Negotiating the transfer and acquisition of project-based carbon credits under the Kyoto Protocol

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INDUSTRIAL DEVELOPMENT ORGANIZATION

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Preface

After having been adopted in 1997 as a worldwide system of dealing with the exacerbating global warming problem, the Kyoto Protocol to the United Nations Framework Convention on Climate Change finally became effective on 16 February 2005. As a result, the 37 countries listed in annex B to the Protocol, including the European Union (EU) and its then member States, now have the binding obligation to reduce or limit greenhouse gas (GHG) emissions as set out in that annex for the period 2008–2012. To assist in achieving their targets, the Protocol has introduced three innovative and ambitious market-based Kyoto flexibility mechanisms: the Clean Development Mechanism (CDM), Joint Implementation (JI) and Emissions Trading (ET).

Global warming is an atmospheric problem and the impact of GHG emissions on the atmosphere is the same irrespective of where the GHGs are emitted or reduced. The flexibility mechanisms give Annex I[1] countries the possibility of fulfilling their reduction or limitation obligations by taking action either domestically, overseas or both. And, as long as they are a Party to the Protocol and satisfy certain eligibility requirements, any country in the world can host GHG emission reduction or removal activities. Reductions or removals made under CDM or JI by an Annex I country overseas, depending on the host country chosen, are recognized as credits or carbon credits, which the Protocol has defined as internationally transferable. Holders of carbon credits can use them to meet their reduction or limitation obligations under the Protocol as if the reductions or removals had been achieved at home. If holders do not need the credits, they can sell them to those who need them.

[1]Although it would be more precise to describe those countries with binding obligations under the Protocol to limit or reduce GHG emissions as "Parties included in Annex I to the Convention with a limitation or reduction commitment inscribed in Annex B to the Protocol", this publication uses the term generally in use, which is "Annex I countries". "Non-Annex I countries" are those which are Parties to the Protocol but have no limitation or reduction commitment and therefore are not listed in Annex B to the Protocol.

This means that Annex I countries and/or entities in those countries which have had the Kyoto obligation of the particular country passed on to them are given the opportunity to meet their obligation at the lowest possible cost. This is because they can either carry out reduction activities in other countries or purchase carbon credits from those who have them if the cost is lower than doing it in their own countries. This also offers developing non-Annex I countries the opportunity to host more foreign and domestic investments that incorporate modern and environmentally friendly technologies conducive to GHG emissions reduction than would have been possible without the Protocol. This is because the additional revenue obtained from the sale of carbon credits may make more investment projects financially viable. Moreover, the marginal abatement costs to investors may well be lower in developing countries where, for example, inefficiencies in energy consumption are likely to exist. In this way, the sale and purchase of carbon credits play a very critical role in delivering the benefits intended for both Annex I and non-Annex I countries, as well as in achieving the goal of the Kyoto Protocol.

However, although the market for project-based carbon credits is expanding rapidly now that the Protocol has come into force, it still appears to be far from crowded with sellers and buyers. A glance at the list of registered CDM projects as of 10 July 2006 suggests that about 75 per cent of non-Annex I countries which have ratified the Protocol have yet to host a CDM project and that there are about 50 project participants from the private sector of Annex I countries acquiring carbon credits. There may be a number of explanations for this but, in view of the rapidly expanding market, it is difficult to imagine that it is due to any lack of interest in opportunities by businesses, either as potential sellers or buyers. The fact that the Kyoto Protocol regime is still new and that the sale and purchase of carbon credits is an emerging business paradigm in many parts of the world is certainly one reason for the present situation. It would not be surprising to find that a large number of businesses are still wary of the idea of carbon credits simply because they are a novel trade commodity. This, coupled with the fact that credits are not tangible and do not physically exist, may well lead to queries such as:

- What is really being bought and sold?
- How are carbon credits delivered?
- How much should be paid and when?

- Who can produce carbon credits?
- What are the risks involved?
- What has to be negotiated and agreed upon for an effective deal?

These queries and many more in other areas are completely understandable. The primary objective of this publication is to answer these and other questions as fully as possible by providing would-be sellers and buyers from both Annex I and non-Annex I countries with information on the explicit and implicit rules of the Protocol and its subsequent decisions, as well as the legal and contractual issues and implications relevant to the sale and purchase of carbon credits. This should assist them in pursuing the opportunities available under the Protocol. In line with that objective, the structure of this book deals, in separate chapters, with the major terms of a typical contract, after a summary in the first two chapters of the background and introductory information on the Kyoto Protocol and its regime as a foundation for the legal and contractual discussions to follow.

The readers primarily targeted are entrepreneurs in both Annex I and non-Annex I countries who may be unfamiliar with the Protocol regime but who wish to inform themselves about the rules of the game and the legal and contractual issues in order to prepare themselves for entering the market to buy or sell carbon credits. However, this publication should also assist policymakers and government officials in developing countries to identify and address barriers to domestic and foreign investment as a means of promoting their countries' sustainable development.

The ultimate goal of this publication is, naturally, in line with the mandate of the United Nations Industrial Development Organization (UNIDO). This mandate is to assist developing countries and countries with economies in transition in their industrialization efforts, to enable them to enhance their capacities for promoting sustainable industrial development for growth and for the alleviation of poverty. With this mandate as the paramount guiding principle, the areas that UNIDO has been addressing with its expertise encompass the promotion of investment and technology transfer, the enhancement of accessibility to reliable and affordable energy, the facilitation of cleaner and more sustainable production and the protection of environmental resources, to name a few. The ultimate wish of the authors of this publication is to contribute to the promotion of investment and to accelerate the transfer of technology to developing countries and countries

with economies in transition in pursuit of their sustainable development as the result of an intensification of transactions in carbon credits.

Some important points should be emphasized:

(a) This book concentrates on transactions involving forward carbon credits, in other words transactions where the parties to a contract agree to buy or sell carbon credits to be generated and delivered in the future. As a result, it does not deal either with transactions involving carbon credits already issued for immediate delivery on the spot market or with derivatives in the form of option contracts or future contracts through the developing exchange markets.

(b) Whether dealing with the Kyoto Protocol regime or with domestic administrative and legal regimes, this fascinating new area of commerce is still evolving and it is advisable that new developments which may affect current understanding and/or interpretation be followed closely.

(c) Although it deals with contractual and legal matters, this book is not intended to provide legal advice. Parties wishing to negotiate a contract are strongly advised to seek legal advice before concluding an agreement.

Readers who wish to send us comments and suggestions to be considered in future updates of the book should contact us at the address below.

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Contents

Abbreviations

AAU	Assigned Amount Unit
AIE	Accredited Independent Entity
AR	afforestation and reforestation
CDCF	Community Development Carbon Fund
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CERUPT	Certified Emission Reduction Unit Procurement Tender
CO_2	carbon dioxide
COP	Conference of the Parties
COP/MOP	Conference of the Parties serving as the Meeting of the Parties
DFP	Designated Focal Point
DOE	Designated Operating Entity
EB	Executive Board
EEA	European Environment Agency
EIT	Economy in Transition
ERPA	Emission Reduction Purchase Agreement
ERU	Emission Reduction Unit
ERUPT	Emission Reduction Unit Procurement Tender
ET	Emissions Trading
EU	European Union
EU ETS	European Union Emissions Trading Scheme
FDI	foreign direct investment

GHG	greenhouse gas
GWP	global warming potential
IASB	International Accounting Standards Board
IEA	International Energy Agency
IETA	International Emissions Trading Association
IFRIC	International Financial Reporting Interpretations Committee
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
l-CER	long-term CER
LULUCF	Land Use and Land-Use Change and Forestry
MA	Marrakesh Accords
MOP	Meeting of the Parties
PCF	Prototype Carbon Fund
PDD	Project Design Document
RMU	Removal Unit
SOP	Share of Proceeds
t-CER	temporary CER
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
VAT	value added tax
WMO	World Meteorological Organization

Chapter 1

TRANSFER AND ACQUISITION OF PROJECT-BASED CARBON CREDITS

What are carbon credits and why trade them?

INTRODUCTION

Both this chapter and the next provide short explanations of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and its flexibility mechanisms and the background to these, as preparation for discussing the contractual and legal issues relating to the transfer and acquisition of project-based carbon credits covered in the following chapters. This chapter begins with the basic problem of global warming caused by greenhouse gases (GHGs) and the international framework of the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol set up to address the problem. It then provides an outline of the three flexibility mechanisms of the Protocol – the Clean Development Mechanism (CDM), Joint Implementation (JI) and Emissions Trading (ET) – and illustrates compliance with the Kyoto obligation to reduce GHG emissions by using allowances and carbon credits, referred to here collectively as Kyoto units. The permissible maximum volume of emissions for any country with a Kyoto obligation is controlled by the issue of allowances and that country may not emit more than the volume of allowances it holds, unless it can acquire more. The idea behind the Kyoto flexibility mechanisms is that, as global warming is an atmospheric problem covering the entire globe, it does not matter where a reduction in the concentration of greenhouse gases occurs, so long as a reduction does occur. Therefore, the Protocol offers a certain amount of flexibility in the way a country can meet its Kyoto obligations by permitting the transfer of allowances from a country with a surplus of allowances to a country that requires more allowances for compliance with its obligation. This possibility effectively attaches an economic value to the allowances. Another flexibility offered is to permit a country to carry out greenhouse gas reduction activities even in other countries, especially where it is less costly to achieve GHGs removal or emissions reduction. Any removal or emissions reduction achieved is then recognized by the issuance of carbon credits, which are internationally transferable. It follows that a holder of carbon credits can use them to offset GHG emissions by the amount represented by the credits as if the reduction had occurred at home. Due to their transferability, so long as an economic demand for them exists, carbon credits represent an economic value. Finally, this chapter looks at the implications of the Kyoto Protocol for both Annex I and non-Annex I countries.

1.1 Global warming

1.1.1 What is global warming?

Global warming and climate change both refer to an increase in average global temperatures. Records of surface temperatures over the last century show that there has been a gradual increase in average temperatures around the world. Although some of this is due to natural causes, it has also been argued that human activities that produce greenhouse gases and that alter the earth's surface may be accelerating the warming process.

In 2001, the *Third Assessment Report* of the Intergovernmental Panel on Climate Change (IPCC), which was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), stated that, during the course of the twentieth century, the average global surface temperature had increased by 0.4–0.8°C.[1] Current climate models predict a rise in global temperatures of 1.4–5.8°C between 1990 and 2100, which would be higher than any century time scale trend for the past 10,000 years.[2] The mean sea level has already risen between 10 cm and 20 cm; by 2100, the average sea level is predicted to rise 9 cm to 88 cm.[3]

If the predictions above actually come true, this is likely to result in many changes to earth systems (weather patterns, water resources, the cycle of seasons, ecosystems, extreme climate events, etc.) and these changes will inevitably have an effect on human welfare. This will be seen, in particular, in the spread of the earth's tropical regions with a possible increase in tropical diseases such as malaria and a change in rainfall patterns. The latter would be associated with an increase, on the one hand, of the threat of drought and desertification, and on the other hand, of flooding, in particular in many low-lying coastal areas. All of these changes would affect the supply of food and water, as well as have other economic consequences.

[1] IPCC (2001), *Climate Change: The Scientific Base*, page 2.
[2] UNEP and UNFCCC (2002), *Climate Change Information Kit*.
[3] Ibid.

1.1.2 What are greenhouse gases (GHGs)?

GHGs are chemicals present in the atmosphere that have certain radiation blocking properties which trap the sun's energy in the earth's atmosphere, creating a type of insulation. This leads to higher temperatures on earth than would otherwise occur. They are defined by UNFCCC (see section 1.2.1) as "those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation".[4]

Annex A of the Kyoto Protocol lists six main greenhouse gases that urgently need to be reduced or limited:

Carbon dioxide (CO_2)
Methane (CH_4)
Nitrous oxide (N_2O)
Hydrofluorcarbons (HFCs)
Perfluorcarbons (PFCs)
Sulphur hexafluoride (SF_6)

The last three GHGs are referred to collectively as fluorinated carbons. The factors that compare the relative contribution of each GHG to the global warming effect with carbon dioxide as the reference gas are referred to as the global warming potentials (GWPs, see section 4.4.1).

1.2 International framework to address the problem

1.2.1 United Nations Framework Convention on Climate Change (UNFCCC)

In May 1992, following IPCC's *First Assessment Report* in 1990 calling for a global treaty to address the global warming problem, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted. It was opened for signature in June 1992 at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro and, as of 24 May 2004, it had been ratified by 189 parties, including the European Economic Community. The Convention is the legal framework which encourages countries that are Parties to the Convention to start the process

[4]UNFCCC, article 1, para. 5.

of stabilizing GHGs in the atmosphere. Since 1994, when the Convention entered into force, the Parties have met every year to define and implement the framework despite the fact that the Convention did not include any obligation on the Parties to achieve any specific targets. There is a loosely defined target in article 4, paragraph 2, which obliges Annex I countries – mostly developed countries and countries with economies in transition – to reduce or limit GHG emissions so as to return to "earlier levels"[5] by the year 2000. But as the target was not clearly expressed in the Convention, it was not considered to be binding. The Convention only "establishes a framework and a process for agreeing specific actions later" and leaves it to the Parties to either weaken or strengthen the treaty by adopting amendments or protocols based on more recent scientific research.[6]

The Conference of the Parties (COP) is the supreme body of the Convention and is responsible for the decision-making necessary for the effective implementation of the Convention. At the First Conference of the Parties (COP 1), which took place in 1995 in Berlin, recognition of the fact that the Convention did not oblige the Parties to reduce or limit GHG emissions led to the decision to work towards adopting such reduction or limitation obligation in a protocol or a legal instrument by the Third Conference of the Parties. This decision – part of the Berlin Mandate – gave rise to the Kyoto Protocol, which was adopted in Kyoto at the COP 3 on 11 December 1997, after intense discussion.

1.2.2 Kyoto Protocol

Unlike UNFCCC, the Kyoto Protocol created specific goals for the reduction or limitation of GHGs that each participating country has to achieve within a certain time period, called the "commitment period". The Kyoto Protocol has two annexes: annex A sets out the six GHGs and the various sectors/source categories to be addressed and annex B lists each country's reduction or limitation obligation. The Protocol obligates countries listed in annex B, which are virtually the same as those listed in annex I of the UNFCCC (see table 1.1 and the appendix to this publication), to achieve specific targets, defined under annex B as the percentage

[5] UNFCCC, article 4, para. 2 (a).

[6] UNEP/WMO (1994), *Information Unit on Climate Change*.

reduction or limitation in relation to the base year of 1990 to be met during the first commitment period of 2008 to 2012. There are different base years for some countries with economies in transition. Although it would be more precise to describe those countries with binding obligations under the Protocol to limit or reduce GHG emissions as "Parties included in

Table 1.1 Percentage reduction/limitation commitment during the first commitment period, 2008–2012

Annex I countries with a reduction/ limitation commitment	*Annex B reduction or limitation commitment as percentage of base year or period*	*Reduction or limitation commitment as percentage change from the base year or period*
European Union, Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Monaco, Romania (1989), Slovakia, Slovenia (1986), Switzerland	92	–8
Canada, Hungary (average of 1985–1987), Japan, Poland (1988)	94	–6
United States	93	–7
Croatia	95	–5
New Zealand, Russian Federation, Ukraine	100	+/–0
Norway	101	+1
Australia	108	+8
Iceland	110	+10

Notes:
(a) The year in parenthesis indicates the base year for the country.
(b) For fluorinated carbons, Annex I countries may use 1995 as the base year.[7]
(c) Hungary's base year for GHGs other than fluorinated carbons is the average recorded between 1985 and 1987.
(d) EU member States agreed to redistribute their targets through the Burden-sharing Agreement of the EU. The 15 member States at the time were: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom.
(e) Australia and the United States have not ratified the Kyoto Protocol.

[7]Kyoto Protocol, article 3, para. 8.

annex I to the Convention with a limitation or reduction commitment inscribed in annex B to the Protocol", this publication uses the term generally in use which is "Annex I countries". "Non-Annex I countries" are those which are Parties to the Protocol but have no limitation or reduction commitment and therefore are not listed in annex B of the Protocol.

The Kyoto Protocol was designed to become effective 90 days after at least 55 Parties to the Convention had deposited their instruments of ratification, acceptance, approval or accession, those Parties representing at least 55 per cent of the Annex I Parties' 1990 total carbon dioxide emissions. On 18 November 2004, the Russian Federation deposited its instrument of ratification with the United Nations Secretary-General as the 128th Party, representing 61.6 per cent of total emissions. The Protocol became legally binding on 16 February 2005.

Once the Protocol came into force, the Conference of the Parties (COP) to the Convention started serving as the Meeting of the Parties (MOP), envisaged as the decision-making body under the Protocol. This first COP/MOP was convened in Montreal in December 2005, to start making decisions on the various matters set out for MOP in the Protocol.[8]

There are two approaches to reducing GHGs in the atmosphere:

(a) Reducing GHGs emissions at source, and

(b) Removing by sinks, or sequestration, of carbon dioxide in the air by photosynthesis.

1.3 What are the Kyoto mechanisms?

To meet its goal, the Kyoto Protocol imposed GHG emission limitation or reduction obligations on Annex I countries. But since global warming is an atmospheric problem that covers the entire earth, it does not matter where or how the reduction of GHGs occurs or who achieves it. One metric ton[9] of GHG reduction in Canada, for example, has exactly the same effect in

[8]Kyoto Protocol, article 13.

[9]More precisely, "one metric ton CO_2 equivalent". See section 4.4.

terms of global warming mitigation as one metric ton of GHG reduction in Mozambique. Thus, it makes a great deal of economic sense to carry out GHG reduction activities in the least costly places in the world, if the reduction is recognized by the issuance of internationally transferable carbon credits to meet the reduction obligation at home (see below). It also makes economic sense to encourage an entity that can achieve GHG reduction in the most cost-effective way to do so and to allow it to transfer the carbon credits achieved to another entity that needs them. This is the basic concept of the Kyoto mechanisms.

The marginal abatement costs to reduce GHGs by one additional metric ton vary from one country to another. As an example, take the efficient use of energy as a source of GHG emissions. Here the costs tend to be higher in developed countries because, as a general rule, they already use energy efficiently. Increasing the energy efficiency of an industry in a developing country may well cost less than in a developed country. Therefore, Annex I countries may wish to partly[10] fulfil their reduction obligations in those countries where the marginal abatement cost is lower than at home. From the perspective of non-Annex I countries, this is likely to result in new investment as well as the transfer of technology for the sustainable development of the country, while at the same time helping Annex I countries to comply with their Kyoto obligations.

Below are the three flexibility mechanisms or market-based mechanisms under the Kyoto Protocol, known as the Kyoto mechanisms:

(a) Clean Development Mechanism (CDM), based on article 12 of the Protocol. This is where emission reductions at source or sequestration are achieved by projects carried out in non-Annex I countries with the credit for reduction, Certified Emission Reduction (CER, see section 1.4), being transferred to Annex I countries.

(b) Joint Implementation (JI), based on article 6 of the Protocol. This is where emission reductions at source or sequestration are achieved by

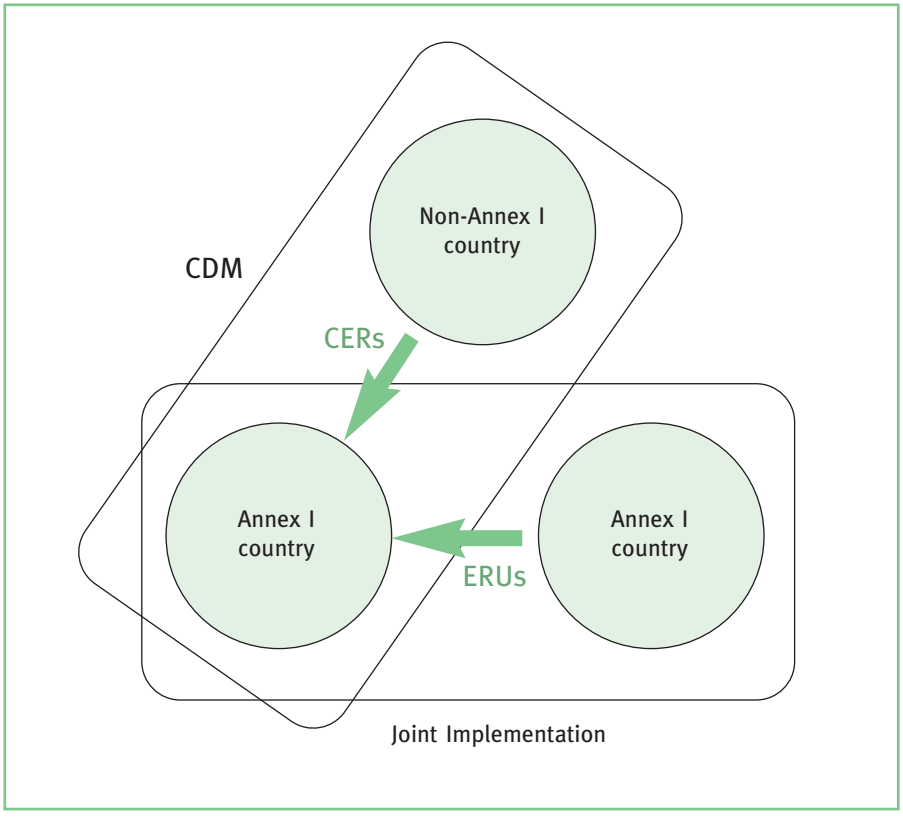
[10]The use of the Kyoto mechanisms (CDM, JI and ET) shall be supplemental to domestic action and domestic action shall thus constitute a significant element of the effort made by each Annex I country. MA Decision 15/CP.7 (Addendum, Volume II, page 2, Preamble) available at http://unfccc.int/resource/docs/cop7/13a02.pdf. All the URLs in footnotes as well as References were valid and accessible as of 21 July 2006 unless otherwise mentioned.

projects carried out in Annex I countries with the credit for reduction, Emission Reduction Unit (ERU, see section 1.4), being transferred to other Annex I countries.

(c) Emissions Trading (ET), based on article 17 of the Protocol. This is where Annex I countries may acquire Assigned Amount Units (AAUs, see section 1.4), Removal Units (RMUs, see section 1.4), CERs and ERUs by trading with other Annex I countries.

Figure 1.1 shows the geographic difference between CDM and JI projects, depending on whether the host country of an eligible project is an Annex I country (JI) or a non-Annex I country (CDM). Emissions Trading among Annex I countries is a mechanism for the trading of Kyoto units already issued and therefore is not based on projects.

Figure 1.1 Geographical difference between CDM and JI



1.4 Kyoto units and compliance with the Kyoto obligations

1.4.1 Assigned amount and Assigned Amount Units (AAUs)

The assigned amount may be described as the amount of GHGs an Annex I country may emit during the first commitment period in compliance with its Kyoto obligation. Any Annex I country will be considered to have complied with its Kyoto obligations if the actual volume of GHG emissions is equal to or less than the assigned amount the country holds at the end of the first commitment period (2008–2012).

The Marrakesh Accords, which contain the decisions reached at COP 7 held at Marrakesh, Morocco, in 2001 regarding the principles, guidelines and modalities of the Kyoto mechanisms,[11] created an Assigned Amount Unit (AAU) for the purpose of accounting for the assigned amount, which is equal to one metric ton of CO_2 equivalent, calculated using global warming potentials (see chapter 4). The initial assigned amount is allocated using AAUs pursuant to the Annex I Party's commitment inscribed in annex B to the Protocol. For example, the initial amount for an Annex I country committed to a 6 per cent reduction over the first five-year commitment period relative to the actual emissions of 10,000 metric tons of CO_2 equivalent in the base year of 1990 is calculated as follows:

> (Total volume of GHG emissions in metric tons CO_2 equivalent in base year 1990) $\times$ (100 per cent – 6 per cent) $\times$ 5 years = 10,000 metric tons CO_2 equivalent $\times$ 0.94 $\times$ 5 = 47,000 metric tons CO_2 equivalent. Thus, 47,000 AAUs will be issued to the particular country.

It is possible that the assigned amount initially allocated to an Annex I country may increase or decrease later on. Under the Kyoto Protocol, this is achieved by Annex I countries using the Kyoto mechanisms, trading parts of their assigned amount amongst themselves and/or earning GHG reduction units (see below) issued to recognize GHG reductions achieved.

[11] The relevant decisions in the Marrakesh Accords of 2002 were actually adopted as recommendations by COP 7 to the first COP/MOP 1 to be convened after the coming into force of the Kyoto Protocol to be adopted in the drafts attached to them. The relevant Decisions 15/CP.7, 16/CP.8, 17/CP.7, 18/CP.7, and 19/CP.7 of the Marrakesh Accords were adopted by COP/MOP 1 (refer to UNFCCC Document FCCC/KP/CMP/2005/3/Add.3 and FCCC/KP/CMP/2005/3/Add.4).

1.4.2 GHG reduction units

The Marrakesh Accords define three different types of GHG reduction units, depending on where and how the GHG reduction is achieved in accordance with the relevant provisions:

(a) A Certified Emission Reduction (CER)[12] is a unit issued to recognize a GHG reduction achieved in a non-Annex I country under a CDM project in accordance with article 12 of the Protocol and is equal to one metric ton of CO_2 equivalent.

(b) An Emission Reduction Unit (ERU) is a unit issued to recognize a GHG reduction achieved in another Annex I country under a JI project in accordance with article 6 of the Protocol and is equal to one metric ton of CO_2 equivalent.

(c) A Removal Unit (RMU) is a unit issued to recognize a GHG reduction achieved by sinks from Land Use, Land Use Change and Forestry (LULUCF) activities in the Annex I home country and is equal to one metric ton of CO_2 equivalent.[13]

In this publication, the terms "carbon credits" and "project-based carbon credits" are used to refer to the project-based emission reductions achieved under CDM or JI in the form of CERs and ERUs. These four Kyoto units – CER, ERU, RMU, AAU – are fungible in that they are interchangeable and can be transferred as equal units, independently of how they are created.

1.4.3 Compliance

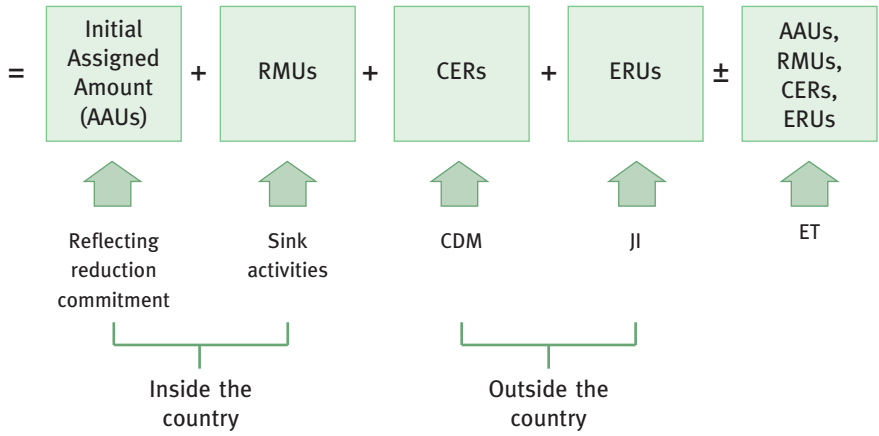
Under the Kyoto Protocol, compliance and non-compliance can be demonstrated by using the Kyoto units as set out below:

An Annex I country has complied with its Kyoto obligations if, at the end of the first commitment period of 2008 to 2012,

[12]COP 9 (December 2003 in Milan) introduced two new types of CERs, temporary CERs (t-CERs) and long-term CERs (l-CERs), to recognize GHG reductions removed in non-Annex I countries by sinks from afforestation and reforestation projects.

[13]Kyoto Protocol, article 3, para. 3, and MA Decision 19/CP.7 (Addendum, Volume II, page 62, para. 25).

A ≤ B and it has failed to comply if, at the end of the first commitment period of 2008 to 2012,
A > B, where:
A = Volume of actual GHG emissions from 2008 to 2012, and
B = Ending balance of assigned amount the country holds.



(a) The term "ending balance of assigned amount" is used to differentiate from the initial assigned amount and refers to the volume of the assigned amount an Annex I country holds at the end of the commitment period, taking into account any increase or decrease in the initial assigned amount. Such increase or decrease is the result of the acquisition or transfer of Kyoto units during that commitment period (see below).

(b) The AAUs and the RMUs in the first two boxes to the right of the equal sign in the equation above represent firstly, the initial allocation of AAUs issued to the Annex I country based on its reduction commitments in annex B and secondly, RMUs from reduction by sequestration in the country as reviewed by an expert review team.[14] The next two boxes of CERs and ERUs represent the project-based carbon credits the Annex I country has earned through CDM and JI activities outside the country.

Under the Protocol, any reduction outside the country is a deemed reduction within the country. Therefore, at the end of the commitment period, when comparing the volume of actual GHG emissions with the ending balance of the assigned amount a country holds, the GHG reduction units earned

[14]Kyoto Protocol, article 8.

outside the country (CERs and ERUs) will always have to be added to the assigned amount a country holds at that time. In explanation, the other method of using units earned outside the country would be to deduct them from the volume of actual GHG emissions of that Annex I country.

(c) The last box of AAUs, RMUs, CERs and ERUs represents the total sum of these Kyoto units transferred or acquired by way of Emissions Trading with other Annex I countries. If the country acquires more than it transfers, the net effect for that box will be a plus and, vice versa, if it transfers more than it acquires, the net effect will be a minus.

1.5 Implications of the Kyoto Protocol for Annex I and non-Annex I countries

As seen so far, in meeting their obligations to reduce or limit GHG emissions under the Kyoto Protocol, Annex I countries and/or any entities which have assumed their country's obligation under domestic laws based on the Protocol are allowed to emit GHGs only to the extent that they hold sufficient Kyoto units to cover the emissions. Should an Annex I country or its entity wish to expand its industrial activities to meet a greater market demand for its products and therefore increase GHG emissions, it can only do so if it has or is likely to be able to acquire enough Kyoto units to cover the expected increase in emissions. Under the Kyoto regime, the country and its entity will need to develop strategies and plans to cope with this new business environment while maintaining or even enhancing its long-term industrial competitiveness.

