raise the tax-free threshold to \$19,400, matching the impact of the carbon price to 2020.**
- **These two rounds of major tax reform will free over 1 million people from having to lodge a tax return and boost the returns to work.**

### 4.1 How the Government will help households

Households will play an important role in the Government's plan for a clean energy future.

To help households adjust to the introduction of the carbon price, more than half of the revenue raised will be given to them primarily in the form of tax cuts, higher family payments and increases in pensions and allowances. As a result, millions of households will be better off, even after business has passed through costs from the carbon price.

The package of household assistance, first and foremost, helps to ensure that the impact of a carbon price is manageable for low and middle income Australian households, especially those who have less financial room to adjust to change. It does this through cash assistance delivered through tax cuts and increased Government payments. Other parts of the household assistance package support incentives for households to adopt their own energy and cost saving measures. By adopting such measures, households will be able to save money as well as contribute to Australia's clean energy future.

Figure 4.1: Overview of household assistance



The Government is also taking the opportunity of moving our economy to a clean energy future to reform the structure of the personal tax system, consistent with key recommendations of the 2009 Australia’s Future Tax System Review. These reforms will modernise the personal income tax system, making it simpler and more transparent. By cutting taxes, they will also improve incentives for and rewards from work, building on other recent Government measures to lift workforce participation. This represents a further response by the Government to the Australia’s Future Tax System Review’s overarching goals for reforming Australia’s tax and transfer system to meet the challenges of the 21<sup>st</sup> century.

The Government will more than treble the statutory tax-free threshold to \$18,200 in 2012, which will replace all but \$445 of the existing low-income tax offset (LITO). The combined effect of the LITO plus the \$18,200 tax-free threshold means that people will be able to earn annual income of up to \$20,542 before they pay any net tax. The statutory tax-free threshold will be further increased to \$19,400 in 2015, on transition to a floating carbon price. Together with a reduced LITO of \$300, people with annual incomes of up to \$20,979 will pay no net tax.

This will improve the rewards for work at low incomes.

As part of the changes, the statutory marginal tax rates will be more closely aligned with the hidden, effective rates that individuals actually pay. This increases transparency in the tax system.

In all, these tax cuts will mean that over 1 million people will be freed from the tax system. This means less time filling out tax forms, and more time to spend with their family.

It also means that workers earning less than the new tax-free thresholds will keep all of their wages in their regular pay packets, instead of waiting to receive some of it at the end of the financial year, as happens now. This will help workers make ends meet, while further improving immediate returns to work.

## 4.2 Reforming taxes and benefits

The Government will use more than half of the revenue raised from big polluters by the carbon price to help households. This assistance will be fair and permanent and it will be targeted at low and middle income households.

The average expected cost of living impact of the carbon price will be 0.7 per cent, or \$9.90 per week. Households will receive a combination of increased payments or tax cuts, worth an average of \$10.10 per week.

- For single pensioners, the cost of living impact for a pensioner with no other income is expected to be \$204 in 2012-13. In 2012-13, this person will receive an increase in their pension of \$338, more than offsetting their expected average cost of living increase.
- The average cost of living impact for a family with two teenage school children, where each parent earns \$50,000, is expected to be \$653 in 2012-13. Through a combination of reductions in personal income tax and increases in the Government payments such as the Family Tax Benefit, the family will receive household assistance of \$679.

Using the revenue from carbon pricing to help families in this way does not cancel out incentives to reduce pollution. Households will still face changes in relative prices, with goods made with fewer emissions becoming relatively cheaper. By choosing less carbon emission intensive goods and services, and taking simple actions to improve energy efficiency in their daily lives, households can save money. These savings will come on top of the increased tax cuts and payments that households will continue to receive.

#### 4.2.1 Commitments to households

The Government wants to make sure low and middle income households can help take action on climate change without unduly bearing any costs. That's why the Government is committed to ensuring:

- more than 50 per cent of the carbon price revenue will be used to assist households
- all assistance — payments and tax cuts — will be permanent and increase over time
- all low-income households will be eligible for assistance that at least offsets their expected average price impact from the carbon price
- middle-income households will be eligible for assistance that helps them meet their expected average price impact
- households with people who have a relevant concession card and face higher essential electricity costs due to a medical condition or disability will be eligible for additional assistance.

**Table 4.1: Income definitions and proportion of households receiving assistance**

Household adjusted taxable income	Single	Couple without children	Couple with children	Single parent	% households	% Receiving some assistance	% receiving >100% of expected cost of living impact
Low (less than)	\$30,000	\$45,000	\$60,000	\$60,000	34	100	100
Middle (between)	\$30,000-\$80,000	\$45,000-\$120,000	\$60,000-\$150,000	\$60,000-\$150,000	40	97	66
High (above)	\$80,000	\$120,000	\$150,000	\$150,000	26	74	18

These definitions are based on markers in the existing tax and transfer system, such as the point where the LITO begins to phase out (\$30,000) and the cut out of Family Tax Benefit B and the Baby Bonus (\$150,000).

### Assisting low-income households

Approximately 90 per cent of low income households will receive assistance that exceeds their expected average price impact by around 20 per cent. The additional assistance recognises that some households do face higher costs than others. It also ensures that sufficient assistance is available to meet the average expected price impact for all pensioners, including part rate pensioners.

#### 4.2.2 Assistance to households

Household assistance will be paid automatically through increases in Government payments, such as pensions, allowances and Family Tax Benefit, and through tax cuts.

The assistance will mean:

- pensioners and self-funded retirees will get up to \$338 extra per year if they are single, and \$510 per year for couples, combined
- families receiving Family Tax Benefit Part A will get up to an extra \$110 per child
- single income families with children will get up to \$69 extra in Family Tax Benefit Part B plus up to \$300 in an additional supplement
- allowance recipients will get up to \$218 per year for singles, and \$390 per year for couples, combined
- on top of this, all taxpayers with annual income of under \$80,000 will get a tax cut, with most receiving at least \$300 per year.

#### Tax reform – tax cuts and freeing over 1 million people from the tax system

Household assistance will be delivered to low and middle income individuals through a major structural reform of the tax system. This reform, consistent with the findings of the Australia's Future Tax System Review, will increase the statutory tax-free threshold from \$6,000 to \$18,200 in 2012 — a more than threefold increase.

As a result of these changes:

- a person earning \$20,000 a year will receive a tax cut of around \$600, meaning that they will pay no net income tax
- a worker with annual income of around \$25,000, will receive a tax cut of around \$500
- most middle income earners will receive tax cuts of at least \$300
- no person will pay more income tax.

This first round of tax cuts will provide a low income earner who does not receive any other payments from the Government with enough assistance to cover the average impact of the carbon price to the third year of the carbon pricing mechanism.

The Government will provide further tax cuts over time, to ensure the value of tax cuts always runs ahead of the impacts of the carbon price.

A second round of tax cuts will be delivered in 2015-16, through a further increase in the tax-free threshold to \$19,400, when the fixed carbon price moves to an emissions trading scheme. These tax cuts will provide taxpayers earning up to \$80,000 with a further tax cut, with most receiving at least \$80 per year. This will be sufficient to cover the expected carbon price impacts out to 2019-20.

These tax cuts will mean the rewards from working will increase, which will encourage more people to enter the workforce.

The reforms will simplify the personal income tax system for many people. After the two rounds of tax cuts, a tax-free threshold of \$19,400 will mean that over a million people need no longer go to the effort of lodging annual tax returns.

The reforms will also make the personal income tax system more transparent. The LITO currently creates an additional hidden 4 per cent tax rate for taxpayers earning between \$30,000 and \$67,500. This is the result of how LITO is withdrawn as income increases. The new tax scales replace some of this with statutory tax rates that are more closely aligned with the effective tax rates that people actually pay. This will provide more transparent rewards for work, encouraging workforce participation. With more certainty over the tax treatment of additional income, people may reconsider and increase the number of hours they work.

The combined effect of the higher tax-free threshold and replacing the hidden LITO tax rate with statutory rates will target tax cuts to taxpayers with annual incomes up to \$80,000. Those on higher incomes will pay no more tax as a result of these reforms.

The changes will be particularly important for secondary income earners who are already in the workforce or may re-enter the workforce on a part time basis.

These tax cuts will be delivered upfront in people's pay packets from 1 July 2012. The increases in the tax-free threshold also mean that workers under the new threshold will get to keep all of their wages in their regular pay packets, instead of waiting to receive some of it at the end of the financial year, as happens now through the LITO.

**Table 4.2: Statutory and effective taxation rates**

Statutory rates and thresholds	Current		2012-13		2015-16	
	Threshold (\$)	Marginal rate	Threshold (\$)	Marginal rate	Threshold (\$)	Marginal rate
<b>1st rate</b>	6,001	15%	<b>18,201</b>	<b>19%</b>	<b>19,401</b>	<b>19%</b>
<b>2nd rate</b>	37,001	30%	37,001	<b>32.5%</b>	37,001	<b>33%</b>
<b>3rd rate</b>	80,001	37%	80,001	37%	80,001	37%
<b>4th rate</b>	180,001	45%	180,001	45%	180,001	45%
<b>Effective tax-free threshold</b>	16,000		20,542		20,979	
<b>LITO</b>	1500	4% withdrawal rate from \$30,000	445	1.5% withdrawal rate from \$37,000	300	1% withdrawal rate from \$37,000

Note: The point where LITO begins to phase-out will move from \$30,000 to \$37,000.

## Looking after families with children: increases to Family Tax Benefit

Assistance will be provided to people receiving Family Tax Benefit in two stages.

Firstly, families will receive an up-front lump sum advance in May-June 2012, while their regular Family Tax Benefit payments remain unchanged. This advance provides assistance for the period from the introduction of the carbon price on 1 July 2012 until 30 June 2013. The early payment will ensure that Family Tax Benefit recipients have cash assistance in their hands from the start of the scheme, to assist with the impact of a carbon price.

The advance delivers a lump sum equivalent to a 1.7 per cent increase in the relevant maximum annual rate of FTB. For example, a family with a child aged 13-15 will receive a tax exempt Clean Energy Advance of \$109.50 in June 2012.

Then, from 1 July 2013, families will receive assistance through a new fortnightly, tax exempt supplement. The supplement will be equivalent to a 1.7 per cent increase in the relevant maximum annual rate of FTB and indexed to CPI. People will be able to choose to receive the supplement on a fortnightly or quarterly basis.

Assistance for families will also include the introduction of a new Single Income Family Supplement from 1 July 2012 which will provide up to \$300 to assist eligible single income families who would receive little or no assistance through tax changes compared with dual income families with similar income.

## Looking after people on pensions and allowances

Assistance will be provided to recipients of pensions and allowances in two stages.

Firstly, pensioners and allowees will receive an up-front lump sum in May-June 2012, while their regular payments remain unchanged. This advance provides assistance for the period from the introduction of the Carbon Pricing Mechanism on 1 July 2012 until 20 March 2013 for pensioners and most allowees. The tax exempt Clean Energy Advance ensures that pension and allowance recipients have cash assistance in their hands from the start of the carbon price.

The advance delivers a lump sum equivalent to a 1.7 per cent increase in the annual maximum rate of their pension. For example, the Clean Energy Advance for pensioners will be \$250 for singles and \$190 for each member of a couple and paid in May-June 2012.

Then, from 20 March 2013, pensioners and current allowees will receive assistance with their regular payment. This assistance will be delivered through a new fortnightly, tax-exempt supplement. The supplement will be equivalent to a 1.7 per cent increase in the maximum rate of their pension and indexed to CPI. People will be able to choose to receive the supplement on a fortnightly or quarterly basis.

## Indexation adjustment

The new Clean Energy Supplement will be valued equivalent to a 1.7 per cent increase in the relevant annual maximum payment rate for pensions, allowances and Family Tax Benefit.

This comprises an increase of 0.7 per cent from the extra indexation flowing from the higher Consumer Price Index due to the introduction of a carbon price, and a further 1.0 per cent increase in payments.

To prevent the double payment of indexation, there will be an adjustment to indexation arrangements in March 2013 for pensions and most allowances, July 2013 for Family Tax Benefit, and January 2014 for Youth Allowance, to allow the 0.7 per cent to be paid via the Clean Energy Supplement.

## Looking after self-funded retirees

### *Commonwealth Seniors Health Card holders*

Assistance will be provided to recipients of Commonwealth Seniors Health Card holders in two stages.

Firstly, Commonwealth Seniors Health Card holders will receive an up-front lump sum advance in May-June 2012, while their regular payments remain unchanged. This advance provides assistance for the period from the introduction of the price on 1 July 2012 until 20 March 2013 and is tax exempt.

The advance delivers assistance of \$250 for singles and \$190 for each member of a couple.

From 20 March 2013, Commonwealth Seniors Health Card holders will be eligible for assistance delivered through a quarterly, tax-exempt supplement. The supplement will be equivalent to a 1.7 per cent increase in the maximum rate of the pension and indexed to CPI. The new supplement will be paid with the existing Seniors Supplement.

Self-funded retirees will also be eligible for the tax cuts outlined above.

## Low Income Supplement

Low-income households that can show they might not receive enough assistance through tax cuts or Government payments to offset their average expected cost impact under a carbon price will be able to apply for an annual, tax-exempt Low Income Supplement of \$300.

## Essential Medical Equipment Payment

The Government is also introducing the Essential Medical Equipment Payment of \$140 per year. This payment will be available to provide extra help for the eligible 110,000 people in Australia who face additional and unavoidable electricity costs owing to medical conditions or disabilities and hold a relevant concession card. People in this situation might use equipment such as a home dialysis machine, or they may have thermoregulatory dysfunctions which mean that they require additional heating or cooling to regulate their body temperature.

The \$140 per year additional payment will cover the additional electricity cost impacts, associated with this essential medical equipment, faced under a carbon price. People affected can apply for this payment, which will supplement existing state and territory assistance for the cost of essential medical equipment.

## Public housing

Assistance is not intended to be included in state government public housing rent setting calculations so that public housing residents get the full benefit of assistance.

## Aged care residents and providers

Aged care providers bear many costs for their residents, including electricity, and will receive around half of the assistance paid through the age pension. Age pensioners living in aged care will receive the balance of the payment, to help them with increases in their other costs of living.

Because aged care fees are regulated, this arrangement will be implemented by increasing the basic daily fee by one percentage point of the maximum pension base rate.

These sharing arrangements are similar to those that were applied when the pension system was reformed, and the base pension rate was increased, in 2009.

The Government will ensure that aged care providers do not increase their fees in response to the carbon price for non-pensioner residents and will give aged care providers additional financial assistance in respect of these residents.

## Reviewing the assistance

The tax cuts, increases in Family Tax Benefit and increases in pensions and allowances have been calculated based on the estimated average price impact for different household types. For example, the estimated average percentage price impact of pricing carbon is higher for a low-income household than a middle income household because on average they spend a larger share of their income on goods such as energy which will face a relatively higher percentage price increase due to a carbon price. Household assistance has been designed to meet the Government's commitments that all low-income households will be eligible for assistance that at least offsets their expected average price impact from the carbon price, and middle-income households will be eligible for assistance that helps them meet their expected average price impact.



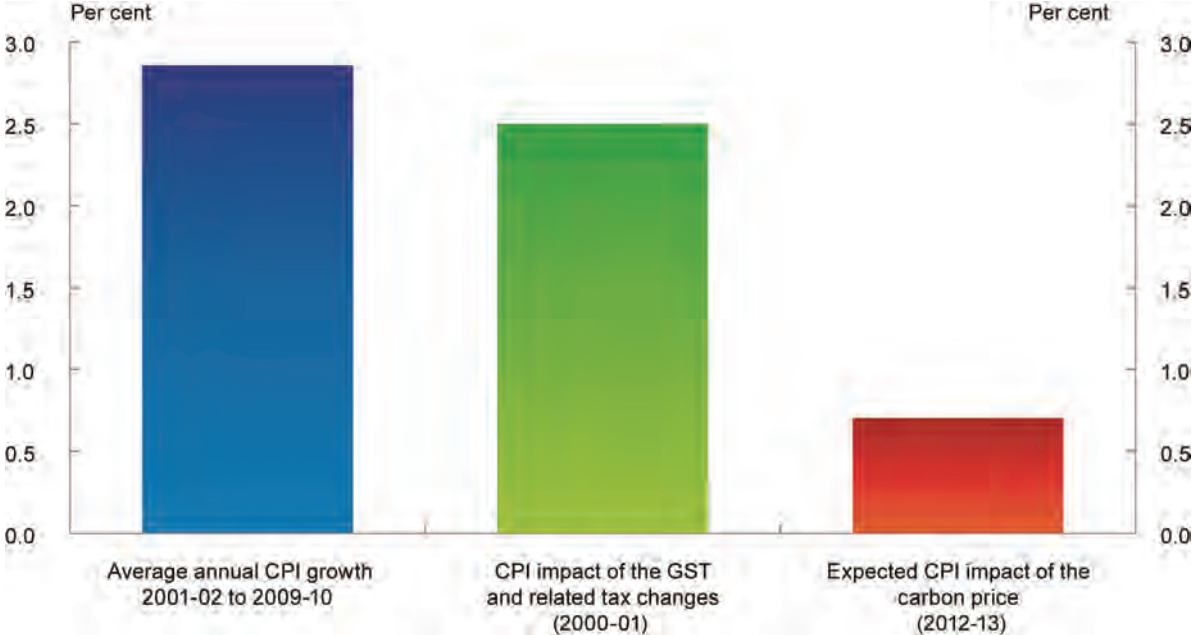
The Treasurer and the Minister for Families, Housing, Community Services and Indigenous Affairs will review the adequacy of the household assistance package annually in the Budget context over the fixed price period. This review will examine the real value of the assistance provided in this package taking into account:

- movements in prices for the household consumption baskets used to calculate the assistance
- indexation arrangements for the assistance
- any new information about the composition of the goods and services that make up the average consumption basket.

### 4.3 The carbon price and the cost of living

The most well-known measure of the cost of living for Australians is the Consumer Price Index (CPI), which measures movements in the prices of consumer goods and services. The carbon price is expected to increase the CPI by 0.7 per cent in 2012-13. The Goods and Services Tax (GST) and other related changes to the tax system had an impact on the CPI more than three times as large.

Figure 4.2: Price impact from the introduction of a carbon price compared to history



The overall increase in prices is expected to be quite modest: the average increase in expenditure across all households is expected to be around \$9.90 a week in 2012-13. This includes an average estimated increase in household electricity expenditure of around \$3.30 per week, and gas of \$1.50 per week. On average, food will go up by less than \$1 per week for households.

The cost of living impact will vary across households. The Government’s household assistance package takes this into account.

- How will the assistance keep pace with the cost of living?
- Assistance to pensioners and other people receiving Government payments will increase over time, as it will be automatically indexed to CPI, which will include any impacts from the carbon price.
- Tax cuts will be provided to ensure that the value of tax assistance runs ahead of the expected impact of the carbon price.
- Tax cuts in 2012 will be sufficient to cover the impact of the fixed carbon price to 2014-15.
- Tax cuts in 2015-16 will be sufficient to cover the impact of expected carbon prices to the end of the decade.
- The Government will ensure the ongoing adequacy of household assistance.

**Table 4.3: Effects on average weekly household expenditure of a \$23 carbon price in 2012-13**

	Weekly expenditure	Consumer prices
	\$ per week	%
Electricity	3.30	10
Gas	1.50	9
Food	0.80	< 0.5
Overall effect	9.90	0.7

Note. These estimates are averages. Actual expenditure may vary depending on household size, composition, preferences and energy sources.

After the carbon price is introduced, households can continue to consume the same things, but the carbon price means that they will have a financial incentive to consider alternatives. This is because the change in the prices of goods and services which are produced with relatively lower levels of carbon pollution will be less than the change in the prices of high-pollution goods and services. These price differences mean consumers will take carbon pollution into account when they make everyday decisions about what they buy. A product made in a more energy-efficient factory will cost less than the same product from a less energy-efficient factory. Households choosing the first product will be rewarding cleaner production. In this way households will be supporting Australia's move to a clean energy future — and household assistance will not blunt these price signals.

## What is driving electricity price increases?

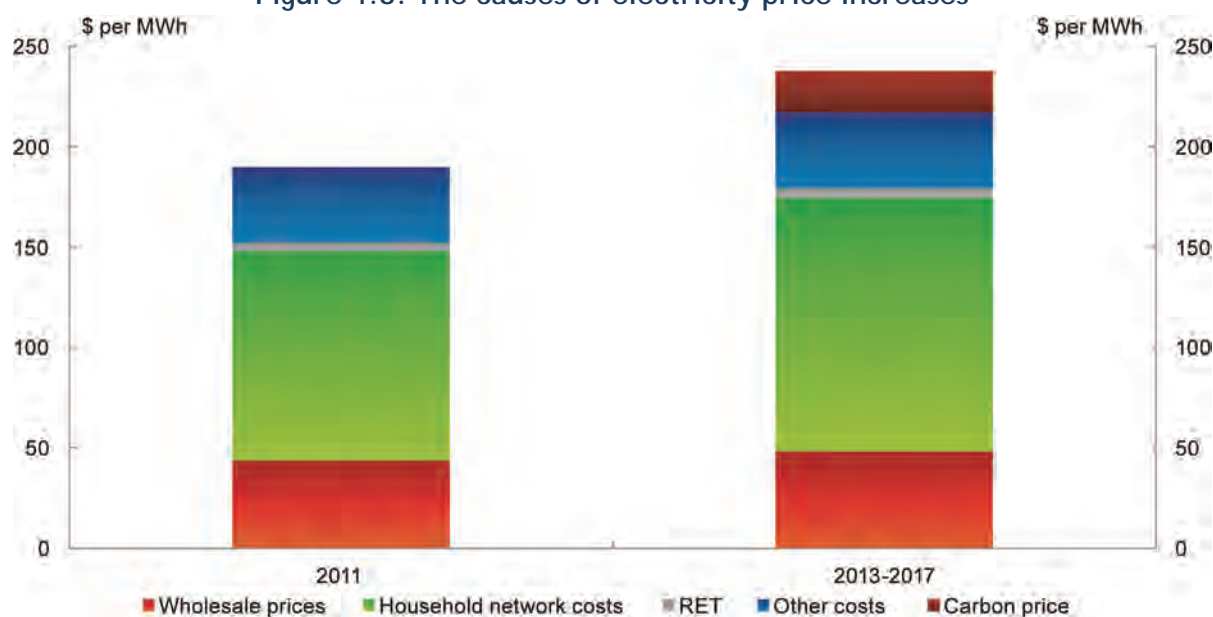
Australian electricity prices have been rising rapidly over the past five years, although they are still low compared to other developed countries. The costs of supplying electricity are made up of the costs of:

- buying electricity from generators and complying with climate change programs ('energy costs');
- getting electricity from the generators to the customers (the poles and wires or 'transmission and distribution' costs); and
- running retail electricity businesses and complying with climate change initiatives such as the Renewable Energy Target and state-based feed-in tariff schemes ('retail costs').

The main cause of the recent price rises has been rising costs of transmitting and distributing electricity. These costs have been rising because of increased investment in the transmission and distribution networks. The owners of electricity networks are upgrading them to: replace ageing infrastructure; expand networks so they can cope with peaks in demand for electricity; and meet higher safety and reliability standards in some states. Figure 4.3 below shows the expected causes of electricity price rises.

Pricing carbon will affect the price of electricity by increasing the cost of generating power. The bulk of Australia's electricity is generated by burning fossil fuels. The major electricity generating companies are amongst the biggest carbon polluters in our economy, so they will pay the carbon price. Across Australia, the carbon price is expected to increase electricity prices by 10 per cent on average in 2012-13 or around \$3.30 per week on average across households. The Australian Government has taken this expected increase in electricity prices into account in designing its household assistance package.

Figure 4.3: The causes of electricity price increases



Source: Treasury, 2011 (core policy scenario).

## 4.4 The opportunities for households

The Government has designed an ongoing household assistance package worth \$14.9 billion over four years to be delivered primarily through tax cuts, higher family payments and increases to pensions and allowances.

This assistance package is targeted to deliver the most assistance to those who need it the most, low and middle income households and families. For millions of households this assistance will outweigh the price impact of a carbon price, including its impact on electricity prices.

In addition to helping families cope with the price impact, the Government will assist families to take advantage of the opportunities that come with a clean energy future. Using carbon price revenue to underwrite significant reforms to the personal tax system will mean that the carbon price not only delivers environmental benefits, but creates wider economic benefits, including increasing rewards from work and reducing disincentives in the tax system for workforce participation. The Government is also assisting households to improve energy efficiency which will save money from household budgets as well as reducing carbon pollution.

