Climate change law: Lessons from the Californian experience

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California is widely recognised as a leading jurisdiction in the area of climate change law, adopting innovative and ambitious measures on issues such as renewable energy use and the incorporation of global warming considerations into environmental assessment. This article analyses the key elements of Californian climate change law in order to highlight the ways in which other climate regulatory frameworks might be modified, or more imaginatively implemented, in order to improve their environmental effectiveness. Comparisons are drawn principally with Australian climate change measures because of the similarities that exist in environmental factors, governance and regulatory structures between Australia and the United States. The final section of the article focuses on the broader lessons for domestic climate change law from the Californian experience, including the importance of an integrated regulatory approach and the capacity to adapt pre-existing environmental laws to deal with the novel problem of climate change.

INTRODUCTION

In the field of climate change law, the United States is often regarded as a laggard state.[1] Under the former administration of President George W Bush, the United States was better known for its efforts to block climate change laws, such as the Kyoto Protocol,[2] than for innovative regulation to address the problem of excessive greenhouse gas (GHG) emissions. However, as in other federal countries like Australia, intransigence at the national level in the United States on climate change issues encouraged State-based efforts to mitigate GHG production.[3] Of the various States that developed new climate change laws over the term of the Bush administration,[4] California is widely recognised as a leading

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[1] Friedman T, *Hot, Flat and Crowded* (2nd ed, Picador, 2009) pp 46-47; Doremus H, "Lots of Science, Not Much Law: Why Knowledge Has Not (Yet) Been Power Over Greenhouse Gas Emissions" in Rodgers WH and Robinson-Dorn M (eds), *Global Warming: A Reader* (Carolina Academic Press, 2009).

[2] *Kyoto Protocol to the United Nations Framework Convention on Climate Change* (done at Kyoto on 11 December 1997, enforced 16 February 2005, 2303 UNTS 148).

[3] See generally, Peel J, "The Role of Climate Change Litigation in Australia's Response to Global Warming" (2007) 24 EPLJ 90; England P, "Doing the Groundwork: State, Local and Judicial Contributions to Climate Change Law in Australia" (2008) 25 EPLJ 360.

[4] See, eg Regional Greenhouse Gas Initiative, *Participating States* (an initiative of the Northeast and Mid-Atlantic States of the US), http://www.rggi.org/states viewed 29 March 2010; and the widespread Renewable Portfolio Standards that have been adopted in almost half of America's States: Energy Efficiency and Renewable Energy Division, *States with Renewable Portfolio Standards* (US Department of Energy, May 2009), http://www.apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm viewed 29 March 2010.

jurisdiction.[5] Indeed, in many respects Californian climate law has been among the most innovative and ambitious worldwide on issues such as renewable energy use and the incorporation of climate change considerations into environmental assessment processes.

This article analyses the key elements of Californian climate change law that began to take shape following the enactment of the State's *Global Warming Solutions Act* in 2006 (or Assembly Bill 32 (AB-32), as it is more commonly known).[6] The regulatory measures and actions taken in California to address climate change bear many similarities to those being implemented (or contemplated) in countries around the world, such as a cap-and-trade emissions trading scheme, measures to encourage the uptake of renewable energy, and the incorporation of climate change factors in environmental impact assessment. For instance, in Australia, the federal government has set a renewable energy target of 20% of energy production by 2020,[7] and is also seeking to introduce a national emissions trading scheme for GHG.[8] In addition, there is a growing movement in Australian climate change litigation to require GHG production to be taken into account in project-based environmental impact assessment.[9]

Given similar courses of regulatory development in California and other parts of the world, an analysis of Californian climate change law serves to highlight the ways in which domestic climate regulatory frameworks generally might be modified, or more imaginatively implemented, in order to improve their environmental effectiveness. In this article, the principal comparisons drawn are with Australian climate change measures, not least because of the similarities that exist in environmental factors, governance and regulatory structures between Australia and the United States. However, the final section of the article – focussing on lessons for domestic climate change law from the Californian experience – is intended to be of broader relevance and application.

A SHORT HISTORY OF CALIFORNIAN CLIMATE CHANGE LAW

The government of California was a relatively early mover in legislating to meet the threat of climate change. In 1988 (the same year the Intergovernmental Panel on Climate Change (IPCC) was established), the Californian legislature adopted Assembly Bill 4420.[10] Proposed by State Senator Byron Sher, this Bill directed the Californian Energy Commission (CEC) to assess the potential impacts of climate change in California, and to explore options for reducing GHG emissions in the State.[11] That mandate led the CEC to publish two important reports in 1989 and 1991 on the issue of global warming,[12] provoking public awareness and policy discussion of climate change in California.[13]

[5] See, eg O'Brien C, "I Wish They All Could Be California Environmental Quality Acts: Rethinking NEPA in Light of Climate Change" (2009) 36 BC Envtl Aff L Rev 239; Golden K, "Senate Bill 1078: The Renewable Portfolio Standard – California Asserts Its Renewable Energy Leadership" (2003) 30 Ecology L Q 693; Franco G, Cayan D, Luers A, Hanemann M and Croes B, "Linking Climate Change Science with Policy in California" (2008) 87(Suppl 1) *Climatic Change* 7 at 9.

[6] 2006 Cal. Legis. Serv 488 (West) (codified at *Cal. Health and Safety Code* § 38500-99 (West 2006 & Supp 2007)).

[7] See *Renewable Energy (Electricity) Act 2000* (Cth). This law was substantially amended in 2009, with the passage of the *Renewable Energy (Electricity) Act 2009* (Cth), which subsumed all equivalent State-based schemes into an increased target of 20% by 2020.

[8] See *Carbon Pollution Reduction Scheme Bill 2009* (Cth). Rejection of the Bill in the Senate has put the legislation on hold for the present until the government either reintroduces the Bill or seeks to dissolve the parliament and hold fresh elections.

[9] See Peel, n 3; see also Australian Labor Party, *National Platform* (2007) Ch 9 at [24], proposing to introduce a "greenhouse gas" trigger into the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

[10] Hanemann M, *How California Came to Pass AB 32, the Global Warming Solutions Act of 2006* (Working Paper Series, Department of Agricultural and Resource Economics, UC Berkeley, 2007) p 8, http://www.escholarship.org/uc/item/1vb0j4d6 viewed 29 March 2010; Franco et al, n 5 at 9.

[11] Chapter 1506, Statutes of 1988, Sher.

[12] Californian Energy Commission, *The Impacts of Global Warming on California* (Sacramento CA, 1989); Californian Energy Commission, *Global Climate Change: Potential Impacts and Policy Recommendations* (Sacramento CA, 1991).

[13] Hanemann, n 10, p 8; Franco et al, n 5 at 9.

After this promising start, the following decade was predominantly characterised by government inaction on climate change. Although the scientific evidence concerning climate change effects continued to build over this time (for instance, the IPCC published its first and second reports in 1990 and 1995), these scientific warnings were not effectively communicated to policy makers.[14] It was not until the publication of the influential report, *Confronting Climate Change in California* (1999), by two well-regarded scientific organisations – the Union of Concerned Scientists and the Ecological Society of America – that public and policy discussion was seriously reignited.[15]

There followed a new wave of government action, beginning in 2000 with the adoption of Senate Bill 1771 establishing the Climate Action Registry.[16] The Climate Action Registry is a voluntary registration and emissions monitoring program for State governmental organisations.[17] This tentative foray into voluntary regulation was followed by the more adventurous adoption of Assembly Bill 1493 in 2002, commonly known as "the Pavley Standards" after the Bill's author, Representative Fran Pavley.[18] Considered a landmark in Californian climate change legislation,[19] the Pavley Standards required the Air Resources Board (ARB)[20] to adopt GHG emissions standards for automobiles, binding automobile manufacturers in the State. The Obama Administration recently adopted these standards nationally through federal regulations.[21] Senate Bill 1078, also passed in 2002, established the Renewables Portfolio Standard (RPS), requiring electricity retailers to source increasing percentages of their supply from renewable energy sources each year.[22] The RPS marked an important step in the development of Californian climate change law, complementing a long history of policy support for renewable energy through mandatory legal requirements.[23] These three policy measures established California as a leader in American climate change law and policy.[24]

The election of Governor Arnold Schwarzenegger in 2003 opened the door to further groundbreaking policy change, coinciding with the release of further influential scientific reports.[25] When the Governor signed Executive Order S-3-05 on 1 June 2005, Californian climate change policy took a new direction. The Governor's Executive Order set ambitious emissions reduction targets for the State, mandating a return to 2000 emission levels by 2010, a return to 1990 emission levels by

[14] Franco et al, n 5 at 9.

[15] Field C, Daily G, Davis F, Gaines S, Matson P, Melack J and Miller N, *Confronting Climate Change in California: Ecological Impacts on the Golden State* (Union of Concerned Scientists and Ecological Society of America, 1999).

[16] Chapter 1018, Statutes of 2000, Sher; *Cal. Health and Safety Code* § 42800; *Pub. Res. Code* § 25730.

[17] The establishment of the registry was based on a recommendation of the CEC: see Californian Energy Commission, *Greenhouse Gas Emissions Reduction Strategies for California* (Sacramento CA, 1998).

[18] Chapter 200, Statutes of 2002, Pavley; *Cal. Health and Safety Code* §§ 42823, 43018.5.

