EMISSIONS TRADING AND CARBON OFFSETS, SCHEMES OR SCAMS? A Review of the Risk and Exposure to the Carbon Market and the Role of the Forensic Accountant

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TABLE OF CONTENTS

1 Executive Summary

International, regional and domestic climate change initiatives are leading to the evolution of a carbon market, where metric tonnes of carbon dioxide credits and allowances are traded in compliance with regulator regimes and voluntarily on climate exchanges or by carbon offset providers. As the carbon market evolves professional expertise from engineers and chartered accountants will be required to: establish guidelines and standards; prepare reports and analysis of emission; and validate and verify carbon dioxide credits. The EU carbon market was established in 2003 and at the end of 2007 there was over $24 billion (USD) in carbon dioxide allowances traded for companies to meet their emission requirements. In Canada and the United States ("US"), the lack of federal regulation and various state and provincial joint ventures has created a voluntary carbon market where companies from all sectors, municipalities and individuals voluntarily purchase carbon credits to reduce their emission levels. However, recent allegations in established carbon markets have shown the various risks and exposures to fraud in the carbon market; which potential can lead to various legal disputes and investigations for an investigative and forensic accountant to be engaged.

The purpose of this report is to analysis the risks and exposures to fraud in the Canadian carbon market and the roles which can potentially emerge for an investigative and forensic accountant. There is a potential for the North American carbon market, in the near future, to be trading billions of dollars in carbon dioxide credits and allowances annually. As the carbon market grows, it will likely result in allegations of frauds and misconduct by the various players in the carbon market. Therefore, the investigative and forensic accounting profession needs to be aware of the potential disputes and frauds which may emerge. Investigative and forensic accounts will need to be aware of the varying regulations, standards, disclosure requirements and financial statement valuation methods for carbon dioxide credits and allowances; prior to being engaged to perform any services in the carbon market. After discussing potential risks and exposures to fraud within the carbon market Selina Andersen, an associate lawyer, and Robert Fishlock, a partner, at Cassel Brooks & Blackwell LLP stated they can see the future importance the investigative and forensic accountant will play within the carbon market.

2 Background

2.1 Kyoto Protocol

The Kyoto Protocol ("Kyoto") is an international agreement, adopted in 1997 and entered into force February 16, 2005. Kyoto established mandatory emission targets, of at least 5% below 1990 levels between the period 2008 and 2012, on Greenhouse Gases ("GHG") for the world's leading economies. Currently, 181 nations and the European Union (collectively called "Participants") have ratified, accessioned, approved or accepted Kyoto. (See Appendix A – Status of Ratification – May 13, 2008 for listing). Kyoto encourages Participants to develop national climate change initiatives to meet their emissions targets. To provide Participants with flexibility in meeting their emission targets; Kyoto created three innovative mechanisms (collectively called "Market Based Mechanisms"):

- Emissions Trading,
- Clean Development Mechanisms, and
- Joint Implementation. [1]

2.2 *Emissions Trading*

Emissions' trading (also referred to as 'carbon market') is a market based mechanism set-up to give companies the ability to meet their emission targets established by their regulatory regime.[2] Emissions' trading is a futures market-based financial instrument where one tonne of carbon dioxide ("carbon credit") is traded at market price. The carbon credit can result from allowances for when an emitter of GHG achieves carbon

[1] United Nations Framework Convention on Climate Change, http://unfccc.int/kyoto_protocol/items/2830.php
[2] As set out in Article 17 of the Kyoto Protocol

reductions below their regulatory requirement or also when a carbon offset project reduces emissions levels below their baseline. For example if a company is allowed to annually emit 10,000 metric tonnes of carbon dioxide (“CO_2”)and they only emit 9,000 metric tonnes of CO_2 at year end then they have generated 1,000 carbon credit allowances which they can bank or trade. Furthermore, if a company replaces a coal broiler with a wood boiler and the change resulted in the business’s CO_2 emissions being reduced from 15,000 metric tonnes of CO_2 to 10,000 metric tonnes of CO_2 then they have generated 5,000 carbon credits. Countries can jointly or independently develop an Emission Trading Scheme of domestic carbon credits and / or secondary certified emission reduction (“CER” or “carbon credit”) credits, which are issued under Kyoto. There are two types of carbon markets: compliance and voluntary. Compliance carbon markets (also referred to as ‘regulatory markets’) are designed and regulated by regional, national or international regulation; for example Kyoto’s clean development mechanisms and the EU’s Emission Trading Scheme. A Voluntary carbon market allows companies, municipalities and individuals to voluntarily purchase carbon credits at market or pre-defined prices, for example the Chicago Climate Exchange and Montreal Climate Exchange.

2.3 *Clean Development Mechanisms (“CDM”)*

CDM (also referred to as ‘carbon offsets’) are a market based mechanism that allows Participants to invest in emission reducing projects in developing countries as an alternative to expensive national projects.[3] Projects approved as carbon offset generate carbon credits, from the reduction of GHG emissions, which are traded on climate

[3] As set out in Article 12 of the Kyoto Protocol

exchanges or by carbon offset providers. Carbon credits, approved by the United Nations ("UN"), are transferable between Participants to be used towards achieving their emission requirements, from any domestic shortfall.[4]

There are over 200 types of projects suitable for generating carbon credits categorized as follows: renewable energy, wind, solar, and hydroelectric power; methane collection and combustion; energy efficiency; destruction of industrial pollutants; and land use change and forestry. The process for a carbon offset project to generate qualified carbon credits, according to the European Climate Exchange, involves the following:

1. Project Idea;
2. Project Design Document ("PDD") and Consent of Home Country;
3. Validation;
4. Registration;
5. Monitoring;
6. Verification; and
7. Issuing of the carbon credit.[5]

2.4 Joint Implementation

The third market based mechanism Joint Implementation functions identically to the methodology of CDM with one main difference. The difference between the two mechanisms is joint implementation projects involve two Participants, as opposed to CDMs which involves a Participant and a developing country.

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[4] United Nations Framework Convention on Climate Change, http://unfccc.int/kyoto_protocol/items/2830.php.
[5] European Climate Exchange, http://www.ecxeurope.com/default_flash.asp.

3 Canada's Role in Kyoto

Canada signed into Kyoto April 28, 1998 and ratified on December 17, 2002 with a promise to reduce the country's GHG emissions by 6%, using 1990 emissions levels as a benchmark by 2012. The federal government initially consulted with industrial emitters attempting to implement a climate change initiative that would allow Canada to meet it Kyoto's targets. However, in April 2007 the federal government announced their intentions to abandon Kyoto and rather meet Canada's emissions targets in 2025, 13 years later then initially promised.[6] The following is a chronology of events leading to the proposed federal regulation relating to climate change:

- "In October 2006, the Government issued a Notice of intent to develop and implement regulations and other measures to reduce air emissions. A key commitment in that Notice of Intent was to develop an approach to regulate industrial greenhouse gas and air pollutant emissions.
- Following up on that commitment, the Government unveiled its Turning the Corner plan to reduce greenhouse gases and air pollution, on April 26, 2007 … This plan sets out the approach for reducing greenhouse gas and air pollution emissions from industry. It also outlined planned regulatory measures to reduce emissions from the transportation sector, actions on consumer and commercial products, and actions to improve indoor air quality.

[6] CTV.ca, http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20070425/tories_climate_070426?s_name=&no_ads=

- In December 2007, the Government of Canada formally required industry to provide information about their emissions of air pollutants and greenhouse gases … This information will be used to draft regulations in 2008.
- On March 10, 2008, the Government announced further details of the greenhouse gas emissions regulations of the Turning the Corner plan, after extensive consultations with environmental groups, industry and other stakeholders. With its Turning the Corner plan, the Government of Canada is taking action and putting into place one of the toughest regulatory regimes in the world to cut greenhouse gas emissions. And it is a plan which balances the need to protect the environment while growing the economy."[7]

3.1 "Turning the Corner" - An Overview of the Proposed Regulatory Framework for Industrial GHG Emissions

The goal of Turning the Corner is to reduce Canada's total GHG emissions by 20% of 2006 levels by 2020, with 2% continuous improvement thereafter. The proposed regulation includes the following initiatives:

- a Canadian Domestic offset system ("Offset System"), including a unit tracking system;
- a technology fund;
- acceptance of carbon credits from Kyoto; and
- an early adoption program.[8]

[7] Environment Canada, http://www.ec.gc.ca/default.asp?lang=En&n=75038EBC-1
[8] Federal Government of Canada, Turning the Corner

Offset System

The Offset System for GHG is designed to encourage GHG reductions and / or removals activities beyond those required to meet industrial air emission regulations. Opportunities for carbon offset projects exist across the national economy, and could include: landfill gas capture and destruction, biodigesters, afforestation / reforestation, soil management, and non-emitting renewable electricity generation. The administration of the offset program is the role of the federal government and trading of carbon credits will fall under the Canadian Environmental Protection Act, 1999. A unit tracking system will maintain and track the creation, transfer and retirement of carbon credits. Furthermore, it will be evaluated if a possible linkage of the unit tracking system with international systems such as the US, when developed and EU Emission Trading Scheme. For a carbon offset project to generate carbon credits, the carbon offset project must be within the scope of the Offset System, and must achieve real, incremental, quantified, verified and unique reductions of GHG. The credit creation process for carbon credits is documented in Appendix B.

Technology Fund

A key compliance mechanism, known as the technology fund ("Fund"), allows companies to receive Fund credits when they make contributions to the Fund, which are then used towards meeting their regulatory requirements. The fund credits will have an established rate and contribution limit; whereby the established rate rises and the contribution limit deceases over time. For example in the first year a company may purchase fund credits at $10 per credit and contribute up to 1,000 towards meeting their

GHG emission requirement. Two years later a company may purchase fund credits at $30 per credit and contribute up to 500 towards meeting their GHG emission requirement. Therefore, it has been projected n the initial years numerous companies will contribute significantly to the Fund to meet their regulatory requirements. The contributions generated from the Fund credits will be used for finance qualifying technology projects.

Kyoto Carbon Credits

Carbon credits resulting from Kyoto are eligible to be used for business towards meeting their regulatory requirements; however, it is limited to 10% of the business's emissions target. All carbon credits generated from various carbon offset projects will be acceptable except for forest sink projects.

Early Adoption

Credits for early adoption will be distributed to participants who took early and measurable actions to reduce their emissions. Eligible participates will receive a one-time allocation carbon credits which are bankable or tradeable and are eligible to be used towards the business meeting their emissions requirements.

