

Kyoto's Catch 22

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ABSTRACT

It is increasingly apparent that developing countries' aims of accelerating their economic development via the Kyoto protocol have suffered from an overdose of wishful thinking. Developing countries still need to concentrate firmly on getting their economic policies and their "legal infrastructure" in good order if they are to attract international investment in their energy sectors.

In 1992, at the Rio Earth Summit, the concept of sustainable development was first integrated into international environmental policy via the UN Framework Convention on Climate Change (FCCC).¹ As it is expressed in Article 2:

"The ultimate objective of this Convention is to achieve stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."

"Kyoto Risk"

For over a decade, the FCCC's objective has been pursued by the Conference of the Parties (CoP).² In 1997, the CoP agreed to establish the Kyoto Protocol. It imposed country-specific commitments on 39 so-called "Annex B Parties" to reduce their Greenhouse Gas (GHG) emissions subject to their ratification of the Protocol.³ All GHG emission reduction projects continue to suffer heavily from "Kyoto risk"; that is, the risk of the Protocol not entering into force, the risk of individual countries not ratifying the Protocol and the risk of misunderstandings over a range of procedural issues such as measurement, verification, accreditation and monitoring.

The Protocol highlighted a very difficult question which continues to stymie progress: what is the appropriate methodological basis of measuring and reporting on emission levels? This question of measurement becomes even more difficult when it comes to individual

¹ The FCCC entered into force on 21 March, 1994. 186 countries have become parties to the FCCC. 3 years after entering into the FCCC, any party may withdraw on 1 year's notice.

² The CoP met for the eighth time in New Delhi on 23 October — 1 November 2002. 167 sovereign parties were represented and 4300 persons were in attendance.

³ The Protocol will not enter into force unless it is ratified by 55 parties to the FCCC including those which account for 55% of 1990 emissions. The Protocol has not been ratified by the United States and Australia. Nevertheless, if the Protocol does enter into force, the commitments of the Parties other than the transition economies are still likely to be referable to 1990 levels and the Protocol will have a retrospective effect. Annex B countries are developed countries which have agreed, subject to their ratification of the Protocol, to reduce their emissions.

emission reduction projects. This is because of the “counterfactual” nature of project baselines, against which emission reductions may be measured. A project baseline is counterfactual because it attempts to describe what would happen if the project never goes ahead — although this will not occur if the project proceeds. However, this is just one additional complication for emission reduction projects: in addition to the uncertainty of measurement, other project uncertainties are encountered, such as country risk and other typical energy project development risks.

Since 2001, ResourcesLaw International has participated in a World Energy Council (WEC) research consortium which has been studying the feasibility of early commencement of cross-border investment in GHG emission reduction projects.⁴ Early research was concerned with a wind generation project in New Zealand which could qualify as a Joint Implementation (JI) project. Current research is concerned with two potential projects in the Philippines which could qualify as Clean Development Mechanism (CDM) projects. One is a wind generation project; the other is a geothermal generation project.

Table 1 defines the main climate change terms used in this paper.

TABLE 1: SOME CLIMATE CHANGE DEFINITIONS	
Annex I Parties	Industrialised countries that, as parties to the FCCC, have pledged to reduce their emissions to 1990 levels. Annex I Parties consist of countries belonging to the OECD and countries designated as economies-in-transition.
Annex B Parties	The 39 countries that, subject to their ratification, have committed themselves under the Kyoto Protocol to quantifiable net emissions targets by 2012 (see Table 2).
Baseline Emissions	The emissions that would occur without policy intervention (in a business-as-usual scenario). Baseline estimates are needed to determine the effectiveness of emissions reduction programs (often called mitigation strategies).
Carbon Dioxide (CO₂)	The greenhouse gas whose concentration is most affected directly by human activities. CO ₂ also serves as the reference to compare all other greenhouse gases. The major source of CO ₂ emissions is fossil fuel combustion.
Carbon Dioxide Equivalent (CO_{2eq})	A measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). The CO _{2eq} for a gas is derived by multiplying the tonnes of the gas by the associated GWP. For example, if the GWP for methane is 24.5, one million tonnes of methane is equivalent to 24.5 million tonnes of carbon dioxide.