[19] See, eg Kaswan A, "The Domestic Response to Climate Change: What Role for Federal, State and Litigation Initiatives?" (2007) USFLR 39 at 48.

[20] ARB is a public regulatory body, similar to the Environmental Protection Agency, established in 1967 to regulate air pollution in California. Such administrative regulatory bodies are typical in the United States legal system, as they are able to make detailed regulations free from the strictures of a highly-politicised congress.

[21] Obama B, *Remarks by the President on National Fuel Efficiency Standards* (speech delivered at the White House Rose Garden, Washington DC, 19 May 2009); White House, *Obama Administration Announces Comprehensive Strategy for Energy Security* (media release, US Government, 31 March 2010); *Environmental Protection Agency, DOT, EPA Set Aggressive National Standards for Fuel Economy and First Ever Greenhouse Gas Emission Levels for Passenger Cars and Light Trucks* (media release, 1 April 2010).

[22] *Cal. Pub. Util. Code* § 399.15 (Deering 2003).

[23] Golden, n 5 at 697.

[24] McKinstry RB Jr, "Local Solutions for Global Problems: The Debate Over the Causes and Effects of Climate Change and the Emerging Mitigation Strategies for the States, Localities and Private Parties" (2004) 12 Penn State Envtl L Rev 1 at 11; Cobo K, "California Global Warming Solutions Act of 2006: Meaningfully Decreasing Greenhouse Gas Emissions or Merely a Set of Empty Promises?" (2007) Loy LA L Rev 447 at 452-453.

[25] Wilson T, Williams L, Smith J and Mendelsohn R (eds), *Global Climate Change and California: Potential Implications for Ecosystems, Health, and the Economy* (CEC Public Interest Energy Research Program, 2003); Union of Concerned Scientists, *Choosing Our Future: Climate Change in California* (Berkeley CA, 2004).

2020, and (most ambitiously) an 80% reduction from 1990 emission levels by 2050.[26] To inform the policy approach to achieving those targets, the Executive Order required the production of biannual scientific reports on the impact of global warming on California, and gave the Secretary of the Californian Environmental Protection Agency (EPA) responsibility for reporting on ways to achieve those targets and coordinating policy.[27]

The new policy framework was given legislative force by AB-32, adopted in September 2006, which is now the centrepiece of Californian climate change law and policy.[28] AB-32 mandates the emissions reduction targets set by the Governor's Executive Order,[29] and requires sources of "significance" to monitor and report on their GHG emissions.[30] In a fashion typical of American legislation, the task of implementing these two objectives is delegated to the ARB, which must make regulations according to a tight, legislatively-mandated timetable. ARB has already complied with a number of early timetable deadlines – it has published and implemented a list of early action measures,[31] and compiled an inventory of the State's GHG emissions (including a 1990 baseline and a plan for staged reduction).[32] ARB has also made regulations establishing a mandatory reporting scheme, thus substantially discharging one of the two objectives mandated by AB-32.[33] At the start of 2009, ARB published a Scoping Plan, as required by AB-32, outlining the strategies that California will employ to achieve its emissions reduction targets.[34] These include existing measures (such as the RPS) and new measures (such as the impending cap-and-trade emissions trading scheme). ARB must make regulations to implement the Scoping Plan by 2011, to be operative by 1 January 2012.[35] It has already released a preliminary draft regulation to implement the emissions trading scheme.[36]

This new direction has not gone unnoticed in other areas of Californian environmental law. Since the passage of AB-32, the State Attorney-General and environmental groups have grabbed headlines with their adventurous approach to climate change litigation. The State has launched several high-profile cases under federal legislation, as well as in tort. Most notably, in *California v General Motors*, the State sued six major automobile manufacturers for public nuisance, claiming damages for the costs to the State of adapting to and mitigating climate change.[37] In addition, existing land-use legislation requiring environmental impact assessment of proposed developments has been used to require assessment and mitigation of the GHG emissions impacts of proposed developments. In these cases, the State Attorney-General and environmental groups have successfully argued that the legislative recognition of the threat of climate change in AB-32 necessitates a reinterpretation of Californian land-use legislation to respond to this urgent environmental threat.[38] More recently the legislation has been amended to specify (via guidelines) what GHG mitigation measures are

[26] Cal. Exec. Order No S-20-06 § 1.

[27] Cal. Exec. Order No S-20-06 §§ 3-4.

[28] *California Global Warming Solutions Act*, 2006 Cal. Legis. Serv 488 (West) (codified at *Cal. Health and Safety Code* § 38500-99 (West 2006 & Supp. 2007)).

[29] *Cal. Health and Safety Code* § 38550 (West 2006 & Supp. 2007).

[30] *Cal. Health and Safety Code* § 38350 (West 2006 & Supp. 2007).

[31] Air Resources Board, *Early Action Measures* (California Environmental Protection Agency), http://www.arb.ca.gov/cc/ccea/ccea.htm viewed 29 March 2010.

[32] Air Resources Board, *Greenhouse Gas Inventory Data – 1990 to 2004* (California Environmental Protection Agency, 2009), http://www.arb.ca.gov/cc/inventory/data/data.htm viewed 29 March 2010.

[33] *Cal. Code of Regulations* §§ 95100-133.

[34] Air Resources Board, *Climate Change Scoping Plan: A Framework For Change* (California Environmental Protection Agency, 2008).

[35] *Cal. Health and Safety Code* § 38562 (West 2006 & Supp. 2007). At the time of writing, these regulations were in the process of being made.

[36] Air Resources Board, *Cap-and-Trade* (California Environmental Protection Agency, 2010), http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm viewed 12 April 2010.

[37] *California v General Motors*, No C06-05755 MJJ, 2007 US Dist. LEXIS 68547 (ND Cal., 17 September 2007).

[38] Sullivan C, "How Californian Land Use Planning Became a Weapon Against Warming", *Greenwire* (5 December 2007),

required.[39] Hence, as both a litigant and as a legislator, the State of California has integrated traditional environmental and planning law with contemporary climate change law.

KEY ELEMENTS OF CALIFORNIAN CLIMATE CHANGE LAW

Like much of the climate change regulation that has emerged in developed countries around the world, Californian climate change law is a complex mixture of regulatory measures spanning market mechanisms, mandatory legislative standards and voluntary incentive programs. For comparative purposes, this section discusses three key elements of this regulatory mosaic that bear the strongest resemblance to proposed or existing climate change initiatives in Australia. These are the cap-and-trade system to be implemented under AB-32 (analogous to the proposed national carbon pollution reduction scheme in Australia), the RPS (equivalent to the Australian Renewable Energy Target (RET)), and environmental assessment factoring in climate change mitigation under the *California Environmental Quality Act* (CEQA) (environmental impact assessment legislation with many similarities to the federal *Environment Protection and Biodiversity Conservation Act 1999* (Cth), as well as Australian State Environmental Impact Assessment laws). To a much greater extent than has occurred to date in Australia, these disparate regulatory initiatives are linked by the overall environmental objective set by AB-32 of capping California's GHG emissions at 1990 levels by 2020.

Cap-and-trade program

In adopting a cap-and-trade scheme for regulating GHG emissions as its centrepiece climate change policy, California is certainly not alone. To comply with obligations under the Kyoto Protocol and integrate with the international carbon market, many Kyoto parties have adopted domestic emissions trading systems resembling the Kyoto "flexibility mechanisms".[40] The European Union (EU) has led the way in this respect, bringing its continental trading scheme into operation on a trial basis from 2005.[41] Experience with emissions trading in the EU has informed subsequent amendments to the scheme, as well as the design of other schemes around the world.[42] For example, New Zealand introduced an emissions trading scheme in 2008, which will progressively include all industry sectors by 2013.[43] The Australian government has committed to introduce its own scheme – the Carbon Pollution Reduction Scheme (CPRS) – although enactment of the implementing legislation has been delayed in the Senate.[44] The United States already has a number of regional emission trading schemes, including the Regional Greenhouse Gas Initiative in the eastern States,[45] and the Western Climate Initiative (WCI) in the west (of which California is a part).[46] Indeed, the concept of emissions trading is often considered an American invention, having been introduced to combat the emission of noxious gases under the American *Clean Air Act* as early as the 1970s.[47]

AB-32 does not specifically require an emissions trading system. It leaves ARB with a broad discretion as to how its legislated emissions reduction targets are to be achieved, including but not

http://www.earthportal.org/news/?p=711 viewed 29 March 2010.

[39] *Cal. Pub. Res. Code* § 21083.5.

[40] Kyoto Protocol, n 2, Arts 6, 12, 17.

[41] Directive 2003/87/EC Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community, in respect of the Kyoto Protocol's Project Mechanisms [2004] OJ L 338.

[42] See generally, Ellerman D and Joskow P, *The European Union's Emissions Trading System in Perspective* (Pew Centre on Global Climate Change, MIT, 2008).

[43] *Climate Change Response (Emissions Trading) Amendment Act 2008* (NZ).

[44] See *Carbon Pollution Reduction Scheme Bill 2009* (Cth).

[45] Regional Greenhouse Gas Initiative, *Model Rule* (an initiative of the Northeast and Mid-Atlantic States of the US, 2007), http://www.rggi.org/model_rule_key_documents_link viewed 31 March 2010.

[46] Western Climate Initiative, *Design Recommendations* (2008), http://www.westernclimateinitiative.org/the-wci-cap-and-trade-program/design-recommendations viewed 31 March 2010.

