Kyoto in action

A tool for businesses who want to know and approach CDM projects

The Kyoto Protocol was opened for signature in 1998 and came into force in 2005. It imposes an obligation on the part of underwriters to make a reduction in emissions of greenhouse gases equal to 5% in the period 2008-2012 compared to those issued in 1990, regarded as the base-year.
To achieve the targets, the protocol provides, in addition to policies and measures at national level, some "flexible mechanisms". These mechanisms make it possible, for subscriber countries subject to constraints, to use their credit reduction activities carried out outside national territory, with the aim of reducing the overall cost of abatement by reducing emissions where it is cheaper and contributing to the same time at sustainable development for the country of destination. This scenario is also an opportunity for the business world, that by adhering to such mechanisms can seize the opportunity to expand their market in countries with economies growing.
The Kyoto Project in Action and its portal provide enterprises the elements of basic orientation in the universe of the CDM and the opportunities offered by flexible mechanisms of the Kyoto Protocol.
On the portal you can find data, information and links organized in a systematic and rational way, aiming to provide an effective tool to companies that want to know and evaluate the opportunities presented by CDM, as well as useful information for further study.

For information:

Luca Galeasso,
e-mail: luca.galeasso@envipark.com
Phone: 011.2257480

Informations for businesses

CDM projects: opportunities and advantages

The Kyoto Protocol provides three "flexibility mechanisms" based on market: Emissions Trading Scheme (ETS), Joint Implementation (JI) and Clean Development Mechanism (CDM). The purpose of these complementary tools is to enable industrialized countries to meet their targets for reducing greenhouse gas emissions through different strategies, depending on the constraints and difficulties pertaining to the areas affected by the objectives of the Protocol.

The Emission Trading System (ETS) provides that Member States through the National Allocation Plans (NAPs) establish the annual allowance to be allocated to certain types of industrial facilities, giving businesses the opportunity to exchange shares with other subjects in a system based on their "credits" or "debt" of CO_2.
The allowance price is determined by the market, mainly depending on the interaction between demand and supply, and may vary depending on a number of macroeconomic, political, economic and environmental factors.

The CDM (Clean Development Mechanism), expected by art. 12 of the Protocol, is instead characterized by allowing countries with advanced economies or ones who are in transition to implement projects in developing countries that produce real environmental benefits in terms of reducing greenhouse gas emissions and economic and social development of countries that host the project and at the same time generate emission credits to countries that promote interventions.

CDM projects include issuing certificates of Certified Emissions Reduction (CERs) showing the effective reduction of greenhouse gas emissions (at the conclusion of the entire project cycle, as a result of certified monitoring activities on the plants) that contribute to achievement of the individual country targets.
With the Directive 2004/101/EC (Linking Directive), establishing a direct link between the CDM and the European System for the exchange of emission quotas, the European Union, while distributing the reduction requirements Community and national trends for some of those directly responsible for emissions of greenhouse gases, namely the industrial sector (Directive ETS), the other allows the same subjects using CDM projects to meet their obligations to reduce CO_2 emissions through the implementation of projects in countries where the marginal costs of abatement of greenhouse gas emissions are believed to be lower.

So what are the main advantages associated with a CDM project?

1) The diffusion of technology in developing countries, where marginal costs of abatement are lower, it is economically advantageous compared to the effort to develop new process technologies in the country of origin

2) Participation in the CDM promotes the internationalization of business and opening of new market opportunities

3) It facilitates and encourages the transfer and diffusion of new technologies and relevant know-how in developing countries, through projects that enable the creation of interventions difficult to implement with local resources

The types of project

The Kyoto Protocol does not limit the types of projects that may be registered as CDM projects. In principle, all projects that lead to a reduction of greenhouse gas emissions are potential CDM projects.

