Climate change:

Guide to the Kyoto Protocol project mechanisms

SECOND EDITION

VOLUME A

Overview of the project mechanisms

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MINISTÈRE DE L'ÉCONOMIE, DES FINANCES ET DE L'INDUSTRIE

MISSION INTERMINISTÉRIELLE DE L'EFFET DE SERRE

FONDS FRANÇAIS POUR L'ENVIRONNEMENT MONDIAL

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To obtain the official documents of the United Nations Framework Convention on Climate Change, the Kyoto Protocol and The Bonn and Marrakesh Agreements, please contact the Climate Change Secretariat:

secretariat@unfccc.int

http://www.unfccc.int

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Le Ministre de l'Écologie
et du Développement Durable

Paris, le 4 novembre 2004

La seconde édition de ce guide paraît à un moment charnière, que l'on peut même qualifier d'historique, dans la lutte contre le changement climatique.

En effet, la ratification du protocole de Kyoto par la Russie met fin à une période d'incertitude et de doute. L'entrée en vigueur officielle du protocole, qui doit avoir lieu début 2005, sera une étape forte, la naissance d'une nouvelle donne mondiale sur l'effet de serre.

C'est un moment charnière aussi pour la France, puisque le Plan Climat présenté le 22 juillet dernier redonne du souffle à la politique nationale de réduction des émissions dans les transports, dans l'habitat, dans l'industrie, et renforce la participation de notre pays aux négociations internationales sur la lutte contre le changement climatique.

La communauté internationale va maintenant disposer d'un cadre valide dans lequel vont pouvoir s'inscrire, à l'échelle mondiale, les politiques climatiques que conduisent tant les pays d'industrialisation ancienne, premiers responsables de l'augmentation de la concentration des gaz à effet de serre, que les pays en développement, dont la lutte contre le changement climatique ne doit pas compromettre les chances de développement.

Les principes régissant les mécanismes de flexibilité prévus par le protocole de Kyoto ayant été arrêtés lors de la conférence de Marrakech, il y a maintenant trois ans, les perspectives ouvertes par la première période d'engagement (2008-2012) revêtent désormais un caractère concret. Tel est notamment le cas pour les mécanismes de projet prévus par le protocole, mise en oeuvre conjointe (MOC) d'une part et mécanisme pour un développement propre (MDP) d'autre part, dont la mise en oeuvre, encore en ébauche, va maintenant pouvoir s'accélérer.

Grâce à l'expérience qui sera progressivement acquise, la panoplie des instruments économiques pouvant être dédiés aux politiques de maîtrise des émissions de gaz à effet de serre va s'enrichir, jetant les bases, pour les périodes ultérieures, d'un avenir sobre en carbone : s'affranchir progressivement des sources d'énergies fossiles, accroître le recours aux énergies renouvelables, intensifier la recherche d'une plus grande efficacité énergétique, telles sont les voies que nous devons explorer.

Je souhaite que ce Guide des mécanismes de projet prévus par le protocole de Kyoto, qui résulte d'une initiative de la Mission interministérielle de l'effet de serre et bénéficie du soutien du Fonds français pour l'environnement mondial, puisse contribuer à en favoriser grandement la connaissance et la diffusion.

Serge LEPELTIER

Introduction

Because of its **global scope**, climate change is unquestionably one of the major challenges we face as we enter the 21st century. The international community has generally understood the problem, making sporadic and more or less critical assessments of the urgent need to mitigate its consequences. This was confirmed by the cycle of international conferences which, from Rio in 1992 to Johannesburg in 2002, assembled thousands of experts to discuss the measures to be taken, and is also demonstrated by the process undertaken to implement the **Kyoto Protocol** (1997), the first international agreement that lays the foundations for true global governance, which also introduces market mechanisms defined at the global level and accessible to all public and private economic players, in an area where policy making traditionally relies on conventional tools such as legislation and taxation.

Initially, the **flexible mechanisms** provided for by the Kyoto Protocol aimed to limit the worldwide costs of policies to prevent greenhouse gas (GHG) emissions. The two project-based mechanisms, **Joint Implementation (JI)** and the **Clean Development Mechanism (CDM)**, are similarly designed to support sustainable development in countries hosting the projects, in particularly by helping them to establish **low-carbon growth trends**. This dimension cannot be ignored by project developers, any more than the more technical aspects they also have to comply with.

The publication of the second edition of Volumes A and B of this Guide, just before the start of negotiations that aim, under the aegis of the UNFCCC Secretariat, to establish a basis for an international post-2012 system, provides an opportunity for a much-needed review of the most important achievements to date, both in France, with the adoption of the 2004 Climate Action Plan and the implementation, as from the 1st January 2005, of a Directive establishing an EU-wide system for trade in emission quotas, and at international level, with the progress achieved in the area of methodology, under the auspices of the CDM Executive Committee.

As in the previous edition, the intention of this guide is not to detail the set-up of a JI or CDM project. This will be covered in the two volumes that complete the guide (Volume B for the CDM and Volume C for JI projects). The objective of the guide is to specify how the Kyoto mechanisms fit into the overall scheme of national and international policy tools used to address climate change, to set out their main characteristics and rules governing their use, and to give examples illustrating their value.

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VOLUME A

Part One

Why is climate change relevant to my activities?

Why is climate change relevant to my activities?

In brief:

Certain gases – known as **greenhouse gases** (GHG) – contained in the atmosphere trap infrared radiation, with the atmosphere acting in the same way as the glass of a greenhouse. This natural phenomenon, or greenhouse effect, is affected by human activity, which increases the content of greenhouse gas in the atmosphere.

Based on work carried out by the Intergovernmental Panel on Climate Change (IPCC), a group of scientific experts assembled in 1988 by the World Meteorological Organization and the United Nations Environment Program, a growing number of observations reveal an overall global warming trend and several other **climate system changes**. New elements confirm that most of the global warming observed in the last 50 years is due to human activity, with local repercussions known as "climate change."

To act against the global phenomenon that is climate change, two major agreements have been adopted by the international community: the **United Nations Framework Convention on Climate Change**, adopted in 1992 in Rio, and more recently, the **Kyoto Protocol**, adopted in 1997. These agreements set quantified and binding commitments for limiting or reducing GHG emissions of anthropogenic origin for 40 countries that are developed or in the transition process towards a market economy, for the 2008-2012 period.

To meet their commitments, these countries must give priority to the implementation of regional or national policies and measures. In addition, three market mechanisms, known as **flexible mechanisms**, have been designed. They are intended to limit the economic cost of the fight against climate change and, for two of the mechanisms, to facilitate the transition towards a global economy generating lower GHG emissions. Firstly, countries that have ratified the Kyoto Protocol will be able to exchange GHG emission allowances. Secondly, two project mechanisms, **Joint Implementation** and the **Clean Development Mechanism** will provide emission credits to a country that invests in another country's GHG emission reduction or prevention projects.

Specialized jurists, ecological groups and climate experts acknowledge that the Kyoto Protocol is the most ambitious environmental agreement ever signed on an international scale. It is in fact the **first step towards global governance and worldwide regulation applied to a "global public asset."** The "carbon" constraint will gradually modify, in the short and mid term, the regulatory, economic and financial environment of companies. The commitments made for the 2008-2012 period **are only a preliminary step** which, albeit essential and significant, is in itself insufficient to reverse the global warming trend and the climate disruptions it provokes. To merely stabilize the atmospheric concentration of CO_2, global emissions would have to be reduced by half, which means that the emissions of developed countries would have to be cut by four. The policies, measures and flexible mechanisms of the Kyoto Protocol will influence the technological choices of companies and constitute the **beginnings of a "carbon-free economy."**

1. What is climate change?

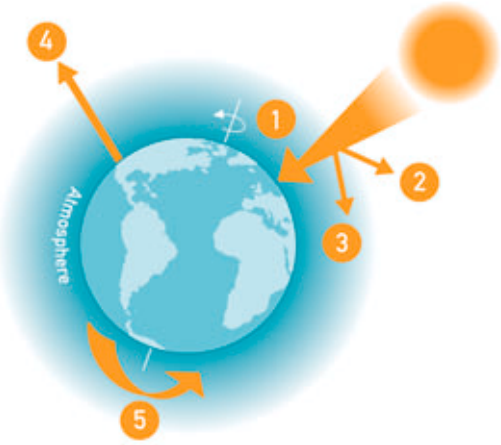
› THE GREENHOUSE EFFECT

» A natural phenomenon...

The greenhouse effect is a natural physical phenomenon that is essential to life on Earth. Without it, the average temperature of the Earth's surface would be around –18°C, rather than the current 15°C.

Certain gases, known as greenhouse gases, trap infrared radiation, with the atmosphere acting in the same way as the glass of a greenhouse.

Diagram 1 – The greenhouse effect



Only a portion of the solar energy hits the Earth (1), the remainder either returns to space (2), or is absorbed by the atmosphere (3). Upon contact with the incident radiation, the Earth heats up and emits this energy in the form of infrared radiant heat (4). Directed towards space, a portion of this radiation is intercepted and absorbed (5) by the so-called greenhouse gases.

Among these gases of natural origin, the most significant are water vapour and carbon dioxide (CO_2) and, to a lesser extent, ozone (O_3), methane (CH_4) and nitrous oxide (N_2O).

» ... affected by human activities

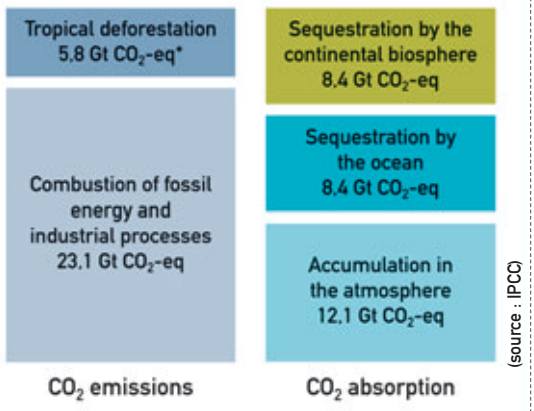
Many human activities increase the greenhouse gas (GHG) content in the atmosphere and thus add to global warming. It is this supplemental greenhouse effect that worries the international community.

The six most significant GHGs of anthropogenic origin, the use of which had not previously been regulated by any international agreement, are: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulphur hexafluoride (SF_6), and two halocarbons (PFCs and HFCs).[1]

The origin of these GHGs breaks down as follows:

- CO_2 stems from the combustion of fossil energy, linked to transport and the production of electricity or heat; certain industrial processes, and also from tropical deforestation;[2]
- N_2O stems from agriculture, the chemical industry and combustion activities;
- CH_4 stems from agriculture, oil and gas activities, and waste disposal activities;
- SF_6, PFCs and HFCs stem from certain specific industrial processes (manufacturing of aluminum or magnesium, the semi-conductor industry), and from aerosols, air conditioning and insulating foam.

Diagram 2 – Annual atmospheric CO_2 fluxes from 1990 to 2000



* 1 Gt CO_2-eq = 1 billion t CO_2-eq

› CLIMATE CHANGE, A PROVEN FACT

» A worldwide gathering of scientific experts: the IPCC

The Intergovernmental Panel on Climate Change (IPCC) was created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) in order to:

- Assess scientific, technical and socio-economic information relevant for the understanding of

[1] *CFCs are also halocarbons and GHGs of anthropogenic origin. Their use has been regulated since 1987 by the Montreal Protocol.*

[2] *Tropical deforestation (approximately 10 million hectares yearly) results in significant emissions of CO_2 (source); conversely, a forest that is sustainably managed and rationally exploited can act as a carbon sink.*

climate change, its potential impacts and options for adaptation and mitigation;

- Provide, upon request from the international community, scientific, technical and socio-economic opinions.

The IPCC renders its opinions based on scientific and technical literature published and peer-reviewed. Thousands of scientists are consulted for each publication.

All official IPCC publications have been unanimously approved by the countries represented.

The IPCC reports objectively summarize all the information on climate change. The reports, which are the result of a consensus among a vast majority of international experts, are made available to the international community.

» The IPCC's conclusions[3]

"An increasing number of observations give a collective picture of a warming world and other changes in the climate system.[...]

There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities."

The IPCC's **"Climate Change 2001: The Scientific Basis"** makes the following conclusions:

- The global mean surface temperature has increased over the 20th century by about 0.6°C;
- Snow cover and ice extent have decreased;
- Global average sea level has risen and ocean heat content has increased.

The additional greenhouse effect, of anthropogenic origin, results in global warming with local repercussions.

Moreover, the IPCC long term projections reveal that:

- Human influences will continue to change atmospheric composition throughout the 21st century;
- Anthropogenic climate change will persist for many centuries; the atmospheric CO_2 concentration, sea level and temperature will continue to rise long after emissions are reduced (*see Diagram 3*);
- Global average temperature and sea level are projected to rise under all IPCC scenarios.

[3] *Source: IPCC, Climate Change 2001: The Scientific Basis.*

IPCC emissions scenarios

In 2000, the IPCC approved its Special Report on Emissions Scenarios (SRES). The report presents the consequences of some forty equally plausible emissions scenarios on the climate. The scenarios are differentiated by the global trend in various parameters and, specifically, demographic change, economic development and technological change.