3.2 Provincial Climate Exchange Initiatives and Markets

Alberta

Alberta introduced a Climate Change and Emission's Management Act, in 2003 which required emitters of more than 100,000 tonnes of GHG a year to reduce their emissions to at least 50% of the year 1990 levels, by December 31, 2020. An Alberta carbon offset system was created to allow emitters to buy carbon credits and allowances to be in compliance with Alberta's regulation. The carbon offsets system has four key steps to offset creation:

1. offset project plan;
2. project implementation;
3. project reporting;
4. and offset submission.[9]

The carbon offset system is administered by the government of Alberta and requires businesses to submit potential carbon offset projects and related reports with their annual compliance report. The annual compliance reports and related carbon offset projects are reviewed and determined if accepted by Alberta Environment. The Alberta regulation clearly defines the rules for how carbon credits are generated, applied, used for compliance purposes, transferred, cancelled and extinguished. Third party auditors, required to be a professional engineer or chartered accountant, verify the reliability of the offset credits.

[9] Government of Alberta, Regulation 139/2007

Quebec

Quebec implemented a carbon tax on energy companies effective October 1, 2007, with the proceeds from the tax going towards financing the province's green plan. In addition, no later then June 1, of each year, every person, and municipality operating an enterprise, facility or establishment which emits a predetermine list of GHG is required to report their annual emissions. Financial penalties of $2,000 - $12,000 for individuals and $5,000 - $25,000 for legal entities are imposed for non-compliance.[10]

Quebec also established the Montreal Climate Exchange ("MCeX"), a joint venture between the Montreal Exchange and the Chicago Climate Exchange. MCeX, began operations on May 31, 2008 and is the first and only regulated climate exchange in Canada, trading in future contracts of CO_2.

British Columbia

Effective July 1, 2008 the government of British Columbia will start phasing in a revenue-neutral carbon tax. The carbon tax will apply to virtually all fossil fuels such as: gasoline, diesel, natural gas, coal, propane and home heating fuel. The carbon tax will charge varying tax rates depending on the fuel type and rise annually until 2012. A tax break will be given to lower-income British Columbians, whereby they will receive an annual Climate Action Credit of $100 per adult and $30 per child. The Government of British Columbia states the carbon tax will be revenue neutral; therefore, legislation will

[10] Government of Quebec, Regulation respecting mandatory reporting of certain emissions of containments into the atmosphere

require for the government each year to demonstrate the revenue generated from carbon taxes will be returned to tax payers through the reduction of other taxes.[11]

4 The Evolution of the Canadian Voluntary Carbon Market

Canadians pride themselves as being a socially responsible country and being a leader in establishing and implementing socially responsible policies; however, the inability of the Government of Canada to implement a climate change initiative has resulted in the creation of a voluntary carbon market. Canadian corporations first purchased voluntary carbon credits in 2004, when TransAlta Corporation purchased $1.75 million in carbon credits. Since 2004, Canadian corporations, municipalities and individuals have started purchasing carbon credits from offset providers and on climate exchanges to voluntarily reduce their emissions from events or day-to-day operations. The evolving voluntary carbon market contains buyers who lack the knowledge of the risks and exposure to frauds in the voluntary carbon market because of multiple standards being used to sell carbon credits, unregulated brokers and lack of disclosure regarding the impact of environmental legislation by public companies.

4.1 Offset Providers

Offset providers are companies that sell certified carbon credits to corporations and individuals from carbon offset projects they have invested in. The carbon credits are generated from projects both in Canada and internationally and are sold to corporations on exchange markets or by a carbon offset provider. Air Canada recently reported they purchased $140,738 carbon credits from Zero Footprint, a not-for-profit organization,

[11] Government of British Columbia, B.C.'s Revenue-Neutral Carbon Tax

whose client's lists includes cities, multinational corporations and educational institutions. Air Canada's Carbon Offset Program was launched in May 2007 and contributed thousands of dollars towards a restoration project in Maple Ridge, British Columbia. The report further indicates during the full year the Carbon Offset Program generated 8,796 tonnes of carbon reductions from 1,759 trees planted. Zero Footprint projects are stated "to meet the highest standards of verification, certification, and transparency", by utilizing the ISO 14064-2 validation by a qualified GHG auditor. The revenue generated from the sale of offset credits is intended for projects currently under development. Zero Footprint's client are major Canadian corporations: Enbridge and Kinross; political parties: The Liberals and Ontario PC Party; municipalities: the City of Toronto, City of Seattle and City of Boulder (Colorado); and major educational institutions: Rotman School of Management, University of Guelph and Upper Canada College. [12]

ISO 140642-2 is a verification methodology also used by Ecosystem Restoration Associates ("ERA") for their carbon offset projects. EconNeutral is an offset product offered by ERA, which works with Municipalities, First Nations and other landowners to restore degraded ecosystems. The carbon credits are generated though agreements ERA has with municipalities and other land owners to produce significant, measurable, carbon benefits, known as EcoNeutral Offset Products. ERA's currently has only one carbon offset project in Maple Ridge which has received third party verification by the Registered Professional Biologists and Foresters. EconNeutral Offset Products are used

[12] Zerofootprint, http://www.zerofootprint.net/about

and supported by the following: Rolling Stone Magazine, BC Hydro, British Columbia Lung Association, Shell Canada Limited and Zerofootprint.[13]

The demand for carbon credits from Canadian corporations is not just limited to public corporation, but also too small and mid sized businesses. Carbon offset provider Climate Neutral Society ("Climate Neutral") is a not for profit organization registered in Vancouver, Canada since 2005. Climate Neutral sells carbon credits to Canadian companies and uses the proceeds to invest in renewable energy and energy efficient projects. Harbour Air Seaplanes and Climate Neutral recently announced a carbon offset program in October 2007; where under the agreement Harbour Air Seaplanes, a mid-sized business, will purchase "high quality carbon offsets". The projects generating the carbon credits are being engaged both domestically and internationally. The domestic portfolio of projects include the following projects in British Columbia: Sk'elep School of Excellent (Kamloops), Delta View Habilitation Centre (Delta), Piccadilly Terrace Retirement Residence (Salmon Arm); in which carbon credits helped pay for the cost of installing a ground source heat pump which provides an environmentally friendly energy solution for their facilities to be heated and air conditioned. In addition Climate Neutral has also supported energy efficient woodstoves projects in Cambodia and Uganda and treadmill pumps in India. Climate Neutral states "Where feasible we pursue Gold Standard certified credits" and all domestic projects go through verification of a third party auditor as being:

[13] Ecosystem Restoration Associates, http://www.econeutral.com/offsetproducts.html

- “Real. Verifiers confirm that our projects take place as promised;
- “Additional.” Offsetters investments lead to real reductions in total GHG emissions by enabling projects that would otherwise not take place;
- Permanent. We avoid reforestation and other projects that only temporarily store carbon.”[14]

Climate Neutral has co-brand and event partners including: Barenaked Ladies, Vancouver Convention & Exhibition Centre, West Jet, MTV Live Earth Party 2007 and BC Tourism Conference 2008.

The recently established Gold Standard, utilized by Climate Neutral and other voluntary carbon offset providers, has facilitated the market for offset providers to sell carbon credits based on a recognized and well respected validation and verification method. The WWF in association with other non-governmental organizations created the Gold Standard for carbon offset projects. The Gold Standard provides a methodology for project developers to ensure their carbon offset projects are creditable and provides real environmental benefits; which leads to the public confidence in the Standards and the carbon market. Planetair a not for profit initiative, founded in 2005, and is Canada’s first provider of Gold Standard offsets. In May 2008, Plantair also became the first Canadian carbon offset provider to publish an annual report claiming to provide a transparent review of their operations. Currently, Plantair has the following projects which are in the process of obtaining their Gold Standard validation:

[14] Climate Neutral Society, http://www.offsetters.ca/

- a wind energy project in Madagascar;
- a micro-hydropower project in Indonesia; and
- a coal to waste wood conversion of a boiler in South Africa.

The only project Plantair has received a Gold Standard certification and carbon credit accreditation is a Biomass Energy project in India. The company's annual report indicates the company assisted their clients in offsetting 4,932 tonnes of CO_2 emissions and that 80% of the proceeds generated from the sale of carbon credits goes directly to the project developers to pay for the implementation, maintenance, validation, verification and certification and retirement of carbon credits and the remain 20% went towards operating costs (customer service, website maintenance and printed materials). Plantair clients range from political include: Alberta Liberal Party, Bloc Quebecois and Parti Quebecois; Utilities: BC Hydro, Canadian Hydropower Association; Public companies: Cascades, Cognos Inc., Dundee Wealth, Grand & Toy, Nissan, Sobeys; and Educational Institutions: Concordia University and University of Sherbrooke. Furthermore they are also carbon credit suppliers for events hosted by Deloitte, PricewaterhouseCoopers and the NHLPA[15]

The purchase of offset credits has not just been limited to small and large corporations, municipalities, utilities and educational institutions. Recent trends by offset providers have created the ability for individuals to purchase carbon credits to neutralize their personal carbon emissions from driving, flying and home energy use. Located in

[15] Planetair, http://planetair.ca/

Toronto, Carbonzero allows individuals and companies to purchase "government re-cognized offset credits to help you meet your targets, no matter which compliance market you do business in North America."[16] Carbonzero claims to provide the "highest quality offsets", secured through the most stringent verifications practices, all based on a principle of transparency. Most of CarbonZero's projects are currently located in Canada; however, they do expect to fund projects in the United States and in CDM countries in the near future. Currently CarbonZero renewable energy development project in Southern Alberta is the only project the company is funding that has been certified. However, the Carbon Zero does not indicate which standards their carbon credits are applied against.

The following is a listing of projects being assets for carbon credits by carbon zero:

- Fuel ethanol project powered by renewable energy with carbon sequestration in Alberta ;
- Solar thermal projects for commercial buildings in Alberta, British Columbia, and Ontario;
- Solar thermal and geothermal hybrid projects in Alberta;
- Biogas powered fuel ethanol project in Alberta;
- Waste Heat Recovery projects in Alberta; and
- Hydraulic vehicular energy recapture apparatus in Southern Ontario

Individuals are able to purchase offset credits for themselves or as a gift at Carbonzero's online shop. The prices ranging from $22 to $220 for one to ten tonnes of offset credits. The client list of Carbonzero ranges from Canadian mid sized business: Salt Spring

[16] CarbonZero, www.carbonzero.ca

Gelato, Thornley-Fallis and AutoShare; to Political parties: Ontario Liberal Party and Ontario New Democratic Party; to Organizations: Federation of Canadian Municipalities, National Association of Green Agents and Brokers Elementary Teachers' Federation of Ontario; and Events: North by Northeast Independent Movie and Film Festival, Fashion Takes Action Green Fashion Show; IdeaCity 2007.

4.2 Carbon Credit Registry

The development of a unified carbon credit registry to track the creation, transfer and cancellation of carbon credits, for the various voluntary markets, is essential to reducing and managing the risks and exposure to fraud relating to double counting. In a voluntary carbon market the responsibility of maintaining a registry is the responsibility of the carbon offset provider or climate exchange. There is no requirement for offset providers to maintain a registry; however, for transparency and reliability of their carbon credits it is in the best interest of the carbon offset provider to maintain a registry.

