

Kyoto's impact on Alberta's energy industry: Increasing benefits and decreasing costs
with the flexibility mechanisms

The Province of Alberta single-handedly supplies over 80 percent of Canada's oil and natural gas and over half of this country's coal.¹ As a result, Alberta's emissions comprise 30 percent of Canada's carbon dioxide generation, 26 percent of Canada's nitrogen oxides, 23 percent of Canada's sulphur oxides, and 23 percent of Canada's benzene emissions.² While the energy industry drives most of the wealth of the Province of Alberta, a by-product of that energy generation is, quite unsurprisingly, a contribution to global atmospheric pollution. Atmospheric pollution may soon be subject to a legally binding international agreement that will cap emissions and stabilize concentrations of greenhouse gases to their 1990 levels. Like any international legal instrument, Kyoto only enters into force on a national level when Canada ratifies and domestically implements the agreement. Environment Minister David Anderson indicates that the Prime Minister's objective is to decide upon whether Canada will ratify the Kyoto Protocol to the United Nations Framework Convention on Climate Change this year, likely at the G-8 Summit in Kananaskis this June.³

The adoption of Kyoto will undoubtedly have significant economic ramifications for Alberta and industry is quickly assessing the costs and benefits of the Protocol.

¹ Canada's Clean Air Picture: Prairies and the North, Environment Canada, online: [wysiwyg://30/http://www.ec.gc.ca/air/pnr_e.htm](http://www.ec.gc.ca/air/pnr_e.htm), accessed on 11/7/2001.

² *Ibid.* (Note that 90 percent of Canada's 4,500 natural gas dehydrators, responsible for benzene emissions, are within Alberta. Also, Alberta's large sour gas plants, responsible for sulphur oxides, already have recovery requirements of 99 percent.)

³ John Dillon, *Seventh Conference of the Parties UN Framework Convention on Climate Change Marrakech, October 29- November 9, 2001*, Final Report, Business Council on National Issues, online at www.icta.org, accessed on 03/ 20/ 2002.

Perhaps the most revolutionary aspect of Kyoto is that it is the first international legal agreement to put an economic value on the environment by allocating units of pollution for each participating nation only up to a targeted amount. Canada has a commitment to reduce its greenhouse gases to 6% below 1990 levels. The commitment only becomes legally binding upon Canada if Canada ratifies the Kyoto Protocol and if the Protocol comes into force internationally. At such a time, Canada will have a legally binding emissions budget to emit a total of 570 megatonnes⁴ for the first five years of Kyoto's commitment period. The Protocol helps a nation to meet its target by providing six methods to achieve emission reductions. The methods include three flexible mechanisms. Canada can help meet its target by supplementing domestic measures with the international sale of emission surpluses, the purchase of emission allocations, or the receipt of emissions credits for projects in other parts of the globe.

The flexibility mechanisms of the Kyoto Protocol are Emissions Trading under Article 17, Joint Implementation under Article 6, and the Clean Development Mechanism under Article 12. The three schemes, in concert, comprise International Emissions Trading (IET). Alberta's energy industry stands to gain by using IET to reduce a sizable portion of Canada's greenhouse gas (GHG) emissions. Instead of abruptly curtailing fossil fuel generation, industry has an incentive to adopt cleaner, more efficient processes, or to foster new technology in other countries where the marginal cost of the project is more favorable. Should reductions in GHG emissions be such that Canada has a surplus, Canada can bank allowances into the next compliance period or sell its

⁴ The exact figure of 570 megatonnes was used in a recent presentation by R. Hyndman, Canadian Association of Petroleum Producers, *Upstream Oil and Gas Perspective on GHGs and Kyoto*, Presentation to CABREE Climate Change Panel, Alberta School of Business, April 4, 2002. Slides available online at www.bus.ualberta.ca/cabree/events-and-conferences.htm, accessed on April 9, 2002.

allowances to other Parties under Kyoto. International Emissions Trade will create a legally recognized global emissions market as a means for participating Parties to meet their international obligations. As evidenced by private sector initiatives and pilot projects already underway in Canada, emissions trade is feasible. For example, TransAlta, Canada's largest non-regulated electricity corporation and second-largest single greenhouse gas emitter, has already engaged in North American and Transatlantic emission offset trades primarily to gain valuable experience with a new market before the regulations of Kyoto take effect.⁵ Also, BP Amoco established a trading regime in 1998 that mimics the latest models for how IET would function under an operational Kyoto scheme.

Much of the previous uncertainty about the flexibility mechanisms was due to the lack of operating guidelines for IET. While the Kyoto Protocol quantified reduction commitments and provided the conceptual framework for the flexibility mechanisms in 1997, it was not until November of 2001 that the decision-making body for Kyoto completed the Marrakech Accords.⁶ This detailed rule-book for IET brings Kyoto one step closer to ratification and it will likely have formative effect on current domestic and private emissions trading markets. Alberta's energy industry can, by understanding the newest batch of legal rules for International Emissions Trading, increase the benefits and decrease the costs of meeting legally binding targets under a ratified Protocol.

Understanding current international law on IET will enable Alberta's industry to meet

⁵ R. Rosenzweig, M. Varilek and J. Janssen, *The Emerging International GHG Market*, Report for the Pew Center on Global Climate Change, online at <http://ieta.org/Library/Links/Documentsforlibrary/trading.pdf>, accessed on 03/20/2002. Note: TransAlta has both sold and purchased emissions units and some trades have involved over 24,000 metric tons of carbon dioxide equivalents.

⁶ Report of the Conference of the Parties on its Seventh Session, held at Marrakech from 29 October to 10 November, 2001, Volume II, FCCC/CP/2001/13/Add.2.

participation eligibility requirements, time its action appropriately, and implement the most beneficial types of projects to meet near and long-term emission budgets.

I. Science and International law: a call for action

The reason to seriously consider the dangers of climate change is simple. Authoritative scientific experts from around the world, in addition to panels comprised of even the most conservative of scientists have, over the past 15 years, concluded that global warming is real and have recommended a world-wide reduction of the release of greenhouse gas into the atmosphere.⁷ More pertinently, if the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) is ratified and brought into force it will be the legal instrument translating that international consensus into binding legal obligations to reduce greenhouse gas emissions.

