Will Emissions Trading really be the answer to Climate Change?

By Felicity Deane[1]

Introduction

The effects of climate change are potentially catastrophic. The world faces an enormous challenge to reduce greenhouse gas (GHG) emissions in the atmosphere, and the solution presented to solve this ever-increasing problem is emissions trading. The Australian Government, despite their emissions trading legislation twice being rejected in the Senate,[2] appears determined to continue on the path to a domestic carbon price through emissions trading. So why is it that emissions trading has spread through the developed world so rapidly?

The purpose of this paper is to examine the development of emissions trading and the rationale behind it. The path of Australia's Carbon Pollution Reduction Scheme will be reviewed. The major domestic schemes will be compared and their capability to link with one another examined. The complexity of the schemes will be compared to a possible carbon tax. Finally, the structure of a carbon tax will be considered to determine the potential complexity of the legislation.

The Path to an Australian Emissions Trading Scheme (ETS)

The CPRS will reduce Australia's emissions by placing a market price on carbon pollution, and link our efforts with those of other countries.[3]

The introduction of emissions trading in a number of developed countries seems likely in the near future. In order to evaluate its desirability as a policy measure its short history must be examined. How has it been effective in the past and what has made the Australian government jump on the ETS bandwagon?

Acid Rain in the United States

The concept of trading in emissions began in the United States with the Sulphur Dioxide Reduction Plan.[4] The purpose of this plan was to reverse the effects of acid deposition through an emission allocation and transfer program. This plan began with capping the emission units of sulphur dioxide from coal-fired power plants and expanded to incorporate more corporations and areas.[5] It was a highly successful method of sulphur dioxide emission reduction. The number of units released into the atmosphere decreased beyond expectation and the price of emission permits never reached the estimated levels of even the schemes biggest supporters. However, the success of the scheme must be examined with the circumstances surrounding it. The sectoral coverage of the scheme was initially very limited, the desulphurisation technology was available and reasonably priced at the time of the introduction of the plan and there were strict caps and enforcement penalties[6] for the scheme.[7]

Although this makes a good case for the emissions trading of greenhouse gases, the reality of regulating a small number of installations for sulphur dioxide can barely compare to the scale of an international emissions trading scheme for six different greenhouse gases. However, this was the starting point for what could eventually evolve into a global emissions market.

The UNFCCC and the Kyoto Protocol

Emissions trading was introduced to the rest of the world as a means of achieving emission reduction targets as a

1 Felicity Deane is a Master of Laws student at Queensland University of Technology.
2 The Carbon Pollution Reduction Scheme Bill 2009, and the accompanying 10 bills were voted against in the Senate for a second time on 2 December 2009.
3 Commonwealth, *Parliamentary Debates,* Senate, 15 June 2009, 3123-30, (Penny Wong, Minister for Climate Change and Water), 3123.
4 42 USC § 7651 (1990)
5 Anthony Hobley, 'Creating a Global Carbon Market' in Paul Q Watchman (ed), *Climate Change - A Guide to Carbon Law and Practice* (2008) 127, 132.
6 42 USC § 7651j (1990). The penalty is currently the number of units multiplied by two thousand US dollars.
7 Richard Baron and Michel Colombier, 'Emissions Trading under Kyoto Protocol: how far from the ideal?' in Farhana Yamin (ed), *Climate Change and Carbon Markets* (2005) 153, 154–155.

flexible mechanism of the Kyoto protocol[8]. The Kyoto Protocol established binding targets for developed countries[9] and included three flexible mechanisms[10] to enable them to meet these targets.

These mechanisms are: the clean development mechanism (CDM) for the creation of certified emission reduction units (CERs),[11] the joint implementation mechanism (JI) for the creation of emission reduction units (ERUs)[12] and international emissions trading (IET),[13] which allows the units created under the protocol to be traded. The Protocol, in addition to creating units under the CDM and JI mechanisms also provides assigned amounts units (AAUs) issued in accordance with each Annex B parties' target, and removal units (RMUs), created from the removal of GHG from the atmosphere through forestry and land use activities.[14]

Emissions trading was included in Kyoto after successful negotiations by the United States in the early stages of discussions. The success of the acid rain program was presented as evidence of the potential of a market to successfully reduce emissions cost effectively. [15] The European Union did not initially support the inclusion, however were the first to implement a scheme of similar framework to Kyoto's IET. Ironically, the United States withdrew from the Protocol in 2001, leaving an emissions trading legacy in their wake.

The inclusion of emissions trading in the Kyoto protocol did not automatically mean that each signatory party would then have to develop their own dedicated emissions trading markets. However, that is precisely what is happening in a number of developed nations, both ratifiers and non-ratifiers of Kyoto. In fact, an ETS in Australia seemed a very real possibility even before the ratification of the Kyoto Protocol in December 2007.

The Implementation of the European Union ETS

The European Union (EU) began regional emissions trading in 2005, creating an emissions market for its member states in Directive 2003/87/EC[16]. The reasons behind the scheme's introduction can be traced to the wording of the directive.

Article 5 states the aims are to:

> "[f]ulfil….commitments to reduce anthropogenic greenhouse gas emissions under the Kyoto Protocol jointly… through an efficient European market in greenhouse gas emission allowances, with the least possible diminution of economic development and employment."

