

Kyoto Protocol (at a glance)

Annex-I and Annex-B Countries) for the period after 2000. [See 9.1] It was adopted in December 1997. The aim of the protocol is to reverse the upward trend in greenhouse gas emissions, which began in these countries 150 years ago.



Graph 2: Global Temperature Change

These developed countries commit themselves to reduce their collective emissions of the covered six greenhouse gases by at least 5%. The reductions of the different gases will be converted into CO_2 Equivalents [see 9.4] and reported as a single figure.

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The 39 industrialised countries and economies in transition (EITs) are obliged to show 'Demonstrable Progress' towards meeting their emissions targets by 2005 and achieve the target as a calculated average of the period 2008-2012.

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Country	Target (1990 - 2008/2012)
EU-15*, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
US***	-7%
Canada, Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0%
Norway	1%
Australia	8%
Iceland	10%

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Table 2: Kyoto Reduction Targets

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Remarks on Table 2'1: Kyoto Reduction Targets:

* The EU's 15 member States will redistribute their targets among themselves, taking advantage of a scheme under the Protocol known as a "bubble". The EU has already reached agreement on how its targets will be redistributed.

** Some EITs have a baseline other than 1990.

*** The US has indicated its intention not to ratify the Kyoto Protocol.

Note: Although they are listed in the Convention's Annex I, Belarus and Turkey are not included in the Protocol's Annex B as they were not Parties to the Convention when the Protocol was adopted.

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The Table above shows the emissions reduction targets as set in the Kyoto protocol.

A detailed list of these countries together with their emissions reduction targets can be found in the appendix [see 9.1].

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The emissions reductions can be achieved in different ways to allow for some flexibility in the system and let each country chose the means with the lowest cost for them.

Emissions credits can be bought and sold between industrialized countries through an international "Emissions Trading" scheme [see 2.2.3]. "Joint Implementation" [see 2.2.1] allows them to generate "Emissions Reduction Units" by investing in carbon reducing projects in other industrialized countries. The industrialized countries can further receive credits for financing projects in developing countries, which are covered by the "Clean Development Mechanism" [see 2.2.2]. This way non-Annex-I countries can also benefit.

In addition to these three Kyoto mechanisms, the protocol provides and suggestive list of policies and measures for Annex-I countries that might help in order to achieve their assigned amount of emissions reductions. Certain activities, so-called "carbon sinks", from the land use, land-use change and forestry (LULUCF) sector generate removal units (RMUs), which can be used to offset greenhouse gases. [4]

The regulatory framework established through the Kyoto protocol and its later added amendments during the Conference of parties meetings (COP MOPs) provide the basis for international emissions reductions and created a new market for emissions credits. The developed countries, which are responsible for most of the emissions over the last 150 years, are obliged to take responsibility and curb their emissions. Market forces will determine the price they will have to pay for the reduction. There is competition on the JI and CDM projects as well as the Trading of Emissions Allowances for example in the EU Emissions Trading Scheme (EU ETS) [see 3].

Although developing countries (non-Annex I) are not obliged to reduce their emissions, some countries think of committing themselves to voluntary emissions reduction targets.

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<![if !supportLists]->1.2<![endif]->Kyoto Mechanisms

As mentioned in the previous section the Kyoto protocol allows countries to use three mechanisms to help them fulfilling their assigned emissions targets.

The aim of this section is to explain how each of these mechanisms works and later show how they are linked together in the framework.

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<![if !supportLists]->1.2.1<![endif]->Joint Implementation

Article 6 of the Kyoto protocol provides for a transfer of credits between different Annex I parties. Two or more Annex-I countries will jointly carry out these projects. For example if a German company would invest in a project to switch a Polish coal power plant to gas and so reduce emissions, the German company could be allocated the credits for the emissions reduction. These credits are termed Emission Reduction Units (ERU) and one unit is equal to the reduction of 1 tonne of CO₂.

In practice it is not as easy as in the example above. The ERUs have to be verified by the Joint Implementation Supervisory Committee (JISC) and have to meet certain requirements.

ERUs will only be allocated for JI projects producing emissions reductions, which are *â€œadditionalâ€™*. That means that otherwise through conduct of business as usual these reductions would not occur.

It is also possible to acquire and transfer ERUs from sinks enhancement activities projects under the JI.