In meeting their obligations to reduce GHGs under the Kyoto Protocol, Annex I countries or their entities assuming such an obligation have the following options:

- To achieve the reduction in some way in their own country
- To invest in or finance[15] projects outside their own country to achieve GHG reductions and agree to acquire project-based carbon credits under CDM or JI

[15] See section 3.1.

- To acquire AAUs, RMUs, ERUs or CERs, either domestically or internationally, from other Annex I countries through ET

Annex I countries or their entities should examine the alternatives above carefully and make the best possible decision, taking into account all relevant commercial and economic risks and benefits.

Once a decision has been made to acquire carbon credits from others to meet a Kyoto Protocol obligation, there are two types of markets in which to do so: the primary market and the secondary market. In this publication, the primary market refers to direct transactions between countries or entities that produce for transfer project-based carbon credits to be generated in the future, also known as "forward carbon credits", and countries or entities in need of these either to meet their own Kyoto obligations or for possible resale by the transferee after delivery of the credits. The secondary market, in this publication, refers to transactions where Kyoto units which have already been issued change hands between buyer and seller with immediate delivery. This publication focuses mainly on the transfer and acquisition in the primary market of forward project-based carbon credits which will be generated, issued and transferred at a future date. There are in fact considerable differences in the commercial and legal implications between the trade in the primary market, which is dealt with in this publication, and the trade of carbon credits in the secondary market.

For non-Annex I countries, the CDM regime provides various opportunities. As the marginal abatement costs of GHG reductions may be lower in developing countries, it offers these countries opportunities to attract foreign direct investment (FDI) and/or to obtain external capital to finance domestic investment, both of which can result in the generation and transfer of carbon credits for a price. For project developers, carbon credits represent an incentive to turn a project which may not have been financially viable into one that is. From the socio-economic perspective of host countries, investment means the generation of employment and income conducive to reducing poverty. Moreover, GHG reductions cannot occur without the transfer of enabling modern and environmentally friendly technology to the host country. Investments in the energy sector can result in the additional production of energy in sustainable ways, the increased efficiency in energy consumption, the diversification of energy sources and/or rural electrification, depending on the type of CDM project.

ET is not discussed to any great extent in this publication, even though it is one of the three Kyoto flexibility mechanisms – together with CDM and JI – whereby AAUs, RMUs, CERs and ERUs are traded. The reason for this is that ET is not project-based and does not generate any of the four Kyoto units above.

Chapter 2

PROCEDURES FOR GENERATING CARBON CREDITS

How are carbon credits generated and issued?

INTRODUCTION

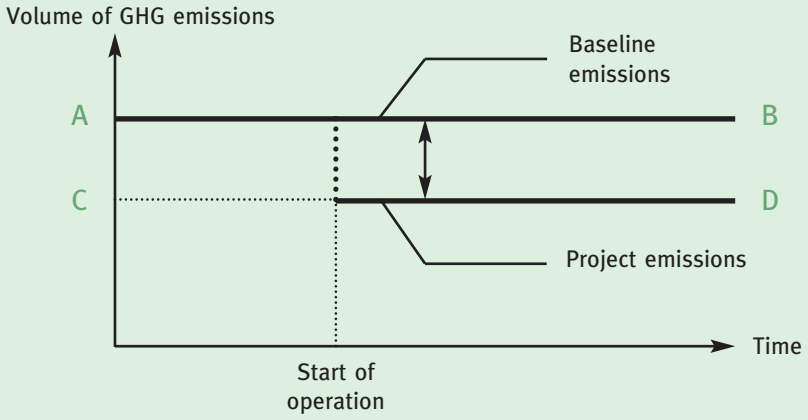
The previous chapter dealt with what carbon credits are and why they are traded under the Kyoto Protocol regime. In this chapter, the question of how project-based carbon credits are produced and issued is addressed through an explanation of both the basic concepts required for project eligibility and the project cycles of Clean Development Mechanism (CDM) projects, as well as Joint Implementation (JI) projects. In the first part of this chapter, the three basic concepts for determining project eligibility – baseline, additionality and sustainable development – are described briefly. Since no carbon credits are issued unless the particular project has been approved to do so, an understanding of these basic eligibility concepts is important. Eligibility is achieved by registration under the Kyoto Protocol regime at an early stage of the project cycle based upon an appropriately selected baseline and a successful demonstration of additionality, as well as confirmation by the host country that the project is conducive to its sustainable development (in the case of a CDM project). The amount of carbon credits a project can expect is the difference between the hypothetical emissions under the acceptable baseline scenario and the emissions expected from the project.

The chapter goes on to cover the process of production and issuance of carbon credits for both CDM and JI projects. The project cycle of a CDM project differs from that of a JI project, which could follow one of two paths: track one or track two. Understanding the project cycles of both CDM and JI projects is essential when planning the projects and/or the transfer or acquisition of carbon credits from those projects, not only with regards to the actual steps to be followed, but also to become knowledgeable about their implications for at least three reasons. First, the cycles show who the main players are and their roles. Secondly, it should be possible to identify certain risks that may affect the generation and delivery of carbon credits and, at the same time, to form an idea of how such risks can be avoided or mitigated. Thirdly, the project cycles indicate when it is advisable to start negotiating the transfer and acquisition of forward carbon credits, when to finalize the deal and probably many other matters. Finally, the chapter provides a few selected examples of potentially eligible CDM projects.

2.1 Basic concept: baseline

The baseline is the hypothetical (sometimes referred to as the counterfactual) situation that reasonably represents what would happen to GHG emissions in the absence of the proposed CDM or JI project. The emission levels of this hypothetical scenario are called the project's baseline emissions. Thus, for a project to be eligible as a CDM or JI project activity, its expected emission levels must be lower than the baseline emissions. The difference between the two is the expected mitigation effect of the project that will be recognized by the issuance of carbon credits expressed in terms of metric tons of CO_2 equivalent (see figure 2.1). The baseline is not only a very important concept in determining the eligibility of a proposed project, but it also provides a basis from which to calculate the volume of carbon credits that can be issued. As such, it is scrutinized at the time of the project's registration under the Kyoto regime. The justification of a particular baseline is a critical step in obtaining approval of the proposed CDM or JI project. In an attempt to assist project developers to select the correct baseline scenario from a set of

Figure 2.1 Volume of carbon credits



AB = baseline emissions per unit of production
CD = project emissions per unit of production
AC = expected volume of carbon credits per unit of production

alternatives, the Methodology Panel of the CDM Executive Board put together the *Draft Optional Baseline Scenario Selection Tool* (BSST) and agreed, at its 19th Meeting in February 2006, to recommend it as an optional tool.[1]

2.2 Basic concept: additionality

CERs and ERUs will be issued only from those project activities that achieve additional reductions to any that would have occurred in the absence of proposed CDM or JI project activities.[2] Project developers are required to demonstrate that their project will produce additional reductions. This additionality criterion ensures the environmental integrity of the Kyoto Protocol and avoids awarding carbon credits to projects that would have been undertaken anyway. Despite its importance, however, the additionality criterion has caused contention due to the absence of any clear definition of "additionality" in the Protocol and its subsequent decisions. Depending on the rationale used in interpreting the requirement, it can be applied narrowly or broadly. This has significant implications for the project developers with respect to their burden of demonstrating additionality. The CDM Executive Board addressed this issue by releasing a *Tool for the Demonstration and Assessment of Additionality* in October 2004 (see section 2.2.2). Later, in March 2006, the Board called for public input for new proposals to demonstrate additionality, including options to combine the selection of the baseline scenario and the demonstration of additionality, and proposals to improve the *Tool*, which indicates that this issue is still evolving. One of these new proposals[3] comes from the International Emissions Trading Association (IETA), which states that, once the baseline has been appropriately selected, additionality can be demonstrated by showing that the proposed project is different from the baseline and its expected emissions will be lower than the baseline emissions. The Board has not yet come to a decision on this. In the meantime, below is a short overview of the components of additionality which have been discussed in past debates, some of which can be found in the *Tool*.

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[1] Report of the 19th Meeting of the Methodology Panel, annex 9, available at http://cdm.unfccc.int/Panels/meth/Meth19_repan_09_Baseline_selection_tool.pdf.

[2] Kyoto Protocol, articles 6 (1) and 12 (5).

[3] Available at http://cdm.unfccc.int/public_inputs/meth_bsl_tool/.

2.2.1 Five aspects of additionality

To show how this issue has evolved to date, the components that have been considered to constitute additionality are listed below (although they are sometimes referred to with different names). These components were discussed, in particular, around the time of COP 7 in 2001 when determining how additionality should be implemented. This list is perhaps the widest spectrum of additionality components and there were disagreements among the representatives of the Parties to the Protocol as to whether all or only some of these were relevant.

(a) Emissions additionality ensures that any reduction in emissions is additional to what would occur without the proposed project and is sometimes referred to as "environmental additionality".

(b) Financial additionality ensures that any public funding from Annex I countries for the CDM project is additional and not a diversion of their official development assistance (ODA).[4] The funds are additional if they come from the private sector or if they are separate from any ODA obligation and do not result in its diversion.

(c) Investment additionality ensures that the investment project is additional in that it would not take place in the absence of a CDM or JI project. There are financial and non-financial aspects to this component. For example, there is a financial implication when a company expects a threshold rate of return upon new investments of 10 per cent, the rate of return for a planned project is 8 per cent without the proceeds from the transfer of carbon credits under CDM, but this rate of return upon investment rises to 12 per cent once the proceeds are added and it therefore clears the threshold. Investment would take place only if it is approved as a CDM project, which can be seen as a clear case of additionality. Examples of non-financial aspects are the barriers that prevent investment even when a financial analysis indicates viability. One barrier is the presence of possible risks. Even though the financial analysis clears the threshold of 10 per cent, a potential investor may not go ahead if the technology to be employed is new and untried, with the accompanying risk of not working properly. This barrier may be overcome if the expected rate of return increases due to the

[4] MA Decision 17/CP.7 (Addendum, Volume II, page 20, preamble).

proceeds from the transfer of carbon credits, allowing the potential investor to decide it is worthwhile taking the risk.

(d) Legal additionality ensures that the project is additional to what is mandated by laws or regulations.

(e) Technical additionality ensures that superior technology[5] is used and that it would have been impossible to transfer such technology without the CDM project.

2.2.2 Tool for the Demonstration and Assessment of Additionality

The *Tool for the Demonstration and Assessment of Additionality*[6] issued by the CDM Executive Board should help project developers in assessing whether a proposed project meets the additionality requirements or not. This *Tool* may be the first and only official information made publicly available so far in a comprehensive manner on the issue of additionality. It comprises an in-depth explanation, as well as a summary in the form of a flowchart (see figure 2.2). The Executive Board encourages the use of this *Tool* but does not rule out the possibility of adjusting the *Tool* or the need for new tools, depending on the type of project.[7] The *Tool* seems to be used widely for the preparation of Project Design Documents (see below).

As illustrated in the flowchart, the *Tool* shows how additionality can be successfully demonstrated by clearing each step. Before each step is cleared, no further progress can be made. The steps include:

(a) Identification of alternatives to the project activity with explanation of why these alternatives cannot be implemented.

(b) Investment analysis to show that the proposed project activity is not the most economically or financially attractive and cannot be implemented without the issuance of carbon credits.

(c) Barrier analysis to identify barriers that could prevent implementation.

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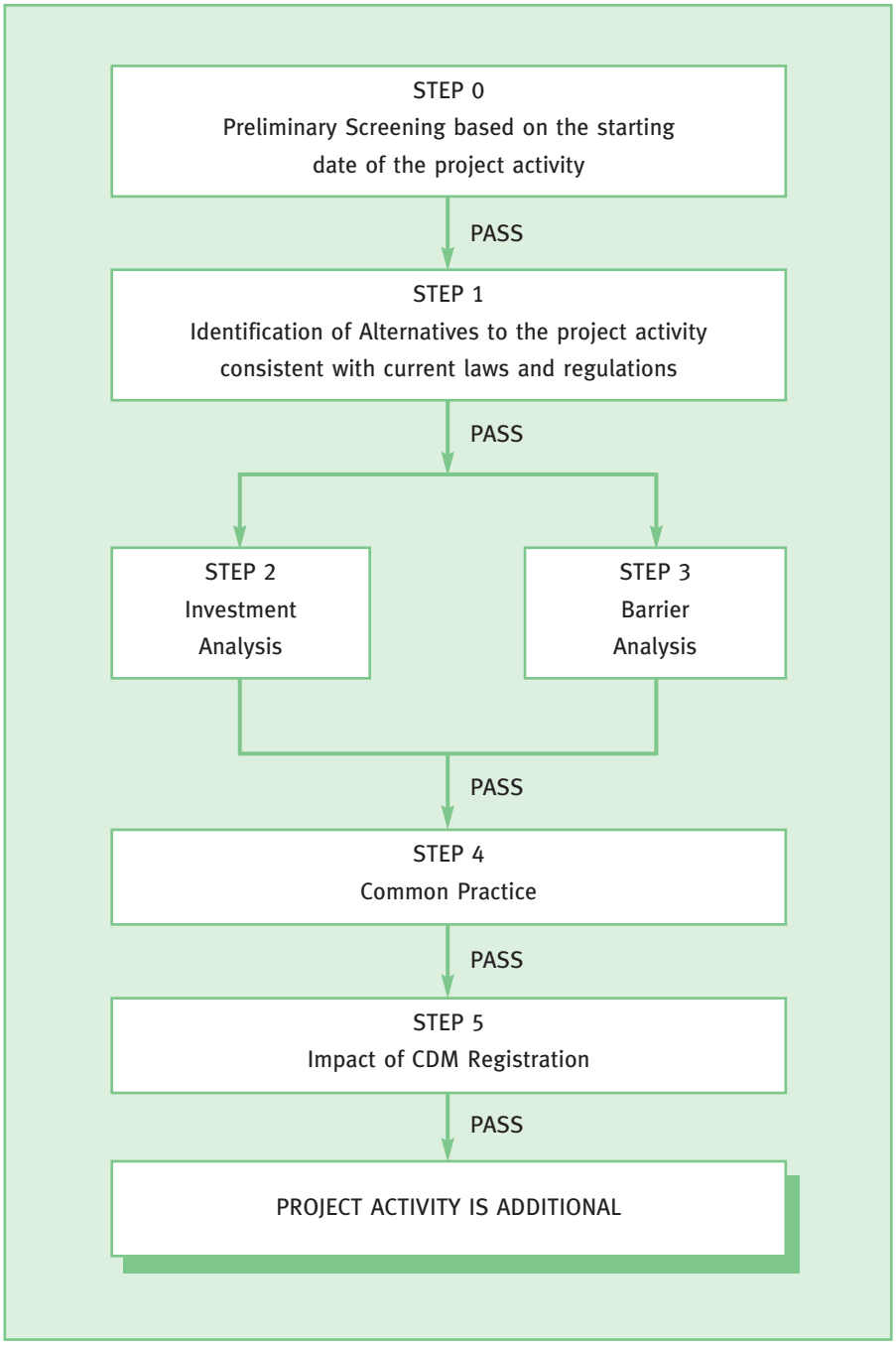
[5] MA Decision 17/CP.7 (Addendum, Volume II, page 37, para. 48).

[6] Report of the 16th Meeting of CDM EB dated 22 October 2004, annex 1 available at http://cdm.unfccc.int/EB/Meetings/016/eb16repan1.pdf.

[7] Report of the 16th Meeting of CDM EB, annex 1, page 1 available at http://cdm.unfccc.int/EB/Meetings/016/eb16repan1.pdf.

Figure 2.2 Flowchart: Additionality Scheme



Source: CDM EB 16th Meeting Report Annex 1, page 9.

(d) Common practice test to ensure no technology or practices similar to those used in the proposed project are already being used or carried out in the sector or region.

(e) Positive impact of registration of the proposed project activity as a CDM project activity to overcome the financial hurdles or barriers identified in step 2 or 3.

2.3 Basic concept: sustainable development

The third important requirement with respect to CDM is the requirement under article 12 of the Protocol that a CDM project must contribute to the sustainable development of non-Annex I host countries. The term "sustainable development" is not defined either in the Protocol or in the Marrakesh Accords, but it is clear from the Accords that it is up to the host country to determine whether a CDM project will assist in achieving sustainable development in that country or not.[8] This determination will be confirmed by the designated national authority (DNA) of the host country at the time of project approval, together with confirmation of voluntary participation by that country.

2.4 Process of generating CERs under CDM

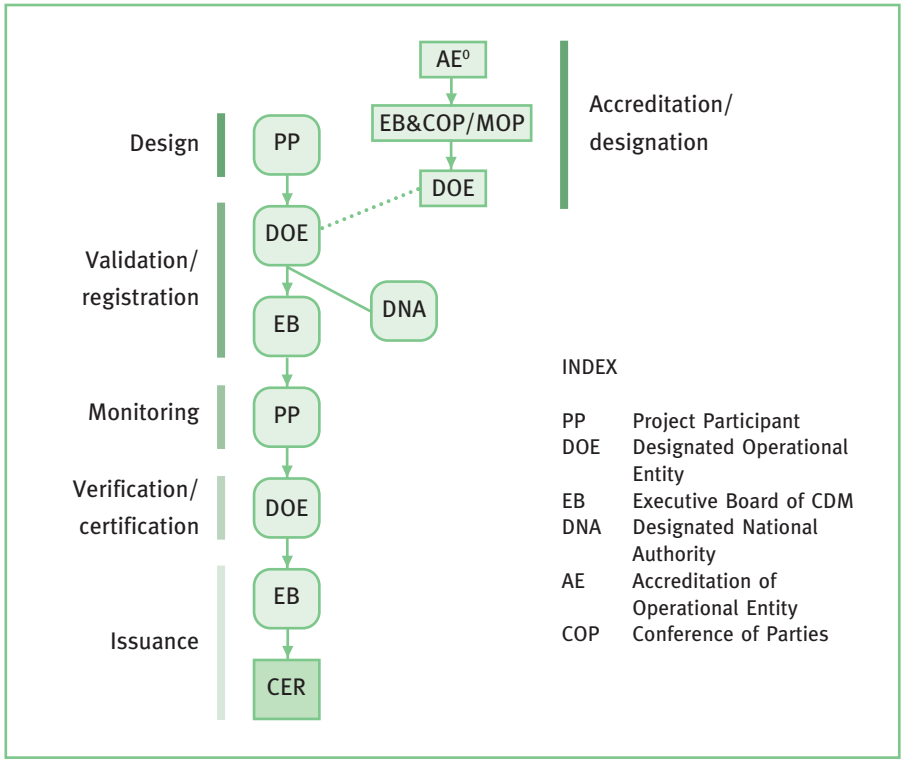
The Clean Development Mechanism is a way of reducing or sequestering GHG emissions through the implementation of specific project activities in any developing country or, more precisely, any non-Annex I country, thereby allowing CERs to be issued. The whole mechanism is supervised by the CDM Executive Board.[9] As set out above, project participants applying for the registration of a CDM project must identify an appropriate baseline and satisfy the fundamental requirements of additionality and sustainable development. At various stages of the CDM project cycle described below, compliance with these requirements will be examined and reported. The process starts with design, leads to validation and registration, monitoring, verification and certification, until finally the CERs are issued. The project cycle diagram below also identifies the key players involved in the whole process.

[8]MA Decision 17/CP.7 (Addendum, Volume II, page 35, para. 40 (a)).

[9]MA Decision 17/CP.7 (Addendum, Volume II, page 27, para. 5).

At COP 9 held in Milan in December 2003, the modalities and procedures for afforestation and reforestation (AR) project activities under CDM were adopted. The project activity cycle in figure 2.3 also applies to project activities where either temporary CERs (t-CERs) or long-term CERs (l-CERs) are issued to recognize the net anthropogenic GHG removals by sinks. However, t-CERs and l-CERs are different from conventional CERs, which are not generated by sinks but by GHG emission reductions at source, in terms of crediting periods, banking, replacement and so forth. Readers interested in AR projects should refer to *Modalities and Procedures for Afforestation and Reforestation Project Activities under the Clean Development Mechanism in the First Commitment Period of the Kyoto Protocol*[10] since they differ substantially from projects dealing with the reduction of emissions at source.

Figure 2.3 The CDM Project Activity Cycle



Source: UNFCCC Secretariat.

[10]Available at: http://cdm.unfccc.int/Reference/Documents/dec19_CP9/English/decisions_18_19_CP.9.pdf.

2.4.1 Design phase

During this phase, a project participant is likely to complete a preliminary feasibility study and should initiate contacts with potential investment partners or prospective acquirers of CERs from the investment project, particularly if the issuance of carbon credits is critical for the viability of the project and such contacts have not yet been initiated.

The project participant should also complete the Project Design Document (PDD), a key document in the CDM procedure, using the format established by the CDM Executive Board available at the UNFCCC CDM website.[11] The PDD should provide information such as:

- A general description of the project activity
- Applicable baseline methodology
- Selection of baseline and demonstration of additionality
- Duration of the project and the crediting period
- Monitoring methodology and plan
- Estimation of project emissions and baseline emissions
- Environmental impact
- Stakeholders' comments

Since projects differ in size and since emission reductions can either be achieved at source or by removing GHGs by sink, the PDD comes in different formats, each of which requires different information. The four different PDD forms are:

- Project Design Document (PDD)
- Project Design Document for Small Scale Project Activities (SSC-PDD)
- Project Design Document for Afforestation and Reforestation (CDM-AR-PDD)
- Project Design Document for Small Scale Afforestation and Reforestation (CDM-AR-SSC-PDD)

In preparing the PDD, if the CDM Executive Board has not approved a baseline methodology that is applicable to a proposed project, the project

[11] http://cdm.unfccc.int/Reference/Documents.

participant has to propose a new baseline methodology using an established format for the Board's consideration and approval by way of a Designated Operating Entity (DOE) (see below). The baseline methodology is, in short, a standard model applicable to certain types of proposed CDM projects to identify the baseline scenario and to quantify baseline emissions, as well as the expected project emissions.

2.4.2 Validation and registration phase

Validation is the process of independent evaluation by a DOE of the requirements (table 2.1) of CDM on the basis of the PDD, together with its supporting documents, prepared by the project participants. The project participants are the ones who must engage and pay for the services of a DOE unless otherwise agreed. DOEs are generally private companies accredited by the CDM Executive Board and listed at the UNFCCC CDM website.[12] The PDD must be submitted to the chosen DOE. Usually, the project includes participants from both Annex I countries and non-Annex I countries. Thus, if the transfer and acquisition of carbon credits has already been agreed, the name of the acquirer in the Annex I country will appear in the PDD. On the other hand, if at the time of registration these details are not yet available, the project may

Table 2.1 Validation requirements for emission reductions[13]

● Country participation requirements must be met
● Due account must be taken of comments by local stakeholders
● Environmental impacts must be analysed
● Additionality must be demonstrated
● Baseline and monitoring methodologies must be complied with
● Monitoring, verification and reporting provisions must be complied with
● There must be conformity with all other requirements of CDM project activities

Note: See appendix B of annex K to Decision 19/CP.9 for the requirements listed in the Project Design Document for GHG removals by sinks CDM projects.

[12] http://cdm.unfccc.int/DOE/list.

[13] MA decision 17/CP.7 (Addendum, Volume II, page 34, para. 37).

still be registered without a project participant from an Annex I country, provided all other details are in order (see section 3.7.3 on the unilateral model).

Once the DOE determines that the project should be validated, it completes a *CDM Project Activity Registration and Validation Report Form*,[14] also known simply as a validation report, and submits it to the CDM Executive Board. By the time the validation report has been completed, the project participants must have obtained the written approvals[15] for the proposed CDM project from the DNAs of both the Annex I country that is to acquire the CERs and of the non-Annex I country hosting the CDM project. In most cases, the DNA is a government authority. The host country DNA must also confirm that the project activity will assist the country to achieve sustainable development.[16] However, the approval letter[17] by the DNA of the Annex I country may be submitted later, after the project has been registered, if no project participant from an Annex I country has been identified yet. The submission of the validation report to the Board constitutes a request for registration of the project. Registration is the formal acceptance by the CDM Executive Board of a validated CDM project activity. Any project that has been rejected by the CDM Executive Board may be resubmitted after modification.

The CDM project activity must be registered before it can advance to the next step toward the issuance of CERs. Failure to have the project registered by the CDM Executive Board means that the project cannot be awarded CERs even if emission reductions are achieved. In line with the Marrakesh Accords,[18] projects that were carried out in or after the year 2000 are retroactively eligible for validation and registration as CDM projects provided they were submitted for registration no later than 31 December 2005. This provision was then amended at COP/MOP 1 in December 2005: since then, project activities that got underway between 1 January 2000 and 18 November 2004 and that have not yet requested registration but that

[14]Available at http://cdm.unfccc.int/Reference/Forms/Registration.

[15]See sections 3.2.2 and 3.3.2.

[16]At its 18th Meeting in February 2005, the CDM EB modified the requirements: submission of written approval by an Annex I country is not mandatory at the time of registration. See section 3.7.3 on the unilateral model.

[17]See sections 3.3.2-3.7.3 and section 6.2.2.

[18]MA Decision 17/CP.7 (Addendum, Volume II, page 23, para. 13).

have either submitted a new methodology or validation by a DOE by 31 December 2005 can request retroactive credits, provided they are registered by the Board by 31 December 2006 at the latest.[19] These provisions do not, however, apply to CDM afforestation and reforestation project activities. A CDM afforestation and reforestation project activity which started after 1 January 2000 can also be validated and registered after 31 December 2005, provided the first verification (see section 2.4.4) of the project activity occurs after the date of registration of the project.[20]

2.4.3 Monitoring phase

It is only after the plant or facility has been constructed and has become operational that the monitoring of emissions may commence. In figure 2.3, monitoring is shown as following validation and registration. However, a long period of time usually passes between the two phases. The construction of power generation plants, chemical or petrochemical plants may take two or three years or even longer from the commencement of the design to the final commissioning, depending on the size, local conditions, scope of activity and other factors, and during that period anything may happen. For example, any delay in construction is likely to cause problems in generating carbon credits as planned and such a delay may make it difficult for the transferring party to deliver the credits as contracted.

Monitoring involves two steps: submission in the PDD of a monitoring plan and, after construction and commissioning of the plant facilities, implementation of the monitoring plan. Registration by the CDM Executive Board of the project shown in the PDD will have included approval of the monitoring plan. Among other things, the plan should provide for the collection and archiving of relevant data required for estimating or measuring the project emissions and for the determination of baseline emissions, quality assurance and control procedures for the monitoring process, together with procedures for the periodic calculation of reductions by the project.[21] As GHG emission reductions or removals must be monitored by the proj-

[19]COP/MOP 1 Decision -/CMP.1 on "Further guidance relating to the Clean Development Mechanism", para. 4.

[20]Report of 21st Meeting of CDM EB dated 23 September 2005, para. 64, available at http://cdm.unfccc.int/EB/Meetings/021/eb21rep.pdf.

[21]MA Decision 17/CP.7 (Addendum, Volume II, page 38, para. 53).

ect participant in accordance with the plan approved at the time of project registration, any change in the plan must be submitted to the DOE for its acceptance. Only if it can be shown that the registered monitoring plan has been followed can the emission reductions achieved by the project be verified and certified.

2.4.4 Verification and certification phase

Verification is the periodic independent review and *ex post facto* determination by the DOE of the monitored reductions or removals that have occurred as a result of a registered CDM project activity during the verification period. Verification is conducted by the DOE by way of a review of documents submitted, on-site inspections, a review of monitoring results and verification that methodologies have been correctly applied and so forth.[22] As a result of this review, the DOE provides a verification report to the project participants, the Parties involved and the CDM Executive Board.

Certification is the written assurance by the DOE based on the verification report that the project achieved the reduction in GHG emissions by source or removals by sinks as verified during the specified period and that this would not have occurred in the absence of the project. Both the verification report and the certification report shall be made available to the public. To avoid any conflict of interests, the DOE engaged in this phase must be different from the DOE engaged in the validation of the CDM project, unless it qualifies as a small-scale[23] CDM project (depending on the size of the investment).[24] There appears to be no restriction on the frequency of verification and certification and any subsequent request for issuance of CERs. Some projects are verified less than once a year, while others are verified more frequently.

2.4.5 Issuance of CERs

The certification report constitutes a request to the Executive Board to issue CERs in the amount of the verified GHG emission reductions or removals. The request is made using the Executive Board form together with both the

[22]MA Decision 17/CP.7 (Addendum, Volume II, page 39, para. 62).
[23]MA Decision 17/CP.7 (Addendum, Volume II, page 21, para. 3).
[24]COP 8 Decision 21/CP.8 (Addendum, Volume III, page 22, para. 20).

verification report and the certification report. Issuance is considered final 15 days after the CDM Executive Board has received the certification report, unless a party involved in the project or at least three members of the CDM Executive Board requests a review, which may, however, only be requested on the grounds of fraud, malfeasance or incompetence of the DOEs involved.[25] Should a review be requested, the CDM Executive Board carries it out. It then informs the project participants of the outcome and publicizes its decision regarding approval of the proposed issuance of the CERs, together with its reasons. Otherwise, the CERs are issued by the CDM Executive Board instructing the CDM Registry Administrator, working under the authority of the Executive Board, to promptly issue the specified quantity of CERs into the pending account of the CDM Executive Board in the CDM registry.[26] From this quantity, 2 per cent of the volume of CERs issued is deducted as the share of proceeds for the Adaptation Fund for those countries most vulnerable to the adverse effects of climate change.[27] The remaining CERs are allocated and transferred to the accounts in the CDM registry and/or the national registry of the relevant country in accordance with the requests of the party designated by the project participants,[28] after the share of proceeds to cover administrative expenses has been paid.[29]

2.5 Process of generating ERUs under JI

2.5.1 Two-track approach

While the terms Clean Development Mechanism (CDM) and Emissions Trading (ET) appear in the Kyoto Protocol, the term Joint Implementation (JI) does not.[30] Nonetheless, it is a widely-used term that describes the mechanism mentioned in article 6 of the Protocol, whereby an Annex I country or its legal entity implements or finances a JI project in another Annex I country; the Emission Reduction Units (ERUs) generated as a consequence of this effort are transferred to the first Annex I country or its entity. Under

[25]MA Decision 17/CP.7 (Addendum, Volume II, page 40, para. 64).

