UNIFORM EMISSIONS TRADING OR TAX SCHEMES: HAS THE GENIE BEEN (FINALLY) LET OUT OF THE BOTTLE?

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INTRODUCTION

The Kyoto Protocol of 1997—as currently in force—has described the parameters in which a reduction of greenhouse gases (GHG) has or should take place.[1] The Protocol is underpinned by, and strengthens commitments made under, the United Nations Framework Convention on Climate Change (UNFCCC).[2] In the 7th Conference of the Parties to the UNFCCC (the Marrakesh Accords), flexible mechanisms to reduce greenhouse emissions were discussed and agreed upon.[3] Unfortunately, the Copenhagen conference's attempt to realize consensus on still outstanding problems such as the governance issues on Clean Development Mechanism (CDM) projects has failed.[4]

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[1] Kyoto Protocol to the United Nations Framework Convention on Climate Change, Feb. 16, 2005, 148 U.N.T.S. 2303, *available at* http://unfccc.int/resource/docs/convkp/kpeng.html [hereinafter Kyoto Protocol].

[2] United Nations Framework Convention on Climate Change, Mar. 19, 1994, 1771 U.N.T.S. 107, *available at* http://unfccc.int/resource/docs/convkp/conveng.pdf [hereinafter Convention on Climate Change].

[3] Seventh Conference of the Parties to the United Nations Framework Convention on Climate Change, Marrakesh, Morocco, Oct. 29 – Nov.10, 2001, *Report of the Conference of the Parties on its Seventh Session: Part Two: Action Taken by the Conference of the Parties*, FCCC/CP/13/Add.2 (Jan. 21, 2002), *available at* http://unfccc.int/resource/docs/cop7/13a01.pdf.

[4] *See* Fifteenth Conference of the Parties to the United Nations Framework Convention on Climate Change, Copenhagen, Den. Dec. 7-19, 2009, *Report of the Conference of the*

Most protocols, treaties, and diplomatic conferences are merely framework agreements and are bereft of functional details. It is left to sovereign states to fill in the gaps and "put the meat on the bones" through their own legislation. Many commentators argue that a carbon reduction system has to be simple and effective in order to achieve the objective of reducing greenhouse gases globally. It appears abundantly clear that no singular legislative framework can be elicited from the Kyoto Protocol, nor is one likely from a new accord which would replace it. All governments will therefore be faced with two political considerations. First, how to proceed in fulfilling its obligations under any existing greenhouse gas emission schemes, and second, what political constraints are to be overcome or taken into consideration when a regulatory framework needs to be constructed on which an emission scheme can be based

This paper returns to where the debate—certainly in Australia—never really started; namely, what system or systems are necessary in order to construct a viable Carbon Pollution Reduction Scheme? That said, it needs to be understood that this paper merely touches on aspects that require further debate and thinking. The fact that we need to embrace a reduction of greenhouse gases is a given. To not do anything is not an option. The issue then is how can states best transition from a polluting economy to a carbon reducing one? Once all the veneer is stripped away and the bare bones of a reduction scheme are exposed, it should be obvious that if the abatement costs are greater than the greenhouse gas reduction costs that will be imposed on business, then the emission of greenhouse gases will continue.

To start with, one could be forgiven for suggesting that a global problem requires a global solution. However, this does not seem to be the case. The Canadian experience is instructive, where the provincial and territorial leaders "won't even try to get consensus on how to reduce" greenhouse gases.[5] Constitutionally, in Australia the response is different as the Carbon Pollution Reduction Scheme Bill is a Federal matter.[6] In the United States, on the other hand, "[i]n the absence of

Parties, FCCC/CP/2009/11/Add.1 (Mar. 30, 2010), *available at* http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf.

[5] Brian Laghi, *Getting More by Worrying Less About Consensus; Each Province's Needs Too Diverse to Reach United Front on all Issues - Premiers Can Get Better Results if They Agree to Disagree*, THE GLOBE AND MAIL (Can.), July 17, 2008, at A4.

[6] Carbon Pollution Reduction Scheme Bill [No. 2], 2009, (Austl.), *available at* http://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/r4221a_first/toc_pdf/09199b02.pdf;fileType=application%2Fpdf [hereinafter CPRS Bill].

federal leadership, states have banded together into regions to address the issue of climate change."[7] The result of the Australian Bill is that different states or regions are linked together in all aspects. It is understandable that the quality of registration, measurement, and supervision of emissions is important and that it must instill confidence in the veracity and hence value of the emission units.

Though the Australian Senate ultimately rejected the draft legislation, the Prime Minister has indicated that it is of importance to recommence the debate as to the introduction of viable legislation to reduce green house gases.[8] This paper therefore analyzes the now defeated Bill in order to understand and learn from the mistakes that were made.

The object of the Bill is contained in Section 3.[9] In Subsection (2), the drafters proclaim the object of meeting Australia's commitments under the UNFCCC and the Kyoto Protocol.[10] Subsection (3) sets forth the aim of promoting an effective international response to climate change.[11] Subsection (4) proclaims that the Bill is Australia's legislative endeavour to reduce greenhouse gas emissions.[12] It must be added that the Australian government initially subscribed to an international view in relation to carbon trading. This is reflected in the White and Green Paper preceding the Bill: "An effective global carbon market will play a key role in developing effective international solutions to climate change by fostering least-cost global abatement. Contributing to a robust international carbon market should therefore be seen as a strategic priority for Australia."[13]

These sentiments are also shared by Professor Garnaut who noted, "It would be neither desirable nor feasible for each country separately to pursue national emissions-reduction targets. It would not be desira-

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[7] Juliet Howland, Comment, *Not All Carbon Credits Are Created Equal: The Constitution and the Cost of Regional Cap-and-Trade Market Linkage*, 27 UCLA J. ENVTL. L. & POL'Y 413, 414 (2009).

[8] Former Prime Minister Kevin Rudd, Remarks at Nepean Hospital, Penrith, Australia (April 27, 2010), *available at* http://pmrudd.archive.dpmc.gov.au/node/6708.

[9] CPRS Bill, *supra* note 6, § 3.

[10] *Id.*

[11] *Id.*

[12] *Id.*

[13] Dep't of Climate Change, Commonwealth of Australia, *Carbon Pollution Reduction Scheme Green Paper* 219 (2008), *available at* http://www.climatechange.gov.au/publications/cprs/green-paper/cprs-greenpaper.aspx [hereinafter Green Paper].

ble because lower-cost abatement options would be forgone, and higher-cost options accepted."[14]

However, in the end, the international view has not been embraced as proclaimed in the governmental preliminary work that preceded the Bill. It has been noted that climate change is a diabolical policy problem.[15] It is therefore not surprising that there exist massive uncertainties associated with designing a carbon reduction scheme, and a government overlay may not always produce the best results. As Professor Coleman remarks:

> "I agree that markets ideally, philosophically are the best way to allocate things and the dead hand of government is just that, but when the dead hand of government is sitting on the markets and driving every part of their supply and demand factors you really don't have freedom of markets and all the benefits."[16]

This paper is concerned with two questions. First, whether an Emission Trading Scheme (ETS) is superior to a tax system to reduce carbon emissions. John Humphreys pointed out that the fundamental question—should we have a trading system—was not asked by the Australian Government until after the Government commissioned, reviewed and reported on such a trading system multiple times.[17] Arguably this question has been answered by the direction the European Union has taken and the economic reality of the existence of a worldwide trade in carbon credits.[18]

The real question is what system should be introduced, as there are several possible solutions to tackle the trade aspect of a greenhouse gas reduction scheme. Furthermore, the question is which system will not only reduce greenhouse gases, but produce the best solution to cushion the increased cost effects on domestic economies.

The second question with which this paper is concerned relates to the fact that the current Bill has not included any dispute resolution

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[14] *See* Ross Garnaut, The Garnaut Climate Change Review: Final Report 217 (2008), *available at* http://www.garnautreview.org.au/pdf/Garnaut_Chapter10.pdf .

[15] *See* Laghi, *supra* note 5.