II. Cooperating through international legal implementation

It is important to note that international law functions unlike domestic statutory law or judge-made caselaw. International law is consensual and voluntary and thus it reconciles conflicting national viewpoints in a way that respects national sovereignty. International legal agreements usually use language that leaves nations with quite a bit of room to skirt inconvenient obligations. Furthermore, international instruments allow

⁷35 countries met at Geneva in 1988 to form the Intergovernmental Panel on Climate Change (IPCC). Three working groups were to assess available scientific information on climate change, assess environmental and socio-economic impacts of climate change, and to formulate national and international responses. The first working group, composed of 170 scientists from 25 countries, delivered "an authoritative statement of the views of the international scientific community" and asserted yet again that rising proportions of carbon dioxide and other greenhouse gases would cause temperatures to rise by 0.3 degrees Celsius per decade. Such a rate of increase is the fastest rate seen in the past 10,000 years. See Tony Benton, *The Greening of Machiavelli; The Evolution of International Environmental Politics*, (London: The Royal Institute of International Affairs Energy and Environmental Programme, 1994) at 168.

nations wide decision-making powers because it is up to each nation to implement the international commitment in the most domestically appropriate way. Therefore, international agreements only become effective once a nation enacts domestic law that complies with the international agreement. International legal agreements may be particularly apt for issues that implicate the world community. For example, taking action on global climate change will involve significant economic expense, changes in patterns of consumption, and matters of international equity between developed and developing countries.⁸ High levels of atmospheric greenhouse gas impact the entire planet but significant emission reductions in only a few countries could damage those countries' economic competitiveness in a world market.⁹ Consequently, a cooperative and multilateral instrument is the most effective way to address global climate change while also addressing the interests of very diverse stakeholders.

The United Nations Framework Convention on Climate Change (UNFCCC) had its beginnings in the late 1980's. In 1992, over 175 countries ratified the agreement at the Earth Summit in Rio de Janeiro. The two categorizations of countries that exist under the UNFCCC are Annex I and Annex II countries. Countries that fall under Annex I tend to include the developed nations as defined by the Organization for Economic Cooperation and Development (OECD). Annex II countries generally are those countries in the process of developing or with economies in transition. The original Framework Convention contained only a non-binding goal for developed nations to stabilize

⁸ Note: Disparities between the rich and the poor nations (euphemistically referred to as the North versus the South) are especially apparent in climate change negotiations. Developing nations feel that developed nations gained their wealth at the expense of the environment. Thus the South feels that the North should be responsible for the costs of emission reduction. The South is also deeply suspicious of restrictions on greenhouse gas emissions because they feel that the North is now attempting to stop them from reaping the same benefits of industrialization. The North, for its part, is very aware of population projections that indicate developing nations will soon outstrip developed nations in the volume of greenhouse gas emission.

anthropogenic greenhouse gas concentrations at a level that would prevent dangerous interference with the biosphere.¹⁰ In 1992, a non-binding goal set by the UNFCCC was for Annex I nations to stabilize their emissions at 1990 levels by the year 2000. However, signatory nations fell short of accomplishing this goal. As Otto Von Bismark said, "When you say you agree to a thing in principle you mean you have not the slightest intention of carrying it out in practice." The typical loose language of international agreements proved unsatisfactory in the instance of global climate change.

A progress review in 1995 determined that non-binding emissions targets would not result in the necessary reduction of anthropogenic emissions by Annex I nations. Two years later, the third Conference of the Parties (the decision-making body established by the UNFCCC) adopted the Kyoto Protocol.¹¹ Kyoto sets specific quantifications on emissions and limits nations to a percentage of the level of greenhouse gas emissions that existed in 1990. Annex B to the Protocol lists the commitment percentages for Annex I nations; and the percentages depend upon each nation's relative contribution to global GHG production. Intense debate surrounded an international legal agreement that would actually hold nations to a quantifiable number of reductions.¹² However, the binding emission limits listed in Kyoto foster environmental integrity and help to ensure that developed nations will significantly reduce levels of carbon dioxide and other harmful greenhouse gases. If nations officially ratify the Kyoto Protocol to the United Nations

⁹ R.Rosenzweig, M. Varilek and J. Janssen, *supra*.

¹⁰ The Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of the Second Part of its Fifth Session, INC/FCCC, 5th Sess., Article 2.

¹¹ *Guide to the Climate Change Negotiation Process: The Kyoto Protocol*, online: UNFCCC <http://www.unfccc.int/resource/process/components/response/respkp.html> (last modified: November 8, 2001).

¹² Note: Choosing a binding target for reductions was made more difficult due to the tendency of governments and energy ministers "to overestimate future economic growth, thus making stringent targets

Framework Convention on Climate Change, then there will be international consensus on these quantifiable commitments. Before Kyoto will enter into force as international law, Annex I Parties who signed the UNFCCC and whose emissions account for at least 55% of the total carbon dioxide emissions from all Annex I countries in 1990 must ratify the Kyoto Protocol.¹³

III. Understanding the Kyoto Protocol

a) Legally binding targets

The Kyoto Protocol creates a legally binding, absolute target to reduce emissions from 1990 levels (the amount that constitutes a nation's 1990 level come from figures reported to the UN Climate Secretariat and logged in national inventories).¹⁴ As outlined above, each Annex I Party with binding commitments has, under Annex B of the Protocol, a listed limitation percentage. Canada is such a Party and has a commitment to reduce emissions within the compliance period of 2008-2012 by 6% from 1990 levels. The percentage reduction quantitatively limits Canada to an absolute amount of emissions and thus fixes an emissions budget that is called an "assigned amount." Canada can then choose to domestically distribute a maximum of emission quotas that will fit within its budgeted assigned amount. The assigned amounts remain fixed and legally binding throughout the compliance period despite external factors such as increased

in such countries look less achievable." Tony Benton, at 173, citing G. Foley, *The Energy Question*, 4th ed. (London: Penguin, 1992).

¹³ *Guide to the Climate Change Negotiation Process: The Kyoto Protocol*, *supra*.

¹⁴ Peter Zapfel, "Negotiated Agreements and 'Flexibility Mechanisms': Building Blocks for Efficient Kyoto Implementation Strategies in the European Union?" in K.L. Brockmann and M. Stronzik, eds., *Flexible Mechanisms for an Efficient Climate Policy: Cost Saving Policies and Business Opportunities*, proceedings of an International Conference held at Stuttgart, Germany, July 27-28, 1999 (New York: Physica-Verlag heidelberg, 2000) 87.

economic growth within the country¹⁵ or unforeseen fluctuations in energy demand. The target gives teeth to the Protocol and provides certainty because the quota sets the level of aggregate emissions pollution. To realize these emission reductions, Kyoto authorizes a set of flexible mechanisms that can supplement domestic measures to reduce emissions.

b) Six ways to meet the targets

The Kyoto Protocol, under Article 3, lays down six options for Annex I nations with Annex B commitments to meet those commitments.¹⁶ The primary two approaches are domestic in nature and involve policies, measures, and sinks enhancement.¹⁷ The remaining four international approaches are joint fulfillment, Joint Implementation (JI), Clean Development Mechanisms (CDM), and Emissions Trading (ET). Together, joint implementation, clean development mechanisms, and emissions trading are the "flexibility mechanisms" and constitute what would become International Emissions Trading (IET) under a ratified Protocol. Importantly, during the first compliance period of 2008-2012, nations can only use these flexibility mechanisms to supplement domestic policy measures and sinks enhancement. This was articulated at the seventh Conference of the Parties where the operational rules for IET require Parties with binding reduction commitments to use IET in a way that "shall be supplemental to domestic action."¹⁸

¹⁵ *Ibid* at 88.

