



Research Brief

New reports, bills and updates of latest research

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Climate Change Bill 2010

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NB: Readers should note that this Research Brief was current at the time of its preparation prior to the conclusion of debate on the Bill by the Victorian Parliament. For further information please visit the Victorian Legislation and Parliamentary Documents website @ <http://www.legislation.vic.gov.au>.

Introduction

The Premier of Victoria, the Hon. John Brumby, introduced the Climate Change Bill 2010 ('the Bill') into the Victorian Parliament on 27 July. The Premier gave the second reading for the Bill in the Legislative Assembly two days later. The main purposes of the Bill are to: establish a target for greenhouse gas emission reductions; facilitate the consideration of climate change in areas of government decision making; promote

collaboration and innovation in the response to climate change by strengthening the role of communities; develop a Climate Change Adaptation Plan; facilitate Victoria's contribution to national and international carbon sequestration efforts; provide for the creation of forestry, carbon sequestration and soil carbon rights; provide for Forestry and Carbon Management Agreements and Carbon Sequestration Agreements; and, provide accessible information to the community on climate change.

The Bill mandates that by 2020 the amount of the state's greenhouse gas emissions will be 20 per cent below the level of emissions in the year 2000. The Bill also amends the *Environment Protection Act 1970* to provide the Environment Protection Authority with the power to regulate greenhouse gas emissions in the state. There are also consequential amendments to some other Acts. The Bill follows the release of the government's White Paper Action Plan on climate change in July 2010 titled, *Taking Action for Victoria's Future*. The contents of the Action Plan are discussed below.

1. Background

Climate Change

In 2007 the Intergovernmental Panel on Climate Change (IPCC) published its Fourth Assessment Report on global climate change, which remains the most comprehensive analysis of the scientific research on climate change yet undertaken.¹ The IPCC concluded that the warming of the planet's surface was unequivocal, and it identified human activity – principally, the release of greenhouse gas emissions - as the main driver of contemporary global warming.

In the period since the publication of the IPCC's Fourth Assessment, climate scientists from across the globe have published new research, which confirms that climate change is occurring, and at a rate that is consistent with, or goes beyond, the upper reaches of the climate projections contained within the Fourth Assessment.² At the end of 2009, the Parliamentary Library Research Service published its second review of recent climate science.³ The three key messages from the Library's report were:

- Global CO₂ emissions continued to rise in 2008, and the concentration of CO₂ in the atmosphere also continued to rise;
- Global average surface temperatures continued to rise – on the current trend the first decade of the 21st century was set to become the hottest on record; and,
- Sea levels continued to rise, with half to one metre of rise projected by 2100.⁴

Recent data from 2010 indicates that these trends are continuing.

¹ See Intergovernmental Panel on Climate Change (2007) *Climate Change 2007 – Synthesis Report, A Report of the Intergovernmental Panel on Climate Change*, IPCC.

² See G. Gardiner & A. Delacorn (2008) *Accelerating Climate Change, Research Paper*, No. 2, 2008, Melbourne, Parliamentary Library.

³ G. Gardiner & A. Delacorn (2009) *Climate Change Update 2009, Current Issues Brief*, No. 1, 2009, Melbourne, Parliamentary Library. Both the 2008 and 2009 papers were prepared with the assistance of Professor Mike Manton from the School of Mathematical Sciences at Monash University.

⁴ Gardiner & Delacorn (2009) *op. cit.*, p. 3.

CO₂ Emissions and Concentration

According to the U.S. National Oceanic and Atmospheric Administration (NOAA) the global concentration of atmospheric CO₂ reached 386.27 parts per million (ppm) in 2009 (up from 384.79 ppm in 2008).⁵ NOAA also presents globally averaged monthly mean data, and in the latest figures available for June 2010, the global concentration of atmospheric CO₂ has exceeded 388 ppm.⁶ At the time of writing, the Carbon Dioxide Information Analysis Center (CDIAC) has yet to release data on global CO₂ emissions for 2009.⁷

Global Surface Temperature

According to the most recent data available from the UK Meteorology Office Hadley Centre and the Climatic Research Unit, the year 2009 was the sixth hottest on record, exceeded only by four other years in the 2000s and one in the nineties.⁸ The decade from January 2000 to December 2009 was the world's hottest decade ever recorded.⁹

In Australia, the Bureau of Meteorology (BoM) has reported that 2009 was the second hottest year since records began. The decade to the end of 2009 was also Australia's hottest decade ever recorded.¹⁰ In recent data from the BoM, it was announced that the 12 months to the end of April 2010 were the hottest 12 months ever recorded for both Victoria and Tasmania. The mean temperature during the 12 months to the end of April in Victoria was 15.36°C, which passed the previous record of 15.25°C between February 2007 and January 2008.¹¹

In 2010, extreme temperatures and heatwaves have occurred in many regions of the world. On 30 July Moscow recorded its highest temperature ever at 39°C, while on the same day Finland recorded its highest national temperature since records began. In the eastern United States and Canada in early July, maximum and minimum high temperatures were exceeded in hundreds of locations, while on 5 July Beijing recorded its hottest July day ever, at 40.6°C.¹²

⁵ P. Tans (2010) 'Globally averaged marine surface annual mean data', Trends in Atmospheric Carbon Dioxide – Mauna Loa, National Oceanic and Atmospheric Administration (NOAA), viewed 9 August 2010, <<http://www.esrl.noaa.gov/gmd/ccgg/trends/>>.

⁶ P. Tans (2010a) 'Globally averaged marine surface monthly mean data', Trends in Atmospheric Carbon Dioxide – Mauna Loa, NOAA, viewed 9 August 2010, <<http://www.esrl.noaa.gov/gmd/ccgg/trends/>>.

⁷ See Carbon Dioxide Information Analysis Center (CDIAC) (2010) 'Global Change Data and Information Products - by Subject', U.S. Department of Energy, Oak Ridge, Tenn., viewed 9 August 2010, <http://cdiac.ornl.gov/by_new/bysubjec.html#carbon>.

⁸ Climatic Research Unit (2010) 'Global Temperature Record', *Information Sheet no. 1*, CRU, University of East Anglia, viewed 9 August 2010, <<http://www.cru.uea.ac.uk/cru/info/warming/>>.

⁹ See NASA Goddard Institute for Space Studies (2010) *Research News 2009*, New York, NASA GISS, viewed 9 August 2010, <<http://www.giss.nasa.gov/research/news/20100121/>>. According to the NASA GISS dataset, 2009 tied for the second hottest year ever recorded, see *ibid*.

¹⁰ Bureau of Meteorology (2010) *Annual Australian Climate Statement 2009*, National Climate Centre, Melbourne, BoM, viewed 9 August 2010, <http://www.bom.gov.au/announcements/media_releases/climate/change/20100105.shtml>.

¹¹ Bureau of Meteorology (2010a) 'Record warmth for Victoria and Tasmania', media release, 3 May, Bureau of Meteorology, viewed 9 August 2010, <http://www.bom.gov.au/announcements/media_releases/ho/20100503.shtml>.

¹² National Oceanic and Atmospheric Administration (NOAA) (2010) 'State of the Climate Global Hazards July 2010', NOAA, National Climatic Data Center, viewed 10 August 2010, <<http://www.ncdc.noaa.gov/sotc/?report=hazards&year=2010&month=7&submitted=Get+Report>>.

In preliminary data just released by NOAA, the combined global average land and ocean surface temperature for the period January-July 2010 was the warmest such period on record.¹³

Sea Level Rise

According to the Archiving, Validation and Interpretation of Satellite Oceanographic data (AVISO) organisation, satellite data shows that global mean sea level rise for the period 1993 to 2009 is 3.26 mm/year. This data indicates that sea level rise is showing no signs of abating.¹⁴

The Copenhagen Conference

International negotiations to address climate change are conducted within the United Nations Framework Convention on Climate Change (UNFCCC), the international treaty which was agreed to in 1992. One of the key agreements to be implemented through the UNFCCC is the Kyoto Protocol, which is due to expire in 2012.¹⁵

Negotiations for a new agreement took place at the UNFCCC Copenhagen summit in December 2009. The Copenhagen Conference concluded on 19 December, and has been widely viewed as a failure.¹⁶ Following twelve days of talks marked by disagreement between developed and developing economies, the conference concluded with a non-binding document titled the *Copenhagen Accord*. The Accord set no binding targets for global emissions reductions beyond those already committed to by participant countries and regions.¹⁷

Carbon Pollution Reduction Scheme

In Australia, the then Rudd Government had made a commitment in 2009 to reduce greenhouse gas emissions by between five and 25 per cent on 2000 levels. The principal mechanism for achieving greenhouse gas reductions was the Federal Government's Carbon Pollution Reduction Scheme (CPRS), which was introduced to the Commonwealth Parliament as a package of bills in May 2009.¹⁸ The CPRS bills were rejected twice by the Senate in 2009. In April 2010, the Federal Government announced that it would be delaying any further action on the CPRS until the end of 2012.¹⁹

¹³ National Oceanic and Atmospheric Administration (NOAA) (2010a) 'State of the Climate Global Analysis July 2010', NOAA, National Climatic Data Center, viewed 10 August 2010, <<http://www.ncdc.noaa.gov/sotc/?report=global>>.

¹⁴ See Archiving, Validation and Interpretation of Satellite Oceanographic data (AVISO) (2010) 'Mean Sea Level Rise', AVISO, Centre National d'Etudes Spatiales, viewed 9 August 2010, <<http://www.aviso.oceanobs.com/en/news/ocean-indicators/mean-sea-level/index.html>>.

¹⁵ United Nations Framework Convention on Climate Change (UNFCCC) (2009) 'Kyoto Protocol', viewed 14 October 2009, <http://unfccc.int/kyoto_protocol/items/2830.php>.