⁴ The current members of the current WEC GHG research consortium comprise the Japan Energy Association (representing its members Kansai Electric Power Company, Tokyo Electric Power Company and Tokyo Gas Company), BHP Billiton Petroleum, Chevron Oil Trading Company, ResourcesLaw International (from Australia), CRL Energy, National Institute of Water and Atmospheric Research, Solid Energy New Zealand, Wind-Flow Technology (from New Zealand) and First Philippine Energy Corporation and Philippine Geothermal (UNOCAL) (from the Philippines).

Certified Emission Reductions (CERs)	A unit of emission reduction arising from a CDM project (equivalent to one metric tonne of CO _{2eq}).
Clean Development Mechanism (CDM)	The proposed mechanism under Article 12 of the Kyoto Protocol to assist developing countries in achieving emission reductions and enable Annex I Parties to comply with their emissions commitments.
CDM Executive Board (Executive Board)	The 10-person executive board responsible for supervision of the CDM.
Conference of the Parties (CoP)	The CoP is the conference of nations which have ratified the FCCC. The primary role of the CoP is to keep the implementation of the FCCC under review and to take the decisions necessary for its effective implementation.
Emission Reduction Unit (ERU)	A unit of emission reduction arising from a JI project.
Framework Convention on Climate Change (FCCC)	The landmark international treaty negotiated at UNCED in Rio (the Earth Summit) in June 1992. The FCCC commits signatory countries to stabilise emissions "at a level that would prevent dangerous anthropogenic interference with the climate system."
International Emissions Trading (IET)	The trading mechanism under Article 17 of the Kyoto Protocol by which Annex B Parties may increase or reduce their emission targets.
Joint Implementation (JI)	The mechanism under Article 6 of the Kyoto Protocol between two or more Annex I Parties or their authorised entities to jointly reduce emissions.
Kyoto Protocol (Protocol)	The agreement under the FCCC reached in Kyoto on 12 December 1997 (but not yet in force) under which net emissions are to be reduced by Annex B Parties and which provides for emissions trading between these countries.
Reservoir	A component of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored (FCCC definition).
Sequestration	The uptake and storage of a substance.
Sink	Any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere (FCCC definition). Trees, plants, soil and oceans are natural sinks and can offset emissions.
Source	Any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere (FCCC definition).

**TABLE 2: ANNEX B TO THE KYOTO PROTOCOL:
QUANTIFIED EMISSION LIMITATION OR REDUCTION COMMITMENTS
(PERCENTAGE OF BASE YEAR PERIOD)**

Party	%	Party	%
Australia	108	Liechtenstein	92
Austria	92	Lithuania	92
Belgium	92	Luxembourg	92
Bulgaria	92	Monaco	92
Canada	94	Netherlands	92
Croatia	95	New Zealand	100
Czech Republic	92	Norway	101
Denmark	92	Poland	94
Estonia	92	Portugal	92
European Community	92	Romania	92
Finland	92	Russian Federation	100
France	92	Slovakia	92
Germany	92	Slovenia	92
Greece	92	Spain	92
Hungary	94	Sweden	92
Iceland	110	Switzerland	92
Ireland	92	Ukraine	100
Italy	92	United Kingdom	92
Japan	94	USA	92
Latvia	92		

The Three “Kyoto Mechanisms”

Under the Protocol, there are three well-known mechanisms by which Annex 1 (developed) countries will be able to satisfy their obligations:

- o Joint Implementation (JI) projects between Annex I (developed) countries
- o International Emissions Trading (IET), dependent upon an international trading regime being established, and
- o Clean Development Mechanism (CDM) projects between Annex I (developed) and non-Annex I (developing) countries.

JI Projects

The Protocol envisaged that Annex I Parties would be entitled to apply against their commitments the emission reduction units (ERUs) gained from JI projects undertaken by them during the 2008-2012 period.⁵

⁵ Article 3 paragraphs 10 and 11 of the Protocol. Although eligibility will not arise under the Protocol until 2008, parties will need to prepare JI projects well ahead of this time.

There are five conditions of eligibility for a JI project⁶:

- o the project must be approved by the developed countries involved
- o the project must actually reduce emissions or enhance sinks that would not otherwise occur
- o the acquiring country must be in compliance with its obligations under Articles 5 and 7 of the Protocol, which deal respectively with methodological reporting requirements
- o the acquisition must be “supplemental to domestic actions” to meet the acquiring country’s commitments under the Protocol and
- o the project participants must be authorised by their respective countries to take actions leading to the acquisition of the ERUs.