This objective of the EU scheme also hints at another mechanism of Kyoto, adopted by the EU.[17] Article 4 of the Kyoto Protocol allows Annex I[18] parties to effectively pool their emission targets and fulfil their obligations jointly. The adoption of the EU bubble follows the same conceptual path as IET, that is, that reductions can be reallocated among members to meet obligations in the most logical and cost effective way. The decision to create an emissions

8 *The Kyoto Protocol to the United Nations Framework Convention on Climate Change,* opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005), Australia ratified 12 December 2007.

9 Ibid, Annex B.

10 These mechanisms were, Clean Development Mechanism, Joint Implementation and International Emissions Trading. Arguably there was a fourth mechanism, which was adopted by the EU, the bubble.

11 CDM is described to be a project between a developed nation and a developing nation to assist the developing nation achieve sustainable development. See The Kyoto Protocol to the United Nations Framework Convention on Climate Change, opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005), Australia ratified 12 December 2007, Article 12.

12 JI is between two Annex I parties of the *United Nations Framework Convention on Climate Change*, Opened for signature 4 June 1992, 1771 UNTS 107 (entered into force 21 March 1994). See *The Kyoto Protocol to the United Nations Framework Convention on Climate Change,* opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005), Australia ratified 12 December 2007, Article 6.

13 *The Kyoto Protocol to the United Nations Framework Convention on Climate Change,* opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005), Australia ratified 12 December 2007, Article 17.

14 *The Kyoto Protocol to the United Nations Framework Convention on Climate Change, opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005),* Australia ratified 12 December 2007, Article 3.3 and Article 3.4.

15 Sonia Labatt, and Rodney R White, Carbon *Finance: The Financial Implications of Climate Change* (2007), 141.

16 *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC* [2003] OJ L 275/46, 32.

17 *Council Decision of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfillment of commitments thereunder* [2002] OJ L 130/45, 1.

18 Annex I is contained in the *United Nations Framework Convention on Climate Change*, Opened for signature 4 June 1992, 1771 UNTS 107 (entered into force 21 March 1994).

market would seem a logical progression for the EU, after the adoption of the bubble. The argument for emissions trading in all other regional areas is significantly less compelling, however this has not stopped the continuing trend.

The Stern Review

The Stern review,[19] to determine the economics of climate change, was commissioned by the Chancellor of the Exchequer in the United Kingdom. On October 30, 2006 the review was delivered. The review caused a degree of alarm for many governments around the world who may have thought, until then, that they would be immune from any effects of climate change.[20] This review did not show preference for emissions trading as a framework, but suggested that establishing a carbon price by tax, regulation or trading, was an essential element of any climate change policy.[21] Although the EU ETS was already in existence at the time of the review, it was recommended that the schemes needed to be broadly similar in nature, with a goal to establishing a global carbon price.[22] Arguably, the timing of this review coincides with the start of investigations into an Australian ETS.

The Prime Minister's Task Group Report

On 10 December 2006, the Prime Minister[23] announced the establishment of a joint government–business Task Group on Emissions Trading.

The terms of reference for the task group included:

> "[t]o advise on the nature and design of a workable global emissions trading system in which Australia would be able to participate. The Task Group will advise and report on additional steps that might be taken, in Australia, consistent with the goal of establishing such a system."[24]

In 2007 their report was delivered, showing a preference for emissions trading over other market-based mechanisms including a carbon tax,[25] which is hardly surprising in light of the bias contained in the terms of reference.

The recommendations of the task group have been presented as evidence of the superiority of an emissions trading model over others.[26] However, based on the Task Group's terms of reference, it is arguable that an ETS for Australia had been decided prior to the presentation of the report of the Task Group.

The Garnaut Review

The Garnaut review was delivered on 30 September 2008. By this stage the Australian Government's 'Green Paper'[27] had already been released, outlining the framework for an Australian ETS. The Garnaut Review did recommend that a 'well designed Emissions Trading Scheme has advantages over other forms of policy'[28]. However, it seems that by this stage the Australian government had already laid the path for emissions trading in Australia.

Although it may be difficult to show how the Garnaut Review shaped the Australian ETS, the effectiveness of the scheme and schemes worldwide can still be evaluated in light of the conclusions contained therein.

A Comparative Analysis

In order to evaluate the compatibility of the schemes worldwide and determine the possibility of linking, the different elements of the schemes must be compared. In considering all schemes their joint objective,[29] to meet

19 Nicholas Stern, *The Economics of Climate Change: The Stern Review* (2006)
20 The Australian government formed the Prime Minister's Task Group on Emissions Trading less than 2 months after the review.
21 Ibid, xviii.
22 Ibid, 468.
23 The Prime Minister at the time of the Task Group was John Howard, replaced in November 2007 by Kevin Rudd.
24 Task Group on Emissions Trading, Commonwealth of Australia, *Emissions Trading Report* (2009) 6.
25 Ibid, Section 3.4.
26 Commonwealth, *Parliamentary Debates*, House of Representatives, 22 October 2009, 1-4, (Greg Combet, Minister Assisting the Minister for Climate Change and Water).
27 Department of Climate Change, Commonwealth Government, *The Carbon Pollution Reduction Scheme Green Paper* (July 2008)
28 Ross Garnaut, *Garnaut Climate Change Review Final Report* (2008), 13.2.2.
29 Obviously with the exception of the US, given they are not a party to the Protocol.

Kyoto targets, must be kept in mind. This effectively makes the most important compatibility between the regional schemes and the Kyoto regime. To ignore the international regime would make any regional scheme useless in achieving targeted levels of emissions.