[47] Kirk J, "Creating an Emissions Trading System for Greenhouse Gases: Recommendations to the California Air Resources Board" (2008) 26 Va Envtl LJ 547 at 557; Ellerman AD and Harrison D Jr, *Emissions Trading in the US: Experience, Lessons and Considerations for Greenhouse Gases* (Pew Centre on Global Climate Change, MIT, 2003).

limited to market-based compliance mechanisms.[48] However, on 18 October 2006, Governor Schwarzenegger signed Executive Order S-20-06, which effectively removed that discretion. This Executive Order established a Market Advisory Committee within the EPA to advise ARB on "the design of a market-based compliance program",[49] and required ARB to work with the Secretary of the EPA "to bring both regulatory measures and market-based mechanisms forward on a concurrent and expeditious schedule".[50] Consequently, when ARB published its Scoping Plan in October 2008, the centrepiece emissions reduction measure was a cap-and-trade emissions trading scheme.[51]

Cap, coverage and linkage

ARB is still formulating the details of the cap-and-trade scheme, which is due to commence operation on 1 January 2012. Stakeholder consultation on the program has been ongoing since January 2009 and the recommendations of a Market Advisory Committee, the California Public Utilities Commission (CPUC) and the CEC have also been taken into account.[52] Given the rapid pace of policy development in the area, the final design may be in place by the time this article is published. Already, the Scoping Plan has provided a number of key design features, which have been elaborated in a Preliminary Draft Regulation for the scheme released for public review and comment on 24 November 2009.[53] The scheme will be linked to the WCI – the north-western regional trading scheme consisting of eight western States and four Canadian Provinces.[54] The WCI has its own design recommendations that, in the interests of linking the Californian scheme with this broader market, have been highly influential.[55] Depending on the fate of federal emissions trading legislation currently before the United States Congress, it is expected that the Californian scheme will also eventually link, or transition, to the federal program.

The scheme as outlined in the Scoping Plan and Preliminary Draft Regulation would cover around 85% of California's GHG emissions with a "declining aggregate cap".[56] The cap is intended to implement the reduction target under AB-32 of a return to 1990 levels by 2020. It will impose an emissions limit of 365 million metric tonnes of carbon dioxide equivalent per annum ($MtCO_2e$) by 2020.[57] That is less than the EU commitment to reduce 20% below 1990 levels by 2020,[58] and the British commitment to reduce 34% below 1990 levels by 2020.[59] It is, however, comparable to Australia's proposed reduction targets. Australia's highest proposed target is a 25% reduction below 2000 emissions levels by 2020. However, the Australian government has made adoption of this target

[48] *Cal. Health and Safety Code* §§ 38560, 38570.

[49] Cal. Exec. Order No S_20-06 § 3.

[50] Cal. Exec. Order No S_20-06 § 4.

[51] Air Resources Board, n 34, p 30.

[52] Air Resources Board, n 34, p 33.

[53] See California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, *Preliminary Draft Regulation for a California Cap-And-Trade Program* (24 November 2009), http://www.arb.ca.gov/cc/capandtrade/meetings/121409/pdr.pdf viewed 31 March 2010. Following the receipt of public comments, a draft proposed regulation will be prepared and put out for further public comment before preparation of final draft regulation. Board due to consider final draft regulation at its scheduled meeting in October 2010.

[54] California, Arizona, Montana, New Mexico, Oregon, Utah, and Washington, and the Canadian provinces of British Columbia, Manitoba, Ontario, and Quebec, in addition to which six American States, one Canadian province, and six Mexican States are participating in WCI as observers: Air Resources Board, n 34, p 30.

[55] Western Climate Initiative, n 46.

[56] California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, n 53, s 95801; Air Resources Board, n 34, p vii.

[57] Air Resources Board, n 34, Appendix C, pp 16-17.

[58] EUROPA, *Citizens' Summary: EU Climate and Energy Package* (2010), http://www.ec.europa.eu/environment/climat/climate_action.htm viewed 31 March 2010.

[59] Department of Energy and Climate Change, *UK Sets World's First Carbon Budgets* (media release, UK Government, 22 April 2009), http://www.decc.gov.uk/en/content/cms/news/pn047/pn047.aspx viewed 31 March 2010.

conditional upon the successful conclusion of a comprehensive global climate change agreement.[60] Following the disappointing outcome of the Copenhagen international climate change conference in December 2009, it is very possible that the 2020 target adopted by Australia will fall back to a level of between a 5-15% reduction on 2000 levels.[61] By comparison, the Californian 2020 target amounts to a reduction of around 5% from 2000 emissions levels in that State.[62] The aggregate scheme caps for the Australian emissions trading scheme will be set progressively, five years in advance.[63] Based on projected emissions data, the cap in 2020 will be about 371 $MtCO_2e$ under a 5% reduction target.[64]

Coverage of GHG emissions sources under the Californian scheme will commence in phases, as with the EU and New Zealand schemes,[65] although ARB is also considering an alternative approach whereby all covered entities would be brought into the program from the outset. Under the staged approach, coverage in the first compliance period (beginning in 2012) would extend only to electricity generators and electricity imports, as well as large industrial facilities that emit more than 25,000 $MtCO_2e$ per year. In practice, this would include about 600 of the State's largest GHG-emitting stationary sources within the scheme. In the second compliance period (scheduled to begin in 2015),[66] fuel combustion would be covered "upstream" where used for commercial or residential purposes, for transport, or by large industrial facilities that emit less than 25,000 $MtCO_2e$ per year.[67] Upstream coverage of emissions from fuel combustion and the coverage of other facilities according to their emissions intensity rather than their industry sector are features the Californian scheme and the proposed Australian CPRS have in common.[68]

Allocation, allowances and offsets

Like most emissions trading schemes, ARB aspires to a 100% auction system as the most efficient means of distributing GHG emissions permits (termed "allowances") among emitters in the long term. In the meantime, however, it has opted to use a combination of permit auction and direct allocation of allowances to existing emitters.[69] The exact ratio of auction to allocation is as yet undetermined. In contrast to the Australian CPRS, where political considerations drove decision-making as to the

[60] Wong P (Minister for Climate Change), *A New Target for Reducing Australia's Carbon Pollution* (media release, Australian Government, 4 May 2009).

[61] In a recent submission to the UNFCCC under the Copenhagen Accord, Australia has specified a 5% target, rising to 15% only if a global agreement is reached under which major developing economies commit to substantially restrain emissions and advanced economies take on commitments comparable to Australia's. See United Nations Framework Convention on Climate Change (UNFCCC), *Appendix I – Quantified Economy-wide Emissions Targets for 2020*, http://www.unfccc.int/home/items/5264.php viewed 31 March 2010. See, however, the government's continued commitment to the full range of targets from 5% to 25%: Department of Climate Change, *National Targets* (Australian Government, 2010), http://www.climatechange.gov.au/en/government/national-targets.aspx viewed 12 April 2010.

[62] According to the 1990-2004 greenhouse gas inventory published by the ARB in 2007, Californian emissions were 426.60 million $MtCO_2e$ in 1990, rising to 452.27 million $MtCO_2e$ in 2000: Air Resources Board, n 32.

[63] Australia's caps will be set progressively, calculated as the difference between the national indicative trajectory and projected emissions from uncovered sectors: Department of Climate Change, *Tracking to Kyoto and 2020: Australia's Greenhouse Emissions Trends 1990 to 2008-12 and 2020* (Australian Government, 2009) p 7. See also *Carbon Pollution Reduction Scheme Bill 2009* (Cth), cl 14(2)-(3).

[64] Projected emissions from uncovered sectors are expected to be 155 $MtCO_2e$ by 2020, and projected total "business-as-usual" emissions are expected to be 664 $MtCO_2e$ by 2020. Therefore, to achieve the required goal of 526 $MtCO_2e$ by 2020, covered sectors will have to be capped at 371 $MtCO_2e$. See Department of Climate Change, n 63, pp 7, 22-23.

[65] The first phase of the EU scheme only applied to electricity generation and select industrial sectors, but coverage is expanded in subsequent phases. The New Zealand scheme only includes forestry in 2008, incorporating electricity generation and industrial processes in 2010, liquid fossil fuels in 2011, and all other emissions (including agriculture and waste) from 2013.

[66] ARB is currently considering whether compliance periods should be shortened from a three-year duration to a one-year duration. If the latter approach is adopted this could see the emissions cap tightened much more rapidly.

[67] Air Resources Board, n 34, p 31.

[68] The Australian CPRS requires corporations or groups that exceed statutory emissions thresholds to register and record their emissions, and surrender permits proportionate to their annual emissions: *National Greenhouse and Energy Reporting Act 2007* (Cth), s 13; *Carbon Pollution Reduction Scheme Bill 2009* (Cth), cll 17, 125, 132.