[16] Dr. Les Coleman, Senior Lecturer, Fin. Dep't, University of Melbourne, Remarks at A Taxing Debate*:* Climate Policy Beyond Copenhagen (Aug. 14, 2009) at 22 (transcript on file with author).

[17] John Humphreys, Op-Ed., *We Need to Start the Emissions Debate*, THE AUSTRALIAN, Feb. 18, 2009, at 12.

[18] *See* Howland, *supra* note 7, at 422 (discussing the European Union Emissions Trading Scheme and continued progression of international cap-and-trade markets).

system, nor has it specified the applicable substantive law. Currently, by default, the rules of private international law will lead to the applicable domestic law. However, the reduction of greenhouse gases is a global problem and hence the question is whether an international law can govern the resolution of contractual disputes.

The Current State of Play: An Overview

The debate in Australia has naturally focused on an ETS and not on a tax system.[19] The speed in which the government sought to have the Bill passed forced the affected business sector to focus on a response to the Bill without having had the opportunity to look at viable alternatives.[20]

Once a cap has been set, it is clear that some Australian corporations will have an emission output above the cap and others below.[21] Considering that carbon credits are proprietary rights that can be traded, a market will be created where buyers and sellers will trade in order to achieve compliance.[22] Multinational as well as national industries will operate in the same market,[23] and hence an interaction between national and international interest is never far away from an informed discussion of ETS. Purely domestic thinking would lead only to running the risk of economic isolation, as it appears settled that greenhouse gas reduction has considerable cost implications.[24] It does

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[19] *See* Humphreys, *supra* note 17.

[20] *See generally* Lenore Taylor, *Steel Chief Sounds Jobs Alarm – Carbon Scheme's Costs 'Not Borne by Competitors,'* The Australian, Feb. 18, 2009, at 5 (discussing likely loss of jobs in steel industry due to effects of carbon pollution reduction scheme).

[21] Senator Annette Hurley, S. Standing Comm. on Econ., Parliament of Austl., Exposure Draft of the Legislation to Implement the Carbon Pollution Reduction Scheme ¶ 1.16 (2009), *available at* http://www.aph.gov.au/senate/committee/economics_ctte/cprs_09/report/report.pdf (estimating that some 1,000 corporations would have an emission output above the cap).

[22] The Hon. Penny Wong, Minister for Climate Change and Water, Exposure Draft: Carbon Pollution Reduction Scheme Bill: Commentary ¶ 2.38 (2009), *available at* http://www.aph.gov.au/senate/committee/economics_ctte/cprs_09/commentary_cprs_bill.pdf.

[23] *See generally id.* at 14 (discussing the contribution of the Carbon Pollution Reduction Scheme to the development of a global carbon market).

[24] *See* Ross Garnaut, Garnaut Climate Change Review: Interim Report to the Commonwealth, State and Territory Governments of Australia 27-32 (2008), *available at* http://www.garnautreview.org.au/CA25734E0016A131/WebObj/GarnautClimateChangeReviewInterimReport-Feb08/$File/Garnaut%20Climate%20Change%20Review%20Interim%20Report%20-%20Feb%2008.pdf [hereinafter Garnaut Interim Report].

not take much imagination to realize that industry—when it can—will relocate to the most cost effective location. This may lead to "carbon leakage"; that is, the relocation of emitters to non-participating countries, which inevitably will increase global emissions.[25] It has been amply demonstrated that industry will relocate to reduce their costs and remain competitive on a global market; examples of companies in the textile and footwear industry in Australia relocating to China, for instance, are abundant.[26] Australia appears to be vulnerable as, unlike the EU and other countries, the Australian government is not enthusiastic to introduce tariffs or export subsidies to protect domestic industries.[27] The EU has recognized the factor of carbon leakage and the Commission is already preparing for such an event by identifying possible energy intensive sectors which may be subject to carbon leakage and proposing to allocate up to 100% of allocations free of charge to businesses in those industries, or "an effective carbon equalisation system could be introduced" in order to put them "on a comparable footing with" competitors in other countries.[28] Several leading Australian businesses such as Onesteel—Australia's second biggest steel maker—have also expressed the view that the current design of the ETS "is likely to cause job losses and force new investments offshore."[29] This view has not changed much despite the recent concessions by the government.[30]

Multinational companies can also be vulnerable to transition arrangements, especially if they decide to open a factory or outlet in an-

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[25] *Commission Proposal for a Directive of the European Parliament and of the Council Amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading System of the Community*, at 7, COM (2008) 16 final (Jan. 23, 2008) [hereinafter *Commission Proposal*].

[26] *See* AUSTRALIAN INDUSTRY GROUP, AUSTRALIAN MANUFACTURING AND CHINA: DEEPENING ENGAGEMENT 7-11, 25-27 (2006), *available at* http://www.aigroup.com.au/portal/binary/com.epicentric.contentmanagement.servlet.ContentDeliveryServlet/LIVE_CONTENT/Publications/Reports/2006/Australian_Mfg_and_China_Aug06.pdf.

[27] *See generally* SENATOR NICK XENOPHON, MINORITY REPORT, EXPOSURE DRAFT OF THE LEGISLATION TO IMPLEMENT THE CARBON POLLUTION REDUCTION SCHEME, *supra* note 22, ¶ 5.2.1 (discussing how use of tariffs and subsidies would be complex, inefficient, and in contravention of global trade rules).

[28] *Commission Proposal, supra* note 25, at 8.

[29] Taylor, *supra* note 20.

[30] *See generally* Sophie Morris, *ETS Will Be a Downer on the Farm: Study*, THE AUSTRALIAN FINANCIAL REVIEW, May 5, 2009, at 8 (discussing research suggesting that "farmers are still vulnerable" and feel that "their emissions should not be covered by the scheme").

other country.[31] A host country needs to be "transition friendly" to attract and keep industries.[32] A lesson should have been learned from the virtual collapse of the pioneering New South Wales Carbon Market because of uncertainties about transition arrangements to the national proposed ETS market.[33] The NSW Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act 2002 No 122 poses two problems: first, whether regulations pertaining to certain industries such as electricity are a state or federal matter, and second, whether states will or can impose caps which are state specific.[34] The Canadian experience has shown that when state and territorial leaders could not agree on a carbon trading system, the national government was able to "fashion its climate-change plan without a significant opposition or counterproposal from the provinces."[35] Canada's provinces and Australia's states have some features in common; notably, that the economies and the demographics are so different that a uniform plan is difficult to achieve.[36]

Viewing the problem by looking at U.S. legislation, the solution is not a convincing one. The California Global Warming Solutions Act of 2006,[37] as an example, is a very broad ranging bill giving the overall authority "with respect to control emissions of greenhouse gases . . . [a]nd, the Secretary for Environmental Protection is required to coordinate emission reductions of greenhouse gases and climate change activity in state government."[38]

The Act specifically addresses in various parts, items such as greenhouse gas reporting, emissions, emission limits, and reductions, but is silent on any trading aspects. As an aside, it is interesting to note that the Act stipulates that a violation of any of its terms would be a crime.[39]

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[31] *See generally* GARNAUT INTERIM REPORT, *supra* note 24 (discussing comprehensive emissions pricing with comparable price levels across countries).

[32] *See generally Commission Proposal, supra* note 25, at 7-9 (discussing further harmonisation and predictability of the EU ETS).

[33] *See* Karan Capoor & Phillipe Ambrosi, State and Trends of the Carbon Market 2008 7 (2008).

[34] *See generally* Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act, 2002, No. 122, (N.S.W. Acts).

[35] Laghi, *supra* note 5.

[36] *See id.*

[37] Cal. Health & Safety Code § 38501 (Deering 2009).

[38] 2006 Cal. Adv. Legis. Serv. 488 (Deering).

[39] *See id.*

This paper will show that a mature and far reaching discussion has not yet taken place as the implications of an ETS have not yet been fully explored. By analogy, any business entering into a new venture will draw up budgets and plans according to perceived strengths and weaknesses measured not only against internal but also external sources, as well as its competition and how it is placed in the market.