It is beyond the scope of this paper to comprehensively critique all emissions trading schemes throughout the developed world. However, a comparison between the Kyoto IET and regional schemes, and regional schemes with each other is important, both to highlight some differences between the schemes, and to lead into a discussion on international linking.

Kyoto – International Emissions Trading

The Kyoto Protocol could be viewed as the scheme that all other schemes must report back to. It is the common purpose of emissions trading in the European Union,[30] New Zealand[31] and Australia[32] to meet the international obligations contained in the Kyoto Protocol.[33]

Even though emissions trading began with Kyoto, little direction was given for future domestic schemes, perhaps because it was unforeseen that a number of signatories would start their own emissions markets. Some basic measures, such as the carbon equivalent of an emissions permit, have largely been followed.[34]

The IET mechanism under Kyoto is a government based trading market. The treaty for 2008-2012 targets binds governments, companies and individuals who release the GHG gases are not recognised by the treaty. The protocol recognises the possibility of governments devolving part of their assigned amount to entities in their territory and allowing them to trade allowances internationally.[35] Rather than opting to devolve their responsibilities governments in the EU, Australia and New Zealand[36] have created schemes, which effectively bring emissions trading down to the level of individual entities.

For parties to participate in International Emissions Trading mechanism they must have ratified Kyoto, calculated their assigned amount in terms of tonnes of CO_2; they must have in place a national system for estimating emissions and removals of GHGs; they must have a national registry to record and trace the creation and movement of ERUs, CERs and AAUs and RMUs and must report this information to the secretariat. Additionally, 16 months must pass from when initial reports are submitted before a country is eligible to trade emissions.[37]

The Kyoto Protocol is intended to cover all GHG emissions into the atmosphere, therefore all sectors and the six major GHGs are covered. As a result regional schemes are generally less broad than Kyoto, with some sectors being excluded; and in the case of the EU, some gases are not considered. Kyoto also recognises forestry[38] and land credits, however the conditions associated with them under Kyoto generally differ from the conditions of those regional schemes where they are included.

These examples demonstrate the need for governments to set targets for their domestic schemes separate from those they are required to meet under Kyoto. For Australia, this means that the number of Australian Emission Units (AEUs) allocated under the scheme must be less than Australian AAUs under Kyoto.[39]

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30 *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC* [2003] OJ L 275/46, 32. Paragraph 5.

31 *Climate Change Response Act 2002* (NZ) s 3(1)(a).

32 Carbon Pollution Reduction Scheme Bill 2009 (Cth) s 3(2).

33 *The Kyoto Protocol to the United Nations Framework Convention on Climate Change,* opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005). Annex A.

34 The Regional Greenhouse Gas Initiative (RGGI), the US carbon cap-and-trade scheme covering 10 eastern states- is based on short tonnes - less than a metric tonne (907.18474kg).

35 Baron, above n 5, 157.

36 These are not the only signatories to Kyoto opting for emissions trading, however it is beyond the scope of this paper to compile an exhaustive list.

37 Rosemary Lyster, 'Chasing down the Climate Change Footprint of the Public and Private Sectors: Forces Converge - Part II' (2007) 24 *Environmental and Planning Law Journal* 450, 451.

38 *The Kyoto Protocol to the United Nations Framework Convention on Climate Change,* opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005), Article 3.3.

39 This is because 25% of emissions which Australia would be liable for under Kyoto would not be included in the Carbon Pollution Reduction Scheme.

Regional Schemes

The Stern review notes the importance of domestic schemes being broadly similar in design[40]. This review was delivered after the commencement of the EU scheme, but prior to schemes in Australia, New Zealand and the United States. Governments therefore had a chance to heed the advice of the review.

There are some similarities between schemes. They are all to be implemented over a number of years, with the EU being implemented in formal phases. Each scheme, over time, increases the coverage, and decreases the level of assistance for liable entities.

The European Union

The EU ETS was established by a Directive of the European Council.[41] The scheme has since been amended by a number of subsequent directives.[42]

The EU ETS is currently in its second phase[43] of trading, with a third phase to begin in the post Kyoto period. Unlike Kyoto, and most other emissions trading schemes, the EU scheme only covered CO_2 for the first phase, but will expand to cover nitrous oxide and perfluorocarbons by the third phase.

The EU ETS recognises credits from CDM and JI projects to comply with their emission reduction targets. The Directive[44] issues some qualitative limits on which projects CDM and JI credits may be used from[45]. In addition there is a quantitative limit on the number of credit units that may be used. This is to enable adherence to the supplementarity principle of Kyoto.[46]

Each EU allowance (EUA) is created from a Kyoto AAU. It is an important aspect of the scheme that it is directly linked with the country's holdings of Kyoto allowances.[47] 95% of allowances in the first phase were allocated free with 90% in the second. The remaining allowances were auctioned. The penalty in the EU ETS for failure to surrender excess emissions in the EU is €100 per tonne and a provision to 'make good' on the allowances short.

Through the first and second phase the EU scheme has operated through National Allocation Plans (NAPs) enabling each country to set its own targets[48] and conditions. However, different national approaches among the member states has lead to similar industries being given different allocations and being treated differently depending on the jurisdiction. The most recent directive concerning the EU ETS has amended this in paragraph 8.[49] This has resulted in abolishing NAPs. The reasons stated were to enable a more harmonised market, avoiding distortions and to improve the possibility of linking.