A carbon price, combined with tax cuts, higher family payments and increases in pensions and allowances and supported by Government programs to help with energy efficiency (Chapter 8), will give householders incentives to change their behaviour — but without imposing additional costs on those least able to afford it. If people want to, they will be able to use the assistance to maintain their existing spending patterns. But if they want to adjust their spending or to make investments in energy efficiency to reduce their household's carbon pollution, then the assistance will help. Making sure 5.7 million Australian households are assisted to meet their average price impacts will ensure these households can play their part in building a clean energy future without having to make financial sacrifices along the way.

# Chapter 5

## SUPPORTING JOBS





## Chapter 5: Supporting jobs

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### Key messages

- **The Government is committed to supporting jobs and competitiveness as Australia moves to a clean energy future.**
- **A Jobs and Competitiveness Program will provide \$9.2 billion over the period to 2014-15 to assist the most emissions-intensive activities in the economy that are exposed to international competition. This will support local jobs, encourage industry to invest in cleaner technologies and avoid 'carbon leakage' offshore.**
- **A \$1.2 billion Clean Technology Program will help directly improve energy efficiency in manufacturing industries and support research and development in low-pollution technologies.**
- **\$200 million of the Clean Technology Program will be targeted at food processing, metal forging and foundry industries.**
- **To increase the capacity of small businesses to invest in new assets, including those that improve energy efficiency, the instant asset write-off threshold will be increased to \$6,500.**

### 5.1 Business certainty, competitiveness and jobs in a clean energy future

As the world moves to reduce carbon pollution, improving energy efficiency and reducing pollution will help Australian businesses gain a competitive advantage. Many businesses have already started reducing their carbon pollution. But many have been waiting for greater certainty about the competitive landscape before taking more ambitious steps. The Government's plan for a clean energy future will create that certainty.

Under the Government's clean energy plan, the carbon pricing mechanism will establish a clear price path into the future for carbon pollution. Just as businesses currently take account of the likely future costs of labour, transport and materials when making decisions, they will now factor in the costs of carbon pollution when weighing up alternative investment decisions.

Greater certainty about carbon pricing will lower business and financial risk. This, in turn, will make it easier for the corporate sector to give the green light to key business decisions for a clean energy future, such as whether to spend funds cleaning up production facilities, improving energy efficiency or adopting new low-pollution technologies. The Government's clean energy plan also includes significant new measures to encourage business innovation, especially in the energy sector (see Chapter 6).

## Jobs in a clean energy future

- Moving to a clean energy future will provide new economic opportunities for Australian workers.
- The carbon pricing mechanism will drive structural change in the economy, moving resources and employment towards lower-pollution activities over time.
- Jobs will continue to grow under the carbon pricing mechanism. An extra 1.6 million jobs are projected to be created by 2020 while growth in Australia's pollution slows.
- Opportunities will open up in existing industries as they invest in new technologies to generate less pollution.
- Jobs will also be created in new or fast-growing clean industries such as renewable energy, carbon farming and sustainable design. These new industries will help to improve Australia's international competitiveness.

Dynamic and competitive industries are essential for Australia's economy and for jobs. For this reason, the Government has adopted assistance measures to ensure a smooth shift to a clean energy future for businesses and their employees. These measures take into account the circumstances of each industry, their ability to pass on carbon costs and their need for help in retooling for a lower pollution future. The Government will allocate around 40 per cent of carbon price revenue to help businesses and support jobs.

These assistance measures are:

- A Jobs and Competitiveness Program worth \$9.2 billion over the forward estimates for companies primarily in manufacturing and heavy industry that are energy intensive and face significant international competition from companies in countries yet to impose comparable costs on carbon. This will support jobs and competitiveness in those sectors.
- Additional assistance for manufacturers worth \$1.2 billion through the Clean Technology Program, including \$200 million to assist food manufacturers, metal forging and foundry industries and \$200 million to support investment in clean technology innovation.
- Assistance for small business owners to enable improvements in energy efficiency and reduce energy costs.

The Government also intends to adopt two initiatives to support jobs in the steel manufacturing and coal mining industries. These measures were not agreed by all members of the Multi-Party Climate Change Committee (see Appendix C for details).

All of the assistance programs have been carefully designed to maintain incentives to reduce carbon pollution while supporting Australian jobs.



Figure 5.1: Overview of measures to support jobs



## 5.2 Jobs and Competitiveness Program

The Government recognises the importance of manufacturing and heavy industries that compete on international markets and use large amounts of energy or generate significant levels of carbon pollution. The goods these industries produce will remain essential in a clean energy economy. We need steel for our buildings and rail transport. Cement slabs can make houses more energy efficient, as can glass used for double glazing. Aluminium makes lighter, more efficient products and liquefied natural gas (LNG) replaces coal in power stations in places like South Korea and China.

In most industries, a carbon price will represent a very small proportion of total revenue. However, some industries, particularly heavy manufacturing industries, are pollution-intensive. For these industries, a carbon price could harm their international competitiveness.

Without appropriate assistance arrangements, applying constraints on carbon pollution in Australia before other countries could risk ‘carbon leakage’ — activities could be relocated from Australia to countries where those activities may not be subject to comparable carbon constraints. Carbon leakage is not in Australia’s interests — either from an environmental or an economic point of view. The Jobs and Competitiveness Program is designed to reduce this risk.

Business decisions on where to invest and undertake production are complex. The presence of carbon constraints in other countries is only one of many factors relevant to these decisions. Businesses make judgements about factors including access to resources, skilled labour, infrastructure, security of energy supply and political stability. The business environment for manufacturers is also constantly changing: external factors like commodity prices and changes in the value of the Australian dollar, technology and consumer tastes significantly affect Australian manufacturing businesses. Nevertheless, the Government is committed to supporting jobs while also encouraging these businesses to invest in lowering their carbon pollution.

The Government has designed a Jobs and Competitiveness Program to keep our emissions-intensive industry onshore as we price carbon pollution. But it will maintain a strong price signal for industries to reduce the pollution intensity of their products. Making products like steel, aluminium, glass, clinker and chemicals in cleaner and more efficient ways is good for the environment, supports Australian jobs and will ensure our industry remains competitive.

The design of the Jobs and Competitiveness Program is summarised below and further detailed in Appendix A, Table 15.

### 5.2.1 Who will be eligible?

The Jobs and Competitiveness Program has been designed to provide assistance to the most emissions-intensive activities in the economy that are highly exposed to international competition — either on export markets or from importers.

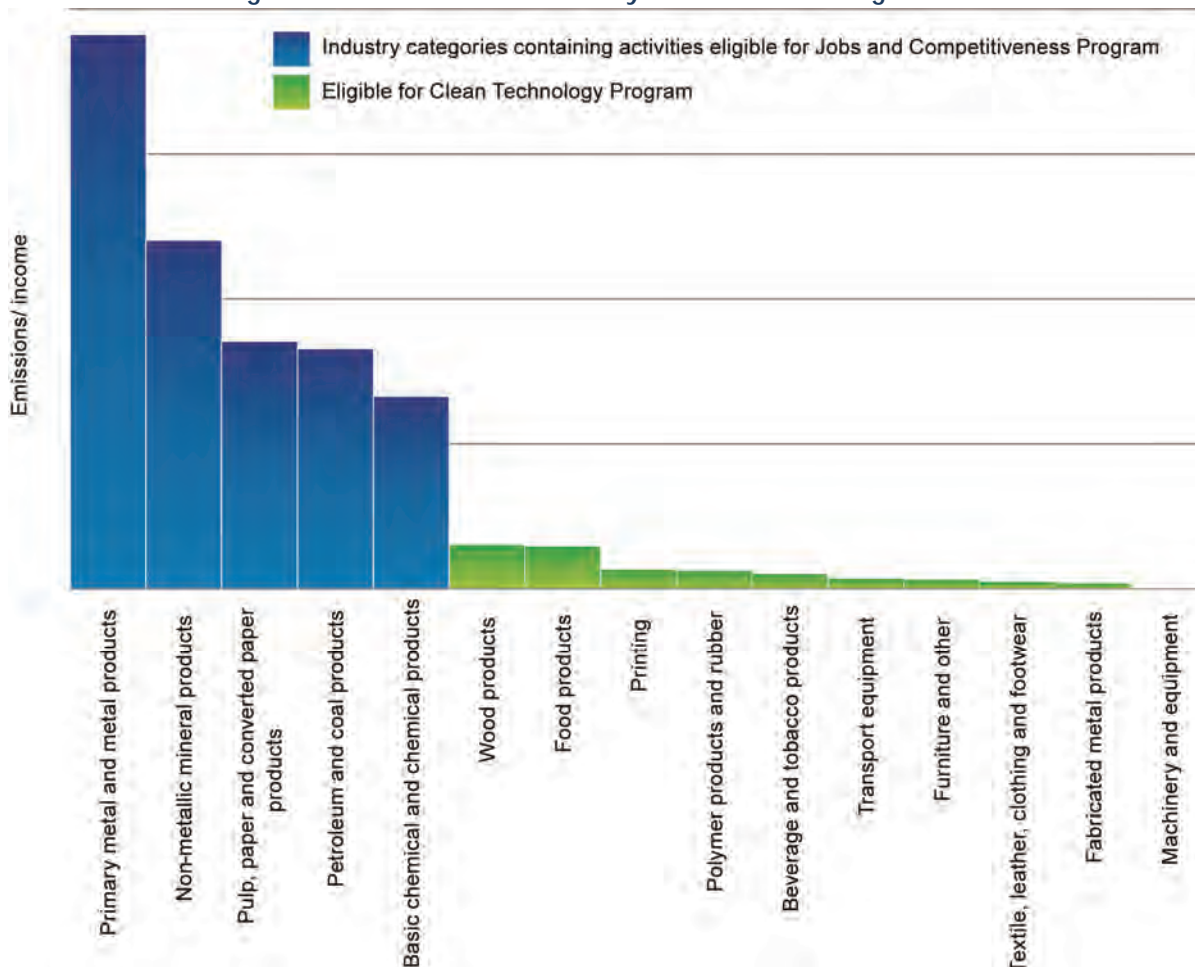
Almost all emissions-intensive and trade-exposed activities are in the manufacturing sector. The Jobs and Competitiveness program will provide support to activities that generate over 80 per cent of emissions within the manufacturing sector. The Government expects that 40 to 50 activities will be eligible. Examples of eligible activities include aluminium production, steel manufacturing, pulp and paper manufacturing, glass making, cement production and petroleum refining.

Figure 5.2 illustrates the emissions intensity of different sectors within the manufacturing industry. The most emissions-intensive sectors are expected to be eligible for assistance under the Jobs and Competitiveness Program. The less emissions-intensive sectors could receive support under the Clean Technology Program (see below).<sup>1</sup>

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<sup>1</sup> Not all entities and activities in the blue highlighted manufacturing subdivisions will receive assistance through the Jobs and Competitiveness Program. However, the activities that are expected to receive assistance under the Jobs and Competitiveness Program are responsible for the vast majority of emissions in these subdivisions. Some activities in the industry subdivisions that are highlighted green may be eligible for Jobs and Competitiveness Program assistance once formal assessments have been completed.

Figure 5.2: Emissions intensity of manufacturing sectors



Source: Australian Bureau of Statistics, 8155.0 - Australian Industry, 2009-10, 2011 and Department of Climate Change and Energy Efficiency, National Greenhouse and Energy Reporting System data, 2011.

### 5.2.2 How will assistance be provided?

The Government will allocate, free of charge, Australian carbon permits to the most emissions-intensive and trade-exposed industries. This will shield eligible businesses from the full impact of a carbon price, while retaining strong incentives to reduce carbon pollution.

There will be two categories of assistance. The most emissions-intensive and trade-exposed activities will initially be eligible for 94.5 per cent shielding from the carbon price. A second category of assistance will provide an initial shielding level of 66 per cent of the carbon price. This will apply to activities assessed as having a lower risk of carbon leakage. LNG projects will also receive a supplementary allocation to ensure an effective assistance rate of 50 per cent, in recognition of the wide dispersion of emissions among some prospective LNG developments.

The assistance rates will be reduced by a 'carbon productivity contribution' of 1.3 per cent a year to provide additional incentives over time for these industries to reduce pollution.

While the assistance will shield emissions-intensive and trade-exposed industries from the full impact of the carbon price on profitability, it has been designed to reward businesses if they reduce pollution. It does this by allocating free permits on the basis of historic emissions

intensity, so that any investments that reduce pollution will save money for the business, increasing the cost-effectiveness of such investments.

Importantly, the Jobs and Competitiveness Program has also been designed to support future investment and growth in these industries. Free permit allocations are linked to production levels, and assistance levels are guaranteed for the first five years, with at least three years' notice being given of any changes. These arrangements will enable businesses to make investment decisions with a clear understanding of the assistance they will receive into the future.

### 5.2.3 Review provisions

The Productivity Commission will review the Jobs and Competitiveness Program in the third year of the carbon price (2014-15) and thereafter at regular intervals. Its reviews will consider a range of issues, including whether to adopt the framework for assistance proposed by the *Garnaut Climate Change Review—Update 2011*.

The Productivity Commission will also examine the impact of carbon pricing on the competitiveness of emissions-intensive and trade-exposed industries, and may recommend changes to the assistance rates or the carbon productivity contribution applying to any particular activity.

In addition, once the carbon pricing mechanism has commenced, firms may make a request to the Government to have the impact of the carbon price on their sector assessed. The Government will establish a set of guidelines that set out when such requests would be referred to the Productivity Commission and the terms of reference for these reviews.

## 5.3 Further support for manufacturing jobs

The Jobs and Competitiveness Program will provide long-term support to businesses that are emissions-intensive and trade-exposed. Manufacturing businesses that are less emissions-intensive will also be provided with transitional support during the move to a carbon price. For many Australian manufacturers, improvements in energy efficiency will be the most effective way that carbon cost impacts can be managed to ensure long-term competitiveness. While a carbon price will provide incentives for these manufacturers to reduce energy consumption, the Government will also help manufacturing businesses identify and implement technologies that will improve energy efficiency and reduce their exposure to changing electricity prices.

### 5.3.1 Clean Technology Program

The \$1.2 billion Clean Technology Program will provide support for manufacturers through the following three components.

## Clean Technology Investment Program

The \$800 million Clean Technology Investment Program will provide grants to manufacturers to support investments in energy-efficient capital equipment and low-pollution technologies, processes and products. These grants will provide practical assistance and support the incentives created by the carbon price to improve energy efficiency or use energy from cleaner sources.

Manufacturing businesses with facilities that use more than 300 megawatt hours of electricity or five terajoules of natural gas a year, or are covered by the carbon pricing mechanism, will be eligible to apply for grants under this program. Funding will be provided on a co-investment basis, with industry contributing on average three dollars for every dollar from the Government. This investment will help modernise parts of the Australian manufacturing sector and help manufacturers compete in a low-carbon world, with benefits for the job security of manufacturing workers.

## Clean Technology – Food and Foundries Investment Program

Special assistance will be provided to the food processing, metal forging and foundry industries. These industries are trade-exposed and have somewhat higher exposure to energy costs than general manufacturing businesses. Through the Food and Foundries Investment Program, the Government will provide grants worth up to \$150 million over six years to the food processing industry and up to \$50 million over six years to the metal forging and foundry industries. The grants will assist the industries to invest in energy-efficient equipment and low-pollution technologies, processes and products.

All businesses in the food processing, metal forging and foundry industries will be able to apply for funding under this program. These industries are important to specific rural and regional areas and the Government wants to see these industries prosper while the world moves to a clean energy future.

Funding will be provided on a co-investment basis, with industry contributing on average three dollars for every dollar from the Government.

## Clean Technology Innovation Program

The Government will provide an additional \$200 million over five years for grants to support business investment in research and development (R&D) in the areas of renewable energy, low-pollution technology and energy efficiency. This funding will be in addition to the broader R&D tax concession and will help Australian businesses creatively work towards a clean energy future.

Funding will be on a co-contribution basis, with industry providing one dollar for every dollar from the Government. This assistance recognises that, in some instances, a higher rate of Government support for innovation to reduce carbon pollution will be important, at least for a transitional period, until private investment increases.

### 5.3.2 Clean Energy Skills

A new Clean Energy Skills program will provide the foundation for the new type of workplace skills that will become increasingly more valuable as we move to a clean energy economy. Funding of around \$32 million will help educational institutions and industry develop the materials and expertise needed to promote clean energy skills. Tradespersons and professionals will develop the skills needed to deliver energy efficiency services, clean energy projects and low pollution products to Australian households, communities and businesses. This will help transition workers of all types to a low-carbon economy by providing them with the skills that will become increasingly important as businesses adapt to a clean energy future.

## 5.4 Support for small business

Small business makes a vital contribution to economic activity. Small businesses will not have to directly pay a carbon price. They will not be required to undertake any compliance activity or fill out any forms due to the carbon price. When it comes to indirect impacts, most small businesses will not be materially affected. Nevertheless, many small businesses may wish to make a contribution towards the move to a clean energy future. The Government will support these businesses.

### 5.4.1 Energy efficiency information grants

The Government will help small businesses understand the implications of the Government's clean energy plan and how they can reduce energy costs. The Government will establish a \$40 million program providing grants over four years to industry associations and non-government organisations which have established relationships with small businesses and community organisations. These groups will deliver information about the implications of a carbon price for small businesses and community organisations, including practical steps to manage the impacts.

### 5.4.2 Increasing the small business instant asset write-off

The other key measure to support small businesses following the introduction of the carbon price is an increase to the small business instant asset write-off.

In response to *Australia's Future Tax System Review*, the small business instant asset write-off threshold is already being increased from \$1,000 to \$5,000 from 2012-13, subject to the passage of the Minerals Resource Rent Tax legislation. The Government will now further increase the threshold from \$5,000 to \$6,500. This applies to small businesses with an aggregate turnover of less than \$2 million a year from 2012-13.

The instant asset write-off provides businesses with increased cash flow by providing an immediate income tax deduction for depreciable assets costing less than the threshold level. Increasing the threshold to \$6,500 will allow small businesses to immediately write-off more expensive assets and provide more cash flow benefits. This will increase the capacity for

small businesses to invest in new assets, including equipment that will improve energy efficiency.

### Example

Anna runs a small cafe and buys a new storage freezer for \$6,000 for use in the business. It is much more energy efficient than her old freezer, which will help control Anna's power bills.

Anna will be able to immediately write-off the value of the freezer as it costs less than \$6,500.

This immediate deduction of \$6,000 means that a tax benefit of \$1,800 could arise (assuming a marginal tax rate of 30 per cent) in the first income year Anna uses the freezer or installs it ready for use.

Anna can now use her tax saving to grow her business and invest in other assets.

### 5.4.3 Clean technology focus for supply chains

The Minister for Innovation, Industry, Science and Research currently administers programs to provide advisory and other non-financial assistance to businesses. These include the Industry Capability Network, Supplier Advocates and Enterprise Connect.

The Government will provide an additional \$5 million over four years for the delivery of these programs to small and medium businesses in clean technology industries. This will enhance the clean technology focus of industry supply chains, which will help local businesses secure contracts for major projects.

## 5.5 Helping communities and regions

A central element in the Australian approach to economic reform over the past three decades has been structural adjustment assistance — government help to ease the transition for regions and communities. The Government will maintain this approach under the clean energy plan, setting aside \$200 million in funding for regions in the event that they are affected by the introduction of a carbon price.

The Department of Regional Australia, Regional Development and Local Government will monitor the socio-economic impacts of the carbon price on regions to identify areas where impacts are acute and structural adjustment assistance may be required. Funding will support regional communities on a case-by-case basis. Examples of programs that may be supported through this program include support for displaced workers and their families, support for affected small businesses, community development programs and economic diversification programs.





# Chapter 6

## INNOVATION IN RENEWABLE ENERGY





## Chapter 6: Innovation in renewable energy

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### Key messages

- **The Government will provide significant levels of financial support for innovation in renewable energy and other low-pollution technologies.**
- **A new \$10 billion Clean Energy Finance Corporation will invest in renewable energy, low-pollution and energy efficiency technologies.**
- **A new Australian Renewable Energy Agency will administer \$3.2 billion in Government support for research and development, demonstration and commercialisation of renewable energy.**
- **An additional \$200 million over five years will support business investment in research and development of clean technologies.**

### 6.1 The importance of innovation

To tackle climate change, Australia needs to transform its energy sector. Our nation is well-placed to make this change. We have world-class scientists and researchers. We have a dynamic and competitive business and private sector. And we have abundant resources of renewable energy, ranging from sunshine and wind power to the geothermal energy harnessed by tapping into hot rocks underground and the wave and tidal power of the oceans surrounding our continent.

By finding better ways of producing energy from existing sources, and by tapping into new energy sources, Australia can lower its carbon pollution substantially. This is why renewable energy is one of the four elements in the Australian Government's plan for a clean energy future, along with a carbon price, energy efficiency and action on the land.

A carbon price will increase Australia's demand for alternative energy sources like renewables. Investing in research, development, demonstration and commercialisation of renewable energy and low-pollution technologies will be important to meet this demand and move to a clean energy future.

A price on carbon provides a powerful incentive for entrepreneurs to find ways of lowering pollution when we produce and use energy. However, the scale of the required transformation is large and the barriers to change are high. There is a strong case for the Government to help by encouraging innovation in clean energy, particularly during the early stages of the transformation.

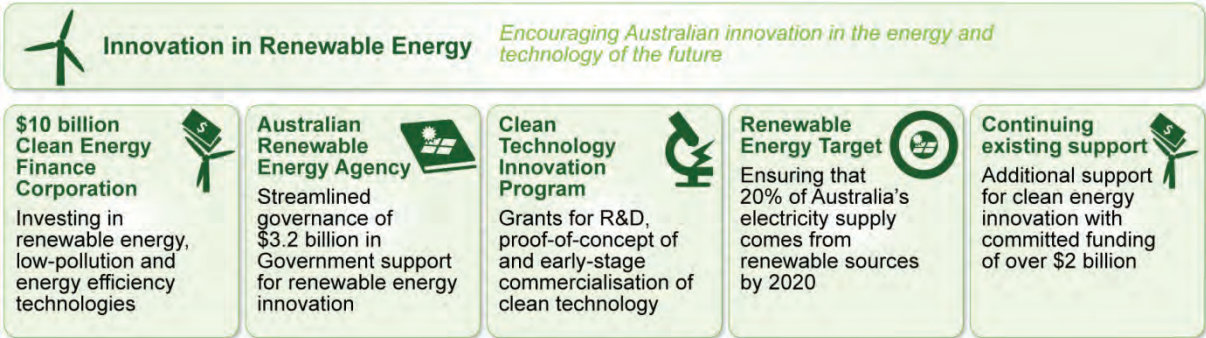
The Government will join with the private sector to drive the shift to clean energy. The Government will bring together a suite of policies which promote clean energy in an economically efficient and commercially sound manner. Substantial new funding, combined

with best-practice delivery mechanisms and governance structures, will give fresh impetus to the transformation of our energy sector. The Government is substantially boosting its level of support for innovation investment in renewable energy as a central element of its plan for a clean energy future.

A new \$10 billion Clean Energy Finance Corporation will invest in the commercialisation and deployment of renewable energy, energy efficiency and clean technologies. A new Australian Renewable Energy Agency will streamline and coordinate the administration of \$3.2 billion in existing support for renewable energy. And the \$200 million Clean Technology Innovation Program will provide further support for businesses to support research and development (R&D) in renewable energy and other low-pollution measures.

The Renewable Energy Target means that 20 per cent of Australia’s electricity will come from renewable sources by 2020. This, combined with other elements of the Government’s plan, including the carbon price, will drive \$20 billion of investment in large-scale renewable energy by 2020 in today’s dollars.

Figure 6.1: Overview of innovation measures



## 6.2 A new drive for clean energy innovation

A carbon price will create economic incentives for businesses to invest in low-pollution innovation. However, securing finance to develop and demonstrate innovative products can be difficult, especially at the early stages of R&D. The Government will now provide a major new source of finance for renewable energy and low-pollution technologies through the following measures.

### 6.2.1 The Clean Energy Finance Corporation

The \$10 billion Clean Energy Finance Corporation will invest in businesses seeking funds to get innovative clean energy proposals and technologies off the ground. These Government-backed investments will deliver the financial capital needed to transform our economy.

