



Carbon Finance Annual Report 2005

Carbon Finance for
Sustainable Development



Contents:

- 3 Carbon Finance for Sustainable Development**
- 27 Report on Business: The Work of the Carbon Funds**
- 81 Making Carbon Finance a Reality: Projects in Progress**
- 99 Annexes**

This is the first consolidated annual report of the carbon funds managed by the World Bank, covering the period from July 1, 2004 through August 31, 2005. An online version of this report is available on the carbon finance website: www.carbonfinance.org

Notes: All \$ = U.S. dollars (unless otherwise indicated). One ton = 1000 kilograms (one metric tonne). All greenhouse gas emission reductions are measured in tons of carbon dioxide equivalent (tCO₂e). This report is provided for informational purposes only. The carbon funds reported on are not legal partnerships. No warranties or representations are made as to the accuracy, reliability or completeness of any information herein.

Our mission is to catalyze a global carbon market that supports sustainable development, reduces transaction costs and reaches and benefits the poorest communities of the developing world.





Carbon Finance for Sustainable Development

4	The Carbon Funds
6	Letter from the World Bank
7	Letter from the Chair of the Host Country Committee
8	The Global Context
12	Carbon Finance at the World Bank
14	From the Senior Manager of Carbon Finance
15	Carbon Finance Highlights 2005
16	Report on Carbon Finance Operations
18	Creating the Carbon Asset
20	Transaction Structuring and Risk Management
23	Financial Performance
24	Capacity Building



The Carbon Funds



Prototype Carbon Fund (PCF)

The mission of the Prototype Carbon Fund is to pioneer the market for project-based greenhouse gas emission reductions within the framework of the Kyoto Protocol and to contribute to sustainable development.

Operational since April 2000 as the first carbon fund to be established globally, the PCF is an innovative public/private partnership aimed at mitigating climate change. Six governments and 17 companies, all from industrialized countries, have contributed US\$180 million to the PCF which currently has 28 projects under preparation.

See page 29



Community Development Carbon Fund (CDCF)

Operational since July 2003, the CDCF is a public/private fund initiated by the World Bank in collaboration with the International Emissions Trading Association (IETA) and the United Nations Climate Change Secretariat.

The single feature that defines this fund and differentiates it from other World Bank managed carbon funds is the generation of community benefits by the projects it finances. CDCF projects are an opportunity for small communities in poorer countries to obtain clean water, improve health conditions and create jobs for women, as much as they are an investment in clean technologies that help reduce greenhouse gas emissions and mitigate climate change.

See page 39



BioCarbon Fund (BioCF)

The BioCarbon Fund is a public/private initiative that was established in May 2004 as a trust fund administered by the World Bank. The fund is piloting projects in developing countries, as well as in countries with economies in transition, that sequester and conserve carbon in forest and agro-ecosystems.

The emerging carbon market represents an unprecedented opportunity for development based on competition and trade. Land-use projects offer a valuable, and maybe the only, opportunity for some of the poorest countries and their rural communities to participate in the carbon market and reap its development benefits.

See page 51



The Netherlands CDM and JI Facilities (NCDMF) (NECF)

The Netherlands Clean Development Mechanism Facility was established in April 2002. The agreement, signed between the World Bank and the Ministry of Housing, Spatial Planning and the Environment of the Netherlands (VROM), supports projects in developing countries in exchange for emission reductions under the Clean Development Mechanism (CDM) of the Kyoto Protocol.

The Netherlands European Carbon Facility started operations in August 2004 and is co-managed by the World Bank and the International Finance Corporation (IFC, the private sector arm of the World Bank Group). The target of the facility is to purchase 10 million tons of emission reductions from Joint Implementation projects located in Central and Eastern Europe.

See page 61

Italian Carbon Fund (ICF)

The Italian Carbon Fund was established in early 2004 based on an agreement between the World Bank and the Government of Italy. The ICF supports a wide range of technologies and activities in China, India, Central and South America, the Balkans, East Asia, the Mediterranean and the Middle East.

The ICF will promote and facilitate Italian industry's engagement in the carbon market by providing knowledge about maximizing project-based opportunities for cost-effective acquisition of emission reductions and clean technology transfer.

See page 67

Danish Carbon Fund (DCF)

The Danish Carbon Fund became operational in January 2005 and involves the participation of Danish public and private sector entities. The DCF will purchase emission reductions from renewable energy projects, combined heat and power projects and landfill projects, among others, that are implemented in developing countries and in countries with economies in transition.

The Danish Carbon Fund's target is to place approximately \$70 million in a first portfolio of 10 to 12 projects with a total reduction of 10 to 12 million tons of carbon dioxide equivalent (tCO₂e).

See page 71

Spanish Carbon Fund (SCF)

The Spanish Carbon Fund was created in 2005 to purchase greenhouse gas emission reductions from projects developed under the Kyoto Protocol to mitigate climate change. It is one of the initiatives implemented by the Government of Spain to achieve its emission reduction target under the Protocol. The SCF will promote renewable energy and energy efficiency projects in developing countries and countries with economies in transition.

The fund, which started operations using financial resources provided by the Spanish Government, will soon be open to the participation of Spanish public and private entities.

See page 75



Letter from the World Bank

We all saw first hand in the last few months the terrible impact of extreme climate variability. Vulnerable populations everywhere are hardest hit, and those with the least, suffer the most. From Southern Africa to Central America and from Bangladesh to Afghanistan, poor people are the ones in the frontlines of severe droughts and floods.

In the past decade, 2.5 billion people in developing countries have been affected by climate disasters. This is of concern to the World Bank whose partner countries run the real risk of seeing their development gains of the last decades threatened.

But real progress can be made in sustaining development efforts and conserving our planet if governments, the business community, international institutions and civil society mobilize their resources towards the long term objective of a lower carbon economy. The G8 Gleneagles Summit kick-started a new and broader dialogue on climate change based on practical solutions and results. The Bank is working with partners in the creation of a new, long term oriented investment framework for clean energy and sustainable development that better aligns all potential financial sources.

All countries and especially developing countries have a stake in integrating climate concerns into policy planning and improving governance in key sectors such as energy, water and transport. Helping vulnerable countries to adapt to this threat is a key priority. Rich countries need to set the example by taking the lead and moving towards environmentally-friendly technical solutions that lower emissions and at the same time maximize the use of market mechanisms such as carbon trading to buy reductions of greenhouse gases from developing countries and countries with economies in transition.

The countries and companies who have partnered with the World Bank in establishing the eight carbon funds that the Bank manages have shown foresight and courage. Many of these carbon fund participants have obligations for carbon emission reductions under regulatory or voluntary regimes. But all of them have perceived the value added of purchasing some of those greenhouse gas emission reductions from projects in developing countries or from countries with economies in transition, bringing development dollars and clean energy technology to communities and countries that would have been otherwise left out of this emerging market.

Ian Johnson
Vice President for Sustainable Development
The World Bank

Letter from the Chair of the Host Country Committee



Most developing countries are very vulnerable to climate change. Their hope is to improve climate conditions and to mitigate their vulnerability through international joint efforts. The Kyoto Protocol's Clean Development Mechanism allows developed countries to obtain greenhouse gas emission reductions by implementing CDM projects in developing countries, while assisting developing countries to achieve sustainable development—a win-win solution.

The Host Country Committee (HCC), with its current 54 member countries, was organized to promote CDM development through building capacity for member countries, engaging in the creation of international CDM and carbon market policies, and sharing information, experience and lessons, among other things. The effective functioning of the Host Country Committee is important for the success of the CDM and the Kyoto Protocol.

2005 is proving to be a remarkable year for carbon market development and for improving HCC functions. The continuing increase in both trade and volume of the European Union Emissions Trading Scheme (EU ETS), which started on January 1, 2005, has sent a strong signal to the Host Country Committee that there are opportunities to take advantage of this market for CDM project development.

On February 15 and 16, auspicious because it happened to be the date that the Kyoto Protocol came into force, 48 members of the Host Country Committee attended the HCC annual meeting in Washington, DC. Key among the decisions made was to establish a pricing committee, to consider the price of carbon in the market and provide advice to the World Bank on pricing policies for carbon.

Both the volume of CDM projects submitted for validation and registration and methodologies submitted for approval by the CDM Executive Board increased significantly this year, resulting in a tremendous challenge for the board and its methodology panel to deal with the sheer number of projects. The Host Country Committee and its members are encouraged to provide advice to the Executive Board and its panel on how they could improve CDM management. A significant message on CDM in 2005 was the call by Parties and stakeholders for CDM reform, including CDM governance and streamlining of CDM regulations. This reform is critical in order to facilitate CDM implementation and to make the CDM an effective instrument to meet Kyoto Protocol targets.

The Carbon Finance Unit of the World Bank has been entrusted to manage eight carbon funds, because of its excellent carbon business management and good reputation. The Bank also manages the CF-Assist program that is supporting capacity building for CDM/JI host countries. With the support of CF-Assist, the number of countries that have submitted CDM projects for validation and registration has greatly increased.

It is expected that the CDM market will grow considerably in the coming years. We should be confident that this will happen, and I would encourage all HCC members to make their best effort to promote this market development.

A handwritten signature in black ink, appearing to be 'Lu Xuedu' in Chinese characters and English.