The various scenarios, which are quite diverse, result in very different GHG emissions and thus, a worldwide temperature increase ranging from 1.4 to 5.8°C between 1990 and 2100. At a local level, this increase in global temperature will probably have the following impacts:

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures and fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase in the heat index[a] over most land areas;
- More intense precipitation over numerous regions;
- Increased summer continental drying and associated risk of drought over most middle latitude continental land areas;
- Increase in tropical cyclone peak wind intensities in some regions;
- Increase in tropical cyclone mean and peak precipitation intensities in some regions.

Probable consequences for Africa according to the UNEP

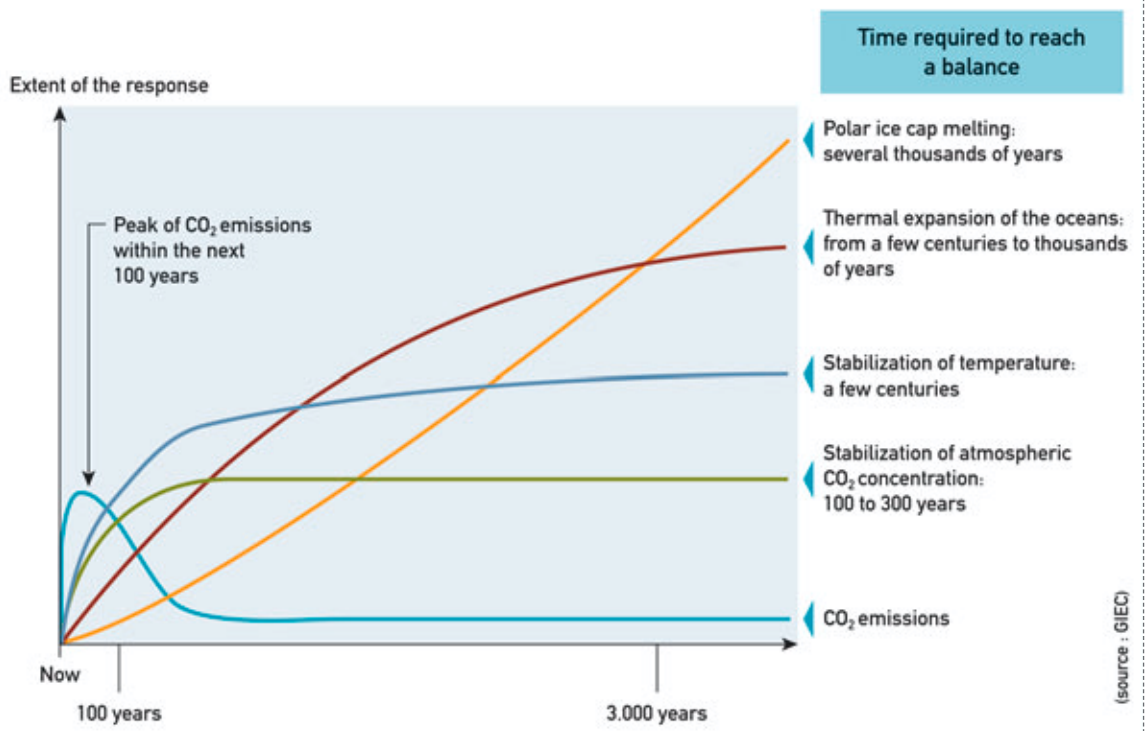
By way of example, according to the United Nations Environment Program, the consequences of climate change for Africa will probably be the following:[b]

- Increase in the number of infectious diseases: malaria and other vector-borne diseases will increase in frequency because of higher nocturnal temperatures. Malaria is now reaching high altitude areas where it was previously unknown;
- Increasing temperatures and changing precipitation patterns may deplete species-rich areas;
- The fall in agricultural production of staple crops such as wheat and corn, due to higher temperatures; rice may disappear because of higher temperatures in the tropics;
- The African populations in particular are likely to face the effects of extreme events such as tropical storms, floods, landslides, wind, cold waves, droughts, and abnormal sea-level rises. These events are likely to exacerbate management problems relating to pollution, sanitation, waste disposal, water supply, public health, infrastructure, and production technologies.

[a] A combination of temperature and humidity that measures effects on human comfort.

[b] Source: www.grida.no, United Nations Environment Program (UNEP) Website, which breaks down the consequences of climate change for Africa.

Diagram 3 – The inertia of climate change



The next IPCC report, for which the research is now being written up, is due for publication in 2007.

For further information

On the IPCC: http://www.ipcc.ch
On the situation in Africa:
http://www.grida.no/climate/vitalafrica/

2. A significant and binding international commitment: the Kyoto Protocol

› A GLOBAL COMMITMENT WITH QUANTIFIED OBJECTIVES

To act against the global phenomenon of climate change, two major agreements have been adopted by the international community.

- The United Nations Framework Convention on Climate Change (UNFCCC), signed in Rio de Janeiro in 1992, acknowledged that climate change is a major environmental issue and set an ultimate objective of stabilizing "greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." In addition, it stipulated that in 2000, forty countries that were developed or undergoing the process of transition to a market economy, as well as the European Union as such, should reduce their GHG emissions to 1990 levels. These countries, listed in Annex 1 of the UNFCCC, are referred to as "Annex 1 Parties." The UNFCCC came into force in early 1995, after ratification by 175 countries.

- The UNFCCC implementation rules and criteria were specified by the Kyoto Protocol (1997). This implementation has been the subject of an annual international meeting, known as a "Conference of the Parties" (COP), since 1995. The most significant meeting was COP7, concerning the implementation of project mechanisms, which took place in Marrakesh in November 2001.

The Kyoto Protocol sets quantified commitments to limit or reduce GHG emissions for 40 developed countries (including countries undergoing the process of transition to a market economy and the European Union), known as "Annex B Parties," and listed in Annex B to the Kyoto Protocol.

The commitments target an overall emission reduction of at least 5% for these countries, in relation to 1990 levels, during the first commitment period (2008-2012).

The Kyoto Protocol covers six GHGs of anthropogenic origin: CO_2, CH_4, N_2O, SF_6, PFCs, and HFCs.

The gases are each allocated a global warming potential (GWP) coefficient, reflecting their respective warming capacity. The coefficient is used to compare the various GHG emissions based on a common measurement unit which, by convention, is one metric ton of carbon dioxide equivalent (tCO_2-eq).[4]

Table 1 enables a comparison of the GWPs of the six GHGs covered by the Kyoto Protocol. The figures are drawn from the 1996 Second Assessment Report (SAR) of the IPCC. The figures are to be slightly adjusted in the near future.

Table 1 – GHG Global Warming Potential

CO_2	1
CH_4	21
N_2O	310
SF_6	23,900
PFC	6,500 to 9,200
HFC	140 to 11,700

The Kyoto Protocol will become effective upon ratification by 55 countries, representing at least 55% of the 1990 GHG emissions of this group.

The European Union and its 15 Member States ratified the Kyoto Protocol on May 31, 2002. All EU accession countries have also ratified the Protocol.

Since the United States announced in early 2001 that they would oppose ratification of the protocol, its entry into force has hinged upon its ratification by the Russian Federation. After a long period of hesitation, Russia, at the time of writing, appears to be making significant advances, since the Duma voted by a large majority in favour of ratification on the 22nd October 2004. Assuming that Russia will be fast-tracking its ratification procedure, the situation is now that the Kyoto Protocol could officially come into force in early 2005.

The reduction commitments of the various countries

During the Kyoto Protocol negotiations, the Parties included in Annex 1 pledged to remain below an average emission level over the 2008-2012 period. These emission levels were set using 1990 as the base year.

The European Union negotiated a "European bubble" provision, under which the Member States can jointly fulfill the 8% overall GHG emission reduction target for the 15 countries. This target is spread among the various Member States, based on national contexts ("burden sharing"). By way of example, France, whose electricity production is primarily based on technologies that emit few GHGs, was assigned a stabilization objective for its GHG emissions. The definition of the "European bubble" and the objectives of Member States were definitively set *via* the Council decision of April 25, 2002 and cannot be modified during the first commitment period. Neither can the bubble be changed by the expansion of the EU, as new member countries will be excluded until 2013.

The following table provides examples for some Parties included in Annex B:

European Union	– 8%
of which:	
Germany	– 21%
United Kingdom	– 12,5%
Italy	– 6,5%
Netherlands	–6%
France	+0%
Spain	+ 5%
United States	– 7%
Japan	– 6%
Canada	– 6%
Russia	+ 0%
Ukraine	+ 0%
Australia	+ 8%

› REGIONAL AND NATIONAL POLICIES AND MEASURES...

In order to meet the various national commitments that have been set, regional and national policies and measures are gradually being implemented.

At the European level, the European Climate Change Program was launched in 2000. The program, whose aim is to propose and develop GHG emission reduction policies and measures, has resulted in Community actions to fight climate change. Some actions, such as the voluntary agreement between the Commission and

[4] The former reference unit was one metric ton of carbon, which corresponds to 44/12, or 3.67 tons of CO_2.

automobile manufacturers, were initiated prior to the European programme. During the preparation of the EU programme, the Commission set up working groups to examine options for initiating actions in the following areas: flexible mechanisms, energy production and consumption, transport, industry (including fluorinated gases), research, agriculture and carbons sinks in agricultural soils and forests. Based on the work carried out, the Commission made proposals for directives or other tools, in particular:

- Directive 2003/87/EC establishing, as of 2005, a system authorising trade in emission quotas, mainly between GHG-emitting industries. The Directive was adopted in July 2003 (see below);
- A new Directive amending the above in order to allow participants in the emissions trading system to use emission credits generated by JI and CDM projects, by converting them into quotas that may be used for this purpose under the EU "Quotas" Directive. The new Directive was adopted by the Council of Ministers on "General Affairs" on the 13th September 2004.

The other European Union proposals concern:

- Promotion of electricity supplies from renewable energy sources;
- Energy-efficiency in buildings;
- Landfills;
- Promotion of biofuels;
- Promotion of cogeneration;
- Fluorinated gases.

In France, the first measures to reduce GHG emissions were introduced in the early 1990s. A national programme for climate change control (known as the PNLCC), officially approved by the government in January 2000, aimed to extend the measures taken at EU level and enable France to meet its commitments under the Kyoto Protocol. In keeping with the spirit of the Protocol, the programme was essentially intended for application at the national level ("domestic" actions).

The PNLCC included, and usually reinforced, measures that had already been decided on (urban journey plans, regulations on heat exchanges in buildings, regulations on industrial boilers, etc.). It also included about a hundred new and very diverse measures, as illustrated by the following sectoral examples:

- Measures for the energy sector aimed, for example, to develop wind power, to reduce the share of energy produced by conventional power stations and to introduce various energy saving measures;
- Measures for the construction sector aimed to gradually strengthen existing regulations, to upgrade government buildings, to introduce a range of incentives, etc.;
- Measures for the transport sector concerned improved vehicle efficiency, speed limits and the promotion of collective transport systems;
- Measures for the industrial sector concerned new financial instruments (FIDEME and FONGIME) and strengthened regulations by branch;
- Measures for the agriculture and forests sector concerned the various sources of emissions (use of nitrogenous fertilizers, livestock effluent, etc.) and reforestation policy.

All these government measures brought into effect since 1990 enabled France to stabilise its total GHG emissions from 1990 to 2002. However, while the emissions trend from energy and industrial sectors appears to be under control and still leaves substantial room for manoeuvre,[5] the situation in the transport and construction sectors is of much greater concern. Overcoming this challenge is a priority for the 2004 Climate Action Plan, the preparation of which, under the responsibility of the French

Table 2 – Contribution of different sectors to GHG emissions and changes since 1990 in France

Sector	2002	Change from 1990 to 2002
Transport	26%	+ 23%
Building	19%	+ 9%
Industry	21%	– 19%
Energy	12%	– 15%
Agriculture	19%	– 6%
Waste	3%	– 7%
Total (excluding carbon sinks)		– 2%
Total (including carbon sinks)		– 6%

Source : PNLCC

[5] *As demonstrated by the development, virtually throughout the world (United States, European Union, Japan), of voluntary agreements between public authorities and professional bodies, or the adoption of voluntary commitments by companies with the highest GHG emissions. Of note in the latter category is the initiative recently adopted by some thirty major companies and French professional federations, resulting in the creation of AERES.*

AERES (Association of enterprises for the reduction of the greenhouse effect) was created in 2002. Its articles of association state that "the association is part of an experimental process that seeks to prepare for the implementation of European Community measures for the control of GHG emissions. More generally, the association's activities fall in line with the application of the Kyoto Protocol and the reduction of the

Interministerial Task Force for Climate Change, takes a long-term approach, reflecting the phenomenon that must be reversed.

"The Kyoto Protocol is a reality in terms of government action. There are specific targets to be reached, and we are no longer at the planning stage. We will have to ensure that our greenhouse gas emissions are reduced by half worldwide before 2050, which means that developed countries have their work cut out for them. [This 50% global reduction target imposes a 75% emission reduction for developed countries, requiring an effort that is twice as difficult to be reached twice as quickly.] We must commit ourselves to this major initiative, with an annual improvement in energy effectiveness of approximately 3%.

The initiative is well under way; it must rally all public and private players at all levels."