[69] Air Resources Board, n 34, p 34.

portion of emissions permits to be allocated for free,[70] ARB's determinations regarding the allocation of allowances will be guided by the advice of a 17-member Economic and Allocation Advisory Committee (EAAC) consisting of economic, financial and policy experts of various backgrounds and experience. The EAAC will also advise ARB on the question of the best use of auction proceeds – an important matter when it comes to ameliorating the distributional aspects of the scheme.[71]

Recommendations for the WCI are also likely to be influential in setting the ratio of permits auctioned versus allocated under the Californian scheme. According to the WCI guidelines, a minimum of 10% of allowances must be auctioned in the first compliance period, increasing to 25% by 2020.[72] California is at liberty to go beyond those minimums and has been urged to do so,[73] but may want to standardise its auction quota with that of the other WCI jurisdictions for the sake of effective linkage.[74] The 10% minimum is comparable to the 25% minimum under the Regional Greenhouse Gas Initiative in the eastern United States, but is relatively low compared to the 75% of permits expected to be auctioned under the Australian CPRS.[75] Nonetheless, other schemes have relied heavily on allocation in their early years in order to ease the financial burden on firms caused by the imposition of a carbon price. For instance, the EU allocated about 95% of available emissions permits in its first phase; however, by 2013 that amount is expected to fall to around 40%.[76]

The Scoping Plan and deliberation of the EAAC to date suggests that any free allocation of allowances to covered entities will be based on the traditional approaches of benchmark standards or historical emissions, as well as a novel option of "setting aside" allowances from the initial compliance period to reward covered entities that make voluntary reductions prior to 2012.[77] In respect of auctioned allowances, California may adopt the WCI suggestion to stipulate an allowance reserve price to prevent a price crash that would undermine the integrity of the scheme.[78] This approach of setting a floor price for auctioned permits is diametrically opposed to that proposed under the Australian CPRS. Although the CPRS legislation allows a reserve price to be set,[79] the Australian Government has indicated it will use this provision to impose a ceiling on permit prices for the first five years of operation, and a (very low) fixed permit price of A$10 for the first year of operation.[80] This decision has been driven by political factors; primarily the desire to ease the costs of the new emissions trading scheme for businesses.[81]

[70] Eltham B, "Will Billions for Big Carbon Be Enough?" *New Matilda* (24 November 2009), http://www.newmatilda.com/2009/11/24/emissions-trading-deal viewed 31 March 2010.

[71] For more information on the Economic and Allocation Advisory Committee Process, see California Climate Change Portal, *Economic and Allocation Advisory Committee*, http://www.climatechange.ca.gov/eaac/index.html viewed 31 March 2010.

[72] Air Resources Board, n 34, p 34.

[73] For example, the CUC and CPEC proposal outlined a phased introduction whereby 100% of permits would be auctioned by 2016; but the California Market Advisory Committee advised that this would impact too sharply on industry, and the CARB seems to agree: Air Resources Board, n 34, Appendix C, p 19.

[74] Air Resources Board, n 34, pp 35-36.

[75] Department of Climate Change, *Carbon Pollution Reduction Scheme: Australia's Low Pollution Future (White Paper)* (Australian Government, 2008) p xxxv.

[76] Hodgkinson D and Garner R, *Global Climate Change: Australian Law and Policy* (Lexisnexis Butterworths, 2008) p 260; EUROPA, *Emissions Trading System: Auctioning* (2010), http://www.ec.europa.eu/environment/climat/emission/auctioning_en.htm viewed 31 March 2010.

[77] Air Resources Board, n 34, Appendix C, p 20.

[78] Air Resources Board, n 34, p 34.

[79] *Carbon Pollution Reduction Scheme Bill 2009* (Cth), cl 103A(2)(m).

[80] Department of Climate Change, n 75, p xxxi; Prime Minister, Treasurer and Minister for Climate Change for Water, *Carbon Pollution Reduction Scheme: Support in Managing the Impact of the Global Recession* (media release, Australian Government, 4 May 2009).

[81] Wong P (Minister for Climate Change and Water), *Carbon Pollution Reduction Scheme: Support in Managing the Impact of the Global Recession* (media release, Australian Government, 4 May 2009).

In addition to allowances that must be surrendered by covered entities to match their emissions during a compliance period, the Californian emissions trading scheme also makes provision for the use of offsets. Offsets are tradable credits that represent GHG emissions reductions from sources not covered by the cap-and-trade program. The Preliminary Draft Regulation promises that rigorous criteria will apply to the use of offsets to ensure they are "real, permanent, verifiable, enforceable, and quantifiable",[82] and satisfy the requirement of "additionality".[83] The technical mechanism for validating and counting offsets according to those criteria will be developed by ARB. The scheme could potentially admit offsets developed in projects outside of California, taking advantage of the emissions reduction opportunities across the border in Mexico,[84] and perhaps throughout the developing world.[85] Importantly, the Californian scheme will adopt the WCI requirement that the amount of allowed offsets not exceed 49% of the total required emissions reduction to ensure that covered sectors make real emissions reductions.[86] This is in contrast to most other cap-and-trade schemes, including the Australian scheme that will allow unlimited use of offsets generated under the Kyoto Protocol (such as certifiable emissions reductions credits from projects undertaken in developing countries).[87]

Penalties and revenue

A crucial element of any emissions trading scheme, despite its market basis, is a credible system of penalties for non-compliance, coupled with strong enforcement.[88] This ensures stability in the market price for permits and prevents free-riding by non-compliant entities on the efforts of emitters who take genuine action to reduce their GHG emissions.[89] Under the Californian emissions trading scheme, the complete range of penalties for non-compliance have not yet been determined, but the penalty for surrendering insufficient allowances is likely to follow the WCI recommendation. This would require a non-complying company to obtain and surrender three allowances for every $MtCO_2e$ not covered by an allowance by the end of a relevant accounting period.[90] This penalty is tough in comparison to many cap-and-trade schemes. The New Zealand and proposed Australian schemes, for example, require that the permit shortfall be made up in the next compliance period (the "make-good" requirement), in addition to a financial penalty for each permit not surrendered (often roughly the same as the permit price).[91] Hence, the overall penalty in these schemes is about twice the permit price, as opposed to something more like three times in California.[92] Moreover, by setting a penalty in permits rather than cash the Californian model allows the penalty to fluctuate with the permit price. In a market where permits are scarce, the increased price of permits will tend to add to the incentive for companies to ensure compliance.

As for the revenues generated through auctioning allowances, how the monies gained from collecting penalties will be spent is yet to be determined. The Scoping Plan lists a number of

[82] California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, n 53, p 7.

[83] "Additionality" refers to the idea that reductions represent emission cuts additional to what is required by law or regulation or would otherwise have occurred.

[84] To which end Governor Schwarzenegger has already signed a Memorandum of Understanding with six Mexican border States: Office of the Governor, *Gov Schwarzenegger Joins Mexican Border States to Fight Climate Change and Increase Green Investment through Public Private Partnerships* (media release, Californian Government, 15 August 2008).

[85] Air Resources Board, n 34, pp 37-38.

[86] Air Resources Board, n 34, p 37.

[87] See *Carbon Pollution Reduction Scheme Bill 2009* (Cth), Pt 10.

[88] Department of Climate Change, n 75, p 7-1.

[89] Bogoshian M and Alex K, "The Essential Role of State Enforcement in the Brave New World of Greenhouse Gas Emission Limits" (2009) 27 UCLAJELP 337.

[90] Air Resources Board, n 34, Appendix C, pp 18-19.

[91] *Carbon Pollution Reduction Scheme Bill 2009* (Cth), s 133; Hodgkinson and Garner, n 76, p 286; *Climate Change Response Act* (NZ), s 123.

[92] On the other hand, the EU penalty was much higher still: 40 euros, rising to 100 euros, despite the low permit price of about 20 euros in the first phase.

suggestions, including a Carbon Trust to facilitate further mitigation and market stability, adjustment support for the electricity sector, industry subsidies, general environmental protection, or assistance for consumers.[93] The preliminary draft regulation identifies three primary claims on "allowance value": compensation for those burdened by the scheme; distribution to the general public; or investment in furthering the aims of AB-32.[94] Under the WCI Design Recommendations, at least some of the money must go to GHG reduction measures, or community adaptation.[95] However, the Californian scheme shows some signs of placing a greater emphasis on consumers disadvantaged by the imposition of a carbon price. In an important concession to environmental justice requirements, ARB is legislatively required to ensure that low-income communities are not disproportionately impacted – a requirement with potentially important ramifications for the use of scheme revenue.[96]

Integration of the emissions trading scheme with other measures

California will combine its cap-and-trade program with complementary non-market measures directed at reducing GHG emissions. In the words of the Economic and Technology Advancement Advisory Committee (an advisory committee of ARB):

> If markets were perfect, such a cap and trade system would bring enough new technologies into the market and stimulate the necessary industrial RD&D to solve the climate change challenge in a cost effective manner…[but as it is] [a]dditional market barriers and co-benefits would not be addressed if a cap and trade system were the only state policy employed to implement AB 32. Complementary policies will be needed to spur innovation, overcome traditional market barriers (e.g., lack of information available to energy consumers, different incentives for landlords and tenants to conserve energy, different costs of investment financing between individuals, corporations and the state government, etc.) and address distributional impacts from possible higher prices for goods and services in a carbon-constrained world.[97]

ARB endorsed this reasoning in the Scoping Plan, finding "that it is critically important to include complementary measures directed at emissions sources that are included in the cap-and-trade program".[98] A multi-pronged regulatory approach is therefore put forward that includes direct regulatory measures (eg GHG emission standards) and measures providing incentives for GHG reduction (eg programs to encourage the uptake of solar energy by households), working in concert with an emissions trading scheme. ARB is also considering the need for further complementary measures to address the emission of co-pollutants (eg smog) and the concentration of such emissions that can occur as a consequence of trading of allowances under an emissions trading scheme.[99]

Perhaps the best example of such complementary measures is the approach taken to reduce transport emissions. Transport accounts for 41.2% of California's GHG emissions, making it the State's largest source.[100] Yet, with 32 million registered motor vehicles in California, downstream coverage of their GHG emissions in a cap-and-trade scheme would be administratively unworkable.[101] By contrast, upstream coverage of transport through increasing fuel prices sends a signal that is both weaker (because it is more removed from automobile use), less effective (because many people do not

[93] Air Resources Board, n 34, pp 70-71.