[26]MA Decision 17/CP.7 (Addendum, Volume II, page 40, para. 66).

[27]See section 5.1.2.

[28]MA Decision 17/CP.7 (Addendum, Volume II, page 41, para. 66 (b)).

[29]See section 5.1.2.

[30]The term Joint Implementation appears in article 4 of the 1992 United Nations Framework Convention on Climate Change.

JI, the article 6 Supervisory Committee (now known as the Joint Implementation Supervisory Committee) was established at COP/MOP 1 in December 2005 to supervise, inter alia, the verification of ERUs generated by JI projects, much like the CDM Executive Board does for CDM projects. A unique feature in the issuance of ERUs from JI projects is that, prior to the transfer to another Annex I country, the host country must first issue the ERUs into its own account in its national registry by converting corresponding quantities of Assigned Amount Units (AAUs) or Removal Units (RMUs) previously held there by the host country.[31] Thus, a transaction under JI can be seen as the transfer of part of the initially assigned amount of AAUs or RMUs from one Annex I country to another.

For the process to generate ERUs under JI, a so-called two-track approach has been formulated, which depends upon the ability of the host country to meet the participation requirements under the Marrakesh Accords. The two tracks that constitute this approach are referred to simply as track one and track two; there is a significant difference in the procedures required of the two. Track one may be applied by those host countries that completely satisfy the requirements of the Accords, whereas track two must be followed by those host countries that satisfy at least three of the most essential requirements but not all (see table 3.1 in chapter 3 for details). A host country meeting all the requirements under track one may, however, choose to follow track two.

Under both tracks, the Parties are required to inform the UNFCCC Secretariat of their Designated Focal Point (DFP) for approving projects, the equivalent of the DNA under CDM, and they must have national guidelines and procedures in place for approving projects.

2.5.2 JI project cycle

Partly because ERUs under JI projects have not been designed to be issued before 2008[32] – while credits for CERs under CDM projects are being issued before 2008 – the Joint Implementation Supervisory Committee was only established in December 2005. It first met in Bonn on 2–3 February 2006 and then met again on 8 and 10–11 March 2006. These meetings marked

[31] MA Decision 19/CP.7 (Addendum, Volume II, page 63, para. 29).

[32] Also see chapter 4, section 4.3.2.

the start of the Committee's work to develop rules of procedure, forms and guidelines for users and others, drawing on experiences gained to date under the CDM procedure. Thus, although further developments should be monitored closely, an outline of the JI mechanism is provided below.

As the two project cycles set out in table 2.2 show, track one is faster than track two. One of the major differences is that the track two project cycle requires project participants to engage an Accredited Independent Entity (AIE) – certified by the Joint Implementation Supervisory Committee – to determine the eligibility of the project set out in the PDD. During the monitoring and verification phase, the AIE must verify and certify the emission reductions or removals by sinks. While waiting for the accreditation process to be established by the Joint Implementation Supervisory Committee, COP/MOP 1 has decided that DOEs under CDM may provisionally act as accredited AIEs under JI, although determinations and relevant activities will only become valid after such entities have been finally accredited.[33] The AIE's determination of whether a project and the ensuing reductions or removals by sinks meet the relevant requirements under JI may be subject to review by the Joint Implementation Supervisory Committee. The track one project cycle, however, leaves such determination up to the two Annex I countries involved. These procedural differences will naturally lead to differences in both the transaction costs and the time required for compliance. At present, most Annex I countries have not clarified which track they will adopt to host JI projects.

2.6 Examples of CDM or JI projects

Annex A of the Kyoto Protocol lists five sectors as sources of GHGs – energy, industrial processes, solvent and other production use, agriculture and waste – and identifies source categories of GHGs. Table 2.3 shows examples of potentially eligible projects under CDM or JI, although there may be many more. However, it should be remembered that it is not the type of project that determines eligibility under CDM or JI but, rather, the specific CDM or JI requirements. Consequently, situations may arise where a certain type of project is eligible in one country but not in another. This could be due, for example, to the existence of a different baseline scenario.

[33]COP/MOP 1 Decision -/CMP.1 on "Implementation of Article 6 of the Kyoto Protocol", para. 3.

Table 2.2 Steps in track-one and track-two project cycles[34]

Phase	*Track one*	*Track two*
Project approval	● Project participant to formulate project ● Project participant to obtain project approval from both parties through each DFP	● Project participant to formulate project ● Project participant to obtain project approval from both parties through each DFP ● Project participant to develop PDD and submit it to AIE ● AIE to determine whether PDD satisfies the requirements and makes PDD publicly available through Joint Implementation Supervisory Committee ● Final approval of PDD if not challenged
Monitoring and verification	● Host party to verify reductions/sinks in accordance with national guidelines or procedures	● Project participant to monitor the project activities and submit monitoring report to AIE ● AIE to determine whether monitoring results prove accrual of emission reductions or removals by sinks and makes determination publicly available through Joint Implementation Supervisory Committee ● AIE determination of reductions or removals by sinks becomes final if not challenged
Issuance of ERUs	● Host party to issue ERUs	● Host party to issue ERUs

[34]MA Decision 16/CP.7 (Addendum, Volume II, page 11, para. 20 and pages 30–45, paras. 30-45).

Table 2.3 Examples of CDM or JI projects

Area	*Type of project*
Energy	● Fuel switching (coal to gas, oil to gas) ● Efficiency improvement (lighting, power, air conditioning, heating) ● Renewable energy (solar, wind, biomass, hydro, geothermal) ● Clean energy transport
Industrial process	● Aluminium production process improvement (PFC reduction) ● Cement production process improvement (energy and process dimensions) ● Adipic acid production process improvement (N_2O reduction)
Waste	● Landfill methane recovery ● Waste utilization for power generation
Agriculture	● Manure management
Land-use change and forestry	● Afforestation/reforestation (CDM) ● Afforestation/reforestation/forest management (JI)
Others	● Coal mine methane utilization

Note: The Marrakesh Accords make it clear that emission reductions from nuclear facilities do not result in certified emission reductions or emission reduction units.[35]

[35]MA Decision 16/CP.7 (Addendum, Volume II, page 5, Preamble) and MA Decision 17/CP.7 (Addendum, Volume II, page 20, Preamble).

Chapter 3

PARTIES TO THE CONTRACT

Who can be a party to the contract?

INTRODUCTION

One of the first steps to a successful contract is to have the right party as a business counterpart. This is even more important under the Kyoto flexibility mechanisms because it is only the countries and their entities that satisfy all the eligibility requirements under the Protocol, the Marrakesh Accords and subsequent decisions, guidelines and procedures that can participate in the mechanisms. This chapter deals with issues related to who can be a party to the contract, in the primary market specifically.

The chapter starts by asking whether it is possible to simply make a purchase, instead of an equity investment, to meet the eligibility requirements for Clean Development Mechanism (CDM) projects, given that at one stage these kinds of projects appeared to be based on an equity investment by investors from Annex I countries. This fundamental issue determines whether or not a project can be approved as a CDM project that can be awarded carbon credits, if the participation of an Annex I country or its entity is limited to the purchase of forward carbon credits only and no equity investment is made. It is now clear that purchase alone – without any equity investment – also allows qualification as a CDM project. The next three sections then examine the participation requirements for CDM and Joint Implementation (JI) projects. These are set out at two levels: firstly at country level and secondly at entity level. It is always up to each Party to the Protocol to set up its own domestic legal regime, in compliance with the Protocol, to regulate entities in its own territory. Therefore, parties to such a transaction should examine their own domestic participation requirements as well.

This chapter emphasizes the importance of carrying out due diligence to establish the creditworthiness of the other party and its ability to perform its duties as laid out in the contract. In particular, it highlights that in most cases years may pass between the conclusion of the contract and the delivery of forward carbon credits, and that anything could happen to the other party during this time. It then goes on to warn that care should be taken in drafting any clause allowing the assignment of the contract, in particular the assignment of rights and/or the delegation of duties during the course of the contract to a third party, and that the eligibility of the assignee should be ascertained. Further on, the chapter explains the three business models used in the imple-

mentation of CDM projects – the bilateral model, the multilateral model and the unilateral model – focusing on the role of the buyers and sellers of Certified Emission Reduction units (CERs) in each model. Finally, the chapter describes initiatives taken by the Government of the Netherlands and the Prototype Carbon Fund of the World Bank to procure carbon credits.

3.1 Selling and purchasing CERs instead of investing equity

In the previous two chapters, instead of referring to the sale or purchase of forward carbon credits when dealing with the distribution of CERs to be generated under CDM to the project participants, reference was made to the transfer or acquisition of forward carbon credits. This was done to take into account the question of whether the participation of an Annex I country could be based solely on the act of purchasing and to reflect on the literal terms of both the Kyoto Protocol and the Marrakesh Accords. Even in the context of Emissions Trading (ET), which is most likely to be based on the sale and purchase of existing credits that have already been issued, the Accords use the terms transfer and acquisition. Therefore, the question here is: Is a project eligible to receive CERs even if an Annex I country or its authorized entity merely buys the CERs, instead of making an equity investment in a project in a non-Annex I host country?

The quick answer is yes. In the past, CDM was widely seen as a mechanism that enabled Annex I countries to implement projects that reduced GHG emissions in non-Annex I countries and to use the CERs earned to meet their Kyoto obligations at home. There was more than a mere implication that CDM originally assumed an investment in equity, either wholly or in part, by Annex I countries or their authorized entities in eligible projects hosted by non-Annex I countries, with the resulting CERs being allocated in accordance with prior agreement among the project participants.[1] The Protocol appears not to have considered the possibility of Annex I and non-Annex I countries trading CERs that have either already been issued or that are going to be issued in the future. Increasingly, however, Annex I

[1] *Limiting Project Formulation and Finance to the Bilateral Model May Exclude Many Developing Countries*, Additional submission by Colombia and Guatemala on behalf of Argentina, Bolivia, Chile, Costa Rica, Ecuador, Honduras, Nicaragua, Panama, Paraguay and Uruguay, (FCCC/SB/2000/MISC.4/Add.3 dated 14 September 2000, page 2).

countries and multilateral funds are buying forward carbon credits as a means of meeting the Kyoto obligations without having to invest equity in the projects.

A close examination of the provisions contained in the Protocol and the Accords still does not provide a definitive answer to the above question. Some may well advocate that, in the absence of any clear exclusion of a purchase option in the Protocol or the Accords, the project should be eligible for CERs even in the case of purchase by Annex I countries or their authorized entities. Others may well oppose this interpretation on the grounds that the sale and purchase of carbon credits is in fact ET, which is allowed only between Annex I countries and not between Annex I and non-Annex I countries. In other words, there is the risk that such projects are deemed ineligible to earn CERs.

The first two CDM projects[2] to have been awarded CERs under the Kyoto Protocol, on 20 October 2005, appear to be based on purchases made by Annex I countries. This could be considered de facto confirmation by the CDM Executive Board that a purchase of forward carbon credits is a permissible option for an Annex I country wishing to participate in a CDM project. As a result, in this and subsequent chapters reference will be made to sale and purchase. The World Bank's Carbon Finance Unit refers to "carbon finance", meaning the provision of financial resources to a project generating or expected to generate GHG emission reductions through the purchase of such reductions.[3] This issue is closely related to the validity of the unilateral and multilateral models (treated in sections 3.7.2 and 3.7.3 respectively) based on the purchase of forward carbon credits.

3.2 Eligibility as seller

The Protocol's requirements for participation in CDM and JI are discussed below, both at the level of the host country and at the level of the entities. It is of course a matter for each Party to the Protocol to introduce its own

[2] "La Esperanza Hydroelectric Project" with participation of the Government of Italy through World Bank's Community Development Carbon Fund (Project Document available at http://cdm.unfccc.int/Projects/DB/DNV-CUK1098894708.4/view.html) and "Rio Blanco Hydroelectric Project" with participation of the Government of Finland (Project Document available at http://cdm.unfccc.int/Projects/DB/DNV-CUK1101980215.28/view.html).

[3] Prototype Carbon Fund, Annual Report (2004), page 43.

domestic laws to regulate the participation of its entities in the implementation of the Protocol. It is also important for potential sellers and buyers of forward carbon credits who participate in CDM or JI activities to investigate the domestic participation requirements as well.

3.2.1 Eligibility as seller at host country level

CDM projects: eligibility requirements of host countries[4]

To host a CDM project, countries must meet the following requirements:

(a) Appoint a designated national authority (DNA) to represent the government in that country. The DNA has an extremely important role to play in scrutinizing the proposed CDM project and approving it, which is one of the prerequisites for a CDM project to be registered (see section 2.4). The DNA is also the country's contact point for the CDM Executive Board.

(b) Be a Party to the Kyoto Protocol.

(c) Maintain its eligibility status from the beginning of the project activities to the end, since the entities authorized to transfer CERs can only do so if the host country continues to fulfil its requirements.

In addition, afforestation and reforestation CDM projects require host countries to report[5] what their definition of forest is to the CDM Executive Board by selecting one of the following:

- A single minimum tree crown cover value between 10 and 30 per cent
- A single minimum land area value between 0.05 and 1 hectare
- A single minimum tree height value between 2 and 5 metres

Any country's eligibility to take part in CDM activities will be checked through the validation process when the CDM project is registered. If the Designated Operational Entity (DOE) finds that the host country is not or is no longer eligible, the project will not be accepted for registration as a

[4]MA Decision 17/CP.7 (Addendum, Volume II, pages 32–33, paras. 29–33).

[5]UNFCCC official document (FCCC/CP/2003/6/Add.2, 30 March 2004, Original English), page 17, para. 8.

CDM project. The eligibility or otherwise will also be checked automatically when CERs are transferred from the CDM registry to a national registry by a transaction log[6] to be established and maintained by the Secretariat.[7]

JI projects: eligibility requirements of host countries

Any Annex I country may host a JI project and transfer the ERUs resulting from such a project to another Annex I country, provided it is in compliance with the participation requirements (see table 3.1).

To fulfil its obligations, hosting Annex I countries must appoint their Designated Focal Point (DFP) and have their national guidelines and procedures approved for implementing JI projects, in addition to meeting the six requirements listed in table 3.1. Annex I countries may still host JI projects if they satisfy the positive minimum requirements indicated in the track-two column and if the projects follow the track-two project cycle (see table 2.2).

UNFCCC is to maintain a publicly accessible list of Annex I Parties that meet the eligibility requirements and of those that have been suspended.

Table 3.1 Requirements for hosting track-one and track-two JI projects

Requirements	*Track one*	*Track two*
Is it a Party to the Protocol?	Yes	Yes
Has its assigned amount been calculated and recorded?	Yes	Yes
Does it have a national system for estimating emissions and sinks?	Yes	No
Does it have a national registry?	Yes	Yes
Has it submitted the most recent annual inventory?	Yes	No
Has it submitted the supplementary information on the assigned amount?	Yes	No

Source: MA Decision 16/CP.7 (Addendum, Volume II, pages 11–12, paras. 21–24).

[6]See chapter 6.

[7]MA Decision 19/CP.7 (Addendum, Volume II, pages 65-66, para. 42).

3.2.2 Eligibility as seller at entity level

CDM projects: eligibility requirements for entities wishing to participate as sellers

The participation of "private and/or public entities"[8] in CDM projects must be authorized by the relevant Party to the Protocol. According to the glossary of CDM terms contained in the *Guidelines for Completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodologies (CDM-NM) Version 05*,[9] a DNA can give authorization by submitting written approval of the participation of a specific entity as a project proponent in a particular CDM project activity. The DNA of a hosting non-Annex I country involved in a proposed CDM project activity shall issue a letter of approval stating that:[10]

(a) The Party has ratified the Kyoto Protocol.

(b) The approval of voluntary participation in the proposed CDM project activity has been granted.

(c) The proposed CDM project activity contributes to sustainable development.

There is no definition of what an entity should be, but it is assumed that an entity is a company or other legal personality with the power to legally bind itself to a contract. The detailed procedures and precise definitions have been left to the discretion of each Party.

JI projects: eligibility requirements for entities wishing to participate as sellers

Authorization by the Annex I Party is required for "legal entities"[11] in the country to participate in JI projects. However, authorized entities may only transfer or acquire ERUs if the authorizing Party is eligible to do so

[8]MA Decision 17/CP.7 (Addendum, Volume II, page 33, para. 33). In this publication reference is made to "entities" only.

[9]Glossary available at http://cdm.unfccc.int/Reference/Documents/copy_of_Guidel_Pdd/English/Guidelines_CDMPDD_NM.pdf.

[10]See "Approval by Parties involved" in the Glossary.

[11]In this publication, reference is made to "entities" only.

at that time.[12] The detailed procedures for authorization have been left to the discretion of each Party.

3.3 Eligibility as buyer

3.3.1 Eligibility as buyer at country level

CDM projects: eligibility requirements for countries wishing to participate as buyers

There are more participation requirements for an Annex I country than for the host country of the seller of forward carbon credits. To be able to take part in a CDM project and acquire CERs, an Annex I country must meet the following requirements:[13]

(a) Appoint a DNA to scrutinize and approve the CDM project on behalf of the government.

(b) Be included in Annex I with a commitment inscribed in annex B and comply with the following eligibility requirements:

(i) Be a Party to the Kyoto Protocol.

(ii) Have its assigned amount calculated and recorded.

(iii) Have a national system to estimate emissions and removals.

(iv) Have a national registry.

(v) Have submitted the most recent annual inventory.

(vi) Submit supplementary information on its assigned amount.

Any Annex I country authorizing entities to engage in CDM activities must not only comply with the eligibility requirements at the beginning of the project but also remain compliant throughout the project, as the entity's ability to transfer or acquire CERs is dependent upon the country continuing to fulfil those requirements.[14] The parties to the contracts are advised to visit the UNFCCC website, which is expected to maintain a publicly accessible list of those Parties that are included in Annex I but that do not meet the requirements above or that have been suspended.

[12] MA Decision 16/CP.7 (Addendum, Volume II, page 13, para. 29).
[13] MA Decision 17/CP.7 (Addendum, Volume II, pages 32–33, paras. 28–34).
[14] MA Decision 17/CP.7 (Addendum, Volume II, page 33, para. 33).

JI projects: eligibility requirements for countries wishing to participate as buyers

In contrast to the host country, the buyer country must meet all of the following participation requirements:[15]

(a) Appoint its Designated Focal Point (DFP) for approving projects.

(b) Submit its national guidelines and procedures for approving JI projects, and comply with the following eligibility requirements:

(i) Be a Party to the Kyoto Protocol.

(ii) Have its assigned amount calculated and recorded.

(iii) Have a national system for the estimation of emissions and sinks of all GHGs.

(iv) Have a national registry.

(v) Have submitted the most recent annual inventory.

(vi) Submit supplementary information on its assigned amount.

3.3.2 Eligibility as buyer at entity level

CDM projects: eligibility requirements for entities wishing to participate as buyers

The participation of entities in CDM projects must be authorized by a relevant country Party to the Protocol. Authorization by a DNA of a specific entity's participation in a specific CDM project activity[16] shall be stated in the written approval. The DNA of a Party involved in a proposed CDM project activity shall issue a statement that includes the following information:

(a) The Party has ratified the Kyoto Protocol.

(b) The approval of voluntary participation in the proposed CDM project activity has been granted.

[15] MA Decision 16/CP.7 (Addendum, Volume II, pages 11–13, paras. 20–29).

[16] See footnote 9.

JI projects: eligibility requirements for entities wishing to participate as buyers

Entities that wish to participate in JI projects to acquire ERUs must be authorized to do so by their countries, which must be Parties to the Protocol. Each country remains primarily responsible for the fulfilment of its obligations under the Kyoto Protocol and shall ensure that such participation is consistent with the Marrakesh Accords.[17] Entities may only acquire ERUs if the authorizing Party is eligible to do so at that time.

3.4 Summary of eligibility requirements

The eligibility requirements listed in sections 3.2 and 3.3 are summarized in table 3.2.

3.5 Creditworthiness

Since it is likely that the contract will last a long time, it is essential that each party check the creditworthiness of the other party by way of a due diligence examination of their eligibility, financial strength, competence, reputation and other matters relevant to the performance of contractual obligations. Moreover, each party usually provides a warranty in the contract stating that it is able to fulfil its contractual duties. The contract also clearly states the rights and obligations of each party in the various situations that may occur during the course of the contract. It must be remembered that the contract may well provide for the delivery of CERs or ERUs to be generated as late as 2012 or even later.

3.6 Assignment of the contract

For various reasons, one of the parties to the contract may wish to transfer either the rights or the duties, or both, to third parties, whereas the other contractual party may not wish this to be possible. Therefore, the parties will have to insert a clause in the contract as to whether they will allow the assignment of rights and/or obligations to third parties and, if so, the requirements for such assignment to be acceptable. It is usual to state

[17] MA Decision 16/CP.7 (Addendum, Volume II, page 13, para. 29).

Table 3.2 Summary of eligibility requirements

	Seller		*Buyer*	
	Country	*Entity*	*Country*	*Entity*
CDM	1 Designation of national authority 2 Party to the Protocol 3 Report of definition of forest (afforestation and forestation CDM only) (see 3.2.1)	1 Authorization by host country (see 3.2.2)	1 Designation of national authority 2 Party to the Protocol 3 Assigned amount 4 System for estimation 5 National registry 6 Inventory 7 Supplementary information (see 3.3.1)	1 Authorization by the country of buyer (see 3.3.2)
JI	*Track one* 1 Focal point 2 Guidelines and procedures 3 Party to the Protocol 4 Assigned amount 5 System for estimation 6 National registry 7 Inventory 8 Supplementary information (see 3.2.1)	*Track two* 1 Focal point 2 Guidelines and procedures 3 Party to the Protocol 4 Assigned amount 5 National registry (see 3.2.1)	1 Authorization by host country (see 3.2.2)	1 Authorization by the country of buyer (see 3.3.2)

in the contract that the prior written consent of the other party must be obtained. Since assignment involves a change of parties to the contract, both parties must always check carefully whether the proposed third party assignee is equally eligible at both country and entity levels to participate in CDM or JI projects. The non-assigning party should also check whether the third party is at least as creditworthy as the assigning party.

3.7 Business structures for CDM

Generally, three approaches[18] have been identified in terms of the possible structuring and financing of CDM projects: the bilateral model, the multilateral model and the unilateral model. The different approaches are discussed below in conjunction with interpretations of the Kyoto Protocol and the Marrakesh Accords as to who may participate in CDM projects, who may initiate CDM projects, what "participation" really means and when the sale and purchase of carbon credits can take place.

Although these models are not necessarily mutually exclusive, the bilateral model, as it is defined here, offers perhaps the narrowest and strictest interpretation of the provisions of the Protocol. As to the multilateral model and the unilateral model, their validity has been debated in particular in the light of the Kyoto Protocol. However, neither the Kyoto Protocol nor the Marrakesh Accords mentions any of the models nor does it clearly indicate whether they are acceptable or not. Over one year since the Kyoto Protocol became effective, the various clarifications and experience have shown that all these models are acceptable under the Protocol, but it should still be borne in mind that some countries may reject models they consider unacceptable during the validation and registration phase.

3.7.1 The bilateral model

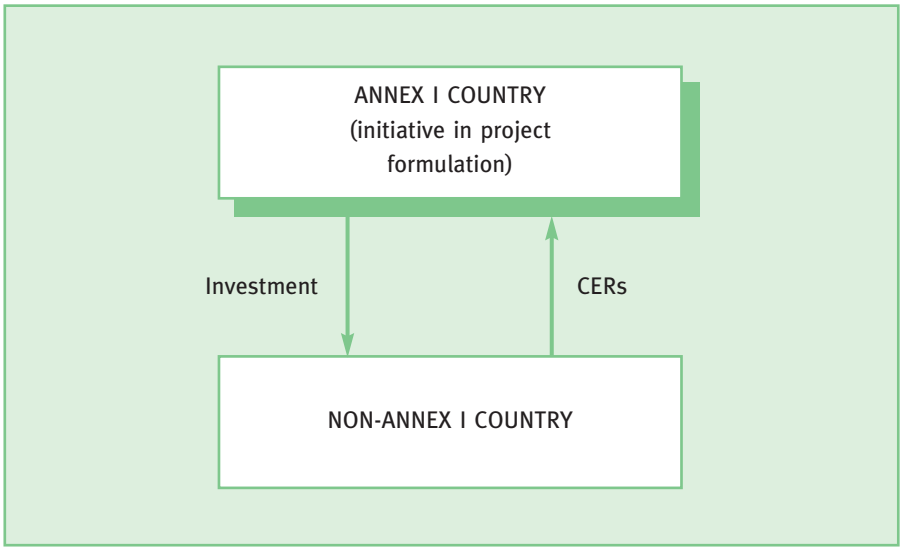
The bilateral model views CDM projects primarily as a form of foreign direct investment (FDI) by way of equity investment in the particular non-Annex I country by an entity of an Annex I country. While 100 per cent FDI is possible if the laws of the host country allow it, the project can also be a joint venture type of arrangement between the investing country and the host coun-

[18]Articles that discuss the three approaches include UNDP (1998), chapter 5 by Farhara Yamin; Baumert, K. A. and N. Kete with C. Figuerres (2000) and Jahn, M. et al (2003).

try, in which both countries have agreed on the share of equity, financing, risks, and the allocation of the expected carbon credits. As with the unilateral model, only two countries are involved but, while the bilateral model tends to emphasize Annex I countries making an equity investment and taking the initiative in the project formulation, in the unilateral model the entities in Annex I countries are usually limited to the purchase of CERs.

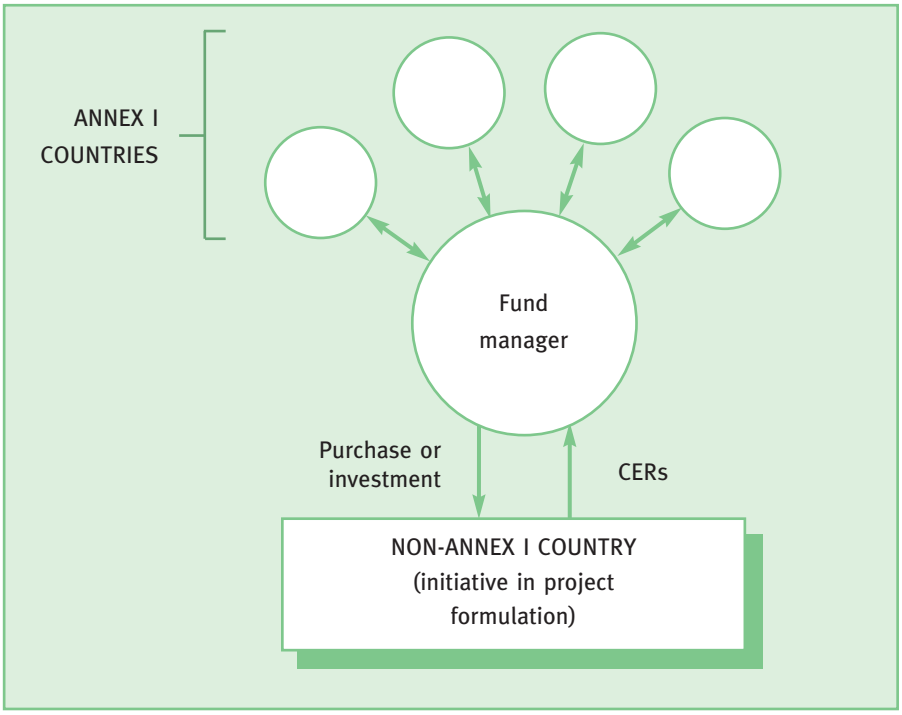
In checking the applicability of this model to a particular CDM project, it is also necessary to look into the applicable laws and regulations of the host country with regard to FDI. A host country may or may not allow foreign investment in certain sectors such as agriculture and, even if equity investment is allowed, the foreign investment may not be more than 49 per cent of the capital of the domestic joint venture entity. Although China appears to be one of the more flexible host countries with regards to the business models under the Kyoto Protocol, it requires "the project owners" of a CDM project to be "Chinese funded or Chinese-holding enterprises" and that they be responsible for constructing and implementing the CDM project activities.[19]

Figure 3.1 Bilateral model



[19] *Measures for Operation and Management of Clean Development Mechanism Projects in China* in force as of 12 October 2005, articles 17 and 18, available at http://cdm.ccchina.gov.cn/english/NewsInfo.asp?NewsId=905.