¹⁶ *Status on Ratification of the Protocol*, online: CO2e.com, The Global Hub for Carbon Commerce < http://ieta.org/IETA2/About_ET/BackgroundonCC_Content.htm > (last modified: August 1, 2001).

¹⁷ Note: A thorough examination of domestic measures is beyond the scope of this paper. Suffice it to say that a nation can make whatever domestic policies and measures that will result in internationally verifiable emission reductions. A nation can also partake in national "sinks enhancement." A forest is an example of a carbon sink; carbon sinks reduce the amount of carbon dioxide or carbon dioxide equivalents in the atmosphere. This paper will focus on increasing benefits and decreasing costs with Kyoto's flexibility mechanisms.

¹⁸ Note: Conferences of the Parties to the UNFCCC occur yearly. Conferences of the Parties are means by which Party nations add further necessary details to the Protocol. If the Kyoto Protocol is ratified by 55%

In order to hold nations publicly accountable for their promised reductions, Kyoto mandates that flexibility mechanisms not take the place of national efforts to reduce emissions. However, the stringency of supplementarity was a point of debate during the seventh Conference of the Parties (COP7). This official decision-making body for the UNFCCC finally settled upon a wording in the Marrakech Accords that defined supplementarity in a less rigorous way than had the wording of previously proposed texts.¹⁹ The rules now state that, "domestic action shall thus constitute a significant element of the effort made by each Party included in Annex I to meet its quantified emission limitation and reduction commitments."²⁰ Therefore, once a significant element of Canada's effort is domestic, Canada can also use International Emissions Trading to meet its 6% reduction commitment.²¹ The first hurdle then, before Canada or its industry can benefit from IET, is that Canada make domestic policies and measures a significant element of national efforts to reduce emissions.

c) Meeting targets with IET

Emissions trading can contribute to a reduction of the aggregate world greenhouse gas (GHG) concentration in the atmosphere. Emissions trade can only occur with the

of the countries whose emissions contributed to 1990 levels of emissions, then new decision making bodies will begin to hold yearly decision-making meetings.

¹⁹ Asbjorn Torvanger, *An evaluation of business implications of the Kyoto Protocol*, Center for International Climate and Environmental Research Report 2001:5, online at <http://ieta.org/Library/Links/Documentsforlibrary/CICERO.pdf>, accessed 03/20/2002.

²⁰ *Marrakech Accords, supra*, decision 15/CP.7.

²¹ Note: The Marrakech Accords seem not to set any specified ceiling on trade except for requiring that domestic action be a significant element of a Party's effort. Asbjorn Torvanger, *An evaluation of business implications of the Kyoto Protocol, supra*.

allowances under a pre-set targeted limitation (and this limitation is a reduction from what nations would have otherwise emitted). The targets for each nation listed in Annex B ensure an overall reduction of GHGs. Because of environmental pollution's global effect on the atmosphere, a limitation must be placed on the total amount of greenhouse gas rather than the yearly flow of greenhouse gas.²² The aggregate amount of pollution from a Party cannot exceed its target for all the years covered in the compliance period of 2008-2012. For example, Canada can only emit greenhouse gases up to a total of 570 Mt during the five year period from 2008-2012. A presentation from Sue Kirby, Associate Assistant Deputy Minister, Energy Sector, Natural Resources Canada, estimates Canada's commitment of 6% below 1990 levels to equate to roughly 26% below business as usual projections for the year 2010.²³ If domestic action comprises a "significant element" of Canada's efforts to reduce emissions and foster carbon sinks within its boundaries, then Canada can buy emission allowances from other Parties who have allowances to spare or otherwise participate in IET.

An analogy to what is known as the "bubble theory" may help to explain why IET works (though it is important to note that International Emissions Trading is distinguishable from any domestic regime).²⁴ A functioning IET scheme would be somewhat like dropping invisible bubbles over each Party to Kyoto with binding emission commitments. Canada can only produce an emissions total of 570 Mt but if, in

²² G. Chichilinsky and G. Heal, "Markets for Tradeable CO₂ Emission Quotas: Principles and Practice," M. Boman, R. Brannlund, and B. Kristrom, eds., in *Topics in Environmental Economics*, Vol. 17 Economy and Environment (Sweden: Kluwer Academic Publishers, 1999), pp. 3-33 at 11. Note: Environmental economists stress that the "stock" of greenhouse gas is more important to environmental integrity than is the "flow" of greenhouse gas.

²³ Sue Kirby, Associate Assistant Deputy Minister, Energy Sector, Natural Resources Canada, *Government of Canada's Approach to Climate Change*, Presentation to the Canadian Petroleum Law Foundation, Annual Seminar, held in Jasper, Alberta on June 2, 2000.

2012, Canada is about to exceed its allotted emissions within its national bubble, then Canada can buy emissions allowances from a nation that has a surplus within the confines of its own bubble. IET allows nations to meet their national targets with the help of market mechanisms. The aggregate level of pollution is the element in a quota regime that is certain. The cost of complying with carbon reductions in a quota regime is the variable that depends upon market supply and demand.²⁵ International Emissions Trading is a way to reduce the costs of complying with Kyoto's binding commitments at International law. IET acts as an economic incentive to cut back in the most cost-effective manner that Party nations can together devise.

d) Kyoto creates a unit of trade

Emission trading makes attaining Kyoto's targets more achievable and provides economic incentive for nations to pollute wisely. In effect, a ratified Kyoto Protocol will create an exclusive market in pollution units where only participants with binding commitments can use trading to offset their international legal obligations. IET uses carbon dioxide equivalents (CO₂eq) as the base unit upon which trading will occur; one can think of CO₂ equivalents as the currency of the trading regime. Scientifically, carbon dioxide equivalents are the standard measurements that assess the Global Warming Potential (GWP), or the amount of additional energy retained in the biosphere as a result of the release of a given greenhouse gas.²⁶ Accordingly, Kyoto regulates six specified greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons,

²⁴ The *Clean Air Act* of the United States is an example of a domestic initiative that operates under a bubble theory.