A voluntary and publicly accessible national registry of GHG baseline, targets and reductions is available for companies and individuals to view. The Canadian GHG Challenge Registry primary objective is to challenge "both current and potential registrants from all economic sectors and geographic regions to demonstrate meaningful actions which contribute towards the reduction of Canada's GHG emissions."[17] The Canadian GHG Challenge Registry participants' includes 289 of Canada's largest corporations and polluters.

[17] Canadian Standards Association, https://www.ghgregistries.ca/challenge/index_e.cfm

4.3 Financial Statement Disclosures

With the recent environmental regulation announcements from Alberta, British Columbia and Quebec and the proposed federal environmental regulation, public companies need to clearly disclose the risks and exposure associated with environmental regulations. The Canadian Securities Administrators' National Instrument 51-102 "Continuous Disclosure Obligations" indicates companies should disclose any and all material facts, risks and uncertainties relating to their business within their Management Discussion and Analysis ("MD&A") and Annual Information Form ("AIF"). However, even with this requirement the need for improved disclosure by public companies regarding their environmental risk has been recently indicated by both the Ontario Securities Commission ("OSC") and the Canadian Institute of Chartered Accountants ("CICA").

The OSC, on February 27, 2008, issued a notice regarding the importance for improved disclosure by public companies regarding the risks and liabilities associated with current and proposed environmental regulation. The OSC conducted a review of 35 companies' environmental disclosures, for which the OSC is the principal regulator. The companies operated in the following industries: environmental services, industrial products, mining, oil and gas, steel, transportation services, or utilities. The review looked the level of disclosure regarding the following matters: i) financial liabilities related to the environment (environmental liabilities), ii) asset retirement obligations, iii) financial and operational effects of environmental protection requirements, and iv) environmental policies fundamental to operations, and environmental risks. Upon completion of the review the OSC found the following regarding environmental risks disclosures:

“Eighteen of the 22 issuers we reviewed that were required to file an AIF, provided disclosure about environmental risks. Four of the 22 issuers did not address environmental risks as a risk factor, despite being in an industry where environmental risks appear to be relevant. Disclosure about environmental risks varied among issuers. For example, one issuer provided a detailed discussion of the foreign environmental laws and regulations that apply to it and quantified the costs of compliance with these laws and regulations in both the short- and long-term. The issuer also discussed how significant changes to these laws or regulations could materially impact its expenditures, which in turn could affect its business, financial results and financial condition.

In contrast, other issuers used boilerplate language, simply disclosing that they are subject to environmental laws and regulations, and that they have established general provisions for expenses associated with environmental obligations. There was no quantification of these expenses. For example, one issuer stated that it was subject to the risk of penalties if it did not comply with applicable environmental laws and indicated that there was no assurance that it could comply with these laws.

We are of the view that if any risks relating to environmental laws are material to an issuer’s operations, whether national or international, the issuer should include a detailed discussion of these laws. This discussion

> should provide meaningful information to investors. For example, it may include whether or not the issuer is in compliance with these laws and any costs of compliance. Boilerplate disclosure is insufficient to properly meet these requirements."[18]

The CICA first issued a discussion brief on environmental disclosure in October 2005[19]. The discussion brief was issued because research had demonstrated companies with significant environmental risk and exposure were not always providing adequate disclosure within their regulatory filings and the CICA wanted to raise awareness and improve the understanding of emerging issue. This discussion brief was recently preceded by an Executive Briefing in March 2008.[20] The Executive Briefing provides a short discussion on the climate change issues facing Canadian businesses, and five key questions relating to disclosures which executives need to consider when preparing disclosures for their financial statements and MD&A. The discussion paper states the following regarding financial statement and MD&A disclosure:

> "With carbon taxes, regulatory emission reduction targets, emission caps and emissions trading there are transactions that need to be recognized in financial statements…. Securities regulators require companies to disclose in their MD&As "important trends and risks that have affected the financial statements, and trends and risks that are reasonably likely to

[18] OSC Staff Notice 51-716 – Environmental Reporting
[19] Canadian Institute of Charter Accountants, MD&A Disclosure about the Financial Impact of Climate Change and Other Environmental Issues
[20] Canadian Institute of Chartered Accountants, Executive Briefing

affect them in the future". Regulators also require that MD&As: "discuss material information that may not be fully reflected in the financial statements". A company's financial statements will not fully reflect the strategic and risk considerations involved in climate change. So the crucial question is whether climate change issues are material and therefore require disclosure. The securities regulators' definition of materiality asks: "Would a reasonable investor's decision whether or not to buy, sell or hold securities in your company likely be influenced or changed if the information in question was omitted or misstated?" To day and momentum traders climate change will not be material to their investment decision making. But it is becoming increasingly difficult to argue that climate change matters are not material to institutional investors."[21]

4.4 Conclusion

The lack of legislation has lead to an increasing complex voluntary carbon market in Canada which:

- uses various standards to certify carbon credits,
- does not have a central registry system to track the creation and retirement of carbon credits; and
- lacks proper disclosures of environmental risk associated with proposed and current regulations.

[21] Canadian Institute of Chartered Accountants, Executive Briefing, Pg. 8

The possible clashes between provincial regulation and proposed federal regulations the Canadian carbon market is becoming even more complex. Many questions have emerged such as how will Ontario's and Quebec's proposed cap-and-trade scheme be integrated with the Federal government's proposed regulation, how will British Columbia's and Quebec's carbon tax work in conjunction with the Federal proposed regulation, will the province or federal government create and maintain one registry for carbon credits or will each have their own? Therefore, the voluntary carbon market in Canada will continue to grow as Canadian businesses want to be perceived as being environmentally conscious. No official statistics are published regarding the carbon trading market in Canada further showing how the voluntary market could potentially be growing without much being know about the size and major players within the industry and the number and value of carbon credits being traded annually. As demand for carbon credits by Canadian and US businesses grow, combined with varying climate initiatives by provinces, states and federal governments in Canada and the US, it is possible for the voluntary carbon market to rapidly grow to be as large as Europe's emission trading market, valued at over $50 billion in 2007.

5 Overview of International Emissions Trading

A 'cap-and-trade' approach has been initiated by numerous countries, including the EU, Australia and New Zealand, as a method of combating climate control. Under the cap-and-trade approach the government or institution (ie. EU) sets a cap or maximum amount of emissions a business can emit during a compliance period. The amount of emissions a business is permitted to emit is referred to as allowances, which represent a business's target for the compliance period. At the end of the compliance period businesses are required to reconcile their allowances against their total actual emissions during the period. If the business is below their cap they have allowances they can sell; and if they are above their cap they must purchase allowances from other companies which have exceeded their emission reduction targets. If at the end of the compliance period the business does not have sufficient allowances to meet their emissions requirements they incur a financial penalty for each excess tonne they do not have any allowances for.[22]

5.1 EU Emission Trading Scheme ("ETS")

The EU Parliament and Council, on October 13, 2003, passed a legal framework to develop a scheme for GHG emission allowance trading for countries within the union. Companies in the EU are required to track their emissions and at the end of each year prepare a report of their annual emissions, verified by a third party auditor. Companies that does not have sufficient allowances, at the end of year, to meet their emission requirements are subject to a financial penalty of €40 for Phase I 2005 – 2007 and €100 for Phase II 2008 – 2012 per excess tonne.[23]

The World Bank, in May 2008, report following statistics regarding the EU ETS:

- the transaction value of CO_2 allowances traded increased by $25.6 billion (USD) from the previous year of $24.4 billion (USD) to $50.1 billion (USD) in 2007;
- this represented a 105% increase from 2006; and

[22] European Climate Exchange, http://www.ecxeurope.com/default_flash.asp
[23] European Climate Exchange, http://www.ecxeurope.com/default_flash.asp.

- the transaction value of CO_2 allowances traded on the EU ETS represents 78% of the global carbon market transaction value[24]

5.2 New South Wales ("NSW") GHG Reduction Scheme ("GGAS")

The Australian state NSW regulated a GGAS which commenced operations on January 1, 2003. The NSW GGAS is a mandatory program created to "reduce greenhouse gas emissions associated with the production and use of electricity; and to develop and encourage activities to offset the production of greenhouse gas emissions. GGAS requires NSW electricity retailers and certain other parties, collectively referred to as benchmark participants, to meet mandatory targets for reducing or offsetting the emission of greenhouse gases from the production of the electricity they supply or use."[25] GGAS is supported by 5 guidelines issued by the Minister for Energy and Utilities, known as the GHG Benchmark Rules ("GGBR"). GGBR provides a methodological calculation for benchmark members to measure whether they are within their emission targets. In addition, accredited abetment certificate providers (also known as carbon offset providers) seek guidance from GGBR to calculate their eligible number of abetment certificates (also known as "carbon credits"). A financial penalty, of $12 per excess tonne of CO_2, is incurred by benchmark members who do not meet their emission benchmarks. However, benchmark participants are allowed to carry forward a deficit of up to 10% of their emission targets to the proceeding year without penalty.[26]

[24] Capoor & Ambrossi, State and Trends of the Carbon Market 2008, 7.
[25] The New South Wales Greenhouse Gas Abatement Scheme, http://www.greenhousegas.nsw.gov.au/overview/scheme_overview/history_development.asp.
[26] The New South Wales Greenhouse Gas Abatement Scheme, http://www.greenhousegas.nsw.gov.au/documents/FS-Sch-Summary-02.pdf.