Importantly, an ETS must be integrated into current domestic and international obligations as interrelationships need to be understood. Of interest are questions such as how Free Trade Agreements (FTAs) are affected as well as WTO/GATT obligations. From an Australian point of view, the Customs Act[40] and rules of origin need to be revisited and decisions need to be made whether these rules need to be changed or whether they are adequate in dealing with ETS. Furthermore, once agriculture is drawn into the carbon scheme, beef farmers in particular will be affected.[41] A question will be whether the beef sector will be able to withstand the challenge and still be competitive against cheaper imports while maintaining export volume. It may sound dramatic, but with the effects of drought, decreasing farm profits, and the deregulation of the dairy industry, a depopulation of Australian farms is arguably becoming a reality.[42] The question will be posed whether the Australian government will change its attitude and protect the farm sector—as the EU and the US do—with a form of subsidy or tariff. Obviously, the problem is that disputes under the scheme are arguably possible for breaches of WTO agreements, and may even trigger a dispute in relation to FTAs currently in force.[43] In this context it should be noted that older FTAs do not have a dispute resolution mechanism embedded in the agreements unlike Bilateral Investment Agreements (BITs).[44] Currently negotiated, or FTAs in the negotiation stage, have taken care to include dispute resolution mechanisms modeled on BITs.[45]

The Australian Government was already forced to announce sweeping changes to the draft Bill including "delaying its start to 2011,

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[40] *See* Customs Act, 1901, No. 6 (Austl.).

[41] *See* Morris, *supra* note 30.

[42] *Id.*

[43] *See* Dominic Trindade, Assistant Secretary, WTO Trade Law Branch, Remarks at the Attorney-General's 25th International Trade Law Conference: WTO Dispute Resolution: Recent Developments in Multilateral and Bilateral Dispute Resolution Processes (Oct. 22, 2003).

[44] *See id.*

[45] *See id.*

setting an initial fixed $10-a-tonne carbon price and increasing assistance to heavy industry."[46] Currently, the price is estimated to be $30-a-tonne.[47]

Furthermore, free carbon credits will be issued to emissions-intensive trade-exposed industries.[48] The problem is that not much thought has been devoted to the actual legal framework or its forward and backward linkages once the cap and trade is in full swing. No doubt domestic contract law can always be used to resolve emerging legal issues; however, it is argued that this is not the best nor the most cost-effective method available. Lessons from the past twenty years should not be forgotten as the general move towards international uniform laws has proven to be advantageous.[49] "Indeed, this current financial crisis has demonstrated that solutions based on domestic policies and laws do not supply the best solutions."[50] Joseph Stiglitz commented in the Wall Street Journal: "As the global economy becomes more interconnected, we need better global oversight. It is unimaginable that America's financial market could function effectively if we had to rely on 50 separate state regulators. But we are trying to do essentially that at the global level."[51]

It is argued that Australia, being a minor player in international trade, ought to take note of developments in the EU and the United States.[52] It is imprudent to develop "an Australian solution," as in the end, our economic well-being and competitiveness on the international stage will be compromised. Point being, can Australia afford to reduce its manufacturing and agricultural base any further?

For Australia to meet the Kyoto commitments, greenhouse gases must be reduced.[53] Any abatement will create costs on the one hand

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[46] Rail Express, *Government Sets New Target for CPRS*, May 5, 2009, http://www.railexpress.com.au/archive/2009/may-05-09/other-top-stories/government-sets-new-target-for-cprs/?searchterm=none.

[47] *See, e.g.*, Lenore Taylor, *Australia Lags Trading Nations on Carbon Price,* THE SYDNEY MORNING HERALD, Oct.19, 2010, *available at* http://www.smh.com.au/environment/energy-smart/australia-lags-trading-nations-on-carbon-price-20101018-16qvm.html.

[48] *See* CPRS Bill, *supra* note 6, §167.

[49] *Id.*

[50] Bruno Zeller, *Systems of Carbon Trading*, 25 TOURO L. REV. 909, 912-13 (2009).

[51] Joseph Stiglitz, *Nobel Laureate: How to Get Out of the Financial Crisis*, TIME, Oct. 17, 2008, *available at* http://www.time.com/time/printout/0,8816,1851739,00.html.

[52] *See generally* Zeller, *supra* note 50 (discussing developments in possible carbon trade regulation in the E.U., U.S. and Australia).

[53] *See* WONG, *supra* note 22, at 8.

but also delivers benefits. It must also be backed by a legislative framework that facilitates the reduction of greenhouse gases. A tax regime is one of the options that has been put forward by many nations[54]; however, a serious analysis of all the implications of a reduction scheme has not been given the full attention it requires in Australia.

By comparison, since 1999, Canada has looked seriously at ETSs, and the National Round Table on the Environment and the Economy (NRTEE) has published many articles and books dealing not only with a general overview, but also looking specifically at some industries.[55] Of note is the fact that a voluntary trading system is the first logical step in greenhouse gas abatements, as any other system will take years to design and implement.[56] It would facilitate the development of a set of evaluation criteria, which will guide any development of an ETS, either on its own or with an inbuilt tax adjustment scheme, to overcome problems of an import adjustment mechanism.[57]

Of all the aspects of a regulatory framework, the real test is "does it work?" The conclusive answer will come from industry when the cost implications and aspects of certainty and predictability of trading are tested. A test has never been seriously attempted by the Australian government. Indeed, a voluntary trading system with government involvement has never found favor. It can be confidently stated that the trading aspect of the draft legislation has not been "road tested."

The question remains whether the government will take a serious look at the proposed legislation, taking the concerns of industry and other interested parties into full consideration, or whether it will simply wait for the mistakes to emerge and then introduce remedial legislation into Parliament. In contrast, in the United States, the initiative has been taken by states, especially in two grouping,[58] the Western Climate Initiative (WCI), consisting of seven states (along with four Canadian Provinces),[59] and the Regional Greenhouse Gas Initiative (RGGI)

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[54] Zeller, *supra* note 50, at 931.

[55] *See* National Round Table on the Environment and the Economy, NRTEE Publications and Reports, http://www.nrtee-trnee.com/eng/publications/publications-by-date.php (last visited Oct. 20, 2010).

[56] NAT'L ROUND TABLE ON THE ENV'T AND THE ECON., CANADA'S OPTIONS FOR A DOMESTIC GREENHOUSE GAS EMISSIONS TRADING PROGRAM 10 (1999).

[57] *Id.* at 35.

[58] *See* Howland, *supra* note 7, at 420-22.

[59] Western Climate Initiative, WCI Partners, http://www.westernclimateinitiative.org/wci-partners (last visited Feb. 6, 2010) (listing California, Arizona, Montana, New Mexico, Oregon, Utah and Washington as member states).

consisting of ten states.[60] Arguably, if such groupings and cooperation are possible between states within a federation it is surely possible for sovereign states to do likewise. This cooperation shows that linkage of a trade in emission units between independent systems is possible and therefore opens the global market with the aim to make emissions units fully fungible.

RGGI specifically is an interesting case study as the intention is to "stabilize carbon dioxide emissions from fossil fuel power plants at 2004 levels by 2014 and then reduce emissions by 2.5 percent annually from 2015 to 2018."[61] The important feature is that all ten linked states have based their programs on the RGGI Model Rules and are therefore linked through carbon reciprocity.[62] Linkage has several advantages. First and foremost, there are more buyers and sellers on the market and hence the price will be positively affected.[63] Initially, a linkage will arguably reduce the market power of a big seller or buyer.[64] Furthermore, purchases in a linked market with fungible units will be made at the most cost-effective place.[65]

Another advantage of linked systems is the fact that states have no power to enforce regulations against each other.[66] Most penalties and trade restrictions would be in breach of WTO regulations.[67] However, a linked system has the advantage that changes may be applied uniformly in a wider market and will have a greater effect in curbing

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[60] Regional Greenhouse Gas Initiative, Participating States, http://www.rggi.org/states (last visited Feb. 6, 2010) (listing Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont as member states).

[61] Howland, *supra* note 7, at 421.

[62] *See* Regional Greenhouse Gas Initiative, Auction Results, http://www.rggi.org/co2-auctions/results (last visited Feb. 6, 2010).