The Clean Energy Finance Corporation will invest in the commercialisation and deployment of renewable energy, energy efficiency and low-pollution technologies. It will also invest in manufacturing businesses that provide inputs for these sectors; for example, manufacturing wind turbine blades.

The Clean Energy Finance Corporation's investments will be divided into two streams, each with half of the allocated funding.

- The renewable energy stream will invest in renewable technologies, which may include geothermal and wave energy and large scale solar power generation.
- The clean energy stream will invest more broadly; for example, in low-emissions cogeneration technology, but will still be able to invest in renewable energy.

The Corporation will not invest in carbon capture and storage (CCS) technology, which is supported through existing programs, including the CCS Flagship Program and the Global CCS Institute.

A variety of funding tools will be used to support projects, including loans on commercial or concessional terms and equity investments. To ensure that the Corporation has continuing and stable funding, capital returned from its investments will be reinvested.

The Corporation will be independent from the Government. The Government will appoint an independent Chair who will have appropriate banking or investment management experience. In setting up the Corporation, the Government will draw on the knowledge and experience of the Chair, who will recommend a detailed investment mandate, risk management policies and governance arrangements. The Chair will preside over an independent board, comprising experts in banking, investment management, renewable energy and low-pollution technologies. The board will have responsibility for setting the investment strategy and managing the Corporation's investments consistent with an investment mandate set by the Government.

The concept of the Clean Energy Finance Corporation is similar to financial mechanisms established overseas to invest in clean energy and low-pollution technologies. The United Kingdom's Green Investment Bank, for instance, will commence in April 2012 with an initial government commitment of £3 billion. The Bank will focus on renewable energy and energy efficiency and will use equity investments, lending and risk mitigation products. Similarly, the United States Department of Energy currently guarantees up to 80 per cent of certain loans for clean energy projects to encourage early-stage commercial use of new technologies.

The Clean Energy Finance Corporation will be a central institution in Australia's move to a clean energy future.

### 6.2.2 The Australian Renewable Energy Agency

The Government is currently providing substantial grant-based support for renewable energy across multiple programs. The Government will reform the management of these programs by creating a new independent statutory body called the Australian Renewable Energy Agency (ARENA). This will provide more independent, efficient and streamlined administration of existing funding.

ARENA will provide early-stage grants and financing assistance for projects that strengthen renewable energy and energy efficiency technologies and make them more cost competitive. It will independently administer \$3.2 billion in existing Government support for R&D, demonstration and commercialisation of renewable energy technologies. ARENA will

oversee existing Government support for programs currently delivered by the Australian Centre for Renewable Energy, the Department of Resources, Energy and Tourism, the Australian Solar Institute and the proposed Australian Biofuels Research Institute.

ARENA will also receive future funding from discretionary dividends paid by the Clean Energy Finance Corporation and a share of future carbon pricing mechanism revenue should the Jobs and Competitiveness Program be modified following Productivity Commission reviews.

ARENA will have an independent board, comprising seven members. The membership of the board will reflect the technologies likely to be considered by ARENA. The board will also include expertise in commercialisation of new technologies more broadly, and business and investment skills.

Together, the new Clean Energy Finance Corporation and Australian Centre for Renewable Energy will provide a robust framework to deliver funding for new clean energy technologies. The goal is to build a critical mass of renewable energy, energy efficiency and low-pollution energy generation projects across Australia.

### 6.2.3 Clean Technology Innovation Program

Innovation will also be supported by the \$200 million Clean Technology Innovation Program, which is part of the Clean Technology Program (discussed in Chapter 5). This will provide grants to support R&D, proof-of-concept and early-stage commercialisation in renewable energy, low-pollution technology and energy efficiency. These grants will be in addition to the broader R&D tax concession and will be provided on a co-contribution basis.

## 6.3 How renewables are already being encouraged

The Government's new innovation measures build on a strong base of existing policies to promote innovation in renewable energy.

### 6.3.1 The Renewable Energy Target

The most important existing measure is the Renewable Energy Target (RET) which is legislated to ensure that 20 per cent of Australia's electricity supply comes from renewable sources by 2020. This will mean that, by the early 2020s, the amount of electricity coming from sources like solar, wind and geothermal will be almost as large as all of Australia's current household electricity use.

The RET is designed to speed up the adoption of renewable energy technologies and help smooth the transition to a clean energy future. A great deal of the new investment is likely to be in regional and rural Australia.

### Investment supported by the Renewable Energy Target

- Wind energy is the fastest growing large-scale renewable energy source in Australia. There are over 50 wind farms accredited under the RET.
- Australia's generation capacity from wind has increased from around 100 megawatts (MW) in 2001 to over 2000 MW.
- In 2010, over 5000 gigawatt-hours of electricity was generated by wind. This is enough electricity to power over half a million average Australian households for a year.
- The Clean Energy Council indicates that over 9000 MW of large wind farm projects are proposed for development around the country.
- The RET has also encouraged significant deployment of small systems, with around 300,000 solar panel systems supported under the RET since 2001.
- In addition, around 600,000 domestic and commercial solar water heaters and heat pumps have been supported under the RET.

### 6.3.2 Other clean energy support programs

The Government will also continue a range of existing programs to support clean energy innovation, with committed funding of over \$2 billion, on top of the initiatives included in ARENA.

A number of these programs are encouraging the development of carbon capture and storage technologies. The CCS Flagships program, for example, supports demonstration projects that will capture carbon dioxide emissions from coal-fired power generation and industrial processes to store them underground in stable geological formations. The Government has also committed almost \$100 million to deploy Australia's first fully integrated, commercial scale smart grid in partnership with the energy sector.





# Chapter 7

## SUPPORTING ENERGY MARKETS





## Chapter 7: Supporting energy markets

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### Key messages

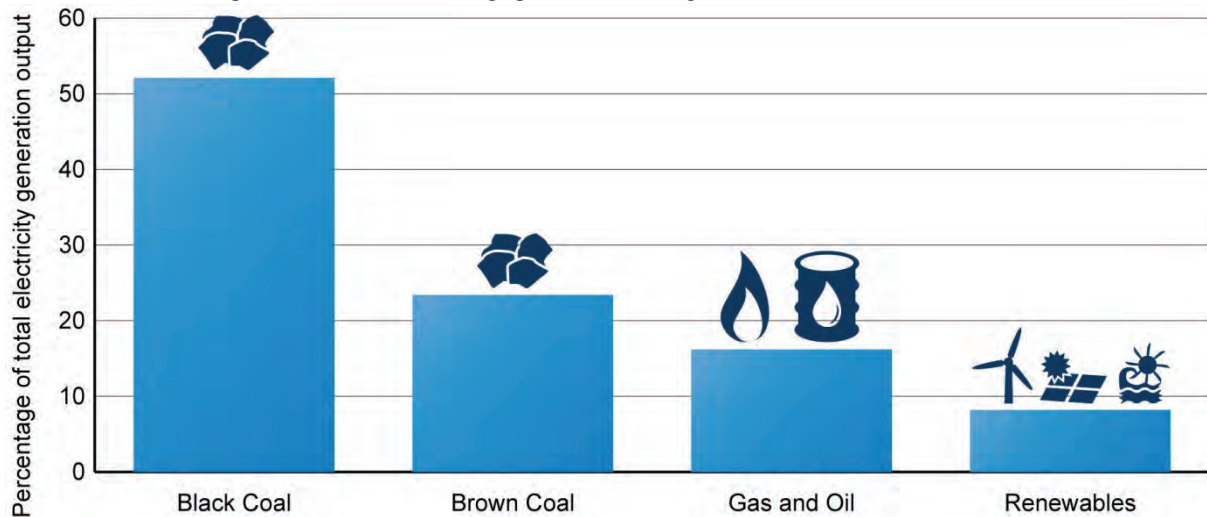
- **Australia's energy sector will be transformed from relying heavily on highly polluting forms of electricity generation to cleaner electricity.**
- **An Energy Security Fund, including an estimated \$5.5 billion of assistance for strongly affected generators, will ensure this is a smooth transition that maintains energy security.**
- **The Government will seek to negotiate a managed and orderly closure of around 2000 megawatts of highly polluting generation capacity by 2020.**
- **Electricity generators strongly affected by a carbon price will be supported and will be required to publish their clean energy investment plans.**

### 7.1 Australia's energy sector

Australia needs to transform its energy sector from its current high-pollution mix towards a greater reliance on clean energy sources. This is achievable. Treasury modelling shows that a carbon price together with the Government's other clean energy support measures will reshape the future development of our electricity sector. The Government will supplement these policies with measures to underpin a successful energy market transition and maintain Australia's enviable record of secure energy supplies.

Reflecting the historical availability of low-cost coal in Australia, coal-fired generation currently accounts for around 75 per cent of Australia's electricity. However, burning coal puts large amounts of carbon pollution into the atmosphere. For every unit of electricity produced, conventional coal-fired generation releases around twice as much carbon pollution as generating electricity by burning natural gas. Yet gas-fired generation currently only accounts for around 16 per cent of Australia's electricity. Generating electricity from renewable resources like wind or solar power puts no carbon pollution into the atmosphere. Renewable electricity currently accounts for around 8 per cent of Australia's power supplies.

Figure 7.1: Electricity generation by fuel source (2009-10)



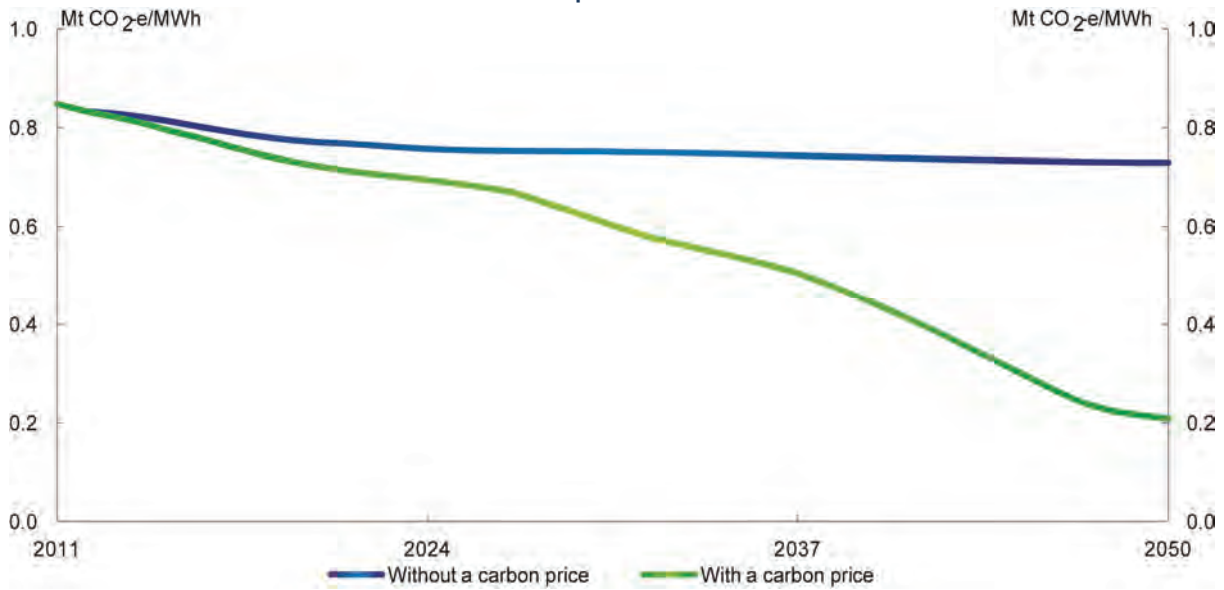
Source: Australian Bureau of Agricultural and Resource Economics and Sciences, *Energy Update 2011*.

Australia relies more heavily on coal-fired electricity generation than most other countries, and this is reflected in the higher pollution intensity of our electricity supplies. The International Energy Agency highlights that, in 2008, Australia's electricity generators released an average of 0.88 tonnes of carbon pollution for every megawatt hour of electricity generated. This is significantly higher than countries like the United States (which released 0.54 tonnes for every megawatt hour of electricity generated), the United Kingdom (0.49), New Zealand (0.21) and Canada (0.18). In fact, Australia had the highest polluting electricity sector of all OECD countries. And among the 80 developing countries examined by the International Energy Agency, only India, Cambodia and Cuba had more polluting electricity sectors.

Fortunately, Australia has an abundance of alternative energy sources. Australia is a major producer and exporter of gas, with reserves predicted to last for many decades to come. Australia has excellent solar, wind and biomass resources, which we are already starting to exploit. We have yet to tap the potential of our geothermal, tidal and wave endowments. If we can combine coal-fired generation with new technologies such as carbon capture and storage, then our reserves of coal can continue to underpin cleaner electricity generation.

At present, low- and zero-pollution generation technologies are more expensive than conventional coal-fired generation — in inverse proportion to their impacts on the atmosphere. A carbon price helps change the balance. It will put an economic premium on releasing less pollution for every megawatt hour of electricity generated. A carbon price will narrow the cost differential between electricity from conventional coal-fired generation technologies compared with electricity from natural gas and renewable sources. Coupled with support for innovation (Chapter 6), a carbon price will stimulate research and development into technologies that lower the costs of renewable energy. A carbon price will also provide incentives for existing coal-fired generators to invest in improving efficiency and lowering pollution. Figure 7.2 shows the expected change in the electricity generation sector's level of emissions intensity under a carbon price.

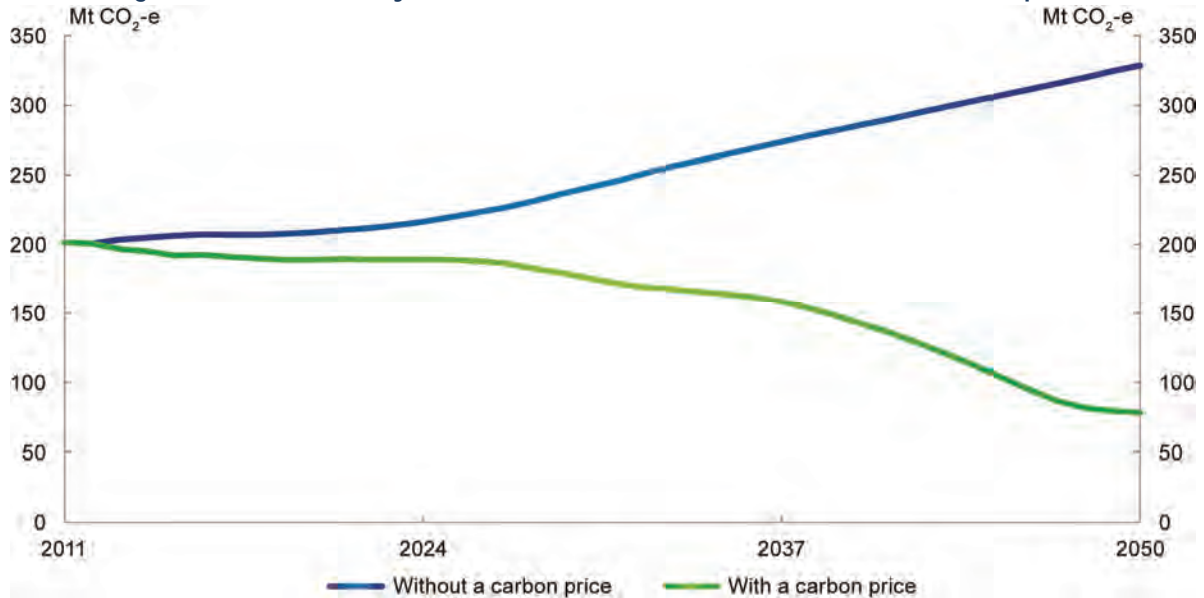
Figure 7.2: Emissions intensity of electricity generation with and without a carbon price



Source: Treasury modelling, 2011 (core policy scenario).

Changing our fuel mix means that we change the trajectory of carbon pollution growth from electricity generation. Treasury modelling estimates that the carbon price will result in a cumulative reduction in pollution from the electricity sector of almost 500 million tonnes by 2030, compared with what would have occurred without a carbon price (Figure 7.3). This represents a major contribution to the national pollution reduction effort.

Figure 7.3: Electricity sector emissions with and without a carbon price



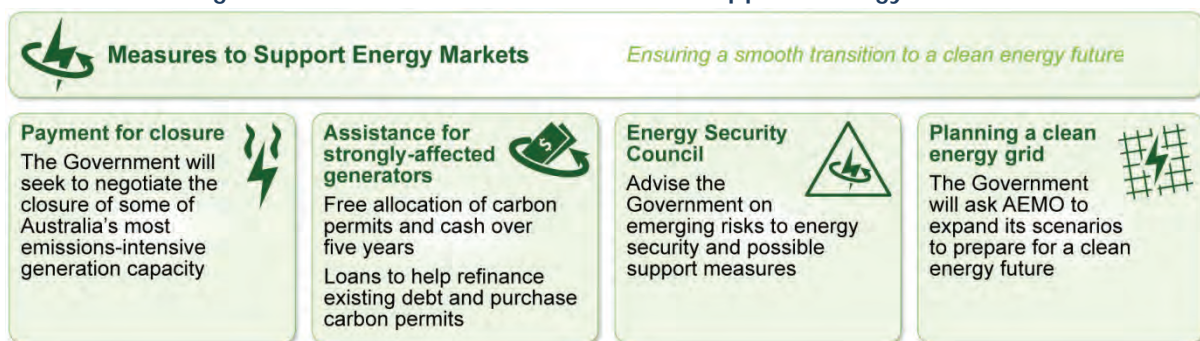
Source: Treasury modelling, 2011 (core policy scenario).

## 7.2 Ensuring a smooth transition

A smooth transition to a clean energy future is in Australia's national interest. It will help tackle climate change by encouraging the spread of electricity generation technologies that release less pollution into the atmosphere. Over time, existing power stations will be replaced with new low-pollution electricity generation facilities. During this renewal of the energy sector, we will need secure electricity supplies and stable energy markets. This is not only in the immediate interests of electricity customers; it will also ensure that Australia remains an attractive destination for the investment we need in clean and renewable energy.

The Government has consulted with the energy market agencies in the process of developing the energy security measures.

Figure 7.4: Overview of measures to support energy markets



### 7.2.1 Energy Security Fund

An Energy Security Fund will be established to smooth the transition and maintain energy security. This Fund will incorporate two main initiatives. First, there will be scope for payments for the closure of around 2000 megawatts (MW) of very highly emissions-intensive coal-fired generation capacity by 2020. This will start the process of replacing existing, highly polluting electricity assets with cleaner generation. Second, there will be transitional assistance to highly emissions-intensive coal-fired power stations in Australia. This assistance will come with conditions to ensure security of supply and transparent information on the action taken by these generators to move to a cleaner energy future.

The key components of the Energy Security Fund are described below and further details are provided in Appendix A, Table 16.

#### Payment for closure

To provide certainty to new investors in low-pollution generation and to begin the electricity sector's transformation to a clean energy future, the Government will seek to negotiate the closure of some of Australia's most emissions-intensive generation capacity. This will be done in an orderly and planned way with realistic timeframes. Closing some of our highest-polluting coal-fired generation capacity will make room for investment in lower-pollution plant.

Closing existing generation capacity in an orderly way will promote energy security. This is because knowing when old capacity will shut down is valuable information for potential new

investors. It allows new investors to plan with confidence and reduces their risks. Giving more confidence to investors is an important part of ensuring our transition to a clean energy future occurs. Providing better information to the market about when new capacity is required means that new investment will be made in a timely manner, underpinning energy security.

The Government will ensure that the timeframes for closure are realistic: they must give enough time for replacement capacity to be built. The Australian Energy Market Operator will be asked to advise on any proposed closure timetable to ensure that it is consistent with maintaining secure energy supplies.

### Assistance for strongly affected generators

The Government will also help generators that face sizeable asset value losses under a carbon price. As a condition of receiving assistance, generators will need to meet system security requirements. They will also need to provide clean energy investment plans, which will be made public. These plans will need to identify their proposals to reduce pollution from existing facilities and to invest in research and development and new capacity. Information on possible projects identified under the Energy Efficiency Opportunities program will also be included in these plans.

This transitional assistance measure will comprise a limited free allocation of Australian carbon permits and cash allocated until 2016-17, estimated at \$5.5 billion and amounting to around 23 per cent of the coal-fired power stations' expected liability over this time.

To further underpin energy security, and recognising the difficult borrowing conditions faced by coal-fired generators, the Government, on advice from the Energy Security Council (see below) may offer loans to emissions-intensive coal-fired electricity generators for the refinancing of existing debt where a coal-fired generator needs finance but is unable to obtain it from the market on reasonable terms. Loans will also be offered for a limited period for the purchase of future vintage carbon permits. Loans will be offered on terms that encourage generators to seek private finance in the first instance.

### 7.2.2 Energy Security Council

A new Energy Security Council will be established to advise the Government on emerging risks to energy security. The Council will also advise the Government on possible support measures to avert risks to energy security. It will advise on risks emerging from financial impairment from any source, not just from carbon pricing. The Council will include energy and financial market experts. It will be able to recommend a range of support measures and will advise on the provision of loans to electricity generators for the refinancing of existing debt.

### 7.2.3 Planning a clean energy grid

The Australian Energy Market Operator (AEMO) already plays a key role in planning the national electricity transmission grid. AEMO's planning is centred on the annual National Transmission Network Development Plan. This takes a 20-year outlook on network and other infrastructure investment in the National Electricity Market. The inaugural 2010 plan considered how different mixes of carbon prices, fuel prices, changing patterns of demand,

renewable energy costs and costs of carbon capture and storage technologies would affect investment.

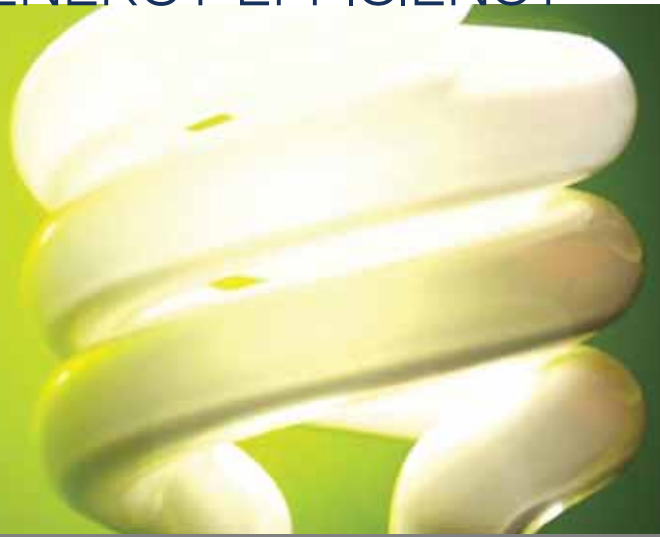
The Government will ask AEMO to expand its planning scenarios to prepare for greater use of renewable energy. This will include further consideration of energy market and transmission planning implications of moving towards 100 per cent renewable energy.

In addition, the Australian Energy Market Commission will continue its review to identify market and regulatory arrangements that would achieve a more efficient balance between supply and demand for electricity. The Government will work with the Commission on these opportunities for reform.



# Chapter 8

IMPROVING ENERGY EFFICIENCY





## Chapter 8: Improving energy efficiency

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### Key messages

- **Using energy more efficiently can lower carbon pollution and save money.**
- **The Government is helping households and businesses improve their energy efficiency and will expand these efforts.**
- **The Government will expedite the development of a national energy savings initiative, as recommended by the Prime Minister's Task Group on Energy Efficiency.**

### 8.1 What is energy efficiency?

Australia can use energy more efficiently. This means considering in the first place whether we can conserve our use of energy; then it means taking steps to avoid waste when we do use energy; and finally, it means being smarter — working out how to get the same outcomes while using less energy to achieve them.

Improvements in energy efficiency can be small in themselves. Turning off a television set at the wall rather than leaving it in power standby mode can reduce carbon pollution by around 20 kilograms a year. Or they can be large. The company Owens-Illinois slowed down the operating speeds of cooling tower fans at its Melbourne glass manufacturing plant and saved 527 tonnes of carbon pollution a year.

Multiplied tens of thousands of times across the economy, small individual initiatives to improve energy efficiency will add up to sizeable reductions in energy use. This is why improving energy efficiency is the third element of the Australian Government's plan for a clean energy future, along with a carbon price, renewable energy and action on the land.