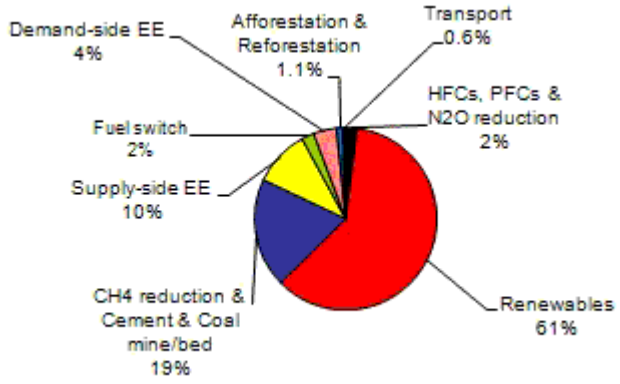
CDM projects can be small or large scale.
The small-scale projects follow simplified modalities and procedures, in order to reduce the cost and time of execution. The small-scale projects must fall into one of the following definitions:

- projects involving renewable energies up to a power of 15 MW;
- improvement activities which reduce energy consumption up to 15 GWh;
- other activities that reduce emissions and directly emit less than 15 kt CO_2 equivalent annually.

For these types of projects, the Executive Committee has developed a simplified procedure for the validation, monitoring and verification in order to reduce transaction costs.

For purely illustrative purposes, the following are some updated information on the type and countries where CDM projects have been implemented.

							For all projects			Popu-	2012 CER
Total in the CDM Pipeline	Number of small-scale		Number of full scale		Number of all projects		kCERs	2012 kCERs		lation	per cap.
Latin America	394	**15.1%**	504	**16.7%**	898	**16.0%**	87861	385172	**13.6%**	449	0.86
Asia & Pacific	2113	**81.0%**	2335	**77.6%**	4448	**79.2%**	618185	2261727	**80.1%**	3418	0.66
Europe and Central Asia	24	**0.9%**	38	**1.3%**	62	**1.1%**	14063	41078	**1.5%**	149	0.28
Africa	58	**2.2%**	90	**3.0%**	148	**2.6%**	30011	99827	**3.5%**	891	0.11
Middle-East	20	**0.8%**	43	**1.4%**	63	**1.1%**	10011	34500	**1.2%**	186	0.19
Less developed World	2609	**100.0%**	3010	**100.0%**	5619	**100%**	760131	2822305	**100%**	5093	0.55