²⁵ G. Chichilinsky and G. Heal, *supra*, at p.10.

perfluorocarbons, and sulphur hexafluoride) by simply converting their respective Greenhouse Warming Potentials into an equivalent amount of carbon dioxide. Converting the regulated gases to a universal unit that measures climate change relative to carbon dioxide thus creates the base unit of exchange for any International Emissions Trading regime.²⁷

e) Meeting targets with cap and trade IET

Under Kyoto, two main methods exist upon which to trade carbon dioxide equivalents; the first is the "cap and trade" method, and the second is the "baseline and credit" method. Emissions Trading, as set out in Article 17 and under the most recent operational details adopted in the seventh Conference of the Parties, functions on a cap and trade basis. The necessary precursor to any emissions trading, whether it be at the sectoral, domestic, or international level, "requires as an indispensable condition the setting of absolute targets (caps) and (ex-ante) allocation of emission allowances to participants."²⁸ Emissions Trading functions on the same principles described above about the way that International Emissions Trading would function as a whole.

These cap and trade systems predetermine an aggregate cap, or targeted limitation, for a participant's allowable emissions. Governments or other authoritative bodies would then issue permits for holders to emit set quantities of CO₂eq.²⁹ Article 17 of the Kyoto Protocol establishes Assigned Amount Units (AAUs) as the target level of

²⁶"What are carbon dioxide equivalents (CO₂eq)?" , online: CO₂e.com, The Global Hub for Carbon Commerce http://ieta.org/IETA2/About_ET/BackgroundonCC_Content.htm (last modified: August 1, 2001).

²⁷ *Ibid.*

²⁸ Peter Zapfel, *supra*, 94.

emissions for Parties during the commitment period.³⁰ Canada's total AAU will equate exactly with its national commitment of 570 Mt of pollution between the years 2008-2012. Canada can then allocate portions of the 570 megatonne pie (its AAU) to authorized legal entities, such as corporations involved in energy production, that also meet participation eligibility requirements for specific types of emissions trade. Authorized legal entities could then only emit greenhouse gases, or carbon dioxide equivalents, up to a limit of their portion of allowance units. If it becomes clear that their emissions will exceed their allotted quotas, participating entities could buy allowance units (subject to the rules as will be explained below) from other qualified participants. Or, if an authorized legal entity is efficient enough to emit carbon dioxide equivalents at a level below its allotted quota, then that entity can sell or bank its allowance units.

f) Meeting targets with baseline and credit IET

The second trading system is the "baseline and credit" method. This second flexibility method is different than cap and trade systems. Instead of initially setting a target and then issuing quotas up to that target, baseline and credit systems will retrospectively award credits for projects that reduce emissions from a hypothetical baseline. The baseline would most probably reflect business as usual estimates. Because of the potential for Parties to falsely set limits, entities that can participate in projects and set their own baselines must obtain certification from an overseeing body. Certified entities could then project a future baseline and obtain credits for the amount of CO₂eq

²⁹ *Linking Domestic and Industry Greenhouse Gas Emission Trading Systems*, Erik Haites and Fiona Mullins, online: International Emissions Trading Association < http://ieta.org/IETA2/Index_New.htm > (last modified: October 2001), p.5.

that they reduce in relation to that baseline. Generating credits is important because an International Emissions Trading system needs both buyers and sellers. Participants in baseline and credit systems generate credits for sale and, for trading to occur, buyers must exist who require credits or surplus allowances in order to meet their mandatory obligations under Kyoto.³¹ Trading approved credits could offset compliance obligations under the cap and trade system of Article 17 emissions trading. Alternatively, purchasing credits could also allow a duly qualified participant to achieve reductions from its baseline under either an Article 6 or 12 baseline and credit project.

Kyoto's articles 6 and 12, Joint Implementation and Clean Development Mechanisms, respectively, both use a system of baseline and credit. Joint implementation fosters the reduction of sources or the enhancement of removals of emissions as between Annex I nations.³² Kyoto calls the credits generated under a Joint Implementation project Emission Reduction Units (ERUs). Clean Development Mechanisms under Article 12 similarly encourages projects that reduce and remove emissions. CDM specifically allows Annex I parties to assist non-Annex I parties and to receive Certified Emission Reductions (CERs) if their efforts meet with an executive board's approval.³³ To meet the allowable limits of their targeted cap during Kyoto's compliance period, participants could generate their own credits with JI or CDM projects, or they could buy ERUs and CERs from other projects. The details and the rules for International Emissions Trading have only just been decided and a comprehensive understanding of the costs and benefits

³⁰ *Kyoto Protocol Mechanisms: "Joint Implementation," The Clean Development Mechanism and Emissions Trading*, online: The United Nations Framework Committee on Climate Change < <http://www.unfccc.int/issues/mechanism.html> > (date accessed: November 11, 2001).

³¹ *Linking Domestic and Industry Greenhouse Gas Emission Trading Systems*, *supra*.

³² *Kyoto Protocol Mechanisms: "Joint Implementation," The Clean Development Mechanism and Emissions Trading*, *supra*.

³³ *Ibid*.

of the regime will only come through scrutinizing the operational details of Kyoto's flexibility mechanisms. Canada, and Alberta's energy industry, can profit from becoming conversant with incipient international law.

IV. The operational details under a ratified Protocol

What then are the specifics of an International Emissions Trading regime? Until a handful of months ago, rampant speculation beset governments, policy-makers, and industry because they could only assess a hypothetical trading regime based on draft negotiating texts and economists' projections. Much of the uncertainty surrounding ratification lay in predicting the outcome of negotiations about specific operational details under Articles 6, 12, and 17. The Articles of Kyoto stipulate that Conferences of the Parties are to establish the operational details of the Protocol. The rules for IET were on the agenda since the fifth Conference of the Parties in Bonn, Germany in 1999. But only now, with the decisions of COP7 in Marrakech Morocco, does the international community have the benefit of the completed "rule book" of mandatory legal requirements for the use of Joint Implementation, Emissions Trading, and the Clean Development Mechanism.³⁴ COP7 also went further than simply outlining future rules and the bodies that would oversee them; the Conference took the initiative to elect the executive board for the Clean Development Mechanism, thus enabling Parties to actively begin CDM projects. Commentators suggest that such a step could very well portend "the