[63] *See* JUDSON JAFFE & ROBERT STAVINS, INT'L EMISSIONS TRADING ASS'N, LINKING TRADABLE PERMIT SYSTEMS FOR GREENHOUSE GAS EMISSIONS: OPPORTUNITIES, IMPLICATIONS, AND CHALLENGES 17-18 (2007), *available at* http://belfercenter.ksg.harvard.edu/files/IETA_Linking_Report.pdf.

[64] *Id.* at 17.

[65] *Id.*

[66] *See* Oren Perez, *Multiple Regimes, Issue Linkage and International Cooperation: Exploring the Role of the World Trade Organization*, 26 U. PA. J. INT'L ECON. L. 735, 743 (2005); *see also,* MODEL RULE REG'L GREENHOUSE GAS INITIATIVE § 6.5 (2008), *available at* http://www.rggi.org/docs/Model%20Rule%20Revised%2012.31.08.pdf (outlining the inability of other states in the Regional Greenhouse Gas Initiative to enforce regulations against other states in the organization).

[67] *See* Perez, *supra* note 66, at 738.

greenhouse gas emissions.[68] Because of a greater knowledge factor, linkage with poorly designed ETS systems can be avoided, which has the added benefit of sending a message to recalcitrant states. Linkage has the effect of creating a *de facto* trade block, which is still WTO compliant as it is merely a multitude of singular systems. In effect, each system is merely a link within a chain.

Carbon Reduction – An Overview

An investigation must naturally commence by examining whether the underlying international instrument, the Kyoto Protocol, is prescriptive in relation to the methodology of reducing greenhouse gases. The Kyoto Protocol introduced three possible schemes: a market-based flexible emission trading scheme, joint implementations (JI), and the Clean Development Mechanism (CDM).[69] The three systems have been developed in order to allow for flexibility in dealing with greenhouse gas emissions in all sectors.[70] The emission trading and JI systems basically allow trade between countries with emission targets that are Annex I countries to the Kyoto Protocol.[71] CDM on the other hand refers to projects in developing counties with no targets.[72] Under this scheme, which de-emphasizes location, reductions can be made wherever the cost is lowest.

However, as far as increases in emissions are concerned, Annex I countries are lagging behind the developing countries with no targets.[73] Furthermore, in relation to countries like Australia, it does not matter whether there is a 5% or 40% target; the reduction measured in global terms is trivial.[74] However, what Australia can do is show that reducing emissions is compatible with economic growth and does not cripple the domestic economy.[75]

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[68] *See id.* at 742.

[69] Press Release, European Union, Kyoto Protocol (July 23, 2003), *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/03/154&format=HTML&aged=0&language=EN&guiLanguage=EN.

[70] *See id.*

[71] *See id.*

[72] *See id.*

[73] *See id.*

[74] Miles Prosser, Executive Dir., Austl. Aluminium Council, Remarks at A Taxing Debate: Climate Policy Beyond Copenhagen 16 (Aug. 14, 2009) (transcript on file with author).

[75] *See id.*

Given that companies have the ability, not only to participate in a domestic ETS, but also participate across borders, creates challenges to any government in designing a regulatory framework which fosters economic growth. Simply put, the question is whether a trading system or a tax system offers the best solution to implementing a reduction scheme.

The United States Environmental Protection Agency (EPA) in 2003 analyzed several policy options, parsing them as "Market-Based Approaches vs. Command-and-Control–Regulation," and "Cap-and-Trade vs. Environmental Taxes."[76] The EPA found that command and control regulations often work best to reduce emissions in specific facilities where a zero or near zero emission level is desirable, such as in areas where a serious health problem exists.[77] Cap-and-trade on the other hand is different insofar as a cap-and-trade option reduces the total emissions by foreseeable amounts,[78] while by contrast, a tax regime sets a price for a tonne of emissions; therefore the quantity of emissions is only reduced to the level where the marginal abatement costs equals the level of the tax.[79]

However, the EPA also advocates an interesting concept known as the "Bubble Policy."[80] The EPA suggests that the Bubble Policy would work best for industries with strong supply chains or groups of facilities like refineries or steel mills. In brief, the facility or conglomerate asks the government for an aggregate emission ceiling. The cumulative emissions within the bubble must be no more than the total emission limit imposed on the conglomerate, irrespective of the emissions of each individual facility within the bubble.[81] Such a system would no doubt be beneficial for steel manufacturers and the energy sector. As an example, Onesteel noted that its integrated iron and steel making would receive 90% of the necessary emission permits for free, whereas its electric arc furnace operation would only qualify for 60% free permits.[82]

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[76] *See* Environmental Protection Agency, Office of Air and Radiation, EPA430-B-03-002, Tools of the Trade: A Guide to the Design and Operating a Cap and Trade Program For Pollution Control 2-5 (2003), *available at* http://www.epa.gov/airmarkt/resource/docs/tools.pdf [hereinafter EPA].

[77] *See id.*

[78] *See id.* at 2-6.

[79] *See id.*

[80] *See id.* at 2-11.

[81] *See id.*

[82] *See* Taylor, *supra* note 20.

TRADE VS. TAX

Neither tax nor trade delivers a "perfect" system of abatement. Both have downsides. The question is which of these approaches has a greater downside than the other one; or stated positively, which one delivers greater benefits? Is there a middle ground?

a) Tax system

Proponents of the introduction of a carbon tax maintain that it would provide certainty for business and provide a constant stream of revenue for the government, which will allow the government to introduce offsetting tax cuts.[83] An alternate method would simply model the carbon tax on the existing Goods and Services Tax (GST) and pass the costs down the chain of production.[84] It has been suggested that:

> "Goods and services that avoid using carbon at all stages of production will pay the pure 10%. Other goods and services will pay a premium in proportion to emissions intensity weighted over all stages leading to a final sale. Exports from Australia would be zero rated and taxed by the importing nations['] carbon reduction policies. Imports to Australia would be subject to border tax adjustments so they are treated the same way as locally produced items."[85]

This is indeed a strong argument as such a system will redistribute taxes. Simply put, the non-polluting industry will have a net gain, which in any situation would outstrip the polluting industries. The outcome is that the non-polluting industries would have a cost advantage beyond the reduction of carbon emissions.

However, reduction of emissions will cease when the marginal abatement cost is equal to the level of the tax.[86] (The same can be said in relation to an ETS.) The only way to reduce the emissions level further would be to raise the tax, which of course could result in carbon leakage.

The undoubted advantage of a tax system is that the costs to the firms are certain.[87] But not all countries will have the same Kyoto commitments and hence, as an example, the border tax adjustments will be different depending on the cap. In effect, the adjustment simply

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[83] *See id.*

[84] *See* Michael Porter, Research Dir., Committee for Econ. Dev. Of Austrl., Remarks at A Taxing Debate, *supra* note 16, at 3-5.

[85] *Id.*

[86] EPA, *supra* note 76, at 2-6.

[87] *Id.*

amounts to a tariff, which possibly would be in breach of WTO/GATT obligations. At worst, a "trade war" could erupt favoring the non-Kyoto countries. As an example, China is not obliged to impose a cap, hence no policies would exist to tax Australian imports. However, the goods imported from China would be taxed.[88] It is doubtful that China would not "retaliate" and level the playing field.

At best, the above argument applies if carbon trading is excluded. As soon as carbon trading is allowed—concurrently with a tax system—the cost of purchasing carbon will influence business decisions. Once the price of carbon on a worldwide trading system falls below the tax, industries would merely buy the required permits, hence avoiding the tax. Therefore, no reduction in emissions is achieved. Of course, the rider is that a regulatory framework has allowed the trading to proceed. If legislation would be introduced to restrict or even ban a trade in carbon credits, it is a reasonable assumption that the inventiveness of multinational companies would lead to the development of a method to move cost and even contemplate carbon leakage. It should also be noted that a study by the Organisation for Economic Cooperation and Development (OECD) in 2001 showed that imposing environmental taxes failed to achieve the expected outcomes in reducing the levels of emissions.[89] Regulatory authorities rarely have the required understanding or information necessary to accurately measure abatement costs and price sensitiveness in any given market in order to attain the emission targets.[90]

Whether a tax or a trade system is introduced there is a need to involve a robust system to assess, audit, and report the level of carbon output.[91] Only once that is done can there be either a calculation of the relevant tax or the relevant purchase of emission units. Both systems can run together on the lines of a goods-and-services model which is in operation in most countries, but imports into any country may have embedded taxes depending whether they originate from an Annex I country or not.[92] Furthermore, the cost of the embedded values depends on the cap and trade systems of the countries, unless of course there is a linkage agreement or the global price is relatively

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[88] *See* Porter, *supra* note 84.