Jean-Pierre Raffarin, Prime Minister, POLLUTEC trade show, November 2002[6]

The 2004 Climate Action Plan, which was presented on the 22nd July 2004, is designed to follow on from the PNLCC. It covers measures in every sector of the economy and the population's daily life, and aims to stabilise French emissions to 1990 levels by 2010. This target requires minimum annual savings of 54 $MteCO_2$ per year[7] by 2010. However, by aiming for a more enduring trend, bringing emissions down to 4 or 5 times lower than in the baseline scenario for 2050, the Climate Action Plan will enable France to go beyond its objectives for 2010, with total emission reductions of 75.2 $MteCO_2$.

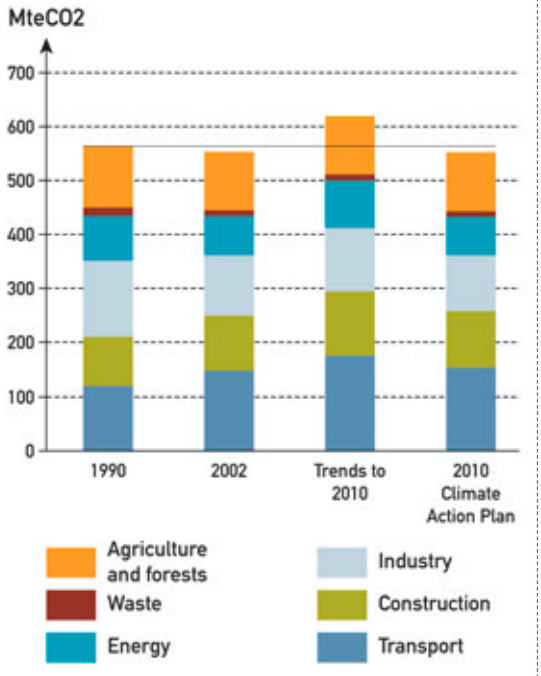
The Climate Action Plan, developed in consultation with socio-economic players, sets out eight main lines of action, three of which are entirely new.

1. **A national campaign on climate change** : over a period of several years, this aims to make every citizen aware of simple, practical ways of reducing emissions at individual level. The campaign relies mainly on intensive media coverage and on systematising the Energy label ("Etiquette énergie") for vehicles, housing and air conditioning.

2. **Sustainable transport** : as the main source of GHG emissions (27% of national emissions in 2002), transport is the sector where the largest reductions are sought (16.3 $MteCO_2$, or 22% of the total reduction target). Biofuel development should meet the target of a 5.75% rate of incorporation in conventional fuels by 2010. A points system (plus or minus), together with the introduction of the Energy label for vehicles, is to be examined in consultation with the European Community authorities, in order to guide consumer choices. Under another entirely new measure, motorway company dividends will be allocated to finance energy-efficient infrastructure.

3. **Construction and ecohabitat** : measures for the residential and tertiary sectors (18% of national emis-

Diagram 4 – Emissions by sector, 1990-2010



greenhouse effect." Accordingly, "it is responsible for technical management relating to the use of:

- 'domestic projects' concerning transport and construction (tertiary sector), for members having the capacity to act,

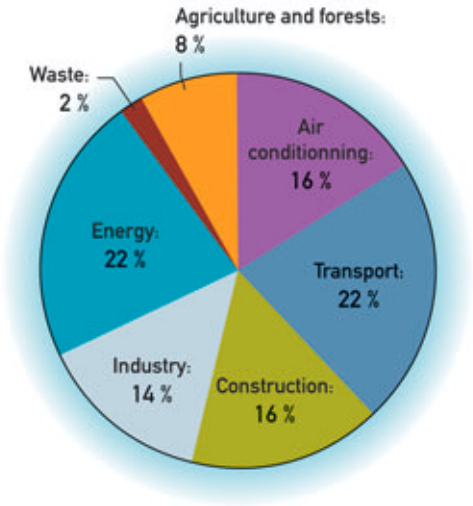
- Clean Development Mechanisms and Joint Implementation, upon their recognition at international level."

At the time of publication of this Guide, the AERES members were: Arc International, Arjo-Wiggins, Atofina, BP France, BSN Glasspack, Ciments Calcia, Clariant, Confédération française de l'industrie des papiers, cartons et celluloses, Cristal Union, Électricité de France, Esso SAF, Fédération des chambres syndicales de l'industrie du verre, Glaverbel France, Holcim France, International Paper, Lafarge Aluminates, Lafarge Ciments, Owens Corning Fiberglass France, Pechiney, Pilkington Glass France, Rhodia, Roquette Frères, Saint-Gobain, Saint-Louis Sucre, Saverglass, Shell (Société des pétroles), Société nationale d'électricité et de thermique, Société vermandoise-industries, Sucreries distilleries des Hauts de France, Syndicat français des industries cimentières, Syndicat national des fabricants de sucre de France, Tembec SA, Total France, Union SDA (sucreries et distilleries agricoles) - Béghin-Say, Usinor, Vicat, Gaz de France.

[6] Jean-Pierre Raffarin's speech is available in full, in French, on the MIES site: http://www.effet-de-serre.gouv.fr/fr/actions/Raffarin.doc.

[7] $MteCO_2$ = million tonnes CO_2 equivalent.

Diagram 5 – Contributions by sector to emission reductions through the Climate Action Plan



sions in 2002) account for 16% of the total effort under the Climate Action Plan (11.7 $MteCO_2$) and concern both old and new buildings. An energy efficiency diagnosis, leading to the Energy label for constructions, will become mandatory so that the required energy investments can be identified. Tax relief measures, potentially of 25% to 40%, will be applied to energy-efficient equipment. Finally, regulations on heat exchanges in renovation work and energy efficiency thresholds in rehabilitation work are to be introduced.

4. **Industry, energy and waste** (accounting respectively for 21%, 12% and 3% of emissions in 2002). Measures for industry, such as the establishment of a market in emission quotas (– 3.2 $MteCO_2$) and N_2O reductions should produce savings of 10.8 $MteCO_2$ (14% of the total objective to be achieved). Measures to control demand for energy and to promote renewable energy sources, representing savings of 16.8 $MteCO_2$ or 22% of the total, are a major feature of the new Action Plan.

5. **Sustainable agriculture and forests** (20% of emissions in 2002). Measures to improve agricultural practice should produce the largest reductions in this sector (5.6 $MteCO_2$).

6. **Eco-efficient air-conditioning.** This measure, aiming to reduce emissions by 10.2 $MteCO_2$, depends on improving consumer information, which in turn will involve encouraging "good practice" among professionals. It includes the introduction of European regulations on testing of air conditioning units.

7. **Territorial Climate Action Plans and the example of the State** (0.4 $MteCO_2$). The State is to generate opportunities for the involvement of territorial bodies, and will be setting the example through its own actions and procurement policies. The territorial authorities will be asked to introduce their own Climate Action Plans in order to encourage local initiatives for controlling GHG emissions.

8. **Research and forward studies beyond 2010.** This line of action is designed to set a long-term perspective for France through the implementation of a research programme to increase energy efficiency in transport, construction and industry, speed up the development of new fuels and improve carbon sequestration methods.

› ... LINKING REGIONAL AND NATIONAL MEASURES TO FLEXIBLE MECHANISMS

The direction taken by France, which favours so-called "domestic" measures, in no way excludes the use of economic tools to limit the costs of change as we move towards a society with reduced GHG emissions. At stake are the interests of the country as a whole and its entire business sector, which can only gain in terms competitiveness over the short, medium and long term. Two sets of tools are already available: the flexible mechanisms provided for by the Kyoto protocol and a European initiative.

» The Kyoto Protocol's flexible mechanisms

To enable the Annex 1 Parties to meet their objectives cost-effectively, the Kyoto Protocol has defined, in addition to national efforts (policies and measures) to be implemented as a matter of priority, three international mechanisms, known as "flexible mechanisms," which are designed to limit the costs of measures to act against climate change. These are international trading of national GHG emission allowances, or "Assigned Amount units" (AAU), Joint Implementation and the Clean Development Mechanism.

- As of 2008, the international trading of Assigned Amount Units will allow Annex 1 Parties that have difficulty complying with their restriction or reduction commitments to purchase Assigned Amount Units from other Annex 1 Parties that have a surplus;
- As of 2008, the Joint Implementation (JI) mechanism will grant emission credits to Annex 1 countries that invest in emission reduction projects in another Annex 1 country;
- The Clean Development Mechanism (CDM) is the only mechanism that associates developing countries which, with respect to the "common but differentiated responsibilities" mentioned in the Kyoto Protocol, have no greenhouse gas emission reduction targets. Under certain conditions, the

mechanism already provides emission credits to Annex 1 countries that invest in emission limitation or reduction projects, once the CDM Executive Board has validated the annual verifications.

JI and the CDM are called "project mechanisms" and fall within the rationale of GHG emission control at a global level, thus reflecting the type of challenge faced by the planet and enabling, at an individual level, the generation of credits by all players (States, project developers), based on the reductions effectively achieved *via* the projects. By extension, the investment projects carried out under these "project mechanisms" are sometimes called "Kyoto projects."

Opportunities for the implementation of these projects can only be enhanced by the adoption by the EU Council of Ministers, on the 12th September 2004, of a new directive providing for trade in emission credit quotas generated by the project mechanisms set out in the Kyoto Protocol, and by the now imminent prospect of the Protocol's entry into force..

» The use of the Kyoto Protocol mechanisms is subject to eligibility criteria

The Kyoto Protocol is based on the idea that GHG emissions in developed countries must be reduced immediately and as quickly as possible, and on the principle that countries have an equitable share in achieving this objective. The various Annex B Parties will each obtain an initial emission allowance, expressed in metric tons of CO_2 equivalent, corresponding to their Protocol objectives.

Annex 1 or Annex B?

In practice, Annex 1 of the UNFCCC and Annex B of the Kyoto Protocol are virtually interchangeable in terms of use. The Annex B countries have emission reduction or limitation obligations, and the Annex 1 countries can invest in Kyoto projects (JI and CDM) or host JI projects. Only the term "Annex 1" will be used in this guide.[a]

(a)The lists only differ in regard to Belarus and Turkey, which are included in Annex 1 but not in Annex B.

To ensure the environmental effectiveness of the Protocol, the Marrakesh Accords defined a compliance regime, which is a system for verifying commitment compliance by the Annex 1 countries, in November 2001. The regime will be set up as soon as comes into force the Protocol.

The Annex 1 countries must first satisfy certain preliminary conditions before they can make use of the flexible mechanisms. Countries that subsequently fail to meet their commitments are liable to sanctions and must report on the progress they expect to make before being granted further recourse to the mechanisms.

Annex 1 countries must meet certain criteria before they are allowed to use the flexible mechanisms:

- They must have established a national accounting system for emissions;
- They must comply with the standardised accounting methods prescribed by the IPCC;
- They must draw up and send an annual emissions inventory to the UNFCCC Secretariat;
- Finally, they must determine the quantity, in terms of their annual GHG emissions in tonnes, to be assigned to them for the 2008-2012 commitment period – a task which is essential to remain in line with the Kyoto Protocol's rationale.

Subsequently, a country that fails to meet its quantified objectives will be penalised by the Compliance Committee set up by the Marrakech Agreements. Penalties involve making restitution for the shortfall in CO_2 reductions over a given commitment period, measured in tonnes and multiplied by a coefficient acting as a decisive deterrent (set at 1.3 for the first period of commitment from 2008 to 2012).

In the opinion of international lawyers, ecological groups and climate experts, the compliance system established as part of the implementation of the Kyoto Protocol makes this the most ambitious environmental agreement that has ever been concluded. It represents a first step towards global environmental legislation and governance over a "global public asset."

» The EU system for trade in GHG emission quotas (EU ETS)

The EU is preparing for the introduction, as of the 1st January 2005, of a new Directive establishing a system for trade in emission quotas between enterprises emitting large volumes of GHGs. The Commission has estimated that the Directive could apply to some 12,000 industrial installations in the 25 countries of the EU. This measure anticipates on the international trading system provided for by the Kyoto Protocol and will be applied over several successive commitment periods. The first covers the years 2005 to 2007,[8] to be followed by successive 5-year periods (2008-2012 for the second period, which is identical to the first "commitment period" stipulated by the Kyoto Protocol).

[8] *Only CO_2 emissions will be concerned in the first period.*

The Directive initially, covers the most energy-intensive activities. Specifically, the sectors targeted are:

- Energy production: combustion installations with a rated thermal output exceeding 20 MW (except hazardous or municipal waste installations), mineral oil refineries and coke ovens;
- Production and processing of ferrous metals;
- Mineral industry (cement, lime, glass and ceramic products);
- Pulp, paper and board manufacturing.

Other industries, whose energy production facilities exceed the 20 MW threshold, will also be concerned: chemical, aluminum, automobile, etc.

Simply put, the Member State authorities will allocate GHG emission allowances for the activities of the major GHG emission groups or companies under their responsibility. Each installation will be awarded an administrative licence to emit GHGs and an initial emission allowance for the corresponding commitment period.

Companies whose installations exceed their emission allowance may:

- Purchase allowances from companies that emit less GHGs and who thus have a surplus of allowances;
- Or, as from 2008, acquire emission credits generated by JI or CDM projects, an option which became available with the adoption of the Directive providing for the conversion of "Kyoto credits" into "quotas" emitted by the EU Member states, to be implemented under the responsibility of each of these.