Lu Xuedu
Chair
Host Country Steering Committee

The Global Context

The Impact of Climate Change

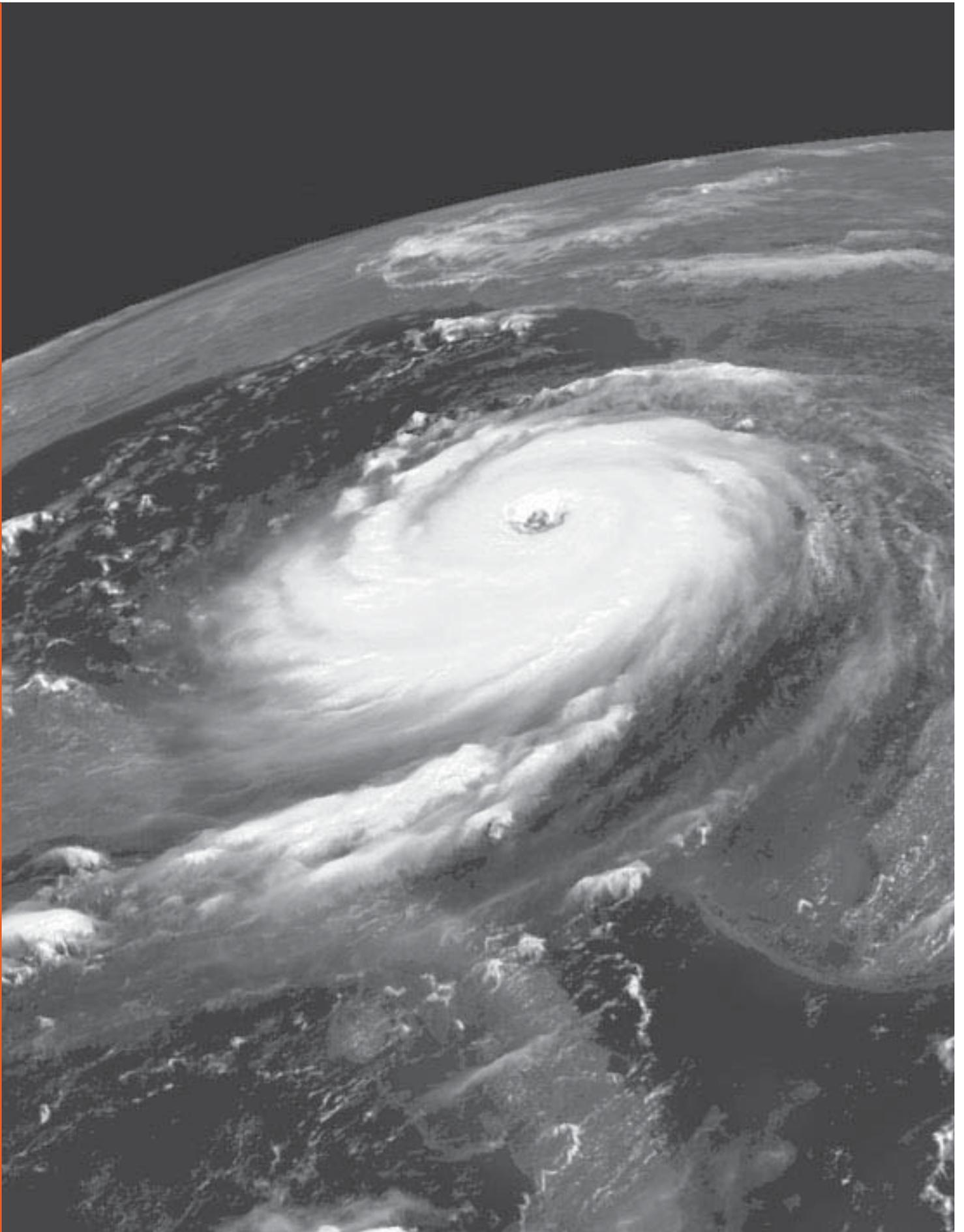
2005 is turning out to be a momentous year, both for the international agreements on climate change that have come into force, and also for the warnings that nature is sending our way on the havoc that climate change could wreak, both in human and economic terms. In the aftermath of the weather disasters that we witnessed all over the world in 2005, it is evident that poor communities anywhere are the most vulnerable, and the damage is borne most heavily by those with the fewest resources to cope.

According to climate records, the last several years have been the hottest on record. Precipitation patterns have changed, sea levels have risen and most non-polar glaciers are retreating. Last summer, floods devastated parts of Central Europe, Central Asia, India and southern China, while long-term drought withered parts of the United States, Western Europe and East Africa. All of these extreme events represent a trend of increasing intensity that climate scientists have

predicted for years as a result of global warming. Our climate is projected to change even more in the coming decades. In short, what we are seeing is only the beginning of an apparently unstable period with largely unpredictable economic and human consequences.

Most scientists agree that these changes are mostly due to our own activities. We are in effect tinkering with the natural thermostat of the planet. The gases we are pumping into the atmosphere from our coal- and oil-burning industries and lifestyles are increasing, and pushing the world into a climatic regime unprecedented in the era of civilization. The extent of warming this century will be determined in part by the development pathways we choose. We must take swift action to lower our emissions of greenhouse gases. In the words of the G8 leaders, we must move towards a “low-carbon” economy, and both governments and business have a central role to play.

The long-term challenge is to meet the goal of the United Nations Framework Convention on Climate Change (UNFCCC), that is, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human-caused interference with the climate system, and in a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.

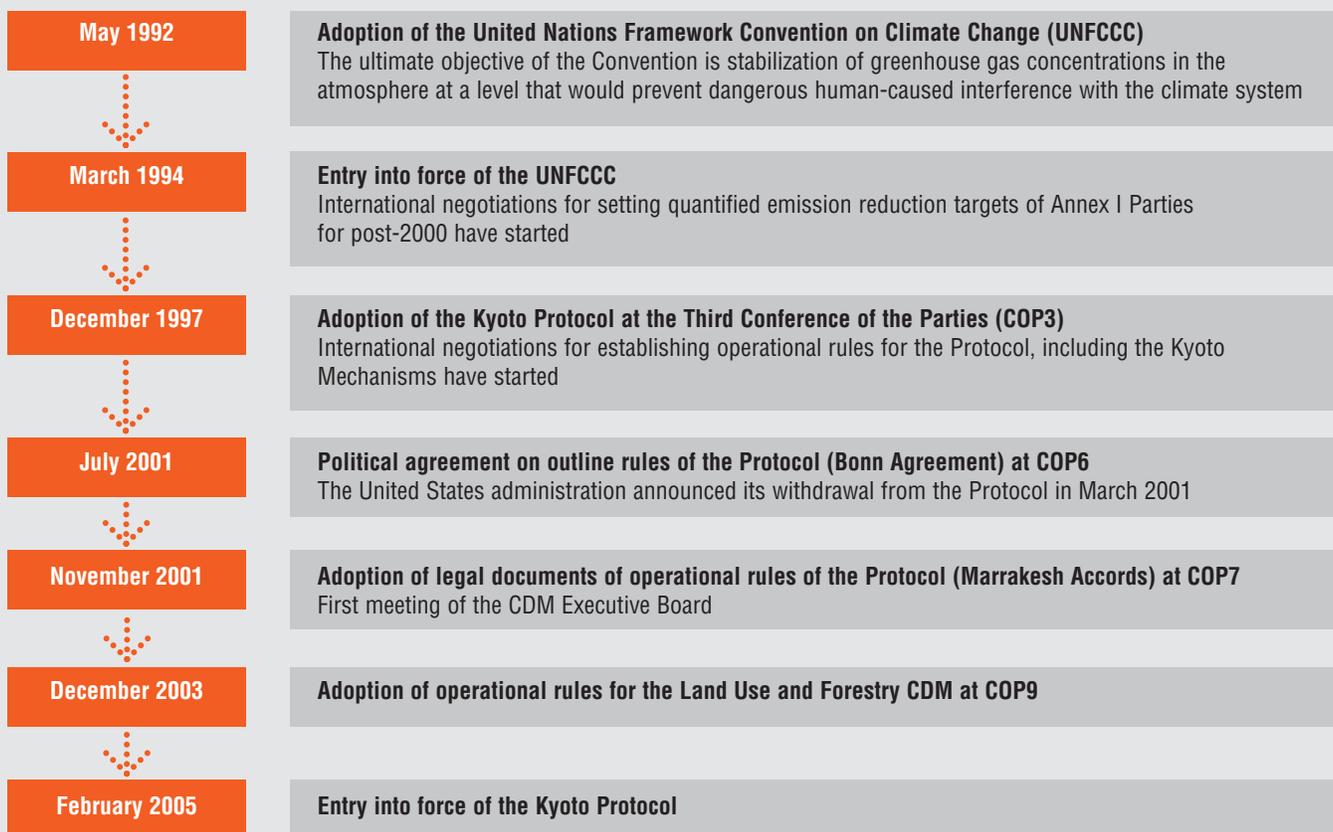


The Global Context

International Agreements to Tackle Climate Change

Reducing greenhouse gas emissions caused by our oil- and coal-driven economies is critical to tackling climate change. With both the European Union Emissions Trading Scheme which began on January 1, 2005 and the Kyoto Protocol which came into force on February 16,

carbon emission reductions became international commitments by most industrialized countries. Signatories to the Protocol are obligated to reduce their greenhouse gas emissions by an average of 5.2 percent compared with 1990 emissions during the period 2008 to 2012.





Flexible Mechanisms for Emission Reductions

Under the Kyoto Protocol, Annex I (industrialized) countries may achieve these reductions either domestically or through three international market-based mechanisms:

- Joint Implementation (JI), or purchasing greenhouse gas emission reductions from projects in other Annex I countries (generally, countries with economies in transition);
- Clean Development Mechanism (CDM), or purchasing emission reductions from projects in developing countries; and
- Emissions trading among Annex I countries.

Through the first two mechanisms, the Kyoto Protocol enables countries and companies in countries that have committed to reductions to supplement their domestic efforts to reduce emissions by purchasing greenhouse gas emission reductions generated by projects in developing countries and countries with economies in transition. These are countries where emissions can be reduced at lower cost, while contributing to sustainable development. The emerging global carbon market is predicated on the fact that greenhouse gases mix uniformly in the atmosphere, which makes it possible to reduce carbon emissions at any point on the planet and have the same effect. All those things have given impetus to the growing carbon market for emission reductions.

State of the Carbon Market 2005

The fifth annual World Bank carbon market intelligence study, co-sponsored by the International Emissions Trading Association, IETA, released in May 2005, showed that the carbon finance market is expanding steadily—107 million tons of carbon dioxide equivalent were exchanged through projects in 2004, a 38 percent increase compared with 2003 (78 million). The report estimated that the volume exchanged halfway through 2005 was 43 million tCO₂e.

According to the report, volumes exchanged on the allowance markets, such as the European Union Emissions Trading Scheme, have increased dramatically compared to the previous year, and are now comparable to the volumes exchanged through project-based transactions. The total amount exchanged on all the allowance markets from January 2004 to March 2005 was about 56 million tCO₂e. This is mostly driven by the entry into force of the EU ETS in January 2005.

The report says that private and public entities in Europe now represent 60 percent of the volume of emission reductions purchased through project-based transactions. (Jan. 2004 to April 2005).

Carbon Finance at the World Bank

Why the World Bank Cares about Climate Change

In the past decade, 2.5 billion people in developing countries have been affected by climate disasters. The human and the economic costs are staggering. In the aftermath of Hurricane Katrina alone, estimates are that damage to buildings, businesses, and infrastructure could be as much as 100 billion dollars, with billions more in private insurance claims. Imagine the aftermath in countries with less capacity to cope, with fragile institutions, with rudimentary emergency systems. According to World Bank research, about \$4 billion a year of World Bank investments are exposed to climate-related risks and \$500 million a year is spent on managing or recovering from climate-related disasters. It is the impact that climate change could have on the Bank's developing country partners that has the World Bank concerned.

At the G8 summit in Gleneagles Scotland in June 2005, the World Bank was asked to create a new framework for mobilizing investment in clean energy and development. Carbon finance is one instrument in that framework.