Using ERUs from Joint Implementation for compliance should only be supplementary to domestic emissions curbing actions. The test programme for JI existed 1999 but ERUs will only be credited in the period 2008-2012 and for that reason are not available for compliance in Phase-I of the EU ETS.

The JI is further split into two categories. While *â€œTrack 1â€™* is a very simplified procedure and will be used for smaller projects there is also *â€œTrack 2â€™* which has higher requirements and is more alike the CDM.

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<![if !supportLists]->1.2.2<![endif]->Clean Development Mechanism

The Clean Development Mechanism allows for more cost effective emissions reductions in a non-Annex I country. In Article 12 of the Kyoto protocol an Annex I country is hereby enabled to generate or purchase emissions reduction units from projects undertaken by them within non-Annex-I countries. Developing countries will profit from that through technology transfer and increased foreign direct investment. CERs can only be generated from projects initiated after 2000. Although there is no specific end date given and most projects end in 2012.<![if

!supportFootnotes]->[5]<![endif]->

The parties of the protocol will designate third party organisations as so called *â€œoperational entitiesâ€™* to verify and certify the CDM projects. The Executive Board (EB) further supervises the CDM.

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The Kyoto protocol and the Marrakech Accords defined the requirements for a project to qualify for CDM.

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The following issues must be considered for a CDM project:

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- <![if !vml]-><![endif]->Project participants and other parties involved
- <![if !vml]-><![endif]->Technologies used in the project Baseline, validation, and verification methodologies
- <![if !vml]-><![endif]->Location of the project and status of the host country
- <![if !vml]-><![endif]->Authorization letter Ownership of CERs
- <![if !vml]-><![endif]->Additionality is just as in the JI a requirement for CDM projects.
- <![if !vml]-><![endif]->Additional environmental and/or community development benefits resulting from the project Monitoring and verification plan

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Graph 2â€™2 gives an overview of all CDM projects (public, registered, review requested and under review) in the world as per 09/09/2006.



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Graph 2â€™2: CDM Projects<![if !supportFootnotes]->**[6]**<![endif]->

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As we can see from the graph, there are a huge number of projects in India, Central America, Mexico and Brazil. The UNFCCC estimates that registered projects will yield about 560,000,000 CERs by the end of 2012 with a 100,000,000 requesting for registration. So far now 13,040,954 CERs have been issued.

In the future the greatest share of CERs will be generated in China, Brazil and Republic of Korea, closely followed by India. The left part of Graph 2â€™3 shows the average annual CERs by host country

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Graph 2â€™3: Average annual CERs and number of registered projects by Annex-I country<![if !supportFootnotes]->**[7]**<![endif]->

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The right side in Graph 2â€™3 shows the buyers by number of registered projects. Here the Netherlands leads the market with 65 projects followed by the UK (52) and Japan (24). This is probably due to â€œThe Netherlands CDM Facilityâ€ founded in May 2002 in an agreement with the World Bank. The Fund has a total of \$ 264.7 million. Countries and companies in cooperation with the World Bank have also set up other Funds and Facilities for the purpose of buying CDM or JI credits.<![if !supportFootnotes]->[8]<![endif]->

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<![if !supportLists]->1.2.3<![endif]->Emissions Trading

The US insisted, ironically, to include emissions trading as one of the main mechanisms in the Kyoto protocol. It seems to be the most workable way to curb emissions at lowest economic costs.<![if !supportFootnotes]->[9]<![endif]->

Article 17 of the Kyoto Protocol sets out emissions trading as a means for Annex-I and Annex-B Countries to meet their emissions targets by purchasing units from other Annex-I Countries. This shall enable a least cost approach to curbing carbon emissions since parties with the lowest reduction costs will be able to reduce more and sell surplus reductions to other parties. In Article 17 of the protocol it states that emissions trading â€œshall be supplemental to domestic actionsâ€.

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<![if !supportLists]->1.3<![endif]->Entities within the Kyoto framework

Having described the three Kyoto mechanisms, now a short introduction into some of the Entities in the Kyoto protocol is given.

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<![if !supportLists]->1.3.1<![endif]->National Registry

A National Registry has to be maintained by every participating Annex-I Country. Parties or Account holders will transfer their certificates through these national registries. Therefore the accounts for ERUs, CERs, AAUs and RMUs will be held there. The different types of allowances are explained in Appendix 9.6.