The EU national governments have established the rules for distributing quotas among the various installations concerned and set up national quota allocation plans.

At the time of writing, most of these national plans have been approved by the Commission. Although some differences regarding the interpretation of the Directive remain between certain Member states and the Commission, this will not affect the introduction of the trading system, which is planned for the 1st January 2005.

The national governments are also responsible for applying penalties if entities covered by the Directive fail to meet their commitments. Initially, these penalties will amount to €40/tCO_2-eq (between 2005 and 2007) and, subsequently, €100/tCO_2-eq as of January 1, 2008. They will in no way discharge the company at fault from having to retrocede the quantity of allowances that was not met over a given period.

› DEADLINES ARE APPROACHING FAST...

As indicated previously, the Kyoto Protocol provides for an initial period of commitment, with respect to compliance with emission limitation or reduction targets, from 2008 to 2012. However, it should be noted that:

- JI and CDM projects may be started immediately. For the CDM, emission reductions can in certain cases be taken into account as of 2000 (subject to the project's approval by the CDM Executive Board – see below). In the case of JI projects, credits can only be taken into account as of 2008, although projects may have been implemented as from 2000;
- As mentioned above, the EU emission trading system (ETS), which prefigures the international trading system provided for by the Protocol and is one of the measures taken by the EU in response to the commitments made at Kyoto, is to be launched on the 1st January 2005.

For further information

On the UNFCCC: http://unfccc.int

On the text of the Kyoto Protocol: http://unfccc.int/resource/docs/convkp/convfr.pdf

On the conclusions of the 7th Conference of the Parties: http://cdm.unfccc.int/cop7/accords_draft.pdf

On the European Climate Change Program:
http://europa.eu.int/comm/environment/climat/eccp.htm

On the European allowance trading scheme:
http://europa.eu.int/comm/environment/climat/emission.htm

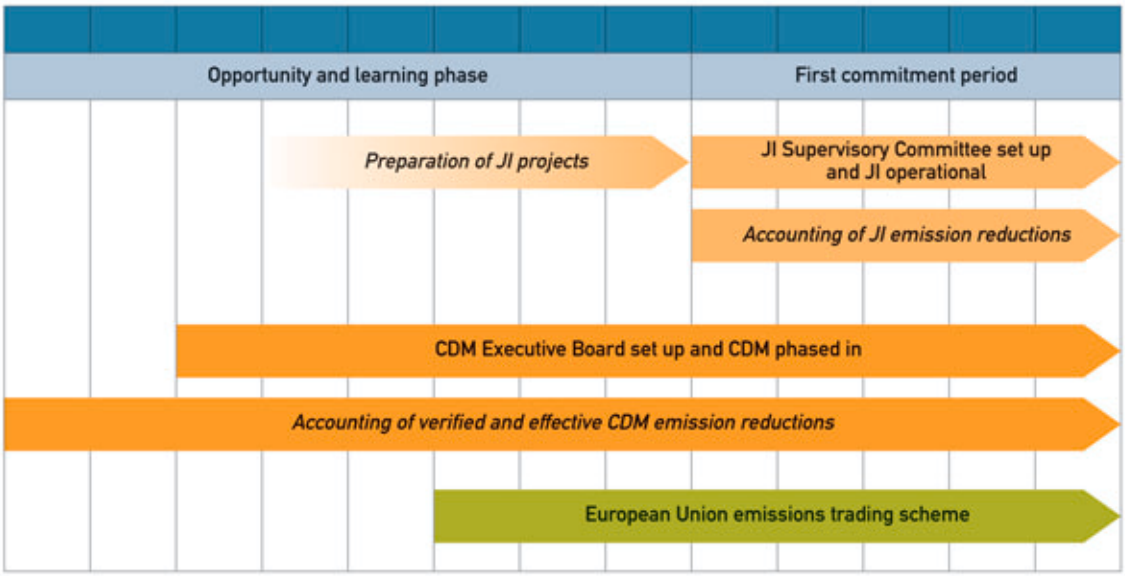
On the PNLCC: http://www.effet-de-serre.gouv.fr/fr/actions/PNLCC.pdf

On the 2004 Climate Action Plan: http://www.effet-de-serre.gouv.fr/fr/actions/BAT-PLANCLIMAT04.pdf

As with any other, setting up a Kyoto project takes a certain amount of time. Preparations therefore need to be made as from now to meet fast-approaching deadlines.

Diagram 6 shows the schedule for the implementation of project mechanisms.

Diagram 6 – Project mechanism implementation schedule



3. What are the consequences for business activities?

The implementation of the Kyoto Protocol and the EU Directive establishing a system for trade in greenhouse gas emission quotas between corporate groups will affect corporate activity both directly and indirectly. Both systems introduce restrictions and additional costs that require careful management, as well as new opportunities.

Action against climate change has already led to the adoption of specific policies by the European Union, national governments and even businesses which have voluntarily undertaken to reduce their GHG emissions. The trend is set to intensify, bringing changes in the economic environment for businesses, influencing attitudes among stockholders (increasing role of "socially responsible funds") and customers and underpinning changes in their behaviour.

Understanding the new economic instruments that are gradually being integrated into environmental policies, particularly at the international level, is essential when gearing businesses to responsible management of the constraints arising from climate change. This understanding will determine their cost control policies and the strategies required to benefit fully from the new opportunities generated by a "carbon-constrained" environment.

› EMERGENCE OF A GLOBAL MARKET FOR GHG EMISSION REDUCTIONS

A new market is emerging with its own rules and players. Various initiatives at different levels are helping to shape this new market:

- At EU level, the Directive establishing a system for trade in GHG emission quotas, supplemented by the Directive on the use of "carbon credits" generated by "Kyoto projects", will be effective as from 2005 for European enterprises emitting large volumes of GHGs;
- Other industrialised countries (Norway and Canada) are setting up similar systems for trade

in emission quotas or may shortly do so (Japan). Norway has already made an official request, as authorised by the "Quotas" Directive, to link the Norwegian trading system to the European trading system;

- At worldwide level, exclusively State-financed funds (mainly in the Netherlands and more recently Austria and Denmark) or funds cofinanced by the public and private sectors (as launched by the World Bank) have already been bidding for several years for emission credits arising from "Kyoto projects."

» Who buys "carbon credits?"

"Carbon credits" are still very much a fledgling market, with few actual players to date. However, the forthcoming application of the Kyoto Protocol is likely to boost its development and quickly bring it to maturity.

To date, the two main types of buyers are:

- Institutional investors:
  - The mixed public/private funds managed by the World Bank's Carbon Finance Business team, and particularly the Prototype Carbon Fund or PCF, with resources totalling M US$ 180;
  - The Dutch government, which, using its own budget resources, has been managing several "carbon credit" purchasing funds since 2001-2002 (ERUPT and CERUPT programmes in association with other international financial institutions), totalling M€350;
- A significant number of private Japanese enterprises have been anticipating future emission limitation requirements, in a context that offers little scope for reducing its emissions.

As well as these two major categories on the "carbon credits" market (accounting for nearly 90% of all transactions relating to emission reduction projects), players include purchasers such as the Bio Carbon Fund, another World Bank project which began operations in May 2004 with assets of M US$ 15. Like the PCF or the Community Development Carbon Funds (CDCF), it is targeting both public and private investors.

» A developing market

According to information from NatSource and Point Carbone,[9] the carbon emissions market in 2003, including all private transactions and those concluded with state purchasing funds since transactions began in 1996, totalled over M€500. A volume of some 80 Mteq CO_2 in emission reductions was traded in 2003, as compared to 30 Mteq CO_2 in 2002. According to analyses of transactions recorded in the early part of 2004, the market is likely to double over the previous year.

This growth is mainly accounted for by:

- A supply-side increase, especially since the implementation of several projects generating very large reductions in emissions;
- The arrival en masse, in 2003, of new private-sector players, especially Japanese firms;
- The emergence of a number of positive signals, including newly operational institutions to oversee the CDM and clarification of the framework of the "quotas" Directive, which significantly reduce the overall level of uncertainty affecting the carbon emissions market. Russia's decision to ratify the Kyoto Protocol should also have a powerful effect;

Nevertheless, it is self-evident that the market is still lacking in liquidity, homogeneity and transparency. It is nearly always difficult to make meaningful comparisons between transactions concluded to date in very different contexts (nature of carbon credits traded, types of uses planned, date of delivery, level of compliance with the rules set out by the UNFCCC, different systems for limiting GHG emissions, etc.). The market as it now stands cannot provide clear and converging indications as to prices per tonne of CO_2 traded, nor as to future trade volumes.

Nevertheless, in the short term, the development of trade in GHG emission "credits" and the emerging structural organisation of transactions, fuelled by the creation of the European emissions trading system, should bring changes in the behaviour of numerous players and start producing clear and reliable signals as to prices and volumes traded on carbon markets.

» Some market players will be net buyers...

All entities – countries or economic players – faced with GHG emission restrictions or wishing to enter this market are likely to need to purchase "carbon credits," for example:

- Primarily, all countries ("Parties" within the meaning of the Kyoto Protocol) that will opt for policies to reduce their emissions and rely partly on the acquisition, through governmental financing, of "carbon credits" generated by Kyoto projects;

[9] *Source: Franck Lecocq, World Bank, States and Trends of Carbon Market 2004.*

Table 3 – Cost reductions through project mechanisms

	Company A	Company B	Total
Emission allowance			
Current emission level (metric ton of CO_2 equivalent)	40,000	100,000	140,000
Emission reduction objective (10%)	– 4,000	– 10,000	– 14,000
Emissions after allowance (metric ton of CO_2 equivalent)	36,000	90,000	126,000
Emission reduction costs without flexible mechanisms			
Emission reduction cost per metric ton of CO_2	€2	€5	
Effective emission reduction (metric ton of CO_2 equivalent)	4,000	10,000	14,000
Total cost of CO_2 emission reduction	€8,000	€50,000	€58,000
Emission reduction costs with flexible mechanisms			
Estimated price of an emission licence		€4	
Effective emission reduction (metric ton of CO_2 equivalent)	12,000	2,000	14,000
Total of cost reduction	€24,000	€10,000	€34, 000
"Carbon credit" balance	8,000	– 8,000	0
Revenue from the sale of "carbon credits"	€32,000	€0	
"Carbon credit" acquisition costs	€0	€32 000	
Total cost of CO_2 emission reductions	**– €8,000**	**€42 ,000**	**€34,000**

This table, prepared using purely fictitious data, illustrates the advantages of flexible mechanisms. Two entities (countries, corporations, etc.) are subject to mandatory GHG emission reductions. Without flexible mechanisms, each entity must bear the cost of achieving its reduction objectives. With flexible mechanisms, both entities benefit in comparison to the previous situation. In this example, even the entity with a particularly low marginal emission reduction cost benefits from the emission reductions.

- Groups or businesses with sites in Europe entering the scope of the European Directive;
- "Carbon credit" purchase funds, whether public like the Dutch programs or mixed and multilateral like the World Bank's Prototype Carbon Fund, or those which certain NGOs might schedule.

In addition to these buyers, various hedge funds aim to take avantage of the market's immaturity and uncertain liquidity by trading on its potentially high volatility.

» ... other players will be net sellers

However, some entities will be net sellers, for example:

- Certain countries in Annex 1 which will have room for maneuver with respect to their commitments. This applies to the Russian Federation and probably other European countries in the process of transition to a market economy;
- Countries not included in Annex 1, for any CDM credits they might have retained;
- States and companies developing low-emission energy activities or technologies likely to be implemented as part of CDM or JI projects (wind energy parks, combined cycle energy installations, etc.);
- Businesses which are able to reduce their GHG emissions through their activities, e.g. managers of controlled landfill sites with methane recovery.

› ACTION AGAINST CLIMATE CHANGE ALTERS THE RULES

» New relationships with stakeholders

In the short term, and even more so in the medium term, the carbon constraint will gradually change the legislative, economic and financial environment of business activities:

- To achieve the limitation objectives of the Kyoto Protocol, States are required to implement new regulations, adapt their tax system and introduce new initiatives;
- Corporate investors and shareholders will increasingly include the "carbon constraint" and overall corporate efforts in this regard in their assessment criteria and decisions;
- Customers and suppliers may also take these criteria into account, which is likely to affect the way business is conducted as well as consumer choices.

» Carbon constraints are likely to increase

In the longer term, the Kyoto Protocol is only a first step which, however important, does not suffice in itself to reverse global climate change trends. Merely stabilising GHG concentrations in the atmosphere by 2050 will require a 50% reduction in GHG emissions worldwide, which implies a fourfold reduction in the developed countries. The level of CO_2 concentrations in the atmosphere, and hence the extent of climate

change, will depend on the point at which reductions actually take effect

The policies to be implemented in the next decades, whether in a multilateral "post-Kyoto" framework yet to be agreed on, in an EU framework or within frameworks established by individual countries, will all be geared to reducing GHG emissions, to "clean" and energy-efficient projects and to technological innovations capable of modifying emission trends. JI and the CDM, as mechanisms that give rise to changes in the rules and logic of investment and to instruments for transferring and disseminating innovative practices and technology, will necessarily influence the economic and technological choices of societies and help to establish a basis for an increasingly – and increasingly unavoidable - "carbon-constrained" global economy.