Carbon Finance for Sustainable Development

Sustainable development is the key reason for Bank engagement in carbon finance operations. The carbon market is emerging as a new form of international trade—that is trade in a new product that can also deliver benefits to developing countries, that could use carbon finance to improve energy efficiency, improve landfill operations, improve forest cover and biodiversity. If given the opportunity developing countries could participate in the carbon market, either through their manufacturing or rural

base. Through the carbon funds it manages the World Bank sees its role as ensuring that the benefits of carbon finance are spread wide and deep, that the carbon market becomes an instrument to help achieve sustainable development in its client countries and that the least developed reap the benefits of the emerging market.

Pioneers in Every Sense of the Word

In the last six years the World Bank involvement in carbon finance has grown from the initial conception and development of the pioneering \$180 million Prototype Carbon Fund to eight carbon funds and facilities today that represent almost a billion dollars, with more than 42 private sector companies and 15 governments as participants.



Carbon Finance at the World Bank: From Vision to Reality

In 1996, Ken Newcombe introduced the concept of the first carbon fund at the World Bank, the Prototype Carbon Fund. Although it was only a dream then, today Ken can look around and see the growth, not only of the carbon funds managed by the Bank, but of a carbon market that has the potential to bring more than \$25 billion in new financing for sustainable development to the developing world and the poorest countries. Ken is now applying the same passion and tenacity that he brought to carbon finance operations to his role in helping to shape the Bank's work on climate change. At the request of the Gleneagles Summit, the Bank is facilitating a broader dialogue on climate change and is working with partners to develop an investment framework for clean energy and sustainable development.

Challenging Times for Reducing Emissions

These are challenging times for the business of carbon finance. There is the uncertainty of the post-Kyoto period—what kind of emission reductions regime will be put in place after 2012 and how quickly will it happen? There is the challenge of spreading the benefits of carbon finance to Africa. *The State of the Carbon Market 2005* reported just one large carbon finance transaction in Africa, although as you will read in this annual report, the numbers are going up—encouraging, but still not fast enough for Africa's needs. There is a major challenge to deliver CDM assets to the market. The window of opportunity is small—CDM projects have to begin delivering emission reductions by 2008 to make them worthwhile to help fulfill Kyoto tar-

gets. That means there is less than two years to have projects up and running in parts of the world where project development can be cumbersome at the best of times.

The World Bank's main challenge now with carbon finance lies in delivering the emission reductions. There are strong partners to help make that happen. China, India and other rapidly developing countries for example are intensifying their efforts to tackle climate change. They are showing the foresight needed to deal with the looming reality of global warming. In particular, China's plans for a Clean Development Fund to utilize some of the resources that will come from its carbon emission reductions projects is an example that other developing countries could follow.

There are challenges but there is good news too. In October 2005, the CDCF's La Esperanza Hydroelectric Project in Honduras became the first project under the CDM to be issued certified emission reductions (CERs). (For more information on La Esperanza and other carbon fund projects please go to page 81.)

“The issuance of the first certified emission reductions is another vital step in the implementation of the Kyoto Protocol. These first CERs issued further demonstrate the concrete way in which CDM projects can contribute to both [cost effective] mitigation of climate change and to the sustainable development of the CDM project countries. La Esperanza says clearly to small communities all over the developing world that they have a very real opportunity to participate in the carbon market. The World Bank is proud to have played a role in helping to make this happen through the CDCF.”

*Warren Evans
Director of Environment
The World Bank*





From the Senior Manager of Carbon Finance

With the Kyoto Protocol coming into force, the market for emission reductions has expanded rapidly with the sale of emission reductions from developing countries reaching over \$400 million annually.¹ Despite considerable contribution by the World Bank Carbon Finance Unit and significant progress with the carbon market, it is still very much an emerging market with the institutional structure underlying it still weak and only a few, though increasing, number of countries benefiting from the growing flow of carbon finance.

Despite the slow start and the institutional weaknesses in the international regulatory regime, the promise of carbon trading remains substantial. While many developing countries have become actively engaged in carbon finance, others have barely recognized the opportunity to earn carbon emission reduction credits and exploit them as export “commodities.” Furthermore, sectors with considerable potential for carbon finance such as coal thermal power plant re-powering, rehabilitation and modernization have not been touched by the carbon market. The potential of carbon finance to support investments in efficient energy production and end-use efficiency, urban waste management, forestry and agriculture is huge and still largely unexploited.

The Bank and other international lending institutions have the opportunity to use carbon finance to increase investment in efficient fossil fuel plants, support renewable energy, deal with poorly managed landfills and other waste streams that pose serious public health risks to large populations, build sustainable forest management, improve land use practices in agriculture, and increase efficiency in transportation—all while setting up a cost-effective mechanism to deal with climate change. In the last year significant progress has been made both at the international level and in many of our client countries. But much still needs to be done and time is of the essence. In the coming year, institutional structures must be strengthened. Delivery of CDM and JI projects needs to be substantially increased.

For our part, the World Bank must continue to deliver on our commitments, to our host countries and to our fund participants. Recognizing the opportunities created by carbon finance, the Bank has proposed to further strengthen its role, based on three inter-related objectives:

- (i) To ensure that carbon finance contributes substantially to sustainable development, beyond its contribution to global environmental efforts;
- (ii) To assist in building, sustaining and expanding the international market for carbon emission reductions and its institutional and administrative structure; and
- (iii) To further strengthen the capacity of developing countries to benefit from the emerging market for emission reduction credits.

In coming years we look forward to working together with all those who have committed themselves to sustainable development and a sound global environment.

Odin Knudsen
Senior Manager, Carbon Finance Unit
The World Bank

¹ State and Trends of the Carbon Market, 2005; World Bank and International Emissions Trading Association, Washington D.C.

Carbon Finance Highlights 2005

The **Prototype Carbon Fund** is expected to have signed emission reductions purchase agreements for most of its projects by December 31, 2005.

Tranche One of the **BioCarbon Fund** closed on August 31, 2005 with a total of \$53.8 million in contributions, which is higher than expected. One-third of the Tranche One portfolio may consist of projects in Africa.

At the end of two years, the capitalization of the **Community Development Carbon Fund** stands at \$128.6 million. The CDCF now has four emission reductions purchase agreements signed and has the first ever certified emission reductions issued by the CDM Executive Board.

The **Danish Carbon Fund** was established in January 2005. As of August 31, 2005 the fund had two public sector participants (the Danish Ministry of Foreign Affairs and the Danish Ministry of Environment) and five private sector participants.

As of August 31, 2005 commitments to the **Italian Carbon Fund** had risen from \$15 million to \$45 million. The fund is currently being opened to private sector investors. Commitments are expected in late 2005, and the fund is expected to be closed in spring 2006 with over \$100 million capitalization.

As of fall 2005, the **Netherlands CDM Facility** had a diversified portfolio consisting of signed emission reductions purchase agreements for a total volume of 2.9 million tons of carbon dioxide equivalent, and approved carbon finance documents with a total potential volume of 31 million tons of carbon dioxide equivalent emission reductions. The NCDMF had the first project ever registered under the CDM.

Three projects were approved for the World Bank project portfolio of the **Netherlands European Carbon Facility** which focuses on the joint implementation countries and is administered in cooperation with the International Finance Corporation. Two projects in the facility entered the validation and emission reductions purchase negotiation stage.

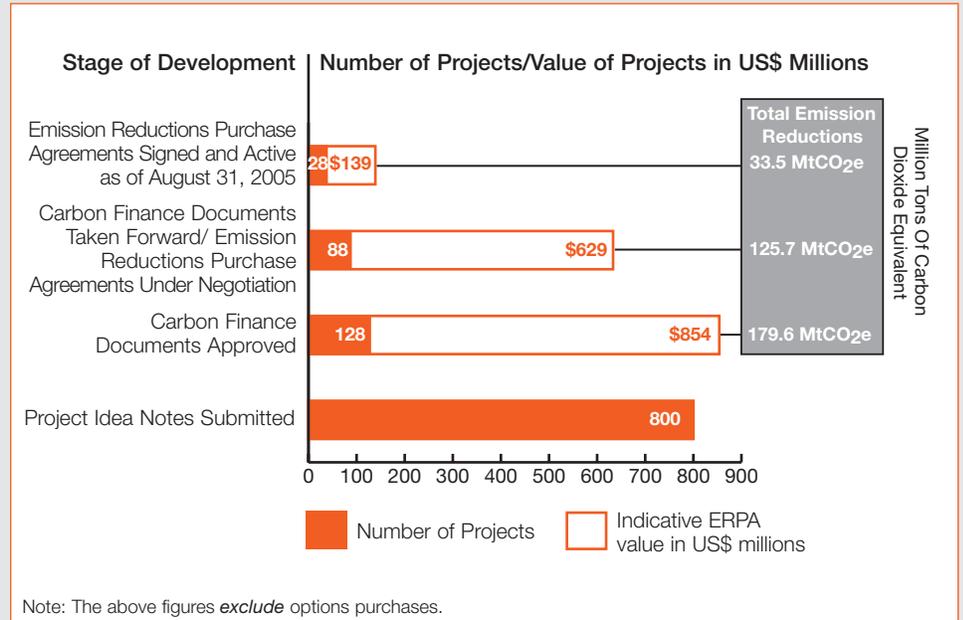
The **Spanish Carbon Fund** has approved carbon finance documents for a number of projects totaling over \$68 million. The fund will purchase about 11.5 million tons of carbon dioxide equivalent from these projects.

Report on Carbon Finance Operations

Carbon Finance Unit Portfolio Development

Approximately 800 project proposals have been reviewed by the Carbon Finance Unit as of August 31, 2005 (Figure 1A). Of these, 128 have proceeded to the carbon finance document (CFD) stage and been approved for further development. Of these 128 projects, 88 remain active and have progressed to the emission reductions purchase agreement (ERPA) negotiation phase. Twenty-eight projects have active signed emission reductions purchase agreements totaling \$139 million², of which 13 were signed in fiscal year 2005 with a total value of \$62.6 million.

Figure 1A. Status of Project Development in the Carbon Finance Unit



Peru: CDCF's Santa Rosa Hydro Registered Under the CDM

The CDCF's four megawatt Santa Rosa Hydroelectric Project has been officially recognized as a CDM activity—it was registered by the Executive Board of the Clean Development Mechanism in October 2005. The project is a milestone for Peru as the first small-scale CDM project to be developed in the country. Registration is the final step in the Kyoto Protocol's CDM process that recognizes the project as a CDM activity.

The proposed project is a bundle of three run-of-river hydropower plants located in the Santa Rosa irrigation area of Sayán District. The project will assist the national grid to reduce use of thermal plants, thereby displacing expensive heavy fuel—diesel, coal and gas-fired generation, and reducing carbon dioxide emissions to the atmosphere. In Peru the options for



hydropower are limited because most of the best locations for hydroelectric plants have already been granted to private firms, and the barriers and risks in investing in hydro are high.

The Community Development Carbon Fund intends to purchase emission reductions of 88,300 tons of carbon dioxide equivalent over a ten-year

period. Community benefits from this project include electricity to a local orphanage, a new community center, increased economic activity, road and irrigation canal maintenance and about 125 new jobs in concrete work and equipment installation.