International Emissions trading (IET)

During the 2008 — 2012 period (the so-called “first commitment period” in which countries have committed to a net emission target), Annex B Parties will be able to participate in emissions trading.⁷ Under IET:

- o a country ‘acquiring’ (buying) ERUs will have its emission target increased by the amount of the units
- o a country ‘transferring’ (selling) ERUs will have its emission target reduced by the amount of the units and
- o countries may thus deviate from their individual emission targets by the amount of certificates bought or sold.

In principle, the idea of IET is that each Annex B Party will be issued with a bank of CO₂ emission credits. These credits will be traded like any other commodity. IET can only be established if emissions are regulated and emission rights are standardised.⁸

CDM Projects

The Clean Development Mechanism has two purposes:

- o “to assist Parties not included in Annex I (i.e. developing countries) in achieving sustainable development” and

⁶ Article 6 of the Protocol

⁷ Article 17 in conjunction with article 3 paragraphs 10 and 11 of the Protocol. The trading principles and rules have yet to be defined by the CoP. It is not (at least as yet) provided for developing countries to participate in emissions trading for the simple reason that Annex B commitments are limited to Annex B Parties.

⁸ Following the initial stage of the WEC research study which reviewed the Tararua Stage 2 Wind Farm Project in New Zealand, the New Zealand Government announced that it would issue promissory notes to enable the proponents of the project to proceed to develop the project with the assurance by the government of future entitlement to the ERUs generated by the project.

- o to enable Annex I Parties to receive credit for financing emissions-reduction projects in developing countries.

Developed country parties are thus able to comply with part of their future emission reduction commitments under the Protocol.⁹

Of the 3 Kyoto mechanisms, CDM projects have a timing (early crediting) advantage because their emission reductions (known as Certified Emission Reductions or CERs) may be created and accumulated for the first Kyoto 5 year commitment period of 2008-2012. Emission reductions from JI projects cannot be accumulated in this fashion.

CERs will be fully fungible with future ERUs that become available under both the JI and IET mechanisms. CERs, and their equivalent ERUs under JI and IET, are therefore likely to become internationally traded commodities, like tangible commodities such as coal, oil and gas.

By contrast with JI, which is based on bilateral deals between countries, the CDM is a project-based mechanism. CDM participation may involve private entities but it is supervised by the CDM Executive Board.

CDM Project Eligibility Requirements

To be eligible as a CDM project, a project must involve the transfer of environmentally-friendly technology to the host developing country and must assist it in achieving sustainable development.

At its 7th meeting in Marrakesh in 2001, the CoP adopted a comprehensive Modalities and Procedures document specifying the functions of the CDM Executive Board, how project participants could apply for project validation and registration and other relevant procedural requirements and standards.¹⁰ The Executive Board has since been established and become operational in anticipation of the Protocol entering into force.¹¹

On 29 August 2002, the Executive Board released a CDM Project Design Document specifying its requirements for:

- o determination of eligibility of projects
- o determination of project baselines
- o obtaining of approvals of the two governments concerned
- o validation of emission reductions and
- o the ultimate issue of CERs.

⁹ Article 12 paragraph 3 of the Protocol. What part and to what extent and in what manner has to be finally determined by the CoP.

¹⁰ Document FCCC/CP/2001/13/ Add.2.

¹¹ The Executive Board is located at the UNFCCC Secretariat in Bonn and comprises 10 persons who are appointed by the CoP. It first met on 10 November 2001 and, by the date of this report, had met 9 times. It has a quorum of 7 members, 3 from Annex I Parties and 4 from non-Annex I Parties.

The release of the Project Design Document removed much of the earlier uncertainty surrounding the operation of the CDM and the future production of CERs. To date, however, the Executive Board, acting through its Methodologies Panel, has not yet accepted any of the 16 methodologies for determination of project baselines that have been submitted to it. Furthermore, the Executive Board will not register a CDM project unless an application is submitted by a "designated operational entity" (DOE), being an independent firm approved as such by the Executive Board.¹²

At its most recent meeting on 8 June 2003, the Executive Board adopted "Procedures for Registration of a Proposed CDM Project Activity" (Registration Procedures). The Registration procedures require a DOE for each project to submit to the Executive Board:

- o a standardised registration and validation report form
- o the CDM Project Design Document and
- o the written approval of voluntary participation by the "Designated National Authority" of each Party involved.