The New Zealand Scheme

The New Zealand Emissions trading scheme (NZ ETS) was established by the *Climate Change Response (Emissions Trading) Amendment Act 2008* (NZ) amending the *Climate Change Response Act 2002* (NZ) (CCRA).

New Zealand Units (NZUs) are created by the Bill. Each NZU will be backed by a Kyoto unit to be held in the New Zealand Emissions Unit Registry.

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40 Trevor Daya-Winterbottom, 'Climate Change, harmonisation and public policy' in Wayne Gumley and Trevor Daya-Winterbottom (eds), *Climate Change Law - Comparative, Contractual and Regulatory Considerations* (2009) 73, 83.

41 *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC* [2003] OJ L 275/46, 32.

42 *Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for green house gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms* [2004] OJ L 338/47, 18.

43 The first phase of the EU ETS went from 2005 until 2007; Phase II from 2008 to 2012 and phase III will run fron 2013 until 2020.

44 Ibid.

45 Ibid, Paragraph 8, restriction on nuclear credits.

46 *The Kyoto Protocol to the United Nations Framework Convention on Climate Change,* opened for signature 16 March 1998, 37 ILM 22 (1998) (entered into force 16 February 2005), Australia ratified 12 December 2007, Article 6.1 (d).

47 Hobley, above n 3, 133.

48 Two recent judgements by the Court of First Instance found that the Commission had misused its powers by reducing the quantities of emission allowances of Poland and Estonia. *Poland v Commission* (T-183/07) [2007] ECR II-00152.

49 *Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community* [2009] OJ L140/52, 63.

The New Zealand scheme is unique in that by 2015[50] all sectors, including agriculture, and all GHGs will be covered. Sectors are staged into the scheme from 2008 to 2015[51]. The inclusion of the agricultural sector in the NZ ETS, although unique, is essential for the effectiveness of the NZ ETS. Electricity in New Zealand is currently 67% renewable,[52] and the majority of New Zealand GHG emissions are from the agricultural sector.[53] Quite obviously the sector coverage is a challenging one, which may result in exaggerated administration and enforcement costs.

The New Zealand scheme accepts Kyoto units in the form of CERs,[54] ERUs and uniquely, AAUs. There are no restrictions on the number that can enter the scheme, however foreign AAUs are unable to be used for compliance beyond 2012.[55]

On 25th November 2009 the New Zealand parliament passed the Climate Change Response (Moderated Emissions Trading) Amendment Bill 2009 (NZ).[56] This Bill made a number of amendments to the CCRA, including delaying the introduction of agriculture into the scheme until 2015, removing the cap on the number of NZUs to be allocated and reducing the rate of decrease in assistance to emission exposed industries. In addition, a fixed price option of $25 will be included in the revised scheme for transport, energy and industrial sectors until 1 January 2013.

The United States

The United States' emission trading scheme is contained in the *American Clean Energy and Security Act 2009*,[57] recently passed by the House of Representatives.[58] The purpose of the United States legislation is to: '[c]reate clean energy jobs, achieve energy independence, reduce global warming pollution and transition to a clean energy economy'.[59]

The scheme's coverage is broad, encompassing all six GHGs, with a provision for any designated new greenhouse gases.[60] It is to cover approximately 85% of emissions in the US by 2016. The agricultural sector and fugitive emissions are currently excluded from the scheme.[61]

As the United States is not a party to Kyoto, there are some different aspects to the scheme. The allowances created by the legislation[62] are not linked to any Kyoto allowances and the United States are unable to participate in the flexible mechanisms of the protocol.

The US legislation contains its own provision for offsets, and permits capped entities to purchase up to 2 billion tonnes of lower-cost offsets from uncapped entities. Half of these can come from domestic sources, such as agriculture, and the other half from international sources.[63]

The legal status of the US emission allowances is contained in s721(c), where it states that the emission allowances do not constitute a property right.

Approximately 80% of annual allowances are to be allocated free until 2025.[64] A portion of the allowances available each year will be distributed via government auction. These auctions will be held every three months and there will

50 The Climate Change Response (Moderated Emissions Trading) Amendment Bill 2009 (NZ) amended this date from 2013 to 2015.
51 Ibid.
52 Johnson, Debroah Lynne, 'Electricity and the Environment - Current Trends and Future Directions' (2008) 12 *New Zealand Journal of Environmental Law* 195
53 Karen Price, Lisa Daniell, and Laura Cooper, 'New Zealand Climate Change Laws' in Wayne Gumley and Trevor Daya-Winterbottom (eds), *Climate Change Law: Comparative, Contractual and Regulatory Considerations* (2009) 89, 96.
54 Excluding CERs from nuclear projects. See Price, above n 51, 93.
55 Ibid.
56 New Zealand, *Parliamentary Debates*, House of Representatives, 24 September 2009, 6854, (Nick Smith, The Minister for Climate Change Issues).
57 [H.R.2454.PCS]. It is still necessary for the Bill to pass through the Senate before it becomes law.
58 This Bill must pass through the Senate before it becomes law.
59 *American Clean Energy and Security Act 2009* [H.R.2454.PCS].
60 Ibid § 711.
61 Ibid § 700, Definition of a covered entity, § 722(10), the exclusion of fugitive emissions.
62 Ibid § 721
63 Ibid.
64 Grant Anderson, Charlie Harrison and Fergus Green, 'Senate standing committees report on CPRS legislation and US greenhouse legislation passes House' (2009) 24(8) *Australian Environment Review* 2, 5.