¹⁶ See M. Becker (2009) 'Gunning Full Throttle into the Greenhouse', *Spiegel Online International*, viewed 13 August, <<http://www.spiegel.de/international/world/0,1518,668111,00.html>>; A. Hewett (2009) 'Poorest of the poor ask why Copenhagen failed to listen', *The Age*, 21 December 2009, p. 17.

¹⁷ COP15 Copenhagen (2009) 'A Copenhagen Accord it is', United Nations Climate Change Conference 2009, Denmark – Official Website, viewed 13 August 2010, <<http://www.denmark.dk/en/menu/Climate-Energy/COP15-Copenhagen-2009/Selected-COP15-news/A+Copenhagen-Accord-it-is.htm>>.

¹⁸ See L. Nielson et al (2009) 'Carbon Pollution Reduction Scheme Bill 2009', *Bills Digest*, No. 165, 2008-09, Canberra, Parliamentary Library, pp. 43-44, 66-67.

¹⁹ AAP, Reuters (2010) 'Rudd delays carbon scheme until 2012', *The Age*, 27 April 2010, viewed 13 August, <<http://www.theage.com.au/business/rudd-delays-carbon-scheme-until-2012-20100427-tp29.html>>.

National Renewable Energy Target

In 2009 the Commonwealth Government set the national expanded Renewable Energy Target (RET) for electricity retailers and large electricity purchasers. By 2020, renewable energy sources, such as wind and solar power, must provide 20 per cent of total energy sources for electricity.²⁰ The RET expands upon the previous scheme known as the Mandatory Renewable Energy Target (MRET), which had mandated two per cent of electricity purchases from renewable sources by 2010.

The Victorian Government established the Victorian Renewable Energy Target (VRET) scheme under the *Victorian Renewable Energy Act 2006*. The VRET created a requirement that Victoria's share of electricity consumption from renewable sources be increased to 10 per cent by 2016. Due to the establishment of the expanded Commonwealth RET scheme, the VRET scheme is ending, with transition occurring throughout 2010.²¹

2. Second Reading Speech

In his second reading speech the Premier declared that climate change was the greatest challenge of our generation and that the Bill is 'landmark legislation' for the state and the country, signalling Victoria's leading role on climate change.

The Premier stated the importance of the Bill both for its specific target to reduce greenhouse gas emissions by at least 20 per cent by 2020, compared to 2000 levels (equivalent to a 40 per cent per capita reduction), in addition to its support for the actions and reforms outlined in the Victorian climate change White Paper Action Plan.²² The White Paper Action Plan, titled *Taking Action for Victoria's Future*, presents 10 actions 'to clean up our environment, cut emissions and stimulate new investment in clean energy and technology'.²³

The Premier emphasised that the target to reduce greenhouse gas emissions presents the challenge that within 10 years, a projected 130 million tonnes of carbon dioxide equivalent in greenhouse gases will need to be cut to around 96 million tonnes. He added that this would be achieved through 'energy efficiency, increased use of solar, wind and other renewable energy sources, increased gas and a significant reduction in brown coal generation, improved agricultural practices and carbon sequestration'.²⁴ Notably, among the Bill's provisions outlined by the Premier, are amendments to the *Environment Protection Act 1970* to give the Environment Protection Authority express powers to regulate greenhouse gas emissions.

The Premier reiterated his support for both national and international measures to reduce greenhouse gas emissions adding that the Bill would be immediately reviewed upon the introduction of a national emissions trading scheme. He also charted Victoria's record on tackling climate change and stated that the Bill will help create new economic opportunities in clean energy. Citing the Intergovernmental Panel on Climate Change (IPCC), the Premier informed the House that the IPCC urged developed countries to reduce emissions by 25 to 40 per cent by 2020 (based on 1990 levels), in

²⁰ A. Talberg & J. Tomaras (2010) 'Renewable Energy (Electricity) Amendment Bill 2010', *Bills Digest*, No. 166, 2009-10, Canberra, Parliamentary Library, pp. 3-4.

²¹ See Essential Services Commission (2010) 'Victorian Renewable Energy Target (VRET) scheme', viewed 17 August 2010, <<http://www.esc.vic.gov.au/public/VRET/Overview.htm>>.

²² Victoria, Legislative Assembly (2010) *Debates*, 29 July, Book 10, pp. 2837-2838.

²³ *ibid.*, p. 2838.

²⁴ *ibid.*, p. 2840.

order to avoid dangerous levels of global warming. He acknowledged that while Victoria was taking a significant step, further efforts may be required in the future.²⁵

3. Climate Change White Paper – The Action Plan

Taking Action for Victoria's Future sets out 10 key 'actions', designed to reduce emissions, create new jobs, technologies and markets, and adapt to climate change. According to the government, an Implementation Plan detailing the initiatives and their funding arrangements will follow later this year.²⁶ A brief summary of the actions is presented below.

Action 1 Targets

This action sets out provisions in the Climate Change Bill to be introduced into the Victorian Parliament that legislate for the target to reduce greenhouse gas emissions, establish frameworks for measuring and reporting on climate change actions and embed climate change considerations in government programs and some decision-making. In addition to legislating a target to reduce greenhouse emissions by at least 20 percent by 2020 compared to 2000 levels, the Action Plan states that the Bill will: amend powers under the Environment Protection Act to 'effectively' ban new power stations based on current brown coal technologies; and, amend powers under the Environment Protection Act to regulate greenhouse gases, enabling the setting of a greenhouse gas 'trigger' for large emitters, as well as enabling the regulation of greenhouse gases as part of licensing and approvals.

Other features of the Bill mentioned include: the development by the government of a Climate Change Adaptation Plan every four years; the creation of new arrangements for the ownership, registration and transfer of forestry and carbon sequestration rights; allowing the Climate Communities Program access to increased funding through the Sustainability Fund; allowing the government to enter into Climate Covenants with communities, regions, industry and other stakeholders; mandating that the government report every two years on climate change science and Victoria's progress towards its emissions reduction target; and, immediate review of the Climate Change Act in the event that the Commonwealth introduces a national emissions trading scheme or an economy-wide carbon price.²⁷

Action 2 Clean Energy

Action 2 sets out measures to reduce emissions in the electricity sector in the absence of a national emissions trading scheme. The government states that existing brown coal-fired generators are the largest contributors to Victoria's greenhouse gas emissions. The government has committed to reduce emissions from brown coal-fired generators by up to four million tonnes over the next four years, achieving a total saving of 28 million tonnes by 2020. It has also committed to no new approvals for new coal-fired power stations based on conventional brown coal technologies.²⁸ Further initiatives in this action are: a target emission level of 0.8 tonnes of CO₂ equivalent (per MWh) for new power stations, which is 'broadly comparable to the performance of open cycle gas'; the commitment of \$30 million towards development of a carbon capture and storage (CCS) network 'hub' through the CarbonNet project in the Gippsland

²⁵ *ibid.*

²⁶ Department of the Premier and Cabinet (DPC) (2010) *Taking Action for Victoria's Future: Victorian Climate Change White Paper – The Action Plan*, Melbourne, Victorian Government, pp. 3, 9.

²⁷ *ibid.*, p. 12.

²⁸ *ibid.*, p. 13.

Basin; and, the creation of a Latrobe Valley Advantage Fund to provide resources to create and improve skills in the Latrobe Valley, attracting new industries and jobs and supporting sustainable research and development projects.²⁹

Action 3 Solar

This action commits to making Victoria the 'solar state' through several initiatives that support solar investment at a small, medium and large scale. These include increasing Victoria's electricity supply from large scale solar power to 5 per cent by 2020, approximately 2,500 GWh. The target for 2014 is 500 GWh. This is to be achieved through the introduction of a large scale solar feed-in tariff. The design of the new feed-in tariff 'is subject to resolution of the appropriate legal framework, conditions and pricing, which will involve a consultative process including a Regulatory Impact Statement'.³⁰ It is anticipated that this initiative will result in the construction of between five and ten large plants across northern Victoria.

This action also includes the establishment of a Medium Scale Solar Working Group to develop a model for medium-scale solar energy and a commitment of \$5 million for up to ten solar energy hubs across Victoria to deliver community-based solar power. In addition, the government will re-allocate \$41 million in uncommitted funds within the Energy Technology Innovation Strategy to provide competitive grants for pilot renewable energy plants and technology projects.³¹

Action 4 Homes

Action 4 commits the government to seeing all Victorian homes upgraded to an average energy efficiency rating of five stars by 2020. This household retrofit program is to be achieved through the installation of more efficient appliances, insulation and other physical upgrades, and by behavioural changes. With regard to new homes, the government will implement the Council of Australian Governments (COAG) decision to require all new homes and major renovations to meet a six star minimum energy rating, from May 2011. A further COAG requirement that is planned for 2011 is for disclosure of a home's energy performance when a house is sold or leased. This initiative is subject to a Regulatory Impact Statement.

Other initiatives include: extending the Victorian rebate scheme for installation of solar hot water systems; encouraging an increase in the number of participating households in the GreenPower scheme from 300,000 to 500,000; and, doubling the target of the Victorian Energy Saver Incentive and expanding the list of eligible energy efficiency activities, subject to a Regulatory Impact Statement.³²

Action 5 Business

This action focuses on providing an investment environment that supports business development and the uptake of clean technologies and systems. Initiatives for this action include: expanding the Energy Saver Incentive scheme to include small and medium enterprises; establishing a new Clean Business Fund, which will include partnerships with industry bodies to assist business with information, tools and networks and grants for projects to reduce emissions; developing a *ClimateTech*

²⁹ *ibid.*, p. 14, and see Department of the Premier and Cabinet (2010a) *Taking Action for Victoria's Future: Energy Fact Sheet*, Melbourne, Victorian Government.

³⁰ DPC (2010) *White Paper – The Action Plan*, *op. cit.*, p. 15.

³¹ *ibid.*, p. 16.

³² *ibid.* p. 17, and see Department of the Premier and Cabinet (2010b) *Taking Action for Victoria's Future: Households Fact Sheet*, Melbourne, Victorian Government.

