

Executive summary

The Australian Government believes that acting on climate change is essential.

The Government is implementing a comprehensive strategy for tackling climate change in Australia. The strategy is built on three pillars: reducing Australia's carbon pollution; adapting to unavoidable climate change; and helping to shape a global solution.

This White Paper sets out the Government's policy in relation to two major elements of its mitigation strategy: a medium term target range for national emissions, and the final design of the Carbon Pollution Reduction Scheme. These elements are placed in the context of Australia's efforts to help shape a global solution, and a range of supporting and complementary climate change initiatives.

Need for action on climate change

Carbon pollution is causing the world's climate to change, resulting in extreme weather, higher temperatures, more droughts, and rising sea levels.

Eleven of the past 12 years rank among the 12 warmest years since records began and Australia has experienced warmer-than-average mean annual temperatures for 16 of the past 18 years.

As one of the hottest and driest continents on earth, Australia will be one of the nations hardest and fastest hit by climate change if we don't act now.

Without action, rising temperatures will affect our way of life and the Australian economy, including by:

- threatening coastal property in Australia through rising sea levels, storm damage and tidal surge
- reducing food production from our farms through longer and more frequent droughts
- damaging our national treasures, including the Great Barrier Reef and the Kakadu wetlands and the big tourism industries they support.

Unmitigated climate change poses a significant threat to Australia's economic security. It challenges our prosperity and risks undermining the viability of many of our coastal, rural and regional communities. It is in our national interest to take strong and decisive action on climate change.

Climate change is a global problem requiring a global solution—one where all major carbon polluting nations need to take comprehensive action to stabilise and reduce global levels of carbon pollution. The longer it takes for all major emitters, developed and developing, to act, the greater will be the unavoidable impacts of climate change.

While progress on a global solution is being made, it has been slow. There are many obstacles to achieving a strong international agreement by the end of the next negotiating round, due for completion by the end of 2009.

However, the least responsible path that Australia could take would be to do nothing while we wait to see how the rest of the world acts. Acting now will reduce our own costs of adjustment in the longer term. It provides us with opportunities to develop new industries and new jobs. It gives us an advantage over competitors that persist with economic structures that exclude a price on carbon. Australia needs to be able to compete in a world where low carbon goods and services attract a premium. Acting now offers the best chance of building international confidence and influencing others to follow our lead.

Central to Australia's domestic mitigation response is the Carbon Pollution Reduction Scheme, aimed at delivering substantial reductions in emissions while sustaining strong economic growth and securing our future prosperity.

Global economic conditions and climate change

The world is currently experiencing a financial and economic crisis that has created a climate of uncertainty. Despite the challenges we face today, the global financial crisis has not diminished the risks of climate change, or the need to take decisive and responsible action now.

As the Secretary-General of the Organisation for Economic and Cooperation and Development has recently said, 'We must not let the financial and economic crisis distract our attention from moving towards long-term rational climate policies'¹.

The global financial crisis, does however, highlight the need for a prudent and balanced approach to delivering the Carbon Pollution Reduction Scheme.

It is always easier for governments to focus on immediate circumstances at the expense of long term challenges. But ignoring long term challenges only makes them worse; meaning that the burden of dealing with these challenges falls on our children and grandchildren.

The Australian Government is acting decisively to protect Australia from the worst effects of the global financial crisis and to tackle the long term threat of climate change.

In delivering the Carbon Pollution Reduction Scheme, the Government has sought to get the balance right: to secure Australian jobs today while at the same time moving to the low pollution economy that will deliver growth and the jobs of the future.

In these uncertain times, there is a strong imperative to provide certainty to industries on future climate change policy so that investment and other business decisions can be made in the full knowledge of future policy settings.

Ultimately Australia faces a choice. We can either wait and allow the challenges to get worse, or we can take action. The Australian people have chosen action.

Responsible action on climate change is crucial to Australia's economic prosperity now and for our children's future.

Landmark economic reform to tackle climate change

The Carbon Pollution Reduction Scheme will bring about the biggest economic reform since the opening up of Australia's economy under the Hawke and Keating Governments in the 1980s and 1990s.

Like those reforms, it will start gradually, building momentum and, over the longer-term, transforming our economic structure.

In delivering this significant economic reform, the Australian Government is focused on getting the balance right.

The Government will deliver a Carbon Pollution Reduction Scheme that protects jobs today, while at the same time moving Australia to the low pollution economy of the future.

As a market-based solution, the Carbon Pollution Reduction Scheme is the lowest cost way to make this change while protecting the interests of business and households.

The Scheme will, for the first time, put a cost on carbon pollution which will encourage major polluting businesses to move towards a cleaner future.

Firms will, for the first time, take the cost of carbon pollution into account in their investment and production decisions. This will ensure for the first time we recognise the costs of climate change in these decisions.

This will affect the pattern of competitiveness across the economy, the relative prices of goods and services, and the consumption choices made by households.

Assisting households move to a low pollution future

The Australian Government will provide assistance to businesses and households to help them transition to a cleaner future.

Carbon pollution costs will flow through the economy to affect the prices of electricity, gas, petrol and a range of other goods and services.

For most households, the increase in costs will be affordable, and they will be able to adjust their behaviour to minimise the impact of the Scheme on their standard of living. However, special care has been taken to target direct assistance to those who have the least capacity to bear increases in the cost of living.

Pensioners, seniors, carers and people with disability will receive additional support, above indexation, to fully meet the expected overall increase in the cost of living flowing from the scheme.

Other low-income households will receive additional support, above indexation, to fully meet the expected overall increase in the cost of living flowing from the scheme.

Around 89 per cent of low-income households (or 2.9 million households) will receive assistance equal to 120 per cent or more of their cost of living increase.

Middle-income households will receive additional support, above indexation, to help meet the expected overall increase in the cost of living flowing from the scheme. For middle-income families receiving Family Tax Benefit Part A, the Government will provide assistance to meet at least half of those costs.

Around 97 per cent of middle-income households will receive some direct cash assistance. Around 60 per cent of all middle-income households (or 2.4 million households) will receive sufficient assistance to meet the overall expected cost of living increase.

Motorists will be protected from higher fuel costs from the scheme by ‘cent for cent’ reductions in fuel tax for the first three years.

Each year, the Government will review the adequacy of the household assistance package in the context of the Budget.

The Government will use every cent it receives from the sale of pollution permits to help households and businesses adjust and move Australia to the low pollution economy of the future.

A global solution for a global problem

Everyone needs to do their bit to tackle climate change by reducing carbon pollution.

By implementing the Carbon Pollution Reduction Scheme, Australia will join other developed nations in the fight to reduce carbon pollution.

Schemes are already operating in 27 European Union member states. President-elect Obama has committed the United States to introduce a scheme. Twenty-seven states and provinces in the US and Canada are already introducing emissions trading, to reduce carbon pollution. Japan is considering introducing a scheme.

New Zealand passed legislation implementing its scheme in September 2008. The new New Zealand Government has indicated it will review the design of the New Zealand scheme by late 2009, but has reaffirmed its commitment to the introduction of emissions trading.

These schemes are a critical part of global leadership on climate change.

Leadership from the developed world encourages other countries to join the global fight.

The Government remains committed to meeting its long-term target of a 60 per cent reduction in greenhouse gas emissions from 2000 levels by 2050.

It also commits to a medium-term national target to reduce Australia's greenhouse gas emissions by between 5 per cent and 15 per cent below 2000 levels by the end 2020.

The top of this range (5 per cent below 2000 levels) represents a minimum (unconditional) commitment to reduce emissions by 2020, irrespective of the actions by other nations. The bottom of this range (15 per cent below 2000 levels) represents a commitment to reduce emissions in the context of global agreement where all major economies commit to substantially restrain emissions and all developed countries take on comparable reductions to that of Australia.

The Government also accepts the findings of the Garnaut Climate Change Review Final Report that:

- a fair and effective global agreement delivering deep cuts in emissions consistent with stabilising concentrations of greenhouse gases around 450 parts per million or lower would be in Australia's interests
- achieving global commitment to emission reductions of this order appears unlikely in the next commitment period
- the most prospective pathway to this goal is to embark on global action that reduces the risks of dangerous climate change and builds confidence that deep cuts in emissions are compatible with continuing economic growth and improved living standards.

Australia's commitment of a 5-15 per cent reduction by 2020 is a serious and credible commitment to the global action required and is realistically attainable in the current circumstances.

In the international context, the Australian Government's medium term target range represents a significant contribution to the global effort.

Australia's particular national circumstances — including its strong population growth, large share of energy and emissions-intensive industries, and heavy reliance on fossil fuels for energy — mean that Australia faces a relatively greater structural adjustment task to move towards a low-emission future than many other developed countries.

Australia's population is projected to grow by around 45 per cent over the 1990-2020 period, so Australia's target range translates to a 34-41 per cent reduction in the per capita emissions of every Australian over this period.

Medium-term target range

The Government confirms its commitment to a long-term goal of reducing Australia's greenhouse gas emissions to 60 per cent below 2000 levels by 2050.

The Government has decided on a medium-term target range to reduce emissions by between 5 and 15 per cent below 2000 levels by 2020, balancing the need to make a strong contribution to international efforts with ensuring a balanced and measured start to the Scheme.

The Government believes that it is in Australia's national interest to achieve a comprehensive global agreement to stabilise atmospheric concentrations of greenhouse gases at around 450 parts per million of carbon dioxide equivalent. However, the Government recognises that achieving global commitment to such action in the near term will be challenging.