[89] Organisation for Economic Co-operation and Development [OECD], (2001) *Environmentally Related Taxes in OECD Countries: Issues and Strategies*, OECD Publishing.

[90] *See* EPA, *supra* note 76, at 2-6.

[91] *See id.* at 2-7.

[92] *See* Kyoto Protocol, *supra* note 1, art. 2(1)(a).

stable. Protecting the local market will always be each country's (perhaps unstated) goal.

To introduce an effective tax system, first it will be essential to measure the emission intensity of a particular product or industry. In Australia, this should not be too difficult, as such values have already been determined as a result of the compulsory requirement set down in the National Greenhouse and Energy Reporting Act of 2007. The next step is also a natural progression—the emission intensity is multiplied with either the carbon price or tax applicable in Australia.[93] The approach is novel in that:

> [t]he emissions intensity multiplied with the carbon price [or tax] gives you an ad volorum [sic] cost adjustment for that product which, divided by the product price, gives you a percentage adjustment. That percentage adjustment is applied to the matching import of that produc[t] just the way GST does. That means that the ad volorum [sic] adjustment to both the locally produced product and the import is the same just as it is with the GST. It's WTO compliant just as the GST is, just as the luxury car tax is, just as the wine equalization tax is, just as all the revenue customs duties are.[94]

Even discounting industry lobbies, the flood of concerned commentary is an indication that the information flow between those who "pay the bill" and those who draft the required regulations has not been perfect. Arguably, a "back-to-front approach" has been taken which needs to change in order to create a "win-win" situation for the environment as well as the economic well-being of a nation.[95]

One possible destabilizing problem would certainly not exist if a tax were introduced: the creation of a derivatives market with all its packaged instruments.[96] The question that needs to be asked is whether the carbon trade will go down the same path as the current financial crisis. It certainly has the potential to, as it is difficult to control or legislate against greed. It has been noted that an advantage of tax over trade is that:

> In a cap-and-trade system, the problems may just be beginning when the allowances have been distributed. Carbon allowances will become the basis for a flurry of new financial derivatives, spurring speculation. The potential dangers of such new derivatives form a more persuasive argument

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[93] Geoff Carmody, Remarks at A Taxing Debate: Climate Policy Beyond Copenhagen 13 (Aug. 14, 2009) (transcript on file with author).

[94] *Id.*

[95] Humphreys, *supra* note 17.

[96] *See generally* Roberta Mann, *To Tax or Not to Tax Carbon – Is That the Question?*, 24 NAT. RESOURCES & ENV'T. 44 (2009).

> against cap-and-trade in light of recent financial crises, as many have grown more concerned about complex financial instruments.[97]

Another distinction is whether a government intends to implement a downstream or upstream tax system.[98] It is certainly easier to administer an upstream model as there are fewer entities that would be subject to the tax.[99] However, both systems are possible. British Columbia and Boulder, Colorado have implemented a downstream model.[100] In the U.S., it is estimated that an upstream model would result in 82% reduction in emissions by levying a tax on fewer than 2,500 upstream or midstream entities (versus millions of downstream end users).[101]

However, a tax is not only an incentive to reduce greenhouse gases, but it can also be used as an incentive for carbon leakage. As an example:

> On March 23, 2009, China's Ministry of Finance and State Administration of Taxation jointly issued a Notice on the Policy of Enterprise Income Tax for China Clean Development Mechanism Fund ("CCDMF") and China Clean Development Mechanism ("CCDM") Projects (hereinafter referred as to the "Notice") to introduce new tax incentives for CCDM projects and the CCDMF. The Notice has retroactive effect from January 1, 2007.[102]

This Notice must be read in conjunction with the "Measures for the Operation and Management of China Clean Development Mechanism Project" promulgated in 2005.[103] In brief, the proceeds from the sales of certified emissions reductions (CER) attract a reduction of up to 65% of the sales price of the CER.[104] Furthermore, any enterprise which invests in CDM projects in China will be exempt from an enterprise income tax for three years.[105] It does not take much imagination to realize that such an incentive will encourage relocation of companies and that China will have a decisive influence in the trade of global carbon credits.

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[97] *Id.*

[98] *Id.*

[99] *Id.* at 44-45.

[100] *Id.*

[101] *Id.* at 45.

[102] William Zheng, *China Introduces Tax Incentives for Clean Development Mechanism Projects*, Shephard Mullin: China Law Update, Apr. 17, 2009, *available at* http://www.chinalawupdate.cn/2009/04/articles/tax-law/china-introduces-tax-incentives-for-clean-development-mechanism-projects/.

[103] *Id.*

[104] *Id.*

[105] *Id.*

b) Current Trading System

Trading in this area is not a new phenomenon as it has been seriously in operation since 2006.[106] By 2007, the value of the trade had reached US$64 billion and it is anticipated that it will reach US$100 billion by 2020.[107] The EU Emissions Trading Scheme accounts for approximately 70 percent of global trades.[108] In 2008, 4.2 billion tonnes were expected to be traded, up from 2.7 billion in 2007.[109] Most of the trading has taken place on exchanges in futures and derivatives.[110] New exchanges are constantly being created, such as the Montreal Climate exchange in 2008,[111] a joint venture with the Chicago Climate Exchange.[112]

If exchanges are the preferred method to trade in permits instead of over-the-counter, a system of control could follow the current underlying understanding between the major exchanges in the world. It would have to be separate from any regulation controlling the over-the-counter trade. The fact is that over-the-counter trade cannot be discounted, as the NSW legislation in Section 97FD clearly anticipated any trade, proclaiming: "The person registered as the owner of an abatement certificate may . . . deal with the certificate as its absolute owner and give good discharges for any consideration for any such dealing."[113]

The implementation of an ETS can be achieved by setting, as a first step, the emissions cap. The EU and Australia have set a tentative

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[106] CAPOOR, *supra* note 33, at 1.

[107] LEHMAN BROTHERS, THE BUSINESS OF CLIMATE CHANGE II 81 (Sept. 20, 2007), *available at* http://gei.newscorp.com/resources/files/lehman—thebusinessofclimatechange.pdf.

[108] EUROPEAN COMMISSION, EU ACTION AGAINST CLIMATE CHANGE: THE EU EMISSIONS TRADING SCHEME 21 (2009), *available at* http://ec.europa.eu/environment/climat/pdf/brochures/ets_en.pdf.

[109] *Carbon News: World Credit Trade to Top $90 Billion*, China Confidential, Feb. 26, 2008, http://chinaconfidential.blogspot.com/2008/02/analysts-predict-global-carbon-trade.html.

[110] *See generally* Lisa Kassenaar, *Carbon Capitalists Warming to Climate Market Using Derivatives*, Bloomberg, Dec. 4, 2009, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=AXRBOxU5KT5M.

[111] Jean Robillard, *Montreal Climate Exchange Launches First Canadian Environmental Market*, CANADA NEWSWIRE, May 30, 2008.

[112] *Id.*

[113] *See* Electricity Supply Amendment, *supra* note 34, at § 97FD.

cap as further consultations with stakeholders have not yet finished.[114] It appears that this step is still a work in progress. In this context it should be noted that the EU and Australia—despite giving the system a cap and trade label—account for the emissions differently. The EU, in essence, requires permits from polluters above a set cap.[115] The now abandoned Australian Bill, on the other hand, required polluters to surrender permits for all the emissions.[116]

The second step would be to determine who is obliged to either receive or purchase allowances. The third step is to determine how these allowances are distributed. Most countries which have—or are about to have—legislation in place have chosen to give some allowances for free (in order to forestall carbon leakage), or have implemented an auction system.[117] The last step would be to determine which class of emissions units are eligible to be surrendered within each system. As an example, the Australian proposal did not allow all units to be surrendered.[118] The problem here is that without consistency between systems, an interlocking is impossible.