² The World Bank's carbon funds have signed 30 emission reductions purchase agreements. One ERPA has been terminated. Two ERPAs are part of an umbrella project and are counted here as one project.

Figure 1B. Geographic Distribution of Carbon Finance Unit Portfolio

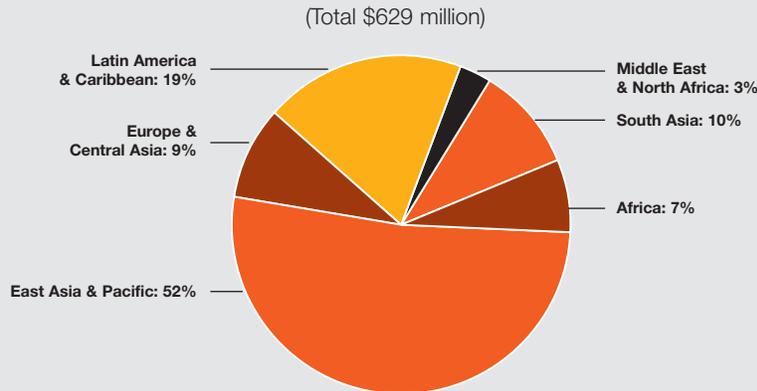
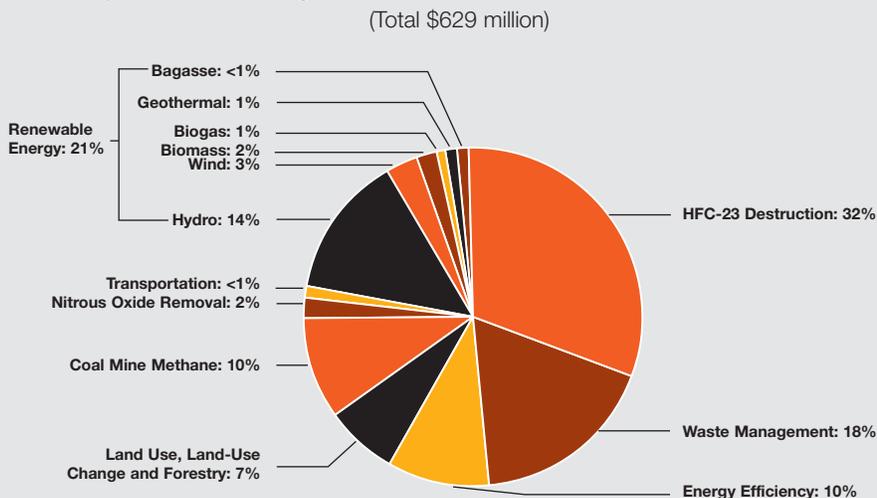


Figure 1C. Technological Distribution of Carbon Finance Unit Portfolio



Geographic diversity is presented in Figure 1B. The geographic distribution across the funds has seen a continued shift towards East Asia, particularly China, over the past year. The East Asia and Pacific region accounts for a total value of \$329.4 million. The Latin America and Caribbean region, while maintaining the lead in number of projects with 35 active CDM projects, accounts for less than half as much in expected contract value with \$120.8 million. The Middle East and North Africa region has seen its first projects enter the portfolio in fiscal year 2005 and Africa, a priority for the Community Development Carbon Fund, has seen an increase in project submissions, although this is not reflected in the distributional breakdown due to East Asia's increased presence. The Europe and Central Asia region continues not to generate JI projects at the level anticipated. The entry into the carbon market of Russia and Ukraine in particular is expected to increase the flow of JI projects in coming years.

Technological diversity is a preference of several of the funds of the Carbon Finance Unit and is exhibited in Figure 1C. In fiscal year 2005, HFC-23 destruction captured a large share (32 percent) of the portfolio pipeline. Waste management and renewable energy continue to be well-represented, accounting for 18 percent and 21 percent of the portfolio respectively. Energy efficiency projects, including cement and other construction material efficiency improvements, district heating, steel waste gas recovery and others, represent a further 10 percent of the portfolio. Forestry projects, mainly through the BioCarbon Fund, account for seven percent of the portfolio.

Creating the Carbon Asset

Carbon Finance Unit methodologies represent some 30 percent of all approved methodologies

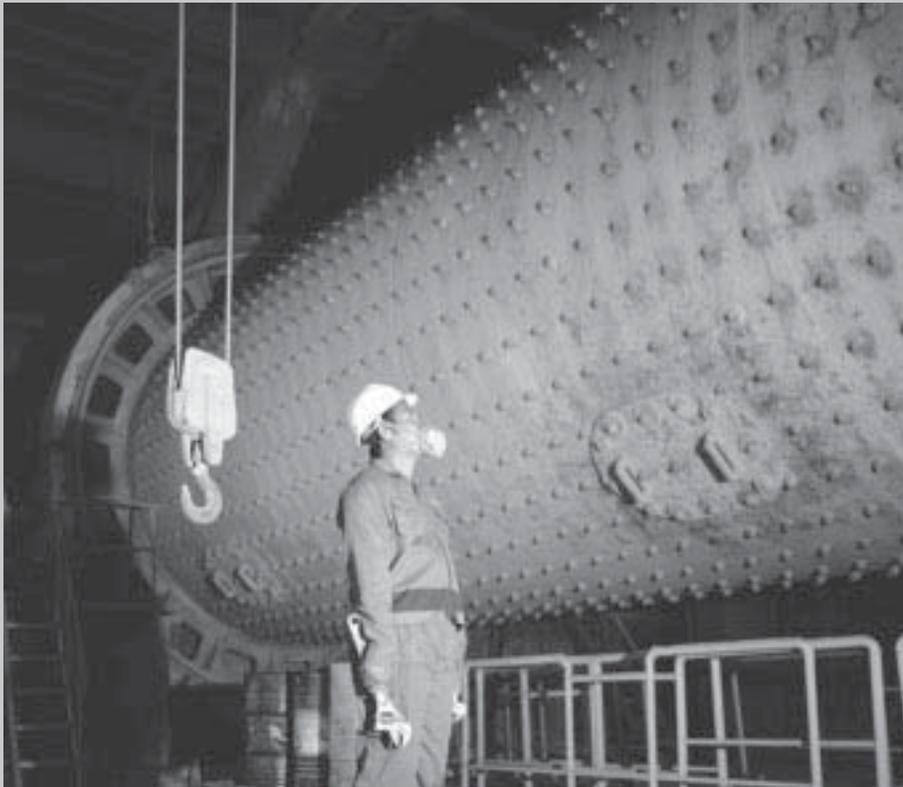
The Carbon Finance Unit (CFU) at the World Bank, is heavily involved in the creation of the **carbon asset**. The term carbon asset refers to the greenhouse gas emission reductions that a project generates when comparing its emissions to emissions that would occur in a baseline scenario, which would prevail without the project. The Kyoto Protocol has established an Executive Board to oversee the CDM, to approve baseline and monitoring methodologies, and to register CDM projects. For Joint Implementation projects, a similar institution will be set up by the first Meeting of the Parties (MOP) to the Kyoto Protocol.

Contributing to New Methodologies

In the past year, several CFU methodologies were approved by the Executive Board. As of September 2005, CFU methodologies represent some 30 percent of all approved methodologies and 17 percent of all submitted new methodologies. The first ever registered project, the Nova Gerar landfill in Brazil (see page 63), was prepared with the assistance of the Carbon Finance Unit. An increasing number of CFU projects are now in the process of being validated and registered.

Despite the approval of methodologies for several important project types, the approval process has made insufficient

progress for some sectors. The CFU has shifted attention to energy efficiency (district heating), fugitive methane capture (coal bed methane) and nitrous oxide (N₂O) projects. The unit also promotes methodologies for fuel switching in cement production, biomass use in heat generation (residential and industrial) and low emission charcoal production. The CFU has proposed a methodology to calculate methane emissions from hydropower reservoirs and is preparing methodologies for waste composting, methane capture from gas pipelines and lower emissions in the transport sector. A CFU methodology is likely to be among the first to be approved for forest projects.



Indonesia: Indocement Sustainable Cement Production

The PCF's Indocement Sustainable Cement Production Project focuses on two activities to reduce carbon dioxide emissions: production of cement with reduced amount of clinker (blended cement) and increased use of alternative fuels (biomass fuels).

As a pioneer within the cement industry in taking advantage of the Clean Development Mechanism of the Kyoto Protocol, Indocement with the PCF had to develop two new methodologies, one for each project component. These methodologies were forwarded to the CDM Executive Board in January 2004.

The alternative fuels methodology was approved by the Executive Board in July 2005 and the blended cement methodology was approved in September 2005.

In the past year, the CFU contributed several notes and policy papers on methodologies and promoted discussion of methodological approaches with *inter alia* project sponsors and developers, designated operational entities, fund participants, the Executive Board and UNFCCC Parties. The CFU proposed several small-scale methodologies, reiterating the importance of flexible bundling rules for small projects and developed case examples of programmatic small-scale CDM projects (Nepal Biogas and India FaL-G Brick Units). A study on program-based CDM activities, which would employ incentive schemes to mitigate emissions, is under way.

Concerns over the CDM Process

There are some concerns over the decision-making process for CDM projects. Some methodologies are taking longer than anticipated for approval. This could contribute to

some projects failing to register before the registration deadline for early projects, which the Parties had set for the end of 2005. If this happens, some projects may lose the credits for emission reductions they had already generated. With the recent steep increase in CDM activity, the capacity of the CDM Executive Board to guide project participants and of the UNFCCC Secretariat to process the increasing workload is being tested.

The CFU will continue to disseminate experience to the Executive Board and other market participants. In the past year, the CFU reported on the status of the emerging regulatory system for the CDM. By now, it has become quite clear that the challenges surrounding the creation of the carbon asset remain formidable.

Although progress has been made by the CDM regulatory body, much needs to be done. In addition, regulatory challenges are shifting in unforeseen ways.

The CFU team is spending considerable resources and time addressing the challenges coming from this shifting and uncertain regulatory environment.

The CFU team has significantly expanded its capacity. While greater methodological certainty should lead to cost reductions, there is still a considerable need for clarifying regulatory uncertainties and achieving greater standardization.



India: FaL-G Brick Units

The FaL-G project aims to replace environmentally damaging burnt clay building bricks in India's construction sector, with fly ash brick which is manufactured in an environmentally sound way. The objective of the proposed project is to catalyze the proliferation of the fly ash brick market by leveraging the FaL-G technology's carbon credits earning potential. The project would facilitate setting up about 300 **micro industrial plants** in different parts of the country by micro enterprises to manufacture fly ash bricks using the FaL-G technology. The volume of emission reductions generated by an individual plant is clearly not sufficient to treat individual plants as separate small-scale CDM projects—the transaction costs largely outweigh the expected CDM benefits. Only by bundling a large number of these tiny plants will it be possible to enable poor entrepreneurs in India to benefit from carbon finance.