In the event that a comprehensive global agreement were to emerge involving emissions commitments by both developed and developing countries that are consistent with long term stabilisation of atmospheric concentrations of greenhouse gases at 450 ppm CO₂-e or lower, Australia is prepared to establish its post-2020 targets so as to ensure it plays its full role in achieving the agreed goal.

Australia's medium term target range represents a comparable effort to others which have announced targets, such as the European Union.

While very few countries have announced specific quantitative commitments to medium term targets, Australia's target range represents a comparable effort to those that have. For example, the European Union (EU) has committed to reducing emissions by 20 per cent in aggregate by 2020 compared with 1990 emissions, or 30 per cent in the context of strong commitments by other developed countries. The population of the EU is projected to be relatively stable over the 1990-2020 period, so its target range translates into a 24 to 34 per cent reduction in emissions for each European.

The comparisons below highlight that Australia and the EU are both making serious and broadly comparable commitments to reduce carbon pollution so as to place the world on the pathway to effective global action. Proposals by United States President-elect Obama and the targets already adopted by the United Kingdom similarly reflect strong commitments to deliver substantial emissions reductions by developed economies.

Table E.1: Comparing carbon pollution reduction targets of different countries

Country	2020 targets	2020 per capita reduction	2050 targets
Australia	5-15 per cent below 2000 levels (4-14 per cent below 1990 levels)	27-34 per cent below 2000 levels (34-41 per cent below 1990 levels)	60 per cent below 2000 levels (60 per cent below 1990 levels)
European Union	20-30 per cent below 1990 levels	24-34 per cent below 1990 levels	60-80 per cent below 1990 levels
United Kingdom	26-32 per cent below 1990 levels	33-39 per cent below 1990 levels	80 per cent below 1990 levels
Proposal			
United States (proposal of President-elect Obama)	Return to 1990 levels	25 per cent below 1990 levels	80 per cent below 1990 levels

Based on UNFCCC emissions data including land use change and forestry; Australia's Low Pollution Future for Australian population projections; UN population projections for other countries.

A clear case for action

As the Garnaut Final Report made clear the costs of inaction will be greater than the costs of responsible mitigation. In addition, the aggregate costs of action are modest, and the benefits of action (and the cost of inaction) increase over time, becoming more pronounced in the second half of this century and beyond. The Garnaut Final Report observes that 'the overall cost to the Australia economy is manageable and in the order of one tenth of one per cent of annual economic growth'.ⁱⁱ It goes on to conclude that 'the costs of well-designed mitigation, substantial as they are, would not end economic growth in Australia, its developing country neighbours or the global economy; unmitigated climate change probably would'.ⁱⁱⁱ

Economies can respond more efficiently to new circumstances when businesses and individuals have certainty about long term direction. Starting as soon as possible on a gradual adjustment to a low carbon economy will provide Australians with the opportunity to plan their responses; to manage changes in technology, equipment and skills requirements; and to minimise the risk of stranding long-lived assets. This will help to reduce the costs of mitigation.

In contrast, a wait-and-see approach leaves the economy exposed to far more serious future adjustment costs that could leave assets stranded, workers unemployed, and households exposed to rising costs. All these risks would drive up the cost of mitigation, and might even put limits on effective mitigation as a weaker economy will reduce our capacity to act. There is a real risk that delaying action will mean bigger changes will need to be made more rapidly, and painfully, in the future.

Indeed, during the last decade of government inaction on climate change, many decisions have been made that did not take account the likelihood of future carbon constraints. These decisions have built a degree of momentum into Australia's emissions pathway which the current Government must responsibly take into account when setting the medium term target range. This underlines the cost of further delay on action on climate change, and the need to begin a sensible and measured transition to a low pollution future as soon as is feasible.

Key results from economic modelling

Treasury modelling outlined in *Australia's Low Pollution Future* indicates that with efficient policy settings, Australia and the world continue to prosper while making the emission cuts required to reduce the risks of dangerous climate change.

The key conclusions from *Australia's Low Pollution Future* are that:

- The economic cost of reducing Australia's emissions will be modest, although costs to sectors and regions will vary.
- Even ambitious emissions reductions goals will have limited impacts on global and national economic growth if they are achieved using broad-based, market-oriented policies.
- Early global action is less expensive than later action, and there are advantages for Australia in acting early if emissions constraints expand gradually across the world. Economies that defer action will face higher long-term costs as global investment is redirected to early movers.
- A market based approach allows robust economic growth into the future even as emissions fall, and many of Australia's industries will maintain or improve their competitiveness under an international agreement to combat climate change.

The Treasury modelling shows that strong action on climate change is unlikely to have a large impact on Australia's long term rate of growth. From 2010 to 2050, modelling results show that real GNP per capita grows at an average annual rate of 1.1 per cent across the policy scenarios, compared to 1.2 per cent in the reference scenario.

Based on the CPRS scenarios in the report, introducing emission pricing is likely to produce a one-off rise in the consumer price level of around 1 per cent for CPRS -5 scenario and around 1.5 per cent for the CPRS -15 scenario, with minimal implications for ongoing inflation.

Australia's comparative advantage will change in a low-emissions world, presenting new opportunities for our economy. With coordinated global action, most sectors of Australia's economy will grow, low-emissions sectors will grow strongly, and many emissions-intensive sectors will maintain or improve their international competitiveness.

Australia's 'three pillars' climate change strategy in detail

The threat of climate change requires a decisive and strong response. The Government's climate change policy is built on three pillars—reducing Australia's carbon pollution emissions, adapting to climate change that we cannot avoid, and helping to shape a global solution.

Pillar 1: Reducing Australia's carbon pollution

Australia must stand ready to play its role in the global mitigation effort, by reducing its own emissions. The Government has provided leadership and clear direction for the national effort

by committing to a medium term national emissions reduction target of between 5 per cent and 15 per cent of 2000 levels by 2020, and a long term target of 60 per cent emissions reduction below 2000 levels by 2050.

Meeting the emissions reductions targets will be challenging. Australia's emissions have been growing at about 1 per cent a year since 1995. Analysis by the Department of Climate Change^{iv} suggests that, while Australia is likely to meet its Kyoto Protocol target of limiting emissions in the 2008–2012 period to an average of 108 per cent of 1990 levels, emissions will increase to 120 per cent of 1990 levels by 2020 without additional policy measures.

Substantially reducing Australia's national emissions will involve the most significant structural reform of the economy since the 1980s, although that reform will take place over a longer timeframe. The reform process will be challenging, and will require the Government to implement responsible economic policies focused on reducing emissions at the lowest possible cost over the long term. Australia will need to draw on low cost emissions reductions wherever they occur globally, by allowing for the purchase of robust carbon reduction credits from the international market, so it can meet the challenging targets at minimal cost to the economy.

The Australian economy is well placed to undertake the necessary structural reform. Successive waves of microeconomic reform have increased the flexibility of the Australian economy, allowing Australia to deal with shocks such as the Asian financial crisis and the world economic slowdown of the start of this century and making business better prepared to manage the current global financial crisis. The Government's economic reform agenda, including the reforms being pursued through the Council of Australian Governments and the Australia's Future Tax System Review, will further enhance the economy's capacity for structural reform. Choosing economically inefficient options will not remove the need for reform, but will increase the cost to our nation, raise the burden on firms and individuals and reduce our capacity to assist industries and households through the transition.

The Carbon Pollution Reduction Scheme will be the primary mechanism through which Australia will seek to meet its emissions reduction objectives. The other major elements of the Government's mitigation strategy are the expanded Renewable Energy Target investment in renewables and carbon capture and storage and action on energy efficiency. These comprise the four elements of the Government's carbon pollution reduction strategy. Together, they lay a solid foundation for the transition towards a low carbon pollution future.

The mitigation measures will be accompanied by a range of supporting measures for households and industry.

Pillar 2: Adapting to unavoidable climate change

Even if global mitigation efforts are successful, the science shows that some climate change impacts are unavoidable. Those impacts create considerable risks to assets, investments, environments, communities and regional economies. Wise action now to adapt to those unfolding challenges can reduce costs in the future.

Individuals and businesses are often best placed to manage risks associated with their assets—the benefits they obtain from adapting to climate change provide an incentive for them to

manage exposure to those risks. However they will need high quality and accessible regional climate information at scales relevant to adaptation decisions.

Work on adaptation in Australia is in its infancy, and it is only in the last year that collaborative action has commenced to develop and implement a comprehensive national adaptation strategy. The Council of Australian Governments (COAG) National Climate Change Adaptation Framework involves the Australian Government and all state and territory governments in building our capacity to respond to climate change, and in actions to reduce regional and sectoral vulnerability.

One early step has been to establish the Adaptation Research Facility to drive development and implementation of national research plans to address key knowledge gaps constraining adaptation action, and the Commonwealth Scientific and Research Organisation (CSIRO) Climate Change Adaptation Flagship.

How Australia deals with water as much of Australia becomes drier is a critical adaptation issue. The Australian Government has committed \$12.9 billion to fund a new 10-year plan, Water for the Future, which aims to adapt to climate change, use water more wisely, secure water supplies and improve environmental outcomes for Australia's water resources.