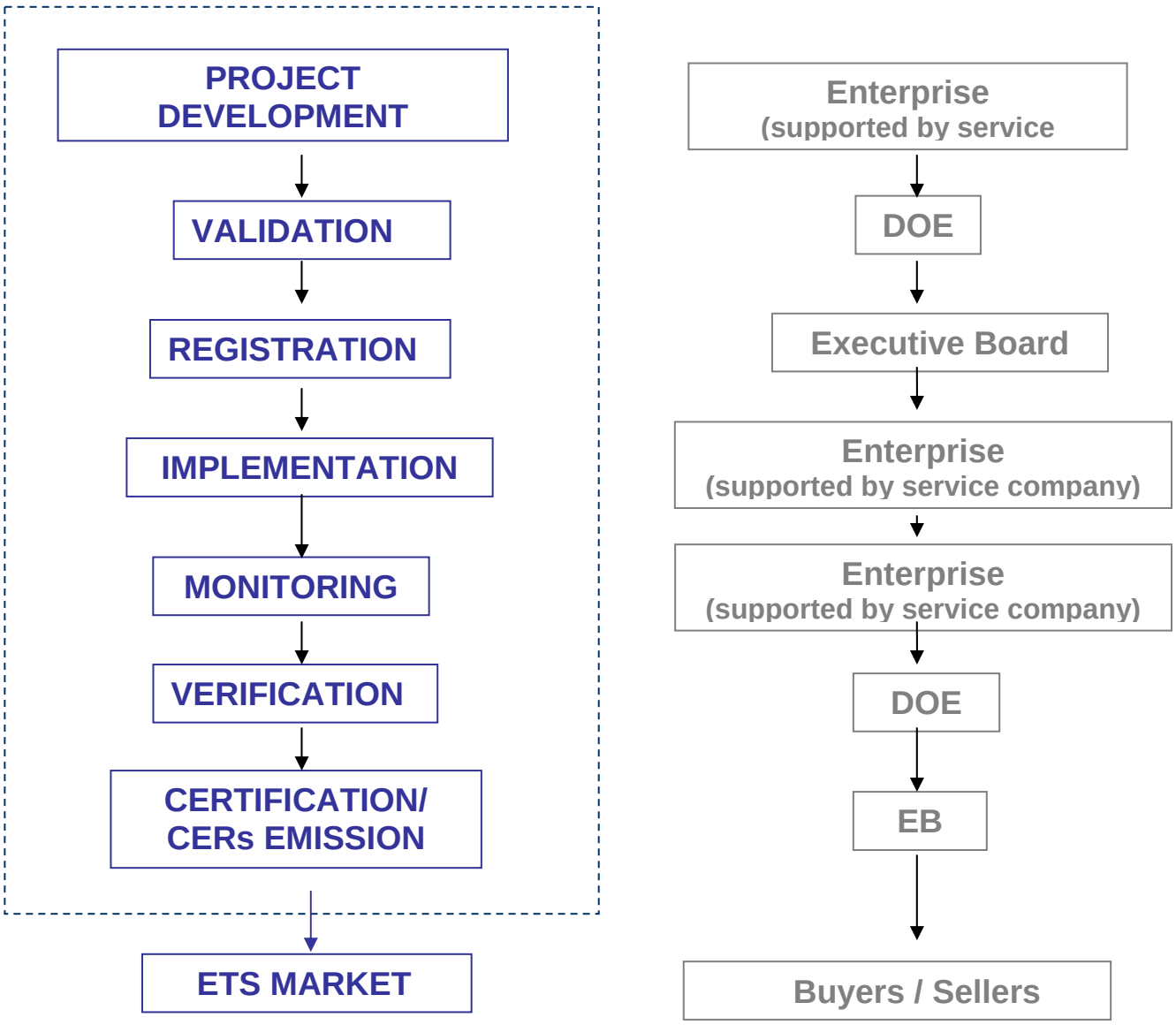
Source: UNEP
Updated: October 2010

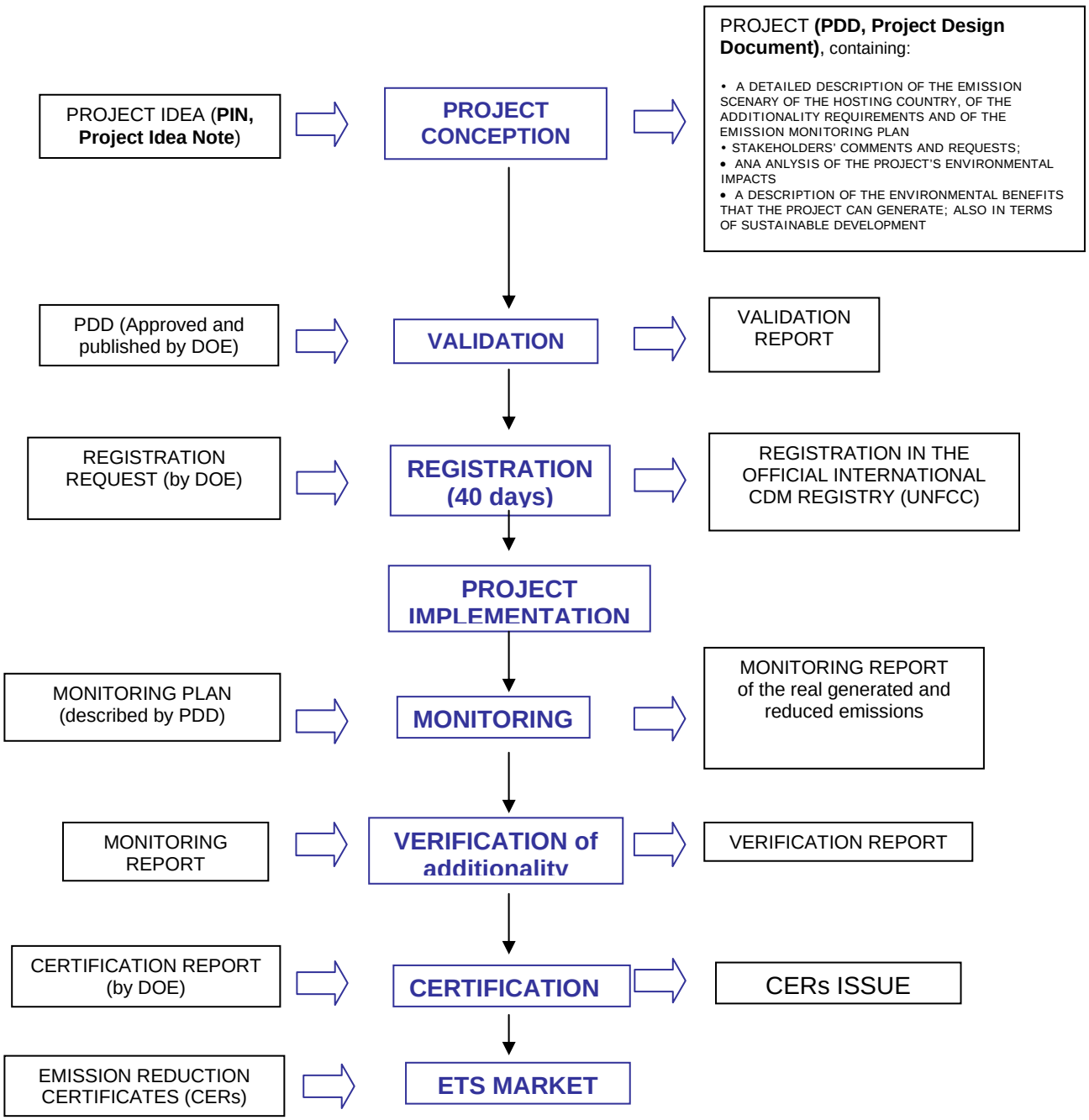
For more information on the types of CDM projects, see the link of UNFCC (United Nations Framework Convention on Climate Change)

The path and the main actors in a CDM project

The following describes in brief the typical path that a company must follow to implement a CDM project. The actors involved in the project cycle may be divided between institutional and private entities.

<u>The path</u>




PROJECT IDEA (**PIN, Project Idea Note**)
PROJECT CONCEPTION
PROJECT **(PDD, Project Design Document)**, containing:
• A DETAILED DESCRIPTION OF THE EMISSION SCENARY OF THE HOSTING COUNTRY, OF THE ADDITIONALITY REQUIREMENTS AND OF THE EMISSION MONITORING PLAN
• STAKEHOLDERS' COMMENTS AND REQUESTS;
• ANA ANLYSIS OF THE PROJECT'S ENVIRONMENTAL IMPACTS
• A DESCRIPTION OF THE ENVIRONMENTAL BENEFITS THAT THE PROJECT CAN GENERATE; ALSO IN TERMS OF SUSTAINABLE DEVELOPMENT
PDD (Approved and published by DOE)
VALIDATION
VALIDATION REPORT
REGISTRATION REQUEST (by DOE)
REGISTRATION (40 days)
REGISTRATION IN THE OFFICIAL INTERNATIONAL CDM REGISTRY (UNFCC)
PROJECT IMPLEMENTATION
MONITORING PLAN (described by PDD)
MONITORING
MONITORING REPORT of the real generated and reduced emissions
MONITORING REPORT
VERIFICATION of additionality
VERIFICATION REPORT
CERTIFICATION REPORT (by DOE)
CERTIFICATION
CERs ISSUE
EMISSION REDUCTION CERTIFICATES (CERs)
ETS MARKET

COP / MOP

Conference of the Parties (COP) and Meeting of the Parties (MOP) - Represents the highest authorities on the Climate Change Convention (COP) and the Kyoto Protocol (MOP). They meet annually to assess the implementation of the Convention and the Protocol, defining the guidelines and guidelines to facilitate the achievement of objectives.