The World Bank's report states the following statistics regarding the NSW ETS:

- the transaction value of CO_2 allowances traded decreased by one million (USD) from the previous year; to $224 million (USD) in 2007;
- the transaction volume of CO_2 , measured in million tonnes of CO_2 equivalent ("MtCO_2e"), increased by five MtCO_2e from the previous year, to 25 MtCO_2e;
- the large increase in volume traded and decrease in value of the market was attributed to decreasing CO_2 prices due to an over supply of credits and clarity regarding the transition to the Australian's proposed national emission trading market, to be operational by 2010
- the transaction value of CO_2 traded on the NSW ETS represents 0.35% of the global carbon market transaction value[27]

Australian Climate Exchange ("ACX")

The ACX is an unlisted public company which established the first Emissions Trading market for GHG in Australia. Founded in December 2005, by two former executives of Australia's largest independent oil and gas producer, the ACX is a voluntary emission trading market.[28]

[27] Capoor & Ambrossi, State and Trends of the Carbon Market 2008, 7.
[28] Australian Climate Exchange, http://www.climateexchange.com.au/Content/company.aspx

5.3 North American Emission Trading Schemes and Climate Initiatives

In February 2002, the US government announced their climate change policy. The climate change policy announced was a strategy to reduce GHG intensity of the American Economy by 18% by 2012. Since the announcement no legislation has been passed by the US Senate regarding emissions levels to be achieved by emission emitters.[29]

Provinces and States are forming regional regimes in an attempt to address their climate change initiatives. The following is a summary of the main regional joint initiatives and regulations in North America to address climate change:

- The New England Govenor's Conference ("NEGC") and the Eastern Canadian Premiers developed the Climate Change Action Plan, in August 2001. The plan included the creation of a regional emission registry and the exploration of a Trading Mechanism.[30]
- Nine Northeast and Mid-Atlantic states designed the Regional GHG Initiative ("RGGI" or "ReGGIe"), a regional cap-and-trade program covering CO_2 emissions from regional power plants. In August 2003 and drafted action plan to launch a regional cap-and-trade scheme was designed and subsequently approved.[31]
- The Chicago Climate Exchange ("CCX") is a voluntary emission reduction and trading system for six GHG, launch in 2003. The CCX is the first voluntary emission trading system in the US consisting of

[29] White House Office of the Press Secretary, US Climate Change Policy
[30] New England Governors'/Eastern Canadian Premiers, Climate Change Action Plan 2001
[31] Regional Greenhouse Gas Initiative, http://www.rggi.org/about.htm

approximately 600 members from all sectors and offset programs worldwide. The World Bank stated the transaction value on the CCX increased by $49, 213%, to $72 million (USD) in 2007; compared to $23 million (USD) in 2006**.**[32]

- The Southwest Climate Change Initiative, was signed on February 28, 2006 as a joint Governor's initiative between the States of Arizona and New Mexico in which they will collaborate in identifying, evaluating and implementing programs to reduce GHG emissions.[33]
- A collaboration by the Governors' of western US states initiated the Western Climate Initiative ("WCI"). Launched in February 2007, the WCI was created with the strategy of developing regional strategies to address climate change. In August 2007 WCI partners released an announcement stating "The Western Climate Initiative (WCI) regional GHG emission reduction goal is an aggregate reduction of 15% below 2005 levels by 2020"[34]
- On November 15, 2007, six states and one Canadian province established the Midwestern Regional GHG Reduction Accord. Under the Accord, member states have agreed to establish regional GHG reduction targets, including a long-term target of 60 to 80 percent below 2007 emissions levels; and the develop a multi-sector cap-and-trade system. Participants will implement polices, such as low-carbon

[32] Capoor & Ambrossi, State and Trends of the Carbon Market 2008, 7.
[33] Southwest Climate Change Initiative Agreement, February 28, 2006
[34] Western Climate Initiative. *Statement of Regional Goal*. August 22, 2007

fuel standards, and establish a tracing system for GHG emission reductions. [35]

6 Risks and Exposure to Frauds of the Voluntary Carbon Market

The recent trend in Canada has seen businesses and individuals purchase carbon credits voluntarily to offset their CO_2 emissions. Large Canadian and American corporations which emit significant and small amounts of CO_2 voluntary purchase carbon credits from climate exchanges such as the CCX or through carbon offset providers. For example large corporations (DuPont, Potash Corporation, Rolls Royce); Electric Power Generators (American Electric Power, Manitoba Hydro); Financial Institutions (Bank of America), Municipalities (Chicago, Melbourne (Australia), Portland) and Universities (Michigan State University, University of Minnesota) have voluntarily joined as members of the CCX. Members of the CCX make a voluntary, but binding commitment, to achieve annual GHG reductions targets. Identical to the 'cap-and-trade' approach members who achieve emission reductions below their targets generate allowances to sell or bank and members which exceed targets are required to purchase carbon credits. The price of the carbon credits for climate exchanges are determined by the market price.[36]

Voluntary carbon credits are also purchased and sold by carbon offset providers to individuals and small, medium and large sized businesses. In this scenario, individual and businesses voluntarily purchase carbon credits to offset events (weddings, conferences, concerts) or to reduce their annual GHG emissions. For instance, professional services firms such as PricewaterhouseCoopers and Deloitte have

[35] Midwestern Regional GHG Reduction Accord Letter
[36] Chicago Climate Exchange. http://www.chicagoclimatex.com/content.jsf?id=821

voluntarily purchased carbon credits; from carbon offset providers, to offset GHG emissions attributed to events they held.

As society becomes more environmental conscious members of society will look to take advantage of the carbon market to make a quick profit. In 2007, Hans Verolme Director of the World's Wildlife Fund Global Climate Change Program, stated "The voluntary carbon offset market is becoming like the Wild West"[37]. Although possibly exaggerated, Mr. Verolme's concern is like many others regarding the voluntary carbon offset market, which is that bad offset projects will be registered under various standards just to make money rather then the benefit to society. There significant risks associated with the voluntary carbon market, is further demonstrated by warnings issued by the Canadian federal government and the ACX. The Canadian federal government proposed regulation, 'Turning the Corner', states "there can be no guarantee of the financial value, if any, of offset credits."[38] Furthermore, the ACX "Risk Disclosure Statement" states:

> "ACX advise that the market in Australia for Emission Commodities is a voluntary one and is not regulated by any government agency or body and is not covered by any State of Federal statute. Participants must form their own view as to the risk of future regulations and mandatory trading regimes that may come into force in Australia or internationally which may affect the value or use of emissions commodities traded on the exchange."[39]

[37] World Wildlife Fund (2007, November 29), from http://www.sciencedaily.com-/releases/2007/11/071126143333.htm
[38] Federal Government of Canada, Turning the Corner
[39] Australian Climate Exchange, http://www.climateexchange.com.au/Content/company.aspx

Based on the experiences of other participants it is clear the voluntary Canadian carbon market is open to various risks and increased exposures to frauds due to:

- varying regulations between the provinces and the federal government;
- the lack of adequate standards and clear methodology to address the "additional" concept; and
- inadequate disclosure of the risks of carbon offsets to carbon offset providers and public companies.

6.1 Brokerage firms Misconducts

Brokerage misconducts such as broker negligence, breach of fiduciary duty, misrepresentation and failure to supervise are a potential risk to the voluntary carbon market. Minimal, if any, attention has been focused on how to regulate brokers (commonly referred to as "intermediaries" or "offset providers") involved in emissions trading. The motive for brokerage firm misconducts is for the firm to gain financially by varies schemes. The Financial Times stated that due the voluntary market being unregulated there is "The risk of fraud, such as sale of credits from carbon reduction projects that do not exist. It is often difficult for buyers and brokers to verify the existence and effectiveness of projects as many are in remote areas."[40] Brokers should be regulated to ensure their members have met ethical and practical standards to have a fiduciary duty to their investors and the public.

[40] Harvey, Fiona. "Beware the carbon offsetting cowboys People"

Concerns were also expressed by HSBC regarding the use of brokers to buy carbon credits on a corporation’s behalf. HSBC evaluate whether to use brokers for the climate program. They concluded they would not used brokers, after months of evaluation, they would not because they found brokers “do not all add very much value, they do not all do this at the minimal cost, and they are not all truly credible". HSBC further stated "The confusion in the market is still such that you have to do as much due diligence on these brokers as you do on the projects themselves." [41]

The evasion of tax by brokers using carbon offset projects is another risk of the voluntary carbon market. On July 24, 2007 Carbon Capital, a UK based carbon trading company with $600 million (USD) in investments, was raided by the UK HM Revenue and Customs. The company was being investigated as to whether investments in forestry projects used to generate carbon credits were rather used as a vehicle for tax evasion. The purpose of the scheme was to generate carbon credits from forestry projects where each partner invests in a research and development project in a forest area. The UK tax law allows for the research expenditure to be written off during the first year therefore the tax payer is allowed to offset the research expenditures against their income. The government subsequently closed the loophole in March of 2007 causing the company to review its operations.[42]

[41] Harvey, Fiona. “Beware the carbon offsetting cowboys People”
[42] Harvey, Fiona. “Raided carbon trader seeking buyer.”

Brokers have attempted to self-regulate their profession by establishing a voluntary carbon standard and gold standard. However, being a voluntary market not all brokers are required to comply with these standards. Broker frauds have existed in the financial market for decades, which has established stringent regulations and guidelines for brokers.

Conclusion

The lack of regulation regarding insider trading practices around environmental disclosures adds further risks to the voluntary carbon market. When a public company is making a significant disclosure or reporting financial results insiders are not allowed to buy or sell stocks in the company. Consideration needs to be given for implementing blackout periods during the audit period of an offset project.

6.2 Double Counting

Double counting occurs when a carbon credit is sold multiple times. To be considered creditable the carbon credit should be sold only once. However, to be able to adequately track a carbon credit from creation to retirement a carbon credit registry needs to be implemented. Voluntary carbon markets have multiple registry systems, which do not track for the possibility of a carbon credit being sold to multiple carbon offset providers. For example a carbon offset project generates 100,000 carbon credits and sells the carbon credits to a carbon offset provider in Alberta, that uses the Alberta Carbon Registry, and to an offset provider listed on the CCX, that uses the CCX Registry. The varying provincial legislations and proposed federal government regulation will create multiple carbon credit registries. This increases the opportunity of double counting by allowing offset providers or offset projects to sell double count their carbon credits on the various markets. The following is an example of how double counting can occur without a central registry system:

> "… a US buyer may purchase offsets generated through the development of a wind farm in a country, state, or locality that has established GHG emissions targets. The U.S. buyer will count the offsets, which may have been purchased to counter an increase in personal air travel. In addition, the nation (state or locality), in which the wind farm is located, may see an emissions reduction due to the wind farm. This decrease will be reflected in the nation's GHG emissions inventory. Thus, the offset project (wind farm) may replace other reduction activities that the nation might have taken to meet its target. A tracking system needed to avoid such double-counting does not exist." [43]

The concern regarding double counting was also expressed by the Financial Times. In an article published in 2007 the author stated:

> "Unlike the Kyoto and EU markets, the voluntary market is unregulated, with no legally binding standards, giving rise to several potential problems … The risk of companies selling the same credits several times over. Under the Kyoto mechanism, carbon credits are tracked through the UN's International Transaction Log, which records every purchase or sale.

[43] Ramseur, Jonathan, "Voluntary offset: an overview and assessment"

> When companies are buying credits for offset, the credits should be "retired" and not used again. But on the voluntary market, there is no central register, so unscrupulous companies could "double count" or sell the same credits more than once.” [44]

This view was further supported by the director of operations for a carbon offset provider when he stated “There is the possibility for double counting at the project developer side. The project developer could sell carbon to us and to others." [45]

6.3 Insider Trading

Insider trading involves the selling or buying of shares, of a public company, based on information. A potential risk to the voluntary carbon market is if offset providers, which are public companies, will have access to inside information and sell or buy shares prior to release of inside information. For example, if management is aware of insider information indicating one quarter of the company’s carbon credits were disallowed, by an auditor, and therefore management purchases sells their shares prior to the release of this information to the public. The motivation for insider trading is to gain financially by buying or selling your shares prior to the release of negative and positive news. Insider trading also damages the reputation of the market (ie. financial or carbon market) and can lead to investors losing confidence in the market.