³⁴ *Ibid.* Note: Immediately after the international deliberations, Michael Zammit Cutajar, Executive Secretary for the Convention, announced, "After several years of tough negotiation, the institutions and detailed procedures of the Kyoto Protocol are now in place." The rulebook's final edited version is only recently available on the internet as of March 5, 2002, online at <http://www.unfccc.int>.

transition now being made to an operational Kyoto regime."³⁵ And a press release by the UNFCCC Secretariat announced that The Marrakech Accords open "the way to widespread ratification by governments."³⁶

Not only do the operational details of International Emissions Trading mark a significant step towards ratification, the very fact that over 160 nations could agree to the rulebook evinces an encouraging level of acceptance amongst participants. The international policy consensus about practical aspects of regulating emissions trading has significant effect on industry even without official ratification. Lisa Jacobson and Allison Schumacher's report for The Business Council for Sustainable Energy asserts that packages of trading rules established under Conferences of the Parties "will likely form the foundation for the international emissions trading market irrespective of ratification of the Kyoto Protocol."³⁷ Definitive statements of legal policy such as the Marrakech Accord will have huge practical application for current and emerging systems of emissions trade. Jacobson and Schumacher assert that clear legal rules will create a robust emissions trading system and that once such rules exist, "recognizable market prices for emissions reductions and credits, as well as standardized contracts for transactions, will evolve as the market develops." ³⁸

The Marrakech decisions at COP7 mark an important milestone on a path where international law will apply private sector investment and market oriented approaches to

³⁵ *Ibid.*

³⁶ *Press Release: Governments Ready to ratify Kyoto Protocol*, online: UNFCCC Secretariat < www.unfccc.int/wnew/index.html > (dated November 10, 2001).

³⁷ *Emissions Trading: Issues and Options for Domestic and International Markets*, Lisa Jacobson and Allison Schumacher, online: Business Council for Sustainable Energy < <http://www.bcse.org/adobefiles/emissionstrading.pdf> > (last modified: October 2000).

³⁸ *Ibid.*

the problem of global climate change.³⁹ Kyoto is a multilateral means for major greenhouse gas emitters to stabilize emissions in a way that actively addresses global climate change and also addresses concerns about international fairness and economic competitiveness. Energy industries throughout Canada, and particularly energy industries like those in Alberta that account for such a large portion of Canada's emissions, would do well to plan for the Kyoto Protocol's legal requirements. One of the most readily accessible ways to reduce emissions, in addition to domestic measures and policies, is to make use of the flexibility mechanisms that the Protocol provides. What must private sector participants meet in order to become eligible to trade international units of emissions? The process depends upon Canada first meeting participation eligibility requirements, Canada then authorizing private sector actors to participate, and finally private sector participants themselves abiding by the rules for ET, JI, and CDM.

V. Participation eligibility for International Emissions Trading

While Kyoto's impact on Alberta's energy industry may be profound, it need not catch the province unawares. An understanding of the Framework Convention on Climate Change and the Kyoto Protocol's provisions for International Emissions Trade provide an essential background for understanding Kyoto's operational rules. The following section outlines the specific requirements for participation in international trading and how Alberta's industry can fit within the scheme. Thus far, the discussion of international law applies most apparently to interactions as between nations. How then can firms and energy producers also partake in IET? The reason that requirements of the Kyoto

³⁹ John Dillon, *Seventh Conference of the Parties UN Framework Convention on Climate Change Marrakech, October 29- November 9, 2001*, Final Report, Business Council on National Issues, *supra*.

Protocol and the operational details from the seventh Conference of the Parties also apply to the private sector is because Kyoto allows an Annex I Party with binding commitments to authorize legal entities to participate in IET. But the Marrakech Accords will still hold Canada responsible for the fulfillment of its binding commitment even when Canada authorizes firms or other legal entities to participate in trades. In international law, corporations or other legal organizations derive their authority to act only through the authority of the authorizing nation. If Canada is not eligible to participate in Kyoto, no private sector legal entity will be able to participate in International Emissions Trading.

COP7 sets the requirements for participant eligibility. The Marrakech Accord's modalities have precisely the same six participant eligibility requirements for Emissions Trading, Joint Implementation, and for the Clean Development Mechanism. Canada, as an Annex I Party with binding reduction commitments, must satisfy the following requirements before it can participate in International Emissions Trading (and before it can authorize other legal entities to participate). Canada is a Party to Kyoto and thus satisfies the first eligibility requirement. The second hurdle is an accurate establishment of national Assigned Amount Units. The third requirement is that participants have a suitable national system for estimation of anthropogenic emissions by sources and anthropogenic removals by sinks. Fourth, participants must have a national registry that will scrupulously keep track of the various International emission allowance and credit units. Fifth, eligible participants must submit standardized annual inventory reports. And lastly, participants must submit supplementary information on their Assigned Amount Units as necessary.⁴⁰

⁴⁰ Report of the Conference of the Parties on its Seventh Session, held at Marrakech from 29 October to 10 November, 2001, Volume II, FCCC/CP/2001/13/Add.2 (hereinafter the Marrakech Accords).

Eligibility requirements send a clear signal to participants about what they must do to partake in emissions trading. The above requirements demand consistent reporting and transparent processes to allocate and to account for emission allowance units at a national level. The requirements essentially encourage nations to "take concrete actions as soon as possible to show that their registries, national systems, national inventories and base year reporting are complete and accurate."⁴¹ Some of the necessary national pre-requisites for the implementation of the Kyoto Protocol are taking shape in Canada and will make the transition to an operational IET regime easier. For example, Canada, in keeping with part of Kyoto's requirement to create a national Registry, now has a Canadian Green-House Gas Credit Registry. Canada must still formulate national AAUs, scientific systems to estimate anthropogenic emissions and removals, and standardized annual inventories. Initiatives are already underway.⁴² In addition, Canada and its industry have initiated Voluntary Challenge and Registry (VCR) programs⁴³, Pilot Emissions trading regimes, and emissions exchanges.

Firms or companies that want to gain authorized legal entity status from Canada can only participate in IET once Canada meets these six eligibility requirements and once

⁴¹ L. Jacobsen and A. Schumacher, *Emissions Trading: Issues and Options for Domestic and International Markets*, online: Business Council for Sustainable Energy <<http://www.bcse.org/adobe/files/emissionstrading.pdf>> (last modified: October 2000).