be a price floor for allowances in order to avoid massive market fluctuations. There is unlimited banking and open borrowing, in an attempt to compensate for the price floor.[65]

The penalty for failure to comply with the scheme is twice the auction clearing price.[66] In addition, parties must account for the excess emissions by surrendering the allowances in the year following the violation.[67]

The Australian Carbon Pollution Reduction Scheme

The Australian emissions trading scheme is contained in 11 bills, which have twice been voted against in the Senate.[68] The future of the Australian Carbon Pollution Reduction Scheme is unknown although; government policy appears to be for a scheme incorporating the amendments brought about through negotiations with the opposition. [69]The Australian government recently released drafts of the Carbon Pollution Reduction Scheme Regulations,[70] providing evidence that the CPRS is not yet dead. Changes to the existing bills will include increased assistance to Emission Intensive Trade Exposed Industries (EITES), the indefinite exclusion of agriculture but increased recognition of agricultural offsets, and additional funding for a number of areas.[71]

Although other changes may be incorporated into a new government scheme, at this stage it would appear the general design of the scheme would remain according to the CPRS bills rejected by the Senate.

The scheme is to eventually encompass 75% of Australia's GHG emissions. The main source not captured is agricultural activities, which consist mainly of methane and nitrous oxide from livestock and cropping and make up 16% of Australia's emissions.

The CPRS bill contained provision for a fixed price period, where AEUs would cost A$10 per tonne of carbon dioxide from 2011 to 2012. This was to then transition to a period of price cap until the end of the financial year commencing on 1 July 2015.[72] This fixed price period would be likely to continue in any new legislation, given that the current trend appears to be to increase assistance offered to participants, which the price cap is designed to do.

The CPRS bill recognises a number of international units, including CERs, ERUs and RMUs.[73] It also makes provision for international units not issued through the Kyoto protocol. There is no restriction on the number of eligible international emissions units,[74] unlike the EU ETS. CPRS also allows credits from emission reduction through domestic reforestation projects to be used to meet reduction obligations, which the EU ETS forbids.[75]

International Linking

The policy choice of a cap and trade scheme in Australia was made through the ease of linking internationally with minimal compliance and transaction costs. [76] Currently there is no legal barrier to linking. There is no inherent incompatibility between the schemes, however the different provisions of the schemes may make linking environmentally undesirable.

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65 *American Clean Energy and Security Act 2009* [H.R.2454.PCS] § 725.
66 Ibid, § 723.
67 Ibid § 723 (4) ©
68 The bills were voted down in the Senate in August 2009. The Bills were reintroduced to the House of Representatives and passed on 16th November 2009. The centrepiece of the legislation is the Carbon Pollution Reduction Scheme Bill 2009 (Cth).
69 Australian Government Department of Climate Change, *CPRS latest updates* (2009) http://www.climatechange.gov.au/government/initiatives/cprs/latest-news.aspx at 11 December 2009.
70 The Carbon Pollution Reduction Scheme Regulations 2009 were released in draft form on 9 December 2009.
71 Australian Government Department of Climate Change, *Details of Proposed CPRS Changes* (2009) <http://www.climatechange.gov.au/government/initiatives/cprs/~/media/publications/cprs/CPRS_ESAS/091124oppnofferpdf.ashx> at 11 December 2009.
72 Ibid s 89.
73 For the definition of an eligible international emissions unit see Carbon Pollution Reduction Scheme Bill 2009 (Cth) s5
74 John Taberner, 'The Carbon Pollution Reduction Scheme Bill 2009' (2009) 24(4-5) *Australian Environment Review* 4, 4.
75 Caroline Haywood, 'The European Union's Emissions Trading Scheme: International emissions trading lessons for the Copenhagen Protocol and implications for Australia?' (2009) 26 *Environmental and Planning Law Journal* 310 , 327
76 Commonwealth, *Carbon Pollution Reduction Scheme Bill 2009 Bills Digest,* Parliamentary Paper 165 (2008-09), 11.

There are potentially, a number of areas that may inhibit international linking. Each domestic and regional policy has undergone extreme scrutiny at all levels of government, and with a goal for a scheme that is region and country specific. To link the schemes, even partially, would result in certain political decisions being bypassed.

The common objective of all the schemes discussed in this paper has been to reduce global warming through controlling the level of emissions. Each scheme has been drafted to attempt to achieve this objective, but to achieve it cost effectively. Although the Stern review discusses the importance of setting a global price for carbon to achieve reductions effectively[77] and Garnaut emphasises the importance of linking the schemes[78], this should not be given priority over the effective reduction of emissions. In order to reduce emissions a price must be attached to emissions that will result in behavioural change. To make the caps and obligations of the emissions trading schemes too easy to fulfil will result in the purchase of credits, without the reduction of GHGs.

The alternative should also be considered. To make the price too high and obligations too difficult to fulfil in any of the schemes individually, may result in carbon leakage.[79] The possibility of carbon leakage occurring and resulting in even higher emissions is real, therefore we must consider that international linking, without compromising the integrity of the schemes is absolutely essential. This would result in a global price on carbon, which could potentially be applied in developed and developing countries.