Improving energy efficiency means that, for any given level of pollution-intensity in Australia's energy supply, there will be lower carbon pollution. There is considerable scope to improve energy efficiency throughout our economy. Steps can be taken in households, starting with the design and construction of our homes and moving on to the way we live in them, how much energy we use and the decisions we make when selecting and using household appliances. Businesses across all industry sectors can also implement more energy-efficient technologies and production systems, eliminating waste, lowering costs and reducing pollution. Governments also have a direct role to play. The Australian Government's Energy Efficiency in Government Operations policy has set targets to reduce the amount of energy used per person on lighting and power in Government office buildings.

As the Prime Minister's Task Group on Energy Efficiency reported last year:

*Energy efficiency is Australia's untapped energy resource — a means to improve the productivity of the economy as well as an important element in moving towards a prosperous low-carbon future.*

Increased energy efficiency will have multiple benefits: lowering carbon pollution, improving energy security, and helping households and businesses cope with rising energy prices. Improving energy efficiency does not mean limiting economic growth or reducing living standards. It means being smarter about how we use energy at home and at work. A range of policies is already in place to help Australians save on energy bills. Under the Government's plan for a clean energy future, these efforts will continue and new initiatives will be adopted.

Figure 8.1: Overview of energy efficiency measures



## 8.2 Prime Minister's Task Group on Energy Efficiency

In October 2010, the Government published the report of the Prime Minister's Task Group on Energy Efficiency. The Task Group examined the most economically and environmentally effective ways of delivering a step change in Australia's energy efficiency performance. The Task Group made six recommendations:

1. An aspirational national energy efficiency target of improving Australia's primary energy intensity by 30 per cent between 2010 and 2020.
2. The introduction of a transitional national energy savings initiative to replace existing and planned state energy efficiency schemes, subject to detailed consultation on its design.
3. Further work that will outline new national governance arrangements for consideration by the Council of Australian Governments.
4. Improve the data, information and analysis tools necessary to enable energy efficiency innovation, track the national target and underpin future policy development.
5. Development and design of a long-term national strategy to build a culture of energy efficiency.

6. Consider the suite of other sectoral proposals in the Report aimed at addressing specific barriers to energy efficiency improvement in particular areas of the economy.

## Response to the report of the Prime Minister's Task Group on Energy Efficiency

1. Target	<p>The Government notes this recommendation and the Task Group's finding that there are opportunities for Australia, nationally, to significantly improve its energy efficiency by up to 30 per cent over the coming decade.</p> <p>The Government does not support proceeding, at this time, with an aspirational national target.</p>
2. Energy savings initiative	<p>The Government will expedite the development of a national energy savings initiative and will examine further how such a scheme may assist households and businesses to adjust to rising energy costs. This further work will involve additional detailed design, quantification of costs and benefits, and discussions with state and territory governments.</p> <p>An important element of the Government's further investigations will be comprehensive public and industry consultation. The Government encourages all firms and individuals that have an interest in a national energy savings initiative to participate in that process.</p>
3. Governance	<p>The Government notes that there is a need for a more streamlined approach to improving energy efficiency across the Australian economy.</p> <p>The Minister for Climate Change and Energy Efficiency and the Minister for Resources and Energy will undertake further work on national energy efficiency governance arrangements, for consideration by the end of 2012. Ministers will investigate the pros and cons of a new complementary implementation body to coordinate national action, such as the Australian Energy Commission model put forward by the Task Group.</p>
4. Data, information and analysis	<p>The Government notes that there is a need to collect better data on energy use and energy efficiency across the economy, and to communicate and disseminate this data. The Government will commission the Australian Bureau of Statistics to improve the extent and availability of household energy use data, filling a critical gap in national data.</p>
5. Culture	<p>The Government notes this recommendation, and will focus on the new commitments discussed below to provide advice to households, small and medium businesses and the community sector to assist them to manage rising energy costs.</p>
6. Sectoral measures	<p>The Government notes that one-third of the sectoral measures recommended by the Task Group are already being progressed.</p> <p>As discussed below, the Government has committed to extending the Energy Efficiency Opportunities program and to implement mandatory carbon dioxide standards for light vehicles, as recommended by the Task Group.</p>

The Task Group made clear that:

*By far the most important element in a vision of a step change in Australia's energy efficiency improvement is the presence of an explicit price on carbon. An explicit carbon price will underpin and catalyse energy efficiency throughout the economy.*

### 8.2.1 Working toward a national energy savings initiative

A national energy savings initiative — or 'white certificate' scheme — would place obligations on energy retailers to help their household and business customers find and implement energy savings. It would help consumers make savings by encouraging the identification and take-up of energy savings opportunities.

A national energy savings initiative would place obligations for deploying energy savings measures on energy retailers who have considerable information about their customers' needs and how to manage energy demand. A national energy savings initiative would replace existing state energy efficiency schemes in NSW, Victoria and South Australia. This would reduce complexity and duplication and allow energy consumers in states without existing schemes to benefit. In European countries and several US states, energy efficiency schemes operate alongside, and complement, a carbon price. India has introduced a white certificate trading scheme and a number of Chinese provinces are also finalising the design of such schemes.

As recommended by the Prime Minister's Task Group, the Government will undertake further consultation and design work on a national energy savings initiative. Factors that will be considered will include:

- economy-wide targets to maximise the benefit of the scheme
- sectoral and fuel coverage issues
- incentives or requirements to create certificates in low-income households and in ways which reduce electricity demand at peak times
- energy saving activities which would be eligible
- managing a smooth transition from state-based schemes.

Subject to economic modelling and a regulatory impact analysis, the Government will make a final decision on whether to adopt a national energy savings initiative. A national energy savings initiative would be conditional on the agreement of the Council of Australian Governments and the abolition of existing and planned state schemes.

## 8.3 Helping communities save energy

The Government will help communities improve energy efficiency through the following measures.

### 8.3.1 Low Carbon Communities

The Government's Low Carbon Communities program will be expanded to provide funding through competitive grants to local councils and communities to improve energy efficiency in council and community-use buildings and facilities, and to assist low-income households. Funding for the program will be increased from \$80 million to \$330 million.

In line with the Government's ongoing support for household action on climate change, Low Carbon Communities has been expanded to include two new initiatives:

- the Low Income Energy Efficiency Program to trial energy efficiency support approaches to assist low-income households overcome energy efficiency barriers
- the Household Energy and Financial Sustainability Scheme, to support low-income households to improve their energy and financial sustainability.

The Low Income Energy Efficiency Program will provide up to \$100 million in grants to consortiums of local and state governments, community organisations, energy retailers and energy service companies. The funds will be used to assist low-income households reduce energy costs to adjust to the impacts of a carbon price. Competitive grants will fund around 15 to 20 trial projects to assist identified low-income households across the country.

The \$30 million Household Energy and Financial Sustainability Scheme will help around 100,000 low-income households find more sustainable ways to manage their energy consumption. The package of assistance will include: energy and financial sustainability assessments and advice, financial education and money management, and access to the No Interest Loans Scheme to assist with the purchase of more energy efficient appliances.

The expanded Low Carbon Communities will also provide additional support through competitive grants for local councils and community organisations to undertake energy efficiency upgrades and retrofits to council and community-use buildings, facilities and lighting. This will reduce their energy costs and serve as demonstration projects to promote long-term energy efficiency behaviour change in the community. Examples of projects that could be funded under this stream include:

- improving public lighting by replacing inefficient incandescent street lights with high efficiency technologies and replacing incandescent traffic lights with modern LED versions
- installation of cogeneration/trigeneration systems
- energy efficient retro-fitting and retro-commissioning of council or community premises
- installing sub-metering/smart metering/building energy management systems.

### 8.3.2 Remote Indigenous Energy Program

The \$40 million Remote Indigenous Energy Program will help Indigenous communities access clean, affordable and reliable 24-hour power supply, manage their energy efficiently and use it to contribute to improvements in health, education and long-term economic viability.

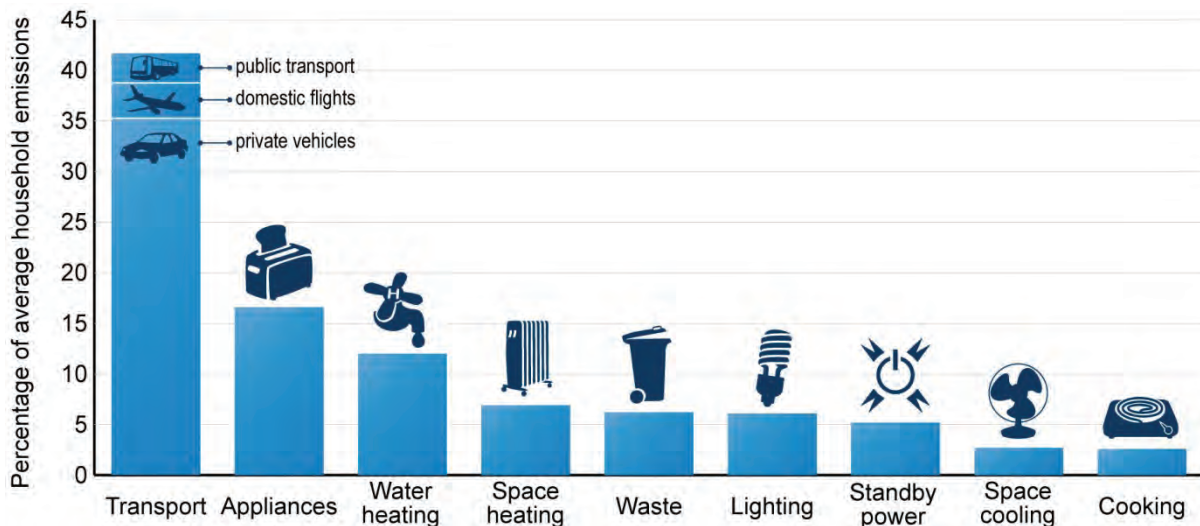
The program will build on the success of the former Renewable Remote Power Generation Program. It will provide additional financial support to install renewable energy generation systems in around 55 remote Indigenous communities over the life of the program. It will also include training in basic system maintenance and the provision of energy efficiency information to encourage ongoing energy management.

## 8.4 Energy efficiency at home

### 8.4.1 Where household pollution comes from

Households are ultimately responsible for around 21 per cent of Australia’s annual carbon pollution — more than the pollution from either agriculture or deforestation. A substantial part of this pollution is released directly by householders, but much of it is released indirectly through the electricity we use at home and our consumption of other goods and services (Figure 8.2). Inside the home, the largest sources of carbon pollution are household appliances (especially fridges and televisions), water heating and space heating. While these make the largest contributions, the fastest-growing sources of pollution in the home come from energy used for appliances (including keeping them in standby power mode) and for space cooling (mainly from an increase in air conditioning).

Figure 8.2: Sources of household emissions in Australia



Source: Department of Climate Change and Energy Efficiency calculation based on 2007 household emissions (the latest year for which the necessary detailed data are available).



## 8.4.2 Reducing energy use

The most effective way for households to reduce carbon pollution is by carefully looking at their electricity, gas and fuel consumption. By using these sources of energy more efficiently families can reduce their bills as well as help to tackle climate change.

Improving energy efficiency does not mean going without comforts and amenities. Being energy efficient just means being smarter about how we use energy. Our homes and lifestyles can be just as comfortable, but can cost us less.

As part of its plan for a clean energy future, the Government will help households manage rising energy costs by making homes and transport more efficient. This will be done through a mixture of existing, expanded and new policy initiatives.

### Actions to improve energy efficiency and save money at home

Small changes at home can reduce energy consumption and provide significant annual savings. For example, it is estimated that for a family of four:

- Washing clothes in cold rather than hot water could save around \$90 each year.
- Using a clothesline instead of an electric dryer once per week could save around \$55 per year.
- Switching off appliances at the wall could save up to \$100 per year in standby power.
- Switching from incandescent light bulbs to compact fluorescent lights could save around \$160 per year.
- Fitting a low-flow showerhead and taking shorter showers could save up to \$550 per year.
- Once installed, a solar hot water system replacing an electric system could save over \$400 per year.

(Note: savings for individual households will vary depending on individual circumstances.)

## 8.4.3 Improving the efficiency of household appliances

### Household advice line and website

The Government's LivingGreener website ([www.livinggreener.gov.au](http://www.livinggreener.gov.au)) provides information on living sustainably and links all Commonwealth, state and territory energy efficiency and climate change programs.

This website will be expanded to provide information on how households can improve their energy efficiency to save money and manage the impacts of increasing energy costs. The website will also provide new content for schools and local governments. Tailored advice to

householders will also be delivered through a phone advice line, supplemented by social media and mobile applications to reach younger age groups.

## Smarter appliances

Improving the energy efficiency of household appliances is a highly cost-effective way of reducing carbon pollution and easing pressure on family budgets.

The Equipment Energy Efficiency (E3) program is a joint initiative of the Australian Government, state and territory governments and the New Zealand Government. For over 15 years, the E3 program has used two tools to deliver energy savings and reduced greenhouse gas emissions.

The first policy tool is minimum energy performance standards, which have successfully removed the most inefficient appliances and equipment from the market. The second is mandatory energy rating labelling, which allows consumers to make informed decisions while providing an incentive for manufacturers to innovate to gain a marketing advantage.

In addition, the Australian Government's continuing phase out of inefficient lighting is expected to reduce carbon pollution by around 28 million tonnes between 2008 and 2020 and save the economy \$380 million a year by 2020.

## Renewable Energy Bonus

The Renewable Energy Bonus helps households replace electric storage household hot water systems with clean energy alternatives. Households that switch from electric hot water to solar or heat pump systems can save hundreds of dollars a year on power bills as well as reducing carbon pollution.

Through the Renewable Energy Bonus, eligible households replacing an electric storage hot water system can claim a rebate of \$1,000 for a solar hot water system or \$600 for a heat pump hot water system. Since September 2007 more than 212,000 households have received Australian Government assistance to replace existing electric hot water systems.

## 8.5 More fuel efficient cars

The Green Vehicle Guide and the Fuel Consumption Label initiative help motorists choose vehicles that use less fuel and emit less carbon pollution. Smaller, lighter and more fuel efficient vehicles, and vehicles which use fuels other than petrol, can be considerably cheaper to run.

The Government is supporting the introduction of more fuel efficient and less polluting vehicles to the marketplace by implementing mandatory carbon dioxide emissions standards for all new light vehicles sold in Australia. This mandatory standard will set a national target for average carbon dioxide emissions per kilometre driven. Each motor vehicle company will have to contribute to this target.

## 8.6 Energy efficiency in business

Improving energy efficiency will be one of the main ways many businesses will manage the cost impacts of a carbon price.

In the long-term, a carbon price will provide incentives for business to reduce energy consumption. However, the Government will also help businesses identify and implement technologies that will improve energy efficiency and reduce their vulnerability to changing electricity prices.

### 8.6.1 Energy efficiency information grants

Clear information from trusted sources will be vital in helping small businesses and the community sector reduce energy costs. The Government will establish a \$40 million program providing grants over four years to industry associations and non-government organisations that work with small businesses and community organisations. These groups will deliver information about the impacts of a carbon price on small businesses and community organisations and practical steps to manage these impacts.

### 8.6.2 Clean Technology Program

As part of the Clean Technology Program, the Clean Technology Investment Program will provide grants to manufacturers totalling up to \$800 million over seven years, enabling firms to invest in energy-efficient capital equipment and low-pollution technologies, processes and products.

Energy efficiency initiatives in food manufacturing plants and metal foundries will also be supported by a new \$200 million Government grants program. For more information see Chapter 5.

### 8.6.3 Energy Efficiency Opportunities

Energy Efficiency Opportunities is an existing Government program that requires Australia's biggest energy-using corporations to identify energy efficiency opportunities and report on their implementation. This program has been effective in saving energy and lowering carbon pollution. In 2010, Energy Efficiency Opportunities participants identified energy savings with net financial benefits of \$1.2 billion per year.

As part of the Government's plan for a clean energy future, the Government will continue and expand Energy Efficiency Opportunities. The Government will:

- extend base funding to 30 June 2017
- expand the program to include energy transmission and distribution networks, major greenfield and expansion projects
- enhance assessment and verification requirements

- establish a voluntary scheme for medium-sized energy users.

These changes are in line with recommendations by the Prime Minister's Task Group on Energy Efficiency. Including transmission and distribution networks in Energy Efficiency Opportunities could see significant reductions in network losses. This would lower carbon pollution from electricity use and put downward pressure on energy prices. A voluntary scheme for medium-sized energy users will allow the significant resources and information available under the existing program to be tailored to these energy users. A key element will be training, mentoring and help with program management.

## 8.7 Energy efficiency in buildings

Australia's buildings are responsible for around 20 per cent of energy use. The Government is working to make sure that new buildings are more energy efficient.

Commercial Building Disclosure is a national program for disclosure of up-to-date energy efficiency ratings. This helps commercial tenants identify buildings that cost less to run.

From 1 July 2012, eligible businesses that invest in improving the energy efficiency of their existing buildings will be able to apply for a tax break through the \$1 billion Tax Breaks for Green Buildings Program.

The Building Code of Australia was also recently changed to include minimum energy efficiency standards for all classes of commercial building in Australia. This standard will eliminate poor energy performance in new buildings and major refurbishments.

## 8.8 Energy efficiency in Government

Energy Efficiency in Government Operations (EEGO) makes Government operations more efficient while also leading market change to deliver greenhouse gas reductions.

EEGO aims to progressively improve overall Australian Government energy performance. It includes energy efficiency targets for Government agency office buildings and a commitment to the development of similar targets for other Government building types. On average, Australian Government offices use over 30 per cent less energy per person for light and power than in 1999-2000.

New Australian Government office leases use Green Lease Schedules, which help landlords and tenants agree on steps to improve and maintain performance. The Government's role as a major tenant of quality offices nationally has meant that the 4.5 star standard for new leases is becoming standard practice for new, high quality office buildings.

# Chapter 9

CREATING OPPORTUNITIES ON THE LAND





## Chapter 9: Creating opportunities on the land

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### Key messages

- **A carbon price will not apply to agricultural emissions. This means there will be no requirement for farmers to pay for emissions from livestock or fertiliser use.**
- **The Carbon Farming Initiative will create economic rewards for farmers and land managers who reduce pollution or store carbon in the landscape.**
- **An ongoing Biodiversity Fund (\$946 million over the first six years) will be established for projects to protect biodiverse carbon stores and secure environmental outcomes from carbon farming.**
- **An ongoing Carbon Farming Futures program (\$429 million over the first six years) will help farmers and landholders benefit from carbon farming by supporting research and development, measurement approaches and action on the ground to reduce emissions or store carbon, including support for conservation tillage equipment.**

### 9.1 Climate change and the land

The fourth element of the Australian Government's clean energy future plan — along with a carbon price, renewable energy, and energy efficiency — is action on the land. The farming, forestry and land sectors have just as important a role to play in reducing carbon pollution as governments, households and the wider business community.

People who live and work on the land know all too well the way extreme weather conditions like drought, flood and fire can affect local and national prosperity. Changes in temperature, rainfall, and extreme weather events will affect water availability, water and soil quality, fire risk and the incidence of pests, weeds and disease. Impacts will vary around the country but many farm producing areas face risks of adverse impacts on crop yields, pasture growth and livestock production.

Agriculture would be one of the Australian industries hardest hit by unmitigated climate change. The frequency and severity of drought is expected to increase and, according to the 2008 Garnaut Climate Change Review, this could see irrigated agriculture in the Murray Darling Basin decline by up to 92 per cent by 2100, undermining Australia's capacity to grow and produce our own food.

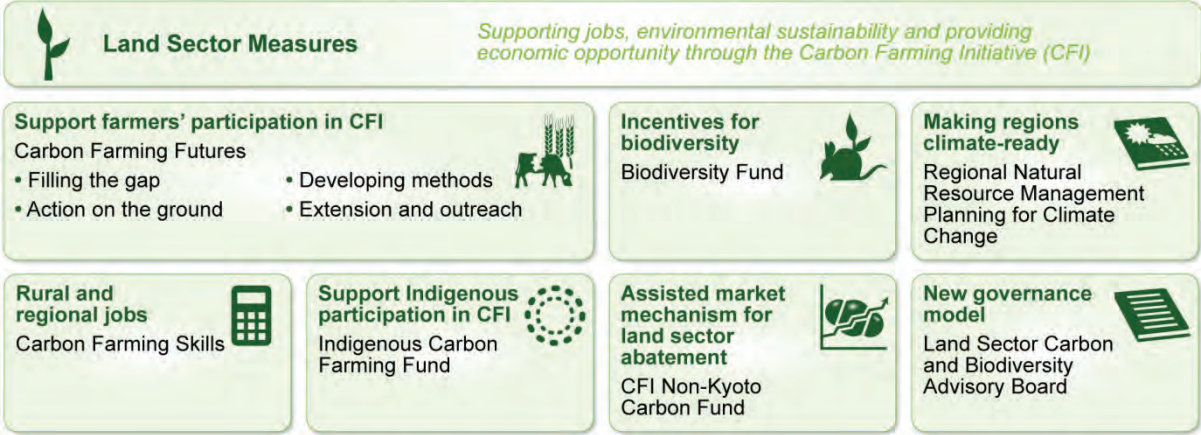
The Government has decided to exclude the agricultural and land sectors from the carbon price. Farmers, forestry operators and other land managers will not pay a price for the carbon pollution from their activities. However, the Government wants to ensure that farmers and

land managers who use their skills, experience and knowledge of the land to lower carbon pollution are rewarded for their efforts.

Australia’s natural assets mean that, while we may have significant levels of agricultural carbon pollution, we also have promising opportunities to store carbon on the land. Farmers have a direct stake in the health of the environment and they have a strong incentive to manage the land sustainably.

Carbon pollution on the land can be reduced by initiatives like capturing emissions from livestock manure or changing the way soil is tilled so that less carbon is released into the atmosphere. Conservation tillage practices seek to minimise soil disturbance and improve organic matter, as well as providing productivity benefits for farmers. Carbon can also be removed from the atmosphere and stored in vegetation. The Government will encourage and reward such action through its Carbon Farming Initiative.

Figure 9.1: Overview of land sector measures



## 9.2 Supporting farmers under a carbon price

The Government has decided to exclude the agricultural and land sectors from the carbon price. This means there will be no requirements for farmers to pay for pollution from livestock or fertiliser use. The carbon price also will not apply to off-road fuel use by the agriculture, forestry and fishing industries.

While the carbon price will increase electricity costs, the costs of other farm inputs, such as fertiliser, are set by world markets rather than domestic policies.

Special assistance will be provided to food processors, which can have a relatively high exposure to energy costs. The Government’s \$200 million Food and Foundries Investment Program will assist food processors and dairies improve the energy efficiency of their businesses to reduce the impact of a carbon price (see Chapter 5).



## 9.3 The Carbon Farming Initiative

The Carbon Farming Initiative is a carbon offsets scheme that will provide new economic opportunities for farmers, forest growers and landholders and help the environment by reducing carbon pollution. Farmers and land managers will be able to generate credits that can then be sold to other businesses wanting to offset their own carbon pollution.

Actions to reduce pollution or increase carbon storage can also increase the land sector's resilience to climate change, protect Australia's natural environment and improve long term farm productivity.

Legislation for the Carbon Farming Initiative was introduced to Parliament in March 2011 to provide long-term certainty to participants and to underpin the environmental integrity and market value of carbon credits.

### Land sector activities under the Carbon Farming Initiative

The Carbon Farming Initiative will allow land managers to earn credits — which can then generate income — for actions including:

- reforestation and revegetation
- reduced methane emissions from livestock digestion
- reduced fertiliser pollution
- manure management
- reduced pollution or increased carbon storage in agricultural soils (soil carbon)
- savanna fire management
- native forest protection
- forest management
- reduced pollution from burning of stubble and crop residue
- reduced pollution from rice cultivation
- reduced pollution from legacy landfill waste.

Over time researchers and land managers will find new ways of reducing pollution and increasing carbon storage in soils and vegetation.

Credits generated under the Carbon Farming Initiative that are recognised for Australia's obligations under the Kyoto Protocol on climate change can be sold to companies with liabilities under the Carbon Pricing Mechanism (see Chapter 3). This includes credits earned from activities such as reforestation, savanna fire management and reductions in pollution from livestock and fertiliser.

The ongoing Carbon Farming Initiative non-Kyoto Carbon Fund (\$250 million over the first six years of the program) will provide incentives for other activities, including revegetation and soil carbon projects.