4. Conclusion

The introduction of flexible mechanisms will enable firms to divide their efforts between applying internal measures and, additionally, securing emission reductions by implementing projects or purchasing emission credits on the market. The mechanisms also open up access to other players (such as NGOs and local government bodies, as part of their implementation of decentralised cooperation programmes).

Where businesses are concerned, if they are to minimise the impacts of measures to avert climate change risks, it is important that they clearly identify the key issues at stake at the same time as they measure the potential of the new instruments available to them.

Pending the adoption of stable rules of operation, particularly the definition of "baseline scenarios," project development through JI and the CDM is still subject to some uncertainty, although this has been greatly reduced, at least for the CDM, thanks to the CDM Executive Committee's work on methodology over the last two years. It should be emphasised that the formation of a carbon emissions market is still in its early stages, and that while certain players are hoping to influence the process by anticipating and seizing the opportunities that arise while also "learning by doing," others, mainly NGOs, are working to ensure that the emerging market does not undermine efforts to achieve the ultimate objective sought since the adoption of the Kyoto protocol – to secure an effective and verifiable reduction in GHG emissions worldwide.

Many investment projects with a "Kyoto" component (JI or CDM) are under consideration in many countries, whether committed to reducing their GHG emissions (Annex 1 countries) or not (countries not listed in Annex 1). More than one hundred JI or CDM projects have already been finalised or are virtually finalised in a large number of countries and activity sectors, promising a bright future for JI and CDM projects.

For further information

Interministerial Task Force for Climate Change: http://www.effet-de-serre.gouv.fr/

"Que serait une société sobre en carbone?" ("Shaping a low-carbon society"): http://www.effet-de-serre.gouv.fr/fr/etudes/BilanMTpdf.pdf

VOLUME A

Part Two

Using the opportunities arising from the project mechanisms to best advantage


Using the opportunities arising from the project mechanisms to best advantage

In brief:

Joint Implementation and Clean Development Mechanism projects offer **three advantages**: firstly, **an environmental advantage**, on both a national and international level; secondly, **a development advantage,** for the country hosting the project; and finally, **a financial advantage** for any player, "Party" within the meaning of the Kyoto Protocol, or "legal entity," wishing to minimize the cost of its commitments.

A large number of sectors is concerned, particularly energy, transport, industry, buildings and waste disposal, as well as agriculture and forestry. More generally, this concerns all projects aiming to reduce and avoid GHG emissions, or capture GHGs for the long term, if they are part of the sustainable development strategy of the host country.

The eligibility of an investment project for JI or the CDM is subject to two conditions: its ability to generate **effective emission reductions**, both measurable and verifiable, and its approval as a "Kyoto" project by the host country, resulting in the creation and transfer of credits.

First and foremost, it is essential that the project proponents guarantee the **additionality** of a project, i.e. the additional reduction of GHG emissions generated with respect to the solutions that would have been adopted without the mechanism. For the CDM, under the Marrakesh Accords, this issue is now the responsibility of the CDM Executive Board, whose decisions are based on the recommendations of the "Methodology Panel," set up in 2002.

The countries hosting JI or CDM investment projects play a key role, as they must not only have ratified the Protocol, the first condition set forth in the Marrakesh Accords, but also individually approved each project. In this respect, the host country expects a partnership relationship to take into account its **wider-reaching development issues**. The CDM project, in particular, cannot be limited to a simple project for the reduction of GHG emissions but must satisfy the sustainable development objectives adopted by the host country.

1. Using JI or CDM project mechanisms

› WHAT IS THE PURPOSE OF JI AND CDM PROJECTS?

Joint Implementation and the Clean Development Mechanism are two mechanisms set up by the Kyoto Protocol, the purpose of which is to fight climate change:

- Firstly, through the implementation of efficient activities, technologies and techniques emitting less GHGs in the countries included in Annex 1 (JI) and not included in Annex 1 (CDM);
- Secondly, through the possibility for Annex 1 countries to reduce their GHG emissions beyond their borders. With respect to the global environment, these reductions are equivalent to the reductions acheved within the Annex 1 countries, but they can be generally obtained at a lower cost.

Theoretical justification for flexible mechanisms

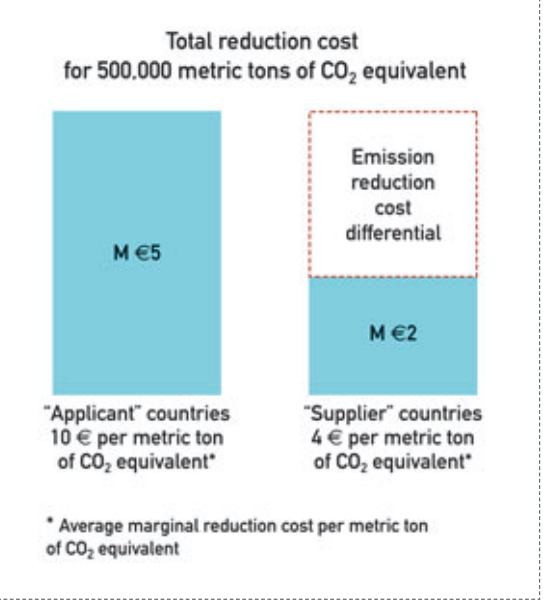
GHGs are pollutants which, in contrast to local pollutants, such as sulphur dioxide (SO_2), have a global impact. They are uniformly distributed in the atmosphere within a week or so. Accordingly, the geographical location of the emission source is of little significance. Reducing GHG emissions will therefore have the same impact whether the reduction takes place in Toulouse, Bucharest or Lima, and whether it results from an improved industrial or waste treatment process or from the use of energies emitting fewer GHGs. However, the cost of the reduction will not be the same for every country, activity sector or production unit achieving the reduction. Diagram 7 illustrates the difference in costs between two countries:

- Country A, called "the applicant," where the incremental emission costs are high;
- Country B, called "the supplier," where the incremental emission costs are lower.

The difference between the incremental emission reduction costs is a surplus, which on a contractual basis can be spread between the supplier and the applicant.

Projects developed under one of these project mechanisms may, under certain conditions, generate credits that can be traded based on effective and verified GHG emissions. These credits, shared between the parties to the project, may then be used in three ways:

Diagram 7 – Illustration of a reduction cost difference



- To fulfill any investor entity commitments, whether voluntary or arising from the implementation of the Kyoto Protocol or trade schemes, such as the EU ETS Directive;
- To be conserved (or "banked") for future use, whether for sale or to be used to fulfill a commitment in a future period;
- To be sold immediately to another entity, which generates additional revenue, improves the profitability of the project and facilitates its financing

› WHY USE THESE MECHANISMS?

Firstly, CDM projects offer an additional solution, for Parties included in Annex 1, to offset emissions from certain sectors where national emission reduction efforts are more difficult to implement quickly, using more traditional mechanisms, whether regulatory (standards) or economic (taxes, market mechanisms). This is the case for the transport sector for example.

Accordingly, and above all, they represent an alternative to the investments that would have been made by businesses subject to emission restrictions at a higher cost per ton of carbon avoided.

Furthermore, the CDM projects of the Kyoto Protocol are the only way of valuing the GHG emission reduction units obtained by Parties not included in Annex 1, which have no national GHG emission reduction objectives.

More generally, JI and CDM projects generate a number of direct and indirect benefits, such as:

- The projects' contribution to the environmental, social and economic development of the host country, the accompanying transfer of technology and know-how, as well as the contribution of a new source of financing linked to the market value of the credits;
- An improvement in the financial viability of low GHG emission technologies (renewable energies, industrial processes, etc.).

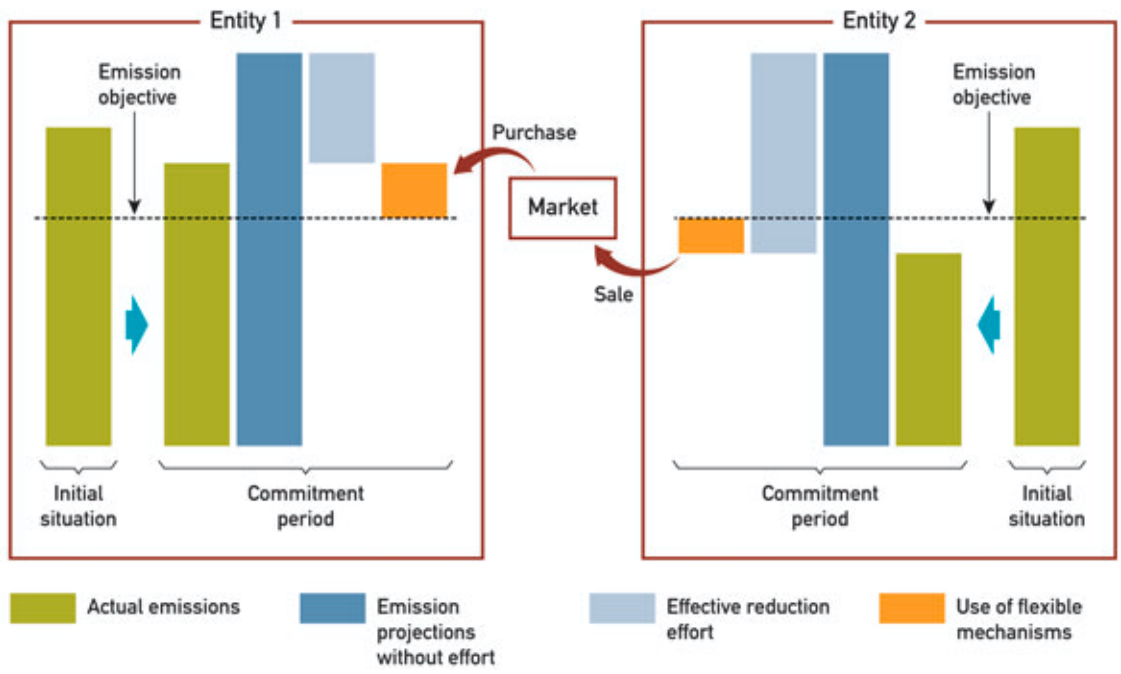
Overall, the advantages of JI and CDM projects are three-fold:

- **A clear environmental advantage at both national and international levels;**
- **An obvious economic and social development advantage for the country hosting the project;**
- **A significant financial advantage for both the company that can now fulfill its commitments at a lower cost and the host country.**

The following two points must be taken into account:

- **The development objectives of the host country, because of its key role, and**
- **Wider-reaching sustainable development issues: the CDM project in particular cannot be limited to a simple reduced GHG emission project but must meet the sustainable development objectives of the host country.**

Diagram 8 - Flexible mechanisms to act against climate change



2. Do my investment projects fall within the scope of the Kyoto Protocol?

› A LARGE NUMBER OF SECTORS ARE CONCERNED

» Some sectors have clearly defined eligibility criteria...

Among the sectors concerned by JI and CDM projects are:

- Energy: with respect to both production (low or reduced GHG emission technologies, with restrictions concerning nuclear energy), and demand (energy efficiency programs in industry or buildings);
- Transport: the projects concerned are those that promote low emission vehicles (energy efficiency of vehicles, fuel substitutes), or change in urban development plans to integrate, for example, mass transportation and transport optimization initiatives;
- Industry: the sectors concerned are those that emit GHGs *via* their industrial processes, excluding energy-related emissions (*see above*). In particular, this concerns the chemical industries, production of materials (cement, lime, glass, paper, ferrous and nonferrous metals), and hydrocarbon activities;
- Waste disposal: in particular, management of biodegradable waste.

For further information

On projects under development and eligible sectors:

http://cdm.unfccc.int/methodologies/PAmethodologies

» ... for other sectors, eligibility will be defined in the near future

Even if the rules to be applied are still uncertain, other sectors will be concerned in the near future, e.g. forestry projects (afforestation and reforestation), for which the more complex eligibility conditions will be developed in stages.

Under the Marrakesh Accords, three sectors are excluded from the CDM for the first commitment period (2008-2012), and their eligibility with respect to JI has yet to be decided:

- Agriculture: in particular, agricultural management practices and livestock breeding;
- Land Use, Land-Use Change and Forestry (LULUCF);
- Storage of CO_2 in underground reservoirs.

› IS MY PROJECT ELIGIBLE?

In order to be developed as a JI or CDM project, it must meet a certain number of criteria.

» It must be "additional"

This means that for the project to be implemented in accordance with the Kyoto Protocol, it has to guarantee that it will effectively generate additional reductions in GHG emissions as compared to activities that would have been implemented without the mechanism. A project that satisfies this condition is said to be "additional."

In order to determine the additionality of a project, the prevailing environmental regulatory framework

JI in candidate countries: additionality and European Community acquis

Countries seeking accession to the European Community are obliged to align their legislative, regulatory and administrative measures to Community legislation as a whole. Transposition to this Community "acquis" must be completed by the accession date at the latest.[a] Community legislation requirements must be considered as part of the baseline for JI projects undertaken in these countries.

In particular, it is clear that facilities ultimately falling under the EU ETS may not simultaneously, and outside of the transitional period,[b] be part of a JI project, in order to avoid double accounting of emission reductions.

[a] Except for certain transition measures agreed during accession negotiations.
[b] The European Directive on project mechanisms, currently under negotiation, should provide further information on this point.

