# Carbon Financing – KfW Carbon Fund Perspectives

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### Abstract

KfW Bankengruppe (KfW) has launched a carbon fund to purchase emission reduction certificates (carbon credits) generated from CDM and JI projects. Purchasers of carbon credits from the fund are largely businesses from Germany and other EU countries who must comply with obligations assigned to them under the EU Emissions Trading Scheme (ETS) and who wish to use the project-based mechanisms. The KfW Carbon Fund is also open to businesses seeking to purchase carbon credits for building up their image as a cleaner business to their customers and to the community at large. In the form of a public-private partnership, state institutions and governments may also participate in the fund, either to promote implementation and use of the Kyoto mechanisms or to purchase carbon credits for their own use.

## Background

The Clean Development Mechanism (CDM) and Joint Implementation (JI) serve to promote bilateral cooperation. Such cooperation takes place not at the state but at the project level and involves private organizations (particularly businesses). This is the reason that CDM and JI are often subsumed under the term 'project-based mechanisms'. The idea is for project developers to register projects with the competent authorities. Their projects must either reduce emissions or capture carbon from the atmosphere and store it in biomass (sink) projects. Examples of emission reduction projects include the construction of wind farms, more energy-efficient district heating systems and the installation of biomass-fuelled power stations. Sink projects comprise afforestation and reforestation activities. Once a project has completed a pre-determined project cycle, the project developer receives emission reduction certificates in the amount of the emissions saved or of the carbon captured and stored. CDM and JI were created in 1997 as an integral component of the Kyoto Protocol.

The idea of joint implementation for climate change projects had, however, already been set out in the UN Framework Convention on Climate Change in 1992. Following the Convention's official entry into force, the first Conference of the Parties (COP) agreed to launch a pilot phase for Activities Implemented Jointly (AIJ). The aim was to gather and pass on experience and knowledge in dealing with the new mechanism. This led to over 150 AIJ projects of differing types and scales. AIJ projects could not, however, be used to generate emission reduction certificates and have since lost their significance.

The CDM is based on Article 12 of the Kyoto Protocol. Article 12.2 sets out two equally weighted objectives: to assist investor countries in achieving compliance with their Kyoto Protocol commitments and to assist host countries in their efforts to achieve sustainable development. CDM host countries are those countries not listed in Annex B of the Kyoto Protocol – the countries generally described as developing countries. The investor countries are the world's industrialised nations. The modalities and implementation procedure for CDM projects are set out in the Marrakech Accords. These are designed to ensure that a real contribution is made towards achieving sustainable development in the host countries and to combating climate change. In contrast to the rules on Joint Implementation, those for the CDM provisionally entered into force in 2001 by way of a COP decision made in Marrakech (known as the 'prompt start'). In the following years, the COP adopted additional guidelines for CDM implementation along with modalities and procedures specifically applicable to afforestation and reforestation projects. Following the Kyoto Protocol's entry into force, the COP/MOP adopted all the COP's provisional decisions regarding the CDM and issued further guidelines. The CDM Executive Board is responsible for drawing up detailed rules and guidelines and for monitoring CDM projects (www.cdm.unfccc.int).

## KfW Carbon Fund

KfW Bankengruppe is a promotional bank of the Federal Republic of Germany - founded in 1948 and is an institution existing under German public law, headquartered in Berlin and Bonn, with representative offices worldwide. Its mandate is primarily to fund German and European enterprise, home finance and housing modernization, protection of the environment and climate, export and project finance, development assistance for developing and transition countries.