Australia will continue working to develop new international rules that recognise a wider range of action on the land to reduce pollution.

## 9.4 Biodiversity Fund

Australia has unique native ecosystems which are highly diverse. Biodiversity plays a crucial role in maintaining the productive capacity of our landscape. Biodiversity can act as a buffer against a harsh and variable climate by binding and nourishing soils, and filtering streams and wetlands. Australia's ecosystems create significant benefits for important industries like agriculture, forestry, fisheries and aquaculture, and tourism.

Our ecosystems are at risk from climate change. Loss of biodiversity, declines in river and wetland health, reduced water quality and quantity, difficulty in flood control, erosion and reduced productivity are some of the challenges that could increase under a changing climate.

Restoring native vegetation and soil carbon can build and protect biodiversity, increasing the resilience of the landscape to the impacts of a changing climate. For example, tree planting can provide corridors for wildlife, help improve water quality and reduce erosion or salinity.

The ongoing Biodiversity Fund will improve the resilience of Australia's unique species to the impacts of climate change, enhance the environmental outcomes of carbon farming projects, and help landholders protect biodiversity and carbon values on their land. The Government will provide funding of \$946 million over the first six years for landholders to undertake projects that establish, restore, protect or manage biodiverse carbon stores.

The Fund will support restoration and management of biodiverse carbon stores including:

- reforestation and revegetation in areas of high conservation value including wildlife corridors, rivers, streams and wetlands
- management and protection of biodiverse ecosystems, including publicly owned native forests and land under conservation covenants or subject to land clearing restrictions
- action to prevent the spread of invasive species across connected landscapes.

These measures will help ensure the protection of Australia's ecosystems and increase the land sector's resilience to the impacts of climate change.

## Environmental and biodiversity benefits lead to improved farm productivity

Australia is one of the mega-diverse nations on Earth. However, its biodiversity is in decline. More than 1,700 species and ecological communities are known to be threatened and at risk of extinction on this continent. For each species listed as threatened, there are many more affected by loss of habitat and other threats. Conservation efforts over the past decades have resulted in improvements in some areas. However, degradation of our environment continues and many ecosystems are increasingly vulnerable to collapse.

Australia's biodiversity is declining due to the impacts of a range of threats, including:

- habitat loss, degradation and fragmentation
- invasive species
- unsustainable use and management of natural resources
- changes to the aquatic environment and water flows
- changing fire regimes
- climate change.

## 9.5 Extending the benefits

To support the Carbon Farming Initiative, the Government will introduce measures to make it easier for farmers, Indigenous Australians and other landholders to benefit from managing carbon in the landscape.

The Government has already invested more than \$46 million in research and development on ways of reducing pollution and adapting to climate change for the Australian land sectors. The Climate Change Research Program includes an \$8 million demonstration component to provide information to farmers.

### 9.5.1 Carbon Farming Futures

As part of the new ongoing Carbon Farming Futures initiative, the Government will invest a further \$201 million (over the first six years of the program) for research into new ways of storing carbon and reducing pollution in the land sectors.

Funding will target emerging technologies and innovative management practices by engaging more scientists and independent experts to improve soil carbon, reduce pollution from livestock and crops, and enhance sustainable agricultural practices. Novel approaches, including biochar, biofuels and new crop and grazing species, will be targeted.

\$20 million (over the first six years of the program) will be available to convert research into practical methodologies which are recognised under the Carbon Farming Initiative.

The Government will fund tests of land sector research on ways of reducing pollution. There will also be funding to identify ways of integrating carbon farming into normal farm business.

Grants of up to \$99 million (over the first six years of the program) will be provided for landholders to take action on the ground, including testing new ways to increase soil carbon and reduce pollution.

Action to reduce greenhouse gases can improve farm productivity. Increasing soil carbon, for example, can improve soil structure and productivity, water use efficiency, soil biological activity and nutrient cycling. With improved soil fertility, farmers will find it easier to cope with impacts of climate change such as higher temperatures and lower rainfall.

### No-till farming improves soil fertility

- The Government will provide a refundable tax offset to encourage the uptake of conservation tillage farming techniques and participation in soil carbon sequestration research at an estimated cost of \$44 million over three years.
- Healthy soils are important for agricultural productivity. No-tillage aims to reduce soil disturbance, minimise damage to soil structure, increase nutrient availability and reduce water loss by increasing soil water holding capacity.
- Broad-acre farmers in and around Hillston, in central western New South Wales, have been involved in improving soil fertility since the devastating drought of 2002. Local no-till trials started around that time, and by 2006 almost 60 per cent of the district's croppers were using the techniques. There were positive results recorded for sub-soil moisture and also for crop yields.
- No-till, like all conservation tillage practices, works to improve the organic matter in the soil by retaining crop stubble. With less than 20 per cent soil disturbance, the effect is improved soil structure and fertility. It also reduces soil temperature, improving conservation of moisture for plant growth. Direct drilling provides excellent protection against wind erosion particularly in dry seasons, and helps improve land degradation. No-till can help reduce the impacts of droughts and other severe climatic conditions, as the practice can help with water retention in the soil.
- No-tillage practices require fewer passes over the property, and so farmers save money on fuel.

To ensure that farmers and landholders have information about opportunities under the Carbon Farming Initiative, the Government has provided \$4 million to support communication with landholders through the Landcare network and other providers. Landcare has a long history of working in the regions on sustainable land management practices. The Government has committed an additional \$64 million (over its first six years) for extension and outreach activities. Farm extension officers will provide information and support to landholders about integrating carbon management into farm planning; new research and farm techniques suitable for the property and farm business; and improving productivity and environmental sustainability.

This builds on a community-inspired approach which proved successful through the Government's \$34 million FarmReady Program.

## 9.5.2 Extending the benefits to Indigenous Australians

The Government will provide support to assist Aboriginal and Torres Strait Islanders to participate in the Carbon Farming Initiative. Indigenous Australians manage around 20 per cent of Australia's land mass, drawing on traditional knowledge of the landscape and its responses to fire, flooding and drought.

The ongoing Indigenous Carbon Farming Fund (\$22 million over its first five years) will assist Indigenous communities to benefit from the Carbon Farming Initiative. Funding will also be provided for specialists to work with Indigenous communities on carbon farming projects and funding for research and reporting tools for Carbon Farming Initiative methodologies will create further opportunities for Indigenous Australians.

The Government will continue to engage with Indigenous stakeholders to address barriers to participation.

### Savanna burning: Indigenous participation in carbon farming

- The Carbon Farming Initiative will create new economic opportunities for Indigenous communities.
- In Northern Australia there is strong interest in savanna fire management projects that build on the success of the Western Arnhem Land Fire Abatement project.
- Savanna fire projects provide opportunities for Indigenous rangers to work on country, fulfilling their customary land management obligations. Indigenous rangers use traditional fire practices to reduce the spread and intensity of fires in savanna regions, protecting biodiversity and reducing risks of damage to properties.
- In 2006, a 17-year voluntary offsets agreement was signed between Darwin Liquefied Natural Gas (a subsidiary of energy giant, ConocoPhillips), the Northern Territory Government, and local land owners. The project operates across 28,000 square kilometres of the Arnhem Plateau, adjoining Kakadu and Nitmiluk National Parks.

## 9.6 Natural resource management for climate change

Regional natural resource management organisations are well placed to help plan for climate change and to maximise the social and environmental benefits of carbon farming projects.

Through Government initiatives such as Caring for our Country, regional natural resource management organisations have had nearly a decade of experience in providing information, training and support to land managers and environmental, Indigenous, and community groups on sustainable land management.

The Government will provide \$44 million over five years for natural resource management regions to plan for climate change impacts. Natural resource management organisations will develop plans in each region to guide where carbon farming projects should be located in the

landscape. These can be used by landholders to identify and develop activities to reduce carbon pollution.

The Regional Natural Resource Management Planning for Climate Change Fund will also support research and analysis to develop scenarios on regional climate change impacts which can be used for natural resource management and land use planning.

These policies and initiatives for creating opportunities on the land represent a significant investment in reducing carbon pollution and delivering natural resource management benefits in the rural sector. The Land Sector Carbon and Biodiversity Advisory Board will be established in legislation and will review and oversee land sector initiatives, providing advice to Government and ensuring the effectiveness of assistance. With a strong focus on the coordination of research activities, the Board will make sure efforts are not duplicated and benefits for farmers and the environment are realised. The Carbon Farming Initiative and this range of complementary measures will provide real and long-lasting support for the land sector.

### Corridors enhancing biodiversity

- Gondwana Link is one of the most ambitious ecological programs in Australia. A wide range of groups are collaborating to protect, manage and restore bushland in a 1000 kilometre-long pathway, from the wet forests of Australia's south west corner to the woodlands and mallee bordering the Nullarbor plain.
- The Fitz-Stirling project aims to create a natural corridor 75km long and 2km wide to reconnect the Stirling Range and Fitzgerald National Parks. By connecting these parks and the land between them, the Gondwana Link can improve the mobility of a wide range of species.
- For example, the project aims to increase the population of Tammar and Black-gloved Wallabies — two species that were once abundant across the south west but due to foxes and habitat loss have dramatically reduced in number.
- The project also aims to restore and improve the health of at least 75 000ha of native vegetation, improve the condition of creeks and watercourses and control feral animals and weeds.
- Successful predator control will also assist in the protection of other species, such as western brush-tailed possums and a number of small to medium sized mammals, birds and reptiles.
- The Carbon Farming Initiative will support environmental programs like the Gondwana Link and others across Australia. This will be an important part of improved biodiversity health into the future.

# Appendices





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# Appendix A: Carbon pricing mechanism

## Scheme architecture

Table 1: Starting price and fixed price period

Feature	Policy
Fixed price period	The carbon pricing mechanism will commence on 1 July 2012. There will be a three year fixed price period.
The fixed price	The carbon price will start at \$23.00 per tonne in 2012-13 and will be \$24.15 in 2013-14 and \$25.40 in 2014-15. The prices in the second and third year reflect a 2.5 per cent rise in real terms allowing for 2.5 per cent inflation per year (the midpoint of the Reserve Bank of Australia's target range).
Fixed price permits	Liabe entities will be able to purchase permits from the Government at the fixed price, up to the number of their emissions for the compliance year. Any permits purchased at the fixed price will be automatically surrendered and cannot be traded or banked for future use. Permits freely allocated may be either surrendered or traded until the true-up date for the compliance year in which they were issued. They cannot be banked for use in a future compliance year.
Buy-back of freely allocated permits	The holders of freely allocated permits will be able to sell them to the Government from 1 September of the compliance year in which they were issued until 1 February of the following compliance year. The price paid by the Government will be equal to the price of the fixed price permits for that year, discounted to 15 June of the compliance year by the latest available Reserve Bank of Australia index of the BBB corporate bond rate, so that the buy-back price reflects the present market value of the permit. From 15 June onwards, the price paid will be equal to the fixed-price permits for that vintage.

Table 2: Transition arrangements and setting pollution caps

Feature	Policy
Transition to the flexible price period	The carbon pricing mechanism will transition to a flexible price cap-and-trade emissions trading scheme on 1 July 2015.
Pollution caps for the first five years	The Government will announce the first five years of caps in the 2014 Budget and will be required to table regulations setting five years of pollution caps in the Parliament no later than 31 May 2014.
Pollution caps for the sixth and subsequent years	The pollution cap will be extended by one year every year in regulations from 2015-16 to maintain five years of known caps at any given time. <ul style="list-style-type: none"> <li>For example, in 2015-16, regulations will be made setting the pollution cap for 2020-21. In 2016-17, regulations will be made setting the pollution cap for 2021-22, and so on.</li> </ul>
Considerations when setting pollution caps	When setting pollution caps, the Government must consider Australia's international climate change obligations and the recommendations on pollution caps made by the Climate Change Authority. The Government would also have regard to: <ul style="list-style-type: none"> <li>the medium- and long-term national emissions reduction targets;</li> <li>progress toward emissions reductions;</li> <li>estimates of the global emissions budget;</li> <li>the economic and social implications associated with various pollution caps, including implications of the carbon price;</li> <li>voluntary action to reduce Australia's greenhouse gas emissions;</li> <li>estimates of the greenhouse gas emissions that are not covered by the carbon pricing mechanism;</li> <li>any past or planned government purchases of international units;</li> <li>the extent of non-compliance under the carbon pricing mechanism; and</li> <li>other matters (if any) the responsible Minister considers relevant.</li> </ul>

**Table 2: Transition arrangements and setting pollution caps (continued)**

Feature	Policy
Default pollution caps for initial years	<p>In the event that the Parliament disallows the regulations presented in 2014, the legislation will provide for a default pollution cap that will ensure that covered emissions are reduced in absolute terms each year by a specified amount, expressed in million tonnes of CO<sub>2</sub>-e, at least consistent with meeting Australia's unconditional pollution reduction target of reducing pollution by 5 per cent below 2000 levels by 2020.</p> <p>Following this, each year the Government will be required to make regulations setting the next five years of pollution caps. If the Parliament disallows these regulations, then the legislation would provide for a default pollution cap for each year until regulations setting the next five years of pollution caps are made and not disallowed.</p>
Default pollution cap for years after initial cap-setting regulations have been made	<p>If, after the initial regulations setting five years of pollution caps have been made, the Parliament rejects the regulations setting the pollution cap for the sixth or any subsequent year of the flexible price period, the legislation will provide a default pollution cap for that year that would ensure that emissions are reduced in absolute terms each year by a specified amount, expressed in million tonnes of CO<sub>2</sub>-e at least consistent with the annual reduction in emissions implied by the 5 per cent emissions reduction target.</p>

**Table 3: Flexible price architecture**

Feature	Policy
Price ceiling	<p>A price ceiling will apply for the first three years of the flexible price period.</p> <p>The price ceiling will be set in regulations by 31 May 2014 at \$20 above the expected international price for 2015-16 and will rise by 5 per cent in real terms each year.</p> <p>If the world is on a 450 parts per million carbon dioxide equivalent (CO<sub>2</sub>-e) trajectory or higher, this will be reflected in international prices and the price ceiling will automatically be \$20 above this price. The level of the international price will be examined closer to the point of transition to a flexible price period to ensure that the price ceiling reflects a \$20 margin above its expected level.</p>
Price floor	<p>A price floor will apply for the first three years of the flexible price period.</p> <p>The price floor will start at \$15 and rise at 4 per cent in real terms each year.</p>
Banking and borrowing	<p>Unlimited banking of permits will be allowed in the flexible price period.</p> <p>There will be limited borrowing of permits such that, in any particular compliance year, a liable entity can surrender permits from the following vintage year to discharge up to 5 per cent of their liability.</p>
Auctions of permits	<p>Permits will be allocated by auctioning, taking into account transitional assistance provisions for key sectors.</p> <p>The policies, procedures and rules for auctioning will be set out in a legislative instrument.</p> <p>The Government will advance auction future vintage permits. There will be advance auctions of flexible price permits in the fixed price period.</p> <p>There will be no double-sided auctions.</p> <p>There will be no deferred payment arrangements for auctions.</p>

**Table 4: Coverage and liable entities**

Feature	Policy
Covered emissions	<p>The carbon pricing mechanism will have broad coverage of emission sources from commencement, encompassing: stationary energy; industrial processes; fugitive emissions (other than from decommissioned coal mines); and emissions from non-legacy waste.</p> <p>An equivalent carbon price will be applied through separate legislation to some business transport emissions, non-transport use of liquid and gaseous fuels, and synthetic greenhouse gases.</p>
Agricultural and land sector emissions	<p>Agricultural and land sector emissions will not be covered.</p>
Emissions from combustion of biofuels or biomass	<p>Emissions from the combustion of biofuels and biomass, including CO<sub>2</sub>-e emissions from combustion of methane from landfill facilities, will not be covered.</p>
Covered gases	<p>The carbon pricing mechanism will cover four of the six greenhouse gases counted under the Kyoto Protocol — carbon dioxide, methane, nitrous oxide and perfluorocarbons from aluminium smelting.</p>

**Table 4: Coverage and liable entities (continued)**

Feature	Policy
Synthetic greenhouse gases	<p>High global warming potential synthetic greenhouse gases (with the exception of perfluorocarbons from aluminium smelting) will not be included in the carbon pricing mechanism but will be subject to an equivalent carbon price using existing import and manufacture levies under the Ozone Protection and Synthetic Greenhouse Gas Management legislation. Levies will be adjusted annually to reflect the prevailing carbon price.</p> <p>From 1 July 2013, incentives will be provided for destruction of waste synthetic greenhouse gases, including ozone depleting substances, recovered at end of life.</p>
Thresholds for facilities	<p>In general, a threshold of 25,000 tonnes of CO<sub>2</sub>-e will apply for determining whether a facility will be covered by the carbon pricing mechanism.</p> <p>All scope 1 (direct) emissions covered by the carbon pricing mechanism, and legacy waste emissions, will count towards thresholds, but not scope 1 emissions from fuels or other sources excluded from the carbon pricing mechanism.</p>
Liability for landfill emissions	<p>Landfill facilities will not be liable for emissions that arise from waste deposited prior to 1 July 2012, but those emissions will count towards facility thresholds.</p> <p>To avoid waste displacement from covered to non-covered landfill facilities, an additional threshold of 10,000 tonnes of CO<sub>2</sub>-e will apply to landfill facilities within a prescribed distance of large landfill facilities.</p>
Liability for natural gas emissions	<p>Natural gas retailers will be responsible for emissions from the use of natural gas by their customers. There will be flexibility for large facilities that purchase natural gas from a retailer to assume responsibility for emissions from their use of natural gas.</p> <p>Where natural gas is not supplied by a retailer, emissions from that natural gas will count towards the liability of covered facilities. Where the gas is not used at a covered facility, the owner of the gas will be the liable entity.</p>
Transfer of liability from natural gas retailers to end users	<p>An obligation transfer number (OTN) mechanism will provide for the voluntary transfer of carbon price liability from natural gas retailers to large natural gas users in prescribed circumstances.</p> <p>In general, large users of natural gas will be permitted to quote an OTN to their supplier to assume liability for their own emissions. Businesses that use natural gas as a feedstock will also be able to quote an OTN in order to avoid paying the carbon price on natural gas that does not result in emissions.</p> <p>OTN quotation and acceptance will in general be voluntary. However, as a transitional arrangement, retailers will be required to accept an OTN quotation where natural gas is supplied under a contract entered into before the Royal Assent to the legislation and where the natural gas is to be used as a feedstock or where more than 25,000 tonnes of CO<sub>2</sub>-e per year are attributable to the natural gas supplied under those contracts.</p>
Liable entity for facilities	<p>The liable entity for direct emissions from a facility will generally be the person with operational control over that facility (that is, authority to introduce and implement any or all of the operating, health and safety, and environmental policies for that facility).</p>
Liable entity for joint ventures	<p>Where a facility is operated by an Unincorporated Joint Venture and no one person has operational control over the facility, the emissions liability for that facility will instead be allocated between the joint venture participants in proportion to their interest in the facility.</p>
Transfer of liability for direct emissions — corporate groups	<p>The operator of a facility will be able to apply for a liability transfer certificate to transfer liability for emissions from that facility to:</p> <ul style="list-style-type: none"> <li>• another member of its corporate group;</li> <li>• a person outside of its corporate group that has financial control over the facility; or</li> <li>• Unincorporated Joint Venture participants in proportion to their interest in the facility where the facility is operated for the Unincorporated Joint Venture.</li> </ul>

**Table 5: Treatment of transport**

Feature	Policy
Light vehicles, agriculture, forestry and fishery businesses	<p>Light commercial vehicles (vehicles 4.5 tonnes or less gross vehicle mass) and households will not face a carbon price on the fuel they use for transport. In addition, the agriculture, forestry and fishery industries will not pay a carbon price on their fuel use.</p>
Emissions from other business transport and non-transport use of liquid fuels	<p>Other business transport emissions from liquid fuels (rail and shipping) and non-transport emissions from businesses using liquid fuels will be subject to an equivalent carbon price, generally applied by reducing business fuel tax credits by an amount equivalent to that of placing the carbon price on liquid fuel emissions.</p> <p>Fuel tax credit reductions will apply to fuels acquired after 1 July 2012.</p>
On-road and off-road transport use of CNG, LNG and LPG	<p>On-road transport use of Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG) and Liquefied Petroleum Gas (LPG) (such as freight transport) will not face a fuel tax credit reduction due to the imposition of the Road User Charge. Off-road transport use of these fuels (such as on a mine site) will face a reduction in fuel tax credits equivalent to placing the carbon price on emissions from that fuel use.</p>

**Table 5: Treatment of transport (continued)**

Feature	Policy
Non-transport use of CNG, LNG and LPG	Non-transport use of CNG, LNG and LPG currently benefit from an automatic remission of excise. This will be replaced by a partial remission to reflect the effective carbon price.
Ethanol, biodiesel and renewable diesel	Ethanol, biodiesel and renewable diesel will not incur fuel tax credit reductions or changes to excise as these fuels are zero rated under international carbon accounting rules.
Aviation fuels	As fuel tax credits are not available for aviation fuels, domestic aviation fuel excise will be increased by an amount equivalent to the effect of placing the carbon price on aviation fuel in order to provide an effective carbon price for aviation. Changes to aviation excise will apply to fuels acquired after 1 July 2012. The additional revenue from increasing aviation excise by an amount equivalent to the carbon price will not be appropriated to the Civil Aviation Safety Authority. International aviation fuel use will not be covered as this is subject to international negotiations.
Adjustments to fuel tax credits and excise	Changes to fuel tax credits and excise to reflect the carbon price will be based on the specific emissions intensities of CNG, LNG, LPG, aviation gasoline, aviation kerosene, petrol and diesel, with all other liquid fossil fuels based on the diesel emission rate. Adjustments to credits and excise will be annual during the fixed price phase and every 6 months (based on the average carbon price over the previous six months) during the flexible price phase.
Productivity Commission review	The Productivity Commission will conduct a review of fuel excise arrangements, including an examination of the merits of a regime based explicitly and precisely on the carbon and energy content of fuels.

**Table 6: Compliance**

Feature	Policy
Carbon permits	The domestic unit for compliance with the carbon pricing mechanism will be the 'carbon permit'. Each carbon permit will correspond to one tonne of greenhouse gas emissions. The creation of equitable interests in carbon permits will be permitted, as will taking security over them. In addition, carbon permits will: <ul style="list-style-type: none"> <li>• be personal property;</li> <li>• be regulated as financial products;</li> <li>• be transferable (other than those issued under the fixed price or any price ceiling arrangements);</li> <li>• have a unique identification number and will be marked with the first year in which they can be validly surrendered ('vintage year');</li> <li>• not have an expiry date; and</li> <li>• be represented by an electronic entry in Australia's National Registry of Emissions Units.</li> </ul>
Compliance year	The compliance year is the Australian financial year, from 1 July to 30 June.
Discharging emissions obligations	To discharge their emissions obligations liable entities will be able to surrender an eligible emissions unit for each tonne of emissions for which they are liable during the compliance year.
Fixed price period	During the fixed price period, most liable entities will be required to discharge their emissions obligations in two parts: <ul style="list-style-type: none"> <li>• a 'progressive' surrender obligation of 75 per cent of their emissions obligation by 15 June of the relevant compliance year; and</li> <li>• a 'true up' (surrender) for the remainder of the obligation by 1 February following the compliance year.</li> </ul> This approach is similar to payment arrangements used for corporate taxes and allows time for entities to finalise annual emissions reports before making a final surrender of carbon permits. A progressive surrender obligation will not apply for direct emissions in respect of: <ul style="list-style-type: none"> <li>• a facility that reported emissions of less than 35 kilotonnes CO<sub>2</sub>-e in its previous year's National Greenhouse Emissions Reporting System (NGERS) report, or was not required to provide an NGERS report in the previous year; or</li> <li>• a facility that is expected to have emissions of less than 35 kilotonnes CO<sub>2</sub>-e in the current compliance year.</li> </ul> In these circumstances, there will be a single date for meeting emissions obligations, which will be the 'true up' date of 1 February.
Flexible price period	During the flexible price period, emissions obligations for each compliance year must be met by 1 February following the compliance year.