⁴² Organizations such as the National Climate Change Process (NCCP) already exist in Canada. The NCCP is a combined effort of the provincial, territorial and federal governments, with the collaboration of industry and environmental groups. Formed in December 1997 at the direction of First Ministers, Joint Ministers of Energy and Environment created the NCCP as a Canadian process to assess the impact, the costs and benefits of Kyoto, and the various implementation options for Canada. National Climate Change Process website, online: http://www.nccp.ca/NCCP/national_process/index_e.html, accessed on 11/7/2001.

⁴³ Note: "Canada started a Voluntary Challenge and Registry (VCR) program as a part of its National Action Program on Climate Change in 1995, which became an independent private/public partnership in 1997. Its purpose is to spur voluntary actions on climate change and publicize them. Two-thirds of its funding is from the private sector, the rest from the federal and provincial governments. In its first 3 years, Canada's VCR program registered about 700 companies and organizations. Resulting carbon dioxide emission reductions totaling just over 9 metric tons of carbon were reported, about 6.5% of Canada's fossil fuel carbon emissions in 1998." R.L. Ottinger and M. Jayne, "Global Climate Change Kyoto Protocol

Canada complies with the operational rules for IET. In addition to defining who can participate in IET through participation eligibility requirements, the Marrakech Accords also detail the legal requirements for international trade. One of the key operational considerations for all participants (including countries and private sector organizations) is that all trades between parties must be registered and verified by the UN. Also, the rules establish a Commitment Period Reserve that will prevent overselling of emissions and will preempt transactions that compromise binding targets. In terms of the functionality of the system as a whole, a few general details are important to note. The international units of trade (AAUs, CERs and ERUs) are highly interchangeable and will thus work together to form one commodity in an international emissions market. Kyoto also provides for a viable market in international emissions because participants can sell, buy, or bank emissions units from ET, JI, and CDM to meet their binding reduction commitments. The following section sets out the pertinent details of the trading regime as a whole. Understanding these details of the Marrakech Accords will enable energy producers to plan for the best way to harness an emerging market under international law.

VI. Legal requirements for International Emissions Trade (Article 17)

a) National registries and the UN Transaction Log

The flexibility mechanisms will operate under a legally endorsed system of international trade. International Emissions Trading under the Kyoto Protocol will only occur through the use of national registries and under the oversight of the UN Transaction Log. The operational rules require each Annex I Party to construct a national registry that

will account for Assigned Amount Units (AAUs) under Emissions Trading, Certified Emission Reductions (CERs) under the Clean Development Mechanism, and Emission Reduction Units (ERUs) under Joint Implementation. Also, the Marrakech Accords create another International Emissions Trading unit called a Credit Removal Unit (RMU) that will apply to projects in Annex I countries that create carbon sinks to sequester carbon dioxide.⁴⁴ Canada, like all Parties, is responsible for tracking every international transfer and acquisition in its national registry. A UN Transaction Log will also verify all transactions within national registries so as to ensure compliance.⁴⁵ Should a Party attempt to transfer any emissions unit without verification by the UN Transaction Log, that Party cannot use those units to satisfy its binding reduction target.

Parties that wish to sell emission units must comply with the verification procedure. In this way, buyers can be sure that the international emission units they buy will be valid to offset their own legal targets. Interestingly, buyers who do not themselves comply with the requirements of national registries and verification can still buy emission units.⁴⁶ Whether buyers would have to comply with the registry and verification procedure was a hotly contested issue during negotiations but eventually COP7 decided to simplify the matter by only policing sellers. Though non-complying buyers can purchase quotas of international emission units, this will not compromise the entire

⁴⁴ Asbjorn Torvanger, *An evaluation of business implications of the Kyoto Protocol*, *supra*.

⁴⁵ Note: The Transaction Log verifies matters including: units previously retired or cancelled; units existing in more than one registry; units for which a previously identified discrepancy has not been resolved; units improperly carried over; units improperly issued; the authorization of legal entities involved to participate in the transaction; the eligibility of Parties involved in the transaction to participate in the mechanisms; and infringement upon the commitment period reserve of the transferring Party. *Marrakech Memo: Details of the Marrakech Accords*, International Emissions Trading Association, online at <http://www.ieta.org>, accessed on 03/20/2002.

⁴⁶ A Party in non-compliance may want to buy International Emission Trading units as a means to meet purely domestic emissions trading quotas under a purely domestic regime. Such a domestic regime would have to have quotas that recognize international units. In contrast, IET units will only recognize domestic

system of trade. The moment that a non-complying buyer attempts to sell its international units, it must, as a seller, properly register and log the transaction. In effect, a Party wishing to meet its quota would have little incentive to buy from any unverified seller in the system that Kyoto creates. Only verified units bought from a Party in compliance with the rules will count towards binding targets. The operational rules thus ensure that international trading occurs with valid units and they will also preempt overselling of valid international units.

b) The Commitment Period Reserve

The Commitment Period Reserve rule exists to prevent Parties from overselling their allotted allowances units. The Bonn Agreement in 1995 established the concept of a Reserve and the Marrakech Accords make this Commitment Period Reserve mandatory.⁴⁷ The reserve requirement precludes overselling emission units that would render a Party in breach of Kyoto's binding cap. International Emissions Trading will only reduce the aggregate level of carbon dioxide equivalents in the atmosphere if all the trades occur with units that are within the preset limits of an emissions budget. Consequently, the Protocol mandates that during the first compliance period between 2008-2012, a Party's net sum of all transfers must be less than 10% of that Party's binding reduction commitment.⁴⁸ In other words, before trading can occur, each Annex I nation with binding commitments must hold at least 90% of the budgeted amount of what they are

efforts if those efforts comply with the Kyoto Protocol's operational rules for one of the flexibility mechanisms.

⁴⁷ *Marrakech Memo: Details of the Marrakech Accords*, International Emissions Trading Association, *supra*.

⁴⁸ Asbjorn Torvanger, *An evaluation of business implications of the Kyoto Protocol*, *supra*.

allowed to pollute.⁴⁹ For example, Canada must hold International Emission units of at least 90% of its budgeted allotment of 570 megatonnes. Canada must therefore ensure that, at any given time, it holds 513 megatonnes of its Assigned Amount Units in its Commitment Period Reserve. Canada is then free to trade (or to authorize private sector participants to trade) with as much as 57 megatonnes (10%) of its total allotment of AAUs.

As outlined above, the UN Transaction log has a safeguard that will prevent trades that would put Canada below its mandatory commitment period reserve level.⁵⁰ Also, the UNFCCC secretariat will notify a Party that exceeds its commitment reserve level and that Party must bring its holdings back to the required level within 30 days. The Commitment Period Reserve consists of holdings of ERUs, CERs, AAUs, and RMUs and a Party can bring its reserve commitment into compliance by acquiring and holding any of the quota types. The combined effect of the national registry system, the UN Transaction Log, and the Commitment Period Reserve require Parties to comply with their binding targets and create a standardized system of international emissions trade in which countries can have confidence. Kyoto's operational regime also makes a true market more viable because it allows for high liquidity between the various flexibility mechanisms.