The project has been significantly affected by the present bundling rules of the CDM Executive Board. In order to meet the requirements of the Executive Board, the project is now required to be processed as several small-scale bundling projects—increasing the number of project design documents—which leads to increased transaction costs and reduced benefits for the small and tiny enterprises engaged in FaL-G activities.

Transaction Structuring and Risk Management

The Carbon Finance Unit's finance team remains at the cutting edge of innovation in carbon transaction structuring and risk management

Structuring innovative deals. The CFU continued to deliver innovation in carbon finance transactions, developing tailored structures that enable project sponsors to borrow against carbon cash flows while maintaining acceptable terms and appropriate risk allocation. Innovative financial structuring of the emission reductions purchase agreement for the Abanico run-of-river hydropower project in Ecuador, for example, enabled the project sponsor to use its emission reductions purchase agreement with the Netherlands CDM Facility to secure financing from the Inter-American Investment Corporation (IIC) for the country's first privately financed hydroelectric power plant (see Box below). The CFU's innovation in structuring emission reductions

purchase agreement terms is key to this ability to accommodate project sponsors' needs and to facilitate financing for the underlying project.

Streamlining transaction development. The CFU upgraded and streamlined project financial screening and transaction processing, resulting in lower preparation costs and improved quality at entry. It standardized the initial financial due diligence documentation, enabling the team to screen out projects that are unlikely to secure financing and/or achieve sustainability. It developed, disseminated and provided training on standard contractual terms, to streamline project structuring and negotiation.

Ecuador: Abanico Hydro Plant

Abanico, a 30 megawatt run-of-river hydro plant in Ecuador, sought financing from the Inter-American Investment Corporation (IIC) in 2002. The project had strong fundamentals, but power purchase agreements fell short of IIC's investment criteria, which required over 50 percent of sales to be under contract and assigned to the lender to secure the loan's debt service. With the involvement of the World Bank's Carbon Finance Unit in 2004, IIC agreed to consider the proceeds of Hydroabanico's certified emission reductions sales in its investment analysis, allowing the borrower to comply with the IIC's covenant.





Securing underlying financing.

Carbon finance has continued to provide measurable benefits to investors and stakeholders in climate-friendly projects. However, the true catalytic effect has not fully materialized. As a result, the CFU's finance team continues to focus on how to use carbon finance as a catalyst for securing underlying project finance. The CFU's finance team has led efforts to promote investment in climate-friendly projects in developing and transition countries. These efforts, funded largely through trust funds such as CF-Assist and the Public-Private Infrastructure Advisory Facility, a multi-donor technical assistance facility managed by the World Bank, were leveraged by the World Bank Group's broader efforts to combat climate change and promote

renewable energy and energy efficiency. The team worked with multi-lateral, bi-lateral and private financial institutions to raise awareness of the impact of carbon finance on climate-friendly investment, and to encourage lending against carbon revenue streams, by convening and/or participating in numerous conferences, training and dissemination events such as the World Renewable Energy Congress, United Nations Environment Program (UNEP) Sustainable Energy Finance, and Hydropower 2005. These efforts are bearing fruit for the CFU as additional financial institutions are now more aware of the carbon finance risk profile and are actively engaged in developing products to lend against the cash flows generated by the CFU's emission reductions purchase agreements.

"The IIC participation in the capital structure of Hidroabánico with a loan of \$7 million is a recognition of the important contribution of the project to generate clean energy in Ecuador. The intervention of the World Bank as trustee of the NCDMF as purchaser of the emission rights of the project, and the corresponding revenue resulting from the emission reductions purchase agreement lowered the risk level of the project and had an impact on the financial costs of the project."

*Jacques Rogozinski,
General Manager
Inter-American Investment
Corporation, IIC*

Innovation in portfolio risk management.

The team introduced innovations in risk management, articulated in strategies for PCF, CDCF and the Danish Carbon Fund. These strategies provide the framework for risk management in project selection and screening, transaction structuring and pricing, portfolio management and insurance.



The Carbon Finance Unit of the World Bank experienced significant growth...effectively doubling the business from \$415 million in funding to about \$915 million.

Financial Performance

Carbon Funds Financial Performance

In fiscal year 2005, the Carbon Finance Unit of the World Bank experienced significant growth. There were three new carbon funds launched—the Netherlands European Carbon Facility, the Danish Carbon Fund and the Spanish Carbon Fund. These three funds together added more than \$280 million in additional funding for operations and purchases of greenhouse gas emission reductions. In January 2005 the CDCF dramatically increased its capitalization to \$128.6 million and by the end of August the BioCF also expanded to \$53.8 million. This expansion coupled with increased funding of other existing funds such as the NCDMF and the Italian Carbon Fund effectively more than doubled the Carbon Finance Unit's business from \$415 million in funding to about \$915 million.

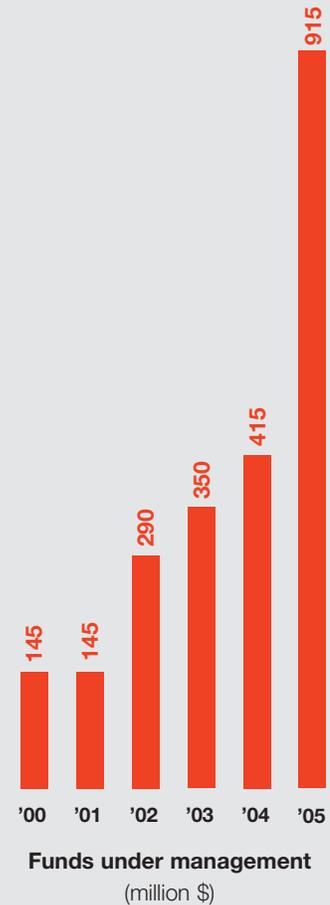
This dramatic increase has been welcomed by the community of sponsors and client countries that have long been hoping for a broader carbon market and more demand for projects and emission reductions. At the same time the new funding increased operational pressure on the World Bank and the Carbon Finance Unit in particular to develop a broad project pipeline that would subsequently deliver the contract volume required by participants.

The operational challenge of dramatic business growth has been most pronounced in two particular aspects. One is the enhancement of the matrix environment, where teams focus on

specific countries and regions to optimize travel and leverage local expertise, while preserving the financial integrity of each fund by allocating individual project costs to the fund pipeline where the project belongs. This complexity is further elevated by the use of staff from multiple organizational units in the Bank. In the past, with two or three funds this has not been a major challenge, but with eight funds this leads to a complex matrix of labor and funding that has to be maintained.

Two, the business operation had to be elevated from a model where individual attention to projects had been possible and for reasons of learning quite welcome, to an environment where volumes of projects are high and processes must carry projects forward with little 'handholding'. This second challenge has been particularly difficult to tackle as the increased work-program has led to a large number of staff and units that need to be informed of changing processes. Additionally, challenges in the area of human resources such as the speed of hiring and management transitions have put further strain on the Carbon Finance Unit.

In line with the growth in overall funding, administrative and project preparation resources have expanded correspondingly. Annual administrative resources support management, administrative, legal and financial services for individual funds as well as allow interactions with participants.



Although fragmented administrative budgets are not optimal for the unit's operation, the resources have been adequate and the Bank has been able to adjust to the larger number of funds and manage costs within respective administrative budgets. Project resources fund the development of project pipeline and project supervision. The funding for project preparation mirrors the high demand for project delivery. At this point the World Bank is not constrained in delivery by limited project resources, but rather by developing market conditions and by its ability to staff up to a higher operational level.

Capacity Building

CF-Assist continues to benefit from the knowledge gained from the Bank's experience as a trustee of carbon funds

As the carbon business grows internationally, the World Bank continues to play a key role to enable the full engagement of developing countries and economies in transition in the carbon market, and to contribute to comprehensive upstream assistance to broaden the carbon market.

A One-Window Approach

The majority of the Bank's carbon finance capacity building activities have been consolidated within CF-Assist, a one-window approach to the capacity building and technical assistance program established by the World Bank in fiscal year 2004. CF-Assist is aimed at assisting interested countries in the development of institutions and local expertise that will lead to the implementation of

projects under the Clean Development Mechanism or Joint Implementation, or to access International Emissions Trading of the Kyoto Protocol. The program incorporates lessons learned from the National Strategies Studies Program, and places the other 'Plus' capacity building efforts of PCF, CDCF, and BioCF under a common program framework.

Learning by Doing

CF-Assist continues to benefit from the knowledge gained from the Bank's experience as a trustee of carbon funds, and through ongoing dialogue with members of the Bank's Host Country Committee on carbon finance. Building on the Bank's 'learning by doing' approach it has taken with its carbon finance opera-

tions, the premise of CF-Assist is that the best way to build capacity is by completing projects in priority areas, building required government understanding and approval capabilities, facilitating initial project identification and preparation activities, building local expertise and providing targeted analysis to overcome market and information barriers.

Supporting Participating Countries

Designed to be modular in its delivery approach and information content, CF-Assist typically takes a 3-Phase approach in countries, with measurable indicators to trigger progress to the subsequent phase. CF-Assist provides support to participating countries by supporting upstream policy and analytical activities that

Carbon Expo 2005

The second Carbon Expo, a unique business platform for bringing together buyers and sellers in the emerging carbon market, was held in Cologne,

Germany, from May 11 to 13, 2005, in cooperation with IETA and Koelnmesse, the local trade event host. The Expo included 1,500 participants (including

more than 150 journalists) from 87 countries (a 50 percent increase from the previous year). There were 134 exhibitors (a 168 percent increase from the previous year) from 50 countries presenting their methods and technologies for reducing carbon emissions and promoting trading in emissions rights and certificates. At least 100 deals for the purchase of carbon emission reductions from developing countries and economies in transition were reached or advanced during the event. There was record participation from developing countries: 29 high-level representatives from developing countries participated in the carbon trade fair.



cannot be adequately addressed solely through project-based activity. CF-Assist also helps transition economies by building institutional capacity for developing and implementing projects eligible under Joint Implementation and designing effective Green Investment Schemes—which would then use the proceeds of the sale of assigned amount units pursuant to International Emissions Trading in a transparent manner to support climate-friendly activities that result in measurable emission reductions. CF-Assist support includes grants for capacity building work, analysis to establish sector baselines, consultant services to identify and advance projects, development of generic project design documents, building expertise of local intermediaries and engaging the financial sector to replicate project activity.

CF-Assist Financial Performance

As of September 2005, CF-Assist has \$10.2 million under management, and contributions are expected to reach \$15.5 million within the fiscal year (ending on June 30, 2006).