However, much remains to be done to enable Australia to adapt effectively to the impacts of climate change. Individuals, businesses and local government need targeted information and tools to support effective adaptation decisions; sectors and regions need to understand their vulnerabilities; Government provided goods and services need to take into account climate change so that decisions being taken today, particularly involving long-lived assets, do not increase our future vulnerability to climate change.

Pillar 3: Helping to shape a global solution

The third pillar recognises that climate change is a global problem that requires a global solution. Australia has the standing and capacity to positively contribute to an international framework that addresses climate change beyond the first compliance period of the Kyoto Protocol, which ends in 2012. An important Australian objective for a global framework beyond 2012 is to ensure that it will slow and ultimately reduce greenhouse gas emissions to avert dangerous climate change.

To strengthen the multilateral response to climate change, the key objective for Australia is to broaden the number of countries willing to make commitments. While all countries should act to mitigate climate change, the top 15 emitters are responsible for around 80 per cent of global greenhouse gas emissions. Australia considers it essential that more countries, especially major emitters, reduce their emissions if dangerous climate change is to be averted.

Developed countries should take the lead. However, developing economies are projected to account for a significant portion of emissions growth into the future. Major developing countries will therefore need to commit to actions to restrain their emissions in a post-2012 framework. Australia recognises, however, that countries' individual commitments will differ according to their national circumstances.

There is a link between Australia's domestic actions and its ability to help shape a global solution. The Carbon Pollution Reduction Scheme is the primary means by which Australia will meet its obligations to reduce emissions. Strong domestic action will also support our

efforts to secure the participation of all countries, both developed and developing, in global efforts to reduce emissions. Developing a flexible and workable emissions trading model also demonstrates to other countries that they, too, can take on emissions targets while maintaining economic growth and rising living standards.

As part of its international strategy, Australia is engaged in a range of bilateral, regional and multilateral partnerships and initiatives which also contribute to efforts to shape a global solution. These include the \$200 million International Forest Carbon Initiative, which supports efforts to reduce emissions from deforestation and forest degradation in developing countries, and the Government's Global Carbon Capture and Storage Initiative which aims to support the development and deployment of industrial-scale CCS technology, here and abroad.

The Carbon Pollution Reduction Scheme

The Government's intention is to commence the Carbon Pollution Reduction Scheme on 1 July 2010. The Scheme will be Australia's primary policy tool to drive reductions in emissions of greenhouse gases. Greenhouse gas emissions are a form of pollution—carbon pollution. The consequent economic cost is not currently reflected in the costs of business or the price of goods and services—because firms face no cost from increasing emissions, the level of emissions is too great. Unless businesses and individuals bear the full responsibility for their consumption and production decisions, the level of carbon pollution will remain too high.

The Carbon Pollution Reduction Scheme is designed to redress this market failure. Emissions trading is simply a mechanism to achieve an objective. That objective is to reduce carbon pollution, and to do so efficiently, by placing a cap on emissions.

Addressing this market failure is a significant economic reform. Tackling climate change will not be easy, and there will be adjustment costs. However, this is not a choice between a no-cost option and an option with costs. It is a choice between taking responsible action now—or neglecting to act and facing much higher costs and more serious climate change later.

The current global economy's circumstances confirm the need for prudent policy decisions, flexible scheme design and effective means to manage compliance costs.

However, in the face of international economic turmoil, Australian businesses need more certainty about their future operating environment, not less. Delaying this significant economic reform would serve no one's interests. Moreover, the current financial crisis has not reduced the threat of climate change, nor the benefits of action. It remains in Australia's best interests to take decisive and meaningful action on climate change.

A cap and trade scheme

The Scheme will put a price on carbon in a systematic way throughout the economy. It employs a ‘cap and trade’ emissions trading mechanism to limit greenhouse gas emissions. Setting a limit means that the right to emit greenhouse gases becomes scarce—and scarcity entails a price. The mechanics of the Scheme are set out in the box below.

A critical point is that the costs to the community arise not from the Scheme itself but from the commitment to reduce national emissions. Alternative non market-based approaches to reducing emissions will impose higher costs on the community because they would not make use of the incentives created by the market mechanism to draw out all low-cost opportunities to reduce emissions.

Mechanics of a cap and trade scheme

Emitters of greenhouse gases need to acquire a permit for every tonne of greenhouse gas that they emit.

The quantity of emissions produced by firms will be monitored, reported and audited.

At the end of each year, each liable entity will need to surrender a permit for every tonne of emissions that they produced in that year.

The number of permits issued by the Government in each year will be limited.

Firms will compete to purchase the number of permits that they require. Firms that value the permits most highly will be prepared to pay most for them, either at auction or on a secondary trading market. For some firms, it will be cheaper to reduce emissions than to buy permits.

Certain categories of firms will receive an administrative allocation of permits, as a transitional assistance measure. Those firms could use the permits or sell them.

As well as driving actual emissions reductions, the introduction of a carbon price provides a financial incentive for investment in low emissions technology research, development and commercialisation. Investment in technological solutions that reduce greenhouse gas emissions has the potential to deliver high financial returns to those sectors with a high cost of abatement. These sectors have a strong incentive to reduce their exposure to a carbon liability.

A carbon cap should also lead to consumer behavioural changes that support a lower carbon economy. For example, higher electricity prices will provide an incentive for consumers to conserve energy in their homes.

The implications of the Scheme will be significant. Placing a limit, and hence a price, on emissions has the potential to change the things we produce, the way we produce them, and the things we buy.

Essential elements of a cap and trade scheme

In a cap and trade scheme, aggregate emissions are capped at a level that is consistent with the environmental objective. There are several different types of greenhouse gases and many different sources of emissions across the Australian economy. The Scheme coverage establishes what types and sources of emissions are subject to the cap.

The cap sets a limit on the aggregate annual emissions from all the covered types and sources of emissions.

The level of the Scheme cap determines the environmental contribution of the Scheme: the lower the cap, the more abatement that must occur. The actual cap and the scope of coverage can be determined independently. However, broader coverage will reduce abatement costs and therefore allow for more ambitious emissions caps.

The number of tradable carbon pollution permits will be equal to the Scheme cap—if the cap were to limit emissions to 100 million tonnes of carbon dioxide equivalent (CO₂-e) in a particular year, 100 million emissions permits would be issued for that year.

Entities responsible for emissions sources covered by the Scheme will be obliged to surrender a permit for each tonne of CO₂-e that they have emitted during the compliance period.

A common misconception is that the Scheme will set limits on emissions for individual companies or facilities, and that companies will be able to sell permits if they emit less than their limit, or must buy permits if they emit more. This is not the case. The limit on emissions applies to all covered emissions sources—there is no limit on emissions from individual sectors, firms or facilities. Companies are free to emit at whatever level they choose, as long as they surrender an eligible compliance permit for every tonne of those emissions at the end of the compliance period. Companies may or may not have received some compliance permits free of charge, but that does not change this basic compliance rule in any way.

Carbon pollution permits will be tradable and the price of permits determined by the market.

The cap will achieve the desired environmental objectives only if it is enforced. This means that entities responsible for emissions covered by the Scheme must monitor and report their emissions and report to the Government. Non-compliance will attract a penalty.

Carbon pollution permits could enter the market either by auction or by administrative allocation. As long as the cap remains unchanged, the way permits enter the market does not significantly affect the abatement outcome. Whether a company receives carbon pollution permits for free or purchases them in the market, it will face the same incentives. Companies are likely to be willing to pay for permits if their internal costs of abatement are higher than the price of permits and to directly reduce their emissions if their internal costs of abatement are lower than the price of permits. Companies which own permits would be willing to sell them if the revenue received from selling permits exceeds the profits from using them. A company perspective is illustrated in the box below.

A company perspective

Different companies will have different abatement costs and opportunities. Under the Scheme, the decision whether to emit or abate will differ from company to company. Consider an example where the market price for a carbon pollution permit is \$25.

Company A can reduce its emissions for a cost of \$20 per tonne of emissions. Its cost of abatement is lower than the market price for a permit. If the company had permits, it would sell them. If the company had no permits, it would be cheaper for the company to abate than to buy a permit so that it could emit.

Company B can reduce emissions for a cost of \$50 per tonne of emissions. Its cost of abatement is higher than the market price for a permit. If the company had permits, it would use them and emit. If the company had none, it would buy them in the market so it could emit.

These market incentives work to move the permits to the highest value use and to encourage the cheapest abatement to occur first. The ability to trade Australian carbon pollution permits ensures that the emissions cap is achieved at least cost to the economy.

The introduction of a carbon price will change the relative prices of goods and services, making emissions-intensive goods more expensive relative to those that are less emissions intensive. This provides a powerful incentive for consumers and businesses to adjust their behaviour, resulting in a reduction of emissions.

Scheme coverage

The Government has announced that the Scheme should have maximal practical coverage of greenhouse gas emissions and sectors. Maximal Scheme coverage is a key element in minimising the overall cost to the Australian economy of achieving emissions reductions. It will increase opportunities for low cost emissions reductions and ensure that the cost of achieving these reductions is shared equitably across the economy. Broad coverage will also ensure that competing firms and sectors operate within equivalent market rules.

The Scheme will cover around 75 per cent of Australia's emissions and involve mandatory obligations for around 1000 entities. There are around 7.6 million registered businesses in Australia: the overwhelming majority will not, therefore, face any direct obligations under the Scheme.