⁴⁹ *Linking Domestic and Industry Greenhouse Gas Emission Trading Systems, supra.* Erik Haites and Fiona Mullins note that these reserve requirements apply whether the participants are nations or firms and that because the total limit of emissions equals the number of allowances, emissions will be within the bounds of the cap so long as Parties comply with their commitments. The Commitment Period Reserve facilitates compliance.

⁵⁰ *Marrakech Memo: Details of the Marrakech Accords*, International Emissions Trading Association, *supra*.

c) Transferability and Banking

International Emissions Trade uses three flexibility mechanisms and thus creates three main types of international emissions units. For a trading system to emerge that most efficiently allows countries with high reduction costs to buy emission units and countries with low reduction costs to sell units in excess of those needed to meet binding reduction commitments,⁵¹ all units should be fully transferable. The Marrakech Accords allow high fungibility; eligible participants who comply with the trading rules can trade ERUs, CERs, AAUs, and RMUs multiple times.⁵² Accordingly, the emissions units can act together as one commodity in one market and are therefore highly interchangeable in a global market.⁵³ Parties can also bank units if they have met their emission reduction target and want to carry units over into another compliance period instead of trading them. Allowance units (AAUs) from emissions trading can carry over indefinitely. Credits under the baseline and credit systems of Joint Implementation and the Clean Development Mechanism can carry over but each only up to a limit of 2.5% of a Party's assigned amount unit. The removal units from sinks projects cannot be banked.

VII. Comparing the legal requirements for Joint Implementation (Article 6) and the Clean Development Mechanism (Article 12)

The paper has outlined the legal requirements on how Canada can participate in IET and thus authorize private sector participants to participate in IET. In addition, the

⁵¹ H. Ewers, "Possibilities and limitations for flexible compliance with the Kyoto targets," in K.L. Brockmann and M. Stronzik, eds., *Flexible Mechanisms for an Efficient Climate Policy: Cost Saving Policies and Business Opportunities*, proceedings of an International Conference held at Stuttgart, Germany, July 27-28, 1999 (New York: Physica-Verlag heidelberg, 2000) at 13.

⁵² *Marrakech Memo: Details of the Marrakech Accords*, International Emissions Trading Association, *supra*.

⁵³ Asbjorn Torvanger, *An evaluation of business implications of the Kyoto Protocol*, *supra*.

legal requirements under Article 17 for international trading have been discussed. What must nations such as Canada, or its authorized private sector participants, do to satisfy the international operational details for baseline and credit projects? Recall that in addition to trading international excesses of allowance units, participants can also earn credits from JI or CDM projects and those credits can offset binding commitments. Annex I participants can sell credits to other participants, use the credits to meet their own Commitment Period Reserve requirement, or bank credits that amount to 2.5% of that Annex I Party's total Assigned Amount Unit (for Canada as a whole this would amount to 11.4 megatonnes of bankable credits for JI and 11.4 megatonnes of bankable credits for CDM). While JI and CDM projects both create credits, differences in the legal requirements for each mechanism will influence a participant who is considering which type of project to begin.

Understanding the legal differences between the flexibility mechanisms will ensure that Alberta's industry implements the most beneficial types of projects to meet near and long-term emission budgets. The following subsections compare Joint Implementation and the Clean Development Mechanism with respect to times when the projects can earn accreditation, who can participate in the projects, and how an overseeing body will monitor the project. As a general matter, both the operational details for JI and for CDM state that participants "are to refrain from using ERUs and CERs generated from nuclear facilities to meet their commitments." Participants should therefore avoid projects with other Annex I participants or with participants from developing countries that involve nuclear energy. Apart from that proviso, the types of

projects and the types of energy they employ will depend upon approval by the appropriate overseeing body.

a) When each project can earn accreditation

Under Article 6, Joint Implementation projects that begin as of the year 2000 may be subsequently eligible for Emission Reduction Units (ERUs) if the project meets the requirements within the Marrakech accords. However, the ERUs will only be issued after the compliance period actually begins in 2008. Though Canada lobbied for eligibility of JI projects before 2008, the idea met with little international support and ultimately did not become part of the Marrakech Accord.⁵⁴ In contrast, Clean Development Mechanism projects can secure early eligibility. The relevant time for CDM projects is not the beginning of the compliance regime like in JI but rather the time after a participant registers a CDM project. Project activity that starts as of January 1, 2000 can be eligible for validation and registration if that CDM project activity is submitted for registration before December 31, 2005.⁵⁵ Once registered before December 31, 2005, a CDM project can get credit for the action it took since January 1, 2000.

b) Valid participants

JI is to occur between Annex I nations (or legal entities authorized by those Annex I nations) that have binding targets under Annex B. Even amongst Annex I participants, however, the relative affluence and technological capability of the participating nations range quite substantially. Thus, the guidelines for implementation

⁵⁴ *Marrakech Memo: Details of the Marrakech Accords, supra.*

⁵⁵ Marrakech Accords, *supra*, Decision 17/CP.7.

urge more developed Parties to "facilitate the participation" of countries "that are undergoing the process of transition to a market economy."⁵⁶ Significantly, the language of this particular guideline only "urges" parties towards this course of action and does not firmly impose the obligation. However, the marginal costs for fostering emissions reductions in less technologically advanced countries will generally act as an impetus for nations seeking to obtain credits.

CDM, in contrast, has a dual objective to both help developed nations meet their targets and to help the host developing nation achieve sustainable development.⁵⁷ Annex I Parties are requested to assist non-Annex I countries, particularly the least developed and small island nations, to build their capacity to participate in CDM projects.