Generally speaking, one of the great advantages of a cap-and-trade system over a tax system is the fact that an ETS would create stable emission levels. However, the costs will fluctuate depending on the market. RGGI, in its first auction in 2008, experienced wide variations in auction prices ranging from $1.86 to $12.00.[119] As the market decides the cost per unit, the government, as the issuing authority of allowances, can influence the market. If the price is too high, more allowances are issued. Furthermore, industry can cushion itself from price fluctuations by "banking" emissions units for use in a future year.

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[114] *See Opinion of the European Economic and Social Committee on 'Climate Change International Negotiations,'* 2009 O.J. (C 77/19) 1.3 (denoting a current benchmark of 20% with a recommendation to increase to 30% if certain events occur such as international agreements to commit to further reduction levels); *see also* Electricity Supply Amendment, *supra* note 113 (establishing gradually increasing benchmarks of carbon removal).

[115] *See generally* Council Directive 2003/87, 2003 O.J. (L 275) 87 (EC).

[116] *See* CPRS Bill, *supra* note 6, § 93.

[117] *See, e.g.*, Council Directive 2003/87, *supra* note 114, art. 9-10, 12 (providing for the allocation of allowances, 90% of which are to be given free of charge and may be transferred); CPRS Bill, *supra* note 6, § 165-67 (allocating units to a trade-exposed assistance program to protect corporations against carbon leakage); MODEL RULE REG'L GREENHOUSE GAS INITIATIVE, *supra* note 66, § 5.3(b) (requiring the allocation of at least 25% to consumer benefit programs).

[118] *See* CPRS Bill, *supra* note 6, §122.

[119] Regional Greenhouse Gas Initiative Auction Results, *supra* note 62.

"Borrowing" also can be used to cushion the effects of higher prices by emitting now and paying later.

It appears that trading at this stage is a multilayered system without any interlocking features. From this point of view, a tax is a superior method, but whether or not it offers the same flexibility is to be investigated further.

The International Trading Aspect

Despite the fact that global warming is—as the word indicates—a global issue, the ETS in many countries unfortunately has been considered purely from a domestic point of view. Both the proposed Australian and existing EU legislation have an inward looking aspect.[120] They are simply not compatible with each other as their respective emission units cannot be traded universally.[121] Each country, for example, has different surrendering rules.[122] In other words, carbon credits on a global stage are not fungible, adding to the complexity of resolving disputes. These diverse markets will or will not interact, as the case may be, but none of the legislative regimes has taken the inevitable relevant question into consideration: Which substantive law will eventually govern contracts for the sale or purchase of emissions units?

Arguably, the Kyoto Protocol should have included an article in relation to the applicable substantive rules as well as a dispute resolution mechanism. However, considering that any treaty is in effect a political compromise amongst the participating nations, such an inclusion was never likely to succeed. The default position, namely domestic law, will have to deal with what is substantially a global problem.

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[120] The inward looking aspects of both Australian and EU legislation can be seen in features such as allowances given free of charge to businesses located inside each respective territory in order to prevent carbon leakage from their jurisdictions; or in Australia, only issuing permits to industries under its jurisdiction. *See, e.g.,* Council Directive 2003/87, *supra* note 115 (providing for the allocation of allowances, 90% of which are to be given free of charge, and providing that these allowances may be transferred); CPRS Bill, *supra* note 6, § 165 (creating a program to assist industries in international competitiveness that may be affected by the carbon reduction regulations).

[121] *See, e.g.,* Council Directive 2003/87, *supra* note 115, art. 30(2)(b), (i) (recognizing the need to address international trading of units in the future and the need to adapt the trading scheme beyond the current EU membership).

[122] *Compare* CPRS Bill, *supra* note 6, § 89 (calling for polluters to surrender permits for all emissions), *with* Council Directive 2003/87, *supra* note 115, art. 4-6 (calling for permits from polluters above a set cap).

Due to the efforts of UNCITRAL and UNIDROIT, uniform international laws have been created and they have found their way into domestic laws.[123] Of interest to this paper is whether the Convention on Contracts for the International Sales of Goods (CISG) and the UNIDROIT Principles of International Contracts (UCP) are possibly applicable. However, it must be kept in mind that contractual terms can exclude the CISG and the UCP, which are only soft laws and must therefore be explicitly included.[124]

It is inevitable that some cap-and-trade systems will not be well-designed due to "poor monitoring and enforcement, use of a safety valve, and a lax standard for offsets."[125] Disputes will surely eventuate. A uniform approach to dispute resolution, i.e., the availability of a uniform law, will reduce compliance and litigation costs. This is important as emission units are traded between countries and regions and therefore a uniform international jurisprudence would assist in the decision making of international traders. At least, a framework could be created which can be applied by companies and their legal advisors.

An Analysis Under CISG Article 2.

Whether the CISG can be useful in supplying the substantive law depends on the interpretation of Article 2, as the CISG only deals with the sale of goods.[126] The first observation is that gases as such have been classified as goods. For example, natural gas has been found to fall under the definition of "goods" by a Russian arbitration panel and therefore subject to the CISG.[127] The difference between the Russian case and the present discussion is the fact that the gases are not to be delivered but only the value of those "goods" represented by the emission units.[128]

As a preliminary point, Article 3 does not pose any problems as greenhouse gases are a by-product of manufacturing. Article 3(1) does

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[123] *See* United Nations Convention on Contracts for the International Sale of Goods, G.A. Res. 33/51, ¶ 4, U.N. Doc. A/97/19 (Dec. 4, 1980) (reaffirming their conviction to the "harmonization and unification of international trade law") [hereinafter CISG]; *see also* UNIDROIT Principles of International Commercial Contracts, xiv (2004) (stating the goal of "unification or harmonisation of law") [hereinafter UCP].

[124] *See generally* UCP, Preamble, *supra* note 123.

[125] Howland, *supra* note 7, at 433.

[126] *See* CISG, *supra* note 123, art. 1(1).

[127] Russian Federation Arbitration Proceeding 65/2003 (2004), *translated in* http://cisgw3.law.pace.edu/cases/040219r1.html.

[128] *Id.*

not apply unless the buyer supplies a substantial part of material necessary for the manufacture.[129] Even if that were the case, the purchase of the goods is not the subject of the purchase of the emissions unit. In effect, in a situation like this, two contracts are applicable: one for the goods where the material has been supplied, and a second for the emissions units, which, as a by-product, have been produced by the seller. However, the seller in this case would be under no obligation to sell or give the by-product, namely greenhouse gases, to the same buyer. Nor is the buyer obliged to reimburse the seller for the creation of greenhouse gases. There is not a natural connection between the production of the goods and the possible sale of emission units.

Article 3(2) is equally not applicable. Article 3(2) excludes those transactions where the party who furnishes the goods also supplies a preponderant part of the obligation in the form of labor or other services.[130] Arguably, Article 3(2) presupposes the existence of only one contract and not separate contracts for the supply of labor and for the supply of goods.[131] Again, this does not apply as greenhouse gases are a by-product of a process (may it be manufacture or otherwise).

At first glance, there appears to be no problem classifying the emission units as personal property and hence they could fall under the governance of the CISG. As an example, the Australian Bill noted in Section 94, "An Australian emissions unit is personal property and, subject to Sections 96 and 97, is transmittable by assignment, by will and by devolution by operation of law."[132]

Sections 96 and 97 described how the emissions units can be transmitted either by assignment or by operation of law.[133] The Commentary to the Bill furthermore noted that "[t]he draft Bill is not intended to prevent the creation of equitable interests in Australian emissions units or the taking of security over them."[134] Arguably, therefore, emissions units are capable of having the character of a "good."