The Scheme will cover all six greenhouse gases that are covered under the Kyoto Protocol. Different activities emit different types of greenhouse gases, and these gases differ in their global warming potential—the 'strength' of the greenhouse effect that they create. By covering all of the gases accounted for under the Kyoto Protocol, the Scheme will best encourage the broadest range of cost-effective abatement activities.

The Scheme will have broad sectoral coverage and will cover emission from stationary energy, transport, fugitive, industrial processes, waste and forestry sectors. This will be achieved through a combination of placing Scheme obligations directly on some emitters,

and, in other cases, placing obligations further ‘upstream’ in the production chain, as a way of cost-effectively capturing smaller sources of emissions.

Initially, the Scheme will not cover emissions from agriculture. The agricultural sector is characterised by thousands of small emitters and the calculation of emissions is complex, so it would not be practical at this stage to cover those emissions directly. However, agriculture’s eventual inclusion in the Scheme is desirable, if it can be cost-effectively achieved. Commencing in 2009 the Government will undertake a work program to enable it to determine in 2013 whether or not to cover agriculture emissions from 2015.

After careful deliberation the Government does not propose to include deforestation in the Scheme. Australian deforestation emissions have reduced markedly since 1990, largely due to increased protections against land clearing. Given the sporadic nature of remaining land clearing emissions, covering deforestation under the scheme would pose large practical difficulties. It also raises the risk of pre-emptive land clearing.

Offset credits could potentially be created by those sectors not covered by the Scheme. Offsets are credited reductions in emissions, that are purchased by other parties to allow them to increase their own emissions. Offsets cannot be created in sectors already covered by the Scheme—the very broad coverage of the Scheme implies that there is little scope to pursue offset activities, particularly if agriculture is to be included in the Scheme. The Government will consider the scope for domestic offsets in 2013 at the time it considers the inclusion of agriculture. The Scheme will not include domestic offsets from agriculture emissions in the period prior to coverage of these emissions.

The Government will further investigate the opportunity to reduce emissions from savanna burning in Northern Australia and the potential for carbon offsets from this activity. The Government will facilitate the participation of Indigenous land managers in carbon markets and will consult with Indigenous Australians on forestry and other opportunities under the Scheme.

The carbon market

The rapid development of a stable, well-informed and efficient carbon market, which is appropriately monitored and regulated to guard against market manipulation, will allow the Scheme to achieve emissions reductions in a cost-effective way.

There are several elements of Scheme design that will contribute to an effective and efficient market.

Carbon pollution permits will be created as personal property, and the legislation implementing the Scheme will not provide any power to extinguish these permits without compensation (except in the case of misrepresentation or fraud). When combined with the issuance of future years’ permits, this should help create confidence in the longer term durability of the Scheme.

Permits will be tradable—an important element in seeking cost effective abatement outcomes.

Permits will be able to be banked indefinitely—they will have a vintage, the earliest they can be used—but no expiry date. Liable entities will also have a small borrowing allowance—they will be able to meet up to 5 per cent of their liabilities by using the following year’s

vintage permits. Banking and borrowing help to lower overall Scheme costs (by providing some flexibility over when abatement should occur) and help promote a smoother carbon price path.

In response to the Green Paper, several stakeholders were concerned to ensure that the carbon market would be appropriately structured and regulated to avoid market manipulation. While the likelihood is low, permits, like other financial products, could be the subject of market misconduct, including market manipulation and insider trading. Market manipulation includes manipulation of the auction process (for example, through collusion) and of prices in the secondary market. There is also the possibility of one or more participants attempting to corner the market for permits close to the time for surrender.

To ensure appropriate regulatory oversight is provided, the Australian Securities and Investments Commission (ASIC) will be given the necessary legal power to investigate and prosecute market manipulation in the carbon market. This will be achieved by designating carbon pollution permits and Kyoto units as financial products for the purposes of the *Corporations Act 2001*. Some adjustments to that regime will be necessary to fit the characteristics of permits and to ensure no unnecessary compliance costs. The Government will consult further on these adjustments. The net effect will be that the permit market will be subject to the same effective safeguards as the Commonwealth bond market. Rules will be put in place to provide additional safeguards against individual entities manipulating auctions, and banking and borrowing provisions provide a powerful check against such behaviour. The economy-wide competition provisions of the *Trade Practices Act 1974* will also apply.

The carbon price

Seeking to meet national emissions targets through the Scheme will generate an explicit carbon price. The price of carbon will be determined by the balance of supply and demand for permits. The Scheme design incorporates a number of internal stabilisers and constraints on carbon prices. Pricing volatility, and upside price risk, will be reduced by:

- widespread coverage, as excluding sectors will push up the cost on the economy
- the ability to bank (i.e. save) and borrow permits, which can help promote a smoother carbon price path
- a ban on the export of permits in the Scheme's initial years, to reduce upward price pressure on the Scheme
- unlimited access to international abatement delivered through the Kyoto Protocol's project-based flexibility mechanisms, which acts to cap permit prices and total Scheme costs
- a transitional cap on the price of permits which provides a further safety valve for the Scheme.

One of the outputs of the Treasury modelling was a time profile for carbon prices for different scenarios. It is important to recognise that the Treasury modelling focuses on the medium to long term economic impacts of policies to reduce emissions. It does not attempt to predict short term international emission prices.

The Treasury modelling suggests that, in the context of efficient market-based global action to stabilise greenhouse gas concentrations at 550 ppm, the initial emission price in 2010 could be around A\$23/t CO₂-e in nominal terms. Stabilising at lower concentration levels requires faster cuts in global emissions and higher emission prices. The starting price is 40 per cent higher to achieve 510 ppm and 110 per cent higher to achieve 450 ppm. Consistent with the target range chosen, the Government has decided to set a price cap for five years, of \$40 per tonne at Scheme commencement, rising at five per cent real per annum.

These emission prices are lower than prices currently observed in some emission markets, particularly the European Union Emission Trading Scheme (EU ETS). Higher current prices in the EU market reflect its more limited coverage and restricted access to international trade as compared to the modelled scenarios. The modelling assumes broad coverage of regions and sectors, allowing far more low cost mitigation opportunities to be captured than in the EU ETS.

If there are no restrictions on international emissions trade, Australia's emission price will be determined by the global price. In the scenarios the Treasury has modelled, Australia's emission price is equal to the global price, with an allowance for changes in the exchange rate.

Reflecting that the actual carbon price will be determined by the market, assistance to business and households has been based on an assumed initial carbon price of \$25 per tonne of CO₂-e, broadly consistent with the Treasury modelling. Each year the Government will review the adequacy of the household assistance package in the context of the Budget.

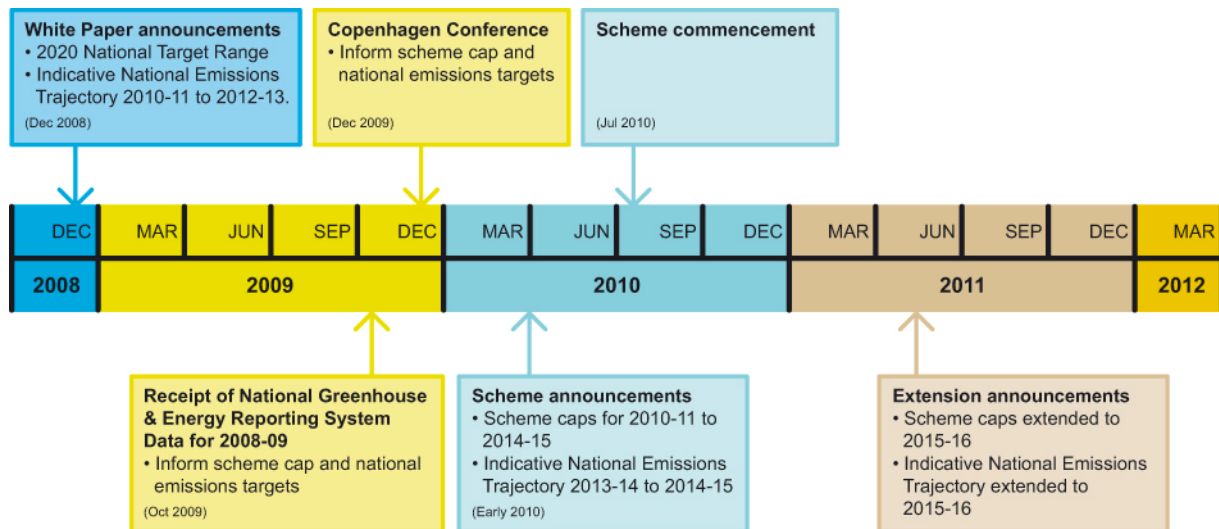
Setting Scheme caps

The Scheme cap determines the number of permits that will be issued by the Government. Allowable emissions across the sectors covered by the Scheme will only be able to exceed the cap if this is matched by the surrender of eligible international units, additional domestic permits issued as a result of forestry activities, additional permits issued under the price cap mechanism or, if eventually allowed, Scheme offsets.

The Government will specify Scheme caps for at least five years in advance. In addition, up to a further 10 years of guidance will be provided through the establishment of 'gateways' or ranges within which future Scheme caps will lie. To maintain five years' guidance, Scheme caps will be extended by one year, every year. Gateways will be extended for five years, every five years.