Consequently, CDM charges Annex I participants a 2% levy on CERs. These CERs will go into an Adaption Fund whose proceeds aid developing nations that are particularly susceptible to adverse effects of climate change.⁵⁸ Clean Development Mechanism projects will occur between an Annex I participant and a developing nation. But because the mechanism exists to aid developing countries, the Marrakech Accords also allow a developing nation to undertake a unilateral CDM project without an Annex I partner. Developing nations who satisfy the CDM executive board that their project qualifies for CDM accreditation will then be able to sell the Certified Emission Unit on the market.

c) An overseeing body monitors the project

Because JI and CDM work on a baseline and credit system, the oversight of an accreditation agency is essential so that projects conform to uniform standards and so that

⁵⁶ Marrakech Accords, *supra*, Decision 16/CP.7

⁵⁷ *Ibid*, Decision 17/CP.7

those projects will result in tradeable credits. The Accord already elected the CDM executive board, the overseeing body, for CDM. The Marrakech Accord decided to establish a supervisory committee in 2008 for JI. For JI, the supervisory committee has yet to be elected but its function will be to oversee the verification of Emission Reduction Units generated in legitimate Article 6 projects. In verifying ERUs, the supervisory committee will report to the Conference of the Parties on its activities and will be responsible for the accreditation of independent entities. The supervisory committee must review and revise reporting guidelines and criteria for baselines and they must elaborate on project design documents and any other Article 6 procedures that the next COP should consider. In addition, both project participants will bear the supervisory committee's administrative costs for the procedures but the exact breakdown of cost sharing will only be decided at Kyoto's first session after ratification.⁵⁹

The Marrakech decisions about the role of the supervisory committee provide insight into the operation of a joint implementation project. The following salient details emerge: participants will receive verified ERUs under a verification procedure where the supervisory committee accredits independent entities. Accredited independent entities determine three main questions: whether the project has the approval of the Parties involved, whether the reduction of anthropogenic emissions by sources or removals by sinks is additional to reductions that would otherwise occur, and whether the project conforms to the proper baseline and monitoring plan. Transparency concerns are of utmost importance for any joint implementation project and so reporting and monitoring requirements pervade the rules and apply both to the supervisory committee itself and

⁵⁸ *Marrakech Memo: Details of the Marrakech Accords, supra.*

also to the project participants. Creating and reporting appropriate baselines must occur under the oversight of the supervisory committee (through an accredited independent entity) and participants must submit project design documents.

Similarly, the CDM executive board will oversee baseline and credit projects and ensure that participants meet accreditation standards. Participants will receive Certified Emission Removal units if their ongoing CDM projects continue to conform to Article 12 requirements and are registered. Recall that participants must also meet the participant eligibility criteria for International Emissions Trading as a whole (but developing nations need not have national registries in place and developing nations need not have a binding target to participate in CDM). The board will decide whether to approve the baselines set by participants and will monitor participants' plans and project boundaries. The executive board has the power to conduct spot-checks of participants and to suspend a participant if the participant fails to abide by the approved baseline for the project. Participants shall establish the baselines for their projects "in a transparent and conservative manner regarding the choice of approaches, assumptions, methodologies, parameters, data sources, key factors and additionality, and taking into account uncertainty."⁶⁰

When participants choose baseline methodologies they must take recommendations from the CDM executive board into account. They must also choose a baseline according to whichever of the following three methods they can justify as being appropriate for the particular project. To set baselines, participants can use actual existing or historical emissions, emissions from a technology that is economically attractive (taking into account barriers to investment), or they can average emissions of similar

⁵⁹ Note: The decision partially eases concerns from developed nations that they would bear the entire cost of joint implementation projects when it mandates some shared financial burden.

projects undertaken in the previous five years. Projects in the previous five years must have involved "similar social, economic, environmental and technological circumstances" and the projects must have performed in the top 20 percent of their category.⁶¹

Participants in CDM projects must adopt one of the above baseline methodologies and decide to use it for a crediting period of their selection. Participants can choose a crediting period of a maximum of 7 years with the option of two renewals, provided that the original project baseline is still valid or has been updated taking into account new data. Alternatively, participants can chose a crediting period of 10 years with no option of renewal.⁶² As in JI, participants in CDM projects need to submit project design documents for the approval of the overseeing body.

Conclusions

The state of international law may soon have significant impact on Alberta's energy industry. The Framework Convention on Climate Change, an international and multilateral agreement, set out principles for greenhouse gas reductions. And the Kyoto Protocol, if ratified by 55% of Annex I nations that emitted 1990 levels of greenhouse gases, will quantify reduction commitments and make them legally binding. A binding target ensures that developed nations actually take action to control dangerous anthropogenic interferences in the global climate equilibrium. Canada will have a national emissions budget to emit carbon dioxide equivalents that total 6% below 1990 levels (this works out to 570 megatonnes of pollution). Kyoto sets this target over the entire five years of the first compliance period of 2008-2012. But Kyoto helps to make

⁶⁰ Marrakech Accords, *supra*, Decision 17/CP.7.

⁶¹ *Ibid.*

the target realistic by allowing Canada six methods to meet reduction commitments and the Protocol establishes International Emissions Trading as a legitimate economic tool in this pursuit. Canada's domestic policies and measures must be a "significant element" of its efforts to stabilize the emissions of harmful greenhouse gases to roughly 26% below business as usual projections for 2010. Then the flexibility mechanisms can supplement domestic action and provide economic incentives through cap and trade and baseline and credit systems of trade.

International law as decided by COP7 helps make IET a viable market oriented mechanism whose operation also stabilizes the aggregate level of greenhouse gases in the atmosphere. Participants must meet eligibility criteria that include being a Party to Kyoto, creating national Assigned Amount Units, establishing a national registry, adopting a system to estimate greenhouse gas emissions and removals, submitting standardized annual inventory reports and supplementing information as necessary. If Canada meets the eligibility criteria, Canada can authorize private sector participants to also partake in International Emissions Trade. IET as a whole will occur through Canada's national registry and the UN Transaction Log will prevent trades with units that are in excess of Canada's Commitment Period Reserve.

Authorized legal entities, such as players in Alberta's energy industry, can trade within the cap of allowances of AAUs from Article 17 Emissions Trading. Alberta's energy industry can also initiate projects in developed nations to gain credits of ERUs from Article 6 Joint Implementation projects that work on a baseline and credit basis. Similarly, Alberta's energy industry can engage in projects with developing nations to gain credits of CERs from Article 12 Clean Development Mechanism projects that also

⁶² *Ibid.*

work on a baseline and credit basis. All of the international emission units are highly fungible and can be purchased, sold, kept in the Commitment Period Reserve, or banked into another compliance period. Participants would do well to understand the international law on emissions trade. Armed with such knowledge, Alberta's energy industry can increase the benefits and decrease the costs of complying with the legal requirements of the Kyoto Protocol. The recent decisions of COP7 have supplied the "rule-book" for IET and have provided the operational details for each of the flexibility mechanisms. When Alberta's energy industry wants to gain market experience under cap and trade systems and position for accreditation through baseline and credit projects, knowledge of the Marrakech Accords will allow industry to time its action appropriately and implement the most beneficial types of projects to meet near and long-term emission budgets.

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