Strategy to position Victoria as a ‘top 5’ global leader in clean technologies and innovative climate solutions; and, expanding the Environment and Resource Efficiency Plan (EREPs) program, a regulatory program that is committed to supporting Victorian businesses to achieve gains in environmental resource efficiency.³³ Further initiatives are included in the government’s fact sheet, *Taking Action for Victoria’s Future: Business and Industry Fact Sheet*.³⁴

Action 6 Farms and Forestry

Action 6 supports Victoria’s agricultural, food and forestry sectors to adapt to a low carbon future and the impacts of climate change. The government commits to creating opportunities in farming, forestry and food via initiatives in voluntary carbon sequestration, offset markets, low emission food products and renewable energy. Initiatives for this action include: establishing the Victorian Carbon Exchange to create an incentive for farmers, the forestry industry, community and government to voluntarily offset greenhouse gas emissions through activities such as, new forest plantations, improved farm practices and soil carbon sequestration, via a central offset purchasing system; and, developing a Victorian Food Strategy to increase the resilience of the state’s food system to climate change, reduce emissions and develop new opportunities in a low carbon economy.³⁵

Action 7 Transport

This action targets transport, which contributes around 16.5 per cent of greenhouse gas emissions. It focuses on investing in the Victorian Transport Plan to take action on electric vehicles, fuel efficiency and low-emission travel options. Initiatives include: reducing emissions from the Victorian Government motor vehicle fleet by 20 per cent by 2015; increasing the use of low emission vehicles, such as electric buses and supporting commercial fleet uptake of low emission vehicles; investing in new bike paths, safe bike lanes and the public bike hire scheme; developing a national fuel efficiency target with the Commonwealth Government and the automotive industry to reduce transport emissions; establishing a new voluntary program offering road users the opportunity to offset their vehicle emissions as part of the registration process; and, doubling the existing \$50 registration discount for hybrid vehicles and including the eligibility of electric vehicles to the discount.³⁶

Action 8 Government

Action 8 commits the government to continue its reform of its own operations and practices, with the intention of setting a national benchmark for greener government. Initiatives under this action include: a commitment by the government to improve energy efficiency by a further 20 per cent across all government buildings by 2018. This follows on from an expected 20 per cent improvement in energy efficiency in government buildings between 2000 and the close of 2011. This is to be achieved through: investment of a further \$100 million in the next stage of the Greener Government Buildings Program to upgrade schools, hospitals and government buildings; investigating the feasibility of installing up to 50 MW of cogeneration in

³³ DPC (2010) *White Paper – The Action Plan*, op. cit., p. 18.

³⁴ See Department of the Premier and Cabinet (2010c) *Taking Action for Victoria’s Future: Business and Industry Fact Sheet*, Melbourne, Victorian Government.

³⁵ DPC (2010) *White Paper – The Action Plan*, op. cit., pp. 19-20, and see Department of the Premier and Cabinet (2010d) *Taking Action for Victoria’s Future: Farmers and Landholders Fact Sheet*, Melbourne, Victorian Government.

³⁶ DPC (2010) *White Paper – The Action Plan*, op. cit., p. 21.

Victoria's existing hospitals; and, increasing the government's GreenPower commitment from 25 per cent to 50 per cent by 2020.³⁷

Action 9 Adaptation

This action supports communities and businesses to manage and adapt to some of the major risks of climate change across Victoria. The government has funded the establishment of the Victorian Centre for Climate Change Adaptation Research (VCCCAR), to inform decision-makers about the potential impacts of climate change and adaptation options.

Initiatives included under this action are: implementing a state-wide Climate Change Adaptation Plan and community-based Climate Change Preparedness Programs that will help small towns identify risks and priorities for climate change adaptation; expanding Community Registers to ensure local health providers can support those most vulnerable in the community in times of heatwave or climate related events; preparing Victorians to anticipate the adverse effects of future floods by investing in flood risk management measures; planning for the coastal impacts of climate change; building climate change considerations into the risk assessments of all new infrastructure projects in Victoria; and, helping to drive a national examination of the role of governments in addressing climate change adaptation through the Council of Australian Governments (COAG).³⁸

Action 10 Climate Communities

Action 10 focuses on expanding Victoria's *Climate Communities* grants program to deliver a range of initiatives across households, businesses, community groups and schools in order for them to take practical action to address climate change in their own communities. Information on the full range of programs, services and incentives are provided via a new Climate Communities web portal. Its key objectives are to support local communities to: reduce emissions; build community resilience in adapting to climate change; and exploring new ideas to help tackle climate change.

The government allocated \$23 million to the program in early 2010 to fund Climate Communities Grants Facilitators and provide grants of up \$50,000 to help community groups undertake action on climate change and fund innovative projects. These facilitators provide expert advice, research, information and assistance with grant applications.³⁹

³⁷ *ibid.*, p. 22. Further initiatives include: Introducing a new target to reduce the Government's motor vehicle fleet emissions by 20 per cent by 2015; upgrading public lighting infrastructure with low carbon technologies through support of the Streetlight Replacement Program and the Victorian Local Sustainability Accord; introducing education on climate change into the curriculum of more schools through the expanded AuSSi Vic program; purchasing offsets from the Victorian Carbon Exchange for all government flights; and, holding a Local Government Climate Change Summit in October 2010, see Department of the Premier and Cabinet (2010e) *Taking Action for Victoria's Future: Government Fact Sheet*, Melbourne, Victorian Government.

³⁸ DPC (2010) *White Paper – The Action Plan*, *op. cit.*, p. 23.

³⁹ The program also includes a state-wide behaviour campaign, *You Have the Power. Save Energy*, to encourage Victorians to adopt a personal energy savings target, see *ibid.*, p. 25, and Department of the Premier and Cabinet (2010f) *Taking Action for Victoria's Future: Climate Communities Fact Sheet*, Melbourne, Victorian Government.

4. Main Provisions of the Bill

The following description of the Bill provides an overview of key provisions. For a full and comprehensive coverage of each of the Bill's provisions Members should consult the Explanatory Memorandum.

Part 1 Preliminary

In section 1 the Bill sets out the main purposes of the legislation as follows:

- (a) to establish a target to reduce Victoria's greenhouse gas emissions;
- (b) to facilitate the consideration of climate change issues in specified areas of decision making of the Government of Victoria;
- (c) to promote collaboration, cooperation and innovation in the Victorian response to climate change by strengthening the role of communities and other measures;
- (d) to provide for a strategic response by the Government of Victoria to climate change through a Climate Change Adaptation Plan;
- (e) to facilitate Victoria's contribution to national and international carbon sequestration efforts;
- (f) to provide for the creation of forestry rights, carbon sequestration rights and soil carbon rights;
- (g) to provide for Forestry and Carbon Management Agreements in relation to private land and Carbon Sequestration Agreements in relation to Crown land;
- (h) to promote transparency and accountability by providing basic, accessible information to the Victorian community on climate change.

Section 3 contains the Bill's definitions, and includes definitions for adaptation, climate change, and greenhouse gas emissions.

Part 2 Emissions Target, Policy Objectives and Guiding Principles

In section 5 the Bill establishes a greenhouse gas emission target, as follows:

- (1) The Minister must ensure that, by the year 2020, the amount of Victoria's greenhouse gas emissions is 20% below the amount of Victoria's greenhouse gas emissions for the year 2000.

Section 6 of the Bill states that the development of government policy will take into account climate change, where relevant, having regard to the following ten objectives:

Contributing to global and national emission reductions; developing energy options for a low carbon future; helping communities and industries to adjust to a carbon price; capitalising on new opportunities emerging from a carbon price; enabling Victoria's communities to capture opportunities with respect to the changing climate and adapt to that changing climate; promoting the resilience of Victoria's natural resources and improving their management; managing risks to Victoria's infrastructure; working in partnership with Victorians to provide the knowledge and information needed; and,

helping to ensure vulnerable communities are not further disadvantaged. The final objective states:

- (j) reducing emissions across the operations of the Government of Victoria and ensuring that climate change is considered in decision making by the Government of Victoria.

Division 3 sets out the six guiding principles, which the Minister must have regard to, in administering section 16 (preparing a climate change adaptation plan) and 17 (reporting on climate change and emissions data). These are as follows.

Section 8 details the first principle, that of informed decision making, wherein, a decision should be based on –

- (a) a comprehensive analysis of the best practicably available information about the potential impacts of climate change that are relevant to the decision under consideration; and
- (b) the potential contribution to Victoria's greenhouse gas emissions of the decision under consideration.

In section 9 the principle of integrated decision making is articulated. Decisions should integrate the competing environmental, economic and other considerations relating to climate change, ensuring that, all relevant issues are taken into account, properly examined, and that measures adopted are cost effective (see section 9(a)(b)(c)).

Section 10 details the principle of risk management, wherein decisions should be based on: the best information available to avoid the impacts of climate change; assessing options with regard to the risk of each; and, managing the risks of climate change impacts transparently (see s. 10(a)(b)(c)). Importantly, section 10(2) states that the lack of a full scientific certainty is not a reason to delay measures to prevent the serious impacts of climate change.

The principle of complementarity is outlined in section 11, and states that decisions of the Victorian Government should complement those of the Commonwealth, including those in relation to an emissions trading scheme and any targets or caps on emissions fixed by the Commonwealth.

The fifth principle, outlined in section 12, is that of equity. The key notion articulated in this section is that today's generation must have regard to both current and future generations in its decision making on climate change. Decisions should have regard to: the current generation increasing capacities within generations for adaptation; increasing the capacities of the vulnerable for adaptation; ensuring the health of the environment is maintained for future generations and impacts are minimised; and, considering the long and short term consequences of decisions (see s. 12(a)(b)(c)(d)).