The first five years of Scheme caps will be announced in 2010, before the Scheme commences and after the Copenhagen meeting of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

Figure E.1: Scheme cap following the Copenhagen conference of the Parties to the UNFCCC



International linkages

The Scheme has been designed to be able to link with international carbon markets. As demonstrated by the Final Garnaut Report and the Treasury modelling, access to an international carbon market can play an important element in reducing the overall costs of the global (and Australian) mitigation effort.

An international carbon market already exists under the Kyoto Protocol. The Kyoto Protocol creates three ‘flexibility mechanisms’:

- the clean development mechanism, for offset projects in developing countries
- the joint implementation, for offset projects in developed countries
- international emissions trading, which allows trade in developed countries’ emissions allocations, as well as the units from the two project based mechanisms.

Opportunities for linking are likely to increase substantially over time, as different countries introduce their own emissions trading schemes. Growth in international carbon markets presents opportunities for Australia by broadening the abatement opportunities for liable parties and by extending the market for Australia’s own abatement.

Consistent with the Green Paper, the Government will allow entities to use eligible Kyoto units for compliance with Scheme obligations, in particular the two project based mechanisms.

The Government has decided that no quantitative restrictions will apply to the use of eligible Kyoto units for compliance in the Scheme. This is a modification of the position contained in the Green Paper, which proposed that a quantitative limit should be set. Having taken into account stakeholder feedback, and having conducted further analysis, the Government considers that the implementation risks of a lack of quantitative restrictions are low. These risks are outweighed by the benefits of having an additional form of safety valve on compliance costs, and more active participation in global carbon markets.

As a way of reducing potential upside price risk, no exports of carbon pollution permits will be allowed, and would only be introduced with five years' notice. However, if Australia were to enter into a bilateral linking arrangement with another country (say, New Zealand), exports would be required. Such a link could be entered into with less than five years' notice where this was unlikely to lead to a significant change in carbon prices.

Auctioning carbon pollution permits

The Government will auction the majority of the Scheme's carbon pollution permits. Auctioning is the most efficient way of distributing permits, since they will be bought by those who value them most highly. However, some permits will also be administratively allocated, in order to address the transitional challenges raised earlier.

The Government has fully delivered on its commitment that every cent raised for the Australian Government from the Scheme will be used to help Australians—households and businesses—adjust to the Scheme and to invest in clean energy options. The full Budget package is outlined at the end of this Executive Summary and in Appendix E.

Assistance for emissions-intensive, trade-exposed industries

Introducing a carbon price in Australia ahead of some other countries could risk carbon leakage occurring—that is, activities could move from Australia to elsewhere, with no benefit in terms of global emissions reductions. Activities most at risk of carbon leakage are those that are trade exposed and highly emissions intensive.

The decision as to where to place investment and undertake production is a complex one, involving judgements about a range of factors including access to resources, skilled labour, infrastructure, security of energy supply, political stability and other more intangible issues. As such, the absence of a carbon constraint on companies producing elsewhere will not automatically lead to carbon leakage from Australia—indeed, the Treasury modelling suggests that this risk is low and work by the IEA suggests there has been little carbon leakage from Europe since the introduction of the EU ETS.

Nevertheless, the Government intends to guard against the risk of carbon leakage and provide some transitional assistance that will help protect jobs in these important industries while also encouraging these industries to make a contribution to Australia's emissions reductions.

The Green Paper proposed providing assistance to emissions-intensive, trade-exposed industries (EITE industries) in the form of an administrative allocation of permits, linked to the EITE industry's output.

Intense stakeholder debate has occurred on this matter since the release of the Green Paper—there has been little challenge to the notion of support, but considerable debate as to the appropriate form and quantum.

This White Paper broadly confirms the rationale, key principles and elements of the framework outlined in the Green Paper. However, the quantum of assistance to emissions-intensive trade-exposed industries has been significantly increased to further smooth the transition. Stakeholder feedback and further analysis has also led to a number of changes on matters of assistance design, including the method for assessing eligibility for assistance.

Approach to EITE assistance—principles

A number of principles have guided the development of the EITE assistance program. These principles are:

- *Assistance should be targeted to reduce the likelihood of carbon leakage and to provide transitional assistance:* In practice, it is extremely difficult to identify which activities are most at risk of carbon leakage compared to the range of factors that influence locational decisions. As a result, the Government has concluded that it is appropriate to be more inclusive in the approach to defining activities eligible for EITE assistance. The Government will retain the rules based approach proposed in the Green Paper. Assistance will be targeted at activities that are highly emissions intensive, and which are trade exposed. Trade exposure will be defined by having a trade share (defined as the ratio of the value of imports and exports to the value of domestic production) of greater than 10 per cent in any year between 2004-05 and 2007-08, or a demonstrated lack of capacity to pass through costs due to the potential for international competition. Emissions intensity will be measured on the basis of the emissions-to-revenue or emissions-to-value-added of activities being above nominated thresholds.
- *Assistance should not reduce carbon price signals:* Providing assistance on the basis of actual activity-level emissions would provide a powerful incentive for firms to avoid reducing their emissions, undermining the effect of the carbon price signal. For this reason, allocations will be made on the basis of the output of an entity conducting an EITE activity, according to the industry's historic average emissions intensity per unit of production. The use of historic data preserves incentives to improve emissions intensity—allocations will not be reduced in the event that actual emissions subsequently decline. Basing allocations on industry averages, rather than individual entities' emissions intensity, means that less emissions intensive entities will have an advantage over their more emissions intensive rivals. This provides some recognition for early action to reduce greenhouse gas emission and encourages emitters to actively pursue abatement since subsequent actions to reduce emissions do not affect the extent of support provided. Scaling assistance to production not only preserves carbon price signals, but explicitly links the assistance to the carbon leakage objective and supports the future growth of EITE activities.
- *Assistance to EITE industries should be balanced against the need to assist other businesses and households:* allocating permits to entities conducting EITE activities means that there are fewer permits available to auction, which means that less funding is available to provide assistance for households and other businesses. Also, the provision of EITE assistance (and the support of production in EITE industries) can lead to higher electricity prices than otherwise, and a greater likelihood for the need to import international units to

meet Australia's international emissions obligations, which reduces national income (Gross National Product).

- *Assistance should not breach Australia's international trade obligations:* any assistance should not breach Australia's obligations as a member of the World Trade Organisation and a party to the Agreement on Subsidies and Countervailing Measures, and a number of bilateral free trade agreements.

Overview of EITE assistance

The mechanics of EITE assistance have been modified in several respects compared with the positions in the Green Paper.

One significant modification is the extension of assistance to activities at a lower level of emissions intensity. Two rates of assistance were proposed in the Green Paper—90 per cent for activities that had at least 2000 t CO₂-e per million dollars of revenue, and 60 per cent for activities that had at least 1500 t CO₂-e per million dollars of revenue. The White Paper extends the lower level of assistance to activities that have at least 1000 t CO₂-e per million dollars of revenue. These rates of assistance ensure that all entities will bear a proportion of the carbon cost that they face.

The second significant change in the EITE package is to provide an additional route for determining eligibility. Where the Green Paper proposed that the assessment of eligibility would be only on the basis of the ratio of emissions-to-revenue of an activity, the White Paper provides the choice of using revenue or a value-added based measure of emissions intensity. (A different threshold for assistance would apply to each to provide broad equivalence in impact.)

The third significant change is the expansion of the emissions and costs in respect of which assistance is provided. The Green Paper only proposed that assistance be provided in respect of an activity's direct emissions and for the indirect emissions associated with its use of electricity. The White Paper expands this list to include emissions from the use of steam, and emissions associated with the extraction and production of natural gas and its derivatives such as methane and ethane when used as a feedstock.

Fourth, stakeholders pointed out that the use of a short period of data (the Green Paper proposed two years) for eligibility assessment may lead to non-representative results, given variations in commodity prices. The Government has thus decided to use a longer time series of data: four and a half years from 1 July 2004 to 31 December 2008, for the EITE activity eligibility assessment.

Fifth, the Green Paper suggested that the rate of assistance provided to EITE entities should decline to keep the share of permits provided to EITE industries broadly stable over time. The White Paper confirms that the rate of assistance to EITE industries will decline over time. The rate of decline—the carbon productivity contribution of the EITE sector—will be set at 1.3 per cent which is broadly in line with the rate of reduction in the national cap for the 5 per cent below 2000 trajectory. This is likely to imply that the share of permits provided to EITE industries will increase over the first 10 years of the Scheme. The application of the carbon productivity contribution to EITE industries partly reflects the expectation that these industries, like other areas within the economy, will reduce the emissions intensity of their

operations. (Historically, EITE industries have achieved reductions their emissions intensity—this trend is likely to continue.) In the event of global agreement five years’ notice would be given to withdraw assistance.

Finally, in the Green Paper the Government did not propose an ‘electricity allocation factor’ that would determine how many tonnes of emissions would be included in the allocation baseline for every megawatt hour of electricity consumed. The purpose of the allocation in respect of electricity is to offset, in part, the increase in electricity costs associated with the Scheme. The White Paper sets this electricity allocation factor at 1t CO₂-e per megawatt-hour. The electricity factor has been determined on a relatively generous basis.

Assistance to emissions-intensive trade-exposed industries

The Government will provide assistance to emissions-intensive trade-exposed industries to reduce the risk that industries will relocate offshore due to competition from countries without carbon constraints and to provide general transitional assistance towards a carbon constrained economy.