For further information:

On European Community acquis:

http://www.europa.eu.int/comm/enlargement/negotiations/chapters/chap22/index.htm

The specificity of afforestion and reforestation projects

At the current stage in international negotiations on forest projects, and in accordance with the November 2001 Marrakech Agreements, the CDM only applies to planting and reforestation projects. Over a given year, the use of credits arising from such projects by States having made commitments under the Kyoto Protocol is limited to 1% of 1990 emissions.[a] The inclusion of forest planting projects in the CDM nevertheless raises a number of specific issues that are currently under intensive discussion with reference to previous COPs:

- The risk of non-permanence, which is linked to the fact that carbon captured from biomass is liable to be re-emitted into the atmosphere at any time, as a result of natural or human disruption;
- The adverse social and ecological consequences of possible "bad projects": forest planting projects generally take up more space than energy-related projects and there have potentially greater impacts – positive or negative – on the environment and living conditions of local populations
- How should baseline scenarios be defined ? How can be projects be guaranteed to be additional? How should the actual effects of these projects be measured?

The Conference of Parties (COP9) held in Milan in December 2003 brought significant progress on issues concerning the implementation of CDM projects for forest planting and reforestation. These advances have greatly improved prospects for developing countries and especially for the Least Developed Countries (LDCs) by significantly extending the scope of the CDM to countries that were previously disadvantaged due to their relative weak energy or industrial infrastructure.

The COP9's decision has brought precise guidelines for the development of these CDM projects. It looks in detail at problems relating to non-permanence, additionality, "leakage," scientific uncertainties and the socio-economic or environmental impacts (protection of biodiversity and natural ecosystems) arising from forest planting or reforestation projects.

CDM forest planting or reforestation projects are characterised in particular by the following provisions:

- Firstly, for CDM projects of this type, the period over which credits are taken into account, initially chosen by the project developer, will either be 20 years, with the possibility of two further 20-year periods, or 30 years with no possibility for renewal.
- Secondly, the accounting system for forest planting or reforestation projects differs from that used for other certified emission reduction units (CERU). Two options were examined for emission credit accounting, in order to reduce risks of non permanence:
  - Introducing temporary certified emission reduction units (T-CERU), which are cancelled at the end of the commitment period following the period in which they were first generated. With this approach, verification and certification of the CDM project results in the emission of new credits every five years, which correspond to the net verified amount of GHG reductions by sequestration generated by the project from the time it began.
  - Long-term certified emission reduction units (LT-CERU). These are cancelled at the end of the credit accounting period (no more than 60 years) or earlier, if carbon stocks are observed to have disappeared by the date of verification. It should be noted that in this case, a certification report has to be produced at least every five years.

  These specific CERUs must be replaced, as soon as their validity expires, by a different CERU (T-CERU, LT-CERU or CERU).
- Thirdly, simplified rules and procedures for small-scale forest planting or reforestation projects should be set out by COP10. This project category would be reserved for forest planting or reforestation projects that capture a maximum of 8,000 tonnes of CO_2 per year and which are developed by low-income communities.

Forest planting and reforestation projects address important issues and interest has already been expressed by World Bank bilateral and multilateral funding agencies (BioCarbon Fund and Community Carbon Development Fund) and by a number of private enterprises. Nevertheless, extreme vigilance must be expected on the part of NGOs involved in protection of the populations and local environments (especially biodiversity) concerned.

It should however be noted that under the "Quotas" Directive, which is supplemented by the "Projects" Directive, no forest projects developed under the CDM have yet been selected as eligible for conversion into emission quotas, which limits the potential market for these projects. Furthermore, the CDM Executive Committee has not yet given any formal approval to methodologies for forest planting and reforestation projects, and project applications are still too few to draw any conclusions.

[a] With emissions totalling 550 MteqCO_2 in 1990, France will be entitled to use up to 5.5 MteqCO_2 per year in credits arising from woodland planting projects under the CDM. To fulfil this quota, around 150,000 hectares of forests will have to be planted in developing countries as from the 1st January 2004.

For further information:

Division 19/COP9 on CDM projects for forest planting and reforestation:
http://cdm.unfccc.int/Reference/Documents/dec19_CP9/French/decision_18_19_CP.9_fr.pdf

Guidelines for the preparation of CDM projects for forest planting and reforestation
http://cdm.unfccc.int/Reference/Documents/Guidel_Pdd_AR/English/Guidelines_CDM-AR-PDD_AR-NMB_AR-NMM.pdf

PDD on CDM forest planting and reforestation projects:
http://cdm.unfccc.int/Reference/Documents/cdm_ar_pdd/English/CDM_AR_PDD.pdf

Proposal for a new methodology: reference level of CDM forest planting and reforestation projects:
http://cdm.unfccc.int/Reference/Documents/cdm_ar_nmb/English/CDM_AR_NMB.pdf

Proposal for a new methodology: method for monitoring CDM forest planting and reforestation projects:
http://cdm.unfccc.int/Reference/Documents/cdm_ar_nmm/English/CDM_AR_NMM.pdf

in the country of investment must first be identified. Reference can also be made to the technologies normally used in the host country. It is impossible for a project in a sector already heavily regulated in the host country to be considered additional, and therefore eligible. For example, if the regulation already requires that a technical landfill centre be equipped with flare stacks, it is clear that a project with a corresponding objective would not be eligible.

The second step is more quantitative than qualitative. Assessing the additionality of a project consists in using a probable "baseline." A baseline, drawn up on the basis of reliable assumptions, simulates the impacts of what would probably have happened had the project with a JI or CDM component not been set up. If the project's GHG emissions are less than those generated by the baseline, then, a priori the project is deemed eligible. The following example illustrates this idea.

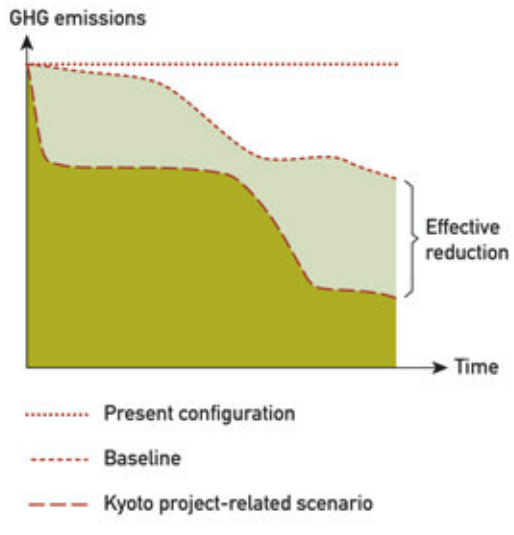
Project eligibility

Let us suppose that a company wishes to invest in a power plant project in Poland. The investor decides to apply an environmentally friendly technical solution, with respect to GHG emissions. The power plant will be equipped with a high efficiency combined cycle gas turbine.

The baseline reflects the situation had there been no Joint Implementation mechanism. This baseline is based on a "classic" coal burning solution, which is the best available technique, given the economic constraints at the time of the project's preparation.

This investment project is a priori eligible with respect to JI as it produces less CO_2 emissions than the baseline.

Diagram 9 - Additionality of a Kyoto project



» The host country must authorize the project

Countries hosting JI or CDM projects play a key role as they must have not only ratified the Protocol, the first condition, but must also have formally approved the project.

Accordingly, the government of the host country must also:

- Confirm that the JI or CDM project complies with its sustainable development strategy. In this respect, it must also determine whether the project requires an environmental impact study (EIS);
- Give its written approval for each project, so that the project is potentially eligible, and may be presented for validation as a "Kyoto project."

What are the advantages for the host countries?

An increasing number of governments are now setting up national structures, as set forth in the Marrakesh Accords, to promote these new projects. Accordingly, if the local economies benefit from the same advantages for their activity as would be the case with a more "standard" investment, the Kyoto projects would also help to:

- Attract Foreign Direct Investment (FDI) in new low GHG emission technologies;
- Improve existing technologies: energy efficiency, industrial processes, sustainable forestry, land restoration, etc.;
- Provide an additional contribution to render a project financially viable or lower the cost of implementation, if the host country is the project developer;
- Finally, as part of a JI project, the investment may even enable local authorities to respect their GHG emission reduction commitments, should the host country wish to conserve a portion of the "carbon credits" generated by the project.

› LEGALLY, SEVERAL CONTRACTUAL AND INDUSTRIAL FRAMEWORKS MAY BE ADOPTED

Projects in the host countries may be implemented with highly diverse legal frameworks (direct ownership and management of the facilities, delegated management (dealership, factoring), BOT (Build, Operate, Transfer); etc.).

In each case, the contractual frameworks should be adapted to specify, in particular, which "legal entities," as defined in the texts, own the emission reduction credits.

› THE ROLE OF THE FRENCH AUTHORITIES

Having supported the introduction of the Kyoto Protocol flexible mechanisms as instruments to complement those to be implemented primarily at the national level, France is seeking to facilitate their use by French companies and other operators. Accordingly, its actions follow three directions:

- First, the provision of **information,** as illustrated by this guide, which is to be supplemented in 2005 with the creation of a web site;
- **Cooperation** with countries seeking to develop projects of this type. These cooperation programmes are conducted as partnerships and may, with guidance from the MIES, lead to the signature of JI or CDM project promotion agreements with the countries in question;[10]
- **Two-fold assistance to project proponents:** (i) local assistance in countries where projects need development, which is provided by the French Embassy services in the countries concerned, generally through their economic missions, and (ii) a procedure for the approval of projects by France as a "Party" if required to ensure compliance with international agreements, which has been designed to reduce the time and costs involved. The MIES, which acts as the national designated point of contact (DPC) for the CDM, coordinates the examination procedure at French level for projects submitted by private enterprises and is also the official contact organisation for the NDAs of countries hosting projects and for the Climate Convention Secretariat during the project approval procedure.

[10] Seven intergovernmental agreements have been signed to date (27 October 2004). Six of these concern the promotion of CDM projects (with Argentina, Chile, China, Columbia, Morocco and Mexico, and one concerns the promotion of JI projects (with Romania).

VOLUME A

Part Three

What are the specific characteristics of a Kyoto-type project?


What are the specific characteristics of a Kyoto-type project?

In brief:

A JI or CDM project, even if it differs in certain ways, is **not fundamentally different, in terms of preparation, from a conventional project**.

It is first and foremost a project of an industrial, energy, environmental or like nature. Accordingly, there is no "good" Kyoto project without a sound investment project. The existence of project mechanisms (JI or CDM) is justified by their ability to orient the choice of investors towards lower GHG emitting technologies that do not divert Official Development Assistance funds and are more conducive to their sustainable development requirements.

For the project developer, a Kyoto project requires additional time and costs that are slightly higher than a conventional project. However, it must be noted that there is only a small number of additional procedures in comparison to the number of activities required to the-set up of a conventional project, and that most of these stages precede the effective implementation of the project. **Effective management normally ensures the simultaneous development of the project and its "carbon" component.**

The additional costs required for the project's development under the Kyoto Protocol will be offset in a number of cases, and at least for major industrial projects, by the **additional income** generated by "**carbon credits**." With a view to long-term implementation, the development costs and timelines of the first project – which will bear the training costs– will automatically be lower for subsequent projects.

Although difficult to quantify, certain benefits, such as increased local competitiveness, the development of new skills or the consequences in terms of global image may also, for companies implementing the projects, play an essential role in the decision to take a Kyoto project to completion. Therefore, these benefits, for industrial projects, are part of a **wider and long-term view of the company's interests**.

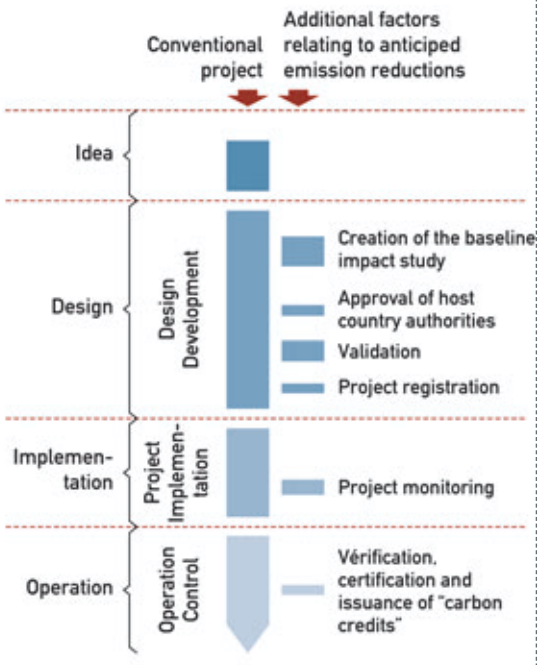
1. Many common points and some differences with "conventional" investment project

› A KYOTO PROJECT IS FIRST AND FOREMOST A "GOOD PROJECT"

A JI or CDM project is first and foremost a project of an industrial, energy, environmental or like nature. Therefore, there is no good Kyoto project in itself, without a sound investment project. However, the Kyoto added value may alter the project's priority or the related technical option choices.

Diagram 10 lists the main implementation steps of a Kyoto project in comparison to a conventional project.