EXECUTIVE BOARD (EB)

Executive Board or the International Executive Committee for the CDM, is composed of 10 members and oversees the activities of CDM projects, according to the guidelines established by the COP / MOP. Spoke in the early stages of project registration and issuance of CERs related.

DESIGNATED NATIONAL AUTHORITY (DNA)

Designated National Authority - Authority responsible for approving CDM projects, prior to validation.

DESIGNATED OPERATIONAL ENTITY (DOE)

DOE is a domestic legal entity or ad international organization accredited and designated by the Executive Board. It has two key functions:

- It validates and subsequently requests registration of a proposed CDM project activity
- It verifies emission reduction of a registered CDM project activity, certifies as appropriate and requests the Board to issue Certified Emission Reductions

THE DIRECTIVE 2009/29 ETS

Directive 2003/87/EC, that introduced the ETS in Europe, covers the period 2005-2008 and the current five-year period (2008-2012).

It has recently been amended by the European Council Directive 2009/29/EC, which comes into force in 2013, in order to improve and extend the Community scheme for trading greenhouse gas emissions.

The new directive introduces the principle, in addition to Article 1 of the first Directive, that the reductions in greenhouse gas emissions can increase up to a level considered necessary from the scientific point of view to avoid dangerous climate change, while previously only made reference to the promotion of the reduction of emissions in accordance with criteria of validity in terms of cost effectiveness and economic efficiency. There is also an adaptation of legislation to implement more rigorous efforts by the Community relating to reductions of more than 20% (Article 1, Section 1, paragraph 2)

In Directive 2009/29 are changed mainly the following aspects:

A. Scope.

In the first Directive, the activities concerned are those that use energy combustion installations with a rated thermal input of over 20MW, oil refineries, including processing of ferrous metals, production of construction materials (cement, ceramics, glass) and paper

production, wood or other fibrous materials (All 1 Dir 2003/87)
The new directive is completely superseded by Annex I and extends the scope of the directive to the following issues:

- CO_2 emissions from petrochemicals, ammonia and aluminium;
- Emissions of N_2O from the production of nitric, adipic and glyoxylic;
- PFC emissions of the aluminium sector

The new directive also expanded the definition of greenhouse gases, while the first directive included in the greenhouse gases listed in Annex II only, the new Directive 2009/29 states that are also included "other gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation" (Article 1, Section 2a)

B. Determination of emission allowances

In the first Directive, Article 9 states that for each period each Member State has an obligation to develop a National Allocation Plan that determines the quantities and methods of allocating them according to certain criteria of objectivity and transparency. In the new directive, instead, was fixed a single EU cap that in 2013 will decrease by a linear factor of 1.74% compared to the average annual total quantity of allowances issued by Member States (Article 9).
According to estimates contained in the impact assessment of the Commission proposal, the application of this factor leads to an annual reduction in the overall ceiling of 1,720 million units in 2020, corresponding to an overall reduction of 21% over the period 2005-2020 .

C. Method of allocation of emission rights.

In the first two periods, regulated by Directive 2003/87/EC, the majority of the shares will be allocated free of charge while, for the remaining 5% in the first period and 10% in the second, there is the possibility for governments to get their allowances in an auction.
The new directive, however, makes gradual insertion of an auction system for all units that have not been allocated free of charge, decreasing gradually up to 30% in 2020.
A broad exception to the bidding mechanism will be given to sectors that are considered vulnerable to carbon leakage.
Indeed, the economic impact that the ETS mechanism can lead on energy costs and the competitiveness of European industry, could lead to the relocation of production to countries that apply a less stringent environmental policy therefore causing a "geographical shift" in emissions and not their killing.
The European Commission will decide what are the areas at risk, based on the following criteria:

- The effect of the additional costs (direct and indirect) on total production costs
- thresholds of exposure to trade with third countries (calculated as total exports to third countries + total imports from third countries and the total size of the market for the EU)

It also establishes that at least 50% of the earnings from the auction listing will be used to fund projects and initiatives with specific purposes, including:

1.reduction of greenhouse gas emissions;

2.measures to adapt to the impacts of climate change;
3.financing of research and development;
4.promotion of renewable energy in view of the 20% in 2020
5.projects for capture and geological storage of greenhouse gases;
6.financing of the Global Fund for Energy Efficiency and Renewable Energy
7.measures to avoid deforestation and facilitate adaptation in developing countries

D. Validity of the allowances.

Allowances issued during the first two periods, regulated by the Directive remain valid during the period for which they are released, while allowances issued from January 1, 2013 are valid for a period of eight years.