The combined effect of these measures is to increase the total amount of assistance that will be provided to entities conducting EITE activities. At the start of the Scheme, it is estimated that EITE industries will be allocated around 25 per cent of total carbon pollution permits (equivalent to around 35 per cent if agriculture were included in the Scheme). If EITE industries grow at the same rate as the rest of the economy, this is likely to rise to around 45 per cent by 2020. In contrast, in the Green Paper it was expected that assistance to EITE industries would commence, and remain, at equivalent to around 30 per cent of the total permit pool.

The Government has balanced the concern of the emissions-intensive trade-exposed sector with the fact that more assistance for these sectors reduces the Government’s capacity to assist households and other businesses. Accordingly the rate of assistance per unit of output will be gradually reduced over time.

A common misconception about the EITE framework is that it provides a ‘cap on growth’ for EITE activities. This is not, and never has been, the case. In both the Green and White Paper formulations, new entrant or brownfields expansions are entitled to the same rate of EITE assistance as existing entities, the rate of assistance is pre-specified based on the initial assistance rate and the carbon productivity contribution. Given new entrants’ access to the latest technological developments, this is likely to present them with an advantage compared with their incumbent rivals, unless the incumbent also invest in upgrading their plant. No adjustment will be made to the rates of assistance for either new or existing entities conducting EITE activities to account for these new entrants. All allocations will be made on the basis of production levels. This means that if an individual EITE entity’s production doubles, then the number of permits that it receives will also double.

Allowing for growth

Growth in existing production and new investments will receive assistance at the same rate. The assistance program provides for the growth of the emissions-intensive trade-exposed sector. If output from the emissions-intensive trade-exposed sector doubles, then the allocation of permits will also double.

The mechanics of the EITE assistance package is set out in table below.

Table E.2: Summary of EITE assistance

Feature	Policy
Form of assistance	Allocation of permits at the start of each compliance period Based on individual entity's previous year's level of production Upon closure, must relinquish permits for production that did not occur in that year
Basis of assistance	Provided to new and existing entities undertaking eligible EITE activity prescribed in regulations
Scope of assistance	Direct emissions covered by the Scheme Scheme related cost increase for electricity and steam use Scheme related cost increase for upstream emissions from natural gas and its components (e.g. methane and ethane) used as feedstock
Eligibility for assistance	Eligibility of activity based on an assessment of all entities conducting an activity Trade exposure assessed through quantitative and qualitative tests Emissions intensity assessment based on average emissions per million dollars of revenue or emissions per million dollars of valued added Time period for assessment: <ul style="list-style-type: none"> emissions data: 2006-07 to 2007-08 revenue/value added data: 2004-05 to the first half of 2008-09
Initial rates of assistance	90% for activities with emissions intensity of at least 2000t CO ₂ -e/\$m revenue or 6000t CO ₂ -e/\$m value-added 60% for activities with emissions intensity between 1000t CO ₂ -e/\$m and 1999t CO ₂ -e/\$m revenue or between 3000t and 5999t CO ₂ -e/\$m value-added
Carbon productivity contribution	Initial rates of assistance will be reduced by a carbon productivity contribution of 1.3 % per annum
Allocative baselines	Allocative baseline for activity based on historic industry average level of emissions per unit of production for all entities conducting activity Electricity allocation factor set at 1t CO ₂ -e per MWh nationwide, may be adjusted in respect of existing large electricity supply contracts Natural gas feedstock allocation factor set state by state
New entrants	New entities conducting an existing EITE activity will receive the same assistance as existing entities conducting the activity Activities new to Australia will be able to apply for EITE eligibility -- assessment and baselines made on the basis of international best practice Allocations to existing entities conducting EITE activities will not be adjusted for allocations to new entrants
Quantum of assistance	Government expects allocations to EITE sector to be around 25% initially (35% including agriculture), increasing to around 45% by 2020
Review of assistance	EITE assistance program to be reviewed by independent body at each five year review point, or at request of Minister Review would consider: <ul style="list-style-type: none"> inclusion of additional activities in light of commodity price changes and expansions in Scheme coverage consistency of EITE program with overall rationale and principles existence of broadly comparable carbon constraints applying internationally Five years' notice of any changes to EITE assistance program to be provided, unless required for compliance with Australia's international trade obligations

The Government has decided that the EITE assistance program will be reviewed at each five yearly review or at another date at the request of the responsible minister. The intent of the EITE assistance program review will be to provide advice to Government on fine tuning the assistance program. In reaching conclusions, the review will be expected to consider issues such as the actual experience with the Scheme, international developments—including the extent to which major partners or competing countries have introduced carbon constraints. The review will advise as to whether modifications should be made to the EITE assistance program, including whether assistance should be withdrawn.

The Government has also decided to include a provision that, once the Scheme has commenced, firms may make representations to the Government to request that the Government commission the Productivity Commission to undertake an assessment of the Scheme impact on their industry. The Government will not necessarily refer all requests to the Commission; it will take into account the nature and details of the request.

Strongly affected industries

This White Paper confirms the position in the Green Paper that only coal-fired electricity generation will receive support as a strongly affected industry, as this sector:

- is not trade-exposed
- is emissions intensive (exceeding the thresholds for emissions intensity used for EITEs)
- includes some entities that are emissions-intensive compared with their competitors, such that they cannot pass on carbon costs, and so could experience significant losses in asset value
- has significant sunk capital costs
- does not have significant economically viable abatement opportunities available to them.

Some coal-fired electricity generators are unlikely to be able to pass on their full carbon costs, because they are constrained by competing generators with a lower emissions intensity. As the carbon price rises, the competitive position of the most emissions intensive coal-fired generators is reduced, resulting in margin compression and lower generation volumes, reducing profits. This is likely to lead significant impacts on the asset values of some coal-fired electricity generators.

Estimating the impact of the Scheme on individual power stations is inherently difficult. It requires both an estimation of what will occur under the Scheme, and also what would have occurred in the absence of the Scheme. These estimates are sensitive to the assumptions used. Modelling undertaken for the Government has indicated that some coal-fired generators could experience significant reductions in their profitability, with the most emissions-intensive generators likely to be the most adversely affected.

In recognition of this impact, and to ameliorate the risk of adversely affecting the investment environment in the Australian electricity generation sector, the Government will provide a once-and-for-all allocation of permits to the most emissions-intensive electricity generators under the Electricity Sector Adjustment Scheme. The Government has decided to provide a fixed administrative allocation of permits, delivering assistance of around \$3.9 billion to the

most emissions-intensive coal-fired generators based on an initial carbon price of \$25 per tonne. These permits will be distributed to each eligible generator over the first five years of the Scheme. The amount of assistance for each generator will be determined up front, before Scheme commencement.

Not all coal-fired electricity generators will receive assistance, since not all generators are likely to experience significantly adverse effects. Assistance will be determined in relation to the historic energy output of the power station between 1 July 2004 and 30 June 2007, and the extent to which the generator's emissions intensity exceeds the 'threshold' level of emissions intensity of 0.86 t CO₂-e/MWh generated, which is the average emissions intensity of all fossil-fuel based generation. These factors represent simple and transparent mechanisms to deliver appropriately calibrated support to those most likely to be affected by the Scheme.

A number of stakeholders raised concerns that allocating permits to electricity generators would allow them to earn windfall profits. The quantum and targeting of assistance has been designed to avoid this outcome. However, to ensure that assistance does not lead to windfall gains, a review will be held in 2013 to determine whether generators in receipt of ESAS assistance are likely to earn windfall profits, taking into account actual and forecast net revenues, compared to those predicted when assistance was originally estimated. Where the regulator finds that windfall gains are likely, it can make a recommendation to the minister to withhold all or part of the last two years of assistance. A finding by the regulator that windfall gains are likely may be challenged in the Administrative Appeals Tribunal.

Impacts of the Scheme on energy security

A number of generators argued that assistance was essential to avoid threats to the security of electricity supply.

However, the Government considers that the combination of the commercial and regulatory features of Australia's electricity markets, combined with other Scheme parameters such as the gradual reduction in emissions imposed by the medium term target range, unlimited access to certain international emissions credits, and a price cap, will be sufficient to ensure that energy security will be able to be maintained during the transition to lower emissions technologies.

The energy market bodies - the market operator (the National Electricity Market Management Company, NEMMCO), the market rule maker and policy adviser (the Australian Energy Markets Commission - AEMC) and the market regulator (the Australian Energy Regulator—AER), considered the broader Scheme design and the ESAS package and concluded that the risks to energy security have been significantly mitigated. The AER noted that they consider the risks of Scheme-related plant shutdown are low. The ESAS assistance was considered an important mitigating factor, with the AEMC commenting that the exogenous contribution to capital of \$3.9 billion, targeted at the most emissions-intensive plant, significantly reduces financial risks that might impact on operational decisions by generators.

However, to provide additional assurance against the risks of premature withdrawal of capacity and consequent risks to energy security, the allocation of permits to coal-fired generators will be conditional on the recipient retaining the same level of generation capacity as at 3 June 2007, unless the relevant market operator assesses that retiring the capacity would not cause or add to a reserve capacity shortfall during the subsequent two year period.

Assistance to emissions-intensive coal-fired electricity generators

The Government will provide assistance to emissions-intensive coal-fired electricity generators to support a positive investment environment in the electricity sector.

Assistance will be targeted at the most emissions-intensive generators as they are unlikely to be able to pass on the full costs of the permits they must buy.