Finally, section 13 states the principle of community engagement, wherein community involvement in decisions affecting them should be facilitated, including, the provision of information, opportunities for involvement in decisions, and providing adequate consultation (see s. 13(a)(b)(c)).

Part 3 Planning for Climate Change

This part of the Bill includes provisions that address decision making, Ministerial guidelines, a climate change adaptation plan, reporting on climate change and emissions data, and reviews of the Act. Section 14 applies to decision makers (that is, relevant Ministers, Secretaries, authorities, councils, persons) making decisions authorised by the provisions of six Acts specified in Schedule 1 of the Bill (*Catchment and Land Protection Act 1994; Coastal Management Act 1995; Environment Protection Act 1970; Flora and Fauna Guarantee Act 1988; Public Health and Wellbeing Act 2008; and, Water Act 1989*).

Under section 14(2) persons making decisions under the provisions specified must have regard to –

- (a) the potential impacts of climate change relevant to the decision or action; and
- (b) the potential contribution to Victoria's greenhouse gas emissions of the decision or action; and
- (c) any guidelines issued by the Minister under section 15.

Section 14(3) states that for a decision maker having regard to the impacts of climate change the relevant considerations are: biophysical impacts; long and short term economic, health and other impacts; beneficial and detrimental impacts; direct and indirect impacts; and cumulative impacts (see s. 14(3)(a)(b)(c)(d)(e)).

In relation to the potential to contribute to greenhouse gas emissions, decision makers will take into consideration: short and long term greenhouse gas emissions; direct and indirect greenhouse gas emissions; increases and decreases in greenhouse gas emissions; and cumulative impacts of greenhouse gas emissions (see s. 14(4)(a)(b)(c)(d)).

The powers of decision makers to consider other matters or decisions under other Acts, are not limited by the above provisions (s. 14(5)(6)). In section 15 the Minister is granted the power to issue guidelines for decision makers.

Division 2 requires the Minister to prepare a climate change adaptation plan, setting out a risk assessment of the potential impacts of climate change on Victoria's regions, and a statement of the government's priorities and strategic responses for adaptation (s. 16(1)). The first plan under the Bill is to be prepared by 31 December 2012, and a new plan developed every four years subsequent, all of which must be presented to Parliament.

Under Division 3, the Minister must also prepare a report on greenhouse gas emissions, the science and data relevant to climate change, and the extent to which greenhouse gas emissions have been reduced in relation to the base year of 2000 (s. 17(1)). Under section 17(2) the Minister has to ensure that the report sets out –

- (a) an overview and collation of information that is published about estimated Victorian greenhouse gas emissions; and
- (b) a synthesis of the best practicably available climate change science and its implications for Victoria; and

(c) data on observed changes in climate in Victoria; and

(d) any other information about Victoria's greenhouse gas emissions or the science and data relevant to climate change that the Minister considers appropriate.

The first report is to be completed by 31 December 2011, and further reports in every second year subsequent, and each report is to be presented to Parliament.

Section 18 requires the Minister to have conducted an independent review of the Act before 31 December 2015. Section 19 requires the Minister to conduct an immediate review of the Act in the circumstance of a Commonwealth enactment of a national emissions trading scheme.

Part 4 Forestry Rights, Carbon Sequestration Rights and Soil Carbon Rights on Private Land

Part 4 details forestry rights, carbon sequestration rights and soil carbon rights on private land, and also provides definitions for forest carbon right, carbon sequestration right, forestry right, and soil carbon right.

Section 20 details the types of land and carbon that the Part does not apply to, including, un-alienated Crown land or reserved Crown land, various other lands, and carbon owned by the Crown under the *Greenhouse Gas Geological Sequestration Act 2008*.

A forest carbon right is defined in section 21 as: a carbon sequestration right, or a forestry right, or a soil carbon right.

A carbon sequestration right means an exclusive right to the economic benefits associated with carbon sequestered by vegetation, other than vegetation that has been harvested, lopped or felled (s. 22). A forestry right is an exclusive right to plant, establish, manage and maintain vegetation on land; take and deal with any vegetation that has been harvested, lopped or felled, and includes a right of entry to land for that purpose (s. 23). A soil carbon right is an exclusive right to the economic benefits of carbon sequestered underground, excluding carbon stored within plants (s. 24).

Division 2 states that a forest carbon right (that is, one of the three rights outlined above) is an interest in land, but not an easement or right of way (s. 25). Section 26 allows for the creation and transfer of forest carbon rights. Such a right can be created by the execution of an instrument of transfer of the right by the registered owner of the land. Where land is subject to lease, the lessee must consent to the creation of the right (see s. 26(1)(2)).

Instruments of transfer must be in a form approved by the Registrar under the *Transfer of Land Act 1958*, specify each forest carbon right created, and include a statement that the right is created according to the Act (s. 26(3)(4)(5)). The Registrar must not register more than one of each kind of forest carbon right in relation to particular land. Such a registered forest carbon right can be dealt with under the *Transfer of Land Act 1958*, may be transferred for not less than three years, but cannot be varied (s. 26(7)(8)(9)).

Division 3 concerns forestry and carbon management agreements, which may be entered into by an owner of land and the owner of a forest carbon right relating to that

land. Public authorities may also be party to such an agreement. The agreement must state that it is an agreement under the Act, and no more than one agreement can be entered into for the same area of land (s. 27(1)(2)(3)(4)).

Under section 28 the purpose of such agreements is to provide for the imposition of management obligations in relation to the following-

- (a) carbon sequestration by vegetation;
- (b) carbon sequestration underground;
- (c) the management of vegetation.

Under section 29(1) the agreement must specify the following:

- (a) in relation to the harvesting of vegetation—
 - (i) who is entitled to control decisions about the timing and extent of harvesting of vegetation; or
 - (ii) the process for determining how those decisions will be made;
- (b) any obligations agreed to by the parties in relation to the preservation, enhancement or management of vegetation or soil.

An agreement may include other provisions as determined by the parties including, compliance requirements, biodiversity requirements, any prohibitions or restrictions on land use, management provisions, and provisions for the ending of the agreement (s. 29(2)). An agreement may also specify any obligations on the parties. An agreement may also include security conditions requiring a party to the agreement to deposit with a person specified in the agreement, a form of financial or other security as specified, and other requirements (s. 30). Agreements are binding on the parties.

Under section 32, an owner of a relevant interest (defined as a fee simple estate, or leasehold estate, or a forest carbon right) may apply to the Registrar to record the agreement on any folio for land to which the agreement applies. In relation to variations to agreements, section 34 specifies that obligations may be varied with the consent of the parties. However, other matters cannot be varied, including, the transfer or varying of a forest carbon right, or the land to which the agreement applies, or the date on which the agreement ends. An agreement can provide a date for its end, or if no date is specified, the parties can mutually agree to end the agreement (s. 35).

In terms of enforcement of agreements, under section 37, a person bound by an agreement can apply to VCAT to enforce it. VCAT has powers to give and make orders under section 37(2), while section 38 details VCAT's role in disputes involving the ending of agreements.

Part 5 Carbon Sequestration on Crown Land

Part 5 concerns carbon sequestration on un-alienated and reserved Crown land, and any Crown land that is subject to a lease. It does not apply to carbon that is owned by the Crown in accordance with the *Greenhouse Gas Geological Sequestration Act 2008*, or carbon sequestered in an underground geological storage formation (or, an underground geological storage formation) within the meaning of that Act (s. 40(3)). A caveat is provided under section 41, which states that none of the rights created in this

Part in relation to Crown land extinguish native title rights to the extent that they exist in relation to that land.

Division 2 provides for the use of Crown land for carbon sequestration. Under section 42(1) the Governor in Council, on the Minister's recommendation, may make an Order for one or more of the following-

- (a) declare specified Crown land or classes of Crown land to be available for carbon sequestration;
- (b) direct that any forest produce on Crown land be placed under the control and management of the Secretary;
- (c) invite expressions of interest for the use or development of Crown land for carbon sequestration purposes.

The Minister must not make a recommendation unless the Minister is satisfied that the land is suitable for the sequestration of carbon by vegetation or in soil; and, the use of the land for that purpose would not be contrary to the public interest (s. 42(2)). Also, the Minister must not make a recommendation unless the Minister responsible for the Act under which the right to forest produce was granted has consented to the recommendation (s. 42(3)).

Section 43 details the role of the Secretary, who may manage Crown land for the purposes of carbon sequestration; and, do anything that is reasonable and necessary for the purposes of carbon sequestration on Crown land. Subject to section 44, the Secretary holds, manages and controls carbon sequestered on or under un-alienated Crown land for and on behalf of the Crown (s. 43(3)).

Section 44 concerns carbon sequestration on encumbered Crown land, that is, land that is managed or controlled by a public authority or is subject to a lease, licence, instrument or agreement under any other Act. The ownership of carbon on such land is subject to the provisions of the Act under which it is managed, or leased, or licensed, and to the terms of the lease, licence, instrument or agreement (s. 44(2)). In section 44(3) the licensee of a plantation licence granted under Part 3A of the *Victorian Plantations Corporation Act 1993* prior to the commencement of this section of the Bill is entitled to a carbon sequestration right during the duration of the plantation licence.

Division 3 concerns carbon sequestration agreements. Under section 45(1) the Secretary may enter into an agreement in relation to Crown land -

- (a) which is subject to a relevant Act; or
- (b) to which a declaration under section 42(1)(a) applies.

In section 45(2) the agreement must –

- (a) comply with the requirements of this Part; and
- (b) not be inconsistent with the requirements of any relevant law, including requirements relating to the following—
 - (i) the use and treatment of conservation workers within the meaning of the Conservation, Forests and Lands Act 1987;

- (ii) environment protection and conservation of biodiversity;
- (iii) native title and aboriginal cultural heritage.

Under section 45(3) an agreement may only be entered into in relation to reserved Crown land if the use of the land for carbon sequestration would not be inconsistent with the purposes for which the land was reserved.