Diagram 10 – Few differences with a conventional project



The difference between the set-up of a Kyoto project and a conventional project essentially involves the host country authorities, or a third party depending on the case, in the project's compliance with the Marrakesh Accords eligibility conditions. The document used as the framework for project development under the Kyoto Protocol is the Project Design Document (PDD), the specific aim of which, in accordance with current CDM rules, is the project's official registration by the CDM Executive Board. This registration will ensure that proponents are entitled to benefit from the "carbon credits" generated by the project.

› ADDITIONAL COSTS

These additional stages for Kyoto projects, with respect to corresponding conventional projects, generate additional costs and, in certain circumstances, slightly longer preparation times.

For a project developer, it is important to obtain an indication of the additional costs related to project development under JI or the CDM, known as "transaction costs." These costs are merely "additional" costs associated with the expenses required to ensure compliance with the rules, enabling the project's eligibility for the JI or CDM mechanism. They relate to the preparation and monitoring of the project and the verification of emission reductions. Certain costs, such as the PDD (Project Design Document) costs, are entry costs. Other costs, such as the verification costs, may be deferred until the project is operational and generating income.

» Entry costs...

The development of a project under the Kyoto Protocol implies additional costs during its preparation phase. In particular, the project developer may have to bear the costs relating to:

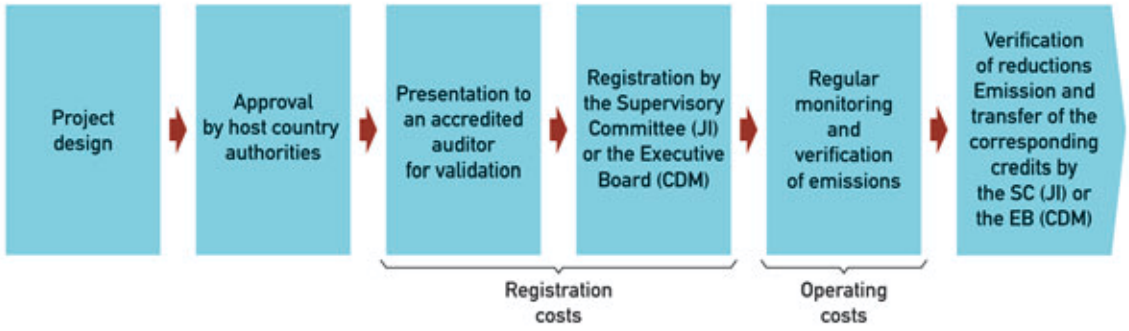
- The project feasibility study component with respect to JI or the CDM;
- The project blueprint, including the drafting of the PDD, and approval from the host country;
- Presentation of the project to an authorized auditor for *ex ante* validation and subsequent certification of the reductions actually achieved;
- Registration by the Supervisory Committee, for JI projects, or the Executive Board, for CDM projects.

» ...and operational monitoring costs

Additional costs should also be taken into consideration over the duration of the project. In particular, the project developer may have to bear costs relating to:

- The monitoring and verification of emission reductions;
- **Payment (2% of the total amount of the "carbon credits" generated by the CDM projects)** made in favor of an international fund to help the Least Developed Countries (LDCs) to prepare for the impacts of climate change.

Diagram 11 – Additional costs



These costs occur once the project has begun to generate "carbon credits."

› IMPLEMENTATION ARE VIRTUALLY THE SAME

The development of a project under JI or the CDM also implies additional deadlines, which are either mandatory or result from the time necessary to develop the new carbon component. It is important to note that most of these deadlines occur prior to the implementation of the project, and that effective management, assuming no major problems for the project developer, ensures the simultaneous development of the project and its "carbon" component.

The deadlines, as set forth in the documents governing JI and the CDM, prior to implementation of the project are:

- A 30-day period during the time PDD is made public (it is only after this period that the authorized auditor can include all comments received in the validation report). This consultation, during the project preparation phase, is imperative whether it is a legal obligation in the host country or a bid to attract various "stakeholders";
- A deadline of 8 weeks (45 days for JI) at the end of which the Executive Board or Supervisory Committee, if they have no reservations, will generally register the project as a JI or CDM project.

All in all, these additional deadlines are reasonable in relation to the overall project development period. In particular, project developers must also allow for additional time to work on the project's carbon component, especially when they are new to project development under the Kyoto Protocol.

A JI or CDM project involves additional deadlines and slightly higher costs than a conventional one. However, it should be stressed that:

- **There are relatively few additional tasks compared to those required to implement a conventional project;**
- **The additional costs are largely covered by the additional income;**
- **Costs and deadlines will diminish as subsequent projects are developed.**

2. The additional benefits can be significant

› ADDITIONAL REVENUE FROM "CARBON CREDITS"

The implementation of JI and CDM projects generates credits, often referred to as "carbon credits" or "CO_2 credits" with reference to the metric ton of CO_2 equivalent, the unit used to measure GHG emissions. These credits have an economic value and may be:

- Used to fulfill a company or group's commitments as part of the EU ETS, or another commitment within a national framework;
- Traded or sold to other entities.

In all cases, the investor can estimate the additional gains of a Kyoto Protocol project.

Table 4 - Impact of carbon income on the Internal Rate of Return (IRR)

Technology	Point increase in IRR (%)
Energy efficiency / District heating	From 2.0 to 3.0
Wind farm	From 0.9 to 1.3
Hydroelectricity	From 1.2 to 2.6
Bagasse	From 0.5 to 3.5
Biomass with methane component	Up to 5.0
Methane recovery from landfills	Over 5.0

Source : PCF, January 2002

Examples of a cement manufacturer's initiatives to reduce its GHG emissions in developing countries

Extracts from the 2002 "Sustainable development" report of a cement manufacturer[a] for possible CDM projects.

"Our current strategy focuses on net direct cement plant emissions. In 2001, we committed ourselves to reduce these emissions over the period 1990 to 2010.

[...]

In the Philippines, an initiative was launched to reduce fossil energy costs by substituting rice husks for conventional fuels. Rice, the major staple food in the region, is grown extensively throughout the country. After the harvest, the grain is separated from the husk, generating a significant quantity of waste, which is traditionally burned in open fires, leaving its calorific value of 12,500 kJoule/kg untapped.

The company decided to install an energy recovery system and to use the energy from rice husks to fuel the rotary dryer. This device is used to dry the limestone and shale for clinker production prior to grinding, because of their high moisture content. Husks are introduced directly into the flame of the rotary dryer. The process allows rice husks to be substituted for fossil fuel in a proportion of 35%, translating into a savings of 2 million liters of bunker fuel oil per year.

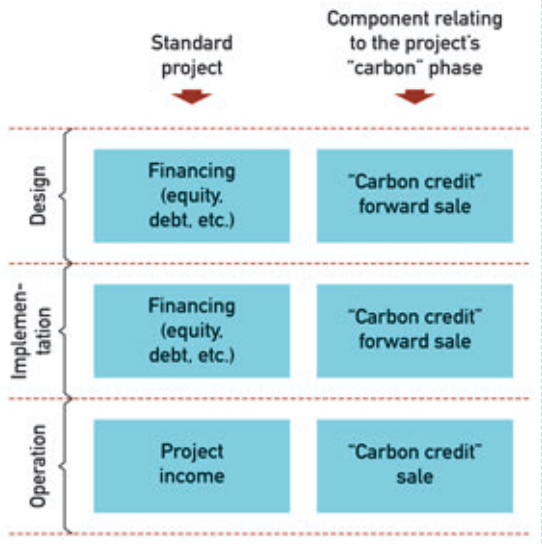
In the same way, the cement manufacturer's Hima cement plant in Uganda uses coffee husks as a secondary fuel, in addition to heavy fuel oil. Contractors continually deliver clean, dry husks to the cement plant, where they are fed directly into the combustion flame using a feeder system designed and built by the company. The cost of the system was approximately €10,000, but fossil fuel consumption has been cut by 10% and the total energy bill has been reduced considerably.

In addition to CO_2 reduction related to the avoidance of fossil fuel burning, the recovery process has reduced local air pollution related to open burning of biomass."

[a] Source: Lafarge's 2002 Sustainable Development Report.

Table 4 presents the impact of the sale of emission reductions on the internal rate of return (IRR) of the project,[9] using a low carbon price assumption (US$ 3/metric ton of CO_2 equivalent).Furthermore, the "carbon credits" may be sold as a forward transaction, and be used to complete the project's financing plan, as demonstrated in Diagram 12.

Diagram 12 - "Carbon credits" may be traded at any time



› ADDITIONAL BENEFITS

Ancillary benefits may also play a key role in the acceptance of a CDM project. These benefits are difficult to assess in direct monetary terms, yet must not be ignored and are an integral part of the long-term interests of project developers.

[9] *Not the capital.*

» Positive impacts on image at a global scale

Gains in terms of image, arising from environmentally friendly projects and their contribution to sustainable development projects, are another advantage for companies. These gains will increase in proportion to increased corporate responsibility: behavior of fund managers, investor attitudes, and new obligations to be respected (such as the New Economic Regulations for listed companies in France). Accordingly, companies may cite their Kyoto projects, which generate transfers of low-emission technologies and are sources of growth for the developing and transitional countries that host these projects.

It must be remembered, however, that corporate image can turn against the company if the implementation of these projects, which attract more media coverage than others, does not scrupulously abide by the objective of sustainable development.

» A more competitive response to local expectations

Governments, particularly in countries which have undertaken to limit or reduce their emissions under the Kyoto Protocol (as in Central and Eastern Europe), will be increasingly encouraged to initiate bids for tenders that take climate change issues into consideration. French companies setting up JI or CDM projects will be able to become familiar with the mechanisms set out in the Kyoto Protocol. Taking these issues into consideration will provide an undoubted competitive advantage in the future environment created by the Kyoto Protocol and the European Directive.

On the whole, it will be possible under JI or the CDM to propose:

- Higher-quality projects through the implementation of more state-of-the-art environmental technologies; and/or
- Less expensive projects when the carbon gain is partly retroceded in the proposed price;[10]

And to therefore strengthen the competitive position of the operator.

[10] *Particularly in response to a bid for tenders.*

The framework of the Kyoto project may also constitute a means of communication with government bodies, local communities and public opinion for certain specific projects (mass transit, energy efficiency in housing and services, etc.) in the host country.

JI or the CDM can therefore act as an additional support for a company's positioning in the host country and in the international arena, by reinforcing both price and technological competitiveness, and the operator's corresponding image. Although they are difficult to quantify, the potential gains for companies could be considerable.

3. Uncertainties are gradually lessening

› A CLEARER INSTITUTIONAL ENVIRONMENT

» The Kyoto Protocol is finally coming into force

Now that the Protocol will be coming into effect, the JI and CDM mechanisms can become operational.

The Kyoto Protocol stipulates that emissions from Annex 1 countries having completed the ratification procedure must represent at least 55% of 1990 greenhouse gas emissions from that group of countries. Now that President Putin has signed the Ratification Act adopted by the Parliament of the Russian Federation, on the 4th November, the Protocol will come into force within a very short time.

The "institutional" risk of the Protocol failing to come into force, which has prevented the launch of JI and CDM projects up to now, no longer exists.

» Policies conducted by host countries may still lack clarity

Despite the earlier risk, host countries, like most of the investor countries, have gradually become more familiar with these mechanisms. However, for project developers, the learning phase – in which the rules of the game have not all been finalised, creates some uncertainty as to the effective approval of their projects. Projects have sometimes been called into question with changes in government.

However, policies conducted by host countries that are well engaged in the process are becoming clearer over time (designated point of contact, existence of guidelines, well established validation procedure, creation of a web site, etc.).

In addition, this risk is greatly reduced if there is a bilateral agreement between the investor country and the host country. On the whole, French operators can notably rely on the Economic Department of French Embassies abroad for guidance with their administrative strategies.

› METHODOLOGIES ARE STILL DEVELOPING

» Uncertainty surrounding the "carbon" value of the projects

The methodologies used to determine baselines have yet to be fully documented. These baselines are nevertheless essential, as they are used to quantify emission reductions and therefore project eligibility. This means there is some uncertainty with respect to the value of projects in terms of the quantities of "carbon credits" they can generate.

In the event of a sale of credits on the market, this risk may, however, be shared with an identified buyer, provided that the parties agree on an acceptable methodology, which is the case of purchase funds such as ERUPT/CERUPT and PCF.

» The ownership and distribution of "carbon credits" must be subject to contractual agreements

The ownership and distribution of "carbon credits" are sensitive issues not covered in the official texts. How are the allocated credits to be distributed among the many JI or CDM project participants, such as project operators, shareholders, banks, suppliers or governments that have supported or, as the case may be, financed the project? This issue, which must be settled contractually, is one of the factors to

be considered in deciding whether or not to initiate a Kyoto project.

Generally, it can be suggested that the greater the financial contribution of the project developer, and therefore the risk for the developer in respect of this activity, the greater the weight of his argument for claiming a portion of the credits generated by the project.

Normally, a manufacturer with a production unit can expect to receive all the credits relating to his energy efficiency project, once it has been approved as a CDM project by the Executive Board. A wind generator exporter has less chance of recovering credits, unless he is involved in financing the investment or managing the activity.

Furthermore, the tax system applicable to the creation, ownership or trading of "carbon credits" still has to be clarified by the various governments.