E. Exclusion of small installations subject to equivalent measures (Article 27)

The new Directive provides that Member States are able to exclude from the system plants emitting less than 25,000 tons of CO_2 equivalent or who have a thermal capacity below 35 MW.
The plants in question will have to apply measures that will achieve a contribution that is equivalent to the emission reductions and also will still have the obligation to carry out monitoring in the manner prescribed by the Directive.

F. More recognition for the CDM and JI.
The new directive has increased the possibility of resorting to the use of other flexible mechanisms of the Kyoto Protocol (Joint Implementation and the Clean Development Mechanism) in the emissions trading system, establishing the validity of emission credits (CERs and ERUs) obtained through the implementation of these mechanisms to meet obligations to reduce emissions.

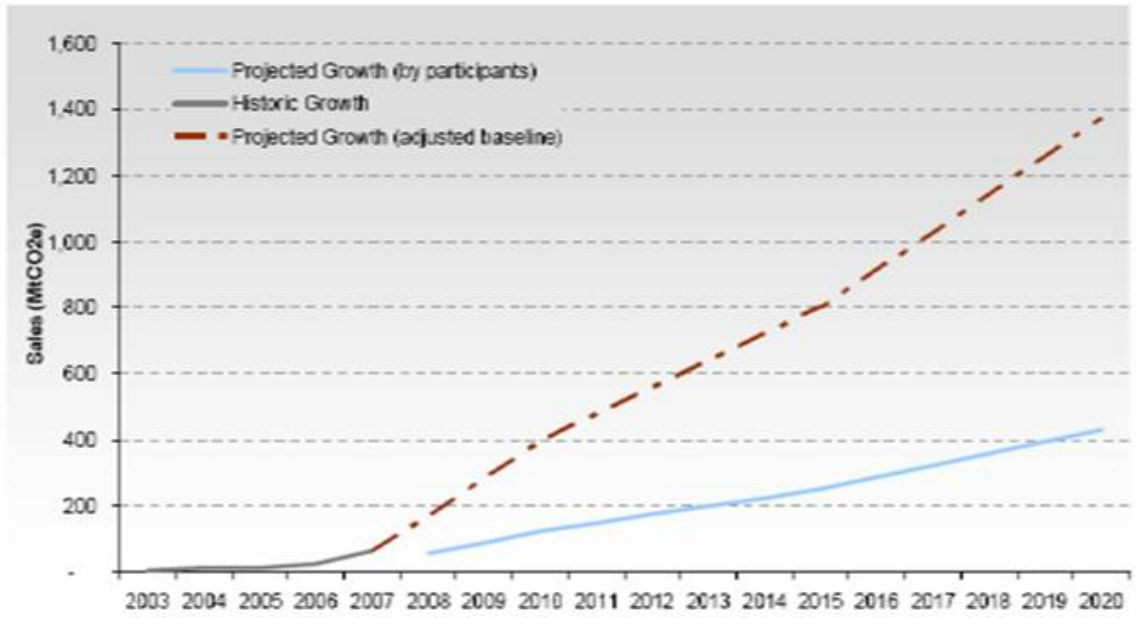
Voluntary emission reductions certificates (VERs)

In addition to the market requirements for the reduction of emissions is growing more and more voluntary work, which includes all transactions of carbon credits taken outside of institutional contexts, then out of the compliance regime of the Kyoto Protocol.

The voluntary reduction of emissions comes from the desire of a company to participate actively in collective efforts to mitigate climate change, demonstrating the sensitivity to these issues and their commitment to supporting new technologies and strategies in place with respect to climate change.