The assistance is ‘once and for all’, so will not compromise the environmental objective of the Scheme as generators will need to allow for the full carbon price when deciding whether to generate and sell electricity into the market.

The Government has consulted with the three energy market bodies who have considered the broader Scheme design and the ESAS package and concluded that the risks to energy security have been significantly mitigated. The Australian Energy Regulator noted that they consider the risks of Scheme-related plant shutdown are low. The ESAS assistance was considered an important mitigating factor, with the Australian Energy Market Commission commenting that the exogenous contribution to capital of \$3.9 billion, targeted at the most emissions-intensive plant, significantly reduces financial risks that might impact on operational decisions by generators.

Transforming the energy sector

An enormous challenge lies ahead to transform Australia’s energy sector. The Scheme will play a major role, creating powerful commercial incentives to avoid traditional high-pollution solutions and to adopt low-pollution alternatives. However, the scale of the transformation is so large, the barriers to change are so high, and the imperative to change so pressing, that additional measures are required.

The Government is driving the transformation of the energy sector through a range of measures supporting renewable energy and carbon capture and storage.

Renewable generation will play a key role in the future of Australia’s energy supplies. The Renewable Energy Target requires 20 per cent of Australia’s electricity to be sourced from renewable generators by 2020. This will require the rapid, large scale deployment of renewable technology, and will significantly reduce the emissions intensity of Australia’s electricity supply.

Renewable energy is being further supported through the \$500 million Renewable Energy Fund, which will help to reduce the cost of demonstrating and deploying key energy technologies that may play a critical role in energy supply and security over the next few decades.

In the longer term, coal-fired generation will be able to play a major role in Australian and global energy markets provided its emissions intensity can be dramatically reduced. Carbon capture and storage (CCS) is one key technology that could allow coal to continue to play a major role in the world’s energy supplies in a carbon constrained environment.

The Government recognises that ongoing support will be needed to drive the development and deployment of CCS technology internationally. To this end, the Government has already

made substantial financial commitments to promote CCS technology. This funding will have the corollary benefit of assisting Australia's coal-fired generation industry, and the regions in which they are located, to adjust to the long term impacts of the Scheme.

In September 2008, the Australian Government announced the Global Carbon Capture and Storage Initiative, and a proposal to fund up to \$100 million per annum towards a new Global CCS Institute. This initiative will help coordinate and drive the concerted global effort called for by global leaders. The Government is also supporting a range of CCS related projects with key international partners, including China, through the Asia-Pacific Partnership on Clean Development and Climate.

This is on top of existing funding programs, such as the provision of \$500 million over eight years to support the National Low Emissions Coal Initiative through the National Low Emissions Coal Fund.

Further, the Australian Government is enabling offshore CCS projects through a new legislative framework, clarifying rights and responsibilities in this area, the *Offshore Petroleum Amendment (Greenhouse Gas Storage) Act 2008*, which passed in late 2008.

Support for both CCS and renewable energy will have important implications for regional development and jobs. Funding for CCS and the reduction of coal mine methane helps foster a sustainable future for coal mining regions and workers. Many renewable energy projects will also be regionally based.

Household assistance

Carbon costs will be incorporated in the prices of goods and services, and will ultimately be borne by consumers. The Government has recognised this impact, and is providing a substantial package of measures to help households adjust to the impacts of the Scheme. The total size of this assistance package is estimated to be \$6.0 billion in 2011-12.

Impact on households

Under the scheme the permit price will be determined by the market. Assistance for households has been based on an assumed carbon price of \$25 (nominal) in 2010-11. A permit price of \$25 is broadly consistent with an emission target of 5 per cent below 2000 levels by 2020. The scheme will affect Australian households, but the impact will be modest. At a carbon permit price of \$25, the cost of living is estimated to increase by 1.1 per cent in 2010-11.

To the extent that households reduce their consumption of goods whose relative prices have risen and increase their consumption of goods and services whose relative prices have decreased, then the real impact on households would be expected to be lower.

The carbon price will have the greatest impact on emissions-intensive goods, such as electricity, gas and other household fuels. Electricity prices are estimated to increase by around 18 per cent and gas prices by 12 per cent. Across all households, this would lead to an average increase in spending of \$4 per week on electricity and \$2 per week on gas and other household fuels.

Household assistance measures

In the Green Paper, the Government made a range of commitments to assist low- and middle-income households. These commitments will be honoured so that:

- pensioners, seniors, carers and people with disability will receive additional support, above indexation, to fully meet the expected overall increase in the cost of living flowing from the Scheme
- low-income households will receive additional support, above indexation, to fully meet the expected overall increase in the cost of living flowing from the Scheme
- middle-income households will receive additional support, above indexation, to help meet the expected overall increase in the cost of living flowing from the Scheme. For middle-income families receiving Family Tax Benefit Part A, the Government will provide assistance to meet at least half of those costs
- low- and middle-income working households will also receive a tax cut to assist with the expected overall increase in the cost of living flowing from the Scheme
- motorists will be protected from higher fuel costs from the Scheme by ‘cent-for-cent’ reductions in fuel tax for the first three years.

Key features of the household assistance package are:

- pensioners, seniors, carers and people with disability will receive a 2.5 per cent pension increase (including upfront indexation) an increase of around \$382 for singles and \$320 for each member of a couple, based on current arrangements
- self-funded retirees will receive an upfront increase in the Seniors Concession Allowance of around \$382 for singles and \$320 for each member of a couple, based on current arrangements
- recipients of allowance benefits will receive an increase of 2.5 per cent (including upfront indexation) an increase of up to \$307 for singles, and up to \$276 for each member of a couple (based on current Newstart Allowance arrangements—they will be different for other allowance type income support payments)
- low and middle income families will receive one or a combination of:
 - an increase of \$390 in the Low Income Tax Offset
 - an increase in the maximum rate of the Family Tax Benefit Part A of 2.5 per cent (including upfront indexation) an increase of \$124.10 per child (child aged 0-12 years) and \$156.95 per child (child aged 13-15 years), based on current arrangements
 - an increase in the base rate of the Family Tax Benefit Part A of \$115 per child (child aged 0-17 years) and \$140 per child (child aged 18-24 years), based on current arrangements

- an increase in Family Tax Benefit Part B of 2.5 per cent (including upfront indexation) an increase of \$98.55 per family (child aged less than 5 years) and \$73 per family (child aged over 5 years), based on current arrangements
- an increase of \$150 in the Dependency Tax Offsets
- a \$500 transitional payment per adult for low-income households and others who can show they will not be assisted in accordance with the Government's commitments.
- around 89 per cent of low-income households (or 2.9 million households) will receive assistance equal to 120 per cent or more of their cost of living increase
- around 97 per cent of middle-income households will receive some direct cash assistance. Around 60 per cent of all middle-income households (or 2.4 million households) will receive sufficient assistance to meet their cost of living increase.

Each year, the Government will review the adequacy of the household assistance package in the context of the Budget.

Fuel tax adjustment arrangements

In the Green Paper, the Government committed to cutting fuel taxes on a cent-for-cent basis to offset the initial price impact on fuel associated with the introduction of the Scheme and to assist certain businesses. To honour this commitment the Government will cut fuel taxes based on the effect of pricing diesel emissions and review the adequacy of the cut every six months for three years. At the end of the three years the adjustment mechanism will be reviewed. Reductions in fuel tax made during this transition period will become permanent after three years.

The Government will also introduce a new 'CPRS fuel credit' payment equal to the fuel tax cut to agriculture and fishing businesses for three years and to heavy on-road transport businesses for one year. A credit will also be provided to compressed natural gas (CNG) and liquefied natural gas (LNG) that are predominantly used in Australia by heavy transport—the credit for these fuels will be provided for one year (as for other heavy transport). A credit will also be provided to liquefied petroleum gas (LPG) for three years. The credits for LPG, CNG, and LNG will be provided at rates that reflect the lower emissions of these three fuels. These measures will be reviewed at the time that each of these measures is due to cease. The total estimated cost of the fuel tax measures is \$2.4 billion in 2010-11.

Interactions with the Pension Review and the Review of Australia's Future Tax System

The household assistance package intersects with two existing reviews: the Australia's Future Tax System Review (AFTS), and the Pension Review.

To guide development of the household package, the Government sought advice from the AFTS Review Panel to minimise policy complications and possible constraints on future reform directions. Its guiding principles helped in designing the assistance package.

In the event that any future changes to the tax and transfer system alter the mechanisms for delivery of direct household assistance, the durability and amount of assistance provided to low- and middle-income households will be preserved.

Energy efficiency

By becoming more energy efficient, households can reduce the cost impacts of the Scheme. Prior to the commencement of the Scheme, the Government will deliver household energy efficiency initiatives building on existing programs to help households do their bit to tackle climate change and reduce energy bills.

Additional assistance for industry, workers and communities

The Government recognises that the need for adjustment assistance is broader than for the EITE industries, coal-fired electricity generators and households. There is a need for information and practical assistance in changing business practices across a range of industries.

Transforming Australia's economy to a low carbon future will create new opportunities for some regions and groups of workers, but pose risks for others. The challenge will be to help transition regions and workers into the sustainable jobs of Australia's low carbon future. The Government will provide the assistance necessary to promote such a smooth and equitable adjustment.

Community sector organisations will also need assistance to manage the costs of the Scheme to continue to conduct their activities for the benefit of the community.