KfW Bankengruppe has set up a carbon fund in cooperation with the Federal German Government in order to purchase emission credits from JI- and CDM-projects . Recipients of these emission credits are mainly German and European companies who are expecting reduction obligations and wish to use the project-based Kyoto mechanisms. The KfW Carbon Fund is thus a purchase programme for emission certificates according to the project-based mechanisms (CDM, JI) of the Kyoto Protocol. (Box 1: KfW Carbon Programmes)

Box 1: KfW Carbon Programmes

- **KfW Carbon Programme (1st Tranche)**
  - Volume: EUR 84 million (INR 500 Crore), closed 31 December 2007
- **EIB-KfW Carbon Programme**
  - Volume: EUR 100 million (INR 600 Crore)
- **Government of Belgium Carbon Fund, managed by KfW**
  - Volume: EUR 25 million (INR 150 Crore)
- **EIB Post-2012 Carbon Fund (together with EIB, CDC, ICO and NIB)**
  - Total Volume: EUR 100 million (INR 600 Crore)
- Participation in other Carbon Reduction Programmes

Projects are selected by the KfW Carbon Fund according to the aspects of risk, return and environmental integrity. Acquired certificates must be eligible to use for compliance within the EU Emissions Trading Scheme. As an AAA off taker, KfW enters into long term contracts and Emission Reduction Purchase Agreements (ERPA) at fixed or/and market prices and according to international standards with possibility of advance payments against these ERPAs either directly or through national institutions and Banks.

The KfW Carbon Fund offers companies the following advantages:

- Acquisition of cost-effective emission credits
- Long-term purchase contracts with fixed prices for the emission credits suppliers
- Reduction of transaction costs versus own JI-/CDM-measures
- Less risks due to a reasonable project portfolio
- Utilization of EIB and KfW's international experience and their access to attractive projects

**Purchase of Carbon Credits by business and industry**

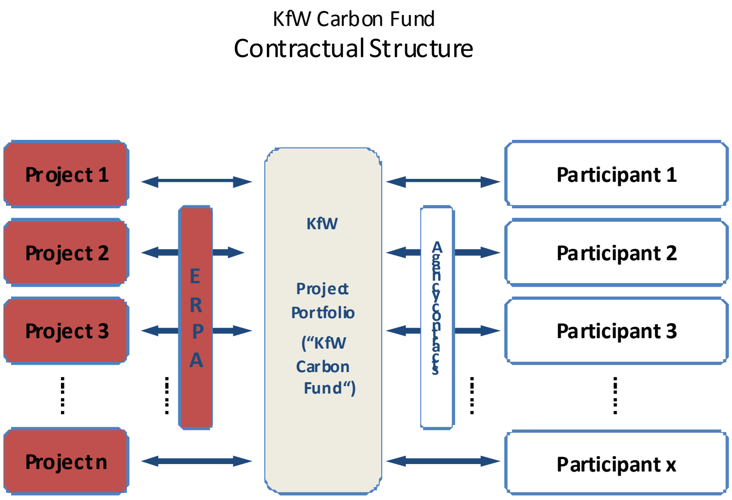
Interested businesses and institutions enter into an Emission Reduction Purchasing Agreement (ERPA) with KfW in which they stipulate their maximum investment and agree to purchase carbon credits in amounts up to the stated sum. KfW acquires carbon credits in its capacity as a trustee for the client's account. As soon as the seller supplies the credits, they are immediately passed to the client in an amount equalling their share in the overall acquisition programme. Distribution of carbon credits to investors in the fund occurs from a portfolio of purchasing agreements which KfW compiles taking cost and risk factors into account. Categorisation of specific types of projects for investors to choose from is not provided for. Funds are called up at the time the carbon credits are received from the seller.

KfW only purchases carbon credits that can potentially be exchanged for EU allowances. Due to the restrictions laid down in the EU Linking Directive (2004), nuclear power stations, afforestation and for the time being, land use projects are excluded from the programme. Large-scale hydropower stations are only allowed if they meet internationally accepted environmental standards, including the WCD Guidelines. Projects must save 50,000 t $CO_2e$ per year in order to keep transaction costs affordable. Consolidating smaller-scale projects is possible. KfW strives to be named as the official project participant at the time a project is approved. It purchases carbon credits at market-oriented prices, taking economic and risk factors into account. Payment is generally on delivery, meaning once the credits have been transferred to KfW's account. Partial payments may be agreed for specific projects after consultation with the credit sections at KfW. Depending on the project structure and credit worthiness of the project participants, KfW can also provide full financing solutions.