[94] Air Resources Board, n 36, subarticle 8.

[95] Western Climate Initiative, n 46, p 7.

[96] *Cal. Health and Safety Code* § 38562(b)(2).

[97] Air Resources Board, n 34, pp 18-19.

[98] Air Resources Board, n 34, p 19.

[99] There is some concern that emissions trading leads to allowances concentrated in highly industrial areas which often colocated with poor/disadvantaged communities. This creates both potential environmental problems (toxic hotspots) and unequal distributional impacts that give rise to environmental justice concerns: Drury R, Belliveau ME, Kuhn JS and Bansal S, "Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy" (1999) 9 Duke Envtl L & Pol'y F 231; Kirk, n 47 at 559.

[100] Kirk, n 47 at 565.

[101] Kirk, n 47 at 567.

have the option not to drive) and less fair (because it imposes a regressive tax on fuel).[102] Since the cap-and-trade scheme cannot effectively mitigate this emissions source on its own, the Scoping Plan provides for the introduction of a Low Carbon Fuel Standard to complement the existing Pavley Standards,[103] as well as a suite of further vehicle efficiency standards.[104] Similar complementary measures are provided for renewable energy promotion, through the RPS and the Million Solar Roofs Initiative.[105]

Renewables Portfolio Standard

The RPS, like the emissions trading scheme, is an American invention. Discussions for a detailed RPS design began in California in 1995, and though the idea was not adopted in California at that time, it was picked up by advocates and policy makers across the United States.[106] Amongst those States first adopting the measure, many experienced a high degree of success in encouraging and increasing renewable energy generation and use, notably Texas.[107] It is now the most popular form of renewable energy regulation in the United States, with just over half the States enacting one variation or another.[108] The United States Congress has considered introducing an RPS, but has so far not followed the States' example.[109]

The Californian RPS Program was adopted in 2002 with the passage of Senate Bill 1078. It is analogous to the RET used in Australia in that it imposes an obligation on electricity retailers to procure a certain percentage of their electricity from renewable energy sources each year.[110] That procurement quota increases by 1% each year, rising to an ultimate target (in California, currently 20% by 2010).[111] A retailer who fails to satisfy that obligation incurs a penalty of 5c per kWh shortfall, with an overall penalty cap of $25 million per retailer.[112] That penalty amounts to US$50 per MWh which, with the rising value of the Australian dollar, is comparable to the penalty of A$40 per MWh under the Australian RET.[113] In both cases, penalties function like a tax that is designed to induce liable entities to increase their use of renewable electricity sources and hence decrease their reliance on more greenhouse polluting sources, such as coal-fired power.[114]

When introduced, the targets in the Californian RPS were the most aggressive in the country,[115] and they have been progressively increased since then. The target was initially set at 20% renewable energy by 2017.[116] In 2006, Senate Bill 107 moved that deadline forward by almost a decade, making

[102] Kirk, n 47 at 567.

[103] Air Resources Board, n 34, p 46.

[104] Air Resources Board, n 34, p 51.

[105] Air Resources Board, n 34, pp 38, 53.

[106] Wiser R, Namovicz C, Gielecki M and Smith R, "The Experience with Renewable Portfolio Standards in the United States" (2007) 20 *Electricity Journal* 8.

[107] Hurlbut D, "A Look Behind the Texas Renewable Portfolio Standard: A Case Study" (2008) 48 *Natural Resources Journal* 129 at 130.

[108] Department of Energy, Energy Efficiency and Renewable Energy Division, *States with Renewable Portfolio Standards* (US Government), http://www.apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm viewed 31 March 2010.

[109] Sovacool B, "Congress Got it Wrong, The Case for a National Renewable Portfolio Standard and Implications for Policy" (2008) 3 *Environmental and Energy Law and Policy Journal* 85.

[110] *Cal. Pub. Util. Code* § 399.15(a) (Deer. 2008).

[111] *Cal. Pub. Util. Code* § 399.15(b)(1) (Deer. 2008).

[112] D 03-06-071, 50 (CPUC Directive).

[113] *Renewable Energy (Electricity) (Charge) Act 2000* (Cth), s 6.

[114] Thompson A and Campbell-Watt R, "Australia and an Emissions Trading Market – Opportunities, Costs and Legal Frameworks" (2005) 24(2) *Australian Resources and Energy Law Journal* 151 at 163-165.

[115] Golden, n 5 at 703.

[116] Golden, n 5 at 703.

it 20% by 2010.[117] In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which increased the target to 33% by 2020.[118] A further increase to 40% by 2020 and 50% by 2025 was put to the voters in November 2008, as Proposition 7, but was defeated.[119] The 2020 target set by the Australian RET pales in comparison with the Californian RPS, even though the Australian government recently legislated to lift the RET from its original level of 9,500 gigawatt-hours (or 2%) to require a further 45,000 gigawatt-hours of renewable energy production by 2020, equating to an increase of about 20%.[120]

Many RPS schemes allow retailers to fulfil their procurement obligations through the purchase and surrender of Tradeable Renewable Energy Credits. The market for renewable energy which these credits create has proven a major attraction, along with the fact that an RPS makes retailers pay for renewable energy (rather than the government).[121] Presumably, this is why the schemes are so popular in Australia and the United States, despite empirical evidence suggesting that they are less effective than their most popular alternative – the feed-in tariff schemes widespread in Europe[122] – which do not possess these features.[123] Currently, the Californian scheme does not allow for tradeable credits, although the authorising legislation specifically gives the CPUC the option of introducing a tradeable credits scheme.[124] Recently, the CPUC has moved to introduce tradeable credits, through a string of decisions and proposed decisions: defining Renewable Energy Credits, and proposing the authorisation of trading.[125] Despite some opposition, the concept enjoys relatively wide support and its introduction appears imminent.[126]

The Californian RPS also includes a number of unusual, additional requirements for purchasing renewable energy under the scheme. Retailers must prepare and submit to CPUC a *Renewable Energy Procurement Plan* outlining planned renewable energy purchases, at least 90 days before the procurement takes place, which the CPUC will review.[127] Moreover, retailers must make those procurements through long-term supply contracts of at least 10 years duration – an innovative feature of the Californian RPS designed to bring certainty to renewable energy generation businesses.[128]

The RPS places more onerous requirements on publicly-owned electricity retailers, as distinct from investor-owned retailers. The obligation to implement an RPS is imposed on the governing board

[117] *Cal. Pub. Util. Code* § 399.15(b)(1) (Deer. 2008).

[118] Cal. Exec. Order No S-14-08 § 1. That increased target was given further salience by Executive Order S-21-09, which ordered ARB to adopt regulations implementing that target.

[119] Weissman S, *California's Proposition 7: An Analysis* (Berkeley CA, 2008).

[120] *Renewable Energy (Electricity) Amendment Act 2009* (Cth); *Renewable Energy (Electricity) (Charge) Amendment Act 2009* (Cth).

[121] Wiser et al, n 106 at 9.

[122] Under a feed-in tariff scheme, rather than set a quota for renewable energy procurement, the FITS sets a fixed price for renewable energy and lets the market determine quantity.

[123] Prest J, "A Dangerous Obsession with Least Cost? Climate Change, Renewable Energy Law and Emissions Trading" in Gumley W and Daya-Winterbottom T (eds), *Climate Change Law: Comparative, Contractual and Regulatory Considerations* (Lawbook Co, 2009) pp 179-206, 195.

[124] *Cal. Pub. Util. Code* § 399.16 (Deer. 2008).

[125] Californian Public Utility Commission, *Decision on Definition and Attributes of Renewable Energy Credits for Compliance with the California Renewables Portfolio Standard*, R 06-02-012 (12 August 2008); Californian Public Utility Commission, *Proposed Decision Authorizing Use of Renewable Energy Credits for Compliance with the California Renewables Portfolio Standard*, R 06-02-012 (26 March 2009); *Californian Public Utility Commission, Revised Proposed Decision Use of Renewable Energy Credits for Compliance with the California Renewables Portfolio Standard*, R-06-02-012 (23 December 2009).

[126] See, eg Union of Concerned Scientists, *Comments of the Union of Concerned Scientists on Proposed Decision Authorizing Use of Renewable Energy Credits for Compliance With the Californian Renewable Portfolio Standard*, R 06-02-12 (16 February 2006), http://www.cpuc.ca.gov/PUC/energy/Renewables/TRECs_PD_Comments.htm viewed 31 March 2010.

[127] *Cal. Pub. Util. Code* § 399.14(a)(1) (Deer. 2008).