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[44] Harvey, Fiona. “Beware the carbon offsetting cowboys People”
[45] Harvey, Fiona. “Beware the carbon offsetting cowboys People”

EcoSecurities Ltd. ("EcoSecurities") an Ireland based carbon offset provider whose business experienced turbulence in 2007. The co-founders Marc Stuart and Pedro Moura Costa recently became multimillions in the booming carbon market in United Kingdom. The company's stock price nearly tripled over 18 months after promising tens of millions in carbon credits, based on the UN approval. However, the co-founders have now lost approximately $147 million due to a nearly 70% decline in the value of the company's stock. On November 6, 2007 the company announced it was writing off 23% of the carbon credits they had promised to deliver. This announcement caused a sharp 47% decrease in the stocks value that day. Approximately five months prior to this announcement, Mr. Stuart and Mr. Costa sold 2.2 million and 1.3 million shares in July 2007 worth about $16 million (USD) and $10 million (USD), respectively. EcoSecurities stated the reason they were not able to deliver on the number of carbon credits promised was because regulators did not establish clear rules and are changing standards as the market evolves. In 2006 the UN made changes to their standards which caused EcoSecurities approximately $100 million in potential profits. A UN review of the Board approving carbon offset projects found that EcoSecurities success was at the same time as a lenient UN board which instantly approved 95% of all projects proposed. The UN stated there were proposals likely approved without proper due diligence. The motive for selling the co-founders to sell the stock in July was possibly due to having knowledge of inside information that became available to the public five months later.[46]

[46] Jeffrey Ball, Up in Smoke Two Carbon-Market Millionaires Take a Hit as U.N. Clamps Down, April 14, 2008

6.4 Baseline Determination

Baseline determination is defined as "an estimate of the "business-as-usual" scenario or the emissions that would have occurred without the project."[47] Carbon credits are generated based on the emissions reductions a project achieves compared to the baseline determination. A project manager needs to establish an emissions baseline to determine how much emissions a project actually was reduced. For example a company decides to replace their coal boiler with a wood boiler to reduce their CO_2 emissions. The project manager will determine the baseline amount of emissions possible based on the last year the coal boiler was in use of based on what the regulation requires. If the project manager were to estimate that the baseline emissions was 1,000 metric tonne of CO_2 and after purchasing the wood boiler their emissions, the following year, was reduced to 500 metric tonne of CO_2 the project would then generate 500 metric tonne worth of carbon credits. The main risk regarding baseline year determination is whether project developers have the incentive to overstate the baseline determination because the higher the projected baseline, the more offsets generated. Therefore, using the example above it the project manager overstates the baseline emissions to be 2,000 metric tonne of CO_2, instead of 1,000, then they generated 1,500 metric tonne worth of carbon credits, artificially inflating the actual number of carbon credits.

In the proposed federal environmental regulation the offset projects baseline year can be either the year the project is commissioned or the year the project is registered. There is a risk here the project manager will select the higher year baseline to generate an artificially high number of credits. Furthermore baseline measurements currently present

[47] Ramseur, Jonathan, "Voluntary offset: an overview and assessment"

technical challenges due to limited technology, currently available in the market, to measure CO_2 emissions. [48]

6.5 Definition of "Additional"

To generate carbon credits, carbon offset "projects are supposed to demonstrate that they will lead to cuts in GHG emissions that are "additional" to what would have happened without the availability of credits"[49]. For example, if regulation exists which requires all industrial emitters to replace coal boilers with wood boilers; then a business is not allowed to register an offset project involving replacing their coal boiler with a wood boiler. The risks regarding the definition of "Additional" is that without clear guidelines established, by a regulatory body or regime, carbon offset providers have the potential to sell carbon credits which do not met the definition of additional. In Canada, the Canadian federal government has not indicated what qualifies as additional, and with various standards utilized in the voluntary market there is risk project managers and offset providers may attempt to find the weakest standards and apply their projects to this standard. The following an example what happens when clear guidelines to address the "additional" concept do not exist:

The British Broadcasting Corporation ("BBC"), in June 2008, reported they uncovered evidence the global carbon market had serious flaws. The BBC found carbon credits were being applied to projects which would be completed even without external financing; therefore, the definition of additional was not met. An investigation was conducted by BBC on three projects in India to determine if the additional concept had

[48] Ramseur, Jonathan, "Voluntary offset: an overview and assessment"
[49] Gregory, Mark, "The great carbon bazaar"

been met. One project involved the installation of a biomass generator to provide electricity at a rice milling plant in Northern India. The senior manager at the plant was questioned as to whether “the carbon credits were important for the company’s decision to install the biomass generator”, the senior manager responded “ “not really” and confirmed that it would have done the project anyway, even without the CDM funds … He was then asked whether the company would take the money if the authorities of the CDM were silly enough to give it a million dollars extra for it, to which he replied: “Yes, definitely. Why not?” ” A second project investigated by BBC was an Indian chemical company SRF, which was registered with the CDM to receive up to 3.8 million carbon credits a year by eliminating an obscure industrial waste product known as HFC23. A spokesperson for SFR stated to the BBC “We would have done it anyway.” The third project investigated was a large hydro scheme in Northern India; which had pros and cons of whether the project deserved to qualify for carbon credits. Currently, the main carbon offset providers, in Canada, have selected to use the Gold Standard and other newly established standards. However, if there is rapid growth in the carbon market there is the possibility offset providers can potentially sell carbon credits which do not meet the additional concept as the BBC investigation uncovered, because of the lack of clarity and methodology to address the additional concept.

6.6 Reporting and Verification of Emission Reductions

For a carbon offset project to generate carbon credits the developer of the project is required to report the carbon offset project’s actual emissions reductions; which are verified by third party auditor. The reporting and verification of carbon offset project is a critical element for preserving consumer and investors’ confidence in the carbon market.

Alberta's regulation requires a Chartered Accountant or a professional Engineering to validate and verify the reported emissions reductions claimed by the project developer. "Turning the Corner", the proposed Canadian federal government regulation, indicates a project's developer will have to demonstrate a third party verifier provided a reasonable level of assurance regarding the GHG emission reductions claimed as fair and accurate. No clear guidance has been provided by the Canadian federal government at this point as to who qualifies for a third party auditor. One of the concerns regarding the reporting and verification of emissions reductions is that management, of the carbon offset developer, has the incentive to overstate their emissions reductions to dishonestly generate additional carbon credits. For example, management of a carbon offset project involving reforestation could report to their auditors they had planted 100,000 trees at an isolated location; however, management only planted 50,000 trees. The overstatement of the number of trees planted will lead to the artificial generation of additional carbon credits because the more trees planted the more the emissions reductions and more carbon credits. In a financial statement audit an auditor is not able to count every inventory item on a company's financial statement and rather performs a valuation of inventory based on a selected sample. Therefore, how will an auditor verify the emissions reductions of a carbon offset project such as reforestation in an isolated part of the world?

6.7 Qualification and Ethics of the Third Party Auditor

Third party auditors will play a critical role in the carbon offset market as they will be responsible for providing assurance to regulators and the market regarding the reliability of carbon credits. In Alberta, third party auditors who can verify emission reductions reported by carbon offset projects are required to be a chartered accountant or professional engineer. However, there are potential risks regarding whether chartered accountant have the qualifications to adequately and properly verify the reliability of the emission reductions reported by businesses. With the rapid growth of carbon offset markets one can question if chartered accountants have had sufficient time for members to adequately train, gain experience regarding validation of emission reductions and guidance from Canadian Generally Accepted Accounting Principals ("GAAP") and / or the International Financial Reporting Standards. For example goodwill, an intangible asset like carbon credits; was a significant accounting issue during the technology boom in early 2000. Prior to 2002 accounting guidelines in Canada only required businesses to expense goodwill over 40 years and as a result companies had significant goodwill values on their books. In 2002, realizing companies had overvalued goodwill on their books the accounting guidelines required businesses to annually value their goodwill and write-down any over valuation of goodwill.[50] The concern in the voluntary carbon market is that auditors may not have currently have the necessary expertise to understand the potential risks regarding the valuation of carbon credits, as was the case with Goodwill, and in the future could lead to significant write downs of carbon credits. The risk is further increased in the short-term risk because of the potential chartered accountants may not be able to understand the depth of the technical documents prepared by engineers. In an interview with Edwin Aalder, director for the International Emission Trading Association ("IETA"), he indicated that experience in Europe has shown the

[50] Rosen, Al. "Goodwill choices", Pg. 45

accountant and engineer required additional training to be prepared to sufficiently audit carbon credits.

The vast majority of professional engineers and chartered accountants are ethical; however, there are always a select few which do not abide by the guidelines and ethics of their regulatory body. There is the potential risk that an engineer and accountant can be negligent in their audit and validate carbon credits which should not be approved. For example, Enron's auditors acted negligently by failing to follow the paper trial of off the book transactions in addition to lawyers and bankers which failed to perform their due diligence which caused the bankruptcy of Enron and downfall of Arthur Andersen.[51] The potential of this risk in the carbon market was questioned when in 2007 the UN officials evaluated carbon offset projects in the portfolio of an Irish firm called EcoSecurites Ltd. The UN officials questioned "whether the auditors have been tough enough. The concern centers on whether auditors, who are hired by project developers, are adequately staffed to police the environmental legitimacy of the swelling number of projects. The auditors strenuously defend the quality of their oversight."[52]

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[51] Krishna, Vern, "Hard for Investors to sue auditors: Canadian statutory process very restrictive

[52] Ball, Jeffrey, Up in Smoke Two Carbon-Market Millionaires Take a Hit as U.N. Clamps Down

In the financial trading market an auditor who does not adequately perform an audit will eventually get caught because the debits and credits will just not add. In the carbon market it will be much more difficult to identify abuses in the market because there are not debits and credits for carbon because it is an intangible product.