The Bill details the requirements that may be specified for such agreements by the Secretary, including, their contents, management plans, identification and protection of other uses, water management, and appropriate securities (s. 46). Under section 47(1) a carbon sequestration agreement may-

- (a) grant a person a carbon sequestration right or soil carbon right in relation to Crown land for a specified term; and
- (b) authorise a person to do all or any of the following—
 - (i) access Crown land;
 - (ii) plant and maintain vegetation on Crown land for the purposes of carbon sequestration;
 - (iii) control and exploit carbon sequestered or to be sequestered within vegetation or soil on Crown land;
 - (iv) manage the land for the purpose of carbon sequestration;...

A carbon sequestration agreement may also set out agreements in relation to management objectives, harvesting and ownership of harvested material, and impose obligations on a person in relation to fire management, prevention and suppression on the Crown land to which the agreement applies (s. 47(1)(c)(d)).

An agreement can provide for matters, including, the ending of the agreement, the periodic review of any provisions of the agreement, the manner of its variation, the circumstances in which compensation is payable, and the rehabilitation or reinstatement of land to which the agreement applies (s. 47(1)(e)). However, an agreement cannot alter the ownership of forest produce (s. 47(2)).

Section 48 of the Bill states that a carbon sequestration agreement may include conditions requiring the provision of securities to the Crown.

Section 49 outlines the provisions for orderly planning that may also be included in an agreement, including provisions for the allocation of risk between the Crown and any other party to the agreement; and the responsibility for the performance of obligations affecting the land under any relevant law including obligations with respect to the following—

- (i) fire management, fire prevention and fire suppression;
- (ii) water allocation;
- (iii) biodiversity conservation;
- (iv) mineral resource development and extractive industries;
- (v) compliance with any Code of Practice under any Act or subordinate instrument applying to the land.

Section 50 concerns the provision of notice of an agreement by its proponent, and the various forms this must take, and the bodies, authorities and persons who must be notified. Section 51 prohibits the Secretary from entering an agreement without the consent of any lessee or licensee of the land. Under section 52 the Secretary must

have regard to the following in deciding whether to enter into an agreement in relation to Crown land-

- (a) the requirements of any Commonwealth law relating to the use of Crown land for carbon sequestration;
- (b) the objectives and requirements of any relevant Act;
- (c) the terms of any existing lease, licence or agreement that applies to the land;
- (d) the desirability of preserving other legitimate uses of the land;
- (e) the need to—
 - (i) balance economic, social and environmental considerations relevant to the land;
 - (ii) manage Crown land for multiple purposes;
 - (iii) maximise the value of Crown land, having regard to the objective and principles of ecologically sustainable development;
 - (iv) plan for the sustainable management of water and biodiversity in the relevant catchment;
 - (v) protect persons and property from the risk of fire;
- (f) any economic risks and opportunities associated with setting land aside for carbon sequestration purposes;
- (g) the interests of indigenous groups in the relevant area.

Under section 54 no rights can be assigned under an agreement without the consent of the Secretary. A carbon sequestration agreement can be ended by the Minister giving the parties not less than 180 days notice, or by agreement or further agreement of the parties (s. 55). The Secretary must maintain a Register of carbon sequestration agreements (s. 56(1)), and section 56(2) outlines details to be included.

Division 4 relates to agreements that affect land and concerns fire suppression and prevention, with provisions for these outlined in sections 58 to 61.

Section 62 provides for enforcement under Part 9 of the *Conservation, Forests and Lands Act 1987*.

Part 6 General

Section 63 states that in relation to land the rights created under Parts 4 or 5, are not uses of the land under the *Planning and Environment Act 1987*, or a subdivision of the land under the *Subdivision Act 1988*.

Section 64 concerns regulations, which may be made in relation to the method for calculating Victoria's emissions for 2000, the method for calculating reductions in emissions, and any other matter authorised.

Part 7 Amendments to Environment Protection Act 1970 and Other Acts

Part 7 mostly concerns amendments to the *Environment Protection Act 1970* ('the EPA Act'). Section 66 inserts a new definition into the EPA Act for 'greenhouse gas substance', and an additional definition for 'waste', which is to include 'any greenhouse gas substance...'. Section 67 establishes the power of the EPA to make

recommendations to the Governor in Council for the making of statutory policies and regulations by inserting new section 13(1)(ga)-

- “(i) to regulate the emission of greenhouse gas substances to contribute to Victoria’s greenhouse emissions target under the *Climate Change Act 2010*; and
- (ii) to regulate the emission and discharge of greenhouse gas substances to reduce harm to the environment;”.

Section 68 of the Bill substitutes a new Division 1 in Part IX of the EPA Act. It states that the objects of this Part are to-

- “(a) foster environmentally sustainable uses of resources and foster best practices in waste management to advance the social and economic development of Victoria; and
- (b) facilitate and promote activities that are directed to climate change including the adaptation and adjustment to climate change.”

This section of the Bill also inserts into the EPA Act the same definitions of adaptation and climate change that appear in the Bill in section 3.

Section 69 concerns the creation of climate covenants. A new Division 2 in Part IX is to be inserted into the EPA Act, which allows for the Premier and the Minister (administering the Climate Change Act 2010) to become signatories (with others) to a climate covenant. This can occur if, in their view, the covenant is, or is likely to, facilitate activities or implement measures directed to climate change, or adapting to or adjusting to climate change. The covenant will be published on the internet. A covenant is defined as an agreement under which a person or body undertakes to facilitate activities, or to implement measures, that are directed to climate change, including adapting to or adjusting to climate change.

The Premier and the Minister are not permitted to enter such a covenant unless it is consistent with the Climate Change Act 2010, requires outcomes or performance levels that exceed such levels required by law, and specifies requirements for reviewing and reporting on performance under the covenant. The covenant can also be signed by the Treasurer or other Ministers.

Covenants must be made public through the Gazette, via publication on the Department of Sustainability and Environment (DSE) website, and the Minister must establish a list of such covenants and publish this list on the DSE website.

Sections 70 and 71 of the Bill insert new sections into the EPA Act in relation climate communities funding, an advisory panel, and the climate communities fund account.

New section 70(6B)(b)(c) is to be inserted after section 70(6B)(b) of the EPA Act, and allows the Premier and the Minister to give consent (for the use of money from the Environment Protection Fund) ‘for the purposes of fostering community action or innovation in relation to the reduction of greenhouse gas substance emissions or adaptation or adjustment to climate change in Victoria.’

Section 71 of the Bill provides for sections 70D and 70E to be substituted and new section 70F to be inserted into the EPA Act. New section 70D provides the Minister, after consulting the Premier, with the power to appoint an eight member advisory

panel. The members must have a relevant set and spread of skills. New section 70E of the EPA Act spells out the functions of the advisory panel, which is to include-

- “(a) making recommendations to the Premier and the Minister in relation to the application of money under section 70(6B)(b) or (c);
- (b) advising the Premier and the Minister on the operation of the Climate Communities Fund Account;
- (c) advising the Premier and the Minister about fostering community action or innovation in relation to the reduction of greenhouse gas substance emissions or adaptation or adjustment to climate change in Victoria;
- (d) advising the Premier and the Minister about the sustainable use of resources or waste management;
- (e) advising the Premier and the Minister about any matters related to climate change or the sustainable use of resources or waste management that are referred to the Advisory Panel by the Premier or the Minister;
- (f) monitoring the progress of projects that have been funded by money from the Climate Communities Fund Account.”

New section 70F of the EPA Act concerns the climate communities fund account. The fund currently held within the Environment Protection Fund, known as the sustainability fund account, is to be renamed as the climate communities fund account, and all monies in the sustainability fund account are to be treated as standing in the climate communities fund account.

Section 72 of the Bill adds new powers for the EPA to recommend regulations to the Governor in Council, in new sub-sections after 71(1)(faa) in the EPA Act-

- “(fab) prohibiting or regulating the emission or discharge of greenhouse gas substances into the environment;
- (fac) prescribing standards for the emission or discharge of greenhouse gas substances into the environment, including emission intensity standards and maximum levels of emissions of greenhouse gas substances;
- (fad) prescribing the conditions under which greenhouse gas substances may be emitted or discharged into the environment;”.

Section 73 of the Bill amends the *Transport Integration Act 2010* to include a reference to reducing transport related emissions.

Part 8 Repeal of Forestry Rights Act 1996 and Consequential Amendment of Other Acts

Part 8 repeals the *Forestry Rights Act 1996* and makes consequential amendments to other Acts.

As noted above, Schedule 1 relates to section 14 of the Bill, while Schedule 2 concerns transitional provisions.

5. Views of Stakeholders

The White Paper Action Plan and the Bill have been praised by some environmental groups, while aspects of both have been questioned by some industry groups. Environment Victoria Chief Executive, Kelly O'Shanassy, said that the target of 20 per cent showed strong leadership. Ms. O'Shanassy stated:

While the science tells us we'll need to go further, the Premier is building a bridge between what we are doing on climate change in Australia and what we need to be doing.⁴⁰

Friends of the Earth campaigns coordinator, Cam Walker, said in a media release that it was a significant Bill 'which has the potential to stabilise and then drive down our greenhouse emissions while creating certainty for investment and industry and creating many new jobs.'⁴¹

The Alternative Technology Association (ATA) welcomed the release of the White Paper. ATA's Chief Executive Officer, Mr. Ian Porter, said that it set a new climate change policy benchmark for Australian governments. He stated:

The combination of a broad coverage of all emitting sectors, the depth of the regulatory and fiscal tools used, and the strength of the emissions target, make this announcement stand out amongst climate change policies in Australia.⁴²

On 26 July, International Power Australia (IPRA) said in a media release that it would review the government's White Paper. The Group Manager, Corporate Affairs for IPRA, Mr Jim Kouts, was quoted as saying:

There is certainly no agreement on the proposition presented in the Government's White Paper. However, we have held a preliminary discussion and we are prepared to continue discussions with both State and Federal governments.⁴³

Mr. Kouts went on to say that IPRA supports a well-designed carbon abatement scheme 'that does not damage the value of our investment in electricity generating assets in Australia'.⁴⁴ He said further that IPRA had offered governments an option that would deliver deep cuts in carbon emissions by the early closure of some coal-fired generating plant. He said:

⁴⁰ See A. Morton (2010) 'Brumby lays down gauntlet on carbon', *The Age*, 26 July, viewed 16 August 2010, <<http://www.theage.com.au/environment/climate-change/brumby-lays-down-gauntlet-on-carbon-20100725-10qkr.html>>.