## The Project Cycle

Under the Kyoto Protocol, a climate change project comprises many components of which the project activity is the most important. The project activity constitutes the actual investment in a more climate-compatible way of doing business. All other components of a climate change project involve accounting, documenting, reporting, and monitoring carbon balance. Project activities to reduce greenhouse gas emissions take in the construction of wind farms, more energy-efficient district heating networks and the installation of biomass-fuelled power stations. Examples of 'sink' project activities, meaning those that result in greater carbon capture per area unit, include afforestation and reforestation. Specific requirements must be adhered to when attempting to implement a climate change project. The chart depicts the project cycle, which can be roughly separated into six working phases. The terms used and the working phases are described in simplified form in figure 1.

Figure 1



### The Project Idea

One of the first things to consider is the project idea. This involves giving thought to potential project activities and project partners.

### Project Checklist

The checklist would assist recognising potential risks early on in the project proposal phase and so allow timely adjustment of the project design. BMU expressly emphasises the wisdom in performing the check in order to avoid costly mistakes; nonetheless climate change projects can only be approved on the basis of a project design document (PDD).

### Project Design Document (PDD)

The PDD has both a prescribed format and mandatory content and provides the basis on which project approval decisions are made. Its main component, apart from a detailed description of the project activity, is an outline of a reference scenario. The scenario has two parts:

i) It describes the investment that would be made and/or the business approach that would be taken in the absence of the project. This is often termed as the reference scenario. When identifying the reference scenario, available technologies, state incentive programmes and statutory requirements must be taken into account.

ii) The emissions are estimated that would result if the reference scenario occurred. The estimate is known as the baseline. The baseline is then compared with a forecast of the emissions that would occur if the project activity were implemented. This allows calculation of the emission reductions expected from the project.

A key prerequisite in the approval of a climate change project is the **criterion of additionality**. This requires that climate change projects only be approved if they would not have come to fruition without the incentives provided by the CDM and JI mechanisms.

Other important terms used include project boundary and leakage. The project boundary is determined by the project developer. It must be stated in the PDD and take in all emissions from sources which are controlled by the project participants, are significant and result directly from the project activity. Leakage describes the increase in greenhouse gas emissions outside the project boundary that can be attributed to the project activity. For example, afforestation projects on former agricultural land could force farmers to use other areas of land and clear existing forest or woodlands. This leakage must be included when calculating the emission reductions achieved or the amount of carbon captured and stored.

A further element of the PDD is the development of a suitable monitoring plan. Monitoring constitutes seamless, verifiable documentation of how the project activity is implemented and of the associated GHG emissions. The data forms the basis for subsequent verification of the emission reductions achieved.

### Assessment/Approval of Climate Change Projects

The PDD is assessed by either a Designated Operational Entity (DOE for CDM) or an Accredited Independent Entity (AIE for JI). Where objections and deficiencies occur, improvements must be made or a new PDD produced. In some cases, project descriptions must be made available to the general public in order to allow people, especially those affected by the project activity, the opportunity to comment on the contents of the PDD. Also, the project must be approved by both the host country and the participating investor countries. National approval is usually based on the assessment by the respective DOE/AIE. If the assessment is successful and no objections are raised, the project is officially accredited as a CDM/JI project.

### Project Implementation and Monitoring

Project implementation must be documented according to the monitoring plan set out in the PDD. Seamless reporting, particularly of the associated emissions, provides the basis for subsequent verification of the emission reductions achieved and for the issuance of CDM/JI-generated CERs and ERUs.

### Verification of the Achieved Emission Reductions / Issuance of Emission Reduction Certificates

The emission reductions achieved with the project are verified by the DOE/AIE, who compares them with the baseline contained in the PDD. Depending on the mechanism involved, the assessment is subject to different rules and regulations.

The minimum requirements for implementing CDM/JI projects are largely prescribed by the decisions of the Conference of the Parties (COP) to the Kyoto Protocol, the EU and, where appropriate, supplementary national arrangements in the investor and host countries.