› KYOTO PROJECTS REQUIRE A CERTAIN AMOUNT OF TRAINING

Aside from the question of the Protocol's entry into force, it becomes apparent from reading the previous sections that the uncertainties which still overshadow the project mechanisms mainly result from the embryonic nature of the mechanism. These uncertainties should gradually be removed *via*:

- The set-up of the EU ETS, which will help to create a market price for the prevention of emissions per tonne of CO_2 in line with its actual economic cost;
- The work undertaken by international authorities to progressively establish a jurisprudence, modifiable by definition, on emission reduction quantification methodologies;
- The creation of specific JI or CDM validation criteria by the host countries, as part of their sustainable development policies;
- The implementation of specific policies and tools by an increasing number of Annex 1 Parties to further the development of CDM projects;
- Finally, the internal dissemination of specific expertise on the implementation of Kyoto projects, both within companies and other structures.

In view of the necessary "revolution" behind the overall internationalisation of the carbon concept in the economy, it is on the whole hardly surprising that problems persist in terms of the very organization of these projects. It may even be surprising to see how quickly the initial projects develop nevertheless.

- Less than two years after the agreements that defined the main rules governing the flexible mechanisms, the CDM Executive Board has already approved the methodologies chosen for several projects.
- The set-up of EU ETS by 2005, bound to the complementary Directive providing for the use of the "carbon credits" generated by Kyoto projects in respect of this trading scheme, should create a significant demand for "carbon credits."

Companies that are sufficiently resilient to meet the persistent uncertainties should not sidestep this learning phase which could play on their future competitiveness. Likewise, host countries with sufficient appeal to justify the high transaction costs associated with first-time experiments may pave the way for other host countries.

VOLUME A

Part Four

The role of the host country


The role of the host country

In brief:

For JI and the CDM, it is up to the host country to decide whether or not a project meets its **sustainable development objectives**, and ultimately to **accept or refuse the project** in respect of the corresponding Kyoto mechanism. Additionally, in the case of the CDM, the Kyoto Protocol explicitly mentions the host country's contribution to sustainable development in the mechanism's objectives. It is therefore very important to make contact with the host country in the project's initial development phases. JI and the CDM generate **major expectations for the host country**, which have to be taken into consideration in order to set up a partnership-based project.

In practice, JI or CDM projects which have so far proved successful have always been the result of **a *bona fide* joint working relationship between the country's partners and their foreign counterparts**.

1. The context

According to the UNFCCC, the host country is the country where the project is located. What are the direct or indirect effects of a JI or CDM project for the host country? As mentioned previously, the aim of the two "project" flexible mechanisms, JI and the CDM, is to encourage efforts aiming to act against climate change in two ways:

- Firstly, through the implementation of efficient activities, technologies and techniques emitting less GHGs in countries included or not in Annex 1;
- Secondly, through the possibility for Annex 1 countries to reduce their GHG emissions beyond their borders. With respect to the global environment, these reductions are equivalent to the domestic reductions achieved by the Annex 1 countries, but they can be generally obtained at a lower cost.

JI and the CDM allow host countries to potentially increase the Foreign Direct Investment (FDI) flows they receive and meet their sustainable development objectives. Since host countries approve JI or CDM projects, they are then able to gear external funding towards sectors that are considered a priority for their sustainable development.

Annex 1 countries will transfer their national GHG emission reduction obligations contracted under the Kyoto Protocol to all economic players. One of the solutions available to help companies meet their international reduction objectives will be to directly invest in a foreign country through a JI or CDM project so as to generate "carbon credits."[11]

[11] This "carbon constraint" on certain companies with high GHG emissions will be heightened by the entry into force of the next European Directive on emission allowances.

2. The importance of the host country

During the development of a JI or CDM project, the project developer should contact the host country authorities as soon as possible. They have an essential role for three reasons:

- The project is implemented in the host country, and must therefore comply with national and local laws and regulations;
- The project must then meet the sustainable development objectives of the host country;
- With regard to JI and the CDM, the project must be officially approved by the host country to generate Emission Reduction Units (ERUs) or Certified Emission Reductions (CERs). It should be noted that the host country must have ratified the Kyoto Protocol.

Contacting the host country as soon as possible will enable it to fully associate with the project's development and therefore facilitate official approval.

For both mechanisms, it is up to the host country to decide whether or not a project meets its sustainable development objectives, and ultimately to accept or refuse the project. Additionally, in the case of the CDM, the Kyoto Protocol explicitly mentions the host country's contribution to sustainable development in the mechanism's objectives. It is therefore very important to make contact with the host country in the project's initial development phases.

› WHAT ARE THE EXPECTATIONS OF HOST COUNTRIES?

Foreign proponents will mainly take on JI and CDM investments, and host countries can therefore consider that these innovative mechanisms will provide a new source of financing.

Kyoto projects therefore appeal to host countries for their capacity to:

- Bring positive contributions to the local environment and the economy, and generate positive social impacts;
- Attract Foreign Direct Investment (FDI) in new low GHG emission technologies and gear investment towards sectors that the host countries consider a priority for their sustainable development;
- Improve existing technologies: energy efficiency, industrial processes, sustainable forestry, land restoration, etc.;
- Provide an additional contribution to render a project financially viable or lower the cost of implementation, if the host country is the project developer.

It should also be noted that in certain cases host countries may wish to retain a portion of the credits generated by the projects, at least for certain project categories.

The impact of JI or the CDM on the host country and local participants will vary according to:

- The objectives and priorities of the host country and the stakeholders;

- The regulatory context set up to ensure that the projects will be geared to these objectives;
- The host country's organizational and institutional capacity.

The expectations of the host countries with regard to JI and the CDM will naturally vary according to their respective economic and social situations.

Overall, JI and the CDM create major expectations, which it is vital to take into consideration in order to set up a project jointly with the host country.

› WHY IS IT SO IMPORTANT TO WORK WITH THE HOST COUNTRY ON A PARTNERSHIP BASIS?

As explained previously, the host country has a vital role in the preparation and validation of JI or CDM projects. In general, the host countries are not interested in a purely administrative role limited to simply reviewing project documents.

Most countries are already aware of the issues arising from the Kyoto Protocol and have begun to acquire tools to monitor these flexible instruments and formulate a national policy with project selection criteria. They have prepared national communications to the UNFCCC on GHG reduction, and set up national ad hoc committees to monitor these projects, as well as specialized government bodies (e.g. focal points).

The host countries generally hope to benefit from the preparation of a JI or CDM project with partners and, where necessary, consultants, so as to develop their own expertise, boost their local institutional capacities and adapt their national policies to these new instruments.

In practice, successful JI or CDM projects have always resulted from a *bona fide* joint working relationship between the country's partners and their foreign counterparts.

3. How should host country authorities take part in the various project phases?

› PLAYERS IN THE HOST COUNTRIES

Government representatives involved in the development of JI or CDM projects are often the host country's ministries. Environment; Energy and Industry; Agriculture; Economy and Finance; Transport and Infrastructure; Foreign Affairs. To facilitate the analysis and approval of these projects by the various government bodies, the UNFCCC Secretariat requests as mentioned in the Marrakech Accords, that host countries set up a structured "focal point," with sufficient means to coordinate the information flows between all the public or private sector players concerned, and to take responsibility for the official validation of JI or CDM projects by the countries.

In addition to local government bodies, other host country players are required to play an essential role in project preparation and validation, e.g.:

- Local authorities;
- Industrial or financial partners;
- Universities and agencies;
- Project engineering consultants;
- Communities or staff who are directly concerned by the project (stakeholders);
- Local NGOs.

It is in a foreign developer's best interests to ensure that the project information he holds is properly distributed to all the local players concerned.

› TACKLING THE PROBLEM OF EMISSION REDUCTION OWNERSHIP AND DISTRIBUTION

Although "carbon credits" cannot yet be officially created or transferred, the problem of distributing credits among project participants should be settled in the initial stages.

A contractual arrangement, specifying the "carbon credit" expectations of each participant, should be set up with the project's local partners and the host country.

In particular, an arrangement should be set up with the host country, which may wish to retain a portion of the credits, especially if it is considering an emission reduction commitment, or if it wishes to generate short-term additional income from the project it is hosting. The various negotiations with the host country will determine how the credits are finally distributed.

In any case, this issue should be settled with the host country as soon as possible, as it will have consequences for the project's financing.

VOLUME A

Annexes

1. English-French Lexicon
2. List of Parties included in Annex 1 to the UNFCCC

1. English-French Lexicon

English	Sigle	French	Sigle
Activities implemented jointly	AIJ	Activités exécutées conjointement	AEC
Additionality		Additionnalité	
Assigned Amount	AA	Quantité attribuée (aux Parties)	QA
Assigned Amount Unit	AAU	Unité de quantité attribuée	UQA
Baseline		Scénario de référence	
Boundaries		Périmètre	
Burden sharing		Bulle de répartition	
Business as Usual	BAU	Scénario sans effort de réduction des émissions	
Central and Eastern European Countries	CEEC	Pays d'Europe centrale et orientale	PECO
Certified Emission Reduction	CER	Unité de réduction certifiée des émissions	URCE
Certified Emission Reduction Unit Procurement Tender	CERUPT		
Clean Development Mechanism	CDM	Mécanisme pour un développement propre	MDP
Commitment period		Période d'engagement	
Conference of the Parties	COP	Conférence des Parties	CP
Countries with Economies in Transition	CET	Pays en transition vers une économie de marché	
Developing countries	DC	Pays en développement	PED
Emission Reduction Unit	ERU	Unité de réduction des émissions	URE
Emission Reduction Unit Procurement Tender	ERUPT		
European Union Emission Trading Scheme	EU ETS	Système européen d'échange de quotas	
Executive Board of the Clean Development Mechanism	EB	Conseil exécutif du mécanisme pour un développement propre	
Focal point		Point focal	
French Global Environment Facility	FGEF	Fonds français pour l'environnement mondial	FFEM
Global Environment Facility	GEF	Fonds pour l'environnement mondial	FEM
Greenhouse gas(es)	GHG	Gaz à effet de serre	GES
Intergovernmental Panel on Climate Change	IPCC	Groupe intergouvernemental sur l'évolution du climat	GIEC
Interministerial Task-force for Climate Change	ITCC	Mission interministérielle de l'effet de serre	MIES
Joint Implementation	JI	Mise en œuvre conjointe	MOC
Land Use, Land-Use Change and Forestry	LULUCF	Utilisation des terres, changement d'affectation des terres et foresterie	UTCF
Metric ton of CO_2 equivalent	tCO_2eq	Tonne d'équivalent CO_2	$teqCO_2$
Monitoring		Suivi	
National Communication		Communication Nationale	
National Program for tackling Climate Change		Programme national de lutte contre le changement climatique	PNLCC
Non Gouvernmental Organization	NGO	Organisation non gouvernementale	ONG

English	Sigle	French	Sigle
Official Development Assistance	ODA	Aide publique au développement	APD
Project Design Document	PDD	Descriptif de projet	
Prototype Carbon Fund	PCF	Fonds prototype carbone	
Registration		Enregistrement	
Removal Unit	RMU	Unité de séquestration	USEQ
Sink		Puits	
Small scale project		Projet à petite échelle	
Supervisory Committee	SC	Comité de supervision de la mise en œuvre conjointe	
United Nations Environment Program	UNEP	Programme des Nations unies pour l'environnement	PNUE
United Nations Framework Convention on Climate Change	UNFCCC	Convention-cadre des Nations unies sur les changements climatiques	CCNNCC
Validation		Validation	
Verification		Vérification	
World Meteorological Organization	WMO	Organisation météorologique mondiale	OMM

2. List of Parties included in Annex 1 to the UNFCCC

Australia	Finland	Lithuania [a]	Slovenia [a b]
Austria	France	Luxembourg	Sweden
Belarus [a d]	Germany	Monaco [b]	Switzerland
Belgium	Greece	Netherlands	Turkey [e]
Bulgaria [a]	Hungary [a]	New Zealand	Ukraine [a]
Canada	Iceland	Norway	United Kingdom of Great Britain and Northern Ireland
Croatia [a b]	Ireland	Poland [a]	United States of America
Czech Republic [a b]	Italy	Portugal	
Denmark	Japan	Romania [a]	
Estonia [a]	Latvia [a]	Russian Federation [a]	
European Economic Community [c]	Liechtenstein [b]	Slovakia [a b]	

[a] Countries with economies in transition.
[b] Countries added to Annex 1 by an amendment effective as of August 13, 1998.
[c] The Protocol adopted in 1997, after the entry in force of the Treaty of Maastricht, employs the term European Community.
[d] Belarus had not ratified the Convention in 1997 when the Protocol was adopted and does not therefore feature in Annex B of the Protocol. Belarus ratified the Convention in 2000, but has not yet ratified the Protocol. Belarus recently requested an amendment to Annex B of the Protocol to set a quantified commitment.
[e] Turkey has not yet ratified the Convention and does not feature in Annex B of the Protocol. The 26/COP7 decision adopted in October 2001 by the Conference of the Parties acknowledges the specific case of Turkey which, after becoming a Party, would hold a position different from that of the other Parties included in Annex 1 to the Convention.

Note: In addition to the Parties included in Annex 1 to the Convention, Kazakhstan notified its intention to comply with the provisions of the Convention concerning the Annex 1 Parties. In accordance with the provisions of the Protocol, Kazakhstan will therefore be included in the list of Annex 1 Parties. However, the country has no quantified commitment and does not feature in Annex B of the Protocol.

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