### Box 4.1. **A new approach to climate change**

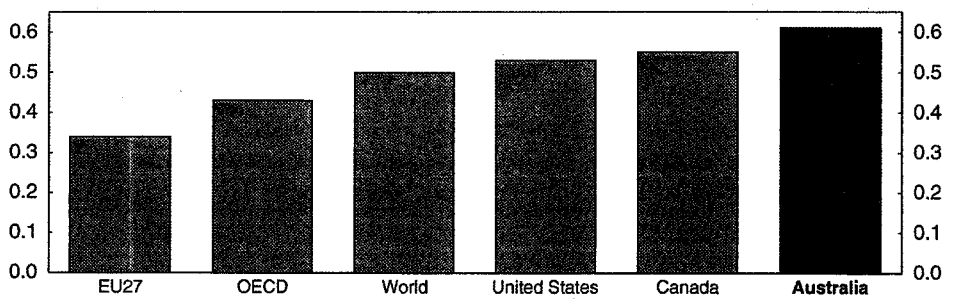
Keeping its electoral promise, the new federal government has reshaped climate change policy by ratifying the Kyoto Protocol and committing to reduce greenhouse gas (GHG) emissions by 60% from the 2000 level by 2050.

In the short term, this policy change, in particular the Kyoto Protocol ratification, will have a limited impact beyond its important symbolic effect underlining the political commitment to contribute to the global efforts to combat climate change. Australia is on track to meet its Kyoto target, which requires emissions to remain below 108% of their 1990 level between 2008 and 2012. In 2007, they reached 106% of this level. In the longer term however, reducing GHG emissions may well be more challenging than in most other OECD countries (Banks, 2008).

The structure of the economy has been shaped by the abundant availability of low-cost fossil fuels, which, for instance, implies a heavy reliance of electricity generation on coal (80% in 2005). The carbon dioxide ($CO_2$) emissions per unit of output are high in international comparison (Figure 4.4). Emissions have also increased swiftly in the main industries since 1990. Their moderate average growth is due to a one-off offset provided by a land-clearing ban. If one excludes this measure, emissions have risen by about 35% since 1990, and by as much as 50% in the energy sector.

Figure 4.4. **Carbon dioxide emissions from fuel consumption**

Kilogrammes of $CO_2$/US dollar, 2005[1]




StatLink http://dx.doi.org/10.1787/472215773836

1. Using 2000 prices and purchasing power parities.

*Source:* IEA (2007), *$CO_2$ Emissions from Fuel Combustion, 1971-2005*, International Energy Agency, OECD Publishing/IEA.

Australia could also be more exposed than many other countries to the consequences of climate change. These can already be felt in the reduction of water supply due to the severe drought (Chapter 5). The small share of the country in global emissions (less than 1½ per cent, which is however comparable to more populated countries like France or the United Kingdom) means that its contribution to abatement will only have a significant impact if the major emitting countries take similar measures. As the benefits of climate change policy are independent from their costs on the Australian economy, it is important to design the policy carefully to avoid unnecessary costs.

The government has defined the broad lines of its strategy in a green paper, which takes into account the initial conclusion of an independent report by Professor Garnaut (Australian Government, 2008; Garnaut, 2008). This document and the quantitative analyses underway, which will be published in the coming months, will be used to conduct consultations in the second half of the year, before finalising the details of this strategy at the end of 2008.

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According to the green paper, the main policy instrument will be a national emission trading system, the Carbon Pollution Reduction Scheme (CPRS), which is planned to commence in 2010. The government's decision to largely rely on market mechanisms to reduce GHG emissions is appropriate as it is the best way to minimise abatement costs. The CPRS will have a broad coverage, representing around 75% of total domestic emissions, which will reinforce its efficiency. The more sectors are included, the less the carbon price will have to rise to meet the abatement target and the smaller the overall cost on the economy will be. Agriculture will be initially excluded from the trading scheme, because of practical difficulties to monitor emissions in a cost-effective way, but could be integrated in 2015, if these difficulties can be solved. Currently, farm fuel energy costs are heavily subsidised, which is a disincentive to improving energy use efficiency and reducing greenhouse gas emissions. The government also proposes to include reforestation on a voluntary basis.