### The Project Portfolio

Projects may be hosted by all countries that meet the criteria laid down in the Kyoto Protocol. The first tranche of the KfW Carbon Fund closed in the first quarter of 2006. Twenty six businesses and institutions from Germany and elsewhere invested a total of •83.9 million in the carbon acquisition programme. Due to the high demand, the originally targeted fund volume of •50 million was exceeded by almost 70 percent. KfW invested •10 million of its own money in the first tranche. The first transfer of carbon credits to the KfW Carbon Fund occurred at the beginning of March 2006. This made KfW one of the first purchasers in the world to hold CERs. Given the positive response to the fund, KfW in cooperation with the European Investment Bank has launched a second tranche of •100 million of its carbon acquisition programme.

Some of the advantages of KfW involvement in the projects would be:

- Long-term partnership
- Obligations are backed up by KfW and its AAA rating
- Maximum security for the seller

  - ➢ Enhances the creditworthiness of the project;
  - ➢ Prices offered by KfW Carbon Fund are guaranteed and competitive
- Advance payments on ERPA
  - ➢ Additional cash flow that can be used for project financing
  - ➢ Just one contract
  - ➢ Structure tailor made to corporate or cash flow based risks
- Flexible contract terms
  - ➢ option on additional amounts
  - ➢ possibility to extend contract period past 2012
  - ➢ early delivery option possible
  - ➢ purchase with consortium or syndication
  - ➢ bundling of smaller projects
- Possibility to buy Post-Kyoto emission certificates
- Financing support of up to • 50,000 for project preparation
  - ➢ Design of PDD, Business Plan, Environmental Impact Assessment Report or support of validation costs
  - ➢ Repayment in CERs

Since mid-2007 programmes that support climate protection activities or that implement climate protection policies in developing countries can be registered as CDM/JI projects (programmatic CDM/JI). This initiative by the Ministry for the Environment aims at reaching previously untapped small and micro sources of emissions and at achieving corresponding marketable reductions in greenhouse gas emissions. It especially focuses on the saving potentials in the areas of energy efficiency, transport, renewable energies, industrial fuel switch and general measures in the household and SME sectors.

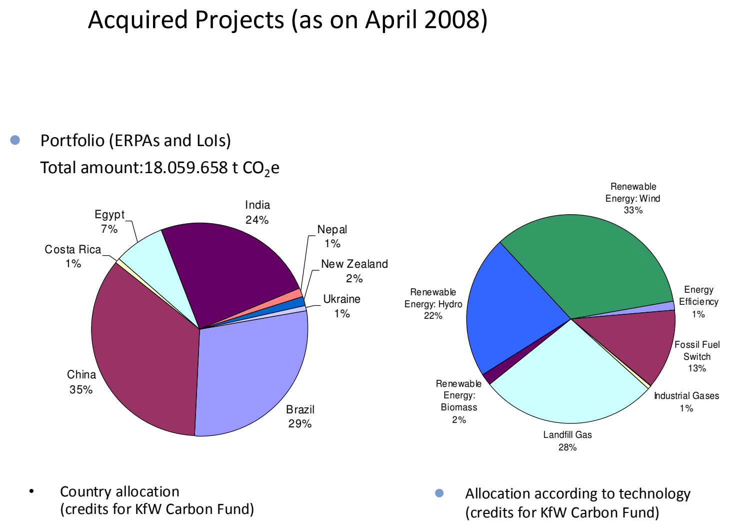



Figure 2

Programmatic projects reduce greenhouse gases by initiating a large number of small, individual measures that each alone cannot carry the CDM/JI transaction costs. This could take the form of a large-scale exchange programme "light bulbs for energy saving lamps", for instance. Further examples are:

- Household cookers (energy efficiency, biogas or solar cookers)
- Solar-powered water heating
- Energy efficiency or fuel switch for industrial boilers
- Energy-efficient equipment, machinery or motor vehicles
- Use of biogas in agriculture
- Energy-efficient buildings

KfW, on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), supports the development of a portfolio of eligible Programmes of Activities (PoA), for which it is soliciting programme proposals.