Figure 3.2 Multilateral model



3.7.2 The multilateral model

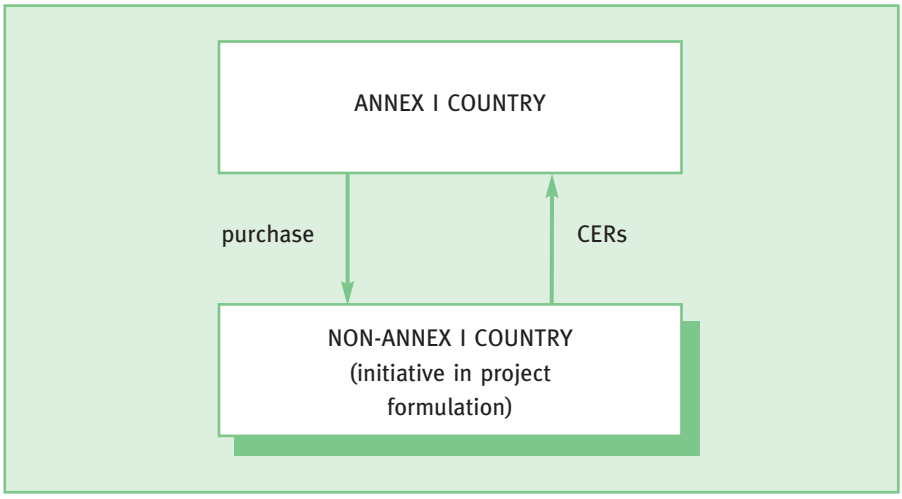
Under the multilateral model, as it is defined here, a multilateral fund created specially for the purpose of acquiring carbon credits invests in the CDM project or finances it through the purchase of forward CERs, or both. Such multilateral funds may be motivated to hold a portfolio of various CDM projects as a way of reducing risks by diversifying projects and host countries, as well as by distributing risk among the contributors of funds. The World Bank's Prototype Carbon Fund (PCF) is a typical example of a multilateral fund where a number of governments and companies contribute funds to acquire CERs and ERUs that will eventually be distributed between them. The PCF is not known to invest in equity. As stated above, one of the eligibility requirements to participate in CDM is that the buyer country's Designated National Authority approve the project. Interestingly, the PCF global fund is neither an Annex I country nor an entity of a Party to the Kyoto Protocol, although its funding contributors are all Annex I countries or their entities. This situation has created a prob-

lem for the fulfilment of the requirement that Annex I countries submit their written approval to the CDM Executive Board to register a CDM project financed by the PCF. In response to this issue, the Board has decided that multilateral funds do not necessarily require written approval from each contributor's DNA, but the countries or entities that do not provide written approval may be forfeiting some of the rights and privileges arising from the project.[20]

3.7.3 The unilateral model

The third approach is the unilateral model. Under this model, entities of non-Annex I countries or the countries themselves design, initiate, organize, arrange, finance and carry out the CDM projects independently and without the involvement of Annex I countries, except through those countries' purchase of CERs. This said, there are two types of unilateral models, depending on when the CERs are sold. In the first case, the CERs are sold before they are generated and issued and, typically, before the project is registered. In the second case, the CERs are sold after they have been generated and issued. The procurement of CERs by the Government of the Netherlands, referred to as CERUPT, is an example of the first type.

Figure 3.3 Unilateral model



[20]Report of 17th Meeting of CDM EB dated 6 December 2004, annex 4, page 1, available at http://cdm.unfccc.int/EB/Meetings/017/eb17repan4.pdf.

Michael Jahn[21] considers the first type to be a bilateral model (since the pre-issue sale of CERs may have a strong influence on the financial closure of the project) and the second type to be a unilateral model. Thus, it is always advisable to clarify what exactly is meant by the term "unilateral model", so as to know what is acceptable and what is not.

The reason for this is that certain Parties to the Protocol used to claim that the unilateral model was unacceptable under the Protocol, and some Parties continue to do so. Their argument seems to be that, in accordance with article 17 of the Protocol, carbon credits can only be traded between Annex I countries and not between Annex I countries and non-Annex I countries. These Parties may not grant approval, when requested to do so by project participants, of any project they consider unilateral, while other Parties may. For example, Malaysia stated, in its letters of approval for the validation and registration of two CDM projects dated 30 November 2005, that "as Malaysia does not support unilateral type CDM projects, this approval is considered void if this project is found to be a unilateral project by the CDM Executive Board".[22]

The approval of the DNAs of Annex I countries wishing to buy and of non-Annex I countries wishing to sell used to be needed at the time of registration of the project activities to satisfy one of the eligibility requirements for the project to produce CERs (see section 2.4). At its 18th Meeting in February 2005, the CDM Executive Board relaxed this requirement so that the registration of a project activity can take place without an Annex I country being involved at the registration stage, as long as its letter of approval is submitted to the Executive Board "before an Annex I Party acquires CERs from such a project activity from an account within the CDM registry". This is required to allow the CDM Registry Administrator to transfer the CERs from the CDM registry to the national registry of the Annex I Party.[23] Effectively, this means that the CDM Executive Board has interpreted the Protocol to the effect that a non-Annex I country can initiate and imple-

[21]Jahn, M., and others (2003), page 4.

[22]For Replacement of Fossil Fuel by Palm Kernel Shell Biomass in the Production of Portland Cement project available at http://cdm.unfccc.int/UserManagement/FileStorage/F4TF6P3SD6OXMB21QBUFD9ME818RKO and for Biomass Energy Plant-Lumut project available at http://cdm.unfccc.int/UserManagement/FileStorage/YTLSoABSOWJXCDCGC88N6F1VECRN53.

[23]Report of 18th Meeting of CDM EB dated 25 February 2005, page 8, para. 57, available at http://cdm.unfccc.int/EB/Meetings/018/eb18rep.pdf.

ment a CDM project without the involvement of an Annex I country. It can then sell the CERs to Annex I countries, even after the CERs have been transferred into its account in the CDM registry. After it has been agreed that the CERs will be sold to an Annex I country, a letter of approval by the DNA of the buyer country must be submitted to the CDM Executive Board, which will then allow the CERs to be transferred to the buyer.

China clearly accepts the unilateral model as one of the business models applicable to its CDM projects by providing in its regulations[24] that:

> If no foreign buyer is determined by the time a project is submitted for approval, and in result the price information[25] requested in the above term 1 (4) is not available, it must be indicated in the project document that the emission reductions generated by the project will be transferred into China's national account in the CDM registry and can only be transferred out with the authorization of China's DNA for CDM.

It is not known at present how long the CERs can stay in the CDM registry before they are forwarded to an Annex I country with their DNA's letter of approval to participate in the CDM project. It is advisable to follow developments as to whether the CDM Executive Board will ever introduce a time frame for how long CERs may be stored in the CDM registry.

3.8 Government and institutional buyers

Some countries have already signed contracts to purchase project-based carbon credits through CDM or JI to fulfil part of their obligations under the Kyoto Protocol, and the number of countries is increasing, particularly within the European Union. In addition, some development banks are financing investment projects aimed at reducing GHGs through the purchase of project-based carbon credits as trustees of funds created for the purpose, to assist countries and entities which need the carbon credits to meet a part of their reduction or limitation obligations. Among the various

[24] *Measures for Operation and Management of Clean Development Mechanism Projects in China* in force as of 12 October 2005, article 15, para. 2, available at http://cdm.ccchina.gov.cn/english/NewsInfo.asp?NewsId=100.

[25] It means the price of CERs sold to foreign buyers.

government and institutional buyers, the purchase programmes of the Netherlands and the World Bank are outlined here to illustrate how they purchase project-based carbon credits.

3.8.1 The Netherlands: CERUPT and ERUPT

The Government of the Netherlands is a pioneer among government buyers, having established a policy of meeting 50 per cent of its total reduction target domestically and the remaining 50 per cent outside the country through the procurement of forward carbon credits from CDM or JI projects. The Government of the Netherlands has chosen to purchase by way of public tenders from competitive sources. The tender for CERs from CDM projects is called the Certified Emission Reductions Unit Procurement Tender (CERUPT) and the tender for ERUs from JI projects, the Emission Reduction Unit Procurement Tender (ERUPT). Although CERUPT is managed by the Ministry of Housing, Spatial Planning and the Environment, and ERUPT by the Ministry of Economic Affairs, a government agency, Senter Internationaal, has been appointed to implement the tenders for both ministries. CERUPT and ERUPT are programmes for the outright purchase of forward carbon credits and do not envisage equity investment in the projects or involvement in project formulation or implementation. Thus, they are good examples of the unilateral model discussed earlier.

Both programmes are open to selling offers by any entity of a non-Annex I country in the case of CDM projects and by any entity of an Annex I country in the case of JI projects, and they require the written consent from the host countries stating that they will endorse the projects. Also, at the time of bidding under the ERUPT programme, the host government is asked to confirm that it will transfer issued ERUs to the national registry of the Netherlands. With the CERUPT programme, the host government is asked to confirm that it will transfer issued CERs to the Netherlands.

CERUPT has completed the tender for the first commitment period of 2008 to 2012. The Government of the Netherlands has since decided to replace CERUPT with a new agreement with the World Bank's International Finance Corporation (IFC), called the IFC-Netherlands Carbon Facility. This agreement has been allocated €44 million to procure carbon credits on behalf of the Netherlands. Following the closure of ERUPT 1 in February

Table 3.3 Outline of ERUPT and CERUPT

	ERUPT 5	*CERUPT*
Responsible ministry	Ministry of Economic Affairs	Ministry of Housing, Spatial Planning and the Environment
Buyer	SenterNovem	Senter Internationaal
Seller	Entity in Annex I countries	Entity in non-Annex I countries
Credits bought	Claims on ERUs (also AAUs for early credits)	CERs
Host countries	Annex I countries	Non-Annex I countries
Minimum quantity per seller	250,000 metric tons CO_2 equivalent	100,000 CERs
Maximum buying price per ERU or CER	Not indicated in the tender	Indicated in the tender as: ● Renewable energy project (except biomass) – €5.50 ● Renewable energy project (biomass) – €4.40 ● Energy efficiency improvement – €4.40 ● Others – €3.30
Payment	● Upon delivery of verification report leading to claims on ERUs or any verified emission reductions ● Advance payment possible up to 50 per cent	Upon delivery of the CERs, advance payment possible
Vintage	2008–2012 (plus early credits before 2008)	2000–2012 (in some cases beyond 2012)
Documents required from the host country	● Letter of endorsement (appendix 1 of Terms of Reference) ● Letter of approval (appendix 6 to Terms of Reference)	● Letter of endorsement (appendix 2 to Terms of Reference) to render assistance for the project ● Letter of approval (appendix 3 to Terms of Reference) to recognize the project as a CDM project

Sources: ERUPT 5 (10 May 2004) and CERUPT (1 November 2001).

2001, ERUPT 2 in September 2002, ERUPT 3 in August 2002 and ERUPT 4 in May 2004, ERUPT 5 was announced in May 2004 for the purchase of any verified emission reductions generated between 2008 and 2012, as well as for the purchase of early credits generated before 2008.

Other tender-based bilateral programmes also occasionally float tenders to purchase carbon credits from CDM and/or JI projects. They include the Austrian JI/CDM Programme, DanishCarbon.dk of Denmark, the Finnish CDM/JI Pilot Programme and the Swedish International Climate Investment Programme. Japan seems to be preparing a similar programme, with the New Energy and Industrial Development Organization (NEDO) as its procurement agency, to float a government-funded tender in 2006 worth approximately US$ 100 million.

3.8.2 The World Bank: the Prototype Carbon Fund (PCF)

Established in 1999, the PCF is a trust fund created by the World Bank, together with 23 Governments and companies, to procure project-based emission reductions to meet the obligations of the fund's contributors and as a way of learning-by-doing in this emerging carbon market. The PCF has been a pioneer in the project-based carbon credit market and has shared its valuable experience with those who have followed it into the market. Unlike ERUPT and CERUPT, the PCF does not call for any public tender in procurement but rather purchases through contracts negotiated individually with the sellers of forward emission reductions from both JI and CDM projects. The term "emission reductions" is used to refer to measurable reductions in emissions of GHGs. The PCF has used this term consistently since it started operations by committing itself to pay for emission reductions even when it was uncertain whether the Kyoto Protocol would ever become effective or whether emission reductions could be issued in the form of CERs or ERUs.

According to the PCF *Annual Report 2004*, as of 30 September 2004 the fund had purchased no fewer than 16,618,984 metric tons CO_2 equivalent of emission reductions at a total price of US$ 74,330,000, equal to an average unit price of US$ 4.47 per metric ton CO_2 equivalent, through its Emissions Reduction Purchase Agreements (ERPAs). The purchase contracts are stipulated between the PCF (on behalf of its fund contributors) and the project participants of JI or CDM projects.

Table 3.4 PCF portfolio status: ERPAs signed as of 30 September 2004

Country	*Project*	*PCF contract (million US$)*	*PCF ERPA emission reductions (tCO_2e)*	*Total project emission reductions generation (tCO_2e)*
Brazil	Planter Sequestration and Biomass Use	5.30	1,514,286	10,251,564
Bulgaria	Direct Heating	4.34	1,084,000	1,539,715
Bulgaria	Svilosa Biomass	1.58	450,000	1,007,724
Chile	Chacabuquito Small Hydro	4.06	1,000,000	2,752,000
Colombia	Jepirachi Wind Farm	3.20	800,000	1,168,000
Costa Rica	Cote Small Hydro	0.60	172,120	215,138
Costa Rica[a]	Chorotega Wind Farm	0.92	262,660	323,850
Czech Republic	CEA Energy Efficiency	2.00	500,000	500,000
Guatemala	El Canada Small Hydro	7.50	2,000,000	2,883,600
Hungary	Pannongreen Pecs Fuel Conversion Project	5.01	1,193,000	2,645,500
Indonesia	Indocement Sustainable Cement Production	10.80	..[b]	11,313,017
Latvia	Liepaja Solid Waste Management	2.48	387,933	864,600
Republic of Moldova	Soil Conservation	4.55	1,300,000	3,215,296
Romania	Afforestation	3.08	854,985	1,360,183
South Africa	Durban Municipal Solid Waste	15.01	3,800,000	8,780,034
Uganda	West Nile Electrification Project	3.90	1,300,000	1, 884,102

Source: PCF 2004 Annual Report (a brief description of each project is given in the report but not included below).

Notes:
a This agreement has been terminated.
b Omitted at the request of project sponsor.

In collaboration with the International Emissions Trading Association (IETA), the World Bank has launched the Community Development Carbon Fund (CDCF) with a capitalization of US$ 128.6 million to provide carbon financing to the poorest countries and to poor communities in developing countries. As of July 2005, contributors to the fund have included the Governments of Austria, Belgium, Canada, Denmark, Finland, Germany, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden and Switzerland, as well as entities in those countries.

On 20 October 2005, the first ever CERs were issued under the Kyoto Protocol for two hydroelectric projects in Honduras. One of the two projects, La Esperanza Hydroelectric Project, was based on the sale of CERs to the CDCF with funding from the Government of Italy. In addition to the PCF and the CDCF, the World Bank operates six other carbon funds: the BioCarbon Fund (BioCF), the Netherlands' CDM Facility (NCDMF), the Netherlands' European Carbon Facility (NECF), the Italian Carbon Fund (ICF), the Danish Carbon Fund (DCF) and the Spanish Carbon Fund (SCF).

Chapter 4

SUBJECT OF THE CONTRACT AND QUANTITY

What is really being bought and sold?

INTRODUCTION

When buying or selling goods such as televisions, it is simple to define those goods in the contract of purchase or sale. Defining what is to be bought or sold in Clean Development Mechanism (CDM) or Joint Implementation (JI) projects may not be so simple, since the subject of the transaction is the removal or reduction of greenhouse gas (GHG) emissions. This chapter attempts to put into perspective the issue of what is really being bought and sold in a transaction involving project-based carbon credits, in an effort to help the contractual parties define the subject of the contract more clearly. The first section discusses briefly three different types of contracts: contracts of sale, contracts to sell and contracts to complete work. This overview should assist buyers and sellers of carbon credits to ensure that contracts reflect the intention of each party by recognizing similarities and differences between the three types of contract. For example, a contract to buy carbon credits should be distinguished from a contract to produce carbon credits, even though both contracts envisage the delivery of carbon credits from one contractual party to the other.

The chapter then discusses the fact that the benefits derived from owning the carbon credits are important and, for most buyers, are the deciding reasons for the contract. Therefore, what is actually being purchased or sold should be defined clearly. The section also touches upon the unique characteristic of carbon credits being intangible, which makes it impossible to protect an owner's interest in the credits through physical possession. The Marrakesh Accords state that the Kyoto Protocol has not created or bestowed any right, title or entitlement to emissions of any kind and thus raises the following questions: "What is an AAU?" and "What is a carbon credit?" The legal nature of carbon credits is also discussed in this section.

The last two sections deal with the quantitative aspects of carbon credits as they pertain to the contents of the contract, such as the volume and time frame for awarding the credits, the common units of carbon dioxide equivalent (CO_2e) to be applied to different GHGs, global warming potentials (GWPs) and so forth.

4.1 Subject of the contract

4.1.1 Sale and contract to sell

As a general guiding principle, there may be a distinction between a sale and a contract to sell, depending upon the law applicable to a particular contract. A sale is an agreement whereby, in consideration of payment of the price, a seller transfers the ownership of goods to a buyer on the date the agreement is made and regardless of who possesses the goods, unless otherwise agreed. For the goods to be the subject of an immediate sale, they must exist at the time of the contract.

On the other hand, a contract to sell is an agreement whereby, in consideration of payment of the price, a seller agrees to transfer the ownership of goods to a buyer at some agreed time in the future. Any contract purporting to sell future goods, defined as goods a seller does not own at the time of the contract but which the seller expects to acquire in the future by purchase, generation or manufacture, is a contract to sell. Under a contract to sell, the ownership of goods does not simply pass to a buyer when the goods come into existence: the seller and the buyer must agree when there will be a transfer of ownership and this understanding should be set out clearly in the contract. The risk of loss is generally borne by the owner. If it is not clearly understood when the ownership passes from the seller to the buyer, a dispute may arise as to who is responsible for any loss or damage of the goods. Whether or not the carbon credits are analogous to goods is an issue that has to be determined pursuant to the governing laws. Neither the Kyoto Protocol nor the Marrakesh Accords provides any clear indication in this regard.

4.1.2 Contract to sell and contract to complete work

A contract to complete certain work must be distinguished from a contract to sell because its legal implication may be different depending on the laws that govern such contracts. The first is a contract to complete certain work to produce something for the other party, whereas the second is a contract to sell something in the future. The end product a party intends to receive may be the same but the nature of the contract can be different. Even where a contract for completion of work includes the supply of tangible goods, the contract can be considered to be a contract for

work, not a contract of sale. For example, the repair of a factory machine is obviously not a sale even though new machine parts are supplied. A contract to sell or buy project-based carbon credits to be generated and issued at a future date may be different, in terms of the legal ramifications and/or applicable taxes, from a contract for work where a party agrees to generate the project-based carbon credits for the other party. In general, different laws apply to these two different types of contracts, thus affecting the legal rights and liabilities of each party. The parties to a carbon credit transaction should make a careful decision as to their intention, as well as an analysis of the associated rights and liabilities. Their negotiation should be based upon their intention and the contract will be drafted accordingly.

4.2 Carbon credits

This section aims to assist potential buyers and sellers of project-based carbon credits to define exactly what they wish to buy or sell, a critical part of the agreement.

4.2.1 Definition of carbon credits to be bought and sold

As seen in chapter 1, buyers mainly purchase carbon credits to fulfil their obligations under the Kyoto Protocol. It is not the carbon credits themselves that the buyers are seeking but, rather, the benefits created and attached to these credits by the Kyoto Protocol. Against this background, at least the following have to be considered in defining in the contract what is being purchased to ensure delivery of what the buyer really wants to acquire:

Firstly, the carbon credits must be issued in compliance with the requirements of the Protocol and its subsequent decisions, otherwise a reduction in GHG emissions cannot be used to meet the Kyoto obligations. Therefore, it is prudent to avoid generic terms such as emission reductions, allowances, carbon offsets or carbon credits in the contract and to refer, instead, to specific names and the source of the definition. For example, the contract should refer to: Certified Emission Reduction (CER) or Emission Reduction Unit (ERU) as defined in the Kyoto Protocol and its subsequent decisions.

Secondly, it is "all rights, title and interest in and to the CERs" (or ERUs, as the case may be) that the buyer really wishes to have "sold, transferred, assigned and conveyed". The quality of the rights, title and interest is discussed in section 4.2.2.

Thirdly, the CERs or ERUs purchased must be held in the buyer's account in the national registry of its country. Only if this is the case will the buyer be able to use the CERs and ERUs at its disposal to meet its Kyoto obligations. Thus, the contract must provide for the credits to be effectively transferred to the buyer's account in the registry. The delivery aspects of carbon credits are discussed in chapter 6.

4.2.2 Third party claims, security or lien

No buyer of property wishes to have his or her enjoyment of the property disturbed by third parties claiming that the property either actually belongs to them or that the third party has security rights over the property which are or could be in contradiction with the new owner's possession or ownership of the property. Buyers and sellers of carbon credits would also like to do without such disturbances, but unfortunately a system to document the title or ownership of Kyoto units to avoid these kinds of competing claims is not yet in place. Moreover, there is no registry to document third party security rights, neither at the international level under the Kyoto Protocol nor at the country level, and there is no indication that the countries intend to devise such a system. Thus, buyers can only insist on sellers providing a warranty stating that they are – or have the right to be – the genuine and sole owners of the carbon credits and that they are free of any security interests or liens that could be claimed by third parties. Thus, the contract could state, for example, that the CERs purchased shall be "free of any security interest and/or lien" and can include such terms as encumbrance, obstruction, burden, limitation, present litigation, obvious defect, doubt concerning validity and so forth, as appropriate. Of course, the warranty will only provide a right to claim for damages if it is breached, as it is only a promise by one of the contractual parties. For the buyer, it cannot give as much comfort as a publicly accessible title register but the buyer may not be able to expect anything more at present. Chapter 6 deals with this issue in connection with registries under the Kyoto Protocol.

4.2.3 The legal nature of carbon credits

In general terms, carbon credits are awarded in recognition of the fact that a certain quantity of GHG emissions has been reduced or that GHGs have been removed under certain circumstances. They have been designed to serve as units to account for compliance or non-compliance of the Kyoto obligations. Carbon credits are not physical goods, but rather electronic units held in the national registries and in the CDM registry (see chapter 6). Neither the Protocol nor the Marrakesh Accords envisages any paper evidence of ownership of carbon credits, which are intangible and, by definition, transferable.

Naturally, the question arises as to what is the legal nature of carbon credits under the Protocol. Neither the Kyoto Protocol nor the Marrakesh Accords addresses the question of the legal nature of the four Kyoto units. Nonetheless, the Accords make it clear that "the Kyoto Protocol has not created or bestowed any right, title or entitlement to emissions of any kind on Parties included in Annex I".[1] UNFCCC's brochure entitled *Caring for Climate*[2] states that "concerns have been voiced that the mechanisms … could confer a 'right to emit' on Annex I Parties … The Marrakesh Accords sought to dispel such fear, asserting that the Protocol creates no 'right, title or entitlement' to emit." The Protocol, the Accords and the brochure are all silent and do not provide a clear answer to the question on the legal nature of carbon credits.

An emission permit sounds analogous to a license (such as a fisheries or broadcasting license), in that it requires the permission of governmental authorities to legalize a particular act by exercising a certain privilege. A fisheries license characteristically involves the allocation of a quota, a catch limitation, fixed total allowable catches, a catch-ration and so forth to manage fish resources and/or to provide protection to endangered species. Likewise, a broadcasting license involves the allocation of the right to broadcast at a particular frequency. However, as seen above, the Accords clearly deny the creation of any right, title or entitlement.

Outside of the Kyoto framework, there are at least two instances of emissions trading already in place that provide some reference in this regard.

[1] MA Decision 15/CP.7 (addendum, volume II, page 3, Preamble).
[2] UNFCCC (2003), page 19.

One of them is the United States Clean Air Act (CAA) as amended in 1990. Title IV, section 403 (f) of the CAA on sulphur dioxide emissions states that: "An allowance allocated under this title is a limited authorization to emit sulphur dioxide in accordance with the provisions of this title. Such allowance does not constitute a property right." Gehring and Streck,[3] on the other hand, argue that: "Although the characterization of an allowance as a property right is excluded from the CAA, these still have many elements of a property right. Allowances might even be characterized as de facto property rights between private parties, though not vis-à-vis governments."

The other instance is the European Union Emissions Trading Scheme (EU ETS) based on EU Directive 2003/87/EC. The EU ETS defines an allowance as a transferable allowance to emit one ton of CO_2 equivalent and allowances are allocated by member States to emitters. Emitters may not emit more GHGs than the allowances they hold without attracting penalties. However, the EU ETS has also left it up to its member States to determine the legal nature of allowances and how to treat them fiscally in its territory. The European Environment Agency (EEA) has consolidated responses from the member States to EEA questionnaires on the legal nature and fiscal treatment of allowances, and reports:[4]

- For the purpose of accounting, allowances are regarded as (intangible) assets in several Member States. Moreover, in Italy and the United Kingdom, emissions are regarded as liabilities.

- For the purpose of financial legislation, some Member States consider allowances to be commodities which do not fall under the responsibility of the Financial Services Authority (FSA). Futures or other derivatives of these commodities are, however, regarded as financial instruments and their transactions are supervised by the FSA. In other Member States, the allowance itself is considered to be a financial instrument.

Thus, the present answer to the question as to the legal nature of carbon credits under the Kyoto Protocol appears to vary depending on the laws governing each contract. Perhaps definite answers to the question will only

[3]Gehring, M.W. and C. Streck (2005), pages 10 and 224.

[4]European Environment Agency (2006), page 38.

be provided by laws that may be passed in the future or by the future settlement of trading disputes.

Regarding the creation of the four Kyoto units, there is an obvious difference between the AAU, which is granted or assigned, and the other three units – the RMU, the CER and the ERU – which are all earned as recognition of an achieved reduction or removal. However, once they have been issued, they are transferable or fungible among themselves. Each is to be treated as the equivalent of any other unit in the emissions reduction or limitation compliance scheme despite the difference in how they came into existence. Whether this difference has an effect on the legal nature of these units is another issue.

4.3 Crediting period

The crediting period is the period within which carbon credits are issued in accordance with the provisions of the Kyoto Protocol and its subsequent decisions and does not necessarily correspond to the life of a project. It should also be noted that the crediting period is different from the commitment period. Annex I countries have legal obligations to reduce or limit their GHG emissions during the first commitment period from 1 January 2008 to 31 December 2012, but they do not yet have any quantified commitments beyond that period. Negotiations have just started among the Parties and nothing conclusive has been decided with regard to their targeted obligations after 2012. The demand for carbon credits after 2012 depends very much upon any decision made by the Parties to the Protocol on any subsequent commitment period. The crediting periods of CERs and ERUs are different, as set out below.

4.3.1 Crediting period of CERs

The crediting period of CERs gained from afforestation and reforestation (AR) CDM projects to enhance GHG removals by sinks is very different from that of CERs gained from CDM projects to reduce GHG emissions at source. This section focuses on projects that reduce emissions at source and does not apply to AR CDM projects for removal by sinks.[5]

[5]For the crediting period for AR projects, see FCCC/CP/2003/6/Add.2, page 21, para. 23, available at http://unfccc.int/resource/docs/cop9/06a02.pdf#page=3.

Starting date

In principle, CERs will only be issued for a crediting period after the CDM project has been registered, provided always that reductions are verified and certified by the Designated Operating Entity (DOE). This means that registration is a prerequisite and that credits cannot be issued retroactively for the period before the date of registration. However, an exception has been made to encourage the early start of CDM activities and CERs can now be requested for the period prior to registration under certain conditions (see section 2.4.2). Once registered, the crediting period for such project activities may start prior to the date of registration but in no case earlier than 1 January 2000.[6] *According to the Glossary of CDM Terms*,[7] "a project activity is a measure, operation or action that aims at reducing greenhouse gas (GHG) emissions". The Kyoto Protocol and the CDM modalities and procedures use the term "project activity" as opposed to "project". A project activity could, therefore, be identical with or a component or aspect of a project undertaken or planned. Project participants may choose the starting date of the crediting period provided it falls after the first emission reductions have been achieved by the CDM activity.

Length of crediting period

The Marrakesh Accords set out the length of the crediting period so that project participants may choose between two possible crediting periods:[8] a fixed crediting period or a renewable crediting period.

The fixed crediting period lasts a maximum of 10 years with no possibility of renewal. The renewable crediting period, on the other hand, lasts a maximum of seven years and may be renewed twice provided that, for each renewal, a DOE determines and informs the CDM Executive Board that the original project baseline is still valid or has been updated, taking account of the new data where applicable.

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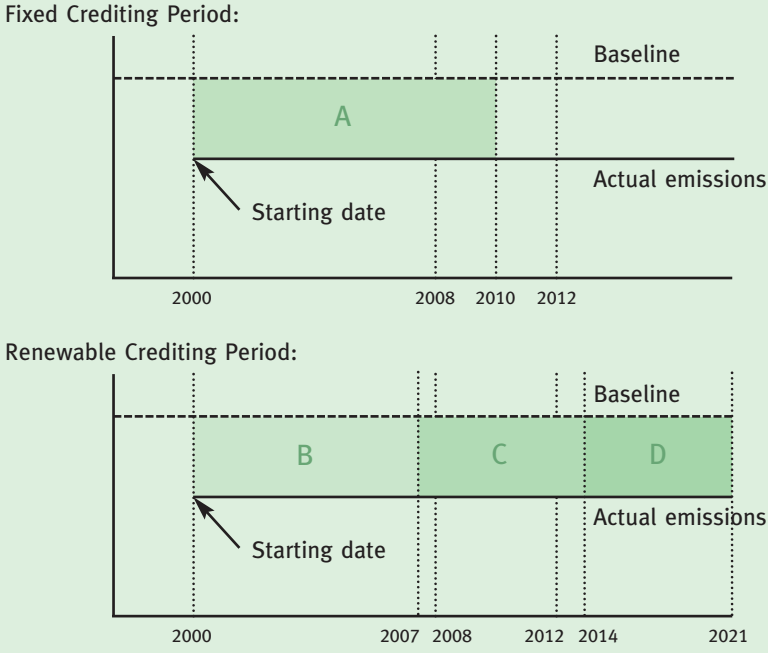
[6]MA Decision 17/CP.7 (Addendum, Volume II, page 23, paras. 12–13). For CDM afforestation and reforestation project activities, see chapter 2, footnote 20.