Direct Donor Contributions:

- Danish Carbon Fund: \$425,000
- Government of Spain: €5 million over five years
- PCF *plus*: \$300,000 per year
- CDCF *plus*/UNEP/UNF: \$1 million

Japan PHRD Grants Climate Change Window:

- approximately \$500,000 per country

The Japan Policy and Human Resources Development Fund (PHRD) is operated in partnership between the World Bank and the Government of Japan. It opened a Climate Change Window for projects

in 2004, and currently is supporting activities in seven countries: Brazil, Bolivia, Gambia, Kenya, Senegal, South Africa and Uganda.

CF-Assist Progress as of September 2005

- CF-Assist programs have been initiated in 16 countries, of which nine are in Africa. Sub-Saharan and Northern Africa are key targets for CF-Assist to ensure that the continent is not overlooked by the carbon market and that sustainable development benefits of the CDM are equitably distributed.
- A successful Carbon Expo was delivered in May 2005 in partnership with IETA.
- Training workshops were held in Zambia and Cameroon (July 2005), and Georgia, Zambia and Mali (September 2005).

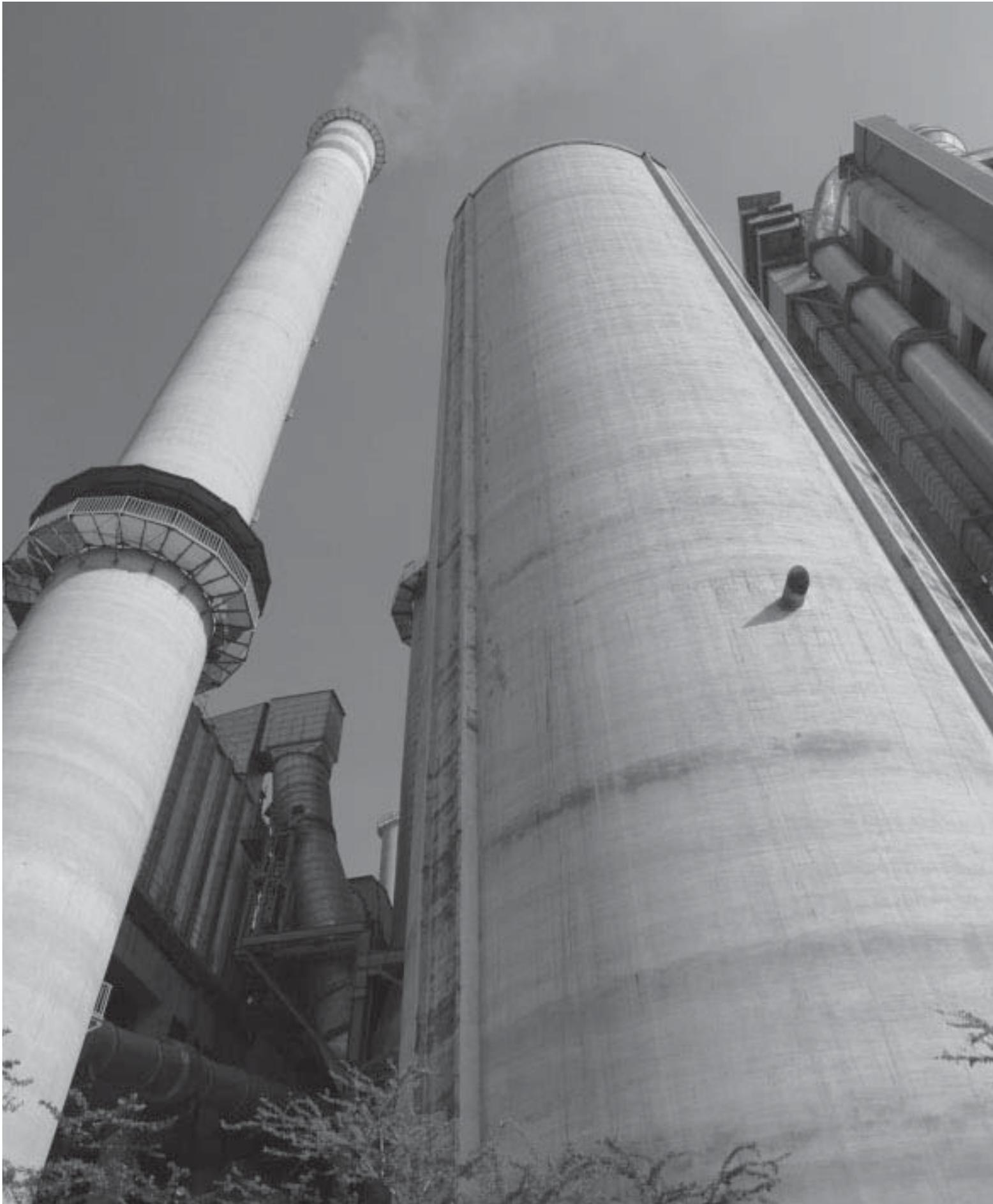
Learning the Carbon Language in Lusaka

With the goal of assisting the Government of Zambia and different private and civil society actors to build their capacity for implementing CDM projects, the first of a series of training workshops was held in Lusaka on September 22 and 23, 2005. Developers and local banks interested in learning how carbon finance could help realize projects in the areas of bagasse cogeneration, industrial energy efficiency, biofuel production and off-grid hydroelectric power stations benefited from a two-day course under the “CF-SEA” partnership between the CDCF, UNEP, and UNEP-Risoe Centre. Deputy Minister for Tourism, Environment and Natural Resources

Ndeson Nzowa opened the event, announcing the Government of Zambia’s intention to ratify the Kyoto Protocol “*as soon as possible*,” and commending the World Bank and the

CDCF for spearheading the CF-SEA program, which “*would contribute to the achievement of sustainable development and reduce poverty in Africa.*”





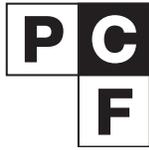
Report on Business: The Work of the Carbon Funds

29	Prototype Carbon Fund
39	Community Development Carbon Fund
51	BioCarbon Fund
61	The Netherlands CDM and JI Facilities
67	Italian Carbon Fund
71	Danish Carbon Fund
75	Spanish Carbon Fund



Hungary Pannongreen Project: coal-fired boilers to biomass

Prototype Carbon Fund



The mission of the Prototype Carbon Fund (PCF) is to pioneer the market for project-based greenhouse gas emission reductions within the framework of the Kyoto Protocol and to contribute to sustainable development.





Letter from the Chair of the PCF Participants' Committee

Undoubtedly, 2005 has been a brilliant year for climate change policies. It started with the nascent European Union Emissions Trading Scheme on the 1st of January, immediately followed by the entry into force of the Kyoto Protocol. It has seen the first-ever registered CDM projects, the first designated operational entities accredited, the first real tons of greenhouse gas emission reductions exchanged against real cash.

The PCF has also recorded several breakthroughs in 2005, the most important being in my view the realization of projects in China. A lot of commitment has been devoted to a better understanding of the market and a deeper knowledge of the mutual interests at stake. It is especially rewarding to see results materializing after so much effort.

Now we are at the eve of closing the PCF portfolio. We can look with satisfaction at the achievements we have accomplished since year 2000, but this does not distract us from looking at the progress that remains to be made. Quite frankly, the increase in interest from potential buyers has not been enough to significantly increase the project pipeline. This is certainly a tricky situation, because when higher prices cannot trigger higher production, no market is likely to function properly.

Annex I governments, host countries, project sponsors, documentation developers, potential buyers, brokers and traders are well aware of the importance of this problem. But not much can be done in a situation that has such a complex set of rules and processes.

The irony is that when facing this high level of uncertainty, project investors and sponsors have a natural tendency to compensate by reducing other risks, becoming increasingly more prudent where more boldness would be needed. If we want to move forward, a lot of pragmatism will be needed. Can we have the same (blind) courage as for the allowance market that was not designed to be perfectly 'perfect' from its conception? The success of this first Kyoto period in all its facets is a necessary condition to a serious commitment after 2012, which is itself a necessary condition to adequately respond to the climate change challenge in the longer term.

2005 also saw Ken Newcombe leaving as manager of the Bank's carbon finance initiatives, to take on other challenges, and I can't let him go without expressing the PCF participants' gratitude and admiration for his vision and his quiet and stubborn persistence to make it happen—which made his success, and ours.

Jean Claude Steffens
 Chair
 PCF Participants' Committee

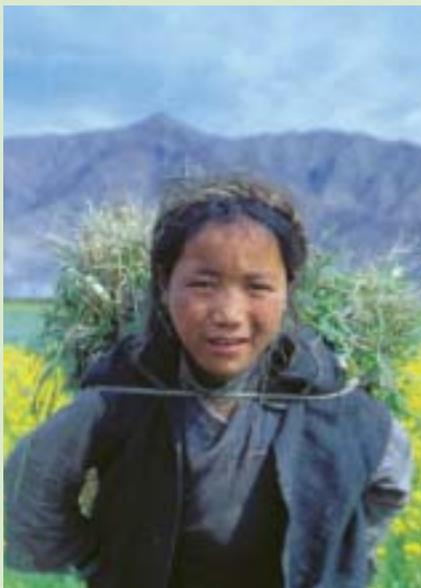
The Prototype Carbon Fund: A Global Pioneer



Operational since April 2000 as the first carbon fund to be established globally, the Prototype Carbon Fund is an innovative public/private partnership aimed at mitigating climate change. The PCF has been pioneering the development of project-based mechanisms to generate potential credits for reductions in emissions of greenhouse gases. The PCF uses funds in projects designed to produce high quality greenhouse gas emission reductions, which PCF participants may be able to use in compliance with their expected greenhouse gas reduction obligations.

Six governments and 17 companies, all from industrialized countries, have contributed \$180 million in funds to the PCF, which currently has 28 projects under preparation covering a variety of technologies including renewable energy, energy efficiency, solid waste management and industrial gas emissions abatement.

The 26 megawatt Chile Chacabuquito run-of-river hydroelectric project, commissioned on July 2, 2002, was the first PCF project to generate emission reductions. The PCF is expected to have signed emission reductions purchase agreements for most of its projects by December 31, 2005. About one-third of these will be submitted for registration by the CDM Executive Board by that same date.



China: Huitengxile Wind Farm

The Huitengxile wind farm is located on the Huitengxile prairie near Wulanchabu city of the Inner Mongolia Autonomous Region of the People's Republic of China. The area has rich wind resources with 1,000 megawatts of wind power potential for development.

The project sponsor, Inner Mongolia North Long Yuan Wind Power Company, will undertake the design, procurement, construction and operation of a 100 megawatt wind farm. Selected under international competitive bidding, around 50 to 100 wind turbines of one to two megawatt capacity will be installed to provide 245 gigawatt hours of annual clean electricity to the North China Power Grid. Currently the North China Power Grid is dominated by fossil-fuel based power plants. The proposed wind farm will displace an equal amount of fossil-fuel based power and thus reduce over 220,000 tons of human caused greenhouse gas emissions every year.