⁴¹ Friends of the Earth (2010) 'Call for Coalition to support Climate Change Bill', media release, 12 August 2010, viewed 16 August 2010, <<http://www.melbourne.foe.org.au/?q=node/778>>.

⁴² ATA (2010) 'White Paper Positions Victoria as a Leader on Climate Change', Alternative Technology Association website, July 26 2010, viewed 18 August 2010, <<http://www.ata.org.au/news/climate-change-white-paper-positions-victoria-a-a-strong-leader-on-climate-change/>>.

⁴³ International Power Australia (2010) 'IPRA Response To State Govt White Paper', media release, 26 July 2010, viewed 18 August 2010, <<http://www.ipplc.com.au/news/response-to-victorian-government-white-paper/>>.

⁴⁴ *ibid.*

In the case of Hazelwood, this would require governments to support the phased closure of all generating units over an agreed term in return for a fixed capacity payment.⁴⁵

The Secretary of the Gippsland Trades and Labour Council (GTLC), Mr. John Parker, was reported by *Reportage/enviro* as saying that he was pleased with the White Paper because it gave the industry enough notice to begin shifting to new industries.⁴⁶ He stated, 'We've been saying to the government, "we want to know the truth and we want to know your best estimate of what's going to happen"'.⁴⁷ The GTLC Assistant Secretary, Mr. Steve Dodd, said it was important that the government 'consult the community and the unions about setting up new jobs for the people to run into'.⁴⁸

On the issue of the option for an additional fee on top of car registration to offset carbon emissions, as outlined in the Action Plan (Action 7 'Transport'), Mr. David Purchase from the Victorian Automobile Chamber of Commerce said that people will not voluntarily pay more for car registration, and questioned how much would be raised from the proposal.⁴⁹

6. The Parties

The Coalition stated it supported aspects of the Bill and did not oppose it in the Legislative Assembly, but did reserve its position in the Legislative Council based on further discussions.⁵⁰ The Opposition's Shadow Minister for Environment and Climate Change, Ms. Mary Wooldridge MLA, outlined the Opposition's concerns about the legislation during the second reading debate on 12 August, including the views of stakeholder groups.⁵¹ She was reported in *The Age* as saying that the government had a track record of setting targets and not meeting them: she said that the Premier 'has to explain to Victorian families how much more they are going to pay for their electricity'.⁵²

In a media release, the Nationals Member for Morwell, Russell Northe MLA, noted that while a target for reducing greenhouse gases was important, there needed to be transitional arrangements put in place to protect jobs in the Latrobe Valley energy industry. Mr Northe expressed concerns regarding the proposed new powers of the EPA. Mr Northe also stated that '[w]e have an opportunity to make this transition happen, but the Government must support our communities, and this support must be accompanied by sensible legislation and sensible regulations'.⁵³

At the time of writing, neither the Greens nor the DLP have declared a position on the Bill.

⁴⁵ *ibid.*

⁴⁶ J. Kenworthy (2010) 'Gippsland unions 'happy' with White Paper', *Reportage/enviro*, Australian Centre for Independent Journalism, 28 July 2010, viewed 18 August 2010, <<http://www.reportage-enviro.com/2010/07/gippsland-unions-%e2%80%98happy%e2%80%99-with-white-paper/>>.

⁴⁷ *ibid.*

⁴⁸ *ibid.*

⁴⁹ ABC News (2010) 'Plan to phase out Hazelwood power station', July 27 2010, viewed 12 August 2010, <<http://www.abc.net.au/news/stories/2010/07/26/2963841.htm>>.

⁵⁰ Victoria, Legislative Assembly (2010) *Debates*, Assembly Proof, 12 August, pp. 9-15.

⁵¹ *ibid.*

⁵² A. Morton (2010) *op. cit.*

⁵³ The Nationals (2010) 'Climate Change Bill needs sensible transition plan', media release, 13 August 2010, viewed 26 August 2010, <<http://www.vicnats.com/news/article.aspx?ID=11016>>.

7. Other Jurisdictions

Several Australian jurisdictions have passed legislation containing emission reduction targets, including New South Wales, the ACT, South Australia, and Tasmania. These jurisdictions will be outlined following an overview of the Commonwealth. Although Queensland⁵⁴ and Western Australia⁵⁵ have not legislated emission reduction targets, a range of abatement measures have been implemented in those states in addition to the national Renewable Energy Target.

Many overseas jurisdictions have also legislated emission reductions targets with operational emissions trading schemes (ETS) to achieve those targets. The most comprehensive is the European Union ETS, which was agreed to in 2003 and became operational in 2005. The scheme is currently in its second phase (2008 to 2012). The overall EU commitment is to reduce emissions by 20 per cent by 2020 from 1990 levels, with a short term goal under the Kyoto Protocol of 8 per cent below 1990 levels by 2008 to 2012. Each country in the EU contributes to that target through a 'national allocation plan'.⁵⁶ For example, the United Kingdom has a commitment of a 12.5 per cent reduction below 1990 levels by 2008 to 2012.⁵⁷ However, it should also be noted that through the *Climate Change Act 2008*, the UK has legislated an emissions reduction target of 34 per cent by 2020, and 80 per cent by 2050 based on 1990 levels. Scotland has also passed the *Climate Change (Scotland) Act 2009* introducing an 80 per cent reduction by 2050.

Other parts of the world have moved ahead with emission reduction targets and emission trading schemes in lieu of a global agreement. Three of these will be detailed further below, including: New Zealand's ETS, the US Regional Greenhouse Gas Initiative, and the US/Canada Western Climate Initiative.

Commonwealth

Carbon Pollution Reduction Scheme

The Federal Government introduced Carbon Pollution Reduction Scheme legislation (CPRS) into the House of Representatives in May 2009. The bills that comprised the CPRS were rejected by the Senate in August 2009. Subsequently, the Federal Government reintroduced the CPRS bills in October 2009. Following negotiation with the Federal Opposition, an amended CPRS package of bills was debated in the Senate in November, but this legislation was subsequently defeated at the third reading on 2 December 2009. In February this year the CPRS bills (with some changes) were again re-introduced and passed the House of Representatives on 11 February 2010. Debate on this round of CPRS bills was adjourned in the Senate on 24 February. The Rudd Government subsequently announced in April that it would delay the CPRS until the end of 2012.

⁵⁴ Queensland Government (2009) *ClimateQ: toward a greener Queensland*, Brisbane, Department of Environment and Resource Management.

⁵⁵ Western Australia Government (2004) *Western Australian Greenhouse Strategy*, Perth, Department of Premier and Cabinet.

⁵⁶ European Commission (2010) 'Emission Trading System (EU ETS)', viewed 17 August 2010, <http://ec.europa.eu/environment/climat/emission/index_en.htm>.

⁵⁷ European Commission (2010a) 'National Allocation Plans: Second Phase (2008-2012)', viewed 17 August 2010, <http://ec.europa.eu/environment/climat/emission/2nd_phase_ep.htm>; UK Department of Energy and Climate Change (2010) 'Phase II National Allocation Plan (2008-2012)', viewed 17 August 2010, <http://www.decc.gov.uk/en/content/cms/what_we_do/change_energy/tackling_clima/emissions/eu_ets/euets_phase_ii/phaseii_nap/phaseii_nap.aspx>.

The Carbon Pollution Reduction Scheme Bill 2009 (Cth) set emissions reduction targets at between five and 25 per cent by 2020, based on year 2000 levels. The minimum target set was five per cent, with higher targets conditional on international agreements being reached.⁵⁸

Renewable Energy Target

The *Renewable Energy (Electricity) Act 2000* (Cth) established the Mandatory Renewable Energy Target (MRET) in 2001, which required electricity retailers and other large electricity purchasers to source two per cent of their electricity purchases from renewable sources by 2010. As mentioned above, in August 2009 the Federal Government amended the *Renewable Energy (Electricity) Act 2000* to provide for the creation of the Renewable Energy Target (RET) to expand the MRET and increased the target to 20 per cent by 2020.⁵⁹ This legislation was further amended in June this year, with the RET scheme separated into two parts from January 2011. Two schemes will then emerge, to be known as the Small-scale Renewable Energy Scheme (SRES) and the Large-scale Renewable Energy Target (LRET). The 20 per cent target will remain.

New South Wales and the Australian Capital Territory

In 2005 New South Wales announced its commitment to reduce greenhouse gas emissions back to 2000 levels by 2025, with a longer term goal of a 60 per cent reduction by 2050, but these targets have not been legislated.⁶⁰ However, an emissions reduction target has been legislated for the electricity sector for the purposes of the Greenhouse Gas Reduction Scheme (GGAS), which commenced on 1 January 2003. Emissions are reduced by setting a state-wide greenhouse gas benchmark for the electricity sector.⁶¹ The benchmark is set under section 97B of the *Electricity Supply Act 1995* (NSW) at 7.27 tonnes of carbon dioxide equivalent of greenhouse gas emissions per head of state population per year. Individual benchmark participants must then meet their allocation based on their share of the NSW electricity demand.⁶² Penalties apply for failing to comply with the benchmark. For the period commencing 1 January 2010, the penalty is \$12.50 per tonne of carbon dioxide equivalent of greenhouse shortfall, with increases of \$1 per year until 2013.