[128] *Cal. Pub. Util. Code* § 399.14(a)(4) (Deer. 2008).

of the publicly-owned utility.[129] They are required to report to the public annually on their renewable energy procurement expenditure, their "resource mix" (including the amount of renewable energy they use), and their status in implementing the RPS.[130] This obligation goes beyond the more general and limited reporting required of investor-owned utilities.[131] None of these additional, and apparently, beneficial features are mirrored by the Australian RET.[132]

The RPS also includes an array of "flexibility measures" designed to facilitate efficient compliance. Firstly, if a retailer falls short of their renewable energy procurement percentage, the RPS allows them to "make up the difference" the next year.[133] Second, if renewable energy purchases rise above market price, the excess cost must be met from specially reserved public funds,[134] and if those funds are insufficient the obligation to purchase is limited to such procurement as can be made at market price.[135] These measures, which are not included in the Australian RET, have been the subject of some concern. They have the potential to undermine the environmental effectiveness of the scheme if retailers routinely fail to meet their obligations, or if the price of energy significantly increases (eg during one of California's famous power shortages).[136]

It is difficult to assess the effectiveness of an RPS like that in California, since although renewable energy improvements can be easily tracked, the extent to which those improvements are caused by RPS is not clear.[137] Anecdotally though, the RPS appears to be building momentum. Despite a proportional decline in renewable energy generation in 2007, generation recovered strongly in 2008.[138] While there were few new renewable energy contracts between 2002 and 2004, renewable energy generation contracts picked up in 2005.[139] In 2008 renewable energy facility construction amounted to more than four times the added capacity than in any previous year, leading the CPUC to speculate that the RPS-driven renewable energy market is beginning to mature.[140]

Environmental assessment and climate change litigation

In Australia, since the mid-2000s, climate change has frequently been raised as an issue in legal challenges to State and federal environmental assessment processes for GHG-intensive developments like large coal mines.[141] The relevant federal statute – the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) – requires environmental impact assessment and approval only for projects with a "significant impact" on designated matters of national environmental significance, including world heritage properties such as the Great Barrier Reef,[142] but excluding climate change per se.[143] The concept of "significant impact" is not defined in the legislation;[144] a situation mirrored in relevant State environmental impact assessment laws.[145]

[129] *Cal. Pub. Util. Code* § 387(a) (Deer. 2008).

[130] *Cal. Pub. Util. Code* § 387(b) (Deer. 2008).

[131] *Cal. Pub. Util. Code* §§ 398.3 (a), 387(b).

[132] On the face of it, these measures, designed to ensure State oversight in sustainable and responsible renewable energy procurement, seem a good precaution though they may prove bureaucratic and cumbersome in practice.

[133] *Cal. Pub. Util. Code* § 399.15(b)(4) (Deer. 2008).

[134] *Cal. Pub. Util. Code* § 399.15(d) (Deer. 2008).

[135] *Cal. Pub. Util. Code* § 399.15(d)(3) (Deer. 2008).

[136] Golden, n 5 at 704.

[137] Wiser et al, n 106 at 12.

[138] California Public Utilities Commission, *RPS Procurement Status Report: First Quarter 2009* (2009) p 4.

[139] California Public Utilities Commission, n 138, p 4.

[140] California Public Utilities Commission, n 138, p 2.

[141] Peel, n 3; England, n 3.

[142] *Environment Protection and Biodiversity Conservation Act 1999* (Cth), s 13.

[143] Thus in order for a project's GHG emissions to attract the assessment and approval requirements of the Act it is necessary to demonstrate that those emissions will have an impact on a protected matter of national environmental significance, eg because

In attempts to harness existing environmental legislation to mitigate the potential climate change impacts of development, Australian litigants have often struggled to prove that one particular development makes, or will make, a "significant" contribution to the global phenomenon of climate change.[146] In the context of the EPBC Act this has led to calls for the legislation to include a "greenhouse trigger" in order to make projects with considerable levels of GHG emissions assessable under the Act. A recent expert review of the EPBC Act recommended the introduction of an interim greenhouse trigger (to be phased out when the CPRS comes into effect) setting a threshold of at most 500,000 tonnes of carbon dioxide equivalent emitted in any 12-month period over the life of a project.[147] However, with the Australian government seeming unlikely to implement this recommendation,[148] the success of climate change litigation – whether under federal or State legislation – will continue to depend upon a "judgment call"[149] by courts as to the appropriate scale (local, regional or global) for assessing climate change impacts.[150]

A similar pattern of climate change litigation to that in Australia has emerged in California in recent years, based on CEQA.[151] Signed into law by Governor Reagan in 1970, CEQA followed the passage of the federal *National Environmental Policy Act* (NEPA), which required federal agencies whose actions would have a "significant impact" on the environment to prepare an Environmental Impact Statement (EIS) outlining those impacts and ways to avoid them.[152] Compared with NEPA, however, CEQA imposed far more stringent requirements. CEQA applies to State or local government agencies whenever they make a discretionary decision to undertake or *approve* a project (including private projects), which may cause significant environmental impacts.[153] The agency concerned will then require that the project proponent prepare and publish an Environmental Impact Report (EIR) outlining potentially significant environmental impacts.[154] Covered impacts that must be assessed include cumulative impacts where "the possible effects of a project are individually limited but cumulatively considerable" when viewed in connection with other projects, including past projects and future projects.[155] If the project may have such impacts, the proponent must also identify all feasible

increased GHG levels lead to warmer temperatures damaging fragile Reef ecosystems. For an (unsuccessful) argument along these lines, see *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment and Heritage* (2006) 93 ALD 84.

[144] The *Environment Protection and Biodiversity Conservation Act 1999* (Cth), s 527E defines "impact" to include both direct and indirect impacts. There are administrative guidelines under the Act explaining the concept of "significant impact" but they are non-binding.

[145] See, eg *Environmental Protection Act 1986* (WA), s 38; *Environmental Planning and Assessment Act 1979* (NSW), s 112.

[146] Peel J, "Climate Change Law: The Emergence of a New Legal Discipline" (2008) 32 MULR 37 at 39; see, eg *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment and Heritage* (2006) 93 ALD 84.

[147] Hawke A, *The Australian Environment Act: Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999* (October 2009) p 113, http://www.environment.gov.au/epbc/review/index.html viewed 31 March 2010.

[148] See Garrett P (Minister for the Environment, Heritage and the Arts), *Release of the Hawke Report* (media release, Australian Government, 21 December 2009), http://www.environment.gov.au/minister/garrett/2009/mr20091221.html viewed 31 March 2010, in which the government rejected the review's recommendation of an interim greenhouse trigger given its intention to reintroduce the CPRS Bill into Parliament.

[149] McAllister LK, "Litigating Climate Change at the Coal Mine" in Burns WCG and Osofsky HM (eds), *Adjudicating Climate Change: State, National, and International Approaches* (Cambridge University Press, 2009) pp 48, 68.

[150] In successful cases, such as the case of *Gray v Minister for Planning* (2006) 152 LGERA 258, judges have assessed the significance of impacts in light of the effects for local/regional environments.

[151] *Cal. Pub. Res. Code* §§ 21000-21177 (Deer. 2008).

[152] 42 U.S.C. §§ 4321-4370 (2000).

[153] *Cal. Pub. Res. Code* § 21080(a), (c)-(d) (Deer. 2008); Owen D, "Climate Change and Environmental Assessment Law" (2008) 33 Colum J Envtl L 57 at 76.

[154] *Cal. Pub. Res. Code* § 21080(d) (Deer. 2008).

[155] *Cal. Pub. Res. Code* § 21083(b)(2) (Deer. 2008).

project alternatives and feasible mitigation measures.[156] Finally, and most importantly, an agency must not approve or carry out a project *unless* in accordance with those alternatives and mitigation measures.[157] Unlike NEPA, CEQA thus positively requires agencies to avoid or mitigate the significant environmental impacts of their actions.[158] An exception is made, however, where there are specific economic, legal, social, technological or other considerations that make infeasible mitigation measures or alternatives identified in the EIR, and the agency concerned finds that the resulting economic, legal, social, technological, or other benefits of the project outweigh the environmental cost.[159]

As with environmental legislation in Australia, the potential of California's environmental assessment statute to combat climate change was overlooked for many years.[160] When AB-32 was enacted, few anticipated the potential links between its terms (generally expected to facilitate market measures) and land-use law.[161] It was only when environmental lawyers from the Attorney-General's office and from environmental non-governmental organisations began pressing this claim that CEQA's global warming potential gained acceptance in the broader legal and academic community.[162] The first signs of change came in 2006, when then-Attorney-General Bill Lockyer advised leaders of Orange County that the proposed construction of a large freeway would not comply with CEQA unless its global warming impacts were considered.[163] In the same year, the Center for Biological Diversity, a non-governmental organisation, filed a comment letter with the City of Banning on a proposal for a large housing development comprising 1,400 homes in an isolated area, arguing that CEQA required an analysis of GHG emissions.[164] When their comments were rejected, the Center filed a suit against the city. They also filed against the City of Desert Hot Springs, on similar grounds.[165]

These initial forays using CEQA to address GHG concerns gained significant momentum in April 2007 when the new State Attorney-General Jerry Brown[166] (with support from environmental groups) brought an action against San Bernardino County, challenging the failure to include an assessment of GHG impacts in its EIR pertaining to a General Plan Update.[167] The General Plan as updated was a land-use policy document which, according to the complaint filed, would "serve as a template for growth and development in San Bernardino County for the next 25 years".[168] The complainants challenged the absence of any GHG measurement or mitigation measures in the plan – particularly the failure to consider the transport emissions of the county's large and dispersed population – as a breach of the duty to avoid significant environmental impacts under CEQA.[169] To support this global warming-responsive interpretation of CEQA, the complaint referred to the legislature's pronounce-

[156] *Save Our Peninsula Comm v Monterey County Bd of Supervisors* 104 Cal Rptr 2d 326 (2001) at 355, citing *Cal. Pub. Res. Code* §§ 21100, 21002.1, 21061.