The PCF plans to purchase one million tons of emission reductions from the project.

Who is the PCF?



GOVERNMENT OF CANADA

The Canadian International Development Agency and Canada's Clean Development Mechanism and Joint Implementation Office, housed within Foreign Affairs Canada, have represented Canada in the PCF since its inception in 2000. Canada has been rewarded from participation in the PCF with a wealth of information on developing and implementing greenhouse gas emission reduction projects.*



GOVERNMENT OF FINLAND

The Finnish Government regards the Kyoto Protocol as a landmark agreement. JI and CDM are essential parts in the implementation of the Protocol. Finland has established a Pilot Programme to create the capacity to utilize JI and CDM. The official role of the mechanisms will be defined in Finland's forthcoming energy and climate change strategy. The PCF accounts for almost half of the program's €20 million budget. The rest will be used for bilateral activities and another carbon fund investment. The PCF has played a major role in developing the global carbon market and in capacity building.*



JAPAN BANK FOR INTERNATIONAL COOPERATION

The Japan Bank for International Cooperation (JBIC) is a policy-based financing institution responsible for conducting Japan's external economic policy and economic cooperation. JBIC highly commends the PCF for accumulating know-how on CDM/JI project formulation and intends to utilize such know-how to provide assistance to projects that contribute to sustainable development and climate change mitigation in developing countries.*



GOVERNMENT OF THE NETHERLANDS

The Dutch government is very committed to tackling the problem of global warming. The Ministry of Economic Affairs, the representative of the Dutch government in the PCF, finds it of utmost importance that carbon dioxide emissions now have a price on the international market. It allows the market mechanisms to tackle an environmental problem in a cost-effective way. The entering into force of the Kyoto Protocol and the start of the European Union Emissions Trading Scheme from January 1, 2005 had a very positive effect to this end. The European Union's linking directive will provide an incentive to the development of CDM and JI.*



GOVERNMENT OF NORWAY

In 1996, following the creation of the pilot phase on Activities Implemented Jointly (AIJ) at the first Conference of the Parties to the UNFCCC, i.e. COP-1 in Berlin, Norway supported the creation of an AIJ program at the World Bank. The program emphasized learning, client-country engagement, methodological development, private sector participation and the identification and selection of projects. These experiences directly influenced the development of the carbon funds in the World Bank, and the participation of Norway in the PCF.*



GOVERNMENT OF SWEDEN

Sweden strives to be a forerunner in global cooperation to curb climate change. Sweden has made great efforts to ensure that the Kyoto Mechanisms evolve into efficient, reliable and fair tools for international cooperation in the field of climate change mitigation. Sweden joined the PCF with a view to influence the policy of the fund towards high-quality projects, interesting methodological challenges, and a just geographical distribution of projects. Our

conviction that rules and guidelines must reflect high standards of environmental integrity, as well as practical experience, is also reflected in our participation in the PCF.*



BP P.L.C.

BP is one of the world's largest energy companies. BP aims to demonstrate environmental leadership and work with others to support and develop climate change policy, mitigating technologies and flexible mechanisms. The PCF has been outstanding in developing carbon markets, and communicating its market-leading knowledge. Participation has provided BP with valuable experience which aligns with BP's goals in this area.*



CHUBU ELECTRIC POWER CO., INC., Chubu Electric Power Co. Inc. (Chubu Electric) is sharing environmental consciousness and coordinating not only with its partners in Japan but also with those overseas—such as investing in a biomass project in Thailand, and in the Japan Greenhouse Gas Reduction Fund (JGRF), a fund to improve energy efficiency in Asian countries, among other initiatives. Chubu Electric joined the PCF at its founding and has committed \$10 million—among the largest contributions from a private sector participant.*



THE CHUGOKU ELECTRIC POWER CO., INC. The Chugoku Electric Power Co., Inc. was established in 1951 and supplies electricity to the Chugoku region in western Japan. To prevent global warming, the company is taking various measures including promotion of nuclear power generation and expanding the use of renewable energy. Participation in the PCF is one of the company's measures to address the global

warming issue and to contribute to sustainable development.*

Deutsche Bank

DEUTSCHE BANK

Deutsche Bank, one of the world's largest financial services groups, recognizes the fundamental importance of the sustainability oriented implications of climate change. The company strongly endorses the approach and methodology undertaken by the PCF. Deutsche Bank's ability to meet representatives of host governments, industry and the finance sector has been particularly welcome in the framework of the ongoing process of implementing the concept of the Prototype Carbon Fund.*

Electrabel

ELECTRABEL

Electrabel is active in the generation, trading and supply of electricity in 10 countries of the European Union. The company recognized the importance of climate policy very early, and the investment in the Prototype Carbon Fund was considered a unique opportunity to learn about carbon friendly projects. This knowledge has contributed to the development of several CDM projects by other branches of SUEZ, which Electrabel is part of.*

Fortum

FORTUM

Fortum is a leading energy company in the Nordic countries and the other parts of the Baltic Rim. The company has systematically developed its business towards low-carbon production and better management of greenhouse gases. Part of that, besides Fortum's own investments, is the utilization of the Kyoto Mechanisms. In this respect the PCF has been Fortum's flagship.*

Gaz de France

GAZ DE FRANCE

With 13 million customers and 7.3 billion kilowatt hours of natural gas carried, Gaz de France is one of the leading European gas groups and is active throughout the world. Gaz de France is actively looking at sustainable development issues related to energy and climate change. Started early on, its many actions currently go from major research programs to voluntary reduction of its own emissions. Participation in the PCF is part of this effort.*

KYUSHU ELECTRIC POWER CO., INC.

KYUSHU ELECTRIC POWER CO., INC.

Kyushu Electric Power Company is one of the electric utility companies in Japan, and supplies electricity to the Kyushu region in southwestern Japan. Kyushu Electric is endeavoring to utilize its accumulated know-how on the reduction of greenhouse gases in activities to prevent global warming. As a part of such efforts, the company participated in the PCF upon its establishment in 2000.*

Mitsubishi Corporation

MITSUBISHI CORPORATION

Mitsubishi Corporation has been active, not only in the trading area, but also in development of commercial opportunities, from product marketing to distribution, project coordination, sourcing of raw materials, capital investment and development of sales channels. Mitsubishi Corporation's participation in the PCF contributes to the establishment of risk mitigation systems for those who are potentially liable for the climate change problem.*

MITSUI & CO., LTD.

MITSUI & CO., LTD.

Mitsui is one of Japan's leading general trading companies. Mitsui is undertaking such commerce-oriented approaches as compliance with international tradable emissions programs, participation in brokerage of carbon credits through investment in the broker CO₂e.com, LLC, and promotion of emission reductions projects, afforestation business and alternative energy sources. Mitsui's participation in the PCF provides knowledge and experience to promote the Kyoto Mechanisms, which contribute to fostering a global carbon market, climate-change mitigation and sustainable development.*



HYDRO

NORSK HYDRO

Norsk Hydro manufactures aluminum and petrochemicals and has activities in the oil, gas and electricity sectors. The group has businesses in approximately 40 countries. Norsk Hydro's investment in the PCF has been an important element in the company's build-up of knowledge and position, as it prepares for the emissions trading system within the European Union.*



RABOBANK

The Rabobank Group is the world's leading bank in the food and agri-business sectors with offices in 34 countries. Sustainable resource management and effective climate change policies are key to the business of Rabobank clients and hence to Rabobank's long-term interest. Participation in the PCF was just a first step into the emerging carbon market. Today, Rabobank offers a suite of products and services to help its clients interact effectively with environmental asset markets.*

Who is the PCF? *continued*



RWE

RWE's core business centers on the generation and sale of energy and water services. Its markets are Germany, the United Kingdom, Central and Eastern Europe and the American water sector. RWE joined the PCF as part of its climate protection strategy and in order to gain experience with project-based generation of carbon credits. Participating in the PCF gave RWE the opportunity to better understand the emerging global carbon market.*



SHIKOKU ELECTRIC POWER CO., INC. Shikoku Electric Power Co., Inc. (YON-DEN), which is one of 10 electric utilities in Japan, provides high-quality, low cost, stable electricity service for more than four million people of Shikoku region. As mitigating climate change is one of Yonden's major corporate concerns, the company expects the PCF to economically create high-quality greenhouse gas emission reduction credits while it contributes to sustainable development in the future.*



STATOIL ASA

Statoil is an integrated oil and gas company, headquartered in Norway, with almost 24,000 employees and activities in 29 countries. The company is one of the world's most environmentally-efficient producers and transporters of oil and gas. Statoil participated in the PCF to help kick-start the implementation of the Kyoto Mechanisms and to enable Statoil to meet future obligations for greenhouse gas emission limitations cost-effectively.*



TOHOKU ELECTRIC POWER COMPANY INCORPORATED

Tohoku Electric Power Company now supplies electricity to about 7.7 million customers in its service areas of the north-eastern region of Japan's main island. Involvement in the PCF gives the company a great opportunity to acquire know-how in implementing the Kyoto Mechanisms, and also a chance to demonstrate its strong capability to address climate change issues all over the world.*



TOKYO ELECTRIC POWER COMPANY INC.

Tokyo Electric Power Company Inc., (TEPCO) supplies electricity to the Tokyo Metropolitan area and has been very active in addressing climate change issues. TEPCO makes every effort to meet its voluntary target of reducing carbon dioxide emissions by enhancing the use of nuclear facilities and supporting high efficiency appliances. In addition to domestic measures, with the experience gained through its PCF participation, TEPCO has been involved in CDM/JI activities, as supplemental actions.*

* The information in the participants' writeups in this annual report was provided by the participants of the various carbon funds managed by the World Bank, and with the exception of minor editorial changes, is reproduced in the same form in which it was provided. The views and opinions expressed in the participants' writeups are those of the participants providing the information, and do not represent the views and opinions of the World Bank or the Trustee. Neither the World Bank, nor the Trustee take any responsibility for the information contained, or the representations made in the participants' writeups.

Bulgaria: Svilosa Biomass

The Bulgaria Svilosa Biomass project was commissioned in February 2004. Initial problems with the roof of the furnace of the 11 megawatt biomass-fired heat-only boiler house were fixed and the project started generating emission reductions in May 2004. The performance test conducted in February established a boiler efficiency of 77.7 percent. From May until December 2004 the project generated 18,935 tons of carbon dioxide equivalent (tCO₂e) of emission reductions, an amount which was verified by the operational entity Japan Consulting Institute. The PCF made its first payment to Svilosa AD, the project entity, within 60 days of the report delivery. The project is now operating at full capacity. Because the stockpiles of wood waste burned down in the summer of 2003, the project will not be able to claim credits from most methane emission reductions, which will reduce the project to 500,000 tons of carbon dioxide equivalent of emission reductions by 2012. Nevertheless, even with the reduced emission reductions, this project is still a good example of energy cost savings, local pollution abatement and climate change mitigation.