**Table 6: Compliance (continued)**

Feature	Policy
Emissions charge	<p>Emissions obligations that are not met through the surrender of eligible emissions units will need to be met by paying an emissions charge.</p> <p>During the fixed price period, the emissions charge for the progressive surrender obligation and 'true up' (surrender) will be 1.3 times the fixed price for permits (that is, \$29.90 for 2012-13, \$31.40 for 2013-14 and \$33.00 for 2014-15).</p> <p>The emissions charge for any shortfall for a compliance year in the flexible price period will be double the average price of permits for that year.</p> <p>The emissions charge will apply for each tonne of greenhouse gas emissions (carbon dioxide equivalent) for which an eligible emissions unit has not been surrendered.</p>

**Table 7: Eligibility of units from the Carbon Farming Initiative (CFI)**

Feature	Policy
Eligible Carbon Farming Initiative (CFI) units	<p>Australian carbon credit units (ACCUs) issued under the CFI will be eligible for compliance under the carbon pricing mechanism if they are:</p> <ul style="list-style-type: none"> <li>• Kyoto compliant Australian carbon credit units (Kyoto ACCUs);</li> <li>• non-Kyoto compliant Australian carbon credit units (non-Kyoto ACCUs) derived from emissions sources and sinks that would have been credited with a Kyoto ACCU if the abatement had occurred before the end of the relevant accounting period for the Kyoto Protocol first commitment period (31 December 2012 for reforestation and avoided deforestation activities, or 30 June 2012 for all other activities); or</li> <li>• any other type of ACCU prescribed in regulations.</li> </ul>
Quantitative limits	<p>In the fixed price period, liable entities may surrender eligible ACCUs totalling no more than 5 per cent of their obligation.</p> <p>In the flexible price period, there will be no limit on the surrender of ACCUs.</p>
Banking CFI units	CFI units will be bankable for future use.
Exporting CFI units	CFI units will be able to be exported during both the fixed price period and the flexible price period.

**Table 8: International linking**

Feature	Policy
International linking in the fixed price period	<p>The use of international units to meet carbon pricing mechanism liabilities will not be permitted in the fixed price period.</p> <p>Export of domestic permits will not be permitted in the fixed price period (with the exception of Kyoto ACCUs).</p>
International linking in the flexible price period	<p>International units can be used to meet carbon pricing mechanism liabilities in the flexible price period, subject to certain qualitative and quantitative restrictions (discussed below).</p> <p>Export of domestic permits (with the exception of Kyoto ACCUs) will not be permitted in the flexible price period while a domestic price ceiling is in place, except as part of a bilateral link to another emissions trading scheme with appropriate provisions in place to maintain the environmental integrity of the linked schemes.</p> <p>Unrestricted export of units will be permitted when there is no longer a domestic price ceiling in place.</p>
Quantitative restrictions	<p>Until 2020, liable parties must meet at least 50 per cent of their annual liability with domestic permits or credits.</p> <p>This restriction will be reviewed by the Climate Change Authority in 2016.</p>
Initial list of eligible international units	<p>The following international units will be included in the legislation establishing the carbon pricing mechanism:</p> <ul style="list-style-type: none"> <li>• certified emission reductions (CERs) from Clean Development Mechanism projects under the Kyoto Protocol, other than temporary CERs, long-term CERs, and CERs from nuclear projects, the destruction of trifluoromethane, the destruction of nitrous oxide from adipic acid plants or from large-scale hydro-electric projects not consistent with criteria adopted by the EU (based on the World Commission on Dams guidelines);</li> <li>• emission reduction units (ERUs) from Joint Implementation projects under the Kyoto Protocol, other than ERUs from nuclear projects, the destruction of trifluoromethane, the destruction of nitrous oxide from adipic acid plants or from large-scale hydro-electric projects not consistent with criteria adopted by the European Union (EU) (based on the World Commission on Dams guidelines);</li> <li>• removal units (RMUs) issued by a Kyoto Protocol country on the basis of land use, land-use change and forestry activities under Article 3.3 or 3.4 of the Kyoto Protocol; and</li> <li>• any other international units that the Government may allow by regulation.</li> </ul>

**Table 8: International linking (continued)**

Feature	Policy
Future restrictions on the use of international units	<p>Any restrictions placed on the acceptance of international units will be to ensure the stability and ongoing credibility of the carbon pricing mechanism, the environmental integrity and effectiveness of the carbon pricing mechanism, and consistency with Australia's international objectives and obligations.</p> <p>The Government may disallow the use of a given type of international unit at any time to ensure the environmental integrity of the mechanism.</p> <p>Liable parties holding such units in their registry accounts will be able to use those units for compliance in the compliance year in which the units were disallowed, but not subsequently.</p>
Adding to the list of eligible international units	<p>The Government may allow other international units by regulation where:</p> <ul style="list-style-type: none"> <li>• the addition does not compromise the environmental integrity of the carbon pricing mechanism;</li> <li>• the addition is consistent with the objective of the carbon pricing mechanism and with Australia's international objectives; and</li> <li>• there has been consultation with stakeholders, and analysis of the expected impact on the permit price, by the Climate Change Authority, and advance notification to the market by the Government.</li> </ul> <p>The types of units accepted and qualitative restrictions on use imposed by the EU Emissions Trading Scheme and the New Zealand (NZ) Emissions Trading Scheme will be taken into account when determining what international units may be accepted for compliance under the carbon pricing mechanism.</p> <p>The Climate Change Authority will advise on the integrity of international units, and recommend which units should be accepted and which should be prohibited.</p>
Linking to other schemes	<p>Linking to other credible trading schemes, including the EU Emissions Trading Scheme and the NZ Emissions Trading Scheme, is in Australia's national interest.</p> <p>The Government will only consider future bilateral links with schemes that are of a suitable standard, based on a range of criteria including:</p> <ul style="list-style-type: none"> <li>• an internationally acceptable (or, where applicable, a mutually acceptable) level of mitigation commitment;</li> <li>• adequate and comparable monitoring, reporting, verification, compliance and enforcement mechanisms; and</li> <li>• compatibility in design and market rules.</li> </ul>

**Table 9: Treatment of voluntary action**

Feature	Policy
Pollution cap setting	<p>The Government will take voluntary action into account when setting pollution caps.</p> <p>Voluntary action will be treated as additional when accounting for Australia's post-2012 targets.</p>
Voluntary cancellation of units	<p>In the flexible price period, permit holders may voluntarily cancel their permits.</p> <p>These will not be counted towards meeting Australia's national emissions targets and their cancellation will reduce the number of permits available in the market.</p> <p>Holders of international units and ACCUs may voluntarily cancel their units at any time, as soon as the Registry is in operation.</p>
Pledge Fund	<p>A Pledge Fund will be established from the commencement of the carbon pricing mechanism to help individuals access the carbon market and voluntarily cancel emissions units.</p> <p>The units the Pledge Fund will voluntarily cancel will include Australian carbon permits, Kyoto compliant and non-Kyoto compliant ACCUs, and eligible international units.</p> <p>Contributions to the Pledge Fund will be tax deductible.</p>
GreenPower	<p>Any purchases of accredited GreenPower from the date that the carbon pricing mechanism commences will be accounted for as voluntary action.</p> <p>In the fixed price period, the Government will measure GreenPower purchases on an annual basis and take these into account when setting the initial pollution caps. As pollution caps are to be set by 31 May 2014, only those GreenPower purchases measured at the time of making regulations will be counted in the initial caps, that is, GreenPower purchases for 2012-13. The remaining GreenPower purchases during the fixed price phase will be accounted for in later caps.</p> <p>In the flexible price period, the Government will measure GreenPower purchases on an annual basis and directly take these into account in setting the pollution caps five years into the future.</p> <p>Adjustments to the pollution cap for GreenPower will be backed by a commitment not to count those emission reductions towards meeting the national emissions reduction target.</p>
Additional voluntary action	<p>Voluntary action in addition to GreenPower and voluntary cancellation of units could also be recognised, on advice from the Climate Change Authority on whether a robust methodology can be developed to recognise additional voluntary action by households.</p>



Table 10: Tax treatment of permits

Feature	Policy
Income Tax Treatment	<p>The cost of a permit will be deductible, with the deduction effectively being deferred through the rolling balance method until the permit is sold or surrendered.</p> <p>The proceeds of selling a permit will be assessable income on revenue account in the income year the permit is sold.</p> <p>Under the rolling balance method, any difference in the value of permits held at the beginning and the end of an income year will be reflected as a variation in a taxpayer's taxable income with any increase in value included in assessable income and any decrease in value allowed as a deduction.</p> <p>Where a permit is surrendered for a purpose unrelated to producing assessable income (for example, voluntary cancellation by an individual), the deduction of the cost of the permit will be reversed by including an equivalent amount in assessable income.</p>
Value of a permit for tax treatment	<p>Taxpayers will be able to elect to value permits that they hold at the end of the first income year they hold permits either at historical cost or at market value, with the default being historical cost.</p> <p>Taxpayers will be able to change their valuation method once during the fixed price period, and after a method has been in use for four years during the flexible price period.</p> <p>The value of a permit will be deemed to be its market value where:</p> <ul style="list-style-type: none"> <li>• it is transferred under a non-arm's-length transaction between related parties or a transaction with an associate;</li> <li>• it is issued to the taxpayer as part of an assistance arrangement; or</li> <li>• it is an ACCU issued under the Carbon Farming Initiative.</li> </ul>
Holding a permit	<p>For income tax purposes, a permit will be deemed to be held by the beneficial owner of the permit.</p>
Importing or exporting permits	<p>Where permits are imported or exported they will be treated as if they were sold and repurchased in the relevant registries at market value.</p>
Costs incurred in becoming the holder of a permit	<p>Expenditure incurred in becoming the holder of a permit will be deductible in the year the taxpayer starts to hold a permit, except where the permit is:</p> <ul style="list-style-type: none"> <li>• issued as part of an assistance arrangement, in which case the deduction will be denied; or</li> <li>• an ACCU issued under the Carbon Farming Initiative, in which case the existing income tax law will apply. An exception to this rule is expenditure incurred in preparing or lodging reports necessary for an ACCU to be issued.</li> </ul>
Penalties	<p>A deduction will be denied for any penalties (including shortfall charges) imposed under the carbon pricing mechanism.</p>
Assistance measures	<p>Assistance grants will be subject to the existing tax law, not special provisions.</p> <p>Permits that are freely allocated to entities undertaking an eligible emissions-intensive trade-exposed (EITE) activity will be valued at zero where:</p> <ul style="list-style-type: none"> <li>• a taxpayer held the permit at the end of the relevant income year;</li> <li>• the taxpayer held the permit at all times from when it was issued to the end of the income year; and</li> <li>• the income year ends on or before the last surrender date for the compliance year for which they are issued.</li> </ul> <p>Thereafter, the normal valuation rules will apply.</p>
Interaction with the income tax law	<p>Specifically providing for the income tax treatment of permits will necessarily create a range of interaction issues with the rest of the tax law. The general rules include principles to manage these interactions.</p>
Goods and Services Tax	<p>Amendments will be made to the <i>A New Tax System (Goods and Services Tax) Act 1999</i> to make supplies of permits under the carbon pricing mechanism GST-free.</p> <p>Application of the normal GST rules will apply to transactions in financial derivatives of permits and payments of grants of assistance.</p>
Accounting and Auditing	<p>The accounting treatment of permits and transactions under the carbon price mechanism will be determined in accordance with international accounting standards, as adopted in Australia.</p> <p>The auditing of potential emissions liabilities will continue to meet Australian auditing standards which conform with the International Standards on Auditing (issued by the International Auditing and Assurance Standards Board).</p>

# Governance

**Table 11: Climate Change Authority**

Feature	Policy
Aim of the Authority	<p>The Climate Change Authority (the Authority) will be established by legislation as an independent body to provide expert advice on key aspects of the carbon pricing mechanism and the Government's climate change mitigation initiatives.</p> <p>The Government will remain responsible for carbon pricing policy decisions with significant and far-reaching implications.</p>
Functions of the Authority	<p>The Authority will perform a number of functions. It will:</p> <ul style="list-style-type: none"> <li>• provide recommendations to the Government on future pollution caps. In making its recommendations the Authority will have regard to: <ul style="list-style-type: none"> <li>– announced Government medium and long-term targets;</li> <li>– estimates of the global emissions budget;</li> <li>– progress towards emissions reductions;</li> <li>– economic, social and other relevant factors; and</li> <li>– voluntary action, including GreenPower and any approved new methodologies;</li> </ul> </li> <li>• make recommendations on the indicative national trajectories and long-term emissions budgets, having regard to the long-term target set by the Government and estimates of the global emission budget;</li> <li>• provide independent advice to the Government on the progress that is being made to reduce Australia's emissions to meet national targets, any indicative national trajectory or budget. As part of this, the Authority will provide analysis of the extent to which the emissions reduction objectives are being achieved from reductions in domestic emissions and from the purchase of international units;</li> <li>• conduct regular reviews of and make recommendations on the carbon pricing mechanism (household assistance and the Jobs and Competitiveness Program will be reviewed separately);</li> <li>• conduct reviews of and make recommendations on the National Greenhouse and Energy Reporting system, the Renewable Energy Target and the Carbon Farming Initiative;</li> <li>• make recommendations to the Government on whether a robust methodology could be developed to recognise additional voluntary action by households;</li> <li>• provide advice to Government on the role of the price floor and price ceiling beyond the first three years of the flexible price phase;</li> <li>• conduct reviews and make recommendations on other matters as requested by the Minister for Climate Change and Energy Efficiency or the Parliament; and</li> <li>• conduct or commission its own independent research and analysis into climate change and other matters relevant to its functions.</li> </ul> <p>The Authority will engage with representatives interested in climate change from across Australia in order to share research and information on climate change and gain input into its analysis.</p>
Composition	<p>The Authority will be made up of nine experts with a particular focus on climate science, economics, climate change mitigation, emissions trading, investment and business.</p> <p>The Authority will be supported by an independent staff.</p>
Timing of reviews	<p>The Authority will provide recommendations to Government on the pollution caps for the first five years of the flexible price period by 28 February 2014. Starting in 2016, the Authority will produce annual recommendations for the annual one-year extension of pollution caps.</p> <p>The Authority will provide advice to Government on the indicative national emissions trajectory or carbon budget at the time of reporting on pollution caps.</p> <p>The first report on progress in meeting national emissions reduction targets and trajectories will be provided to the Government by 28 February 2014 and then reported annually.</p> <p>The first review of the carbon pricing mechanism will be provided to the Government by 31 December 2016, the second review by 31 December 2018 and then each subsequent review within five years of the last.</p> <p>A review of the Renewable Energy Target will take place in the second half of 2012 and every two years after that.</p> <p>A review of the Carbon Farming Initiative will take place by the end of 2014 and every three years after that.</p> <p>A review of the National Greenhouse and Energy Reporting System will be conducted at least every five years and may be done as part of the review of the carbon pricing mechanism.</p> <p>The Authority will prepare a public report with each of its reviews.</p>

**Table 11: Climate Change Authority (continued)**

Public consultation	The Authority will be required to hold public consultations as part of each of its reviews. This will include public hearings and a process of public submissions.
Accountability of the Government and the Parliament	<p>Following receipt of the Authority's first report by 28 February 2014, the Government will include its formal response in the 2014-15 Commonwealth Budget and a separate statement will be produced and tabled in Parliament .</p> <p>The Government will introduce the first carbon budget regulations (comprising the first set of pollution caps for the next five years) into the Parliament no later than the end of May 2014.</p> <p>If the pollution caps presented in the regulations differ from the recommendations of the Authority, the Government will justify the difference in its response.</p>

**Table 12: Clean Energy Regulator**

Feature	Policy
Functions of the Clean Energy Regulator	The Clean Energy Regulator (the Regulator) will be established to administer the carbon pricing mechanism within a limited and legislatively prescribed discretion.
Responsibilities of the Regulator	<p>Responsibilities of the Regulator will include:</p> <ul style="list-style-type: none"> <li>• providing education on the carbon pricing mechanism, particularly about the administrative arrangements of the carbon pricing mechanism;</li> <li>• assessing emissions data to determine each entity's liability;</li> <li>• operating the Australian National Registry of Emissions Units;</li> <li>• monitoring, facilitating and enforcing compliance with the carbon pricing mechanism;</li> <li>• allocating permits including freely allocated permits, fixed price permits and auctioned permits;</li> <li>• applying legislative rules to determine if a particular entity is eligible for assistance in the form of permits to be allocated administratively, and the number of other permits to be allocated;</li> <li>• administering the National Greenhouse and Energy Reporting system, the Renewable Energy Target and the Carbon Farming Initiative, the regulatory functions which will be brought together with the Clean Energy Regulator to form an independent regulator from July 2012; and</li> <li>• accrediting auditors for the Carbon Farming Initiative and the National Greenhouse and Energy Reporting System.</li> </ul>

**Table 13: Productivity Commission reviews**

Feature	Policy
Development of capability	The Productivity Commission (PC) will be commissioned to undertake ongoing work to quantify mitigation policies in other major economies. It will start immediately to expand the number of countries, industries and policies evaluated and to build up a comprehensive, robust and up-to-date data set.
Review of assistance under the Jobs and Competitiveness Program	<p>Assistance arrangements will be reviewed by the PC in the third year of the carbon pricing mechanism (2014-15) and thereafter consistent with the timing of general scheme reviews.</p> <p>A review of assistance provided to a particular activity could be conducted earlier than 2014-15 if requested by the Government, and priority could be given to:</p> <ul style="list-style-type: none"> <li>• industry sectors receiving the greatest level of assistance;</li> <li>• industry sectors experiencing the fastest rates of growth in assistance; or</li> <li>• industry sectors where there is strong evidence of windfall gains as a result of the assistance.</li> </ul>

**Table 13: Productivity Commission reviews (continued)**

Feature	Policy
<p>Review of assistance under the Jobs and Competitiveness Program (continued)</p>	<p>Reviews will consider:</p> <ul style="list-style-type: none"> <li>• whether an alternative pattern and level of assistance would meet the Program’s objectives, particularly economic and environmental efficiency, more effectively;</li> <li>• the feasibility of, and availability of data for, amending the Jobs and Competitiveness Program assessment framework to one based on an assessment of the estimated expected global uplift of prices of individual EITE products if other countries had implemented a carbon price equivalent to that applied in Australia, as proposed by the Garnaut Climate Change Review—Update 2011. This review will consider whether it is the most effective and efficient means of preventing carbon leakage and assisting the industry to transition and whether the Government should adopt this approach;</li> <li>• whether EITE activities are making progress towards best practice energy and emissions efficiency for the industrial sector to which those activities relate;</li> <li>• whether additional activities should be added to the Jobs and Competitiveness Program on account of commodity price movements or other relevant matters;</li> <li>• whether windfall gains are being conferred on entities carrying out EITE activities;</li> <li>• the effect of existing facilities having no cap on permit allocations;</li> <li>• the growth in the EITE sector and implications for total free permit allocations under an emissions cap;</li> <li>• the existence of broadly comparable carbon constraints applying internationally;</li> <li>• the appropriateness of the LNG supplementary allocation policy;</li> <li>• the impact of carbon pricing on the competitiveness of EITE industries, including an analysis of carbon cost pass-through, the level of abatement achieved and the effect of the carbon productivity contribution on EITE activities over time and whether the carbon productivity contribution should be changed for a specific industry; and</li> <li>• whether less than 70 per cent of relevant competitors in each industry have introduced comparable carbon constraints, taking into account all mitigation policies and relevant assistance policies, and hence whether the application of the carbon productivity contribution rate for a specific industry should pause when assistance rates reach 90 per cent for highly emissions intensive industries, or 60 per cent for moderately emissions intensive industries.</li> </ul> <p>At least two Associate Commissioners with experience in the markets and production of EITE products will be appointed to the PC to take part in these Reviews.</p>
<p>Ad hoc assessments of impacts of the carbon pricing mechanism on particular industries</p>	<p>Once the carbon pricing mechanism has commenced, firms may make a request to the Government to have the impact of the mechanism on their sector assessed. The Government will establish guidelines which set out when such requests will be referred to the PC and the terms of reference for these reviews. These assessments will:</p> <ul style="list-style-type: none"> <li>• take into account the industry’s circumstances, including a range of factors related and unrelated to the carbon pricing mechanism that affect the competitiveness of the industry, and any assistance provided to the industry; and</li> <li>• make recommendations to the Government about whether it should adjust support to the industry and the appropriate mechanism for that assistance.</li> </ul>
<p>Fuel excise arrangements</p>	<p>The PC will conduct a review of fuel excise arrangements, including an examination of the merits of a regime based explicitly and precisely on the carbon and energy content of fuels.</p>

# Assistance

Table 14: Household assistance

Feature	Policy																																																							
Commitments to households	<p>The Government's commitments to households are:</p> <ul style="list-style-type: none"> <li>more than 50 per cent of the carbon pricing mechanism revenue will be used to assist households;</li> <li>millions of households will be better off under the carbon pricing mechanism;</li> <li>assistance will be permanent;</li> <li>low-income households (including all pensioners) will be eligible for assistance that at least offsets their average expected cost impact from carbon pricing;</li> <li>middle-income households will be eligible for assistance that helps them to meet the expected cost impact from carbon pricing; and</li> <li>households containing individual/s with a relevant concession card and who are certified by a medical practitioner as having a medical condition or disability that means they have high essential electricity costs are eligible for additional assistance through the Essential Medical Equipment Payment.</li> </ul>																																																							
Delivery of assistance	<p>Cash assistance will be delivered through the tax and transfer system.</p> <p>Assistance provided through transfer payments will be permanent and increase with the cost of living. Assistance will be delivered through a lump sum payment — the Clean Energy Advance — made to eligible recipients in May-June 2012. On-going assistance will then be provided through a new Clean Energy Supplement.</p>																																																							
Transfer assistance	<p>All pensioners will receive annual assistance through their pension equivalent to a 1.7 per cent increase in the maximum rate of the pension. This includes those on the Age Pension, Service Pension, Carer Payment, Disability Support Pension. Assistance for pensioners will be:</p> <ul style="list-style-type: none"> <li>up to \$338 per year for singles</li> <li>up to \$510 per year for couples combined.</li> </ul> <p>Self funded retirees on the Commonwealth Seniors Health Card (CSHC) holders will get \$338 per year for singles and \$510 per year for couples, combined, through their Seniors Supplement.</p> <p>Allowance recipients get annual assistance through their payments equivalent to a 1.7 per cent increase in the maximum rate of their payments.</p> <p>Eligible families get assistance through a 1.7 per cent payment increase in Family Tax Benefit of:</p> <ul style="list-style-type: none"> <li>up to \$110 for each child; and</li> <li>up to \$69 per family in receipt of Family Tax Benefit Part B.</li> </ul> <p>In addition, up to \$300 in Single Income Family Supplement will be available for single income families with a primary earner between \$68,000 and \$150,000, who would receive little or no assistance through tax changes compared with dual income families with similar income.</p> <p>A new Low Income Supplement of \$300 will be available to those who can show they did not receive enough assistance to offset their average cost impact. People can apply for the payment from 1 July 2012.</p> <p>Veterans on compensation payments made under the <i>Veterans Entitlement Act 1986</i> — including disability pensions and the war widow/ers pension — and the <i>Military Compensation and Rehabilitation Act 2004</i> — including permanent impairment payments and wholly dependent partner payments — will receive assistance equivalent to a 1.7 per cent increase in their payment.</p>																																																							
Tax assistance	<p>The Government will deliver tax cuts to target assistance to low- and middle-income individuals by more than tripling the statutory tax-free threshold from \$6,000 to \$18,200 on 1 July 2012, and adjusting the first two marginal tax rates. This will replace all but \$445 of the low-income tax offset (LITO), and provide current tax payers with annual incomes up to \$68,000 with a tax cut of at least \$300.</p> <p>The statutory tax-free threshold will be further increased to \$19,400 when the carbon price is replaced with an emissions trading system in 2015-16. This will reduce the LITO to \$300, and bring the total value of tax cuts to people with annual incomes up to \$68,000 to at least \$385.</p> <p>The current and new personal income tax rates and thresholds are shown below:</p> <table border="1"> <thead> <tr> <th rowspan="2">Statutory Rates and Thresholds</th> <th colspan="2">2011-12</th> <th colspan="2">2012-13</th> <th colspan="2">2015-16</th> </tr> <tr> <th>Threshold (\$)</th> <th>Marginal rate</th> <th>Threshold (\$)</th> <th>Marginal rate</th> <th>Threshold (\$)</th> <th>Marginal rate</th> </tr> </thead> <tbody> <tr> <td>1st rate</td> <td>6,001</td> <td>15%</td> <td>18,201</td> <td>19%</td> <td>19,401</td> <td>19%</td> </tr> <tr> <td>2nd rate</td> <td>37,001</td> <td>30%</td> <td>37,001</td> <td>32.5%</td> <td>37,001</td> <td>33%</td> </tr> <tr> <td>3rd rate</td> <td>80,001</td> <td>37%</td> <td>80,001</td> <td>37%</td> <td>80,001</td> <td>37%</td> </tr> <tr> <td>4th Rate</td> <td>180,001</td> <td>45%</td> <td>180,001</td> <td>45%</td> <td>180,001</td> <td>45%</td> </tr> <tr> <td>Effective tax free threshold</td> <td colspan="2">16,000</td> <td colspan="2">20,542</td> <td colspan="2">20,979</td> </tr> <tr> <td>LITO</td> <td>1500</td> <td>4% withdrawal rate from \$30,000</td> <td>445</td> <td>1.5% withdrawal rate from \$37,000</td> <td>300</td> <td>1% withdrawal rate from \$37,000</td> </tr> </tbody> </table>	Statutory Rates and Thresholds	2011-12		2012-13		2015-16		Threshold (\$)	Marginal rate	Threshold (\$)	Marginal rate	Threshold (\$)	Marginal rate	1st rate	6,001	15%	18,201	19%	19,401	19%	2nd rate	37,001	30%	37,001	32.5%	37,001	33%	3rd rate	80,001	37%	80,001	37%	80,001	37%	4th Rate	180,001	45%	180,001	45%	180,001	45%	Effective tax free threshold	16,000		20,542		20,979		LITO	1500	4% withdrawal rate from \$30,000	445	1.5% withdrawal rate from \$37,000	300	1% withdrawal rate from \$37,000
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**Table 14: Household assistance (continued)**