The voluntary market can also agree in the following cases:

- A project to reduce emissions not covered by the cases provided for CDM projects
- The project is not eligible as a CDM project because you can not complete the process of certification and registration



Source: Ecosystem Marketplace, New Carbon Finance

Compared to the regulated market, the voluntary one is characterised by lower volumes; turnover on the European market is 23.7 million tonnes of CO_2, equivalent to $ 91 million and 30% of the total (data PointCarbon 2008).

Markets	**Volume ($MtCO_2$) 2006**	**Volume ($MtCO_2$) 2007**	**Value (US$milion) 2006**	**Value (US$milion) 2007**
Voluntary market OTC	14.3	42.1	58.5	256.4
Voluntary market CCX	10.3	22.9	38.3	72.4
Total of voluntary markets	**24.6**	**65.0**	**96.7**	**330.8**
EU ETS	1,103.9	2,060.8	24,435.6	50,097,4
CDM primary	537.0	550.9	6,886.6	6,886.6
CDM secondary	25.0	240.0	8383.6	8383.6
Joint Implementation	16.2	41.1	141.1	494.8
New South Wales	20.2	25.4	225.4	224.1
Total regulated markets	**1,702.2**	**2,918.2**	**40,072.7**	**66,086.5**
Total of markets	**1,726.7**	**2,983.2**	**40,169.4**	**66,417.2**

Figure 2: Dimensions of the voluntary and regulated markets.
Source: Ecosystem Marketplace and New Carbon Finance, World Bank

Most of the transactions that take place in the voluntary market are subject to the exchange of Voluntary Emission Reduction (VER) that are generated by voluntary projects to reduce greenhouse gas (GHG).
The demand for VERs meets companies that want to offset their emissions of greenhouse gases for the purpose of corporate social responsibility, voluntary credits represent in fact

volunteer tonnes of CO_2 equivalent culled from companies that are not subject to special rules, such as the market for CERs resulting from the so-called CDM / JI.

As is the case for CERs, for the recognition of voluntary credits is requested the creation of a structured process that involves the development of programs or interventions aimed at reducing emissions as well as the description of how you determined the amount of avoided emissions, verified through an audit by an independent third party.
Credits generated can be stored and processed by special trading platforms, the VERs are more frequently traded through bilateral trade or through auctions.

The voluntary nature of the market today suffers from a lack of regulation and the lack of tools and certification standards recognized in an official way.
In fact, while CDM projects must be validated and tested and certified CERs resulting from the Third Party Entities accredited by the UNFCCC, for VERs were created different standards and registries, each with different rules.

OPPORTUNITIES OF INVESTMENT

The following is an overview of project opportunities available in some major developed countries that have formalized and specific policies to reduce emissions of greenhouse gases. For each country was built a descriptive summary of the following:

• Reference of the DNA (Designated National Authority)
• Strategies of the country in the fight against climate change
• Procedural issues
• Portfolio projects by sector and progress. In this area were investigated the methods of construction ("origination") of projects and possible organized funding opportunities

Download country profiles:

- Albania
- Brazil
- India
- Macedonia
- Morocco
- Montenegro
- Peru
- Serbia

Documents and links

INVESTING IN A CDM PROJECT

The CDM is an opportunity for companies to internationalize their market and transfer their technologies in the developing countries, with somewhere also the sustainable development of recipient countries of projects.

The reduction certificates generated (CERs) may also be used by companies subject to compulsory emission control as a means of compliance with the limits. The project ideas may arise for direct initiative of local actors, interested in researching foreign parner, or on the proposal of business to invest.