6.8 Financial Statement Valuations

Auditors apply the guidelines stated in the GAAP when auditing a company's valuation of its assets and liabilities. The CICA issued an Executive Briefing, in May 2008, which:

- provides guidance on financial statement valuations;
- indicates the importance for improved disclosures by public companies; and
- suggests the recognition of carbon taxes, regulatory emission reduction targets, emission caps and emissions trading in financial statements. [53]

Although no specific methodology for the valuation of offset credits and allowances were proposed the executive briefing made reference to a joint survey by PricewaterhouseCooopers and the IETA. The two parties performed an analysis on "the accounting approaches applied in practice and assessment of the key accounting approaches consider suitable under IFRS". The report was based on the results of 26 surveys received and concluded:

[53] Canadian Institute of Chartered Accountants, Executive Briefing

> "it is possible to identify six main approaches in relation to the EU ETS…The most common approach identified was to recognize the granted allowances at nil value, with the obligation recognized at the carrying value of allowances already granted/ purchased, with the balance at the prevailing market price. There was however more variation when the classification of the EU ETS on the balance sheet is considered, with fifteen different approaches identified in total.
>
> In relation to the purchased CERs it is possible to identify two main approaches. All respondents initially recognize the purchased CERs at cost, but in terms of subsequent treatment, 38% revalue the CERs subsequent to initial recognition, with 62% choosing not to revalue the CERs. As with the EU ETS it is possible to identify more variation when it comes to classification, with eleven different approaches identified in total."[54]

7 Parallels between Carbon Offset Market and the US Mortgage Meltdown

During my review of the risks and exposures of the voluntary carbon market possible similarities were noted between the voluntary carbon market and the issues with the US sub-prime mortgage market and Asset Backed Commercial Paper ("ABCP"). Mortgage brokers acted fraudulently in a market with varying regulation. In addition, inadequate disclosure of the risks associated with asset backed commercial paper ("ABCP") by financial institutions. This paper is not saying there is a relationship between the two

[54] PricewaterhouseCoopers and IETA, Trouble Entry Accounting

situations, but rather we need to learn from the experiences of other markets and prevent a similar situation from happening in other markets.

7.1 Exposure to Frauds by Brokers

Mortgage fraud is defined as when one or more individuals defraud a financial institution by submitting false information willfully, normally to obtain a favorable outcome. According to the United States Federal Bureau of Investigation some mortgage brokers have been involved in mortgage fraud. Predatory mortgage lending is when a dishonest financial institution willfully misleads or deceives the consumer. Some mortgage consultants, processors and executives of mortgage companies have been involved in predatory lending. The majority of mortgage brokers are regulated to ensure compliance with banking and finance laws in the jurisdiction of the consumer; however, the extent of the regulation depends on jurisdiction. The brokers operating in the carbon offset market are currently operating unregulated by legislation or a regulatory body. Therefore, there is a greater risk and exposure to fraud from brokers in the voluntary carbon market because they are not regulated.

The financial system, in the US, lead to the creation of ABCP, a complex and interdependent system prone to conflicts of interests where frauds were rampant in the sale of sub-prime mortgages; spurred by greed for short-term gains. US federal laws and most state laws do not assign a fiduciary duty on mortgage brokers to act in best interests of their customers Kyoto has lead to the creation of voluntary and regulated carbon markets which are complex and potentially prone to conflicts of interests. In Canada carbon offset providers are not require to have a fiduciary duties to its customers. Bankers and fund managers, in the US, stand accused of pocketing bonuses with no thought for the longer-term consequences of what they were doing. It is plausible that a similar situation can emerge in the voluntary carbon market in which carbon offset providers would attempt to generate carbon credits to pocket bonuses and increased share value. A case in the US showed that mortgage brokers at various brokerages (AGA Capital NY, Inc. / Northside Capital NY, Inc), real estate appraisers and loan account executives submitted loan applications and supporting documents with false information and material omissions to sub-prime lenders in order to induce the lenders to make loans that otherwise would not have been funded. During the course of the scheme AGA capital and its successor Lending Universe Corporation and Northside Capital earned a total of at least $4 million in commission fees on loans. The sub-prime lenders that issued the mortgages and loans brokered by Northside Capital, AGA Capital and Lending Universe have suffered actual losses of at least $4.5 million as a result of the fraud scheme.[55] It is plausible that a similar situation will occur in the voluntary and regulated carbon market.

7.2 Disclosure of Risks involved with ACBP and Sub Prime Mortgages

Banks and investment firms are writing off billions because of ABCP. Banks and investment firms were not fully aware of the risks associated with ABCP and sub-prime mortgages possibly because of a lack of disclosure. Furthermore, mortgage brokers were

[55] Imperial Valley News, June 7, 2008

found to have not disclosed key information to consumers.[56] In the current Canadian voluntary carbon market there are already signals by the CICA and OSC that disclosure regarding environmental risks and liabilities associated with the carbon market are not adequate. The OSC indicated in their Staff Notice the need for improved disclosures by public companies[57]. The CICA stated "Despite regulatory requirements, there is research demonstrating that companies with significant environmental risk exposure are not always providing adequate disclosures in their regulatory filings and reporting to capital markets, especially with respect to climate change."[58]

7.3 Mortgage Industry Regulation

The US mortgage industry was regulated by multiple federal and state laws, enforcement agencies and licensing boards. It is possible the multiple regulations lead to the creation of a complex market which was exposed to fraud. This is similar to the Canadian voluntary carbon offset market, where varying regional, provincial and federal initiatives can potentially lead to the creation of varying regulation.

8 Role of the IFA

The emerging voluntary and future regulatory carbon markets in Canada have the potential to various risks and exposures to fraud which have been experienced in the financial and mortgage markets. The voluntary carbon market especially has increased exposure due to a complex system with varying standards and regulations. The international voluntary carbon market has only started to experience exceptional growth

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[56] US Federal Trade Commission, Proposed Illustrations of Consumer Information for Subprime Mortgage Lending
[57] OSC Staff Notice 51-716 – Environmental Reporting
[58] Canadian Institute of Charter Accountants, MD&A Disclosure about the Financial Impact of Climate Change and Other Environmental Issues

and there are already various allegations and potential disputes arising from the integrity of carbon offset programs to inadequate disclosures regarding environmental risks. Section 6 “Risks and Exposure to Frauds of the Voluntary Carbon Market” detailed allegations and potential risks and exposures to frauds in the Voluntary Carbon Market. This section outlines engagements an IFA can potential be engaged for to investigate or play the role of an expert witness in the carbon market.

The Standard Practices For Investigative and Forensic Accounting Engagements, released in November 2006, states in Section .12 to .14 an IFA engagement should apply:

> “Professional accounting skills, investigative skills, and an investigative mindset … investigative skills are not restricted to investigative engagements, but are also applied in loss quantification and other IFA engagements, although the extent to which investigative skills are applied varies according to the nature of the engagements… An investigative mindset is also necessary for all IFA engagements. In dealing with dispute-related engagements, the investigative mindset is employed to assist in determining and evaluating procedures, findings and conclusions. In consulting engagements, the investigative mindset is applied to determine and evaluate the procedures that need to be performed. For example, in an engagement to develop fraud prevention policies, an investigative mindset is applied to establish the process for determining ways in which policies could be violated.”

Based on the criteria an IFA can potentially be engaged to assist in establishing fraud prevention guidelines, validation and verification of carbon offset credits and for disputes and investigations.

8.1 Establishment of guidelines

IFA experience and expertise allows them to use their investigative mindset to assessing potential abuses of the carbon credit scheme and registry and establish guidelines to address these risks. Furthermore, the way provincial regulations are not cohesive with federal proposed regulations leading various complex regulations and IFA can be engaged to develop fraud prevention policies to integrate the voluntary and regulated carbon market

8.2 Reporting and Verifications of Reductions

There is a risk that offset providers will attempt to sell carbon credits from projects where offset providers have potential reported false and deceptive information. To address this issue federal and provincial governments have implemented a reporting and verification of reductions by a third party auditor. One can question whether the verification of emission reduction for the generation of carbon credits is a role for the IFA or an auditor. The verification can be considered an IFA role because valuating carbon credits is not a matter just debits and credits, it requires the auditor to apply various standards and report if the credits are allowed based on the applicable standard. It can also be considered the role of an auditor because the verification process will require the auditor to rely on the work of a specialist, an engineer, and the auditor will only be required to verify the work of the auditor. The answer to this question will depend on the level of assurance required by provincial and federal governments. If the federal and provincial governments only require the review of a specialist report and supporting documents then this is the role of an auditor. However, if the federal government requires an investigative approach to the verification of carbon credits then this will be a role for the forensic accountant.

8.3 Disputes and Investigations

As the voluntary carbon market will grow and mature there is the potential for the to be engaged for disputes and investigations. Potential investigations for the IFA to be engaged for are: brokerage firms misconducts, review of emissions reports for manipulation and falsification of supporting documents, insider trading and financial statement frauds. Furthermore, there is the potential for disputes by offset providers, brokerage firms and investors for which the IFA will be engaged for.

8.4 Use of a Specialist and Technical Expertise

Prior to performing an engagement in the voluntary carbon market it is highly probably the IFA will require the use of a specialist. Currently the Scientific Research and Experimental Development Tax Credit, in Canada, has been designed where an scientist or engineer works on the technical document and the chartered accountant prepares the returns required for the credit. A similar relationship will be required by the IFA and engineer in performing an engagement.

APPENDICES

Appendix A - Status of Ratification – Source: United Nations Framework Convention on Climate Change (Accessed June 10, 2008)

Appendix B – Registration of Project – Source: Federal Government of Canada - "Turing the Corner"

Appendix C – Listing of Abbreviations

Appendix A

Last modified on: 13 May 2008

KYOTO PROTOCOL

STATUS OF RATIFICATION

Notes:

R = Ratification
At = Acceptance
Ap = Approval
Ac = Accession

COUNTRY	SIGNATURE	RATIFICATION, ACCEPTANCE, ACCESSION, APPROVAL	ENTRY INTO FORCE	REMARKS	% of emissions
1. ALBANIA	-----	01/04/05 (Ac)	30/06/05		
2. ALGERIA	----	16/02/05 (Ac)	17/05/05		
3. ANGOLA	----	08/05/07 (Ac)	06/08/07		
4. ANTIGUA AND BARBUDA	16/03/98	03/11/98 (R)	16/02/05		
5. ARGENTINA	16/03/98	28/09/01 (R)	16/02/05		
6. ARMENIA	----	25/04/03 (Ac)	16/02/05		
7. AUSTRALIA*	29/04/98	12/12/07 (R)	11/03/08		2.1%
8. AUSTRIA*	29/04/98	31/05/02 (R)	16/02/05		0.4%
9. AZERBAIJAN	-----	28/09/00 (Ac)	16/02/05		
10. BAHAMAS	-----	09/04/99 (Ac)	16/02/05		
11. BAHRAIN	-----	31/01/06 (Ac)	01/05/06		
12. BANGLADESH	-----	22/10/01 (Ac)	16/02/05		
13. BARBADOS	-----	07/08/00 (Ac)	16/02/05		
14. BELARUS*	-----	26/08/05 (Ac)	24/11/05		
15. BELGIUM*	29/04/98	31/05/02 (R)	16/02/05		0.8%
16. BELIZE	-----	26/09/03 (Ac)	16/02/05		
17. BENIN	-----	25/02/02 (Ac)	16/02/05		
18. BHUTAN	-----	26/08/02 (Ac)	16/02/05		
19. BOLIVIA	09/07/98	30/11/99 (R)	16/02/05		
20. BOSNIA AND HERZEGOVINA	-----	16/04/07 (Ac)	15/07/07		
21. BOTSWANA	-----	08/08/03 (Ac)	16/02/05		