[7]In *Guidelines for Completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodologies* (CDM-NM) Version 05 available at http://cdm.unfccc.int/Reference/Documents/copy_of_Guide1_Pdd/English/Guidleines_CDMPDD_NM.pdf.

[8]MA Decision 17/CP.7 (Addendum, Volume II, page 37, para. 49).

As illustrated in figure 4.1, during the fixed crediting period of 10 years, the project participants can expect to gain the quantity of CERs shown in area A. Under a renewable crediting period of no more than 21 years, the participants may expect to gain the quantity of CERs shown in areas B, C and D provided the DOE verifies the validity of the original baseline every seven years. In fact, at the time of renewal, it is possible that the original baseline has been updated based on new available data covering the subsequent seven-year periods. There is no guarantee of a successful renewal. The choice of the crediting period type and of the starting date of the crediting period must be fixed in the PDD before registration. Thus, a choice should be made once the advantages and disadvantages of each option have been taken into account and on the basis of the particular situation of the parties to the contract. It would be prudent for the contractual parties to

Figure 4.1 Choice of crediting period under CDM



Assumption: The first emission reduction is achieved in the year 2000 and the project participants choose the date of the first reduction as the starting date of crediting period.

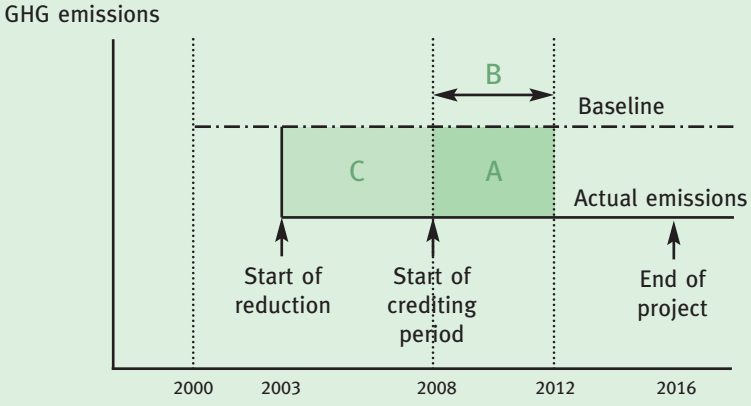
provide in the contract for situations where the renewal of the crediting period results in changes to the baseline, which in turn means a significant change in the volume of CERs to be delivered.

4.3.2 Crediting period of ERUs

For JI projects that generate ERUs, the crediting period starts on 1 January 2008. However, in contrast to that of CERs, the length of the crediting period of ERUs is not actually mentioned anywhere in the Marrakesh Accords. Given this absence, it is assumed that the crediting period is the same as the first commitment period of 2008–2012.

As illustrated in figure 4.2, the project life and crediting period are different. Even though the project achieves GHG emission reductions during the entire project life from 2003 to the end in 2016, ERUs are to be issued only for the five-year crediting period from 2008 to 2012. Should the project end in 2010 instead of in 2016, however, it is clear that ERUs will be issued for only three years: from 2008 to 2010 and not beyond to the end of the crediting period in 2012. Thus, the parties to a contract must clearly understand the crediting period and avoid committing to sell more than is possible. As

Figure 4.2 Crediting period and ERUs



A = Volume of ERUs generated in the period B
B = 2008–2012 period within which ERUs are to be issued
C = Early credits

to the period before 2008, it is argued that ERUs equivalent to area C in figure 4.2 could be issued, provided the host country agrees. The argument arises from a lack of clarity in the Marrakesh Accords, which do not state explicitly whether emission reductions achieved only after 1 January 2008 can result in ERUs or those achieved in compliance with the Protocol between 2000 and 2008 can also be awarded but issuance of ERUs must be suspended until 2008. The relevant part of the Accords states: "The projects starting as of the year 2000 may be eligible as [Joint Implementation] projects if they meet the requirements of the guidelines for [Joint Implementation] as set out in the annex below and that ERUs shall only be issued for a crediting period starting after the beginning of the year 2008".[9]

Reductions generated before 2008 and concerning which there is uncertainty as to whether they may or may not be issued as ERUs only after 1 January 2008, are called "early credits". Parties interested in obtaining early credits should approach both Annex I countries – the host and the investor countries – involved in the JI projects to discover whether issuance is possible or not.

In this regard, the bilateral Memorandum on Cooperation[10] under the Kyoto Protocol between the Governments of Japan and Bulgaria dated 20 December 2005 states in item 4 that Bulgaria will recognize emission reductions generated before 2008 by JI projects in the form of AAUs during the period 2008-2012 and will transfer the AAUs to the relevant accounts in Japan's national registry in accordance with the contracts between the project participants of the two countries on the basis of Emissions Trading (ET) as defined in article 17 of the Protocol. It is interesting to note that the emission reductions achieved by eligible JI projects in Bulgaria before 2008 will be awarded AAUs and transferred under the ET scheme rather than under the JI scheme.

4.3.3 Vintage and banking

The term "vintage" refers to the year in which GHG emission reductions are achieved. It is important because it indicates whether they meet any time-related requirements of the buyers of carbon credits. For example,

[9] MA Decision/CP.7 (Addendum, Volume II, page 6, Preamble).

[10] Press release of 20 December 2005 by the Ministry of the Environment of Japan, available at http://www.env.go.jp/press/file_view.php3?serial=7518&hou_id=6675.

under the Kyoto Protocol regime, GHG reductions of 1999 vintage are not eligible as carbon credits because, even though CDM allows the issuance of CERs before the start of the first commitment period in 2008, the CDM crediting period does not start before 1 January 2000. In contrast, GHG reductions of 2004 vintage, for example, may attract buyers because, provided the relevant procedures under the Protocol have been met, these reductions may be issued as CERs. The term vintage is not used in the Protocol nor in the Marrakesh Accords but is widely used in the business.

The term "banking" refers to the idea of saving extra Kyoto units from the first commitment period (2008–2012) for use in subsequent commitment periods. Article 3, paragraph 13, of the Kyoto Protocol states: "If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount under this Article, the difference shall, on request of that Party, be added to the assigned amount for that Party for subsequent commitment periods". In official UNFCCC documents, the term "carry-over" is often used. There are certain limitations to carry-over, described in section 4.3.4.

4.3.4 Limitations

Under the Kyoto Protocol, there are certain quantitative limitations, applicable only at the country level and not at the entity level, on the generation of CERs from Land Use, Land Use Change and Forestry (LULUCF) projects and the carry-over or banking of the Kyoto units. It is up to each Annex I country to decide how these provisions in the Kyoto Protocol are managed within the country and the extent of limitations imposed upon the business community. Since these limitations may affect the entities holding Kyoto units and must, therefore be taken into account when trading, it may be advisable for entities to consult with the relevant administrative authorities about any possible restrictions.

Limitations on CERs from Land Use, Land Use Change and Forestry (LULUCF) projects

Under CDM, the eligibility of LULUCF project activities is limited to afforestation and reforestation.[11] "Afforestation" means the direct human-induced conversion of land that has not been forested for a period of at

[11] MA Decision 17/CP.7 (Addendum, Volume II, page 22, para. 7 (a)).

least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.[12] "Reforestation" means the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land.[13] For the first commitment period, reforestation activities will be limited to the reforestation of those lands that did not contain forest on 31 December 1989.[14] For additions to a country's assigned amount, temporary CERs (t-CERs) and long-term CERs (l-CERs) generated by such project activities may not make up more than 1 per cent of the base year emissions of the particular Party, times five (i.e. 5 per cent = 1 per cent $\times$ 5 years) for the first commitment period of 2008–2012.[15] Obviously, any activity that removes GHGs by sink in excess of the limit will not result in the issuance of CERs.

Limitation on carry-over beyond the first commitment period

An Annex I country may carry over to the subsequent commitment period any CERs held in its national registry which have neither been retired for that commitment period nor cancelled, to a maximum of 2.5 per cent of the assigned amount under article 3, paragraphs 7 and 8.[16] The t-CERs and l-CERs cannot be carried over.

For AAUs, ERUs and RMUs, the rules[17] are:

(a) Any AAUs may be carried over.

(b) No RMUs may be carried over.

(c) Of ERUs not converted from RMUs, only up to 2.5 per cent of the assigned amount may be carried over.

The differences in the ability of units to be carried over may affect their price when traded.

[12]MA Decision 11/CP.7 (Addendum, Volume I, page 58, para. 1 (b)).
[13]MA Decision 11/CP.7 (Addendum, Volume I, page 58, para. 1 (c)).
[14]Ibid.
[15]MA Decision 17/CP.7 (Addendum, Volume II, page 22, para. 7 (b)).
[16]MA Decision 19/CP.7 (Addendum, Volume II, page 61, para. 15 (b)).
[17]MA Decision 19/CP.7 (Addendum, Volume II, page 61, paras. 15–16).

4.4 Quantity

4.4.1 GHG and global warming potential (GWP)

The global warming potential (GWP) is the factor that compares the relative contribution of each GHG to the global warming effect with carbon dioxide (CO_2) as the reference gas. By definition, the GWP of CO_2 is 1, whereas the GWP of methane (CH_4) is 21, according to the *Second Assessment Report* of the Intergovernmental Panel on Climate Change (IPCC). This means that the emission of one metric ton of methane is 21 times worse in global warming terms than the emission of one ton of CO_2. In terms of mitigating global warming, the reduction of one metric ton of methane emissions is equal to the reduction of 21 metric tons of carbon dioxide emissions.

Decision 2/CP.3, taken at COP3 in 1997, confirmed that the GWP values to be used for the first commitment period, from 2008 to 2012, should be those provided by the *Second Assessment Report* by the IPCC ("1995 IPCC GWP Values") based on the effects of GHGs over a 100-year period, taking into account the inherent and complicated uncertainties involved in global warming potential estimates.[18]

Table 4.1 1995 IPCC GWP values[19]

GHG	*Chemical symbol*	*Global warming potential (GWP)*
Carbon dioxide	CO_2	1
Methane	CH_4	21
Nitrous oxide	N_2O	310
Hydrofluorocarbons	HFC-23	11,700
	HFC-125	2,800
	HFC-134a	1,300
	HFC-152a	140
Perfluorocarbons	CF_4 (perfluoromethane)	6,500
	C_2F_6 (perfluoroethane)	9,200
Sulphur hexafluoride	SF_6	23,900

[18]Kyoto Protocol, article 5(3) and Decision 2/CP.3 of UNFCCC official documents (FCCC/CP/1997/7/Add.1, page 31, Preamble).

[19]This is a partial list based on IPCC (1996), page 121.

The GWP may be revised and updated in line with the latest scientific advances. In fact, the GWPs of several gases have been revised and were published in the IPCC *Third Assessment Repor*t. For example, the GWP of methane is now 23, not 21 as stated in the *Second Assessment Report.* As long as CERs and other carbon credits are bought and sold for the purpose of compliance during the first commitment period, it is suggested that reference continue to be made to the 1995 IPCC GWP values and that this be specified in the contract. Otherwise, confusion may arise due to the continuous revision of GWP values.

4.4.2 CO_2 equivalent and carbon equivalent

The units issued under the Kyoto Protocol and the Marrakesh Accords as a means of recognizing the reduction of GHGs by way of emission reductions or sequestration – ERUs, CERs and RMUs – are each equal to one metric ton of CO_2 equivalent. Thus, the terms ERU and CER can be used to express the volume of carbon credits bought and sold in a contract, depending on whether it is JI or CDM that generates the carbon credits. The volume of carbon credits traded in CDM projects may be expressed, for example, as "100,000 CERs as defined in the Marrakesh Accords" or, alternatively, as "CERs as defined in the Marrakesh Accords in the volume of 100,000 metric tons CO_2 equivalent".

CERUPT of the Government of the Netherlands uses CERs as units in the terms of reference of its tender documents. Clause 2.2 (on the nature and amount of the delivery) states:

> A CER or Certified Emission Reduction Unit is a unit pursuant to article 12 of the Kyoto Protocol and requirements thereunder, and is equal to 1,000 kg CO_2 equivalent, calculated using global warming potential defined by Decision 2/CP.3 or as subsequently revised in accordance with article 5 of the Kyoto Protocol… Through CERUPT 2001, the Netherlands intends to purchase at least 3 million CERs.[20]

It is possible to achieve the reduction of various GHGs, depending upon the particular project, but in all cases the volume of reductions must be

[20]Article 5 of the Kyoto Protocol refers specifically to the IPCC for the calculation of GWP (see section 4.4.1).

converted into the volume of CO_2 equivalent, using the GWP. The corresponding volume of carbon credits will be issued in the form of ERUs or CERs. For example, the quantity of CERs to be issued from a CDM project which has effectively reduced 1 metric ton of methane is 21, or CERs in the quantity of 21 metric tons CO_2 equivalent.

Occasionally, the term "carbon equivalent" is used as the unit of measurement instead of "carbon dioxide equivalent". Carbon dioxide equivalent and carbon equivalent are not the same. The conversion factor is the fraction represented by the atomic weights of carbon and carbon dioxide (12/44) which should be multiplied by the amount of carbon dioxide equivalent in order to arrive at the equivalent amount of carbon equivalent. Thus, 1 metric ton CO_2 equivalent $\times$ 12/44 = about 0.27 metric tons carbon equivalent, while 1 metric ton carbon equivalent $\times$ 44/12 = about 3.67 metric tons CO_2 equivalent.

4.4.3 Denomination of units

One CER or ERU is, by definition, equal to 1 metric ton CO_2 equivalent of GHG emission reductions. It is convenient to denominate unit prices using the same unit as the CER or ERU so that, for example, 1 metric ton CO_2 equivalent is worth US$ 5. Alternatively, the price can be expressed as US$ 5 per CER.

The parties to a contract should avoid using different measurement units when denominating the unit price. While one CER or ERU is equal to 1 metric ton CO_2 equivalent, confusion will arise if the price is quoted using a different unit of measurement, for example, US$ 5 per long ton CO_2 equivalent.

While 1 metric ton is equal to 1,000 kg or 2,204.6 lbs, in the United Kingdom it is usual to use 1 long (gross) ton or imperial ton, which is equal to 1,016 kg or 2,240 lbs, whereas in the United States of America one short (net) ton, equal to 907 kg or 2,000 lbs, is often used.

Thus, the actual price will differ depending on whether the price is US$ 1 per metric ton or US$ 1 per long ton or US$ 1 per short ton. An offer to buy at US$ 1 per short ton is actually the same as offering to buy at US$ 1.10 per metric ton; the offer of US$ 1 per short ton is based on an amount of 907 kg and, if converted to a price per 1,000 kg or metric ton, then it is worth US$ 1.10.

Chapter 5

PRICE AND TERMS OF PAYMENT

How much and when to pay?

INTRODUCTION

One of the most important aspects of a contract, if not the most important, is the agreement between the parties as to when and how much is to be paid. The first part of this chapter deals with the major factors that influence the process of arriving at an acceptable price for the carbon credits including the risk that the buyer will not receive the carbon credits on time and in the quantity agreed. Then, the chapter identifies the costs that will almost certainly be associated with a transaction, such as the fee for the services of the Designated Operating Entity (DOE). Once these costs have been identified, the parties to the contract can discuss and establish a clear and mutual understanding of who should be responsible for which costs. A "unit price contract" is introduced to illustrate a type of contract that allows for the final quantity to vary from the quantity agreed upon initially.

The next major subject of this chapter is the terms of payment. Buyers and sellers have a conflicting interest as to when the price should be paid: sellers need to be certain the price will be paid and they generally wish to receive payment as early as possible, while buyers need to be certain that the carbon credits will be delivered and they generally wish to pay the price as late as possible. To help the parties strike a compromise, the issues of advance payment and of security for the refund of advance payments are discussed.

Finally, the chapter examines the tax situation, as well as accounting treatments of carbon credits upon production, sale, purchase, resale, holding or retirement. Depending on how the transaction involving carbon credits is structured, it may be subject to various types of taxation and these taxes are likely to constitute a cost to either the seller or the buyer.

5.1 Price

5.1.1 Factors influencing price

In the context of a contract to sell or buy carbon credits to be created in the future, the price to be agreed by the parties to the contract will be influenced by one or more of the following factors, although this is not an exhaustive list:

Buyer's break-even point

If the buyer is an entity that has an obligation to reduce greenhouse gas (GHG) emissions and that is seeking to purchase carbon credits as a less costly way of meeting its obligations than having to reduce emissions in its own country, then the entity will not pay more for carbon credits than it would cost to carry out the reduction, taking into account all associated costs and risks.

Seller's cost and the viability of the investment project

The cost of producing carbon credits will be determined by a number of factors, including the type and size of the project, the technology used, the baseline emissions level, the crediting period, etc. and will vary from project to project. The seller naturally wishes to sell the carbon credits at a price that is higher than the production costs. Also, if the decision to invest in a specific Clean Development Mechanism (CDM) or Joint Implementation (JI) project depends solely on the successful sale of carbon credits at a particular price, then the seller will naturally try to obtain at least that price.

Market factors

During the negotiation of a contract, the carbon credit market cannot be ignored. Both the prevailing market, as well as the perceived future market, will provide a reference to be taken into consideration in the negotiation of the price. Thus, it is important to pay due attention to market trends. Market information may be collected from various sources such as brokers, the Internet, etc. However, it is always important to consider matters, including the time of delivery, the transaction costs, the cost of any financing, payment terms and the risks involved, to arrive at an effective comparison with the prevailing market price.

Parties to the contract

The competence and creditworthiness of the parties to the contract, both buyers and sellers, are also important, especially since it may take years, once the contract has been finalized, before the plant or facilities are constructed and all the carbon credits are delivered. The price may also be influenced by the capabilities of the seller and/or of the seller's contractors to effectively manage the project and to construct the plant or facilities that are to achieve reductions in the emission of GHGs.

Transaction costs

There are certain inevitable costs and expenses that arise from following the procedures required under CDM or JI, such as the costs of engaging a DOE for a CDM project or an Accredited Independent Entity (AIE) for a JI project (see section 5.1.2).

Terms and conditions of the contract

The agreement of the parties to the contract on the price will also reflect the burdens imposed on each party by the terms and conditions of the contract. If these impose a greater possible liability upon the seller, the seller will only be prepared to accept such onerous terms and conditions if the price is attractive enough. By the same token, if the buyer believes it bears the greater possible liability, it may be able to insist that its acceptance is dependent upon the price being low enough to make its agreement to the contract economically worthwhile.

Risks

In a contract where the parties propose to sell and buy carbon credits that will be generated and delivered in the future, the buyer may be reluctant to enter into such a contract, and/or unwilling to pay a good price, if the project involves a significant degree of uncertainty of actually receiving the carbon credits on time and in the quantity agreed upon. Depending on the type and location of the project, it can easily take three or more years after the investment decision has been taken before the plant or facilities have been constructed and commissioned. As pointed out previously, in most cases, GHG emission reductions or GHG removals can start to accrue only after investment has been made in the plant or facilities and these have become operational and/or forests have grown to the required extent. Throughout the phases of planning, construction and operation, anything could happen to the project that may affect achievement and delivery of the carbon credits and, generally, the longer the time span, the more risks are involved. Examples of risks are set out in chapter 8, together with a discussion of defaults and remedies. Thus, all other factors being equal, the price of carbon credits of a vintage further into the future could involve more risks than carbon credits of an earlier vintage and this factor may be reflected in the price.

5.1.2 What is included and what is not included in the price

As with any contract, it is important to make it very clear which party is responsible for which obligations, what is included in the price and what is not. This applies just as much to the sale and as to the purchase of forward carbon credits.

A contract to sell or buy forward carbon credits may, for example, simply set out that the buyer is only responsible for paying the agreed price and nothing else, while the seller is responsible for all and any costs and expenses until the forward carbon credits have been transferred to the buyer's account in its national registry. However, even in such cases, the parties to the contract may wish to refer to certain items to clarify what is included and what is not included in the price. Although by no means exhaustive, below is a list of some associated costs and certain expenses particular to CDM and JI projects.

Cost of the Designated Operating Entity (DOE) or Accredited Independent Entity (AIE)

As we have already seen in the CDM project cycle in chapter 2, the DOE provides critical services in the validation, registration, verification and certification[1] of a CDM project. Either party to a contract can contract a DOE. Whereas it is specifically allowed in the project cycle of small-scale projects that the same DOE may carry out both the validation and the verification and certification, for the common type of CDM projects, two different DOEs should carry out these functions, unless the Executive Board allows otherwise.[2] Certainly, the use of two different DOEs should avoid any conflicts of interest. The contract must clarify which party – the seller or the buyer – is responsible for appointing the DOEs and for paying the fees.

Under JI, track one is available only when the host country has complied with all the required eligibility criteria and can, therefore, rely on simplified procedures for the issuance of Emission Reduction Units (ERUs). Track two must be followed whenever the host country has not fulfilled all the required eligibility criteria; in this case, emission reductions must be verified in a similar way to Certified Emission Reduction units (CERs) in

[1]Decision 21/CP.8 (FCCC/CP/2002/7/Add.3 Original: English, page 22, para. 20).
[2]MA Decision 17/CP.7 (Addendum, Volume II, page 32, para. 27 (e)).

a CDM project, this time by an AIE accredited by the Joint Implementation Supervisory Committee under article 6 of the Protocol. This extra cost must be taken into account by the parties. The AIE or DOE(s) should be asked to provide an estimate for services rendered.

Registration fee for CDM projects[3]

A registration fee is payable to the CDM Executive Board by the project participants at the time of application for registration of the proposed CDM project in accordance with the formula below.

> (Registration Fee) = (up to first 15,000 metric tons CO_2 equivalent of expected average annual CERs over its crediting period) × US$ 0.10 per CER + (expected average annual CERs over its crediting period in excess of 15,000 metric tons CO_2 equivalent) × US$ 0.20 per CER.

No registration fee has to be paid, however, if the expected average annual CERs over its crediting period is less than 15,000 metric tons CO_2 equivalent. Even when a registration fee does have to paid, it is never more than US$ 350,000. If an activity is not successfully registered, any registration fee in excess of US$ 30,000 is reimbursed. Before 1 March 2006, when it came into force, the registration fee was charged in accordance with annex 5 to the report of the 6th Meeting of the CDM Executive Board of 24 October 2002. However, the registration fee is, in fact, an advance payment of the share of proceeds for administration expenses payable at the time of issuance of the CERs, from which the registration fee is deducted.

Share of proceeds (SOP)

Under CDM, once the CERs have been issued into the pending account in the CDM registry, they are subject to the collection of certain levies, known as share of proceeds (SOP). There are two types of SOPs, as set out below. This means that the quantity of CERs issued is different from the quantity of CERs that will be available for allocation among parties entitled to them. Thus, the contract should specify whether the seller or the buyer should bear these levies.

[3]Report of 23rd Meeting of CDM Executive Board dated 24 February 2006, para. 91 and annex 35.

The levy of a share of the proceeds is specific to CDM. At the time of the Marrakesh Accords, ERUs to be issued under JI were not subject to any deduction for such proceeds. However, it is possible that similar charges may be introduced in the future for these procedures as well.

(a) Share of proceeds for administrative expenses

This SOP is collected by the CDM Executive Board to cover the administrative expenses of the entire CDM system. The COP/MOP 1 decided[4] in December 2005 that the SOP in this regard shall be calculated as follows:

(i) US$ 0.10 per CER issued for the first 15,000 metric tons of CO_2 equivalent for which issuance is requested in a given calendar year, plus

(ii) US$ 0.20 per CER issued for any amount in excess of 15,000 metric tons of CO_2 equivalent for which issuance is requested in a given calendar year.

This decision was a rejection of the flat rate of US$ 0.20 recommended by the CDM Executive Board at its 21st Meeting in September 2005.

The Executive Board will not distribute CERs to project participants before it has received these SOPs. For JI projects, it is now being considered whether the administrative expenses relating to the Joint Implementation Supervisory Committee should be borne in some way both by Annex I Parties and project participants.[5]

(b) Share of proceeds for the Adaptation Fund

This SOP is collected to contribute to the Adaptation Fund, which assists those developing countries, Parties to the Protocol, that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation against those adverse effects. The volume of these proceeds that will be deducted by the Executive Board has been fixed at 2 per cent of the volume of CERs issued and it is assumed the percentage will be levied on the total quantity of CERs issued into the pending account of the CDM registry.[6] However, CDM projects implemented in the least developed coun-

[4]COP/MOP 1 Decision -/CMP.1 on "Further guidance relating to the clean development mechanism", para. 37.

[5]COP/MOP 1 Decision -/CMP.1 on *Guidelines for the Implementation of Article 6 of the Kyoto Protocol*, para. 7.

[6]MA Decision 17/CP.7 (Addendum, Volume II, page 23, para. 15).

tries are exempt from this levy.[7] For Joint Implementation projects, no share of proceeds for the Adaptation Fund was decided at COP/MOP 1 in December 2005.

Sharing credits with the host country

In some cases, a host country may claim a portion of the CERs issued in accordance with either its own laws or an agreement between the country and the project participants. Thus, it is critically important for the seller/project participant that will carry out the CDM project to clarify this point before applying for the approval of the host country's designated national authority (DNA) and before registration. The share of credits may take different forms, such as the imposition of taxes or levies, rather than a claim for a certain quantity of CERs.

Brokerage

If a broker is engaged in the transaction, it should be clear in the contract that the brokerage fee is to be borne by the party who engaged the broker, whether it is the buyer or the seller. The parties may also agree to share the brokerage fee, regardless of who engaged the broker.

5.1.3 Unit price contract

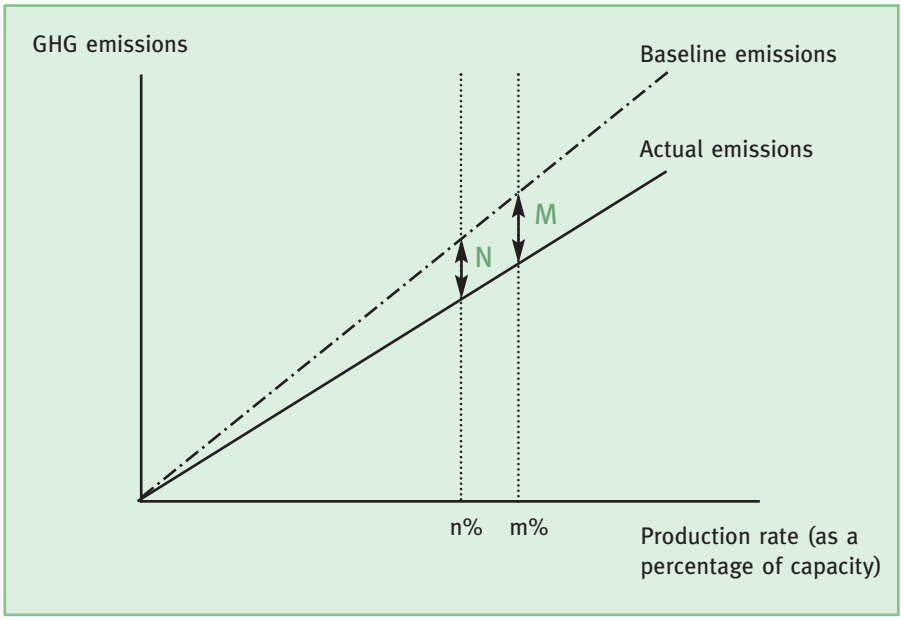
At the moment of concluding the contract, it is almost impossible to determine the exact quantity of carbon credits that will actually be generated, certified and delivered by the seller in the years to come.

Whatever the reason, the quantity of carbon credits would increase as the rate of industrial production activities eligible as a CDM or JI project increases, and it would decrease as the operation is run down, as illustrated in figure 5.1.

When the operation rate increases from n% to m% in figure 5.1, the quantity of carbon credits, which is the difference between the baseline emissions and the actual emissions, will also increase from N to M. Vice versa, the quantity of carbon credits will decrease with a decrease in production.

[7] Ibid.

Figure 5.1 Production rate and carbon credits



In such a situation, a "unit price contract" is probably more practical and realistic since here, the parties to the contract agree to deliver and accept a certain quantity of carbon credits to be finally determined in the future, at a unit price agreed upon in concluding the contract. Once a unit price contract has been established, it is usual for the seller and the buyer to agree upon a provisional quantity and a tolerable variation in the quantity from the agreed provisional quantity.

Figure 5.2 illustrates the relationship between the actual quantity of carbon credits available and the contract amount payable in a hypothetical contract, where a provisional quantity of 1,000 metric tons CO_2 equivalent of forward carbon credits are sold and purchased with an acceptable quantity variation of plus/minus 10 per cent:

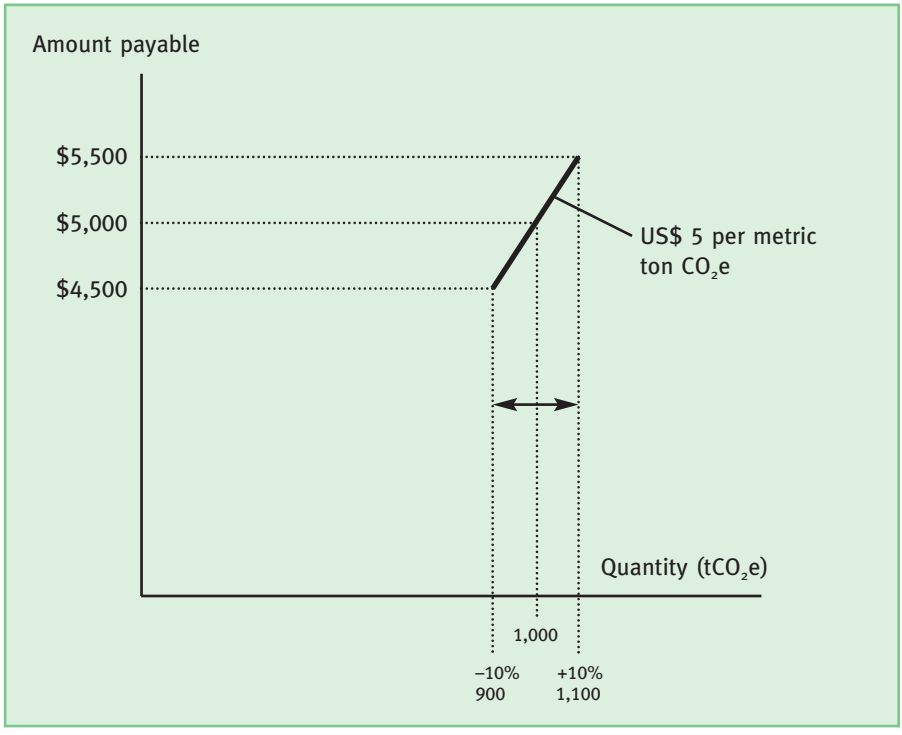
- A unit price of US$ 5 per metric ton CO_2 equivalent is agreed for the provisional quantity of 1,000 metric tons CO_2 equivalent, making a total provisional contract amount of US$ 5,000.
- If the actual quantity available is more than 1,000 metric tons CO_2 equivalent but equal to or less than 1,100 metric tons CO_2 equivalent,

the seller has performed its obligations under the contract in full and the buyer must accept the actual quantity at the agreed unit price of US$ 5. However, the buyer may reject any quantity in excess of 1,100 metric tons CO_2 equivalent and the seller is under no obligation to deliver this.