Climate Change Action Fund

The Government will establish a \$2.15 billion Climate Change Action Fund over five years to smooth the transition for businesses, community sector organisations, workers, regions and communities to an operating environment that includes a price on carbon. An additional \$300 million will be provided as part of the coal adjustment stream.

The Fund will comprise four streams of activity in the box below.

Climate Change Action Fund streams of activity

Stream 1: Information

This stream will focus on informing business and community service organisations about the operation of the Scheme and how to manage the expected financial impacts. It will also assist to address information failures that impede the uptake of low emission practices and processes and energy efficiency opportunities.

Stream 2: Investment in Energy Efficiency and Low Emissions Technologies

This stream will comprise three measures to provide funding for low emission technologies and processes and high energy savings projects:

Small Business Capital Allowance to assist investment in energy efficiency enhancing equipment (e.g. hot water, insulation, lighting, motor and drives, combined heat and power, heating, ventilation and air conditioning, and refrigeration equipment) that meets established energy saving criteria. Priority will be given to those small businesses that are not eligible for other forms of assistance.

Community Organisation Capital Allowance to provide small community organisations with assistance to invest in energy efficiency equipment that meets established energy saving criteria.

Innovation in Climate Change to provide competitive grants funding for low emission technologies, production methods, supply chain improvements or products; and high energy savings projects with long pay back periods. Priority will be given to those businesses that are not eligible for other forms of assistance recognising or receive the lower rate of EITE assistance recognising that there may be other situations where assistance is warranted.

Stream 3: Structural Adjustment Provision for Workers and Communities

The third CCAF stream will provide structural adjustment assistance in the event that workers and communities are disproportionately imposed by the introduction of the Scheme.

The Government will closely monitor the impact of the Scheme on workers, communities and regions and stands ready to provide assistance where a clear identifiable and significant impact arises or is highly likely to arise as a direct result of the Scheme.

Stream 4: Coal Sector Adjustment

Coal mine operations with high fugitive emissions have been identified as an industry sub-sector that will not be eligible for other forms of Scheme assistance. Adjustment assistance of up to \$250 million over 5 years will be provided to affected coal mining operators to promote emissions abatement. A further \$500 million over five years will be provided as direct assistance to gassy coal mines to assist them adjust while they explore abatement opportunities.

A stakeholder Consultative Committee comprising business, environmental and community stakeholders will be established to provide their advice to Ministers about the detailed design and implementation of activities under the Climate Change Action Fund. The committee will also provide their perspectives and advice to Ministers about the operational aspects of the regulator of the Scheme. The committee is expected to be convened early in 2009 and to continue until the Scheme commences, at which time consultative arrangements will be reviewed to ensure an appropriate focus on Scheme operation to meet changing needs. The committee will be separate from the independent expert advisory committees which will be formed to undertake strategic reviews of the Scheme at least every five years.

Scheme governance and implementation

The guiding principle that has been used to design governance arrangements for the Scheme is to provide as much certainty and predictability for regulated entities and the market as is practicable, while retaining an appropriate degree of flexibility for the Government to adjust the Scheme in response to changed circumstances.

The Scheme will be established by legislation and associated regulations. These will set out key scheme features, such as the medium-term target range, scheme caps, scheme coverage, rules for permit allocation, penalties for non-compliance and the safety valve.

The administration of the Carbon Pollution Reduction Scheme, the National Greenhouse and Energy Reporting System, and the Renewable Energy Target will be combined under a single independent regulator. Integration of these functions is expected to improve regulatory outcomes, streamline administration of related legislation and reduce regulatory burdens. Key functions of the regulator in relation to carbon pollution include enforcing compliance, maintaining the registry of domestic and international units, auctioning permits, and administering the permit allocation rules set out in legislation and regulations.

An independent expert advisory committee will be convened to conduct strategic reviews of the Scheme, with the first review to be completed in 2014. The advisory committee will be required to undertake public consultation. Each report will be tabled in parliament and the Government will be required to table its response to any recommendations made by the committee. 'Care and maintenance' reviews may be required in addition to these regular reviews, especially in the early years of the Scheme, to assess the operation of administrative arrangements.

The Government recognises that good scheme design must be underpinned by effective implementation. To minimise implementation risks, preparatory work to establish the regulator has already commenced. An interim regulator will be in place in the first half of 2009 to ensure key personnel and systems are in place well in advance of scheme start. Extensive communication with stakeholders will continue in the lead-up to Scheme start, to ensure that liable entities are ready to comply with the Scheme. A national registry is already under development and is expected to be fully operational in the first quarter of 2010.

The Australian Government expects to receive \$11.5 billion in revenue relating to pollution permits in 2010-11, and \$23.5 billion over the forward estimates. Every cent of this will be used to help households and businesses adjust to the scheme. The net impact on budget, taking into account assistance provided, will be neutral over the forward estimates.

(Appendix E discusses the net impact of the scheme on the fiscal balance and underlying cash balance in more detail.)

Table E.3: Impact on fiscal balance of the Carbon Pollution Reduction Scheme and Related Measures

	2008-09 \$b	2009-10 \$b	2010-11 \$b	2011-12 \$b
Revenue from the issuing of permits			11.5	12.0
Households Assistance Measures				
Assistance for Low and Middle Income Households			-3.9	-6.0
Fuel Tax Adjustment			-2.4	-2.0
Industry Assistance Measures				
Assistance to Emissions-Intensive Trade-Exposed Industries			-2.9	-3.1
Assistance to Strongly Affected Industries			-0.7	-0.7
Climate Change Action Fund		-0.3	-0.7	-0.7
Net Impact of Revenue and Assistance Measures		-0.3	0.8	-0.5
Resourcing of the CPRS Regulator	*	*	*	*

* Final costs will be published in the 2009-10 Budget.

Next steps

The White Paper is the foundation on which an ongoing response to climate change will continue to develop. Drafting for legislation to enact the Scheme is under way, and an exposure draft is expected to be released for public comment in late February 2009. Following public comment, the Government intends to introduce the relevant bills into the Australian Parliament in the winter session of 2009. Following successful passage of the legislation, it is expected that the Scheme will begin on 1 July 2010.

Design of the expanded national Renewable Energy Target is also well under way, and draft legislation is planned to be released for public comment in December 2008. Legislative and regulatory amendments to implement the design of the Renewable Energy Target are expected to be in place by mid- 2009, with the revised targets commencing from 2010.

Part of the Climate Change Action Fund will be rolled out before the Scheme commences to better assist Australia to prepare for the onset of a carbon price. Additional measures will also be developed to assist the land sectors contribute to reducing emissions until such time as they are covered by the Scheme and to transition into the Scheme at a later date.

There is no single solution to the global problem of climate change.

The costs of inaction on climate change are already beginning to be felt, and there is no case to delay any longer. Despite the economic challenges of today, the Australia Government will continue to take strong and decisive action on climate change because it is in Australia's economic interest.

About this White Paper

This White Paper discusses major elements of the Government's strategy for combating climate change. It sets out the Government's policy in relation to:

- a medium-term target range for national emissions
- the design of the Carbon Pollution Reduction Scheme
- a range of complementary and supporting measures for households and industry.

The positions in this White Paper represent the culmination of a number of processes and intense national policy debate that have occurred over the course of several years. These processes, and stakeholder views, have informed the Government's policy positions.

In July 2008, the Government released a Green Paper on the design of the Carbon Pollution Reduction Scheme. Over 1000 submissions were received in response. More than 2400 people attended 18 public consultation sessions and workshops held in capital cities and regional areas. More than 260 companies attended technical workshops and meetings. Six industry and non-government roundtables were held with representatives from 45 organisations. The extent of the response to the Green Paper confirms the depth of the Australian public's concern about climate change.

Having taken this feedback into account, this White Paper variously confirms, elaborates on, and modifies the proposals contained in the Green Paper. The Green Paper itself took into account the work of the former Prime Ministerial Task Group on Emissions Trading, and the National Emissions Trading Taskforce; both of these processes were, in turn, assisted by the input of hundreds of stakeholders.

In September 2008, the Government received the Final Report of the Garnaut Climate Change Review. The Garnaut Review was commissioned in April 2007 by the eight state and territory governments and then Leader of the Opposition. The Australian Government joined the Review following the election in November 2007 of the current Government. This Review assessed the impacts of climate change on Australia and the effects of international action to combat climate change, and made a range of policy recommendations on medium term national emissions targets for Australia.

The Government has also released the results of the modelling undertaken by the Treasury, published in October 2008 as *Australia's Low Pollution Future: The Economics of Climate Change Mitigation*. This modelling exercise assessed the costs of achieving different national emissions cumulative targets.

The scope of the White Paper is broader than that of the Green Paper. While the Green Paper focussed on the design of the Scheme, the White Paper also outlines in more detail the science of global climate change and discusses Australia's role in a global solution, the selection of the national medium-term target and trajectory, and a range of complementary measures that will smooth the transition to a lower-carbon economy. It provides the Government's detailed policy positions on the Scheme, and outlines next steps in its development and implementation.

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- i Official Correspondence, 28 November 2008
 - ii R Garnaut, *The Garnaut Climate Change Review: Final report*, Chapter 12.
 - iii R Garnaut, *The Garnaut Climate Change Review: Final report*, Chapter 11.
 - iv Department of Climate Change, *Tracking to the Kyoto target: Australia's greenhouse emissions trends 1990 to 2008-2012 and 2020*, Commonwealth of Australia, 2008.