Income definitions	The income definitions for the household commitments are:				
	<b>Household income</b>	<b>Single</b>	<b>Couple without children</b>	<b>Couple with children</b>	<b>Sole parent</b>
	<b>Low (less than)</b>	\$30,000	\$45,000	\$60,000	\$60,000
	<b>Medium (between)</b>	\$30,000-\$80,000	\$45,000-\$120,000	\$60,000-\$150,000	\$60,000-\$150,000
	<b>High (above)</b>	\$80,000	\$120,000	\$150,000	\$150,000
Aged care residents	<p>Some of the household assistance paid to residents of aged care facilities will be distributed to their aged care facilities, which pay for most of their residents' costs of living.</p> <p>Household assistance will be shared between aged care providers and their residents in an approximate 55:45 split, by increasing the percentage of the basic pension payable to the provider (from 84 per cent to 85 per cent).</p> <p>'Grandfathering' arrangements will be established for around 2 per cent of existing residents not in receipt of a pension or other income support payment and not holding a CSHC, so their fees do not increase as a result of the change in fee structure outlined above.</p> <p>Aged care facilities will be provided with additional funding to address the costs they incur in respect of their 'grandfathered' residents.</p>				
Essential Medical Equipment Payment	<p>The Essential Medical Equipment Payment will be provided to households containing individual/s with a relevant concession card and who have very high essential electricity costs due to a medical condition or disability.</p> <p>The annual cash payment of \$140 will be paid through Centrelink and the Department of Veterans' Affairs (DVA) to people using pieces of equipment recognised by any state or territory medical electricity assistance scheme. People with thermoregulatory dysfunction and a relevant concession card will also be eligible for the same level of assistance.</p> <p>A claimant must meet the following criteria to be eligible for the Essential Medical Equipment Payment:</p> <ul style="list-style-type: none"> <li>the claimant is a current Australian Government concession card holder (Pensioner Concession Card, Health Care Card, CSHC or equivalent DVA concession card excluding DVA Gold Card);</li> <li>the claimant must show that they, or the concession card holder they care for in their household, meet specified medical condition/medical appliance requirements; and</li> <li>the claimant or the person they care for is the holder of the electricity account.</li> </ul>				
Review of assistance	<p>The Treasurer and the Minister for Families, Housing, Community Services and Indigenous Affairs, in consultation with relevant ministers, will annually review the adequacy of household assistance in the Budget process. This review will examine the real value of the assistance provided on the introduction of the carbon pricing mechanism taking into account:</p> <ul style="list-style-type: none"> <li>movements in prices for a consumption basket used in calculating the assistance;</li> <li>the indexation arrangements for the assistance provided, including the adjustment for the bring forward; and</li> <li>any new information about the weights of items in the consumption basket.</li> </ul> <p>In addition to these annual reviews, there will be a review of the household assistance package in parallel with the carbon pricing mechanism review in 2013-14.</p>				

**Table 15: Jobs and Competitiveness Program**

Feature	Policy
Form of assistance	<p>Assistance will be provided through allocation of permits early in each compliance period to new and existing entities undertaking an eligible emissions-intensive trade-exposed (EITE) activity prescribed in regulations.</p> <p>Assistance will be based on an individual entity's previous year's level of production with a true-up to account for actual production.</p> <p>Upon closure, recipients must relinquish permits for production that did not occur in that year.</p>
Assistance during the fixed price period	<p>100 per cent of permits allocated in respect of indirect emissions and 75 per cent of permits allocated in respect of direct emissions will be provided early in each compliance period, with the remaining 25 per cent of permits relating to direct emissions allocated early in the following financial year. This means that permits will be provided in line with progressive payment obligations.</p> <p>The Government will provide a buy-back facility for firms in receipt of free permits to sell these permits back to the Government as outlined under the scheme architecture (Table 1).</p> <p>In the flexible price period, assistance will be provided early in each compliance year.</p>

Table 15: Jobs and Competitiveness Program (continued)

Feature	Policy
Eligibility for assistance	<p>Eligibility of activities will be based on an assessment of all entities conducting an activity during the historic baseline period consistent with the process, criteria and requirements currently used for Partial Exemption Certificate assistance under the Renewable Energy Target.</p> <p>Trade-exposure is assessed through quantitative and qualitative tests:</p> <ul style="list-style-type: none"> <li>• the quantitative test threshold would be a trade share (ratio of value of imports and exports to value of domestic production) greater than 10 per cent in any one of the years 2004-05, 2005-06, 2006-07 or 2007-08; and</li> <li>• the qualitative test threshold would be a demonstrated lack of capacity to pass through costs due to the potential for international competition.</li> </ul> <p>The emissions intensity assessment is based on average emissions per million dollars of revenue or emissions per million dollars of valued added.</p> <p>Time period for assessment:</p> <ul style="list-style-type: none"> <li>• emissions data: 2006-07 to 2007-08; and</li> <li>• revenue or value added data: 2004-05 to the first half of 2008-09.</li> </ul> <p>In situations where a given output was produced from eligible activities using either primary materials or recovered or recycled materials as inputs, the same rate of assistance will be applied to both activities.</p> <p>Activity assessments and activity definitions that have already taken place will remain valid.</p>
Scope of assistance	<p>Businesses will receive assistance for their direct emissions as well as the cost of their indirect emissions from electricity and steam use, and the cost increases for upstream emissions from natural gas and its components (for example, methane and ethane) used as feedstock and sequestered in the output of the activity.</p>
Allocative baselines	<p>Allocative baselines for activities will be based on the historic industry average level of emissions per unit of production for all entities conducting an activity during the assessment period.</p> <p>The electricity allocation factor will be set at one permit per megawatt hour. However, this may be adjusted in respect of existing large electricity supply contracts for entities consuming greater than 2,000 gigawatt hours per year, and where contractual arrangements entered into before 3 June 2007 are still in force (without having been renegotiated or reviewed) within 60 days after Royal Assent of the Act. In such a situation, these contracts will be considered by the Regulator with a view to determine an entity-specific electricity allocation factor.</p> <p>The natural gas feedstock allocation factor will be set state-by-state.</p>
Initial rates of assistance	<p>94.5 per cent of the industry average baseline for activities with an emissions intensity of at least 2,000t CO<sub>2</sub>-e/\$m revenue or at least 6,000t CO<sub>2</sub>-e/\$m value added.</p> <p>66 per cent of the industry average baseline for activities with an emissions intensity between 1,000t CO<sub>2</sub>-e/\$m and 1,999t CO<sub>2</sub>-e/\$m revenue or between 3,000t CO<sub>2</sub>-e/\$m and 5,999t CO<sub>2</sub>-e/\$m value added.</p>
LNG projects	<p>LNG projects will receive a supplementary allocation to ensure an effective assistance rate of 50 per cent in relation to their LNG production each year.</p>
Carbon productivity contribution	<p>Initial rates of assistance will be reduced by a carbon productivity contribution of 1.3 per cent per year.</p>
Cap on an entity's assistance	<p>No maximum cap on allocations will apply to existing facilities.</p> <p>Allocations to new facilities will be limited by regulations in a manner which avoids windfall gains from assistance arrangements.</p>
New entrants	<p>New entities conducting an existing EITE activity will receive the same assistance as existing entities conducting the same activity.</p> <p>Activities new to Australia will be able to apply for EITE eligibility. Assessments and baselines will be made on the basis of international best practice emissions intensity.</p> <p>Allocations to existing entities conducting EITE activities will not be adjusted for allocations to new entrants.</p>
Review of assistance	<p>Any changes to assistance arrangements that will have a negative effect on business will not occur before the sixth year of the carbon price.</p> <p>Three years' notice will be provided of modifications to EITE allocations that will have a negative effect on business. The notice period may overlap with the five year minimum assistance period.</p> <p>Assistance arrangements will be reviewed by the Productivity Commission as outlined in the policy table on 'Productivity Commission reviews'.</p> <p>The Government would implement the approach proposed by the Garnaut Climate Change Review—Update 2011 if the Productivity Commission recommends that it is the most effective and efficient means of preventing carbon leakage and assisting the industry to transition and recommends that the Government adopt this approach. This will be subject to the minimum assistance and notice period set out above.</p>

Table 16: Energy security measures

Feature	Policy
Overview	<p>An Energy Security Fund will provide transitional assistance to promote the transformation of the electricity generation sector from high to low-emissions generation while addressing risks to energy security arising from the carbon price.</p> <p>The Energy Security Fund will comprise:</p> <ul style="list-style-type: none"> <li>• scope for <i>payments for the closure</i> of around 2,000 megawatts of very highly emissions-intensive coal-fired generation capacity by 2020, according to a publicly announced schedule. This measure will commence the process of transforming our electricity generation sector, by delivering concrete closure outcomes and providing clear signals to potential investors in low-emissions generation; and</li> <li>• a <i>limited transitional administrative allocation of permits and cash</i> estimated at \$5.5 billion over six years to assist highly emissions-intensive coal-fired generators adjust to the introduction of a carbon price and prepare for a lower emissions future.</li> </ul> <p>A new <i>Energy Security Council</i> including energy and financial market experts will be created to advise the Government in the event that systemic risks to energy security emerge from the financial impairment of power stations arising from any source, including from the introduction of carbon pricing.</p> <p>The Council will provide advice to the Treasurer on the appropriate policy instruments available to address energy security risks. This will include providing advice to the Treasurer on the provision of Government loans to generators which need to refinance their debt if finance from the market is not available.</p> <p>Recognising the difficult borrowing conditions faced by coal-fired generators, transitional loans may also be offered to emissions-intensive generators to provide additional working capital for the purchase at auction of future vintage carbon permits.</p> <p>In both of the above cases these loans will be priced on terms that encourage generators to seek private finance in the first instance.</p>
Purpose of assistance	<p>To mitigate energy security risks arising from the introduction of carbon pricing and to incentivise a transformation to low-emissions generation, focusing on the most emissions-intensive coal-fired generators.</p>
Components of assistance	<p><b>Payments to close</b></p> <p>Eligibility to participate in an expression of interest process for closure contracts will be limited to coal-fired generators with emissions intensity greater than 1.2t CO<sub>2</sub>-e per MWh of electricity on an 'as generated' basis.</p> <p>Following an expression of interest process and negotiations with selected generators the Government will contract with one or more generators for closure of agreed capacity on the basis of value for money.</p> <p>Payments to close will be contingent upon: power system reliability requirements; payment of workers' entitlements; and arrangements for appropriate remediation of the site of the power station (and of a related coal mine where appropriate).</p> <p><b>Administrative allocations</b></p> <p>Administrative allocations of free carbon permits will be limited to generators with emissions intensity above 1.0t CO<sub>2</sub>-e per MWh of electricity on an 'as generated' basis.</p> <p>To support energy security, generators will be eligible to receive administrative allocations only if they comply with power system reliability requirements and develop and publish Clean Energy Investment Plans (see below).</p> <p>Generators may exit the market and still receive their administrative allocations if they satisfy the Australian Energy Market Operator that there is alternative capacity in the market available to meet demand, or where they have invested in new lower-emissions replacement capacity themselves.</p> <p><b>Loans for purchase of future vintage carbon permits</b></p> <p>Government loans will be available for the purchase at auction of future vintage carbon permits for the first three years of carbon permit auctions.</p> <p>The Government will also consider making loans available where generators need to refinance their debt but finance is not available from the market. The Energy Security Council will provide advice on the provision of loans in these circumstances.</p> <p>In both of the above cases, loans will be priced on terms that encourage generators to obtain private finance where possible and there will be an assessment of a potential recipient's capacity to repay the loan.</p> <p><b>Energy Security Council</b></p> <p>The Energy Security Council will advise the Government on systemic risks to energy security arising from the financial impairment of any market participants. Eligibility for assistance to address any systemic risks to energy security would be assessed on a case-by-case basis. The Energy Security Council will provide advice to the Government on other measures that may be required should systemic risks to energy security emerge.</p>



Table 16: Energy security measures (continued)

Feature	Policy
Details of assistance	<p><b>Payments to close</b></p> <p>Generators contracting with the Government to close will be required to forego their administrative allocations (and will not have to comply with associated conditions) but will receive value equal to that foregone assistance plus an additional payment for closure.</p> <p><b>Administrative allocations</b></p> <p>Administrative allocations of free carbon permits and cash payments will be provided to the value of \$5.5 billion (nominal) in five separate instalments. \$1 billion of assistance will be provided in 2011-12, followed by annual allocations of 41.705 million free carbon permits per year in the period 2013-14 to 2016-17.</p> <p>Generators with an emissions intensity of above 1.0 tCO<sub>2</sub>-e/MWh of electricity 'as generated' will be eligible for administrative allocations of free carbon permits and cash.</p> <p>For these generators, shares of administrative allocations of free carbon permits and cash will be based on the extent to which each generator's emissions intensity exceeds 0.86 tCO<sub>2</sub>-e/MWh 'as generated', multiplied by their historical energy output, calculated over the period 2008-09 and 2009-10.</p> <p>To ensure that assistance is not inappropriately skewed towards the most emissions-intensive generators, for the purposes of calculating administrative allocations where an individual generator's emissions intensity exceeds 1.3t CO<sub>2</sub>-e per MWh of electricity on an 'as generated basis', it will be capped at 1.3t CO<sub>2</sub>-e per MWh.</p>
Regional structural adjustment	<p>A comprehensive structural adjustment support package will be made available to the workforce of generators which contract with the Government to close. This includes personalised advice on searching for a job; career options and employment programs; information about local job vacancies and access to job search facilities; help with a résumé and job applications; and advice on interview skills. Job Services Australia will also help job seekers access skills assessments, training and other employment support that will help them find new employment.</p>
Clean Energy Investment Plans	<p>Generators receiving administrative allocations of free carbon permits will be required to provide Clean Energy Investment Plans, which will be made public. These Plans will identify their proposals to reduce pollution from existing facilities and to invest in research and development and new low- or zero-emissions capacity. Information on possible projects identified under the Energy Efficiency Opportunities program will also be included in these Plans.</p>



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## Appendix B: Support for transition to a clean energy future

Table 1: Support for innovation

Program / measure	Description	Funding
<p><b>Clean Energy Finance Corporation</b></p>	<p>The Clean Energy Finance Corporation (CEFC) will be established to invest in the commercialisation and deployment of renewable energy and enabling technologies, energy efficiency and low-emissions technologies. It will also invest in the transformation of existing manufacturing businesses to re-focus on meeting demand for inputs for these sectors.</p> <p>Funding will be divided into two streams:</p> <ul style="list-style-type: none"> <li>• a renewable energy stream which will have one half of the funding allocated; and</li> <li>• a general clean energy stream which will have half of the funding allocated and will be able to fund renewable energy projects in addition to the dedicated stream.</li> </ul> <p>The CEFC will provide finance for projects through commercial loans, concessional loans, loan guarantees and equity. Capital will be reinvested in the CEFC.</p> <p>The CEFC will have an independent Board, comprised of experts in banking, investment management and clean energy and low-emissions technologies, with its responsibilities to include setting the investment strategy for funds being invested and managing these investments consistent with the investment mandate prescribed by the Government.</p> <p>The CEFC will not invest in Carbon Capture and Storage technologies.</p> <p>The Prime Minister will appoint the Chair of the CEFC Board to report back to the Government by early 2012 on:</p> <ul style="list-style-type: none"> <li>• a proposed investment mandate for the CEFC;</li> <li>• the policy on investments in foreign listed companies;</li> <li>• how to frame risk management policies to ensure that investment decisions are based on rigorous case-by-case analysis of candidate projects;</li> <li>• the details of the Corporation's governance arrangements including the: <ul style="list-style-type: none"> <li>– application of <i>the Financial Management and Accountability Act 1997</i> and/or the <i>Commonwealth Authorities and Companies Act 1997</i>;</li> <li>– responsibilities, powers and statutory duties of the Board;</li> <li>– reporting obligations of the Board;</li> <li>– responsibilities, powers and statutory duties of the Chair of the Board;</li> <li>– responsibilities, powers and statutory duties of the Chief Executive Officer;</li> <li>– relationship between the Board and responsible Ministers, including the Minister's powers to make directions about financial assets and the Board's responsibility to keep Ministers informed;</li> <li>– duties and functions of Australian Public Service support staff; and</li> <li>– how the CEFC interacts with other Government bodies and initiatives, including the Australian Centre for Renewable Energy.</li> </ul> </li> </ul>	<p>\$10 billion over five years from 2013-14</p>

Table 1: Support for innovation (continued)

Program / measure	Description	Funding
<p>Australian Renewable Energy Agency</p>	<p>A new statutory authority will be established, the Australian Renewable Energy Agency (ARENA), with an independent board of directors and additional resources. It will incorporate the Australian Centre for Renewable Energy and the Australian Solar Institute.</p> <p>ARENA will provide funding for projects through a range of competitive grants programs. \$3.2 billion in existing programs supporting research and development, demonstration and commercialisation of renewable energy technologies will be consolidated into ARENA, including:</p> <ul style="list-style-type: none"> <li>• programs administered by the Australian Centre for Renewable Energy (ACRE);</li> <li>• Australian Solar Institute;</li> <li>• Australian Biofuels Research Institute;</li> <li>• Solar Flagships Program;</li> <li>• Low Emissions Technology Demonstration Fund renewable energy project;</li> <li>• Connecting Renewables Initiative;</li> <li>• Renewable Energy Demonstration Program;</li> <li>• ACRE Solar projects;</li> <li>• Geothermal Drilling Program;</li> <li>• Second Generation Biofuels Program;</li> <li>• Renewable Energy Venture Capital Fund; and</li> <li>• Emerging Renewables Program.</li> </ul> <p>ARENA will also receive significant future funding from:</p> <ul style="list-style-type: none"> <li>• discretionary dividends paid by the Clean Energy Finance Corporation; and</li> <li>• a share of future carbon pricing mechanism revenue notionally allocated to the Jobs and Competitiveness Program should it be freed following Productivity Commission reviews.</li> </ul>	<p>\$3.2 billion over nine years from 2011-12</p>

Table 2: Industry and business assistance

Program / measure	Description	Funding
<p>Increased small business instant asset write-off threshold</p>	<p>The small business instant asset write-off threshold will be increased from \$5,000 to \$6,500 for depreciating assets (as defined in the tax law). It provides an immediate income tax deduction for the costs of eligible assets.</p> <p>(Note that the passage of the Minerals Resource Rent Tax is a pre-requisite for the increase in the existing small business instant asset write-off threshold from \$1,000 to \$5,000.)</p> <p>The small business instant asset write-off threshold is available to small businesses as defined by the tax law.</p> <p>Broadly, small businesses with an aggregated annual turnover of less than \$2 million will be eligible to access the write-off. (The aggregated turnover includes the turnover of the small business entity and certain closely related entities.)</p> <p>The increase will apply to the 2012-13 income year and later income years.</p>	<p>Forgone revenue of \$200 million over the period to 2014-15</p>

Table 2: Industry and business assistance (continued)

Program / measure	Description	Funding
Grants to provide energy efficiency information to small and medium businesses and community organisations	<p>Competitive grants will be provided to industry associations and non-government organisations (NGOs) that have established relationships with small businesses and community organisations.</p> <p>The industry associations and NGOs will develop and deliver relevant and tailored information about the likely impacts of a carbon price on small businesses and community organisations, and practical steps they can take to manage these impacts. Examples could include:</p> <ul style="list-style-type: none"> <li>• sector-specific information and recommendations on energy efficient processes and equipment for small businesses or community sector organisations;</li> <li>• workshops and training courses on key energy efficiency issues, including case studies and success stories; and</li> <li>• provision of energy efficiency advice.</li> </ul>	\$40 million over the period to 2014-15
Clean Technology Program	<p>This Program has three components.</p> <p><b>Clean Technology Investment Program (\$800 million over seven years from 2011-12)</b></p> <p>Competitive grants (minimum grant size of \$25,000) for manufacturing businesses to invest in energy efficient capital equipment and low-emissions technologies, processes and products.</p> <p>Examples of where funding will be utilised include:</p> <ul style="list-style-type: none"> <li>• adoption and deployment of technologies to reduce energy use and/or carbon emissions at manufacturing facilities;</li> <li>• process re-engineering involving the adoption of energy or carbon efficient manufacturing tools;</li> <li>• support the conversion of facilities from coal to natural gas;</li> <li>• investing in co-generation plants; and</li> <li>• assistance with the implementation of energy efficiency opportunities.</li> </ul> <p>To be eligible to apply for grant funding, manufacturing businesses must have an annual electricity consumption of at least 300 megawatt hours or 5 terajoules of natural gas, or be directly liable under the carbon pricing mechanism in the year prior to application.</p> <p>Co-investment of three dollars from grant recipients for every dollar of grant will be required.</p> <p><b>Clean Technology Food and Foundries Investment Program (\$200 million over six years from 2011-12)</b></p> <p>Competitive grants (minimum grant size of \$25,000) for manufacturing businesses to invest in energy efficient capital equipment and low-emissions technologies, processes and products. This program comprises:</p> <ul style="list-style-type: none"> <li>• a dedicated \$50 million stream for manufacturers in the metal forging and foundry sector; and</li> <li>• a dedicated \$150 million stream provided for the manufactures in the food processing sector.</li> </ul> <p>Co-investment of three dollars from grant recipients for every dollar of grant will be required. In the event that funding under the food and foundries program is exhausted, businesses that were eligible under that program will be able to apply under the Clean Technology Investment Program program.</p> <p><b>Clean Technology Innovation Program (\$200 million over five years from 2012-13)</b></p> <p>Competitive grants will be provided to support business investment in low-emissions research and development in the areas of renewable energy, low-emissions technologies and energy efficiency. The program will offer grants from \$50,000 up to \$5 million.</p> <p>Grants will be provided on a matched (50:50) co-investment basis.</p> <p>Grants will be available to businesses, as well as to companies controlled by universities and public sector research organisations.</p>	\$1.2 billion over seven years from 2011-12

**Table 2: Industry and business assistance (continued)**

Program / measure	Description	Funding
Clean Energy Skills Program	<p>A new foundation for the new type of workplace skills that will become increasingly more valuable as we move to a clean energy economy. Funding will help educational institutions and industry develop the materials and expertise needed to promote clean energy skills. Tradespersons and professionals will develop the skills needed to deliver energy efficiency services, clean energy projects and low-pollution products to Australian households, communities and businesses. This will help transition workers of all types to a low-carbon economy by providing them with the skills that will become increasingly important as businesses adapt to a clean energy future.</p>	<p>\$32 million over the period to 2014-15 to be funded from existing resourcing within the Department of Education, Employment and Workplace Relations</p>
Clean Technology Focus for Supply Chains Programs	<p>Additional funding will:</p> <ul style="list-style-type: none"> <li>• enhance the role of Supplier Advocates for the clean technologies, water, and built environment sectors appointed under the Supplier Advocate program;</li> <li>• enhance the roles of National Section Managers for the Clean Technology, Water and Oil and Gas sectors appointed under the Suppliers Access to Major Projects Program, which is administered on behalf of the Australian Government by the Industry Capability Network Limited; and</li> <li>• develop strategies for industry development activities that enhance Australian industry involvement in the supply of goods and services for energy efficiency solutions.</li> </ul>	<p>An additional \$5 million over the period to 2014-15</p>