[157] *Cal. Pub. Res Code* § 21081(a) (Deer. 2008).

[158] O'Brien, n 5 at 258.

[159] *Cal. Pub. Res Code* § 21081(b) (Deer. 2008).

[160] Owen, n 153; Sullivan, n 38.

[161] In Australia, this is known as planning law.

[162] Sullivan, n 38.

[163] O'Brien, n 5 at 239.

[164] Letter from Julie Teel, Staff Attorney, Centre for Biological Diversity, to Mr Oscar Orci, Cmty. Dev. Dir., City of Banning, Cal. (8 September 2006) cited in Vespa M, "Thinking Globally, Acting Locally: The Role of Local Government in Minimizing Greenhouse Gas Emissions from New Development" (2008) 44 Idaho L Rev 589 at 616.

[165] Center for Biological Diversity, *California Environmental Quality Act*, http://www.biologicaldiversity.org/campaigns/ceqa viewed 10 April 2010.

[166] Jerry Brown was previously California's Governor, with a strong record on climate change policy.

[167] Petition for Writ of Mandate, *The People v San Bernardino County* (executed 11 April 2007 in Sacramento CA) (San Bernardino Complaint).

[168] San Bernardino Complaint, n 167 at [2].

[169] San Bernardino Complaint, n 167 at [5].

ment in AB-32 that "[g]lobal warming poses a threat to the economic well-being, public health, natural resources, and the environment of California".[170]

In August 2007, San Bernardino County reached a settlement agreement with the Attorney-General, agreeing to include measurements of GHG emissions, a GHG emissions reduction target, and measures to achieve that target in its General Plan.[171] Following the San Bernardino County agreement, the Attorney-General filed a number of comment letters and reached a number of agreements with public and private proponents, relying on this interpretation of CEQA. For example, in September 2007, ConocoPhilips agreed to mitigate the GHG emissions from the company's planned refinery expansion in Rodeo.[172] In May 2008, the San Diego Airport Authority agreed to a number of measures in its near-term and long-term developments plans, designed to reduce emissions from its operations at Lindbergh Field.[173] Similar agreements have been reached with the Port of Los Angeles, ethanol producers Great Valley Ethanol and Cilion, and the City of Stockton.[174] In addition, on 15 May 2009, a Californian Superior Court ruled that an EIR prepared by Wal-Mart for a new "supercenter" was inadequate, for failure to consider the GHG emissions from the building.[175]

Amid concerns about the uncertainty of a "significant" greenhouse impact under CEQA, and under pressure from business and Republican representatives, the legislature responded to these emerging precedents. Senate Bill 97 was passed in 2007, establishing for the first time with legal certainty that GHG emissions were a proper subject for CEQA analysis.[176] Failure to consider the climate change impacts of new land-use proposals will now be a breach of the statute, and provide grounds for a cause of action.[177] The Senate Bill also required the Governor's Office of Planning and Research to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by 1 July 2009, to take effect from 1 January 2010.[178] At the time of writing, those amended guidelines had been prepared and submitted to the Natural Resources Agency, which is currently undertaking its rulemaking process necessary for the guidelines' approval.[179] The key provision of the proposed amendments to the guidelines relating to determining the significance of environmental impacts from GHG emissions calls for the lead agency on a project to "make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" before making an assessment of the significance of a project's GHG contribution.[180] That latter assessment may take into account factors such as:

(a) the additive effect of the project in terms of increasing GHG emissions relative to the existing environment;

[170] San Bernardino Complaint, n 167 at [4].

[171] Settlement Agreement between Edmund G Brown, Attorney-General of California, and the County of San Bernardino and the San Bernardino County Board of Supervisors (21 August 2007).

[172] Settlement Agreement between Edmund G Brown, Attorney-General of California and ConocoPhilips Company (10 September 2007).

[173] Memorandum of Understanding between the Attorney General of the State of California and the San Diego Regional Airport Authority Regarding the San Diego International Airport Master Plan (8 May 2008).

[174] Office of the Attorney-General, *California Environmental Quality Act* (Californian Government), http://www.ag.ca.gov/globalwarming/ceqa.php viewed 31 March 2010.

[175] *Coalition for Environmental Integrity v Town of Yucca Valley*, No CIVBS 810232, order entered (Cal. Super. Ct., San Bernardino County, 14 May 2009).

[176] *Cal. Pub. Res. Code* §§ 21083.05, 21097 (Deer. 2008); O'Brien, n 5 at 264.

[177] *Cal. Pub. Res. Code* § 21097 (Deer. 2008); O'Brien, n 5 at 264.

[178] *Cal. Pub. Res. Code* § 21083.05 (Deer. 2008).

[179] The Governor's Office of Planning and Research, *CEQA Guidelines and Greenhouse Gases* (Californian Government), http://www.opr.ca.gov/index.php?a=ceqa/index.html viewed 31 March 2010 (CEQA Guidelines).

[180] CEQA Guidelines, n 179 at §15064.4.

(b) whether the project's emissions exceed a pre-determined threshold of significance that the lead agency decides applies to the project;[181] and

(c) the extent to which the project complies with regulations or requirements adopted to implement a State-wide, regional, or local plan for the reduction or mitigation of GHG emissions; an EIR would still need to be prepared where the possible effects were judged to be "cumulatively considerable" notwithstanding compliance with the adopted regulations or requirements.

These proposed guidelines still leave decisions about the "significance" of the impacts of GHG emissions as a matter of judgment that will be influenced by contextual factors, such as the nature of the surrounding environment. As a result of federal case law, a similar position pertains under the Australian EPBC Act.[182] However, the amended CEQA guidelines provide greater clarity than exists in Australia on the question of whether GHG emissions are significant because of their possible cumulative effects. In particular, a new direction in the guidelines for an EIR to "analyze greenhouse gas emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable", coupled with a lead agency's capacity to consider the significance of increases in GHG emissions due to a project relative to the existing environmental situation, hold out the prospect that assessments will be able to examine the incremental or additive aspects of a project's GHG contribution. This capacity to take account of the cumulative effects of GHG emissions is particularly important in addressing a global problem like climate change where a single project is unlikely to add enormously to overall GHG levels but may nonetheless exacerbate a situation of over-production of such gasses. As some in the Californian environmental community have argued, AB-32 confers added salience to a consideration of the cumulative impacts of new projects' GHG emissions given its firm commitment to reducing California's level of emissions.[183] Arguably then, any new project that cannot feasibly avoid or mitigate its GHG emissions could be seen to have a significant environmental impact requiring CEQA analysis.

The integration of land-use legislation and climate change policy will be a critical step in achieving California's GHG emissions reduction goals. That importance stems, for the most part, from the enormous contribution of transport emissions to California's total GHG emissions profile. As mentioned above, transport emissions are California's single largest source of GHG pollution, accounting for 41.2% of the State's GHG emissions.[184] Reducing transport emissions is crucial to achieving the State's emissions targets, and the most direct way to reduce those emissions is by reducing the distance Californians drive.[185] Accordingly to the Urban Land Institute, the approach to reducing transport emissions is:

> [like a] three-legged stool, with one leg related to vehicle fuel efficiency, a second to the carbon content of the fuel itself, and a third to the amount of driving or vehicle miles travelled…Since 1980, the number of miles Americans drive has grown three times faster than the US population.[186]

The San Bernardino County case is a good example of the potential of land-use laws to prevent GHG emissions. In the San Bernardino County Complaint, one of the principal concerns was the recognition in the original General Plan Update that residents in the southwest of the county (where 78% of the population lives) were travelling approximately 28 million miles *per day* by car in 2007.[187] The predicted increase in the State's population (25% by 2030) and the added GHG emissions arising from

[181] Thresholds of significance may be determined by agencies pursuant to § 15064.7 of the CEQA Guidelines.

[182] See particularly, *Booth v Bosworth* (2001) 114 FCR 39; 117 LGERA 168; *Minister for the Environment and Heritage v Greentree* (2004) 138 FCR 198.

[183] Vespa, n 164 at 616.

[184] Kirk, n 47 at 565.

[185] Vespa, n 164 at 599.

[186] Ewing R, Bartholomew K, Winkelman S, Walters J and Chen D, *Growing Cooler: The Evidence on Urban Development and Climate Change* (Urban Land Institute, 2007) pp 11-12, quoted in Vespa, n 164 at 599.

[187] San Bernardino Complaint, n 167 at [16].

that increased transport were not adequately accounted for by the General Plan.[188] Many areas of Australia share with California this dependence on road transport given the vast distances between regional centres. In Australia, however, there has been no concerted attempt made under planning or environmental legislation to address the impact of GHG emissions associated with new transportation projects.