Applications are made publicly available on the Executive Board website for 8 weeks before the Registration Procedures can be completed.

In summary, the Registration Procedures to be carried out by the DOE can be divided into five stages as set out in Table 3:

TABLE 3: FIVE STAGES OF CDM PROJECT REGISTRATION
Stage 1: Project Development — Screening
<ul style="list-style-type: none"> • Screen the project for eligibility
Stage 2: Project Development — Design
<ul style="list-style-type: none"> • Determine the real emissions reductions: <ul style="list-style-type: none"> • Choose the project boundary • Select the project baseline • Set the crediting period • Calculate the emissions reductions • Develop an emissions monitoring and verification protocol • Prepare an investment plan and undertake financial analysis • Prepare a project concept report

¹² The requirements for accreditation of DOEs are rigorous and quite costly in terms of technical and human resources. To date 13 firms have applied to the EB for accreditation but no applicant has yet been successful.

Stage 3: National Approval
<ul style="list-style-type: none"> • Prepare the Project Design Document • Carry out an environmental impact assessment • Obtain stakeholders' comments • Obtain all host country development and investment approvals (including approval of the Designated National Authority)
Stage 4: Project Registration
<ul style="list-style-type: none"> • Finalise the Project Design Document • Validate and register the project (after 8 weeks' availability of application to the public)
Stage 5: Project Implementation
<ul style="list-style-type: none"> • Implement the project • Monitor, verify, and certify the emissions reductions • Obtain issue of CERs from the Executive Board

The International Chamber of Commerce recently criticized the Registration Procedures as being excessively complex and involving high transaction costs. The Executive Board has decided to apply simplified, fast-track Registration Procedures to qualifying small-scale CDM projects (mainly, these will be renewable energy projects with less than 15 MW installed capacity). However, even these are sufficiently complex to put many investors off.

Kyoto's "Catch 22"

Catch 22 is a term coined over 40 years ago by Joseph Heller in his book of the same name. It originally referred to plans to achieve military missions that were perfectly possible but in the course of their execution always created an exceptional situation that frustrated the original purpose. The Concise Oxford Dictionary now defines Catch 22 as a "dilemma where victim cannot win". The CDM is Kyoto's equivalent of Catch 22: what was designed to accelerate the transfer of technology to developing countries and encourage foreign investment in sustainable development has added yet another layer of complexity and risk on top of those that already pose major hurdles for foreign investors.

Some developing countries find it extremely difficult to attract investors because of unstable political conditions, uncertain policies, inadequate legal infrastructure, weak or corrupt institutions and cumbersome procedures. These countries will find it no easier to attract foreign investment with the lure of greenhouse gas emission credits than they will without them.

CDM projects will therefore continue to be frustrated for some time by:

- (i) Kyoto risk
- (ii) country investment risk and
- (iii) all of the other project risks that are usually found in energy development projects (such as technology risk, completion risk, operating risk, market risk and financing risk).

Internationally, to date, the most prominent CDM-like initiative has been a closed-end investment fund known as the Prototype Carbon Fund (PCF). The World Bank has acted as its promoter and fund manager. The PCF has invested or has committed itself to invest up to US\$180 million in a variety of projects. These funds were subscribed by a group of 6 public and 17 private investors who bravely contributed US\$10 million and US\$5 million respectively to participate in it.

Many investors that have expended funds in cross-border emission reduction projects before the Protocol has entered into force will have done so in non-Kyoto compliant projects. This will be either because the projects do not satisfy Kyoto procedures as ultimately adopted (particularly the methodologies they have used for determination of project baselines) or because the emission reductions that they aim to generate will not coincide with the Kyoto commitment periods.

The normal time lags involved in new energy development projects, especially in the lesser-developed countries, will be exacerbated by bureaucratic CDM registration procedures. It will take some years to disburse funds in more than a handful of eligible CDM projects.

There is little doubt that the potential availability of CERs generated by eligible CDM projects will be attractive to foreign investors as a side-benefit of investing in energy projects that reduce emission levels. However, developing countries are strongly advised to accelerate their efforts to get their economic policy settings and their "legal infrastructure" in good order rather than wait for CDM projects to drop out of the sky.

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July 2003

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