The account holders whose installations are covered by the EU ETS will be issued their EUAs by Feb 28th of each trading period. Every natural person or legal entity that wants to trade emission credits can open an account with its national registry. By May 15th each year the account holderâ€™s status of compliance has to be publicly available in the registry. This data can still be subject to changes when examinations during the following trading period unearth different emission outputs.

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<![if !supportLists]->1.3.2<![endif]->CDM Registry

The CDM Registry keeps the CER accounts for non-annex I countries that take part in projects under

the Clean Development Mechanism. The CDM Executive Board maintains this registry.

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<![if !supportLists]->1.3.3<![endif]->International Transaction Log

The UNFCCC secretariat maintains the International Transaction Log (ITL). Issuance, transfer and acquisition between registries, cancellation and retirement of emissions credits are verified there. It monitors all types of emissions transactions (ERUs, CERs, AAUs, RMUs) and ensures that only acceptable transactions are executed.

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<![if !supportLists]->1.3.4<![endif]->CDM Executive Board

During COP7 in Marrakech, CDM Executive Board was established by the COP/MOP.Â The Board comprises out of 10 members and 10 alternatives.

The role of the CDM Executive Boards includes the following tasks:<![if !supportFootnotes]->[10]<![endif]->

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- <![if !vml]-><![endif]->Approve, Develop and implement its operational procedures
- <![if !vml]-><![endif]->Approve New Methodologies
- <![if !vml]-><![endif]->Accredit Designated Operational Entities (DOE)
- <![if !vml]-><![endif]->Issue Certified Emissions Reductions (CERs) earned through CDM projects
- <![if !vml]-><![endif]->Establish committees, panels or working groups to assist it in the performance of its functions.

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<![if !supportLists]->1.4<![endif]->Summary

The Kyoto protocol with its mechanisms does not only oblige countries to reduce their emissions it also offers new opportunities. Developing countries can benefit from technology transfer via CDM-Projects, JI offers project opportunities in economies in transition and emissions trading makes sure that countries with less cost can reduce more and sell surplus allowances at a profit. Most ERUs are to come from the new EU member states in Eastern Europe. Abatement should, of course, be the main tool to comply with the reduction target, but the three mechanisms can be regarded as further options or substitutes.

The following graph shows where the three mechanisms are located in time.



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Graph 2â€™4: Timing of projects, crediting and commitment period<![if !supportFootnotes]->[11]<![endif]->

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For comparison the EU ETS starts its first phase (2005-2007) before the first Kyoto commitment period (2008-2012) and the first Kyoto commitment period coincides with Phase-II of the EU ETS.

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The future after 2012 is still unclear, but to agree on what is going to happen after the Kyoto Protocol, currently 188 nations are engaged in global talks on future action on climate change under the umbrella of the UN Climate Change Convention from 1992. These talks started in May 2006 in Bonn and aim to produce agreement on further international action to stop climate change.<!--[if !supportFootnotes]->[12]<!--[endif]->

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It is important to distinguish between the Annex I and Annex B countries. Often Annex I and Annex B countries are used interchangeably, but it is only the Annex I countries that can invest in JI or CDM projects and also host JI projects. On the contrary only non-Annex I countries can host CDM projects. Annex B countries have agreed on the emissions reduction obligations in the Kyoto protocol.

<!--[if !supportFootnotes]->

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<!--[if !supportFootnotes]->[1]<!--[endif]-> IPCC, <http://www.ipcc.ch/present/graphics.htm>

<!--[if !supportFootnotes]->[2]<!--[endif]-> EC, <http://ec.europa.eu/environment/climat/kyoto.htm>

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<!--[if !supportFootnotes]->[4]<!--[endif]-> UNFCCC,
http://unfccc.int/essential_background/kyoto_protocol/items/3145.php

<!--[if !supportFootnotes]->[5]<!--[endif]-> Point Carbon (2006): [Carbon 2006](#). Hasselknippe, H. and K. R ine eds.

<!--[if !supportFootnotes]->[6]<!--[endif]-> Amended, original from UNFCCC

<!--[if !supportFootnotes]->[7]<!--[endif]-> UNFCCC, <http://unfccc.int>

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