- If the actual quantity available is 900 metric tons CO_2 equivalent but less than 1,000 metric tons CO_2 equivalent, the seller has performed its obligation under the contract in full and the buyer must accept the actual quantity at the agreed unit price of US$ 5.

- If the actual quantity is less than 900 metric tons CO_2 equivalent, the seller has not performed its obligation under the contract and the buyer is entitled to take any remedies available to it in the contract. Whether the buyer can accept the actual quantity of less than 900 metric tons CO_2 equivalent and demand compensation for the shortage, or whether the buyer has the right to terminate the contract and demand

Figure 5.2 Quantity variations and amount payable



compensation for the entire quantity, depends on what the parties have agreed and the applicable laws.

Under the general terms and conditions of the CERUPT of the Government of the Netherlands, the buyer has a right to purchase any excess quantity the seller has generated at the market price. However, this right is not an obligation to accept any excess CERs:

> 3.3 Should the contractor[8] generate more CERs during the crediting period than are called for under the terms of the agreement in the contract, Senter[9] reserves the right to acquire these CERs. The contractor must offer the surplus of generated CERs to Senter before it can do so to any other party. The contractor will offer the surplus of generated CERs to Senter at the market price of the CERs at the time of delivery. Senter is in no way obliged to purchase more CERs than are agreed upon in the contract.

5.2 Terms of payment

The parties will negotiate the terms of payment on the basis of various factors, such as price, the creditworthiness and financial strength of each party, market conditions, the time since the conclusion of the contract to delivery, any milestone payment obligations, any risks involved in the project or any country risk, other terms and conditions of the contract and so forth. Naturally, sellers want to be paid early, even before they have delivered the carbon credits to the buyer, while buyers want to be able to pay late, only after they have received the carbon credits.

5.2.1 Cash on delivery

Perhaps the most basic and straightforward method of payment is "cash on delivery", where payment is effected in full against delivery of the carbon credits to the buyer. If the contract envisages more than one delivery, then payment may be made each time the carbon credits are delivered, applying the agreed unit price or as otherwise agreed.

[8]The term "contractor" here refers to the seller.

[9]Senter is the buyer of CERs on behalf of the Government of the Netherlands.

5.2.2 Payment before delivery of carbon credits

The legal implications of payment being made before completion of delivery may be different, depending on the nature of such payment in the contract and the applicable law. The payment may be part of the total contract amount or an advance payment or payment of some other nature. With a payment in advance, the amount paid may be recovered as a credit against the total payment due when the carbon credits are successfully delivered. Moreover, the contract may provide for the advance payment to be recovered if the seller fails to deliver the carbon credits in line with the contract. Thus, it is always advisable to clearly set out the nature of such a payment method in the contract, together with details of how and when any amount paid will be refunded to the buyer in case of partial or entire non-delivery.

5.2.3 Payments based on key milestones

As an alternative to cash on delivery, if the seller and buyer have agreed on periodic payments reflecting progress in the project cycle until completion of delivery of the carbon credits, it may be prudent to link each advance payment to the occurrence of relevant key milestones in the project cycle of the CDM or JI project. In this case, each advance payment is made once a key milestone is achieved toward the successful completion of the project and the generation and issuance of the carbon credits. The key milestones could be:

- The project is approved by the DNA or DFPs of either one or both of the countries involved.
- The project is registered by the CDM Executive Board or by the Joint Implementation Supervisory Committee, after validation by a DOE or an AIE.
- The plant facilities become operational.
- The emission reductions are verified and certified by a DOE or determined by an AIE.

The milestone-based advance payments may be made upon production of supporting documents. Any advance payment is, by definition, refundable to the buyer, either with or without interest, if the seller fails to deliver the

subject of the contract. However, it is important that the advance payment obligation is clearly understood as agreed between the parties and defined in the contract, precisely in accordance with such agreement. The central issue here is the payment obligation, before the price has been "earned" or before the obligation under a contract has been fulfilled by the seller.

While the parties to a contract are negotiating the milestones which will set off the duty to pay, they should also negotiate and agree on the dates by which each milestone should be achieved. These provisions should take into consideration the remedies that the buyer is entitled to in the case of a delay or if it becomes impossible to achieve a particular milestone.

As an example of advance payment, CERUPT provides for a "prepayment arrangement" as follows:

> 5.1 If the contract includes a prepayment arrangement, Senter will make a maximum of four prepayments, mounting up to 50 per cent of the total contract value. Prepayments will only be made available on the milestones agreed upon by Senter and the contractor.[10] Payments on delivery will consequently be only 50 per cent of the contracted price per CER. The other articles of this section apply also to deliveries of CERs as mentioned in the prepayment arrangement.

In section 5.4, the contract specifies that submission of a monitoring report will be used as a milestone for prepayments of up to 50 per cent and also describes the prepayment as an advance payment: "Payments will be made on delivery of a monitoring report in the second, fourth, sixth, etc. year of the CDM project being operational and generating emission reductions. These payments are advance payments."

Should the seller default on delivery, section 5.10 provides as follows: "Notwithstanding the previous stipulations, any advance payments may be reclaimed if the agreed delivery does not take place within one year of the agreed delivery date, or at any such time as it becomes evident that the contractor will not meet his obligations."

[10] "Contractor" here means the seller of CERs.

5.2.4 Securing payments and refunds

In order to secure payments by the buyer or to ensure that advance payments are refunded, the parties could consider using banking instruments like letters of credit or bank guarantees. The concern of the seller is to receive payment in full and on time upon delivery; to avoid any uncertainty, the buyer could instruct its bank to issue a letter of credit so as to provide payment to the seller, once the seller has delivered those documents agreed with the buyer as triggering the payment obligation under the letter of credit. It should be noted that the CERs or ERUs will not be issued in any paper form as certificates in writing, they will simply exist electronically either in the CDM registry under the control of the CDM Executive Board or in the national registries under the control of each Annex I country which is a Party to the Protocol. Thus, the CERs or ERUs themselves are probably unable to be used as documents which could be required under the letter of credit before payment is made. Despite this, the buyer and the seller may find documents which they both agree are acceptable.

The concern of the buyer, when paying in advance, is that those advances can be recovered should the seller default in delivering what was agreed. Here, the parties to the contract could consider using an instrument such as an on-demand bank guarantee to serve as a refund bond. This is an undertaking by a bank instructed by the seller that the bank will pay to the buyer an amount equal to the advances made either upon simple demand by the buyer to the bank or with a statement that the seller has failed to honour its obligations under the contract and that the buyer is entitled to receive the amount representing a refund of the advances paid.

In both cases, the instruments will result in costs to the applicants – to the buyer in the case of the documentary credit and to the seller in the case of the bank guarantee – in the form of the fee the banks will charge. The bank may even demand the applicants deposit with them the amount of the credit or the guarantee, in full or in part, depending on the creditworthiness of the applicant.

5.2.5 Currency of price and of payment

As with most contracts that involve relatively long transactions, the parties – the seller or the buyer or both – will be exposed to the risk of foreign

exchange fluctuations over time if payment is to be carried out in a currency other than their own. The parties may gain or lose, depending on how the foreign exchange market fluctuates, unless they have hedged their risks with forward or future foreign exchange contracts, which are also subject to fees. The currency of the price and of the payment must be clearly specified in the contract.

5.3 Taxes, levies and charges

Parties to the contract should carefully look into the relevant taxes, duties, levies and any other charges the Governments involved could impose on this type of transaction. It is always advisable to seek the advice of accounting and tax experts and to establish a clear and mutual understanding between the parties with respect to responsibilities for the applicable taxes, levies and charges. The question most likely to be asked by any business person is whether trading in carbon credits will attract a value added tax (VAT), a sales tax or any other similar tax. The answer may differ from country to country and depends not only on the reason for the acquisition, whether the goods are bought for own use or for resale, but also on how the goods are acquired, whether by equity investment, multilateral carbon fund or bilateral purchase, among others. A country that views carbon credits as commodities created by the Kyoto Protocol may or may not impose an import duty and/or VAT at the time of importation when they are imported from the host country. Although many countries which are Parties to the Kyoto Protocol have yet to establish such legislation or guidelines, some developments have been taking place in Japan and the United Kingdom in the area of accounting. Taxation generally follows prevailing accounting treatments.

According to a press release issued by the Ministries of Economy, Trade and Industry and the Environment[11] of Japan, the Accounting Standards Board of Japan issued in November 2004 the *Report on Practical Issues no. 15 on Interim Measures for the Accounting of Emissions Trading.* In this report, two different accounting treatments were suggested, depending on the purpose of the acquisition of carbon credits effective from the fiscal year 2005, which started in April:

[11]Dated 16 February 2005.

- When the credits are acquired for resale, they should be posted under "inventories".

- When the credits are acquired for eventual retirement to meet the buyer's own target under a voluntary action plan[12] to reduce GHG emissions, they should be accounted for as "intangible assets" or "investments and other assets" at the time of acquisition and charged under "selling and general administration expenses" at the time of the transfer of the credits to the retirement account.

It is expected that in Japan the tax treatment will follow the accounting treatment, wherever these have prevailed as generally accepted accounting standards. It should be noted that the Accounting Standards Board of Japan focuses on the Kyoto Protocol regime.

On the European front, the London-based International Financial Reporting Interpretations Committee (IFRIC) of the International Accounting Standards Board (IASB) issued, on 2 December 2004, an Interpretation, known as IFRIC 3, as guidance for accounting for emission rights under the EU Emissions Trading Scheme (EU ETS) ahead of the launch of the scheme in January 2005. The Interpretation specified that:[13]

- Rights (allowances) are intangible assets that should be recognized in the financial statements in accordance with IAS 38 *Intangible Assets.*

- When allowances are issued to a participant by a government (or a government agency) for less than their fair value, the difference between the amount paid (if any) and their fair value is a government grant that is accounted for in accordance with IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance.*

- As a participant produces emissions, it recognizes a provision for its obligation to deliver allowances in accordance with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets.* This provision is normally valued at the market value of the allowances needed to settle it.

[12]Such as the *Keidanren Voluntary Action Plan on the Environment* of the Japan Business Federation, available at http://www.keidanren.or.jp/english/policy/polo58/index.html.

[13]IASB Press Release (IFRIC issues and guidance on accounting for greenhouse gas emissions and scope of leasing standard) of 2 December 2004 available at http://www.iasplus.com/pressrel/2004pr32.pdf.

However, the Interpretation was withdrawn by IASB in July 2005, with immediate effect, after the Board decided that it was not the right time to issue such an Interpretation since the markets were still slow, although developing quickly, and a project was in place to amend the relevant accounting standards (IAS 20). Therefore, IASB decided to take more time to introduce guidelines on emission rights.[14] The EU rights (allowances) discussed here appear to resemble the Kyoto Assigned Amount Units (AAUs) allocated, rather than the carbon credits such as CERs and ERUs which are earned, at least at the time of issue, after which AAUs, CERs and ERUs, are fungible when traded under the Kyoto Protocol regime.

The European Environment Agency reports on the current situation in the fiscal treatment[15] of allowances under the EU ETS as follows:

- In most member States all transactions of allowances are subject to VAT, except the issuance free of charge.
- Profits and losses from transactions in allowances are subject to income or corporate tax. Most countries have not established separate rules for allowances but apply the same regulations as for all other profits and losses.

A non-Annex I country acting as a host country, China introduced a new regulation entitled the *Measures for Operation and Management of Clean Development Mechanism Projects in China*[16] on 12 October 2005 to replace, effective immediately, the *Interim Measures for Operation and Management of Clean Development Mechanism Projects in China*. Its English translation provides the following with respect to sharing benefits:

> Article 24: Whereas emission reduction resource is owned by the Government of China and the emission reductions generated by specific CDM projects belong to the project owner, revenue from the transfer of CERs shall be owned jointly by the Government of China and the project owner, with allocation ratio defined as below:

[14] IASB Press Release (IFRIC withdraws IFRIC Interpretation on Emission Rights) of July 2005.
[15] European Environment Agency (2006), page 38.
[16] Available at http://cdm.ccchina.gov.cn/english/NewsInfo.asp?NewsId=100.

(1) The Government of China takes 65 per cent CER transfer benefit from HFC and PFC projects;

(2) The Government of China takes 30 per cent CER transfer benefit from N_2O project;

(3) The Government of China takes 2 per cent CER transfer benefit from CDM projects in priority areas defined in article 4 and forestation project. The revenue collected from CER transfer benefits of CDM projects will be used in supporting activities on climate change. The detailed regulations on collecting and using the revenue will be formulated by the Ministry of Finance jointly with NDRC[17] and other relevant departments.

(4) The article does not apply to the projects already approved by the Government of China before 12 October 2005.

Although it is not clear what is meant by the terms "revenue" and "transfer benefit", presumably they refer to the profit from the transfer of CERs. It is also not clear in the English version of the regulation whether the nature of the share by the Government is some kind of tax or otherwise.

Bulgaria, as a country that hosts JI projects, clarified in a bilateral memorandum[18] with Japan on cooperation under the Kyoto Protocol that the transfer of ERUs or AAUs, as the case may be, is free of any extra charges beyond the agreed terms of payment in the contracts between Japanese and Bulgarian project participants. This kind of proactive approach is an important step by the governments involved to support the project participants and promote JI activities by providing clarification on certain fundamental issues, thereby reducing uncertainty. Parties who feel that a part of the memorandum is unclear may wish to contact the government involved for further clarification. Since the memorandum is a bilateral document between Bulgaria and Japan, the entity of any other Annex I country interested in carrying out projects in Bulgaria should approach its own Government and/or the Bulgarian authorities to clarify whether the matter is also applicable to them.

[17]The National Development and Reform Commission is China's DNA.

[18]Memorandum presented at press release on 20 December 2005 by the Ministry of the Environment of Japan, available at http://www.env.go.jp/press/file_view.php3?serial=7518&hou_id=6675.

Chapter 6

DELIVERY AND TRANSFER OF TITLE

How are carbon credits delivered?

Introduction

6.1 Delivery and transfer of title

6.1.1 Delivery

6.1.2 Transfer of title

6.2 Issuance and transfer of Kyoto units

6.2.1 System for transferring units under the Kyoto Protocol

6.2.2 Issuance and transfer of CERs

6.2.3 Issuance and transfer of ERUs

6.3 Security interest

6.3.1 Commercial considerations

6.3.2 Legal/regulatory considerations

6.3.3 Procedural considerations

INTRODUCTION

A contract to sell and purchase goods is a legal agreement according to which a seller agrees to deliver goods to a buyer, who in turn agrees to pay the price for the goods. Thus, delivery is an essential part of the contract. This chapter starts by discussing what should be delivered, when and how it should be delivered and what should constitute delivery in the contract. The chapter goes on to illustrate how the international system involving registries and the transaction log has been structured by UNFCCC for the issuance and international transfer of carbon credits under the Clean Development Mechanism (CDM) and Joint Implementation (JI). This should provide a useful reference for parties to a contract in setting out the workable terms and conditions of delivery. Who or what triggers the issuance or transfer of carbon credits under the system may be one of the most important points for the buyer or seller to consider. Finally, the chapter examines certain aspects of the possible use of carbon credits as collateral security for loans or other debts and, in particular, the possibility of delivering and transferring carbon credits to a third party creditor, in case a debtor – who may be either of the parties to the contract – fails to meet the repayment obligation. This examination is based on the Kyoto Protocol's modalities and procedures for the issuance and transfer of forward carbon credits.

6.1 Delivery and transfer of title[1]

The delivery of goods and the transfer of title are two different things and those who possess goods do not necessarily also hold the title to the goods. Parties to a contract have almost total freedom to agree on whatever they wish with regard to the time of delivery of the goods to the buyer and when the title in the goods is transferred from the seller to the buyer. All contracts should provide precise details on the agreement between the parties. Usually, responsibility for expenses regarding the holding of goods is transferred from the seller to the buyer together with the title, unless otherwise agreed. However, it is currently not clear whether carbon credits can be

[1]As pointed out in section 4.2.1, the buyer wishes to obtain all "rights, title and interest" in the carbon credits; this is included in any use of the term "title".

treated in exactly the same way as other goods, whether they should be treated as intangible property or whether they should be treated in some other way. In many parts of the world, there continue not to be specific laws applicable to carbon credits. Consequently, parties are strongly advised to seek legal advice so that the contract is drafted appropriately, in accordance with applicable laws and taking into consideration the issues presented here.

6.1.1 Delivery

The objective of the buyer (country or entity) in most cases is to acquire the project-based carbon credits to meet its own greenhouse gas (GHG) reduction or limitation obligations under the Kyoto Protocol. In order to demonstrate its compliance with the Kyoto obligations, the buyer is required to retire the ERUs, CERs, AAUs and/or RMUs it holds in its account by transferring them to the retirement account in its national registry in the quantity equivalent to its actual GHG emissions in the commitment period.[2] Therefore, it is essential for the buyer that such carbon credits are stored in its account in the appropriate national registry so that the buyer has control over them and can dispose of them at its discretion. From this perspective, it is in the buyer's interest that delivery is defined as the transfer by the seller of the forward carbon credits into the buyer's account in its national registry in the quantity and for the time period agreed and that delivery is not complete unless and until the credits have been received in the account accordingly.

The contract should specify the quantity and the date on or before which delivery of the carbon credits should take place. Whenever a contract provides for the transfer to be made in more than one delivery, the various dates and the corresponding quantities have to be agreed upon and set out clearly in the contract. In such a contract, the parties should also agree on whether each delivery is regarded as complete in itself or whether each delivery is simply a provisional and partial delivery, in that the seller ceases to be responsible only once all carbon credits have been delivered. What constitutes completion of delivery affects the issue of the transfer of the title to the carbon credits traded and should be dealt with in the contract in conjunction with such issues.

[2] MA Decision 19/CP.7 (Addendum, Volume II, page 64, para. 34).

6.1.2 Transfer of title

While it will be possible to view the delivery of the carbon credits by their transfer from one registry to another and/or one account to another, the delivery of carbon credits into an account in a registry will not, of itself, mean that the account owner has legally obtained the title, with full rights, title and interest in and to the carbon credits at the same time under the contract. As an international treaty, the Kyoto Protocol does not concern itself with any questions of legal ownership. While it is clear that the registries under the Protocol are responsible for the manner in which the carbon credits are transferred between registries and between accounts within a registry, questions of title in and to the carbon credits traded must be dealt with in the contract between the parties, against the background of whichever contractual law is agreed to be applicable. The matter should be included in any due diligence examinations. Once the parties have reached an agreement on what constitutes delivery, it may be straightforward for them to agree also that all rights, title and interest in and to the CERs, for example, are transferred, assigned and conveyed from the seller to the buyer when the CERs are received into the buyer's account in its national registry, as above. The seller may insist that the transfer of title is conditional on full payment, a condition that is generally referred to as the contractual retention of title.

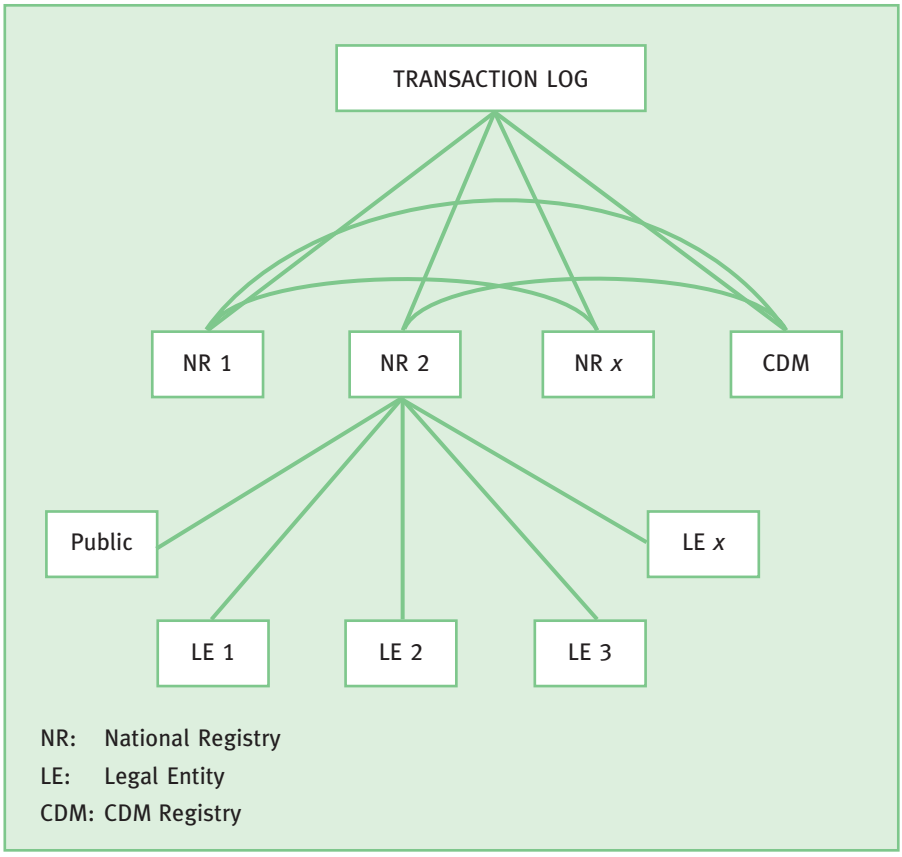
6.2 Issuance and transfer of Kyoto units

It is worthwhile for the parties to a contract to understand the system the Kyoto Protocol has designed for the issuance, transfer and holding of Kyoto units, including carbon credits, in negotiating and agreeing the terms and conditions applicable to the delivery of carbon credits sold and purchased, and the terms and conditions regulating the transfer of the rights, title and interest in and to them.

6.2.1 System for transferring units under the Kyoto Protocol

The international transfer of carbon credits is managed using the national registry operated by each Annex I country and the CDM registry operated by the CDM Executive Board, subject to monitoring and verification by the independent transaction log operated by the UNFCCC Secretariat. Figure 6.1 illustrates the relationship between the national

Figure 6.1 Linking registries and the transaction log



Source: UNFCCC Technical Paper: Registries under the Kyoto Protocol FCCC/TP/2002/3, dated 28 May 2002.

registry of each Annex I country and its accounts, the CDM registry and the transaction log.

National registries

The Marrakesh Accords provide that, in order to accurately account for the issuance, holding, transfer, acquisition, cancellation and retirement of ERUs, CERs, AAUs, RMUs, as well as the carry-over of ERUs, CERs and AAUs, each Annex I county has to establish and operate a national registry.[3] A national registry is expected to carry accounts for the country itself

[3]MA Decision 19/CP.7 (Addendum, Volume II, page 61, para. 17).

and for those entities of the country that have been authorized to participate in the flexibility mechanisms of the Kyoto Protocol. In other words, any entity that wishes to participate in the flexibility mechanisms has to have an account in the national registry of its country to receive or transfer carbon credits. Each Annex I country decides the details of how its registry will operate. Thus, questions on what is required for the transfer of Kyoto units from the holder's account to another account within the registry or to an account in another Annex I country's registry should be referred to the designated administrator of the national registry of each country involved.

The CDM registry

To ensure the accurate accounting of the issuance, holding, transfer and acquisition of CERs, the CDM Executive Board has established and operates a CDM registry. The Board appoints a registry administrator to maintain and operate the CDM registry under its authority.[4]

The CDM registry has the following accounts:[5]

- One pending account for the CDM Executive Board into which CERs are issued before being transferred to other accounts
- At least one holding and transferring account for CERs representing the SOPs for the Adaptation Fund
- At least one holding account for non-Annex I countries that are eligible to host CDM projects
- At least one account for the cancellation of ERUs, CERs, AAUs and RMUs equal to excess CERs issued, where a DOE has been suspended

Additionally, the following accounts may also be opened:[6]

- Holding accounts for project participants authorized by non-Annex I countries

[4]MA Decision 17/CP.7 (Addendum, Volume II, page 47, para. 1).

[5]MA Decision 17/CP.7 (Addendum, Volume II, page 47, para. 3).

[6]Report of 20th Meeting of CDM Executive Board dated 8 July 2005, para. 69, available at http://cdm.unfccc.int/EB/Meetings/020/eb20rep.pdf.

- Temporary holding accounts for Annex I countries and their authorized entities until their national registries become operative[7]

Each CER shall be held in only one account in one registry at any given time and each account within the CDM registry shall have a unique account number. The system for issuing and transferring of CERs is discussed in depth below.

The transaction log

The UNFCCC Secretariat operates an independent transaction log for verifying the validity of transactions, including the issuance, transfer and acquisition between registries, the cancellation and retirement of ERUs, CERs, AAUs and RMUs, and the carry-over of ERUs, CERs and AAUs.

Together, the national registries, the CDM registry and the transaction log constitute a set of tools used to track the flow of ERUs, CERs, AAUs and RMUs. According to the Marrakesh Accords, all AAUs, RMUs, CERs and ERUs must:[8]

- Be entered into a registry in the form of an electronic database (which is why they do not appear in paper form at present)
- Bear distinguishing serial numbers
- Only ever appear in one registry at any given time
- Be able to be issued, held, transferred, acquired, cancelled or retired
- Be moved only after a central independent transaction log has verified the transaction
- Be transferable both between and within registries

6.2.2 Issuance and transfer of CERs

The process of issuing and transferring CERs is described in figure 6.2, which illustrates a hypothetical CDM project in non-Annex I country B, from which an authorized entity A (AE-A) of the Annex I country acquires

[7]Report of 12th Meeting of CDM EB dated 2 December 2003, para. 35, available at http://cdm.unfccc.int/EB/Meetings/012/eb12rep.pdf.

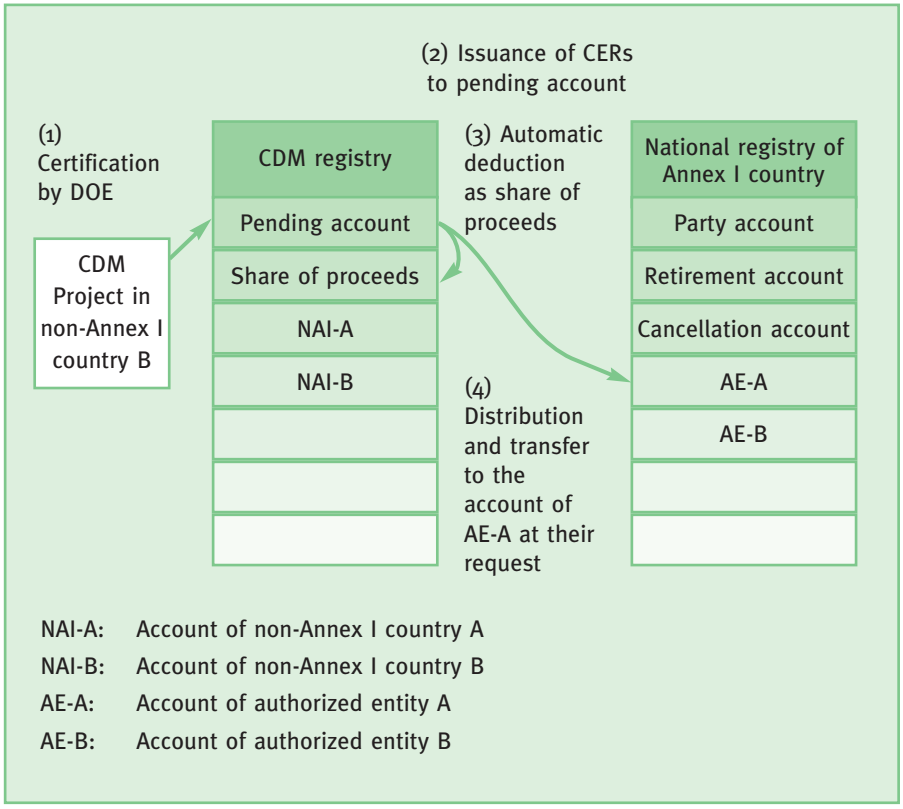
[8]MA Annex II to Decision 19/CP.7 (Addendum, Volume II, pages 61–68).

all the CERs. This case assumes that there is no share for non-Annex I country B:

(a) The DOE must first state in its certification report that the requisite quantity of emission reductions has been achieved. This certification report to the CDM Executive Board constitutes a request for the CERs to be issued.[9]

(b) When there are no calls for this request to be reviewed, issuance becomes final and the CDM Registry Administrator, working under the authority of the CDM Executive Board, issues the CERs into the Board's pending account in the electronic CDM registry.

Figure 6.2 Issuance of CERs



[9]MA Decision 17/CP.7 (Addendum, Volume II, page 40, para. 64).