In order to examine the likelihood of linking between current and future markets the different elements of the schemes must be examined. The following is a discussion of some features that may inhibit the forming of a global emissions market.

Price ceilings and price floors

The effects of price ceilings and floors were discussed in the Garnaut report in some detail, and it is not the intention of the author to replicate the negative arguments contained therein. Simply stated, a price ceiling or floor is going to interfere with the normal market functioning. It is likely to directly interfere with the demand for emissions units and may therefore result in either the reduction of emissions being less than they would otherwise be, or the cost to entities being higher than it should be.

Currently the Australian CPRS contains provisions for a period of price capping. It is likely that while this is in effect international linking with the scheme will be limited.[80] The United States, on the other hand will have a minimum reserve price for auctions,[81] which may not result in an effective price floor, as this will not have an effect on trading after purchase, nor will all the permits be allocated through auctioning initially. It may, however, have an effect on the normal functioning of the market, and possibly any markets linking to it.

Effectively, No Cap on Emissions

Any emissions trading scheme without an effective cap on emissions is likely to have lower cost for emission allowances than one with strict cap and enforcement policies. The Australian and New Zealand legislation contains no limit on the number of Kyoto units that can be accepted into the schemes to fulfil obligations. This is in contrast to the EU scheme, which has an overall limit on the number of CERs and ERUs able to meet obligations. With no absolute cap there is no guarantee that GHG emissions will decrease. Furthermore, with potential allowances unlimited in the market the economic theory of market supply and demand will be unbalanced, and will likely cause price volatility.[82]

77 Stern, n 16, 469.

78 Garnaut, n 26, 14.5.1. Carbon leakage simply explained as; entities moving from countries with high emission regulation, to one with no regulation, to avoid costs and reductions.

79 Ibid.

80 See eg. Policy Department Economic and Scientific Policy, European Union, *Options and Implications of Linking the EU ETS with other Emissions Trading Schemes,* (March 2008), i.

81 *American Clean Energy and Security Act 2009* [H.R.2454.PCS] § 791 (d).

82 The EU experienced excess allowances in their market during the first phase of the ETS. This was due to ghg emissions were cut more quickly than expected, but there was an over allocation in the first place, due to questionable data by the companies themselves. This oversupply leads to a weakening of the scheme because the EUAs became so cheap that there was no incentive to reduce emissions. See eg, Suzanne S Dickey, 'Emissions trading schemes: What works?' in Trevor Daya-Winterbottom and Wayne Gumley (eds), Climate Change Law: Comparative, contractual and regulatory considerations (2009) 63

Acceptance of AAUs

The Australian scheme currently does not allow for the use of other countries Assigned Amount Units (AAUs) to fulfil obligations under the scheme, however the New Zealand scheme has included them. The rationale behind allowing the AAUs into the New Zealand scheme is to essentially open the market. It is feared that otherwise the New Zealand scheme will lack liquidity and lead to low trading and high prices.[83] Unfortunately the inclusion of AAUs may lead to the New Zealand scheme being flooded with 'hot air',[84] as a result of over allocation of AAUs in Kyoto. This may not prove to be a problem ultimately for linking with the New Zealand scheme as AAUs from the first commitment period may not be used to meet New Zealand ETS obligations that occur after that period.[85] Furthermore the over allocation of AAUs may be corrected once a new international agreement is negotiated. [86]

Linking with Non-Kyoto Schemes

The United States is currently a non-ratifier of the Kyoto Protocol. This means that the United States has no provision in their legislation for any Kyoto units and has no AAUs allocated to them through the Kyoto Protocol. The EU, Australia[87] and New Zealand[88] units created under their respective emissions trading schemes are limited to their scheme caps, which are based on Kyoto obligations. To link to the US would result in allowances entering their schemes that would have no place in the Kyoto regime. The relative ease of linking with another ratified party was considered in the Australian Government's White Paper. It stated:

> "[w]here a link is made with another country that also has a binding commitment under the international architecture, trades between the domestic schemes can be backed by international units and recognised under the international architecture. In which case, the detailed design characteristic of the different domestic schemes is less important."[89]

The ability to link into a scheme such as the United States, will be possible, but will involve accurate accounting for non-Kyoto international units by the ratified country.[90] Failure to do this may lead to non-compliance of international obligations by the ratified party.

Complications of Emissions Trading versus a Carbon Tax

Despite emissions trading being adopted throughout the world the complexity of the schemes can not be denied. The Australian scheme has twice been rejected by parliament, yet the Government continues to support the policy. The EU scheme has undergone continuous changes since its inception. The New Zealand scheme, commencing in 2008, has already undergone substantial changes. [91] The amount of time and resources already invested into emissions trading throughout the world is impossible to fathom, yet the challenges remain.

The question of whether emission reduction will actually be achieved through emissions trading remains to be answered. The assistance offered to emission intensive industries is seen as a necessary stepping stone to a low carbon economy and to reduce the possibility of carbon leakage.[92] However, it also delays and reduces the need to actually reduce emissions. The Garnaut Review clearly states:

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83 Price, above n 51, 93.

84 The over allocation of AAUs to former Soviet countries due to the collapse of their economies has lead to these countries having excess emission allowances, which have the potential to flood the market and therefore leading to less need to actually reduce emissions worldwide. The over allocation has been commonly dubbed 'hot air'.