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[129] CISG, *supra* note 123, art. 3(1).

[130] *Id.* art. 3(2).

[131] Frank Diedrich, *The CISG and Computer Software Revisited*, 6 VINDOBONA J. INT'L COM. LAW & ARB. SUPPLEMENT 55, 66 (2002), *available at* http://www.maa.net/attachments/221_vj_6_2_e_supplement_diedrich.pdf.

[132] CPRS Bill, *supra* note 6, § 94.

[133] *Id.* § 96-97.

[134] Carbon Pollution Reduction Scheme Bill 2009 Commentary § 2.40 (Austl.), *available at* http://whitepaper.climatechange.gov.au/emissionstrading/legislation/pubs/commentary_cprs_bill.doc.

However, the Bill proposed that all Australian emission units and eligible international emission units are added to Section 764A(1)(k) of the Corporations Act,[135] which defines "specific things that are financial products."[136]

From this description, it appears that a trade in units will fall under financial services laws. However some countries—Austria as an example—have defined emission units as goods,[137] hence the problem of conflicting definitions is possible. As technology is available for sequestration, it is difficult to imagine that a financial product would be captured and put under ground. Further arguments also suggest that greenhouse gases are goods. First, greenhouse gases are movable, the same as electricity.[138] Second, they are used in production. And third, greenhouse gases exist in various qualities and therefore third party verification is necessary.[139]

Conceptually, the over-the-counter trade is distinguishable from a trade on the derivatives market and hence, depending on the manner of trade, the emission units are either a financial product or a good.[140] The problem is that if the certificates are classed as goods, the classification within the derivatives market is different than if they are financial products.[141] Commodity derivates within the EU would not require licensing.[142] However, as soon as the new EU Investment Services Directive is implemented, the question of licensing would need to be investigated.[143]

Consequently, depending on conflict of laws issues, an Australian seller or buyer of emission units could be subject to different legislative requirements for essentially the same transaction. Furthermore, it is obvious that over-the-counter trade will need to have different legisla-

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[135] Carbon Pollution Reduction Scheme (Consequential Amendments) Bill 2009 Explanatory Memorandum 79, May 6, 2009 (Austl.).

[136] Corporations Act, 2001, c. 7 (Austl.).

[137] Emissionszertifikategesetz [EZG], Bundesgesetz [BGBl] I No. 46/2004, § 22, *available at* http://www.ris.bka.gv.at.

[138] Christin M. Forstinger & Alexander F. Wagner, *Emission Trading and Capital Market Law; Emissionshandel und Aufsichtsrecht*, Österreichisches Bankarchiv, Aug. 2004, at 7, *available at* http://www.isb.uzh.ch/publikationen/pdf/wagner_emissionstradingandcapitalmarket.pdf.

[139] *Id.* at 7-8.

[140] *Id.*at 11-12.

[141] *Id.* at 12-14.

[142] *Id.* at 15.

[143] *Id.* at 15-19. .

tive controls than those applying to brokers or the person giving advice. In sum, a legislative framework dealing with ETS needs to take methods of trade into consideration and give some safeguards to buyers and sellers.

Before further analysis is undertaken it must be understood that a polluter, in effect, enters into two contracts. The first contract by operation of law is with the government, where the polluter is allowed to emit a certain tonnage. He then must surrender emissions units to the value of the emitted tonnage to the government. The next contract is with the seller of emissions units. It is obvious that only the purchase of the units by the emitter is of interest to this paper and not the act of surrendering the units to the government.

Furthermore, it must be remembered that the drafters of the CISG did not think of the unique and intangible nature of carbon trade.[144] However, the drafters were aware of the changing nature of international trade and drafted the convention in a form which is devoid of words with a domestic connotation.[145] Moreover, the CISG relies on words which can be given meaning as time progresses. Computer software is a product which comes to mind as it is also an intangible good.[146] Professor Diedrich commented that "software has become a cornerstone in electronic commerce. And e-commerce does not know any physical borderlines. It is as such international or transnational."[147]

The same can be said in relation to ETS. In general, the CISG only applies to sales of goods if the requirements of Article 1 are met, i.e., to "sale of goods between parties whose places of business are in different States."[148] Furthermore, Article 1 also stipulates that either both parties must have a place of business in a contracting state or "the rules of private international law [must] lead to the application of the law of a Contracting State."[149] There is, however, no definition in the CISG which explicitly defines the term "sale of goods." Articles 30 and 53 clarify its meaning by pointing out that "[a] contract for the sale of goods is . . . a contract where one party (the seller) has the duty to deliver the goods and to transfer the property therein (including the

[144] Diedrich, *supra* note 131, at 55.
[145] *See id.* at 58.
[146] *Id.* at 57.
[147] *Id.*
[148] CISG, *supra* note 123, art. 1.
[149] *Id.*

handing over of related documents) . . . ."[150] The principle of reasonableness would suggest that it is sufficient to hand over the documents where only the value of the goods represented by the document is at issue and neither the buyer nor the seller are interested in taking possession of the actual goods underpinning the documents.[151] Arguably, therefore, Article 1 does not preclude the conclusion that emissions units can be subject to a sale of "goods."

The next question is whether emission units can be classed as goods under Article 2, which states:

> "This Convention does not apply to sales:
> (a) of goods bought for personal, family or household use, unless the seller, at any time before or at the conclusion of the contract, neither knew nor ought to have known that the goods were bought for any such use;
> (b) by auction;
> (c) on execution or otherwise by authority of law;
> (d) of stocks, shares, investment securities, negotiable instruments or money;
> (e) of ships, vessels, hovercraft or aircraft;
> (f) of electricity."[152]

The first point to note is that Article 2 is not making a positive statement but rather a negative one. Hence, all goods which do not fall under Article 2's exclusions are "goods" pursuant to the CISG. However, a closer definition is required because the negative definition in Article 2 is an open issue; that is, a gap exists. One point is clear though: Article 2 does not make a distinction between tangible and intangible goods; hence both classes can—subject to Article 2—be classed as goods.[153] This is supported by the fact that electricity was only excluded in the drafting stage because of specific political reasons.[154]

At first glance, the solution to the definition of "goods" is that goods are everything not excluded in Article 2. This is not very satisfactory, but by further reading of the CISG a more narrow description can be elicited. Article 35 mentions goods as "required by the contract and which are contained or packaged in the manner required by the con-

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[150] Diedrich, *supra* note 131, at 57.

[151] *Id.* at 61-62.

[152] CISG, *supra* note 123, art. 2.

[153] *See* Diedrich, *supra* note 131, at 62-63 (discussing *Advent Systems Ltd. v. Unisys Corporation*, 925 F.2d 670 (3rd Cir. 1991) (holding that intangible computer software can be classified as goods)).

[154] *Id.* at 58.

tract."[155] Article 46(3) provides that "[i]f the goods do not conform with the contract, the buyer may require the seller to remedy the lack of conformity by repair."[156] Articles 85 to 88 regulate the preservation of goods, and Article 87 specifically mentions the "warehous[ing]" of goods.[157] "What conclusions can be drawn from this? If there is uncertainty as to whether a particular item can be classified as goods, a court can ask additional questions such as whether the item in question is movable, tangible property that can be packaged, repaired if necessary and warehoused if required."[158]

Carbon emissions units representing greenhouse gases, at first glance, do not fall under the above descriptions except that they are movable and tangible property. However, a further characteristic must be taken into consideration, namely that carbon units are personal property and capable of being subject to a security interest.[159] Therefore, they would arguably fall under the definition of "goods" pursuant to Article 2.[160] It is clear that the exemptions listed in subsections (a), (b), (c), (e), and (f) do not apply.[161] The question is whether emissions units fall under one of the categories listed in subsection (d).[162] The categories of money, investment securities, stocks and shares can be discounted, as they have no similarities to emissions units.[163] Hence this issue can be further narrowed to whether emissions units would be excluded as "negotiable instruments."

This issue can be looked at from another viewpoint as well. The seller is—pursuant to Article 30—obliged to deliver the goods, hand over the documents and transfer the property in the goods subject to the contract.[164] Emissions units represent personal property that cannot be handed over in its original form. Accordingly, all but one of the

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[155] CISG, *supra* note 123, art. 35.