Benchmark participants receive 'abatement certificates' for project-based emission reduction activities. The certificates are supplied by Abatement Certificate Providers (ACPs) who carry out abatement activities, such as; improvements in emissions intensity of existing generation activities; activities that result in reduced consumption of electricity; reduction of on-site emissions not directly related to electricity consumption; and the capture of carbon from the atmosphere in forests (carbon sequestration). ACPs

⁵⁸ See L. Nielson et al (2009) op. cit.

⁵⁹ See Talberg & Tomaras (2010) op. cit., pp. 3-4.

⁶⁰ New South Wales Government (2005) *NSW Greenhouse Plan*, New South Wales Greenhouse Office, Sydney.

⁶¹ NSW Independent Pricing and Regulatory Tribunal (2010) 'Greenhouse Gas Reduction Scheme', viewed 16 August 2010, <<http://www.greenhousegas.nsw.gov.au/>>.

⁶² Mandatory benchmark participants include: holders of electricity retail licenses, electricity generators that supply electricity directly to customers, market customers that take their supply directly from the National Electricity Market. Elective benchmark participants, who can elect to manage their own benchmarks, include: customers with electricity loads greater than 100GWh, or people carrying out state significant development (such as the Minister for Planning). See NSW Independent Pricing and Regulatory Tribunal (2010a) 'Benchmark Participants: Overview', viewed 16 August 2010, <http://www.greenhousegas.nsw.gov.au/benchmark/benchmark_overview.asp>.

must apply to the Scheme Administrator for accreditation in the particular abatement activity, and are subject to ongoing audits for verification.⁶³

An online registry is maintained by the Scheme Administrator which provides details of ACPs and the status of abatement certificates. ACPs can register certificates online and benchmark participants can surrender certificates to meet their allocated benchmark. Auditors can then use the registry to verify abatement certificate creation, transfers and surrender activities. The actual trading occurs independently by the market, while the registry records 'ownership' of the certificates.⁶⁴

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is legislated to oversee compliance and administration of the scheme. As part of its compliance function IPART monitors the compliance of mandatory benchmark participants with their greenhouse gas benchmarks. IPART also oversees the accreditation of abatement certificate providers, the creation and transfer of greenhouse gas abatement certificates, monitors the performance and compliance of accredited parties, and maintains the GGAS registry.⁶⁵

The scheme was also adopted by the ACT on 1 January 2005 and is legislated to run until 2020. As with NSW, the benchmark is set at 7.27 tonnes of carbon dioxide equivalent of greenhouse gas emissions per head of Territory population per year. Benchmark participants can reduce emissions through abatement certificates created in either the ACT or NSW. A common registry is used, which is administered by the NSW IPART. However, the scheme in the ACT is administered by the Independent Competition and Regulatory Commission.⁶⁶

At the time of writing, the ACT Minister for the Environment, Climate Change and Water, Simon Corbell, announced that the Climate Change and Greenhouse Gas Reduction Bill 2010 would be tabled in the Legislative Assembly on 26 August 2010. According to the Minister, the Bill sets an emissions reduction target of 40 per cent based on 1990 levels by 2020, and 80 per cent by 2050.⁶⁷

South Australia

South Australia has passed the *Climate Change and Greenhouse Emissions Reduction Act 2007* (SA). The principal target under the Act is to reduce 'by 31 December 2050 greenhouse gas emissions within the State by at least 60 per cent to an amount that is equal to or less than 40 per cent of 1990 levels' (s 5(1)). Two related targets contained in section 5(2a) and 5(2b) are an increase in the proportion of renewable energy generated to at least 20 per cent by 31 December 2014, and an increase in renewable electricity consumption to at least 20 per cent by 31 December 2014.

⁶³ NSW Independent Pricing and Regulatory Tribunal (2010b) 'Abatement Certificate Providers: Overview', viewed 16 August 2010, <http://www.greenhousegas.nsw.gov.au/acp/acp_overview.asp>.

⁶⁴ NSW Independent Pricing and Regulatory Tribunal (2010c) 'Registry: Overview', viewed 16 August 2010, <http://www.greenhousegas.nsw.gov.au/registry/registry_overview.asp>.

⁶⁵ NSW Independent Pricing and Regulatory Tribunal (2010d) 'Scheme Introduction: Overview', viewed 16 August 2010, <http://www.greenhousegas.nsw.gov.au/overview/scheme_overview/overview.asp>.

⁶⁶ ACT Independent Competition and Regulatory Commission (2010) 'Overview of the ACT Scheme', viewed 16 August 2010, <<http://www.icrc.act.gov.au/actgreenhousegasabatementsscheme/overviewoftheactscheme>>.

⁶⁷ Minister for the Environment Climate Change and Water (2010) *ACT Government sets milestone greenhouse gas reduction targets*, media release, 26 August 2010.

In order to achieve the targets in the legislation, the Minister must undertake a range of initiatives as outlined in section 6 of the Act, which are aimed at creating a suite of measures that collectively will reduce greenhouse gas emissions. Section 14 of the Act specifically requires the Minister to develop policies that will reduce or limit climate change or greenhouse gas emissions, and promote or implement measures to facilitate adaptation.

Section 16 provides for the Minister to enter into voluntary 'sector agreements', by which a particular business group, industry, entity, or individual person, can agree to a range of activities to achieve the reduction targets in the Act, such as: reducing energy consumption, improving energy efficiency, or renewable energy use. Other activities, such as emissions abatement and adaptation measures, can also be included in the agreements. However, the content of a specific agreement is set on a 'case by case' basis.⁶⁸ Some of the businesses and sectors that have an agreement under the Act include: Local Government, the Anglican Church, the Property Sector, Adelaide Brighton Cement Ltd., the South Australian University Sector, SA Water, the Technology Industry Association, and the Jeffries Group.⁶⁹

Section 7 of the Act requires the Minister to produce a report every two years detailing the effectiveness of the initiatives and providing an assessment of progress towards the emission reduction targets. There is also a requirement that the report must contain a report from the CSIRO that assesses the extent to which the targets are being met. The first report was produced in 2009. Based on the CSIRO assessment, the methodology used by the South Australian Government to measure progress towards meeting the legislated reduction in greenhouse gases is 'valid and robust'. A conclusion was not reached regarding progress towards the emissions targets due to 'considerable estimation risk'. However, the report did note that 'progress towards the renewable energy targets will significantly enhance the probability of achieving the target'.⁷⁰

Tasmania

In Tasmania the *Climate Change (State Action) Act 2008* contains targets for reducing greenhouse gas emissions. One of the stated aims of the Act is to 'help Tasmania respond to the challenges of climate change by addressing issues associated with that phenomenon and, in particular, by providing for the setting of a target for the reduction of greenhouse gas emissions in the State as part of the national and international response to climate change' (s. 4). Section 5 of the Act sets a target of a 60 per cent reduction in greenhouse gas emissions below 1990 levels, by 31 December 2050, with interim targets to be set through the Regulations (s. 7).

Division 3 provides for the establishment of the Tasmanian Climate Change Council, which provides the Minister with independent advice on climate change issues. As part of this function, the Council can advise on the following issues; the state's interim targets, progress towards targets, the effectiveness of initiatives and methods used to reduce emissions, and mitigation or adaptation strategies. Division 4 of the Act contains the reporting requirements. On an annual basis the Council is required to provide a report to the Minister to be tabled in Parliament outlining the Council's

⁶⁸ South Australian Government (2010) 'Climate Change Sector Agreements', viewed 16 August 2010, <<http://www.climatechange.sa.gov.au/index.php?page=climate-change-sector-agreements>>.

⁶⁹ South Australia Government (2010) op. cit.

⁷⁰ South Australian Government (2009) *Report on the operation of the Climate Change and Greenhouse Emissions Reduction Act 2007*, November 2009, Adelaide, Department of the Premier and Cabinet, p. 71.

activities for that financial year. On a biennial basis the Council is to provide a report on progress towards the Act's objectives, with the first report due to be submitted by 31 December 2010.

The Tasmanian Wedges Project was commissioned by the Tasmanian Government to model greenhouse gas emissions in the state under a business as usual scenario to 2050, and assess the viability of reaching the legislated targets. A report was produced that identified emission reduction options for each sector of the economy and assessed the cost and benefit of each option. One of the key findings of the report was that the legislated targets are achievable in Tasmania.⁷¹ However, the report was modelled on the assumption that the national CPRS would be implemented in July 2011.

In light of the deferral of the national CPRS, the Climate Change Council subsequently provided its advice to the government based on the findings in the report. The Council found that the targets are still achievable providing a national scheme is introduced in or soon after 2013. In the mean time, the Climate Change Council suggested that interim emission reduction targets should be set via the Regulations.⁷²

New Zealand

New Zealand has committed to a target range for emissions reduction of between 10 and 20 per cent below 1990 levels by 2020. Under the Kyoto Protocol, New Zealand must reduce its emissions back to 1990 levels by 2012.⁷³ The principle means by which this will be achieved is the New Zealand Emissions Trading Scheme. The New Zealand Government notes that 28 other countries already have an emissions trading scheme, with other similar schemes operating in some US states. As well as reducing emissions and driving investment towards clean technology, the New Zealand Government views the ETS as a means to 'strengthen the country's clean green brand'.⁷⁴ The scheme was introduced by the *Climate Change Response (Emissions Trading) Amendment Act 2008*, which amended the *Climate Change Response Act 2002*.

New Zealand's ETS introduces the New Zealand Unit (NZU), which is the primary unit of trade created and distributed by the government. During the phase in of the scheme (July 2010 to December 2012) participants will have to surrender one NZU for every two tonnes of emissions, or pay the government \$25 per two tonnes of emissions. This effectively sets the price of one NZU at \$12.50 per tonne of emissions. After December 2012, one NZU will equal one tonne of emissions, and the cost will be determined according to the market price.⁷⁵

The New Zealand Emission Unit Register (NZEUR) was originally developed to administer New Zealand's obligations under the Kyoto Protocol. However, it now also manages the accounting, reporting and reconciliation of NZUs under the New Zealand

⁷¹ W. Gerardi, L. Parisot and S. Knapp (2009) *Tasmanian Greenhouse Gas Emissions Reduction Project*, November 2009, Canberra, Department of Premier and Cabinet.