85 *Climate Change Response Act 2002* (NZ) s18CC (1)

86 Negotiations for a post-Kyoto agreement are to take place in Copenhagen in December 2009.

87 With the exception of the units issued in the first year of trading. Carbon Pollution Reduction Scheme Bill 2009 (Cth) s 92.

88 This will be revised if the Climate Change Response (Moderated Emissions Trading) Amendment Bill 2009 (NZ) is passed into law.

89 Department of Climate Change, Commonwealth Government, *Carbon Pollution Reduction Scheme: Australia's Pollution Future* (December 2008), 11-38.

90 See generally, Policy Department Economic and Scientific Policy, European Union, *Options and Implications of Linking the EU ETS with other Emissions Trading Schemes,* (March 2008), 18.

91 An amending bill has been passed by the New Zealand Parliament, Climate Change Response (Moderated Emissions Trading) Amendment Bill 2009 (NZ)

92 Commonwealth, *Parliamentary Debates*, House of Representatives, 22 October 2009, 1-4, (Greg Combet, Minister Assisting the Minister for Climate Change and Water), 2.

Policy makers would be better off abandoning an emissions trading scheme in favour of a broad-based emissions tax without exemptions if they felt unable to resist pressures on the political process for ad hoc and overly generous assistance arrangements for…industries.[93]

Arguably a tax on emissions would have been far less complex and allowed more certainty for industries and investors. Complexity can also often lead to excess resource allocation, resources which may have been better dedicated to other GHG reduction measures. The following is an analysis of some of the complications of emissions trading, which could possibly be avoided with a carbon tax.

Accounting and Taxation Issues

It is beyond the scope of this paper to discuss the taxation and accounting implications for each country's emissions trading scheme. It is important to note, however, that the different legal definitions[94] of emissions permits may have an impact on the way these permits and emission liabilities will be accounted for and taxed.

The requirements for taxation of permits were contained in the Carbon Pollution Reduction Scheme (Consequential Amendments) Bill 2009 (Cth), Schedule 2, which also makes provision for the treatment of permits in relation to GST. These provisions have not been challenged, and are likely to remain in new legislation. If the different regional schemes are linked and an international emissions market is created there will be a need for further clarity on tax issues.

Another issue, currently unresolved is accounting in financial statements. Any emissions trading market will require corporations to hold emission units and to incur liability for GHGs emitted. The International Accounting Standards Board is currently developing standards, which will likely result in uniform accounting. The difficulty of a global accounting standard may be in the different status attributed to emissions permits in different markets. Accounting for an emissions unit, with the legal status of a property right may in fact be very different to the correct method of accounting for a United States unit. Until this issue is resolved by the IASB[95] it is likely that different accounting methods will be used, making financial statement comparison difficult.

A carbon tax would face very few of these issues. There is no need to define the legal nature of a tax. Accounting for a taxation liability is relatively simple and uniform throughout the world. The taxation issues would automatically be eliminated, as there is no tax on a tax. GST complications would also be eliminated.

Administration of the CPRS

The Australian CPRS was to be regulated by the Australian Climate Change Regulatory Authority (the Authority), established in the Australian Climate Change Regulatory Authority Bill 2009 (Cth). That Act itself has 54 sections, with provisions for regulations.[96] The administration of any new scheme would be likely to be similar in design to that already proposed.

The duties required to administer an Australian ETS will be extensive, and the discussion of all such duties is beyond the scope of this paper.[97] Broadly speaking, the resources required to establish and operate the required authority will be significant. No authority would need to be established for the administration of a carbon tax, as the Australian Taxation Office exists for such purposes. There would be monitoring and compliance issues under a tax, and resources would need to be allocated accordingly, however this would only incorporate a small area of the duties of the Authority.

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93 Garnaut, above n 26, 13.3.3.

94 The United States scheme specifically states that the emission permits are not property rights *American Clean Energy and Security Act 2009* [H.R.2454. PCS] § 721 (c); The International Financial Reporting Interpretations Committee has interpreted the EU permits to be intangible property, see Iain Calton, Helen Devenney, and Sarah Nolleth, 'Accounting and Taxation' in Paul Q Watchman (ed), *Climate Change - A Guide to Carbon Law and Practice* (2008) 143; Australian permits are defined as personal property, see Carbon Pollution Reduction Scheme Bill 2009 (Cth), s 94.

95 International Accounting Standards Board, *IASB Work Plan - projected timetable as at 1 August 2009* < at 23 October 2009.

96 Australian Climate Change Regulatory Authority Bill 2009 (Cth), s 54.

97 See eg Carbon Pollution Reduction Scheme Bill 2009 (Cth), s145.

Allocation of permits

The Garnaut Review argued strongly for the auctioning of emission permits as opposed to free issuance.[98] It was suggested that free permit allocation would involve 'unavoidable arbitrariness'.[99]

Despite this advice, the Australian government has introduced, as one of their assistance measures, unlimited allocation of free permits.[100] The extent that this measure will be used, and the effect it will have on the amount of GHG emission reduction is, at this stage, unknown. Arguably there will still be supply and demand for the permits, and markets will operate accordingly, however predicting the behaviour of an emissions market has proved to be a difficult task. The EU has already experienced the volatility of the emission permit market during their first phase of trading.[101]

The issue of the permits is a complicated area in itself,[102] which would be avoided by a carbon tax. Many of the rules for auctioning permits will be contained in regulations, however the government has committed to auctions on a monthly basis.[103] The resources associated with running auctions so frequently will be significant, both on behalf of the Authority and the entities themselves.