As an experienced partner for projects, KfW offers advisory, structuring and assessment services for programme proposals as well as financing and grants to cover the preparation of programme concepts, project design documents (PDDs) and monitoring plans. In addition, it offers its know-how to help with programme implementation and can assist with marketing expected carbon credits. The PoA Support Centre targets interested enterprises, organisations and public entities in CDM/JI host countries (energy utilities, banks, energy agencies etc.) considering or planning to develop and implement PoAs. In addition, EIB will assume a leading role in determining the acceptability of proposals for advance payments.

## Demand Scenarios:

The opportunities to use CDM/JI-generated emission certificates (carbon credits) in Germany and other EU Member States are largely driven by national and EU legislation. There are three main options available:

- Responding to demand generated by the EU Emissions Trading Scheme
- Responding to demand created under the carbon acquisition programmes run by the various EU Member States
- Voluntary demand from private agents

Most non-state demand for CERs and ERUs is generated by the caps placed on industrial emissions in the EU Emissions Trading Scheme. Under the EU Linking Directive (transposed in Germany's Project-Based Mechanisms Act (ProMechG)), carbon credits generated from CDM/JI projects may be used in the EU Emissions Trading Scheme as follows:

- CDM/JI project developers complete their respective project cycles and receive a quantity of CERs or ERUs.

- CDM/JI project developers sell their carbon credits to operators of industrial installations or combustion facilities that must participate in the EU Emissions Trading Scheme (ETS). Project developers and operators of facilities covered by the ETS may be identical.

- These operators request that the CERs or ERUs be exchanged for EU allowances by surrendering their CERs/ERUs to the DOE in their own EU Member State. Technically speaking, operators receive the corresponding number of EU allowances which they must immediately use to prove they are in possession of EU allowances.

- If operators are in a position to substitute more CERs/ERUs than the EU allowances needed to meet their obligations, they may use the remaining EU allowances to meet subsequent obligations under the EU Emissions Trading Scheme; alternatively, they may sell their EU allowances to other market players.

- An EU Member State which exchanges CERs/ERUs for EU allowances can use the CERs/ERUs to comply with their Kyoto Protocol commitments.

Exchange and substitution of emission reduction certificates is limited by the setting of a facility-related upper limit as prescribed by the EU Linking Directive. In its draft National Allocation Plan II (NAP II), Germany has set this upper limit at 20 percent of the EU allowances to be surrendered. Thus, for the ETS second trading period from 2008 to 2012, industries participating in the scheme receive some 90 million allowances per year or 450 million for the entire trading period. The amount can be surrendered in varying quantities throughout the trading period.

Interested businesses can generate emission reduction certificates from their own CDM and JI projects, purchase CERs and ERUs on the carbon market, or use a carbon acquisition programme to obtain carbon credits. One such programme is the KfW Carbon Fund, which is one of the few funds designed not to generate credits for states obligated to reduce their emissions under the Kyoto Protocol, but for businesses participating in the EU Emissions Trading Scheme.
Independent of the ETS, the EU Member States may create opportunities to use CERs and ERUs at national level. The simplest method involves direct purchase of emission reduction certificates by the state and many such programmes have already been implemented.

Another option would be to allow CERs and ERUs to be counted towards obligations under other policy instruments (e.g. voluntary agreements, eco-tax). None of the EU Member States appear to be considering such action at present, however. The overarching aim of the EU Member States in both cases is to obtain CERs and ERUs in order to use them to comply with their Kyoto Protocol commitments.
In addition to the two demand segments outlined earlier, a third is emerging in which no state intervention occurs whatsoever. This involves voluntary offsetting, which is as yet unregulated at international, EU or national level. The main feature of this demand segment is that the CERs and ERUs purchased by private agents are not used by the state to comply with Kyoto commitments. Rather, the private agents cancel them voluntarily.

## Conclusion

The KfW Carbon Fund is a mechanism that enables businesses to meet their carbon reduction obligations, and at the same time, ensuring that developing countries, who sell carbon, are in a position to meet their own sustainable development objectives.

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[1] This article has drawn extensively on the KfW Carbon Fund website. However, th e article has been written in personal capacity and KfW or any of the official agencies mentioned therein is not responsible for accurateness or interpretations.