[156] *Id.*, art. 46(3).

[157] *Id.* art. 85-88.

[158] Bruno Zeller, *Four-Corners - The Methodology for Interpretation and Application of the UN Convention on Contracts for the International Sale of Goods*, May 2003, [http://www.cisg.law.pace.edu/cisg/biblio/4corners.html]; *see also* HENRY D. GABRIEL, CONTRACTS FOR THE SALE OF GOODS: A COMPARISON OF DOMESTIC AND INTERNATIONAL LAW 18 (Oceana Publications, Inc. 2004) (stating generally 'goods' within the meaning of art. 1(1) are those products that are moveable and tangible at the time of delivery).

[159] CPRS Bill, *supra* note 6, at section 94.

[160] CISG, *supra* note 152.

[161] *Id.*

[162] *Id.*

[163] *Id.*

[164] CISG, *supra* note 123, art. 30.

seller's obligations will be executed. Taking possession of the physical goods is not required. On the contrary, only handing over the documents and transferring the property in the goods to the buyer is required by the CSIG.[165] The last hurdle, namely that emissions units must be able to be surrendered, suggests that they are not free from a right or claim of a third party. This is so as the Bill and other legislation in the EU will not accept all emission units for purposes of surrendering, and hence execute a right over the units.[166] The CISG recognizes this fact in Article 41,which states in brief that the buyer is free to take the goods subject to any right or claim of a third party.[167] The current problem is that not all ETS are compatible and hence a unit may be able to be surrendered in one country but not the next.[168] The CISG protects the buyer and the seller in these instances as the seller is only responsible for third party claims if he knew or should have known of them at the time the contract was concluded.[169] The seller is protected from obligations in relation to third party claims "if the buyer had actual or constructive knowledge of the third-party claims at the conclusion of the contract . . . ."[170]

Returning to the issue of whether the emissions units can be classified as negotiable instruments and hence would be excluded via Article 2(d), at first glance it can be argued that emissions units are indeed negotiable instruments as they can be traded on the derivatives market as well as passed over-the-counter to brokers, speculators and others. But, they have something in common with bills of lading as well: They are backed by actual goods and the document in question merely transfers ownership in the goods and nothing else.

However, Article 2 also describes methods of sale in subsections (b) and (c), and if a sale falls under the listed categories, the CISG is not applicable.[171] Therefore it is of value to describe briefly the most common methods of selling and buying emissions units in order to eliminate these exemptions for certain methods of sales.

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[165] *See id.*

[166] *See e.g.* CPRS Bill, *supra* note 6, §122 ("Surrender Restrictions").

[167] CISG, *supra* note 123, art. 41.

[168] *See generally*, Bruno Zeller, *Systems of Carbon Trading*, 25 TOURO L. REV. 909 (2009) (calling for a uniform international ETS while noting the problems associated with cap and trade based systems such as the EU recognizing credit and baseline based systems).

[169] GABRIEL, *supra* note 158, at 141.

[170] *Id.* at 142.

[171] CISG, *supra* note 123, art. 2.

The government is a supplier of units.[172] It is anticipated that the bulk of units will be either given free to high emitters or sold by auction.[173] Furthermore, the buyer of units can purchase emissions units through the derivatives market or over-the-counter.[174] It is therefore apparent that all sales by government through the auction system are excluded, as well as dealings at the derivatives market, which would fall under subsection (d)'s exception for investment securities.[175] The observation that can be made at this stage is that only sales over-the-counter and the free issue of units may attract the application of Article 2.

The next issue is whether the term "goods" also includes intangible goods. Greenhouse gases may not be visible; however, in order to be able to put on a cap or a tax, the object in question must be measurable. If it is measurable, it does, to an extent, become tangible. The law, which is drafted to reduce greenhouse gases, depends on a measurable output (namely tonnes of emissions) and hence carbon emission is a measurable unit.[176] It can be captured and sequestrated; to put it simply, it can be stored. It can be traded but is represented by a document or a book entry, namely the emissions unit. However, this would not detract from the definition of goods as off-the-shelf computer programs have also been termed "goods" no matter whether they are in a box or downloaded via a computer in another country. The Regional Court in Munich, for example, had to decide whether a sale of a computer program was indeed a sale of goods.[177] The court noted:

> The fact that the transaction at issue concerns a computer software programme does not hinder the application of the CISG. According to the opinion of the Court, the sale of standard software for an agreed price is a "contract of sale of goods" within the meaning of Art. 1 CISG. Schlechtriem/Huber (CISG, 1990, Annotation 21 to Art. 1) also agree on the classification of computer software as goods under the CISG.[178]

The Commercial Court in Zürich came to the same conclusion. The Court stated that "[t]he purchase of software as well as the joint purchase of software and hardware constitutes a sale of goods that falls

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[172] *See Green Paper, supra* note 13, at 12.

[173] *Id.* at 255.

[174] *Id.*

[175] CISG, *supra* note 123, art. 2.

[176] *See* CPRS Bill, *supra* note 6, § 14.

[177] CISG Case Presentation, District Court, München, Germany (February, 8 1995), http://cisgw3.law.pace.edu/cases/950208g4.html.

[178] *Id.*

within the ambit of the CISG."[179] Likewise, the Federal District Court for the Middle District of Pennsylvania also concluded that software is included within the sphere of the CISG.[180]

The conclusion which can be drawn from the above cases is that not only physical goods, but also virtual goods can be classed as goods pursuant to Articles 1 and 2 of the CISG. It follows therefore that greenhouse gases which are traded in a virtual world via emission units can also be classed as goods. The question in the end will not be asked as to quality or ownership but rather as to quantity of greenhouse gases which are tradable. The question of quantity and description is within the sphere of the CISG and is represented by Article 35.

Conclusion

Carbon reduction is indeed the biggest economic reform effort in recent times. However, as this paper has attempted to highlight, crucial aspects of the trade or tax scheme have not yet been investigated. In other words, forward and backward linkages of the effects on trade are ignored.

The solution in the long term—as it has been advocated in the G20 summit—is to devise a global system that is simple and compatible with not only developed, but also developing nations.[181] In other words, the linkage attempts by individual systems in the U.S. need to be studied carefully and lessons need to be learned. This is a new area of economic development and if the Doha rounds are any indication, solutions will not be easily forthcoming.[182] At this stage individual states are attempting to implement their own systems. The issue is not whether something is done, but whether the attempt will succeed. Subsidies and tariffs may re-emerge if ETS proves to reduce domestic growth and competitiveness.

It is agreed that on one hand global warming needs to be tackled and greenhouse gases must be reduced. However, the other side of the coin is that the implementation of the abatement process will affect

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[179] CISG Case Presentation, Commercial Court, Zurich, Switzerland (Feb. 17, 2000), http://cisgw3.law.pace.edu/cases/000217s1.html.

[180] *See* American Mint LLC v. GOSoftware, Inc., 2005 WL 2021248 (M.D.Pa. 2005).

[181] Convention on Climate Change, *supra* note 2, art. 3.

[182] *See generally* Jonathan Lynn, *More Meetings, No Movement in Intense Doha Trade Talks*, Reuters, Sept. 18, 2009, http://www.reuters.com/article/GCA-GCA-G20/idUSTRE58H3II20090918?sp=true; *World Trade Talks End in Collapse*, BBC News, July 29, 2008, http://news.bbc.co.uk/2/hi/7531099.stm.

the economic environment of nations. Trade in credits has already begun and it is obvious that legislation is following, not leading the market. The question will be how the pending legislative framework will affect the existing markets and established intentional conventions and treaties. This aspect is not yet explored and it can be argued that any successful cap and trade system ought to include, not only the capping aspect, but also a sound and simple international trading aspect that includes relevant dispute resolution mechanisms.

The aim of any system, whether tax or ETS, should be to reduce our carbon imprint but at the same time reduce costs. With such a system, economic growth and environmental benefits are guaranteed. The bottom line is that we need both. Otherwise the system will fail.