Obviously the CPRS will undergo changes as areas for improvement are discovered. It is hoped that this will streamline the process rather than making it more complex.

Structure of a Carbon Tax

The arguments in favour of a carbon tax as opposed to an emissions trading scheme generally centre on simplicity, fairness and thriftiness, as the theory behind a tax is far simpler than a market trading emission permits.

Basically tax revenue is calculated by multiplying the tax rate by a tax base.[104] The reality of these variables for an emission tax however is far from simple. In Australia the determination of a tax base would be similar to the tests applied for a liable entity under the CPRS. The legislative provisions for a liable entity under the CPRS cover Part 3 of the Bill, encompassing sections 16 through to 81. It is highly unlikely that provisions under a carbon tax would be comparably streamlined. The tax base also requires the determination of the point of liability for each liable entity. Once again consideration would need to be given to each sector, considering all possible points of liability.

The second part of the equation is the tax rate. The delicate balance required for placing a price on carbon would need to be constantly monitored and reviewed to ensure behavioural change was achieved, without placing unnecessary financial stress on exposed industries. Setting a price on carbon is a very precarious political move for any government, and in Australia could cause catastrophic economic results if the level is set too high.[105] This political risk could be partially alleviated if the rate was aligned regularly to carbon prices set by markets in other parts of the world.[106]

Finally, assistance measures would still need to be determined to decrease the economic burden of the tax. It would be likely that, similar to the CPRS, any tax would be revenue neutral.[107] Alternatively, and ideally for the environment, funds could be invested into reduction measures, such as clean coal technology, carbon capture and storage and renewable energy. This may go further in fulfilling the goal of decreasing the cost of living in a low carbon economy.

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98 Garnaut, above n 26, 14.3.1.
99 Ibid.
100 Commonwealth, *Parliamentary Debates*, House of Representatives, 22 October 2009, 1-4, (Greg Combet, Minister Assisting the Minister for Climate Change and Water), 3.
101 Dickey, above n 83.
102 Carbon Pollution Reduction Scheme Bill 2009 (Cth), s 88.
103 Department of Climate Change, *Auctioning Australian Emissions Units* <http://www.climatechange.gov.au> at 26 October 2009.
104 Janet E Milne, 'Carbon Taxes in the United States: The Context for the Future' in Jennifer Kuntz (ed), *The Reality of Carbon Taxes in the 21st Century* (2008) 1, 4.
105 Such as major job losses, through plant and mining closures; or carbon leakage.
106 The Commission on Taxation, Republic of Ireland, *Report 2009* (July 2009) 326. This would ensure that the rate could be justified.
107 Milne, above n 105, 5.

Despite the complications discussed, the imposition of a carbon tax would be simpler than the introduction of a carbon market in Australia. Furthermore similar results could be achieved by placing a price on carbon, especially if this price was aligned to markets in other parts of the world. However, it seems highly unlikely that this measure will become part of any climate change solution in Australia in the near future.

A Carbon Tax in Australia?

There are already six European Union countries with parallel emissions trading and carbon taxes,[108] with more implementing and considering carbon tax as a complementary measure.[109] The European Union Scheme in general captures around 50% of each participating countries' emissions, with significantly less in countries dependent on agriculture.[110]

The Australian CPRS is designed to cover 75% of emissions.[111] The remaining 25% is made up of 16% emissions from the agricultural sector, which is indefinitely excluded from the Australian scheme.[112] The argument for the exclusion of agriculture is that the emissions are difficult to measure and the number of liable entities exceeds 100,000. This would make monitoring and compliance issues extremely difficult. To impose a carbon tax on this sector would not resolve these issues. In the author's opinion it is unlikely that a carbon tax will be introduced concurrently with a CPRS, and the Government appears reluctant to let go of their goal of an ETS for Australia. If the agricultural sector is to be penalised for emissions in the future it is unlikely that the tax base will be actual emission output.

Conclusion

The complexities of emissions trading can not be denied. For a fully functioning, freely operating international emissions market to be established many of the current regional markets will need to be reviewed, and reformed. It is unlikely that the schemes developed in piecemeal fashion throughout the world will be able to come together cleanly, without some international agreement. A carbon tax, could have been developed and had similar results, and would have possibly been far less complex, however such a policy shift is unlikely at this stage for the Australian Government. Regardless of what the mechanism is for putting a price on carbon, complementary measures are absolutely essential to reduce GHG emissions, both in Australia and throughout the world. Neither a market, nor a tax would be enough to change the behaviour of society, instilled since the industrial revolution. Having said that, it is a good place to start and over time emissions trading may improve, or perhaps it will one day be replaced by a world wide carbon tax. Only time will tell.

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108 McDonald, Frank, 'Budget Carbon Tax Transparent and Fair, says Royal Irish Academy', *The Irish Times* (Dublin), 28th October 2009.

109 The French carbon tax will commence on January 1 2010. The Irish Commission on Taxation has recommended a carbon tax for Ireland.

110 The Commission on Taxation, Republic of Ireland, *Report 2009* (July 2009) 337.

111 Penny Wong, 'The Australian Government's Climate Change and Water Agenda' (Speech delivered at the Institute of Public Administration WA, Perth, 30 September 2009)

112 The decision to indefinitely exclude agriculture was a result of negotiations between the Australian Government and Federal Opposition.