⁷² Tasmanian Climate Action Council (2010) *Tasmanian Climate Action Council's advice to the Tasmanian Government on the Tasmanian Wedges Report*, Hobart, 2010.

⁷³ New Zealand Government (2010) 'Why we have the ETS', Ministry for the Environment, viewed 16 August 2010, <<http://www.climatechange.govt.nz/emissions-trading-scheme/about/why.html>>.

⁷⁴ *ibid.*

⁷⁵ New Zealand Government (2010a) 'About Obligations', Ministry for the Environment, viewed 16 August 2010, <<http://www.climatechange.govt.nz/emissions-trading-scheme/obligations/index.html>>.

ETS. The register operates similar to a banking system in that each participant has an account which allows the transfer of NZUs.⁷⁶

In the New Zealand ETS, a participant may not be the business that actually emits the greenhouse gases. For example, in the energy and fuel sectors, participants are the upstream businesses such as transport fuel producers and coal producers. All major sectors of the economy, excluding the fishing industry, will be liable to surrender NZUs, including; forestry, energy, industry, liquid fossil fuels, synthetic gases, waste, and agriculture. Some of those industries will be allocated NZUs to offset expenses, including; forestry, fishing, industry, and agriculture. Only the forestry industry will be able to earn NZUs. All of the industries are integrated into the scheme by 2010, except for synthetic gases (2013), waste (2013), and agriculture (2015).⁷⁷ Each of the industries has a set of regulations that details the method of calculating emissions and the means to report those emissions for the purposes of the scheme.

North America

Despite the failure of a global agreement on emission reduction targets, much of North America is involved with an emission reduction target and a cap-and-trade initiative at some level. The three programs are the Regional Greenhouse Gas Initiative, the Western Climate Initiative, and the Midwestern GHG Reduction Accord. A brief overview of the Regional Greenhouse Gas Initiative and the Western Climate Initiative is provided below.

Regional Greenhouse Gas Initiative

The Regional Greenhouse Gas Initiative (RGGI) is a cap-and-trade system between ten Northeast and Mid-Atlantic states, including: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. It is the first mandatory scheme in the United States, and aims to reduce emissions from the power sector by 10 per cent by 2018. Approximately 95 per cent of emissions from the electricity generation sector in participating states are regulated under the program.⁷⁸

The scheme works by initially setting an emissions limit which participants must then meet by acquiring sufficient allowances to cover their emissions. Each state has a share of the total cap and allowances are allocated accordingly, with each allowance equalling one ton of CO₂. Emissions allowances are then distributed in the regional 'primary market' through auctions or by allocation.⁷⁹ From September 2008 to September 2010, there have been nine auctions held with over US\$700 million raised, with the proceeds being invested in consumer benefits, such as; energy efficiency, renewable energy, and other clean energy technologies.⁸⁰ Allowances are also allocated to participants for approved emission offset projects, such as carbon

⁷⁶ New Zealand Emission Unit Register (2010b) 'About the NZEUR', viewed 16 August, <<http://www.eur.govt.nz/about-us/welcome-to-the-nzeur>>.

⁷⁷ New Zealand Government (2010c) 'Participating in the Emissions Trading Scheme (ETS)', Ministry for the Environment, viewed 16 August 2010, <<http://www.climatechange.govt.nz/emissions-trading-scheme/participating/index.html>>.

⁷⁸ Regional Greenhouse Gas Initiative (2010) 'Key Documents', *RGGI Program Overview*, viewed 13 September 2010, <<http://www.rggi.org/states>>.

⁷⁹ *ibid.*

⁸⁰ Regional Greenhouse Gas Initiative (2010a) 'Auction Results', viewed 13 September 2010, <http://www.rggi.org/market/co2_auctions/results>; Regional Greenhouse Gas Initiative (2010b) 'RGGI Benefits', *RGGI Offsets Fact Sheet*, viewed 13 September 2010, <http://www.rggi.org/rggi_benefits>.

sequestration. Each state controls its allocation to ensure the regional cap is not exceeded.⁸¹

A participant can then use the allowances they acquired through the primary auction to cover their emissions, and sell any excess to another emitter through the secondary market. A participant may have excess allowances if they purchased more than they needed in the primary market, or they used offsets to cover some of their emissions. Allowances can either be physically traded between participants, or traded as standard futures and options contracts on public exchanges such as the Chicago Climate Futures Exchange and the New York Mercantile Exchange.⁸²

Although the cost of the scheme is eventually passed on to consumers through electricity prices, economic modelling suggests that the increase in prices will be between one and three per cent. Price triggers are also built into the scheme if electricity prices should rise unexpectedly, and an independent body monitors the entire scheme.⁸³ Thus far the scheme has been effective in limiting emissions from the power generation sector.⁸⁴ In addition, all of the participating states have reported significant positive flow-on effects from the revenue stream created by the scheme, including the following:

- Efficiency programs in Massachusetts are expected to create 4,000 jobs over three years.
- Over 200 full time jobs are being maintained in New Hampshire as a direct result of the RGGI scheme.
- The Center for Ecological Technology has doubled its workforce (from 50 to 100) since the scheme began as a result of the increase in work relating to energy efficiency.
- As a result of the revenue created by the RGGI scheme, Connecticut reopened an oversold solar rebate program providing a 40 per cent tax cut for solar PV installations.⁸⁵

Western Climate Initiative

The Western Climate Initiative is a collaboration of seven US states and four Canadian provinces, including: New Mexico, Arizona, California, Utah, Oregon, Montana, Washington, British Columbia, Manitoba, Ontario, and Quebec. These states and provinces constitute a significant portion of population and GDP, with the US states making up 19 per cent of total US population and 20 per cent of US GDP, while the

⁸¹ Regional Greenhouse Gas Initiative (2010b) 'RGGI Benefits' op. cit.

⁸² Regional Greenhouse Gas Initiative (2010c) 'Market Monitor Reports', *Annual Report on the Market for RGGI CO2 Allowances: 2009*, viewed 17 August 2010, <http://www.rggi.org/market/market_monitor>.

⁸³ Regional Greenhouse Gas Initiative (2010) 'Key Documents', op. cit.

⁸⁴ Regional Greenhouse Gas Initiative (2010c) 'Market Monitor Reports', op. cit.

⁸⁵ Regional Greenhouse Gas Initiative (2010d) 'News Releases', *RGGI CO2 Auctions Yield Millions for Investment in Clean Energy Job Creation*, viewed 13 September 2010,

<<http://www.rggi.org/news/releases>>; C. Riedel (2010) 'The Proof is in the Pudding: Regional Greenhouse Gas Initiative Shows Pollution Pricing Works', *Centre for American Progress*, viewed 17 August 2010, <http://www.americanprogress.org/issues/2010/03/rggi_roadmap.html>. This material [The Proof is in the Pudding: Regional Greenhouse Gas Initiative Shows Pollution Pricing Works] was published by the Centre for American Progress.

Canadian provinces account for 79 per cent of the total Canadian population and 76 per cent of Canada's GDP.⁸⁶

The scheme aims to reduce greenhouse gas emissions to 15 per cent below 2005 levels by 2020 and is scheduled to commence on 1 January, 2012. The cap-and-trade system effectively works as most other schemes, with tradeable permits being issued to each jurisdiction according to their allocated 'carbon budget'. Similar to the RGGI scheme outlined above, the permits are auctioned off and can then be subsequently traded.⁸⁷

Participants can reduce their costs by using offset programs such as planting trees or improving energy efficiency, and a Complementary Policies Committee has been established to facilitate such programs. All of the participants have developed 'Partner Climate Action Plans', with many also having passed legislation containing emission reduction targets.⁸⁸

⁸⁶ Western Climate Initiative (2010) 'Design for the WCI Regional Program', viewed 17 August 2010, <<http://westernclimateinitiative.org/the-wci-cap-and-trade-program/program-design>>.

⁸⁷ *ibid.*

⁸⁸ Western Climate Initiative (2010a) 'Partner Climate Action Plans', viewed 17 August 2010, <<http://www.westernclimateinitiative.org/climate-action-plans>>.

Glossary⁸⁹

Members should note that the definitions provided here may differ somewhat in their wording compared to those relevant definitions contained in the Bill. See Part 1, section 3, for the Bill's list of definitions.

Adaptation	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Carbon sequestration	The process of removing carbon from the atmosphere and depositing it in a reservoir.
Greenhouse gases	The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO ₂), methane (CH ₄) and nitrous oxide (N ₂ O). Less prevalent --but very powerful -- greenhouse gases are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF ₆).
Kyoto Protocol	An international agreement standing on its own, and requiring separate ratification by governments, but linked to the UNFCCC. The Kyoto Protocol, among other things, sets binding targets for the reduction of greenhouse-gas emissions by industrialized countries.
ppm (parts per million)	ppm (parts per million) or ppb (parts per billion) is the ratio of the number of greenhouse gas molecules to the total number of molecules of dry air: eg., 385 ppm means 385 molecules of a greenhouse gas per million molecules of dry air.

Acronyms

IPCC	The Intergovernmental Panel on Climate Change
NOAA	National Oceanic and Atmospheric Administration (U.S. Department of Commerce)
UNFCCC	United Nations Framework Convention on Climate Change

⁸⁹ These terms are mainly derived from UNFCCC (2010) 'Glossary of climate change acronyms', UNFCCC, viewed 18 August 2010, <http://unfccc.int/essential_background/glossary/items/3666.php#P>. See also Gardiner & Delacorn (2009) op. cit., p. 19.

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