Here are some useful links to companies that wish to propose and implement a CDM project or acquire CERs:

- www.ambientebalcani.it, Balkans (Albania, Serbia, Montenegro, Macedonia)
- http://www.cdm-egypt.org/ProjectsPF.htm, Egypt
- http://www.cdmmorocco.ma/fr/rech_mdpma.php, Morocco
- (http://www.iepf.org/docs_prog05/pol_envir05/IFP-MDP-accueil.htm) CDM in French-speaking countries

LEGISLATION

The flexible mechanisms of the Kyoto Protocol fall within the broader legislation on combating climate change, including such international agreements as the European and national legislation of character observed regarding implementation of the Protocol and Directive ETS (Emission Trading Scheme) .

http://europa.eu/legislation_summaries/environment/tackling_climate_change/index_it.htm, (European Union)
http://www.metonline.it/documenti/archivio-normativo.php, (MET, Management of Emission Trading)

FORMS

The presentation and management of CDM projects is a complex process. For each phase, you can use the forms and supporting materials prepared dall'UNFCC, available online at the following links:

http://cdm.unfccc.int/Reference/PDDs_Forms/index.html, (UNFCC)
http://www.metonline.it/documenti/moduli.php, (MET, Management of Emission Trading)

KYOTO PROTOCOL FLEXIBLE MECHANISMS

The Kyoto Protocol requires for its implementation the use of three different types of flexible mechanisms: the ETS (Emissions Trading Scheme), the JI (Joint Implementation) and CDM (Clean Development Mechanism)

On the site www.minambiente.it you can see some pages that describe

- The operation of CDM / JI
- The cycle of CDM / JI
- Issues and technical details on the CDM / JI
- The terminology of the CDM / JI

On the site http://unfccc.int/kyoto_protocol/items/2830.php (UNFCCC) full text of the Kyoto Protocol and a series of general news on JI and CDM are available

Emissions Trading Scheme (ETS)

In 2003 the EU launched the EU ETS, which is now the largest multi-sectoral and cross-border exchange of emissions of greenhouse gases.
The framework is still evolving and has some important news that will come into force from 2012:

http://ec.europa.eu/environment/climat/emission/linking_en.htm

CDM (Clean Development Mechanism)

The CDM is governed by an executive body (Executive Board) responsible for implementation to assure that, through specific working groups to update the procedures for all phases of the process and ensure the scientific nature and effectiveness of the methods provided. For real-time updating of the working groups:

http://cdm.unfccc.int/index.html

DATA AND USEFUL INFORMATIONS

Type and distribution of projects around the world

The CDM provides the opportunity to develop projects in the following sectors:

- Reduction of greenhouse gas
- Production of energy from renewable sources
- Reduction of emissions of methane and other landfill gas plants, cement plants, mining
- Energy efficiency on the supply side of energy
- Energy efficiency on the demand side of energy
- Fuel switching
- Afforestation and reforestation
- Reduction of emissions in the transport sector

The spread of projects in recipient countries is variable depending on the strategy adopted by each of them and the technologies which idnetificate priority. It 'can get a complete overview on the following link:

http://www.cdmpipeline.org/cdm-projects-type.htm (UNEP)
http://cdm.unfccc.int/Projects/registered.html (UNFCC)

ACTORS OF A CDM PROJECT

The process of developing a CDM project involves different actors at different levels: specialized service providers, owners of credits generated from projects, buyers interested in entering into agreements (ERPA) for the acquisition of certificates.

An overview of these subjects is available at:

http://cdmbazaar.net/ (UNFCCC website)

CARBON CREDITS' MARKET (prices and news)

Allowances and reduction certificates may be exchanged on specific markets. An overview of prices and trading volume is available at the following link:

http://www.metonline.it/news/focus-mercati.php

CREDITS FOR THE VOLUNTARY REDUCTION OF EMISSIONS - MAIN STANDARDS

In addition to the market requirements for the reduction of emissions is growing more and more voluntary work, which includes all transactions of carbon credits taken outside of institutional contexts, then out of the compliance regime of the Kyoto Protocol. The use of credits volunteers can be an alternative solution for saving projects not included in those provided by the CDM.

Main reference standards for the certification of credits for voluntary emission reductions:

VER: www.tuev-sued.de/climatechange
VCS: www.v-c-s.org
VOS: www.carboninvestors.org
CCBA: www.climate-standards.org
GOLD STANDARD: www.cdmgoldstandard.org
CCX: www.chicagoclimatex.com