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Last modified on: 13 May 2008

COUNTRY	SIGNATURE	RATIFICATION, ACCEPTANCE, ACCESSION, APPROVAL	ENTRY INTO FORCE	REMARKS	% of emissions
22. BRAZIL	29/04/98	23/08/02 (R)	16/02/05		
23. BULGARIA*	18/09/98	15/08/02 (R)	16/02/05		0.6%
24. BURKINA FASO	----	31/03/05 (Ac)	29/06/05		
25. BURUNDI	-----	18/10/01 (Ac)	16/02/05		
26. CAMBODIA	-----	22/08/02 (Ac)	16/02/05		
27. CAMEROON	-----	28/08/02 (Ac)	16/02/05		
28. CANADA*	29/04/98	17/12/02 (R)	16/02/05		3.3%
29. CAPE VERDE	-----	10/02/06 (Ac)	11/05/06		
30. CENTRAL AFRICAN REPUBLIC	-----	18/03/08 (Ac)	16/06/08		
31. CHILE	17/06/98	26/08/02 (R)	16/02/05		
32. CHINA	29/05/98	30/08/02 (Ap)	16/02/05	(10)	
33. COLOMBIA	-----	30/11/01 (Ac)	16/02/05		
34. COMOROS	-----	10/04/08 (Ac)	09/07/08		
35. CONGO	-----	12/02/07 (Ac)	13/05/07		
36. COOK ISLANDS	16/09/98	27/08/01 (R)	16/02/05	(4)	
37. COSTA RICA	27/04/98	09/08/02 (R)	16/02/05		
38. COTE D'IVOIRE		23/04/07 (Ac)	22/07/07		
39. CROATIA*	11/03/99	30/05/07 (R)	28/08/07		
40. CUBA	15/03/99	30/04/02 (R)	16/02/05		
41. CYPRUS	-----	16/07/99 (Ac)	16/02/05		
42. CZECH REPUBLIC*	23/11/98	15/11/01 (Ap)	16/02/05		1.2%
43. DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	-----	27/04/05 (Ac)	26/07/05		
44. DEMOCRATIC REPUBLIC OF CONGO	-----	23/03/05 (Ac)	21/06/05		
45. DENMARK*	29/04/98	31/05/02 (R)[1]	16/02/05		0.4%
46. DJIBOUTI	-----	12/03/02 (Ac)	16/02/05		
47. DOMINICA	-----	25/01/05 (Ac)	25/04/05		

1 With a territorial exclusion to the Faroe Islands.

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Last modified on: 13 May 2008

COUNTRY	SIGNATURE	RATIFICATION, ACCEPTANCE, ACCESSION, APPROVAL	ENTRY INTO FORCE	REMARKS	% of emissions
48. DOMINICAN REPUBLIC	-----	12/02/02 (Ac)	16/02/05		
49. ECUADOR	15/01/99	13/01/00 (R)	16/02/05		
50. EGYPT	15/03/99	12/01/05 (R)	12/04/05		
51. EL SALVADOR	08/06/98	30/11/98 (R)	16/02/05		
52. EQUATORIAL GUINEA	-----	16/08/00 (Ac)	16/02/05		
53. ERITREA	-----	28/07/05 (Ac)	26/10/05		
54. ESTONIA*	03/12/98	14/10/02 (R)	16/02/05		0.3%
55. ETHIOPIA	-----	14/04/05 (Ac)	13/07/05		
56. EUROPEAN COMMUNITY*	29/04/98	31/05/02 (Ap)	16/02/05	(1) (8)	
57. FIJI	17/09/98	17/09/98 (R)	16/02/05		
58. FINLAND*	29/04/98	31/05/02 (R)	16/02/05		0.4%
59. FRANCE*	29/04/98	31/05/02 (Ap)	16/02/05	(2) (9)	2.7%
60. GABON	-----	12/12/06 (Ac)	12/03/07		
61. GAMBIA	-----	01/06/01 (Ac)	16/02/05		
62. GEORGIA	-----	16/06/99 (Ac)	16/02/05		
63. GERMANY*	29/04/98	31/05/02 (R)	16/02/05		7.4%
64. GHANA	-----	30/05/03 (Ac)	16/02/05		
65. GREECE*	29/04/98	31/05/02 (R)	16/02/05		0.6%
66. GRENADA	-----	06/08/02 (Ac)	16/02/05		
67. GUATEMALA	10/07/98	05/10/99 (R)	16/02/05		
68. GUINEA	-----	07/09/00 (Ac)	16/02/05		
69. GUINEA-BISSAU	-----	18/11/05 (Ac)	16/02/06		
70. GUYANA	-----	05/08/03 (Ac)	16/02/05		
71. HAITI		06/07/05 (Ac)	04/10/05		
72. HONDURAS	25/02/99	19/07/00 (R)	16/02/05		
73. HUNGARY*	-----	21/08/02 (Ac)	16/02/05		0.5%
74. ICELAND*	-----	23/05/02 (Ac)	16/02/05		0.0%
75. INDIA	-----	26/08/02 (Ac)	16/02/05		
76. INDONESIA	13/07/98	03/12/04 (R)	03/03/05		

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Last modified on: 13 May 2008

COUNTRY	SIGNATURE	RATIFICATION, ACCEPTANCE, ACCESSION, APPROVAL	ENTRY INTO FORCE	REMARKS	% of emissions
77. IRAN (ISLAMIC REPUBLIC OF)		22/08/05 (Ac)	20/11/05		
78. IRELAND*	29/04/98	31/05/02 (R)	16/02/05	(3)	0.2%
79. ISRAEL	16/12/98	15/03/04 (R)	16/02/05		
80. ITALY*	29/04/98	31/05/02 (R)	16/02/05		3.1%
81. JAMAICA	-----	28/06/99 (Ac)	16/02/05		
82. JAPAN*	28/04/98	04/06/02 (At)	16/02/05		8.5%
83. JORDAN	-----	17/01/03 (Ac)	16/02/05		
84. KAZAKHSTAN	12/03/99				
85. KENYA		25/02/05 (Ac)	26/05/05		
86. KIRIBATI	-----	07/09/00 (Ac)	16/02/05	(6)	
87. KUWAIT	-----	11/03/05 (Ac)	09/06/05		
88. KYRGYZSTAN	-----	13/05/03 (Ac)	16/02/05		
89. LAO DEMOCRATIC PEOPLE'S REPUBLIC	-----	06/02/03 (Ac)	16/02/05		
90. LATVIA*	14/12/98	05/07/02 (R)	16/02/05		0.2%
91. LEBANON	-----	13/11/06 (Ac)	11/02/07		
92. LESOTHO	-----	06/09/00 (Ac)	16/02/05		
93. LIBERIA	-----	05/11/02 (Ac)	16/02/05		
94. LIBYAN ARAB JAMAHIRIYA	-----	24/08/06 (Ac)	22/11/06		
95. LIECHTENSTEIN*	29/06/98	03/12/04 (R)	03/03/05		
96. LITHUANIA*	21/09/98	03/01/03 (R)	16/02/05		
97. LUXEMBOURG*	29/04/98	31/05/02 (R)	16/02/05		0.1%
98. MADAGASCAR	-----	24/09/03 (Ac)	16/02/05		
99. MALAWI	-----	26/10/01 (Ac)	16/02/05		
100. MALAYSIA	12/03/99	04/09/02 (R)	16/02/05		
101. MALDIVES	16/03/98	30/12/98 (R)	16/02/05		
102. MALI	27/01/99	28/03/02 (R)	16/02/05		
103. MALTA	17/04/98	11/11/01 (R)	16/02/05		
104. MARSHALL ISLANDS	17/03/98	11/08/03 (R)	16/02/05		

Last modified on: 13 May 2008

COUNTRY	SIGNATURE	RATIFICATION, ACCEPTANCE, ACCESSION, APPROVAL	ENTRY INTO FORCE	REMARKS	% of emissions
105. MAURITANIA		22/07/05 (Ac)	20/10/05		
106. MAURITIUS	-----	09/05/01 (Ac)	16/02/05		
107. MEXICO	09/06/98	07/09/00 (R)	16/02/05		
108. MICRONESIA (FEDERATED STATES OF	17/03/98	21/06/99 (R)	16/02/05		
109. MONACO*	29/04/98	27/02/06 (R)	28/05/06		0.0%
110. MONGOLIA	-----	15/12/99 (Ac)	16/02/05		
111. MONTENEGRO	-----	04/06/07 (Ac)	02/09/07		
112. MOROCCO	-----	25/01/02 (Ac)	16/02/05		
113. MOZAMBIQUE	-----	18/01/05 (Ac)	18/04/05		
114. MYANMAR	-----	13/08/03 (Ac)	16/02/05		
115. NAMIBIA	-----	04 /09/03 (Ac)	16/02/05		
116. NAURU	-----	16/08/01 (R)	16/02/05	(7)	
117. NEPAL	-----	16/09/05 (Ac)	15/12/05		
118. NETHERLANDS*	29/04/98	31/05/02 (At)[2]	16/02/05		1.2%
119. NEW ZEALAND*	22/05/98	19/12/02 (R)[3]	16/02/05	(11)	0.2%
120. NICARAGUA	07/07/98	18/11/99 (R)	16/02/05		
121. NIGER	23/10/98	30/09/04 (R)	16/02/05		
122. NIGERIA	-----	10/12/04 (Ac)	10/03/05		
123. NIUE	08/12/98	06/05/99 (R)	16/02/05	(5)	
124. NORWAY*	29/04/98	30/05/02 (R)	16/02/05		0.3%
125. OMAN	-----	19/01/05 (Ac)	19/04/05		
126. PAKISTAN	-----	11/01/05 (Ac)	11/04/05		
127. PALAU	-----	10/12/99 (Ac)	16/02/05		
128. PANAMA	08/06/98	05/03/99 (R)	16/02/05		
129. PAPUA NEW GUINEA	02/03/99	28/03/02 (R)	16/02/05		
130. PARAGUAY	25/08/98	27/08/99 (R)	16/02/05		

[2] For the Kingdom in Europe.
[3] with a territorial exclusion to Tokelau.