The Californian example, taking an integrated approach to climate change that combines land-use regulation and existing environmental assessment regimes with emissions trading, is one that other regions and countries might usefully follow. Land-use planning has the potential to curb more than just transport emissions – arguably, it is also best placed to promote goals such as energy efficiency, thus achieving deeper cuts in emissions.[189] GHG emissions from buildings and their electricity use account for about 30-40% of all GHG emissions in the United States.[190] Land-use planning laws and documents can readily include "green building" requirements and encourage energy efficiency retrofit projects. Tackling the greatest "problem areas" directly through mandatory regulation, land-use planning and legislation like CEQA can thus provide a useful, and often more immediate, complement to the gradual, indirect mechanism of an emissions trading scheme.[191]

LESSONS FROM THE CALIFORNIAN EXPERIENCE

With no binding outcome emerging from the international climate change conference in December 2009 in Copenhagen, the course of development of climate change law around the world seems likely to continue to be shaped by a "bottom-up" dynamic.[192] Hence, rather than international law driving regulatory change in domestic environmental systems, it is more probable that regulatory measures adopted at a domestic or regional level will serve as a model for legal reform elsewhere. Elements of these various domestic approaches – such as emissions trading schemes – might then be integrated via linkage arrangements to form a larger, plurilateral system. In this context, analysis of regulatory measures in particular leading jurisdictions has the potential to contribute to the development of climate change law in other countries. This article's description of the Californian efforts with regard to climate change regulation are offered in this light: not as a template to be slavishly copied around the world but as a source of ideas and experience that could be used and adapted in fashioning other domestic climate change laws.

The seminal lesson of the Californian climate change experience is the capacity for a firm and ambitious emissions cap to found an integrated regulatory program designed to reduce overall GHG emissions. AB-32 has not only provided the basis for the introduction of a cap-and-trade emissions program in California, but also stimulated legal action designed to ensure land-use planning decisions take into account GHG emissions reduction goals and the need for climate change adaptation. Integration is also evident as between the proposed emissions trading scheme and the renewable energy regulations made under the RPS. According to the Scoping Plan, the RPS is intended to complement the emissions trading scheme as part of a multi-faceted policy approach to achieving the GHG reductions set by AB-32. The emissions cap for the cap-and-trade scheme (365 million $MtCO_2e$ by 2020) has thus been calculated so as to account for the projected reduction of 21.3 million $MtCO_2e$ by 2020 due to the operation of the RPS.[193] In addition, the impact of other emissions reduction measures, like the Low Carbon Fuel Standard (with a projected 15 million $MtCO_2e$ emissions

[188] San Bernardino Complaint, n 167 at [15]-[16].

[189] Vespa, n 164 at 601.

[190] Vespa, n 164 at 602.

[191] See also Profeta T and Daniels B, *Design Principles of a Cap and Trade Scheme for Greenhouse Gases* (Nicholas Institute for Environmental Policy Solutions, Duke University, 2005) p 5; Kirk, n 47 at 564-568; Prest, n 123, pp 181, 196, 201-203.

[192] Godden L and Peel J, *Environmental Law: Scientific, Policy and Regulatory Dimensions* (Oxford University Press, 2010) Ch 7.

[193] Air Resources Board, n 34, p 32.

reduction by 2020) and the Pavley Standards (with a projected 31.7 million $MtCO_2e$ emissions reduction by 2020), have also been accounted for.[194]

The importance of an integrated approach in dealing with climate change has often been overshadowed by a focus on market measures in discussions of climate change law in other jurisdictions and, indeed, at the global level. Internationally, this is illustrated by debates over proposed measures to reduce emissions from deforestation and forest degradation in developing countries (REDD), which have centred on the use of REDD credits in international carbon markets more so than on the important question of how a system for REDD might integrate with local land-use laws.[195] On the domestic front, in countries such as Australia, the mainstream policy thinking that has informed legal development at the national level has seen target-setting and associated emissions trading as central but without a clear understanding of how this latter regulatory measure will interface with a range of other climate change legal initiatives. Indeed, most policy documents dealing with this issue in Australia suggest a mature carbon market will drive behavioural change to reduce emissions, eventually subsuming the need for other measures such as renewable energy targets.[196]

The complexity of the climate change problem, coupled with the known deficiencies of markets as environmental regulatory measures, caution against such a unitary approach.[197] While it makes sense for a jurisdiction to set an overall environmental objective for its climate change regulatory system – which can be implemented as a GHG emissions cap as AB-32 does – the Californian experience suggests it is better to employ a diverse range of measures to reach that goal.[198] Emissions trading alone is unlikely to solve a "diabolical" policy problem like climate change with its dual domestic/international nature, complex causes and multiple sources.[199] This is especially so in Australia, where the environmental effectiveness of the nascent CPRS is increasingly in doubt. The uncertainty clouding the progress of the CPRS Bill, as well as the low impact the scheme is likely to have (in its early years at least), make integration with other climate change regulations even more important.[200]

The Californian experience not only points the way to a more integrated regulatory approach in dealing with climate change, but also demonstrates how traditional environmental law can be reconceived in ways useful for addressing the localised impacts of climate change. Arguably, environmental assessment and planning laws are better suited than larger-scale measures, such as an emissions trading scheme, to dealing with the specific climate change ramifications of development in

[194] Air Resources Board, n 34, pp 38, 46.

[195] Godden L, Keenan R, Kallies A and Peel J, "Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD): Implementation Issues" (2010) *Monash Law Review* (forthcoming).

[196] See Prest, n 123, pp 187-188, citing the Prime Minister's Task Group on Emissions Trading (*Report of the Task Group on Emissions Trading*, 2007, p 137), the Australian Industry Group (*Submission to the National Renewable Energy Target Scheme*, 18 August 2008, p 1), the Institute of Public Affairs, the Productivity Commission (*What Role for Policies to Supplement an Emissions Trading Scheme? Productivity Commission Submission to the Garnaut Climate Change Review*, 2008) and Ross Garnaut.

[197] See, eg Christoff P, "Can the Invisible Hand Adjust the Thermostat? Carbon Emissions Trading and Australia" in Bonyhady T and Christoff P (eds), *Climate Law in Australia* (Federation Press, 2007); Prest, n 123; Weston D, "Carbon Trading: Much Ado About Nothing" (2009) 99 *Arena* 19; Baldwin R, "Regulation Lite: Emissions Trading" (2008) 2(2) Reg & Gov 193; Lyster R, "(De)regulating the Rural Environment" (2002) 19(1) EPLJ 34; Godden L, "Governing Common Resources: Environmental Markets and Property in Water" in McHarg A, Barton B, Bradbrook A and Godden L (eds), *Property and the Law in Energy and Natural Resources* (Oxford University Press, 2010); Fisher DE, "Markets, Water Rights and Sustainable Development" (2006) 23 EPLJ 100.

[198] See further, Sorrell S and Sijm J, "Carbon Trading in the Policy Mix" in Helm D (ed), *Climate Change Policy* (Oxford University Press, 2005) p 196; Christoff, n 197, pp 97-98; Prest, n 123, p 186; Bonyhady T, "The New Australian Climate Law" in Bonyhady and Christoff, n 197, p 24.

[199] Garnaut R, *The Garnaut Climate Change Review* (Cambridge University Press, 2008) p xviii; Garnaut R, *Climate Change as an Equity Issue* (Sampbell Oration, speech at the Brotherhood of St Lawrence, 13 November 2008) p 7, http://www.bsl.org.au/pdfs/Sambell_Oration_2008_Garnaut.pdf viewed 31 March 2010.

[200] Hawke, n 147, p 113; Power M, "Emissions Trading in Australia: Markets, Law and Justice under the CPRS" (2010) 27 EPLJ 131.

a local area.[201] Moreover, many such laws in different jurisdictions adopt general tests, such as the need for assessment and approval in instances of "significant" environmental impact. Compared with new laws governing emissions trading that often take time to develop and implement, a general significant impact test under existing environmental legislation may be more readily adapted – whether via administrative guidelines or relevant case law – to take account of climate change factors in environmental decision-making. In the Californian context, this process has been facilitated by the adoption of GHG emissions reduction goals under AB-32 which, in effect, have provided a new context for administrators and judges in considering the concept of a "significant" environmental impact.

In Australia and the United States, the days of intransigent, climate-sceptic federal governments would seem to have passed.[202] Despite this, the national governments of both countries continue to struggle with the regulatory complexity and political challenges of effective climate change regulation. In particular, both governments are facing substantial obstacles in their efforts to introduce a national GHG emissions trading scheme.[203] These challenges are mirrored and amplified at the international level, as exemplified by the failure of governments at the recent Copenhagen conference to agree on new, binding targets and measures for addressing climate change.[204] So long as aspirations for successful emissions trading schemes – national and international – remain frustrated, complementary and alternative regulatory measures to mitigate climate change will become increasingly important. Now more than ever before, these alternative regulatory options demand attention in confronting the urgent task of mitigating and adapting to climate change.

[201] McDonald J, "The Adaptation Imperative: Managing the Legal Risks of Climate Change Impacts" in Bonyhady and Christoff, n 197, p 124.

[202] Nonetheless, the federal Opposition party in Australia recently deposed its leader, Malcolm Turnbull (a proponent of emissions trading) in favour of Tony Abbott who has at times questioned the science of climate change.

[203] Kerr C, "Australia out of Step on Emission Scheme", *The Australian* (6-7 February 2010) p 5; Norington B, "Democratic Party Support for Barack Obama ETS Drops", *The Australian online* (5 February 2010), http://www.theaustralian.com.au/news/nation/democratic-party-support-for-barack-obama-ets-drops/story-e6frg6nf-1225826913033 viewed 31 March 2010.

[204] Clarke S, "UN Says Copenhagen Failed to Deliver", *ABC Online* (21 January 2010), http://www.abc.net.au/am/content/2010/s2797520.htm viewed 31 March 2010.