The green paper does not provide an emission reduction trajectory. It will be defined at the end of 2008. Modelling work underway will be useful to identify the trade-offs between the economic and environmental objectives and the choice of the appropriate abatement path. Rapid emission cuts upfront may be economically harmful because much of the existing capital stock is long lived while the development of new technologies is likely to be slow. But the planned early start of the CPRS in 2010 is welcome, as it will help to minimise the costs of long-term emission cuts[1] and reinforce Australia's position in the forthcoming international negotiations on climate change. To favour a smooth implementation of the scheme, the government proposes that emission permits could be used in any subsequent year after their acquisition (*i.e.* unlimited banking) and that a limited degree of borrowing from the following year could be allowed to increase flexibility. It also suggested to set each year the caps for the following five years and beyond this period to identify the range within which future caps will be set over 5 to 10 additional years. Finally, a cap on the carbon price should be introduced between 2010/11 and 2014/15, but set at a high enough level to ensure it binds only in exceptional circumstances.

In the green paper, the authorities have indicated their intention to use all revenues provided by the auctioning of the emission permits to help households – especially low-income households – and businesses to adjust to the impact of the scheme and invest in clean energy options. As long as support to households is not directly linked to their actual fossil fuel consumption, they should not affect the relative price changes required to modify their behaviour (Garnaut, 2008). This is the case for instance for increased assistance through the income tax and benefit system. However, the government intention to offset the increase in fuel prices for motorists, at least for the first three years following the introduction of the CPRS, by a cut in fuel excise is counterproductive. The same applies for heavy vehicle road users, who will get a fuel tax cut on a cent-for-cent basis to offset the fuel price increase induced by the CPRS for at least one year, while similar rebates will be granted to the agricultural and fishing industries for three years.[2]

Although allocations of emission permits would progressively move towards 100% auctioning as the scheme matures, the government plans to adopt transitional provisions to assist some sectors to adjust. In addition to the AUD 500 million funding already agreed to promote the development of commercially viable carbon capture and storage technology, the government proposes to provide a limited amount of direct assistance to existing coal-fired electricity generators to reduce the possible impact of higher risk premiums for investments in the electricity generation sector due to some potentially significant declines in asset values induced by the regulatory changes. Free emission permits will also be granted to the most emissions-intensive trade-exposed industries to

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provide transitional support to these industries, and to address the potential problem of carbon leakage. These permits would be provided on the basis of industry average activity emission intensities rather than the intensity of a particular firm and these subsidies would be gradually reduced over time at a pre-announced rate. Nevertheless, it does not seem justified to compensate industries which can pass the cost of permits on to consumers, such as coal-fired electricity generators, unless a compromise is required to create a political constituency in support of climate change policy. The free permits to trade-exposed emission-intensive industries will help their adjustment to the relative price changes, but it is also likely to slow it and to increase the overall economic cost of meeting the emission reduction target.

The government has ruled out the nuclear energy option, but has decided to raise the amount of electricity generated from renewable energy sources from slightly less than 10% currently, to 20% by 2020. Once the CPRS is in place, complementary policies appear warranted in only few specific cases, for instance to promote abatement in sectors not covered or to strengthen research and development to find low-emission technologies, as incentives related to relative price changes may be insufficient. In this regard, the authorities have planned to establish a fund, the Climate Change Action Fund, to assist businesses to develop innovative low emissions processes and energy efficiency-enhancing projects with long payback periods. On the other hand, setting an ambitious mandatory target for renewable energy on top of the future CPRS is likely to distort choices and to increase abatement costs, even though this scheme should replace the multiple state-based systems in place and be phased out over the 2020-30 period. This type of measure is not going to affect the total quantity of emissions, which will be set by the CPRS, but only their mix (Productivity Commission, 2008b). However, to limit cost increases, the renewable energy target uses a mechanism of tradable renewable energy certificates.

Since the climate change challenge is a global issue requiring a global response, it is not in Australia's interest to act in isolation, as recognised by the authorities in the green paper. International trade of permits could also help to cut abatement costs. The authorities are designing their emission reduction plan so as to allow an international linkage with the systems developed abroad in the longer term. This is consistent with their intention to announce by the end of 2008 the quantitative limit on the use of Kyoto units for compliance with the CPRS by liable entities. Similarly, the recent efforts to sign an agreement with Papua New Guinea to reduce emissions from deforestation are also encouraging steps.

1. According to Allen Consulting (2006), these long-term costs could be of the order of 6% of GDP, implying a reduction of annual output growth by 0.15 percentage point until 2050, which is significant but affordable. If the emission cuts were postponed until 2022, the output loss would reach 13%.
2. The government will review these measures after one year for heavy vehicle road users and after three years for the agriculture and fishing industries and households.



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