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COUNTRY	SIGNATURE	RATIFICATION, ACCEPTANCE, ACCESSION, APPROVAL	ENTRY INTO FORCE	REMARKS	% of emissions
131. PERU	13/11/98	12/09/02 (R)	16/02/05		
132. PHILIPPINES	15/04/98	20/11/03 (R)	16/02/05		
133. POLAND*	15/07/98	13/12/02 (R)	16/02/05		3,0%
134. PORTUGAL*	29/04/98	31/05/02 (Ap)	16/02/05		0.3%
135. QATAR	-----	11/01/05 (Ac)	11/04/05		
136. REPUBLIC OF KOREA	25/09/98	08/11/02 (R)	16/02/05		
137. REPUBLIC OF MOLDOVA	-----	22/04/03 (Ac)	16/02/05		
138. ROMANIA*	05/01/99	19/03/01 (R)	16/02/05		1.2%
139. RUSSIAN FEDERATION*	11/03/99	18/11/04 (R)	16/02/05		17.4%
140. RWANDA	-----	22/07/04 (Ac)	16/02/05		
141. SAINT KITTS AND NEVIS		08/04/08 (Ac)	07/07/08		
142. SAINT LUCIA	16/03/98	20/08/03 (R)	16/02/05		
143. SAINT VINCENT AND THE GRENADINES	19/03/98	31/12/04 (R)	31/03/05		
144. SAMOA	16/03/98	27/11/00 (R)	16/02/05		
145. SAO TOMÉ AND PRINCIPE		25/04/08 (Ac)	24/07/08		
146. SAUDI ARABIA	-----	31/01/05 (Ac)	01/05/05		
147. SENEGAL	-----	20/07/01 (Ac)	16/02/05		
148. SERBIA	-----	19/10/07 (Ac)	17/01/08		
149. SEYCHELLES	20/03/98	22/07/02 (R)	16/02/05		
150. SIERRA LEONE	-----	10/11/06 (Ac)	08/02/07		
151. SINGAPORE	-----	12/04/06 (Ac)	11/07/06		
152. SLOVAKIA*	26/02/99	31/05/02 (R)	16/02/05		0.4%
153. SLOVENIA*	21/10/98	02/08/02 (R)	16/02/05		
154. SOLOMON ISLANDS	29/09/98	13/03/03 (R)	16/02/05		
155. SOUTH AFRICA	-----	31/07/02 (Ac)	16/02/05		
156. SPAIN*	29/04/98	31/05/02 (R)	16/02/05		1.9%
157. SRI LANKA	-----	03/09/02 (Ac)	16/02/05		
158. SUDAN	-----	02/11/04 (Ac)	16/02/05		

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COUNTRY	SIGNATURE	RATIFICATION, ACCEPTANCE, ACCESSION, APPROVAL	ENTRY INTO FORCE	REMARKS	% of emissions
159. SURINAME	------	25/09/06 (Ac)	24/12/06		
160. SWAZILAND	------	13/01/06 (Ac)	13/04/06		
161. SWEDEN*	29/04/98	31/05/02 (R)	16/02/05		0.4%
162. SWITZERLAND*	16/03/98	09/07/03 (R)	16/02/05		0.3%%
163. SYRIAN ARAB REPUBLIC	------	27/01/06 (Ac)	27/04/06		
164. THAILAND	02/02/99	28/08/02 (R)	16/02/05		
165. THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA	-----	18/11/04 (Ac)	16/02/05		
166. TOGO	-----	02/07/04 (Ac)	16/02/05		
167. TONGA	----	14/01/08 (Ac)	13/04/08		
168. TRINIDAD AND TOBAGO	07/01/99	28/01/99 (R)	16/02/05		
169. TUNISIA	-----	22/01/03 (Ac)	16/02/05		
170. TURKMENISTAN	28/09/98	11/01/99 (R)	16/02/05		
171. TUVALU	16/11/98	16/11/98 (R)	16/02/05		
172. UGANDA	-----	25/03/02 (Ac)	16/02/05		
173. UKRAINE*	15/03/99	12/04/04 (R)	16/02/05		
174. UNITED ARAB EMIRATES	-----	26/01/05 (Ac)	26/04/05		
175. UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND*	29/04/98	31/05/02 (R)	16/02/05		4.3%
176. UNITED REPUBLIC OF TANZANIA	-----	26/08/02 (Ac)	16/02/05		
177. UNITED STATES OF AMERICA*	12/11/98				
178. URUGUAY	29/07/98	05/02/01 (R)	16/02/05		
179. UZBEKISTAN	20/11/98	12/10/99 (R)	16/02/05		
180. VANUATU	-----	17/07/01 (Ac)	16/02/05		
181. VENEZUELA	------	18/02/05 (Ac)	19/05/05		
182. VIET NAM	03/12/98	25/09/02 (R)	16/02/05		

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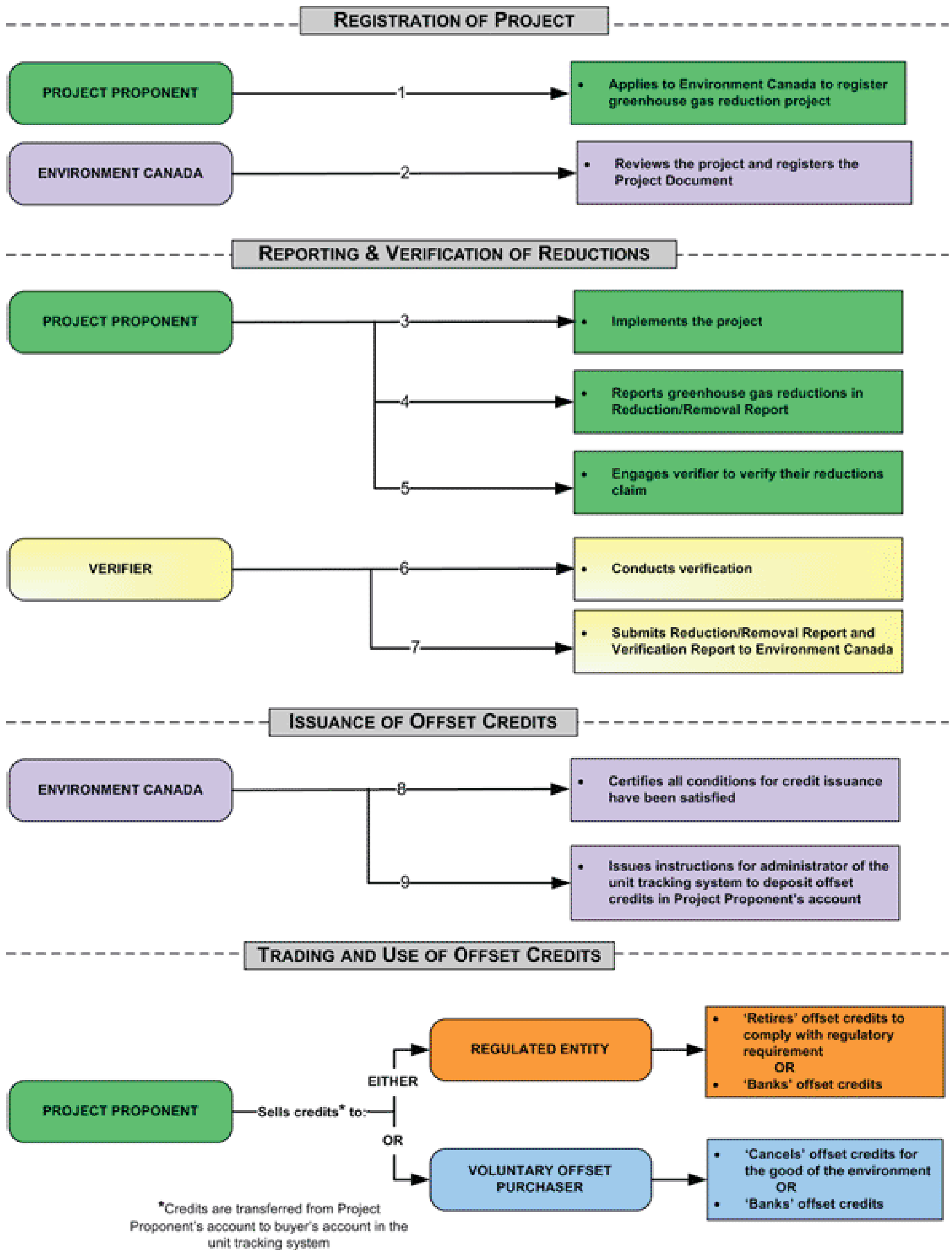
Last modified on: 13 May 2008

183. YEMEN	-----	15/09/04 (Ac)	16/02/05		
184. ZAMBIA	05/08/98	07/07/2006 (R)	5/10/2006		
TOTAL	84	182		-----	63.7%

Appendix B



REGISTRATION OF PROJECT
PROJECT PROPONENT
1
Applies to Environment Canada to register greenhouse gas reduction project
ENVIRONMENT CANADA
2
Reviews the project and registers the Project Document
REPORTING & VERIFICATION OF REDUCTIONS
PROJECT PROPONENT
3
Implements the project
4
Reports greenhouse gas reductions in Reduction/Removal Report
5
Engages verifier to verify their reductions claim
VERIFIER
6
Conducts verification
7
Submits Reduction/Removal Report and Verification Report to Environment Canada
ISSUANCE OF OFFSET CREDITS
ENVIRONMENT CANADA
8
Certifies all conditions for credit issuance have been satisfied
9
Issues instructions for administrator of the unit tracking system to deposit offset credits in Project Proponent's account
TRADING AND USE OF OFFSET CREDITS
PROJECT PROPONENT
Sells credits* to:
EITHER
REGULATED ENTITY
'Retires' offset credits to comply with regulatory requirement
OR
'Banks' offset credits
OR
VOLUNTARY OFFSET PURCHASER
'Cancels' offset credits for the good of the environment
OR
'Banks' offset credits
*Credits are transferred from Project Proponent's account to buyer's account in the unit tracking system

Appendix C

Listing of Abbreviations

Abbreviation	Definition
ACX	Australian Climate Exchange
AIF	Annual Information Form
BBC	British Broadcasting Corporation
CCX	Chicago Climate Exchange
CDM	Clean Development Mechanism
CER	certified emissions reduction
CICA	Canadian Institute of Chartered Accountants
Climate Neutral	Climate Neutral Society
CO_2	Carbon Dioxide
EcoSecurities	EcoSecurities Ltd.
ERA	Ecosystem Restoration Associates
ETS	Emission Trading Scheme
EU	European Union
Fund	Technology Fund
GAAP	General Accepted Accounting Principals
GGAS	Greenhouse Gases Reduction Scheme
GGBR	Greenhouse Gases Benchmark Rules
GHG	Greenhouse Gases
IETA	International Emissions Trading Association
IFA	Investigative and Forensic Accountant
Kyoto	Kyoto Protocol
MCex	Montreal Climate Exchange
MD&A	Management Discussions and Analysis
NEGC	New England Governor's Conference
NSW	New South Wales
Offset System	Canadian Domestic Offset System
OSC	Ontario Securities Commission
RGGI or ReGGIe	Regional Greenhouse Gases Initiative
UN	United Nations
US	United States
WCI	Western Climate Initiative

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