(c) The distribution of CERs is always subject to effective payment of the SOPs for administrative expenses.[10] From this pending account, the following amounts of CERs are distributed:

(i) An amount of CERs representing 2 per cent is deducted and transferred into the appropriate account for the SOPs for the Adaptation Fund for developing countries particularly vulnerable to the adverse effects of climate change.

(ii) The remaining CERs are distributed by direct transfer into the accounts of entity A in the national registry of Annex I country in accordance with the request[11] submitted through the focal point of the project participants to the CDM Executive Board.

Under the authority of the Board, the CDM Registry Administrator distributes the CERs in accordance with the request made by the Parties and project participants after automatic reduction by the share of proceeds. Thus, this request plays a critical role in the original distribution of the CERs after issuance by the Board. In section 2 of the *Validation Report of CDM Project Activity Registration and Validation Report Form* (F-CDM-REG Version 01/8 June 2003), the Board states that it requires "a statement signed by all project participants stipulating the modalities of communicating with the Executive Board and the secretariat in particular with regard to instructions regarding allocation of CERs at issuance".

So far, in most if not all cases, project participants have nominated a representative from their own midst to act as focal point on their behalf. This representative may submit a request for the distribution of CERs to the Board.

Samples of such statements for projects already validated or registered can be found on the CDM pages of the UNFCCC website. Many of the statements available are titled "Statement on the modalities for communicating with the Executive Board and the UNFCCC Secretariat". They state that a representative nominated by the project participants shall serve as the focal point for all communication with the Board and the Secretariat regard-

[10] At its first session in December 2005, COP/MOP 1 decided not to follow the recommendation of the CDM EB on the fee to be charged for the share of proceeds for administrative expenses; see section 5.1.2.

[11] MA Decision 17/CP.7 (Addendum, Volume II, page 48, para. 6 (c)).

ing all matters, including instructions regarding allocation of CERs upon issuance. Should there be any change in the distribution of CERs, a request signed by all signatories to the previous instruction must be made to the Executive Board.[12]

It is important to note that the Board agreed that although registration of a CDM project may take place without any Annex I country being involved, its letter of approval must be submitted to the Board so that the CDM Registry Administrator can forward CERs to the national registry of the country.[13] At a later date, the Board also agreed[14] that the CDM Registry Administrator will forward CERs to accounts in the national registries of Annex I countries upon the request of representatives of holding accounts of entities authorized by non-Annex I countries, provided that the letter of approval is issued by the designated national authorities (DNAs) of Annex I countries. This indicates that credits may be generated and issued to the CDM registry even in the absence of a purchaser, although it is not clear how long the credits can stay in the registry before a purchaser is found and the letter of approval is issued.

6.2.3 Issuance and transfer of ERUs

In a JI project, once the emission reductions have been verified,[15] the host Annex I country will first convert the corresponding amount of either AAUs or RMUs held in its Party account in the national registry into ERUs and then transfer these to the appropriate account as agreed between the Parties. Figure 6.3 illustrates the issuance and transfer of ERUs. As mentioned earlier, it is the Annex I country that operates the national registry and that decides the details of its operation. Thus, questions such as "What is required to transfer ERUs to the account of authorized entity B (AE-B) in Annex I country B?" can be answered only by the designated administrator of the national registry of Annex I country A.

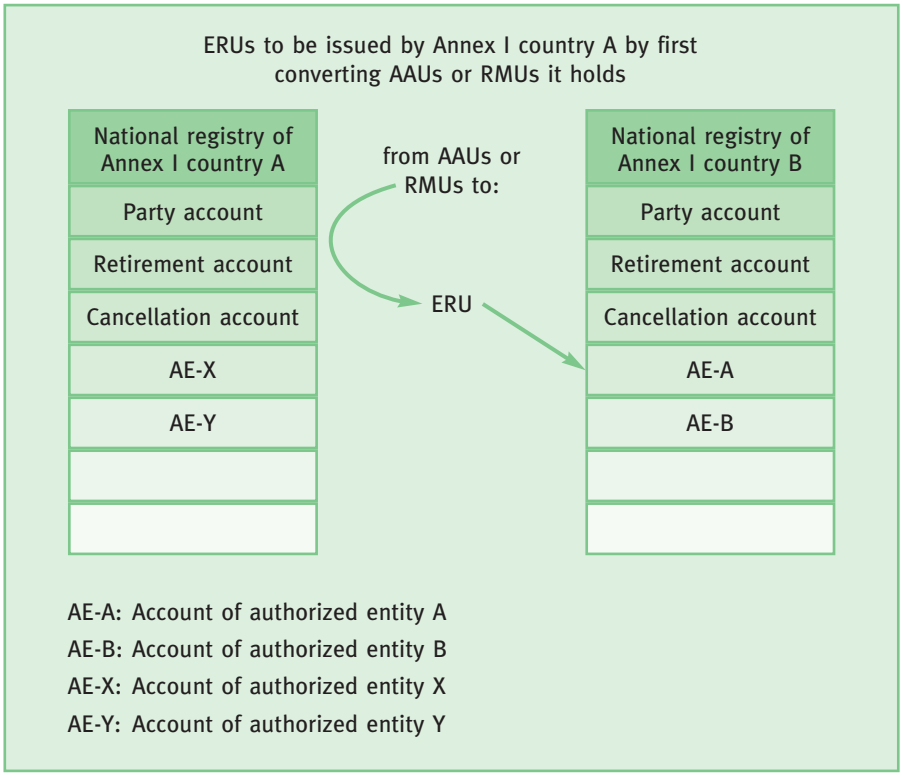
[12]Report of the 17th Meeting of CDM EB dated 6 December 2004, annex 4 and Glossary of CDM terms under Request for distribution of CERs of Guidelines for Completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodologies (CDM-NM) Version 0.5 available at http://cdm.unfccc.int/Reference/Documents/copy_of_Guidel_Pdd/English/Guidelines_CDMPDD_NM.pdf.

[13]Report of the 18th Meeting of CDM EB dated 25 February 2005, page 8, para. 57, available at http://cdm.unfccc.int/EB/Meetings/018/eb18rep.pdf.

[14]Report of the 20th Meeting of CDM EB dated 8 July 2005, para. 71, available at http://cdm.unfccc.int/EB/Meetings/020/eb20rep.pdf.

[15]MA Decision 16/CP.7 (Addendum, Volume II, page 13, paras. 23–24).

Figure 6.3 Issuance of ERUs



6.3 Security interest

It is common practice for the borrower of a loan to give security to a creditor as compensation in case the borrower fails to repay the loan. Without this security, the loan may not be available at all or may only be available at a much higher interest rate. This secured loan assumes, as an essential requirement, that the assets provided as security can be sold or transferred to a third party quickly to recover all or part of the unpaid loan. Can forward carbon credits be used as security? As we have seen, carbon credits are transferable under the Kyoto Protocol and therefore seem to satisfy at least one of the basic requirements of a security: transferability. Forward carbon credits are traded for a significant economic value, depending on the quantity and the market price, and it would not be surprising to see a debtor wishing to use its carbon credits as security against a loan from a

creditor, at a favourable interest rate and for an attractive term, which might not otherwise have been available. Having looked at the system for issuing and transferring Kyoto units, this section discusses the issues involved in the possible use of carbon credits as security from commercial, legal/regulatory and procedural perspectives.

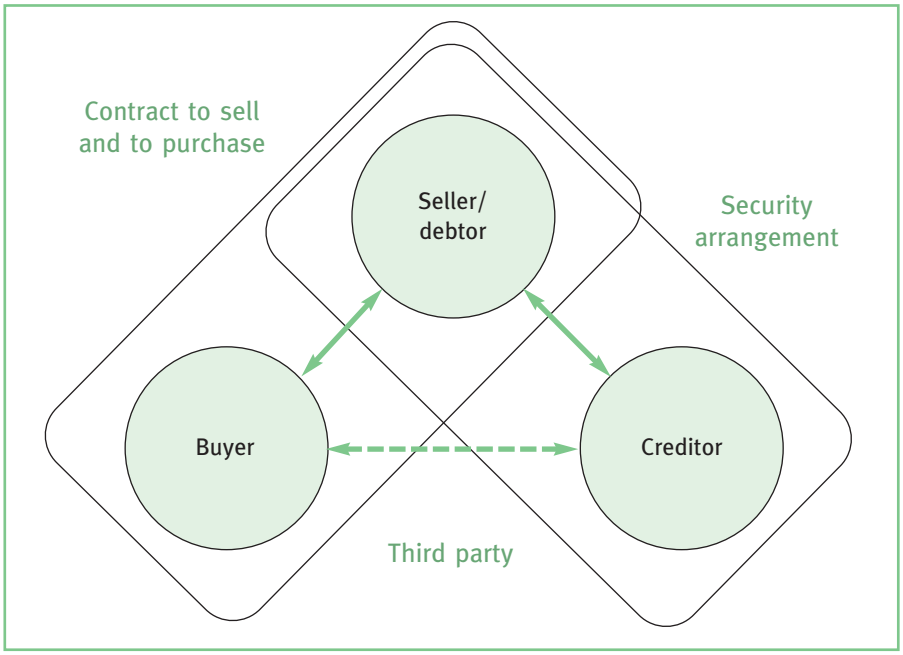
6.3.1 Commercial considerations

One of the immediate questions that may arise when a creditor is offered forward carbon credits as security for a loan is "How likely are the forward carbon credits to be generated and is it commercially worthwhile to accept them as security?" There must be a significant difference in the quality of a security between an asset already in existence and an asset that will only come into existence in the future. Obviously, the latter involves the risk that the assets over which the security is given will not be generated and issued as expected. Nonetheless, there may be creditors willing to take this risk under certain circumstances, for example at a higher interest rate, thus making the risk worthwhile.

Provided the delivery risk is acceptable to a creditor, there will be additional considerations depending on who grants the security as debtor/grantor, the seller of the forward carbon credits or the buyer. If the debtor is the seller of the forward carbon credits, the enforcement of its security rights by the creditor is likely to cause a conflict of competing claims to title between the creditor and any buyer of the forward carbon credits who is affected by security arrangements existing between the seller and the creditor (see figure 6.4). Firstly, if the buyer knows that the forward carbon credits are subject to the security rights of a creditor, the buyer is unlikely to conclude the contract of purchase. For the same reason, a creditor is unlikely to agree to accept such carbon credits as security for a loan. If the grantor is the buyer of the forward carbon credits, the problem of competitive claims to ownership is less likely, unless the buyer intends to resell the credits to third parties.

So far, the carbon credits themselves – in particular those expected to exist in the future – have been discussed for use as a possible security for a loan. However, as an alternative, an assignment of the revenue stream under a contract to sell and purchase may be used as a form of security under certain circumstances. Under a contract between a seller/debtor and a buyer

Figure 6.4 Contract to sell and security arrangement



of carbon credits (see figure 6.5), the debtor agrees to the demand of the creditor and assigns the revenue to be received under the contract to the creditor (third party) and the creditor may accept the assignment after having examined the creditworthiness of the buyer. In this case, the buyer will pay the price of the carbon credits directly to the creditor instead of to the seller, on condition that both parties always satisfy the provisions under the assignment clause of the contract (see section 3.6).

In a security arrangement in a loan agreement between the buyer/debtor of forward carbon credits and a creditor (third party), the buyer/debtor may agree to designate the creditor's account in its national registry to receive the forward carbon credits purchased under the contract so that the creditor, not the buyer, receives the carbon credits into its account directly from the seller and then transfers them to the buyer/debtor, as and when the buyer repays the loan (see figure 6.6). There may be many more alternatives to the above examples but, in any case, the legal/regulatory considerations and the procedural considerations must be kept in mind.

Figure 6.5 Assignment of receivables

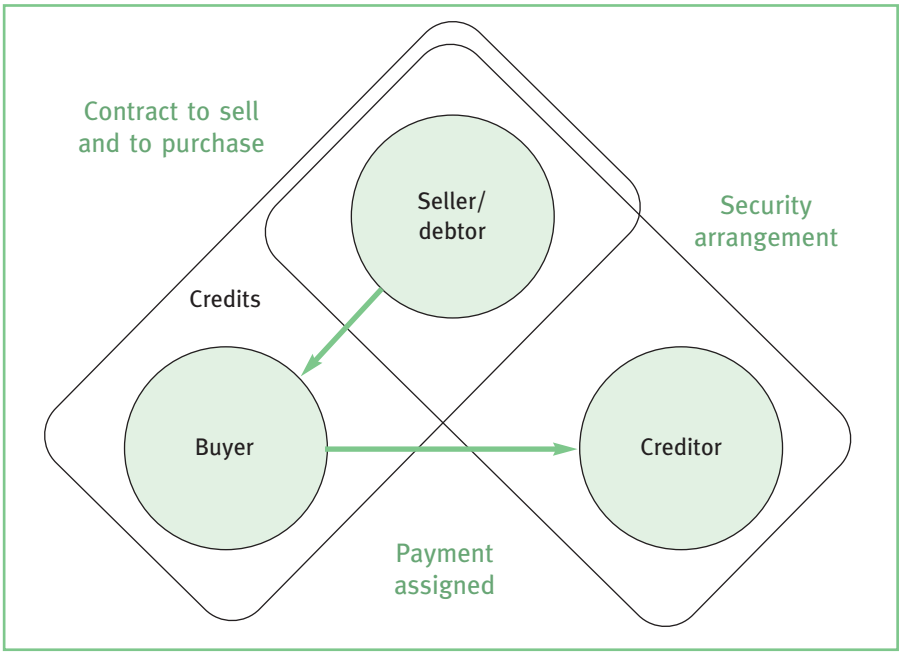
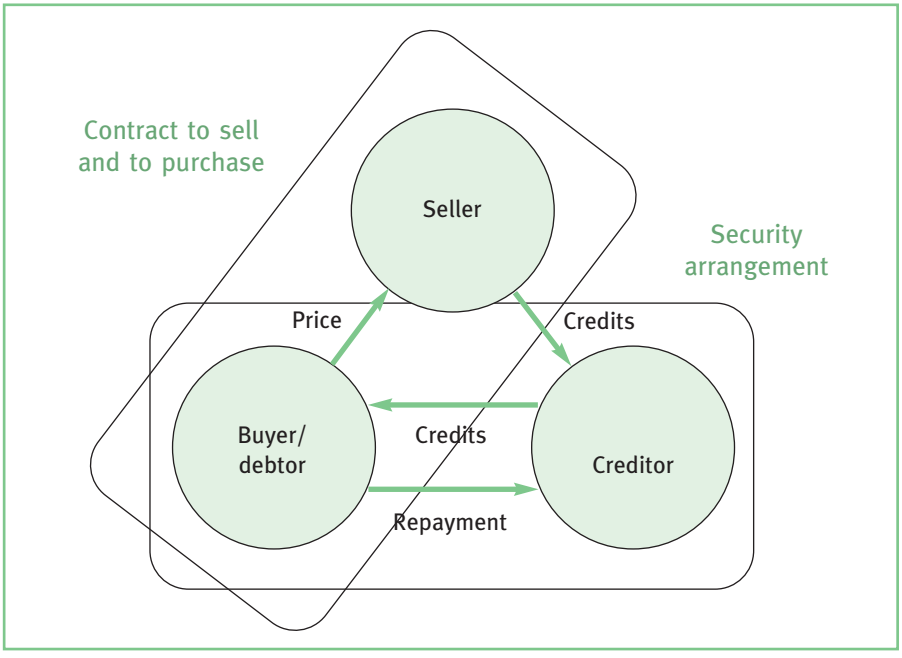


Figure 6.6 Designation of creditor's account for delivery



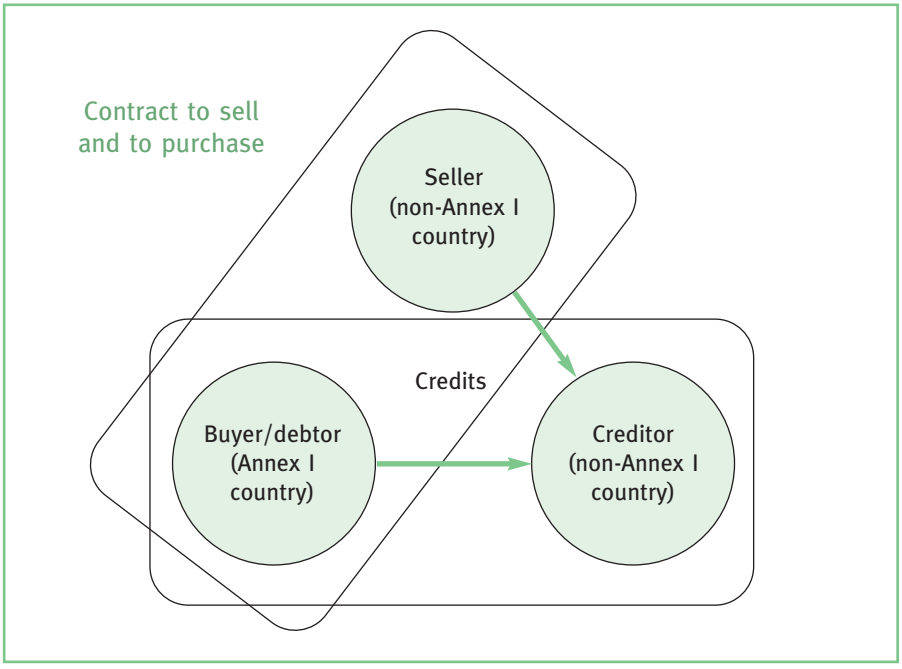
6.3.2 Legal/regulatory considerations

As international agreements, neither the Kyoto Protocol nor the Marrakesh Accords deals with the issue of security. The Parties to the Protocol must, therefore, deal with this issue in their own domestic legal regime. Thus, answers to many of the questions related to security must be sought in the domestic legal regimes of the Parties and the answers may differ from Party to Party. The Kyoto Protocol does not deal with the idea of a national registry, including a register of charges (or securities given as collaterals), that would provide clear notice of any security right or lien registered against any carbon credits to be issued and transferred. This is a matter of domestic law that depends on each country's intention and approach. Due diligence has to be exercised even with the three cases illustrated in the paragraphs above, to check whether they are legally valid.

6.3.3 Procedural considerations

The eligibility of a creditor to participate in CDM, JI or ET is also a factor to be considered in planning and granting an effective and workable security. This is particularly so if it is decided that, in case of default by the debtor, the creditor may exercise its right of security by taking over the carbon credits and selling them to a third party to recover the amount of the loan from the proceeds of sale. To illustrate this situation, see figure 6.7, in which a creditor from a non-Annex I country has provided a loan to a buyer/debtor in an Annex I country in order to finance the latter's purchase of CERs from a seller from the non-Annex I country which hosts the CDM project. Assuming the buyer/debtor of the Annex I country cannot repay its financial obligations at the appropriate time, the creditor from the non-Annex I country will want to be able to receive, either from the buyer/debtor or directly from the seller, the CERs which are the security for the loan and to liquidate them to satisfy the unpaid loan. However, the creditor is an entity of a non-Annex I country and there seems to be no regime under the Kyoto Protocol that allows this transfer of CERs from an Annex I country to a non-Annex I country or from a non-Annex I country to another non-Annex I country. This is because CDM assumes the flow of CERs from a non-Annex I country to an Annex I country only, while ET assumes the flow of Kyoto units between Annex I countries only.

Figure 6.7 Eligibility of creditor to participate in CDM



Chapter 7

WARRANTIES AND REPRESENTATIONS

What promises must the parties make to each other?

INTRODUCTION

A contract does not only contain the rights and obligations of both parties but also different kinds of clauses. Warranties and representations are promises of facts, expectations or intentions stated in the negotiations and at the time of contract. Some confirm the competence and legal authority of the parties to the contract, while others may include statements of alleged facts made by either party that are deciding factors for the other party to enter into the contract. Failure by one party to comply with a warranty very often gives the other party a right to damages and/or to give notice to correct the default, with the possibility of terminating the contract in some cases, depending on the contract and the applicable law. Particularly in an emerging business and uncertain legal climate, the parties must be able to take comfort in and rely upon these warranties and representations. Some of the usual warranties and representations are outlined in the first three parts of this chapter and each party must carefully examine which promises are relevant enough to be included in the contract. Any warranty or representation made by the parties at the conclusion of the contract should exist throughout the validity of the clause.

There are certain factors that neither party can control but that are very important in enabling them to achieve what they want from the contract, such as decisions taken by their Governments. Decisions by Governments take various forms: letters of approval or letters of authorization, for example, are required by the Clean Development Mechanism (CDM) Executive Board, while letters of endorsement and letters of approval are required by government and institutional buyers in procurement tenders under the CDM or Joint Implementation (JI). In addition, memorandums of understanding can be stipulated between host countries and investor/buyer countries that are prepared to provide project participants with a bilateral basis to support and promote CDM or JI project activities at the level of Government and to smooth the international sale and purchase of carbon credits. These are discussed at the end of the chapter.

7.1 Warranties and representations common to both parties

Both parties need to provide the usual warranties and representations. Both the buyer and the seller in the contract should be prepared to represent and warrant that they:

- Are a corporation duly incorporated, validly existing and in good standing under the laws of (place and country)
- Have the right, power, authority and capability to enter into and carry out the contract, all of which has been duly and validly authorized by all necessary corporate action
- Confirm that the execution, delivery and performance of the contract and completion of the transactions contemplated in the contract have been duly and validly authorized by all necessary corporate action
- Confirm that there are no bankruptcy or other proceedings pending or threatened against or affecting them before any court or administrative body or arbitral tribunal which might materially adversely affect their ability to meet and carry out their obligations under the contract

The buyer and the seller should carefully examine what is really required and, depending on the situation, may extend the list as appropriate. In some cases, either or both parties may be asked to produce a verified copy of the articles of association/charter of the company and any notarized power of attorney at the time of the contract's execution to prove some of the items above.

7.2 Seller's warranties and representations

The usual legal promises that a buyer of forward CERs or ERUs expects from the seller in a contract are set out below. It should be noted, however, that there are certain promises that the seller may, in turn, wish to exclude despite the fact that they are critically important for the buyer. These include matters relating to decisions by Governments that are obviously beyond the control of the seller. This is an area the Government of the host country should resolve if it wishes to promote investment under CDM or JI (see also section 7.4).

There may be certain warranties and representations set out below that a seller considers too obvious, and therefore redundant, but that a buyer may insist upon. For example, a seller may question why a buyer insists that the seller warrants and represents that it has the capability, capacity and competence to undertake the project, when the seller already gives an explicit guarantee of delivery of the forward carbon credits. The reason is that a buyer will generally wish to see in the contract that the seller gives warranties on important elements that are required to ensure the seller does actually generate and deliver the carbon credits as promised. This is especially true when the carbon credits may be fully delivered only years after the contract has been concluded. No buyer wishes to have to wait years only to be told that no carbon credits have been generated and that there is nothing to be delivered. If the buyer can rely on such a specific warranty and representation, it may be expressly entitled to demand that the seller take corrective measures and remedies, should it become clear that, for instance, construction of the plant is significantly delayed and the agreed delivery of the carbon credits is threatened.

7.2.1 Authorization and compliance requirements

The buyer may wish to be assured by the seller that the seller is familiar with the procedures and knows and will comply with all the requirements under the Kyoto regime to eventually be awarded CERs or ERUs and be able to deliver them to the buyer as agreed in the contract. The host country might demand additional requirements to those called for by the Protocol and its subsequent decisions.

Approval of project by host country

The designated national authority (DNA) of the host country must approve CDM projects for the projects to be considered for registration and for CERs to be issued. The Marrakesh Accords require the host country to confirm that a proposed project assists in achieving sustainable development in the country. If, for whatever reason, both parties wish to conclude the contract before the host country has granted the necessary approval or authorization, the buyer may well require the seller to promise to apply for and to secure such approval by the Government of the host country. Although it can promise to apply for and do everything in its power to facilitate the granting of such approval, it may well be beyond the power of the seller to ensure that the host country provides approval. In case the

buyer and the seller have difficulty reaching agreement on this matter, they may consider making the contract subject to the approval by both countries within an agreed fixed time period (see section 7.4.1).

Authorization by host country to participate in flexibility mechanisms

As mentioned above, the DNA must authorize the seller's participation in CDM activities. The seller should be able to warrant that it will organize such authorization and promise to comply with any requirements needed to maintain that authorization valid during the term of the contract. While the seller may not have much influence on its own country's decision to grant authorization for participating in CDM or JI, or to maintain the validity of the authorization for the duration of the contract, it should in any case be prepared to warrant that it will comply with any administrative requirements with regard to authorization to participate in the flexibility mechanisms (see section 3.2).

Compliance with domestic laws and regulations

The seller may be asked to warrant that it will comply with all the domestic legal requirements of the host country in which the CDM or JI project will be carried out, particularly those regarding environmental and planning regulations, industrial relations, taxation and corporate governance.

7.2.2 Project implementation

Truth, correctness and completeness of project information

The buyer may demand the seller to warrant that the information in its documents is true, correct and complete, particularly if some of those documents influenced the buyer to enter into the contract. For the sale and purchase of forward carbon credits, the Project Information Note, the draft Project Design Document (PDD) or proposals prepared by the seller may be used to explain the project contemplated by the seller. If the buyer's decision to purchase the forward carbon credits from the project is based largely on what is stated in the documents, it may ask for such warranty.

Capability, capacity and competence

Human and financial resources are needed to implement an investment that involves the construction of a plant or facilities that, after successful com-

missioning, are operated to produce and sell a planned product. In many cases, such industrial activities achieve reductions in GHG emissions at the same time. Thus, the buyer may well ask the seller to represent that it is capable and competent and has the capacity to undertake all planned investment activities and that it can operate the business without which carbon credits cannot be issued.

7.2.3 Carbon credits

Warranty of rights, title and interest

One of the most important warranties the buyer will seek from the seller is that it has (or, in the case of forward carbon credits, will have) all the rights and the legal title to and interest in those credits. If the seller of the carbon credits to be produced is in fact a group of co-owners, procedures for the smooth transfer of the carbon credits have to be agreed by all co-owners, and due diligence is required from both the seller and the buyer to deal with this issue.

Warranty against encumbrances

The registries contemplated under the Kyoto Protocol and the Marrakesh Accords do not include any provision for dealing either with questions of ownership of the units held by them or with the registration of third-party charges, either in the CDM registry or the national registries. Until the national legal regimes start dealing with these important aspects, if they ever will, it is vitally important that the seller warrant that no third party has any rights – in the form of charges, claims, liens, encumbrances or interests whatsoever – over the carbon credits to be sold at the time of contract. Moreover, the seller should not give such rights to third parties between the time of the contract and final delivery of the carbon credits to the buyer.

7.3 Buyer's warranties and representations

Usually, a seller provides more representations and warranties in a contract than a buyer does because the seller has to produce and deliver the subject of the contract, while the buyer only has to receive it and pay. However, the seller may ask the buyer to provide additional warranties to those discussed in section 7.1.

7.3.1 Authorization and compliance requirements

Under the Protocol, both the seller and the buyer must be authorized by their DNA or DFP to take part in CDM or JI project activities. Thus, the seller may require the buyer to warrant that it will apply for and receive such authorization by a certain date (see section 3.3).

7.3.2 Ability to pay

Given that a long time might pass between conclusion of the contract and final delivery of the carbon credits, the buyer may be required to warrant that it is financially capable of honouring its payment obligation in due form.

7.4 Promotional roles of host countries

The Governments involved play important roles not only in implementing but also in promoting CDM or JI project activities by officially confirming their intentions or clarifying certain items in addressing the requirements of the Protocol and the needs of potential project participants.

7.4.1 Letters of endorsement and letters of approval

Besides the letters of approval and authorization required under the Protocol, letters of endorsement and approval by host countries are typically required by government and institutional buyers under their public tender-based procurement of forward carbon credits. As seen in chapter 3, CERUPT and ERUPT constitute the programme of the Government of the Netherlands to purchase, by way of public tenders, CERs and ERUs under CDM and JI. There are two steps in both the CERUPT and ERUPT procurement processes: the selection phase and the contract awarding phase. At both steps, a letter from the host country is required. As the buyer, the Government of the Netherlands first calls for parties at the project development stage through the preparation of a Project Information Note to express interest in selling forward carbon credits. The Government (buyer) then asks the seller to attach a letter of endorsement that is, in fact, a preliminary approval of the project by a host country stating that it endorses further development of the project, among other matters. Table 7.1 shows the main issues included in the letters of endorsement required by CERUPT and ERUPT 5.

Table 7.1 Issues in letters of endorsement from host countries to the Government of the Netherlands: CERUPT and ERUPT 5

	CERUPT (1 November 2001)	*ERUPT 5 (10 May 2004)*
Selected representations of host country	The host country confirms that it: ● Endorses the further development of the project ● Renders necessary assistance for the future registration, verification and issuance of emission reductions	The host country declares that it: ● Has ratified the Kyoto Protocol ● Is aware it should comply with the eligibility requirements under the Marrakesh Accords by no later than 1 September 2006 ● Is aware of the project and that the supplier intends to sell ERUs, that it will assess the JI project in the light of its criteria and will start discussions with the supplier, and endorses further development of the JI project and commits itself to render necessary assistance for the future validation, verification, issuance and transfer of ERUs ● In case of positive assessment, it will consider granting formal approval of the JI project with the intention of enabling the transfer of ERUs to the account of the Netherlands ● Will consider transferring, to the Netherlands, AAUs through ET emission reductions achieved prior to 2008 (early credits)

Having shortlisted the interested parties, the Government of the Netherlands solicits price proposals. Table 7.2 shows the main issues included in the letters of approval required by CERUPT and ERUPT 5. In the case of CERUPT, the letter of approval should be issued before submitting the price proposal in order to register the project with the CDM Executive Board. In the case of ERUPT 5, in the absence of detailed procedures that are to be established by the Joint Implementation Supervisory

Table 7.2 Issues in letters of approval from host countries to the Government of the Netherlands: CERUPT and ERUPT 5

	CERUPT (1 November 2001)	*ERUPT 5 (10 May 2004)*
Selected representations of host country	The host country confirms that it: ● Has fulfilled its national obligations to become a Party to the Kyoto Protocol or will accede to the Protocol in 30 days after its effectuation ● Recognizes the project to be a CDM project ● Confirms that the project contributes to the sustainable development of the host country. ● Authorizes the contractor to generate CERs ● Accepts the transfer of CERs to the Government of the Netherlands	The host country declares that it: ● Has ratified the Kyoto Protocol ● Will comply with the eligibility requirements under the Marrakesh Accords by 1 September 2006 ● Recognizes the project to be a JI project ● Authorizes the supplier to generate ERUs ● Accepts and will issue and transfer the ERUs generated during 2008–2012 to the Netherlands ● Confirms that ERUs will be transferred to the Netherlands free of any taxes or levies ● Confirms that ERUs will be transferred to the Netherlands irrespective of any legal or other transfer of the JI project to third parties ● In case the Kyoto Protocol does not become effective, it will transfer the emission reductions to the Netherlands ● If both countries fully comply with the requirements of Marrakesh Accords, it will use track one ● Will transfer AAUs to the Netherlands through ET of emission reductions achieved prior to 2008 (early credits) ● Will comply with the participation requirements under the Marrakesh Accords ● Others

Committee, it is currently unclear whether the letter of approval can also be used for registration of the project or not.