**Table 3: Household and community assistance**

Program / measure	Description	Funding
Low Carbon Communities	<p>The existing Low Carbon Communities program will be redesigned and have funding increased to:</p> <ul style="list-style-type: none"> <li>• pilot energy efficiency approaches that assist low-income households reduce their energy costs;</li> <li>• provide energy and financial sustainability assessments and advice to low-income households; and</li> <li>• provide additional support for local government and community organisations to undertake energy efficiency upgrades to community-use buildings and facilities.</li> </ul> <p>The redesigned program will provide funding through competitive grants to local councils and community organisations to undertake energy efficient upgrades of buildings, facilities and street lights. The program will assist councils and community organisations to reduce their energy costs and the outcomes will serve as demonstration projects to promote long-term energy efficiency behaviour change in the community. Examples of projects that could be funded include:</p> <ul style="list-style-type: none"> <li>• improving public lighting by replacing inefficient street lights with high efficiency technologies and replacing incandescent traffic lights with modern light emitting diode versions;</li> <li>• installation of cogeneration or trigeneration systems;</li> <li>• energy efficient retro-fitting and retro-commissioning of council or community premises; and</li> <li>• installing sub-metering, smart metering or building energy management systems.</li> </ul> <p>The new \$100 million Energy Affordability Scheme component for low-income households will trial how best to improve the energy efficiency of low-income households and will be designed to build on work already being done by community organisations.</p> <p>The new \$30 million Household Energy and Financial Sustainability Scheme for low-income households will help vulnerable people who are having difficulty meeting their energy bills to find more sustainable ways to manage their financial situation and their energy consumption.</p>	<p>Additional funding of \$250 million over four years bringing total funding to \$330 million over six years from 2010-11</p>



Table 3: Household and community assistance (continued)

Program / measure	Description	Funding
Household advice line / website	<p>The single, user-friendly LivingGreener website will be expanded to include more information about energy efficiency and managing energy costs, supplemented by a household information and advice telephone service.</p> <p>Website enhancement will include:</p> <ul style="list-style-type: none"> <li>• tailored advice to householders delivered through a household advice line and supplemented by social media channels;</li> <li>• new content and features for schools;</li> <li>• information about local government rebates and assistance;</li> <li>• better engagement with Australian audiences and more targeted information to address the information needs of Australians during the transition to a price on carbon;</li> <li>• more access by Australians to government information through enhanced website design for flexible delivery including the introduction of a mobile application; and</li> <li>• serving the needs of Australians for a centralised information hub by maintaining up-to-date material on federal, state and territory and local government rebates and assistance programs, along with lifestyle guides targeting specific audience groups.</li> </ul>	\$6 million over the period to 2014-15
Remote Indigenous Energy Program	<p>The Remote Indigenous Energy Program will build on the former Renewable Remote Power Generation Program and support provided through the Renewable Energy Target.</p> <p>It will provide financial support to install renewable energy generation systems in around 55 remote Indigenous communities over the life of the program. It will also include training in basic system maintenance and the provision of energy efficiency information to encourage ongoing energy management.</p> <p>The Department of Families, Housing, Community Services and Indigenous Affairs will select suitable delivery organisations to roll out the installations and training program.</p>	\$40 million over five years from 2011-12
Household energy survey	<p>The Australian Bureau of Statistics with the Department of Climate Change and Energy Efficiency will conduct a survey to gather and communicate data on household sector energy consumption (including behaviours that affect consumption) and expenditure.</p> <p>The survey will collect data to support:</p> <ul style="list-style-type: none"> <li>• innovative solutions to improving household energy efficiency;</li> <li>• the design of new energy efficiency policies such as the Energy Savings Initiative, and LivingGreener advice line, which will require granulated and high-quality data on household energy use;</li> <li>• the design of existing energy efficiency standards for buildings and appliances; and</li> <li>• a better understanding of power pricing options.</li> </ul>	\$10 million over three years from 2011-12

Table 4: Additional energy efficiency measures

Program / measure	Description	Funding
<p>Further work on a national Energy Savings Initiative</p>	<p>A national Energy Savings Initiative (ESI or 'white certificate scheme') is a market-based tool for driving economy-wide improvements in energy efficiency. It would place obligations on energy retailers to find and implement energy savings in households and businesses. This would help consumers to save money by encouraging the take-up of energy efficient technologies and the development of a broad-based energy services company sector.</p> <p>This is consistent with the report of the Prime Minister's Task Group on Energy Efficiency, which recommended that the Government 'agree to the introduction of a transitional national energy savings initiative to replace existing and planned state energy efficiency schemes, subject to detailed consultation on its design.'</p> <p>Further work on the national ESI will be the subject of detailed policy analysis, economic modelling and consultation with the community, industry and State and Territory governments.</p> <p>The ESI would:</p> <ul style="list-style-type: none"> <li>• have broad coverage (that is, residential, commercial and industrial sectors); and</li> <li>• create an incentive or a requirement to create certificates in both low-income homes and in ways which reduce peak electricity demand.</li> </ul> <p>The Federal Government will immediately establish a working group to seek agreement on the replacement of existing state mandatory energy savings schemes and on the appropriate design of a national energy savings scheme. Among other issues, the design work will consider:</p> <ul style="list-style-type: none"> <li>• the annual targets that would apply;</li> <li>• sectoral and fuel coverage issues;</li> <li>• energy saving activities to be considered eligible activities; and</li> <li>• how a smooth transition from State-based schemes could be managed.</li> </ul> <p>The working group will report in the first quarter of 2012.</p> <p>Subject to the findings of economic modelling and regulatory impact analysis, the Government will make a final decision on whether to adopt a national ESI. A national ESI would be conditional on the agreement of the Council of Australian Governments and the abolition of existing and planned State schemes.</p>	<p>\$4 million over two years from 2011-12</p>
<p>Continuation and expansion of Energy Efficiency Opportunities</p>	<p>The Energy Efficiency Opportunities (EEO) program will be continued and expanded to include energy generators, transmitters and distributors.</p> <p>The Government will:</p> <ul style="list-style-type: none"> <li>• extend the base funding of the EEO program through to 2016-17, enabling the Government to deliver on its legislative obligations to administer the <i>Energy Efficiency Opportunities Act 2006</i> (the EEO Act) for its second assessment cycle;</li> <li>• enhance the EEO program's assessment and verification requirements and expand coverage of the EEO Act to include energy transmission and distribution networks and major greenfield and expansion projects; and</li> <li>• establish and implement a voluntary scheme for medium energy use corporations that use less than 0.5 petajoules per year.</li> </ul> <p>With the inclusion of generators, transmitters and distributors, the EEO program will cover over 60 per cent of Australia's primary energy use and include all of Australia's largest corporate energy users. The inclusion of a scheme for medium energy use corporations will further expand its coverage to almost 65 per cent of primary energy use.</p>	<p>An additional \$32 million over five years from 2012-13</p>

**Table 5: Transport measures**

Program / measure	Description	Funding
Mandatory vehicle emissions standards	<p>Implementation of the election commitment on a new mandatory vehicle emissions standard will set a national fleet-wide target for average carbon dioxide emissions and each individual motor vehicle company will have to contribute to this target by reducing the average emissions of the vehicles they sell.</p> <p>It will cover all light duty vehicles up to 3.5 tonnes gross vehicle mass, including passenger vehicles, sports utility vehicles and light commercial vehicles.</p> <p>The average CO<sub>2</sub> emissions for light vehicles sold in Australian were 213 g/km in 2010. The Government has proposed average mandatory CO<sub>2</sub> emissions standards of 190 g/km by 2015 and 155 g/km by 2024, as a starting point for discussion with industry and stakeholders.</p> <p>Modelling undertaken indicates that the new standards could save 2.6 million tonnes of carbon dioxide annually.</p> <p>The trajectory of the standard will be reviewed within two years of its initial implementation.</p>	Nil

**Table 6: Regional structural adjustment assistance**

Program / measure	Description	Funding
Regional structural adjustment assistance	<p>The Government will set aside funding for regions strongly affected by the introduction of a carbon price.</p> <p>Assistance will be tailored to the needs of individual communities and will be delivered through a combination of additional funding for existing programs, as well as the development of new or modified programs where appropriate.</p>	\$200 million over seven years from 2012-13

**Table 7: Land sector measures**

Program / measure	Description	Funding
Carbon Farming Initiative (CFI) non-Kyoto carbon fund	<p>The Government will purchase non-Kyoto compliant Carbon Farming Initiative credits, which cannot be purchased by liable entities under the carbon pricing mechanism.</p> <p>The ongoing Carbon Farming Initiative non-Kyoto Carbon Fund will increase incentives for activities that are not counted towards Australia's emissions target under current international carbon accounting rules. These include soil carbon, revegetation and cessation of logging in native forests.</p>	\$250 million over six years from 2012-13

Table 7: Land sector measures (continued)

Program / measure	Description	Funding
Carbon Farming Futures	<p>The ongoing Carbon Farming Futures Fund will help landholders benefit from carbon farming.</p> <p>The Carbon Farming Futures measure will comprise four components:</p> <ul style="list-style-type: none"> <li>• <i>Filling the research gap</i>: funding for research into abatement technologies and practices;</li> <li>• <i>Developing estimation methodologies</i>: funding to convert research from <i>Filling the research gap</i> into carbon estimation methodologies;</li> <li>• <i>Action on the Ground</i>: funding for on-farm abatement, including support for farmers to adopt more sustainable, conservation tillage farm equipment: <ul style="list-style-type: none"> <li>– Primary producers will be able to claim a 15 per cent refundable tax offset for new eligible conservation tillage equipment installed and ready for use between 1 July 2012 and 30 June 2015, provided they participate in soil carbon sequestration research.</li> <li>– It is proposed that eligible conservation tillage equipment include: <ul style="list-style-type: none"> <li>(a) tine machines fitted with minimum tillage points (for example, narrow, knife or inverted 'T' points) to achieve minimum soil disturbance and less than full cut-out;</li> <li>(b) disc openers (single, double, or triple arrangements); and</li> <li>(c) disc/tine and disc/blade hybrid machines.</li> </ul> </li> </ul> </li> <li>• <i>Extension and outreach</i>: new extension officers to help farmers benefit from carbon farming.</li> </ul> <p>The Land Sector Carbon and Biodiversity Advisory Board will provide advice on implementation of these measures.</p>	\$429 million over six years from 2011-12
Biodiversity Fund	<p>The ongoing Biodiversity Fund will support the restoration and protection of biodiverse carbon stores.</p> <p>Funding will be provided to:</p> <ul style="list-style-type: none"> <li>• establish biodiverse carbon plantings in areas of high conservation value such as wildlife corridors, riparian zones and wetlands;</li> <li>• prevent the spread of invasive species across connected landscapes; and</li> <li>• manage existing biodiverse carbon stores, including on land already under conservation covenants or subject to land clearing restrictions, and publicly owned native forests.</li> </ul> <p>The Land Sector Carbon and Biodiversity Advisory Board will provide advice on implementation of these measures.</p>	\$946 million over six years from 2011-12
Regional Natural Resources Management (NRM) Planning and Climate Change Fund	<p>The Regional NRM Planning and Climate Change Fund will help regional communities plan for the impacts of climate change, and maximise the benefits from carbon farming projects.</p> <p>Funding will be provided for:</p> <ul style="list-style-type: none"> <li>• regional NRM organisations to plan for climate change;</li> <li>• production of NRM plans to a highly professional, nationally consistent standard; and</li> <li>• development of scenarios on regional climate change impacts.</li> </ul>	\$44 million over five years from 2011-12
Indigenous Carbon Farming Fund	<p>The ongoing Indigenous Carbon Farming Fund will provide support for Indigenous Australians to implement carbon farming projects.</p> <p>Funding will be provided for:</p> <ul style="list-style-type: none"> <li>• specialists to work with Indigenous communities to develop carbon farming projects; and</li> <li>• development of low-cost estimation and reporting tools for abatement activities likely to have high Indigenous participation, such as savanna fire management.</li> </ul>	\$22 million over five years from 2012-13

Table 7: Land sector measures (continued)

Program / measure	Description	Funding
Carbon Farming Skills	<p>The ongoing Carbon Farming Skills initiative will ensure that landholders have access to credible, high quality advice and carbon services.</p> <p>This measure will fund:</p> <ul style="list-style-type: none"> <li>• development of a new nationally accredited qualification for carbon service providers;</li> <li>• accreditation of carbon brokers and aggregators operating in the Carbon Farming Initiative; and</li> <li>• information workshops for farm extension officers, catchment authorities and rural service providers about carbon farming.</li> </ul>	\$4 million over five years from 2011-12
Land Sector Carbon and Biodiversity Board	<p>The independent Land Sector Carbon and Biodiversity Board will provide advice on the implementation of land sector measures.</p> <p>The Land Sector Carbon and Biodiversity Board will:</p> <ul style="list-style-type: none"> <li>• report annually to Parliament about progress of land sector and biodiversity measures;</li> <li>• advise the relevant Minister(s) on the implementation of the land sector measures;</li> <li>• advise on the coordination of research to reduce duplication across the research community, target gaps and enhance the independence of research advice to government; and</li> <li>• advise on key performance indicators for land sector measures.</li> </ul> <p>The Board will advise on the guidelines for the priorities, streaming of funding and criteria for funding the Biodiversity Fund. The Government will table these guidelines in Parliament and respond to any issues raised by the Board in the formulation of the guidelines. The Board will play a key oversight and review role in ensuring the Biodiversity Fund is well targeted and maximises the opportunities available. Individual funding decisions will take into account the advice on the merits of each proposal and consistency with funding guidelines from the board and any relevant technical committees which the Board establishes. The Board will be established permanently under legislation through statutory appointments.</p>	\$4 million over six years from 2011-12
Native forest wood waste under the Renewable Energy Target	<p>The Renewable Energy Target regulations will be amended to exclude biomass from native forest as an eligible renewable energy resource. This includes products, by-products and waste associated with or produced from clearing or harvesting of native forests, subject to appropriate transitional arrangements for existing accredited power stations.</p>	Nil



## Appendix C: Fiscal tables

Table 1: Plan for a clean energy future

	Fiscal impact (\$m)				Forward estimates
	2011-12	2012-13	2013-14	2014-15	
<b>Revenue from sale of permits</b>	<b>0</b>	<b>7,740</b>	<b>8,140</b>	<b>8,590</b>	<b>24,470</b>
<b>Revenue from application of carbon price via other measures<sup>1</sup></b>	<b>0</b>	<b>290</b>	<b>320</b>	<b>320</b>	<b>930</b>
<b>Fuel tax credit reductions<sup>2</sup></b>	<b>0</b>	<b>570</b>	<b>620</b>	<b>670</b>	<b>1,860</b>
<b>Household assistance measures</b>	<b>-1,533</b>	<b>-4,196</b>	<b>-4,802</b>	<b>-4,825</b>	<b>-15,356</b>
Assistance for low - and middle-income households	-1,470	-4,096	-4,671	-4,700	-14,937
Increases in transfer payments <sup>3</sup>	-1,470	-746	-2,301	-2,380	-6,897
Tax reform	0	-3,350	-2,370	-2,320	-8,040
Low Carbon Communities - redesign and extension	-5	-33	-78	-84	-200
Other household energy efficiency measures <sup>4</sup>	-7	-13	-15	-13	-48
Household assistance implementation	-51	-54	-39	-28	-172
<b>Support for jobs</b>	<b>-26</b>	<b>-3,017</b>	<b>-3,475</b>	<b>-3,773</b>	<b>-10,291</b>
Jobs and Competitiveness Program	0	-2,851	-3,059	-3,312	-9,222
Clean Technology Program <sup>5</sup>	-19	-142	-245	-312	-717
Increased small business instant asset write-off	0	0	-100	-100	-200
Regional structural adjustment	0	-10	-50	-30	-90
Other business energy efficiency measures <sup>6</sup>	-7	-15	-21	-19	-62
<b>Clean Energy Finance Corporation<sup>7</sup></b>	<b>-2</b>	<b>-21</b>	<b>-467</b>	<b>-455</b>	<b>-944</b>
<b>Energy security and transformation<sup>8</sup></b>	<b>-1,009</b>	<b>-1</b>	<b>-1,003</b>	<b>-1,042</b>	<b>-3,054</b>
<b>Land and biodiversity measures</b>	<b>-69</b>	<b>-131</b>	<b>-506</b>	<b>-489</b>	<b>-1,194</b>
Carbon Farming Initiative	0	-47	-65	-81	-193
Biodiversity Fund	-37	-35	-250	-251	-572
Carbon Farming Futures Program	-31	-30	-113	-102	-276
Carbon Farming Initiative Non-Kyoto Carbon Fund	0	-1	-50	-47	-97
Regional Natural Resource Management Planning	0	-13	-23	-4	-40
Other land and biodiversity measures <sup>9</sup>	-1	-5	-5	-4	-16
<b>Governance</b>	<b>-78</b>	<b>-90</b>	<b>-106</b>	<b>-107</b>	<b>-382</b>
Clean Energy Regulator	-68	-68	-61	-59	-256
Coverage of synthetic greenhouse gases	-1	-2	-26	-31	-60
Climate Change Authority	0	-6	-9	-9	-25
Productivity Commission reviews	-4	-4	-5	-5	-18
Other governance	-5	-9	-5	-4	-23
<b>Total impact</b>	<b>-2,716</b>	<b>1,144</b>	<b>-1,279</b>	<b>-1,110</b>	<b>-3,961</b>

1 Includes revenue from synthetic greenhouse gases and changes to aviation excise.

2 Ongoing fuel tax credit reductions with permanent shielding for heavy on-road transport, agriculture, fisheries and forestry.

3 Includes transfer payments for pensioners and beneficiaries, income support for veterans, Essential Medical Equipment payment, CPI indexation and residential aged care assistance.

4 Includes development of a national energy savings initiative, ABS Household Energy Consumption and Expenditure Survey, Household Advice and Support - extension of Living Greener website and the Remote Indigenous Energy Program.

5 Includes the Clean Technology Investment Program, the Clean Technology Food and Foundries Investment Program and the Clean Technology Innovation Program.

6 Includes Energy Efficiency Information Grants and Clean Technology Focus for Supply Chain Programs. The Clean Energy Skills Package has been allocated \$32 million over four years, which is to be fully offset from existing resourcing.

7 Assumes investment of \$2 billion per annum from 2013-14. The new Australian Renewable Energy Agency has been allocated \$3.2 billion over the period to 2019-20 from existing grant funding programs.

8 Includes the Energy Security Fund and loans to generators for the purchase of future vintage carbon permits at advance auctions.

9 Includes the Indigenous Carbon Farming Fund, the Carbon Farming Skills Initiative and the Land Sector Carbon and Biodiversity Advisory Board.

Table 2: Plan for a clean energy future

	Underlying cash balance impact (\$m)				Forward estimates
	2011-12	2012-13	2013-14	2014-15	
Total receipts (net of free permits)	0	4,270	6,200	6,531	17,001
Total payments	-2,683	-4,745	-6,621	-6,747	-20,796
<b>Total impact</b>	<b>-2,683</b>	<b>-475</b>	<b>-421</b>	<b>-216</b>	<b>-3,795</b>



## Appendix D: Additional Government measures

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Beyond the set of measures agreed by the Multi-Party Climate Change Committee (MPCCC), the Government intends to pursue four additional measures as part of its plan for a clean energy future.

### Treatment of heavy on-road transport

The Government intends to apply an effective carbon price to fuel used by heavy on-road transport from 1 July 2014 through changes in fuel tax credits. This will significantly broaden coverage of the carbon price as heavy on-road vehicles account for over 25 per cent of road transport emissions. Moreover, as rail, domestic shipping and domestic aviation will face an effective carbon price, extending coverage to include heavy on-road vehicles will provide consistent treatment across the freight sector.

### Government support for steel and coal

The MPCCC agreed to the measures outlined in Chapter 5 to support jobs. The Government intends to implement further initiatives to support jobs in the steel manufacturing and coal mining industries. These measures will be funded outside of the revenue from the carbon pricing mechanism.

#### Steel Transformation Plan

Australian steel makers currently face considerable pressures from factors other than a carbon price, including international competition, increases in raw material costs and subdued growth in the Australian construction industry.

The Steel Transformation Plan will provide assistance worth up to \$300 million over five years to encourage investment and innovation in the Australian steel manufacturing industry. This will help the sector transform into an increasingly efficient and economically sustainable industry in a low-carbon economy. The Steel Transformation Plan is designed to improve the environmental outcomes of steel manufacturing and promote the development of workforce skills.

Funding under the Steel Transformation Plan will be in addition to assistance for steel makers under the Jobs and Competitiveness Program.

#### Coal Sector Jobs Package

Most Australian coal mines do not release a great deal of carbon pollution and are expected to face relatively minor cost impacts from a carbon price.

A small number of coal mines, however, have high volumes of 'fugitive' emissions — mainly methane — most of which is released from coal seams during mining. These 'gassy' mines may face significant cost pressures in the early years of a carbon price. At a \$23 carbon price, the average non-gassy mine is estimated to face an emissions cost of around \$1.40 per tonne of coal produced. By contrast, if no assistance were provided, the average gassy mine would face a cost of around \$7.40 per tonne of coal produced, and the gassiest mines could face a cost of around \$25 per tonne of coal produced.

The Government has always recognised the importance of safeguarding jobs and preserving local communities which rely on coal mining. Assisting operators of gassy mines will also provide time for these operators to explore options for reducing pollution from these mines.

The Coal Sector Jobs Package will provide assistance over six years to the most emissions-intensive coal mines. The Government has allocated \$1.3 billion to this program.

Eligible coal mines will be mines that had a fugitive emissions intensity in 2008-09 of at least 0.1 tonne of carbon dioxide equivalent (tCO<sub>2</sub>-e) per tonne of saleable coal produced. Assistance will be provided to eligible coal mines for up to 80 per cent of their fugitive emissions exposure above the 0.1 tCO<sub>2</sub>-e per tonne of saleable coal threshold. Assistance will be based on production up to a cap of base period production levels (the higher of 2007-08 or 2008-09).

Like the Jobs and Competitiveness Program, the Coal Sector Jobs Package will provide assistance based on historical emissions intensity data. This will reward coal mines for reducing pollution.

The Coal Sector Jobs Package will not assist new mines or expansions of production in existing mines. The carbon price will provide incentives for expanded coal production in Australia to be sourced from lower-emissions coal seams.

### Coal Mining Abatement Technology Support Package

The Coal Mining Abatement Technology Support Package will provide transitional assistance to help the coal industry implement carbon abatement technologies. Assistance will be provided in the form of grants on a co-contribution basis. The Government has allocated \$70 million over six years to this program.

## Fiscal table

Table 1: Plan for a clean energy future including Government measures

	Fiscal impact (\$m)				Forward estimates
	2011-12	2012-13	2013-14	2014-15	
<b>MPCCC agreed measures</b>	<b>-2,716</b>	<b>1,144</b>	<b>-1,279</b>	<b>-1,110</b>	<b>-3,961</b>
<b>Additional Government measures</b>	<b>-223</b>	<b>-48</b>	<b>-322</b>	<b>178</b>	<b>-416</b>
Coal Sector Jobs Package	-222	0	-231	-243	-696
Coal Mining Abatement Technology Support Package	0	-11	-16	-15	-41
Steel Transformation Plan	-1	-38	-75	-75	-189
Additional fuel tax credit reductions for heavy on-road transport from 2014-15	0	0	0	510	510
<b>Total impact</b>	<b>-2,939</b>	<b>1,096</b>	<b>-1,601</b>	<b>-933</b>	<b>-4,377</b>

Table 2: Plan for a clean energy future including Government measures

	Underlying cash balance impact (\$m)				Forward estimates
	2011-12	2012-13	2013-14	2014-15	
MPCCC agreed measures	-2,683	-475	-421	-216	-3,795
Additional Government measures	-223	-48	-322	108	-486
<b>Total impact</b>	<b>-2,906</b>	<b>-524</b>	<b>-743</b>	<b>-109</b>	<b>-4,281</b>





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