7.4.2 Memorandums of understanding between Parties to the Protocol

Increasingly, countries are entering into bilateral memorandums of understanding, not only for JI projects but also for CDM projects. The purpose of such documents may differ from memorandum to memorandum but some certainly are efforts made by the Governments involved to reduce uncertainties, in particular regarding the transfer of forward carbon credits for the entities involved and to promote and facilitate such CDM or JI activities. An example of such efforts is the Memorandum of Understanding signed in December 2005 between Bulgaria and Japan,[1] both Annex I countries, which is summarized in table 7.3. In the Memorandum of Understanding, Bulgaria (the host country) provides guidance on issues that can only be decided by the Government to project participants from Bulgaria and Japan interested in carrying out JI projects in the country. Those issues include:

- The crediting period of ERUs
- Early credits issued before 2008
- The share of the host country and any charges on the transfer
- The payment terms

While in CDM projects it is the CDM Executive Board that issues the CERs, in the case of JI projects it is the Government of the host country that determines the eligibility of the projects and that issues and transfers ERUs to another Annex I country after converting the AAUs and/or RMUs held by the host country, in compliance with the rules of the Kyoto regime. In the case of early credits, it seems many countries intend to award these in the form of AAUs and then transfer them under the ET mechanisms.

[1]Press release, 20 December 2005, by the Ministry of the Environment of Japan available at http://www.env.go.jp/press/file_view.php3?serial=7518&hou_id=6675.

Table 7.3 Structure and main points of the Memorandum of Understanding between Bulgaria and Japan on cooperation under the Kyoto Protocol and UNFCCC

Item	*Title*	*Contents*
1	General	The Memorandum of Understanding creates the framework for cooperating on JI and ET
2	Objective	To facilitate the realization of JI projects and transfer from Bulgaria to Japan of ERUs and AAUs for reductions achieved before 2008
3	Contribution by Japan	● Exchange of information to promote projects in Bulgaria ● Issuance of letter of approval as per article 6.1 of the Protocol ● Administration of ERUs and AAUs from JI projects
4	Contribution by Bulgaria	● Provision of information and consultation to Japanese project participants interested in JI projects and approval of projects by issuing a letter of approval in accordance with article 6, paragraph 1, of the Protocol ● Confirmation of transfer of agreed amounts of ERUs in accordance with the contracts between the project participants of the two countries and the crediting period during the first commitment period ● Transfer of AAUs during the first commitment period for reductions generated before 2008 ● Confirmation that the transfer will be free of any extra charges beyond the agreed terms of payment in the contract between the parties to the contract ● Confirmation of best efforts by Bulgaria in case of significant change in policy of or failure by Bulgaria to satisfy eligibility requirements under the Protocol
5	Payment schemes	Payment schemes for ERUs or AAUs are to be decided on a case-by-case basis in the contracts between the project participants of the two countries
6	Consultations and adjustments	Any problem concerning the Memorandum of Understanding is to be settled amicably by consultations by both sides
7	Duration	Effectuation and termination of the Memorandum of Understanding

Chapter 8

DEFAULT AND REMEDY

What if a party fails to keep its promises?

INTRODUCTION

Each and every party to a contract is assumed to be dedicated to carrying out its contractual obligations so that the contract is performed to the satisfaction of all parties. However, even in the best situations, problems – avoidable and unavoidable – may arise. The goal of a well-drafted contract is to anticipate problems and provide guidelines for their solution, even for those problems that could not have been reasonably foreseen. In the first part of this chapter, events of default (the non-performance of duties) and of remedies (the correction and curing of defaults or the compensation for damages caused) are discussed. Certain defaults that are beyond the control of either party may be excused as force majeure by agreement or under certain legal circumstances.

In most cases, the seller's default takes the form of late delivery, incomplete delivery or non-delivery of the carbon credits while the buyer defaults by failing or refusing to pay. The causes of problems in delivery are examined and grouped by nature to indicate where the risks are likely to lie. Finally, there is the question of how are other parties dealing with the issue of remedies in cases of default in delivery? Although not many cases are publicly available due to the private and confidential nature of contracts, two examples are given at the end of this chapter.

8.1 Events of default and remedies

8.1.1 Events of default

A default is the non-performance of a duty or obligation specified in a contract. It is usual for the parties to agree upon a list of specific events of default and appropriate consequences. Some of these events could be:

- Failure or refusal by the seller to deliver the carbon credits in the agreed quantity
- Failure or refusal by the seller to deliver the carbon credits on time
- Total failure or refusal by the seller to deliver any carbon credits

- Breach by any party of a warranty or representation it has given
- Failure or refusal by the buyer to make the necessary payments
- Insolvency or bankruptcy of any party to the contract
- Material breach of any other terms and conditions of the contract

8.1.2 Remedies

Remedies are the means by which parties cure or correct a failure to perform or a non-performance listed in the events of default, whether as a result of an agreement or as mandated by law. To repair any damage caused, remedies may involve the enforcement of a right or the prevention of the violation of a right. However, depending on the nature of the default, it is usual to provide in the contract that the non-performing party may first be ordered in writing by the innocent party to cure the default and to carry out its duties under the contract within a certain specified period of time. Should no cure be carried out within the specified time frame, the innocent party should inform the other party that it may seek remedies under the contract or the applicable laws. Such remedies may take different forms, as indicated below.

- The innocent party may sue to compel the other party to carry out the specific terms of the contract. The court may order the non-performing party either to perform or to stop its continuing acts of default.
- The innocent party may terminate the contract and sue for compensation for damages.
- The parties may have agreed at the conclusion of the contract that the delinquent party will compensate the innocent party for any damages caused by non-performance. The contract may or may not allow the other to terminate the contract.

To make matters simpler, it is also usual to provide in the contract for "liquidated damages". This is a previously agreed amount to be paid by the party in breach of the contract to the other party as compensation for damages caused. It can be an amount fixed either per calendar day if the breach is related to delay, per ton if the breach is related to quantity, or a combination of both if the non-performance is within a certain permissible

range. The liquidated damages for delay in delivery of the carbon credits may be set out in terms of the time of delay and the missing quantity, for example as "US$ 0.20 per CER per calendar day of delay in delivery".

In general, the law supports the innocent or damaged party in receiving compensation for any loss, but it does not permit the damaged party to profit from the other party's wrongdoing. Although this naturally depends entirely on the laws applicable to the specific contract, an agreement on liquidated damages as a fair estimate of the actual damages suffered is acceptable in most legal systems, while a measure that is punitive rather than compensatory is generally not acceptable.

8.1.3 Force majeure

Most international contracts include a force majeure clause to provide guidance in the event of a problem which the parties could not have reasonably anticipated or which is outside their reasonable control. Such a clause usually includes a list of conditions that the parties agree will be regarded as force majeure. These may differ from case to case but may include political disorder (revolutions, insurrections and states of emergency), industrial unrest (strikes and blockades) and physical and natural disasters (floods, fires and earthquakes). Reference is sometimes also made to the catch-all phrase "acts of God and any other occurrence which is outside the control of the parties". It is advisable that both parties agree on what constitutes force majeure during the contract negotiations. The Kyoto Protocol is an international treaty in which Governments play certain roles at various phases of the project cycle under the flexibility mechanisms. A Government's act, or failure to act may have a significantly negative impact on the performance of obligations by either party under a contract. Thus, although a typical contract usually includes "acts of government" as one of the force majeure conditions, parties involved in the sale and purchase of forward carbon credits should carefully examine and seek an appropriate solution in this regard rather than adopting it thoughtlessly.

Having established which conditions would be accepted as force majeure, the parties should then agree upon the consequences of such conditions. For example, they should agree on whether delivery may be delayed for as long as the force majeure conditions prevail, whether the parties have the right to renegotiate the price or payment terms etc.

8.2 Reasons or causes for failing to deliver

The ultimate performance of the contract by the seller is to deliver and transfer the title to the CERs or ERUs as specified, in the agreed quantity and at the agreed time. With the transfer of forward project-based carbon credits, it is expected that it will take a long time from conclusion of the contract until the carbon credits are issued and transferred. Consequently, the credits might not be delivered for several years, during which time many things could happen to make delivery of the carbon credits in the agreed quantity, at the agreed time, difficult if not impossible.

In cases in which forward carbon credits have been sold and bought even before the project has been registered, there is the risk that either the investor country or the host country or both do not approve the project as a CDM project for one reason or another, despite the fact that approval by both countries is absolutely necessary for the proposed project. Without such approval, the carbon credits cannot be generated nor transferred.

There are also risks regarding the registration of the project. The project will not be approved or registered by the CDM Executive Board if the project participants fail to successfully justify and demonstrate baseline and additionality, in particular.

Even after the project has been successfully registered by the CDM Executive Board, there are risks associated with the construction and operation of the plant or facilities that may, for various reasons, affect the generation and, eventually, the delivery of carbon credits. The contractor engaged by the seller to build the plant/facilities may prove to be incompetent or incapable of completing the construction, either technically or financially, or of meeting the schedules and specifications required. The capability of the seller as project owner to carry out effective project management should also be scrutinized since the project owner is ultimately responsible for the entire project. The technology employed may be found to be defective only after the facilities have been constructed, particularly if it is new and untried.

Although it is far from an exhaustive list, table 8.1 identifies various factors that might lead to failure to deliver on time and in the agreed quantity. Although some of the failures listed can be attributed to either the

Table 8.1 Selected reasons causing failure to deliver agreed quantities on time

Failures related to CDM/JI procedures	● Failure by seller to have the project registered due to unsuccessful justification of baseline/additionality
	● Failure by seller or buyer to have the project approved by its DNA
	● Failure by seller or buyer to engage DOE or AIE in a timely manner
	● Failure by seller and/or buyer to be authorized to participate in CDM/JI
	● Failure due to change baseline at renewal of crediting period
Failures attributable to Parties to Kyoto Protocol	● Failure by host or buyer country to ratify the Kyoto Protocol
	● Withdrawal of host or buyer country from the Kyoto Protocol
	● Suspension of buyer country from the Kyoto Protocol due to non-compliance under CDM or JI
Failures related to investments	● Failure by seller to invest due to changes in business environment, or cancellation of investment
	● Failure by seller to invest due to insufficient funds
	● Failure by seller to complete construction of plant as per specification and on time
	● Failure of plant to operate at planned rate due to technical deficiency in design/installation
	● Failure of plant to operate at planned rate due to reduced market demand for product
	● Failure of plant to operate at planned rate due to breakdown caused by faulty operation/maintenance
	● Failure of plant to operate at planned rate due to breakdown caused by acts of God or other natural disasters (e.g. earthquake)
Others	● Insolvency or bankruptcy of seller or buyer
	● Failure by buyer to pay in advance as agreed in the contract
	● Refusal of seller/buyer to perform due to significant change in market price relative to contracted price
	● Failure by buyer to be authorized to participate in CDM/JI or to open account in its national registry to receive the carbon credits
	● Force majeure

seller or the buyer, the responsibility for some failures is not easy to determine and parties will have to agree in advance on the course of action to be taken. Moreover, there are events over which neither the seller nor the buyer has any control.

8.3 Cases of government buyers

It is interesting to know how other parties have dealt with these problems and the remedies they have agreed to in cases of failure to deliver carbon credits in the quantity and at the time specified in the contract. Unfortunately, the terms and conditions of individual contracts are rarely available publicly. The public tenders for the purchase of carbon credits by government buyers such as ERUPT 5 or the Finnish Pilot Programme are exceptions.

In ERUPT 5, should the seller fail to deliver emission reductions, the Government of the Netherlands requests, as a remedy for each AAU or ERU missing from the agreed quantity, the payment of a penalty by the seller at the rate of 120 per cent of the market price of AAUs, before 2008, or ERUs, after 2008 (see clauses 5.1 and 5.2 of the *General Terms and Conditions*). In the case of deliberate non-delivery, where the seller has actually had AAUs or ERUs issued but does not deliver them to the buyer as agreed, it requires the seller to pay a penalty of 100 for each undelivered AAU or ERU (see clause 5.4 of the *General Terms and Conditions*).

The Finnish Pilot Programme on JI and CDM by the Government of Finland takes a similar approach and proposes in its *General Terms and Conditions for Emission Reductions Purchase Agreement*, under the heading "Non-delivery of agreed emission reductions", that the seller pay the buyer "the market value of the emission reductions not delivered".[1]

As seen above, both ERUPT 5 and the Finnish Pilot Programme require the seller to provide compensation for any quantity not delivered on the basis of the market price, although the former increases the market price

[1]Ministry of Foreign Affairs of Finland, *Clean Development Mechanism (CDM) and Joint Implementation (JI) Pilot Programme – Operational Guidelines* (Version 3.0 29 January 2003), page 44 of 45, accessed on 9 January 2004 at http://global.finland.fi/english/procurement/kyoto/annex5_guidelines.pdf.

by 20 per cent. The reasoning behind this requirement may be that the buyers would be able to go on to the spot market themselves and purchase the carbon credits at the prevailing price to make up the unexpected deficit in carbon credits, using the compensation from the seller as their funding. The terms and conditions do not make it clear whether the buyers would have to pay the contract price, even for the quantity not delivered while demanding compensation from the sellers. Any compensation by the sellers would be the difference between the contract price and the market price, if the latter price is higher than the former. If in fact the market price is lower than the contract price, the sellers may insist on a clause that entitles them to go on to the spot market and purchase the carbon credits in the quantity short of the commitment and then deliver these to the buyers, together with the carbon credits they generated. The two instances here appear not to allow any delay in delivery and both parties would establish the quantity not delivered as of the date committed in the contract and the sellers would pay compensation for the deficit. However, as an alternative to the provision, both parties may agree at the time of contract to establish a period during which liquidated damages at the rate of, for example, US$ 0.20 per metric ton CO_2 equivalent per calendar day of delay would apply before compensation calculated on the market price is triggered, provided the quantity deliverable on time is acceptable to the buyers.

Chapter 9

BOILERPLATE CONTRACTUAL CLAUSES

What else should the contract contain?

INTRODUCTION

In addition to setting out the main duties and obligations of the parties, a well-drafted contract should contain various standard clauses. These are so common that they are referred to as "boilerplate clauses" and are usually set out towards the end of the contract. While certain standard clauses – for example, the clause setting out how parties are to notify each other – are found in all types of agreements and are probably not controversial, others may have a far-reaching effect and should be considered more carefully. These include the procedural clauses, which deal with the law to which the parties agree the contract is subject to, and all dispute resolution clauses. Despite the importance of these clauses, very often little thought is put into them. This might result in the terms of one contract simply being based on those of a previous contract, without any consideration or analysis of the fact that the second contract deals with different parties, different obligations and so forth. Therefore, the parties to a contract to sell and buy project-based carbon credits are advised to pay careful attention when drafting the clauses of this type of transaction to ensure that they are relevant.

9.1 Whole contract or entire agreement

Parties may wish to state that the present contract reflects the entire agreement between them and supersedes any other prior agreements or understandings, particularly any previous oral agreements or understandings. When this clause is used, all the understandings and agreements must be properly included in the contract.

9.2 Amendments or variation clause

Should parties wish to change anything previously agreed, the contract should include a suitable amendment or variation clause that stipulates a procedure for amending the contract. This clause usually calls for any mutually agreed upon amendment to be made in writing and, for the sake of clarity, for the particular clause in the contract being amended to be referred to explicitly.

9.3 Waiver

This clause is intended to ensure that any party's failure to enforce rights it has under the contract, or its delay in doing so, is not to be construed as that party either agreeing to any variation of the terms of the contract or giving up those rights.

9.4 Severability

Parties may wish to clarify that if a court decides that a clause of the contract is invalid or ineffective, that invalidity or ineffectiveness will not affect the rest of the contract's clauses, which remain in force.

9.5 Survival of clauses after termination of the contract

A survival clause is a clause that governs the situation between parties once the contract has ended by providing which clauses survive the termination and continue to bind the parties. One example is the confidentiality clause: one or both parties may wish for this clause to survive so that the obligation to keep information confidential continues to be binding even after the contract has terminated. Sometimes, it is simply implied from the context but not clearly and expressly stated that certain clauses will survive the end of the contract and that they can still be relied upon by the parties. It is advisable that the parties make the situation clear in the contract.

9.6 Notice

Each party must know in what form and to which address proper notice to the other party may be sent. This is not only important when a party wishes to terminate the contract early, but also when a default has occurred and notice to remedy the default, together with a deadline, must be sent to the other party. Complete postal addresses, telephone, fax and mobile telephone numbers, email addresses – even telex numbers, in some parts of the world – are essential, together with an agreed form of valid and effective notice, whether by letter, registered post or courier service, with or without previous notice by electronic means or by telephone. The some-

times difficult question of when any notice has been served on the other party may also be dealt with by accepting an agreed "time for service" in the agreed form.

9.7 Waiver of sovereign immunity

There is nothing more frustrating than discovering, after lengthy discussions and many drafts of the document, that the negotiating partner does not have the authority to sign the final version of the contract. This may be especially true when negotiating with government agency representatives who might not be completely clear about the authority they have to bind the agency, with their signatures, to the contract. Negotiating a contract with sovereign Governments also raises the question of sovereign immunity, a doctrine under which a sovereign Government cannot be sued without its consent. As the sale and purchase of forward carbon credits could very well involve Governments, either as sellers or buyers, this matter should be dealt with early on in the negotiations.

9.8 Assignment of the contract

Parties will have to agree on whether to allow the assignment of their rights and obligations to third parties and, if so, under which conditions such an assignment is acceptable. It is usual to state that the prior consent of the other party to the assignment must be obtained in writing. Although the right of assignment to an associated company or subsidiary in the same group may be insisted upon during negotiations (the party only has to give notice of the fact), the implications of this right should be examined carefully. When asked for consent to an assignment, the other party may want to carry out due diligence on the possible assigned company and may have to insist upon this right, as well as on the right to refuse the assignment. The implications of assigning the contract to a third party are discussed in section 3.6.

9.9 Choice of law or governing law

A sensible precaution in any contract is for parties to agree on the law to which the contract is subject, as it allows the parties further certainty in interpreting their various obligations. In international contracts, parties may

be reluctant to accept the law of a country with whose language and legal system they are not familiar as the law governing the contract, mainly because both the foreign legal concepts and the foreign legal terms may differ from the parties' own or from the law with which they are most familiar. For example, the question of compensation for loss of profits due to a breach of contract may well be treated differently by one legal system compared with another. In choosing the applicable law, parties should consider the occurrence of a significant dispute against which they wish to protect themselves. Nonetheless, should a sovereign Government be party to a contract, it may insist on its own law governing the contract.

Although there are few settled laws upon which parties may rely at present with respect to the nature of carbon credits and their trade under the Kyoto Protocol, some nations have already reacted to the challenge outside of the Kyoto Protocol regime by amending their general commercial laws; for example, the trading of future renewable energy rights under standard form contracts is regulated in Australia by the federal Corporations Act. Given that trading in carbon credits is still an emerging business and national legal regimes dealing with this kind of transactions may differ from one country to another, the parties to a contract should examine the possible choices of law carefully and choose the most appropriate.

9.10 Dispute resolution

Once the law has been decided, parties should agree on the relevant authority to which they may turn for resolving disputes. Very often, legal action – litigation – is regarded as the first option, even though this means resorting to the courts of the country of one of the parties, unless it has been agreed to refer all disputes exclusively to the courts of one particular country. If so, one of the parties will necessarily have to deal with unfamiliar legal rules and procedures, in addition, possibly, to a foreign language. Another alternative is to agree that any dispute be referred for final settlement and decision to an arbitration tribunal, usually made up of three arbitrators who have been empowered by the parties to deal with the matter at a place and using the rules, procedures and language they believe best suits the resolution of the dispute.

Should the parties agree on arbitration, they must then ensure that the arbitration clause in the contract reflects this clear understanding that they do

not wish to present any disputes they may have to a court, but to an arbitral tribunal. Most of the leading arbitration institutions (the International Court of Commercial Arbitration at the International Chamber of Commerce in Paris, the Chartered Institute of Arbitration in London, the American Arbitration Association, the International Arbitral Centre at the Austrian Federal Economic Chamber etc.) have sample arbitration clauses. These can be expanded from the simple agreement to arbitrate any dispute, under the auspices of a particular institution, to include the number of arbitrators, the arbitration rules to be applied, the place and language of the arbitration etc. The cost of such dispute resolution is a matter for the parties to consider, particularly if they are situated in different countries. Any sovereign Government that is a party to a contract may not agree to binding arbitration, relying on their sovereign immunity (see section 9.7).

Other possibilities for settling disputes include mediation, if the dispute is minor and the parties are keen to settle it quickly so as to continue the commercial relationship, or ad hoc arbitration if the parties can agree on the necessary parameters. For disputes of a purely technical matter, expert mediation may be useful.

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Others

Available at http://unfccc.int/documentation/documents/items/3595.php.

COUNTRY CHECKLIST

UNFCCC status of ratification as of 24 May 2004;
Kyoto Protocol status of ratification as of 18 April 2006

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
Afghanistan	Yes			
Albania	Yes		Yes	
Algeria	Yes		Yes	
Andorra				
Angola	Yes			
Antigua and Barbuda	Yes		Yes	
Argentina	Yes		Yes	
Armenia	Yes		Yes	
Australia	Yes	Yes		Yes
Austria	Yes	Yes	Yes	Yes
Azerbaijan	Yes		Yes	
Bahamas	Yes		Yes	
Bahrain	Yes		Yes	
Bangladesh	Yes		Yes	
Barbados	Yes		Yes	
Belarus	Yes	Yes	Yes	

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
Belgium	Yes	Yes	Yes	Yes
Belize	Yes		Yes	
Benin	Yes		Yes	
Bhutan	Yes		Yes	
Bolivia	Yes		Yes	
Bosnia and Herzegovina	Yes			
Botswana	Yes		Yes	
Brazil	Yes		Yes	
Brunei Darussalam				
Bulgaria	Yes	Yes	Yes	Yes
Burkina Faso	Yes		Yes	
Burundi	Yes		Yes	
Cambodia	Yes		Yes	
Cameroon	Yes		Yes	
Canada	Yes	Yes	Yes	Yes
Cape Verde	Yes		Yes	
Central African Republic	Yes			
Chad	Yes			
Chile	Yes		Yes	
China	Yes		Yes	
Colombia	Yes		Yes	
Comoros	Yes			
Congo	Yes			
Cook Islands	Yes		Yes	
Costa Rica	Yes		Yes	
Cote d'Ivoire	Yes			
Croatia	Yes	Yes		Yes

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
Cuba	Yes		Yes	
Cyprus	Yes		Yes	
Czech Republic	Yes	Yes	Yes	Yes
Democratic People's Republic of Korea	Yes		Yes	
Democratic Republic of the Congo	Yes		Yes	
Denmark	Yes	Yes	Yes	Yes
Djibouti	Yes		Yes	
Dominica	Yes		Yes	
Dominican Republic	Yes		Yes	
Ecuador	Yes		Yes	
Egypt	Yes		Yes	
El Salvador	Yes		Yes	
Equatorial Guinea	Yes		Yes	
Eritrea	Yes		Yes	
Estonia	Yes	Yes	Yes	Yes
Ethiopia	Yes		Yes	
Fiji	Yes		Yes	
Finland	Yes	Yes	Yes	Yes
France	Yes	Yes	Yes	Yes
Gabon	Yes			
Gambia	Yes		Yes	
Georgia	Yes		Yes	
Germany	Yes	Yes	Yes	Yes
Ghana	Yes		Yes	
Greece	Yes	Yes	Yes	Yes

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
Grenada	Yes		Yes	
Guatemala	Yes		Yes	
Guinea	Yes		Yes	
Guinea-Bissau	Yes		Yes	
Guyana	Yes		Yes	
Haiti	Yes		Yes	
Holy See				
Honduras	Yes		Yes	
Hungary	Yes	Yes	Yes	Yes
Iceland	Yes	Yes	Yes	Yes
India	Yes		Yes	
Indonesia	Yes		Yes	
Iran (Islamic Republic of)	Yes		Yes	
Iraq				
Ireland	Yes	Yes	Yes	Yes
Israel	Yes		Yes	
Italy	Yes	Yes	Yes	Yes
Jamaica	Yes		Yes	
Japan	Yes	Yes	Yes	Yes
Jordan	Yes		Yes	
Kazakhstan	Yes			
Kenya	Yes		Yes	
Kiribati	Yes		Yes	
Kuwait	Yes		Yes	
Kyrgyzstan	Yes		Yes	
Lao People's Democratic Republic	Yes		Yes	

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
Latvia	Yes	Yes	Yes	Yes
Lebanon	Yes			
Lesotho	Yes		Yes	
Liberia	Yes		Yes	
Libyan Arab Jamahiriya	Yes			
Liechtenstein	Yes		Yes	Yes
Lithuania	Yes	Yes	Yes	Yes
Luxembourg	Yes	Yes	Yes	Yes
Madagascar	Yes		Yes	
Malawi	Yes		Yes	
Malaysia	Yes		Yes	
Maldives	Yes		Yes	
Mali	Yes		Yes	
Malta	Yes		Yes	
Marshall Islands	Yes		Yes	
Mauritania	Yes		Yes	
Mauritius	Yes		Yes	
Mexico	Yes		Yes	
Micronesia (Federated States of)	Yes		Yes	
Monaco	Yes	Yes	Yes	Yes
Mongolia	Yes		Yes	
Morocco	Yes		Yes	
Mozambique	Yes		Yes	
Myanmar	Yes		Yes	
Namibia	Yes		Yes	
Nauru	Yes		Yes	

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
Nepal	Yes		Yes	
Netherlands	Yes	Yes	Yes	Yes
New Zealand	Yes	Yes	Yes	Yes
Nicaragua	Yes		Yes	
Niger	Yes		Yes	
Nigeria	Yes		Yes	
Niue	Yes		Yes	
Norway	Yes	Yes	Yes	Yes
Oman	Yes		Yes	
Pakistan	Yes		Yes	
Palau	Yes		Yes	
Panama	Yes		Yes	
Papua New Guinea	Yes		Yes	
Paraguay	Yes		Yes	
Peru	Yes		Yes	
Philippines	Yes		Yes	
Poland	Yes	Yes	Yes	Yes
Portugal	Yes	Yes	Yes	Yes
Qatar	Yes		Yes	
Republic of Korea	Yes		Yes	
Republic of Moldova	Yes		Yes	
Romania	Yes	Yes	Yes	Yes
Russian Federation	Yes	Yes	Yes	Yes
Rwanda	Yes		Yes	
Saint Kitts and Nevis	Yes			
Saint Lucia	Yes		Yes	

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
Saint Vincent and the Grenadines	Yes		Yes	
Samoa	Yes		Yes	
San Marino	Yes			
Sao Tome and Principe	Yes			
Saudi Arabia	Yes		Yes	
Senegal	Yes		Yes	
Serbia and Montenegro	Yes			
Seychelles	Yes		Yes	
Sierra Leone	Yes			
Singapore	Yes		Yes	
Slovakia	Yes	Yes	Yes	Yes
Slovenia	Yes		Yes	Yes
Solomon Islands	Yes		Yes	
Somalia				
South Africa	Yes		Yes	
Spain	Yes	Yes	Yes	Yes
Sri Lanka	Yes		Yes	
Sudan	Yes		Yes	
Suriname	Yes			
Swaziland	Yes		Yes	
Sweden	Yes	Yes	Yes	Yes
Switzerland	Yes	Yes	Yes	Yes
Syrian Arab Republic	Yes		Yes	
Tajikistan	Yes			
Thailand	Yes		Yes	

	UNFCCC		*Kyoto Protocol*	
	Ratified	*Annex I*	*Ratified*	*Annex B*
The Former Yugoslav Republic of Macedonia	Yes		Yes	
Togo	Yes		Yes	
Tonga	Yes			
Trinidad and Tobago	Yes		Yes	
Tunisia	Yes		Yes	
Turkey	Yes	Yes		
Turkmenistan	Yes		Yes	
Tuvalu	Yes		Yes	
Uganda	Yes		Yes	
Ukraine	Yes	Yes	Yes	Yes
United Arab Emirates	Yes		Yes	
United Kingdom of Great Britain and Northern Ireland	Yes	Yes	Yes	Yes
United Republic of Tanzania	Yes		Yes	
United States of America	Yes	Yes		Yes
Uruguay	Yes		Yes	
Uzbekistan	Yes		Yes	
Vanuatu	Yes		Yes	
Venezuela (Bolivarian Republic of)	Yes		Yes	
Viet Nam	Yes		Yes	
Yemen	Yes		Yes	
Zambia	Yes			
Zimbabwe	Yes			
European Union*	Yes	Yes	Yes	Yes

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