Biomass Boiler

Country/Project Name	Project Description	PCF Contract ERs (tCO _{2e})	Total Project ERs (tCO _{2e})
Emission Reductions Purchase Agreements (ERPA's) Signed			
Brazil: Plantar Sequestration and Biomass Use	Charcoal produced from sustainably harvested plantation replacing coke for pig iron manufacture	1,514,286	10,251,564
Bulgaria: District Heating	District heating system upgrades for the cities of Sofia and Pernik	1,241,000	1,539,715
Bulgaria: Svilosa Biomass	11 megawatt biomass-based boiler to utilize wood waste produced at the Svilosa pulp and cellulose plant to replace coal	450,000	500,000
Chile: Chacabuquito Hydro	26 megawatt run-of-river hydro to replace coal or gas in the grid	1,000,000	2,752,000
China: Jincheng Coal Mine Methane	Capture of coal mine methane (CMM) associated with coal mining operation and utilization of CMM for power generation by installing steam turbine-gas engine combined cycling power plant of 120 megawatts	4,500,000	15,735,530
China: Xiaogushan Hydropower	98 megawatt peaking run-of-river hydroelectric plant located on the Heihe River in the Sunan Yugur	3,000,000	6,540,000
Colombia: Jepirachi Wind Farm	19.5 megawatt wind farm in the northern part of Colombia to displace a mix of coal- and gas-based power generation	800,000	1,168,000
Costa Rica: Cote Hydro	6.3 megawatt hydro to replace thermal power generation	172,110	215,138
Czech Republic: Czech Energy Agency (CEA) Energy Efficiency (Umbrella)	Energy efficiency measures and renewables through the Czech Energy Agency (CEA)	500,000	500,000
Guatemala: El Canada Hydro	43 megawatt peaking run-of-river hydroelectric plant in the west coast of Guatemala to displace thermal power plants	2,000,000	2,883,600
Hungary: Pannongreen Pécs Fuel Conversion Project	Conversion of Pécs Power plant's existing coal-fired boilers to biomass	1,193,000	2,645,500
Indonesia: Indocement Sustainable Cement Production	Energy efficiency measures in Indocement plants by reducing clinker contents in the produced cement, burning alternative fuels for clinker formation, utilizing heat power generation in three locations at Citeureup, Cirebon and Tarjun	*	11,313,017
Latvia: Liepaja Solid Waste Management	Methane capture from waste management and carbon dioxide reduction from power generation	387,933	864,600
Mexico: Umbrella Waste Management Project	Seven bundled waste-to-energy projects with 21 megawatt capacity	2,000,000	3,513,000
Moldova: Soil Conservation	Afforestation of 14,494 hectares of degraded and eroded state-owned and communal agricultural lands throughout Moldova	1,300,000	3,215,296
Philippines: NorthWind Bangui Bay Project—Phase I	25 megawatt capacity wind farm on a strip of land on the foreshore of Bangui Bay in Ilocos Norte	356,000	400,000
Romania: Afforestation	Afforestation of 6,033 hectares of degraded public land in seven counties	854,985	1,360,183
South Africa: Durban Municipal Solid Waste	10 megawatt gas-fired generator to produce electricity from landfill-collected methane	3,800,000	8,780,034
Uganda: West Nile Electrification Project	1.5 and 5.1 megawatt hydro to replace a number of diesel generator sets in West Nile region	*	500,000

*Project sponsor does not wish to disclose project information.



Country/Project Name	Project Description	PCF Contract ERs (tCO ₂ e)	Total Project ERs (tCO ₂ e)
Projects Under Negotiation			
Brazil: Alta Mogiana Bagasse Cogeneration	Increase efficiency in manufacturing processes and install new facilities to generate surplus electricity to be commercialized	110,000	130,000
Brazil: Lages Cogen Facility	Installed capacity of 28 megawatt electricity plus 25 tons per hour of steam, fueled by wood waste from the sawmill industries of the region	750,000	2,415,000
Chile: Sustainable Waste Management in Santiago	Build and operate a composting plant for biodegradable waste and sludge from water treatment plants	2,000,000	2,609,280
China: HFC-23 Destruction	Destruction of HFC-23 produced as a byproduct of HCFC-22 production in China	5,000,000	98,000,000
China: Huitengxile Wind Farm	Construct and operate a 100 megawatt wind farm in Inner Mongolia in China. The project will consist of around 50 to 100 wind turbines of one to two megawatt capacity with a net annual generation of 245 gigawatt hours per year	1,000,000	4,207,500
India: Municipal Solid Wastes	5.6 megawatt electricity and 75 tons per day of organic waste from municipal solid wastes (MSW) in Lucknow in Uttar Pradesh	1,000,000	1,898,649
India: Nitrous Oxide Removal	Removal of a minimum of 80 percent of the nitrous oxide produced as a side reaction in the production of nitric acid in the facilities of Rashtriya Chemicals & Fertilizers Ltd. and National Fertilizers Limited	3,000,000	6,000,000
Iran: Tehran Landfill Gas Capture	Capture and flare landfill gas at the Kahrizak landfill outside of Tehran City; carbon finance will be used to carry out site remediation in an environmentally sound manner	4,000,000	5,023,767
Poland: Stargard Geothermal	District heating system to utilize geothermal energy to replace coal in the city of Stargard	240,000	300,000

PCF Portfolio Development

At the end of its fifth year of operation, the PCF has reviewed more than 490 project proposals (see Figure 2A). Of these, 63 have been presented to the PCF Participants' Committee and have received its approval. The process of identification of the projects for the placement phase was completed in June 2005. The final portfolio of the PCF is expected to include 28 projects. The PCF has signed emission reductions purchase

agreements (ERPAs) with 20 projects (one of them has subsequently been terminated) with a total value of \$117.2 million (\$114.3 million after termination of the one ERPA) and is now negotiating another nine projects with a total value of \$84.7 million. The PCF is expected to have signed emission reductions purchase agreements for most of its projects by December 31, 2005.

Figure 2A. Status of Project Development in the PCF

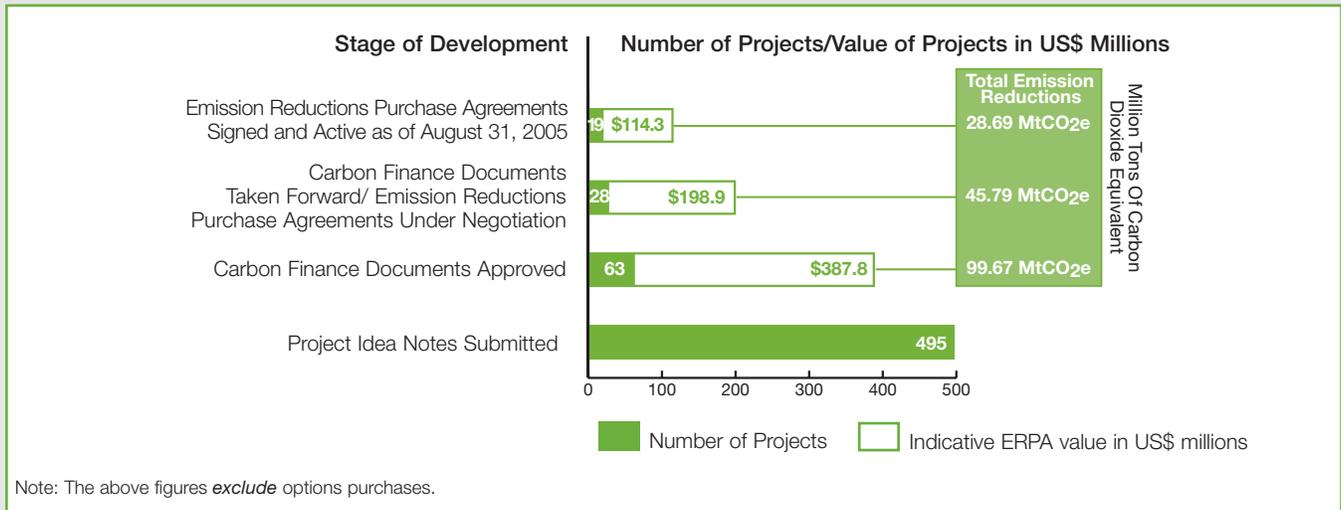
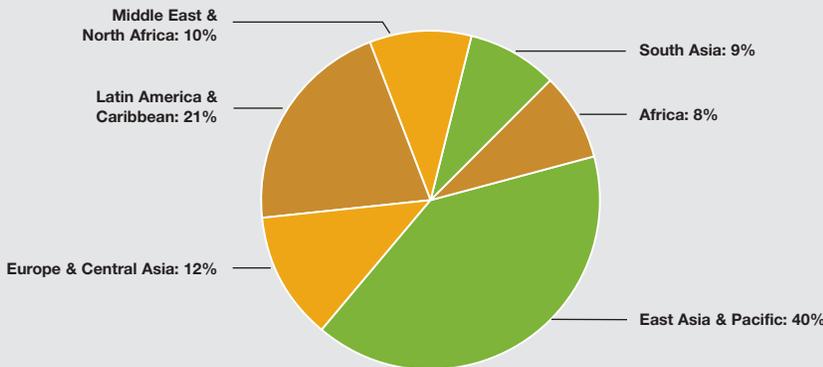
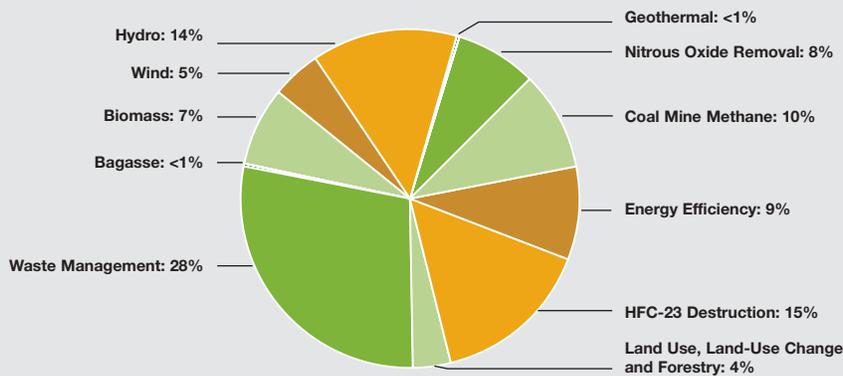


Figure 2B. Geographic Distribution of PCF Portfolio (Total \$198.9 Million)



Geographic diversity of the projects of the final portfolio is presented in Figure 2B. Consistent with the evolution from previous years, the East Asia and Pacific pipeline has become stronger. It will dominate the portfolio with the Latin America and Caribbean pipeline, while the distribution of projects among the other regions is more balanced.

Figure 2C. Technological Distribution of PCF Portfolio (Total \$198.9 Million)



Technological diversity has again been increased with the integration of the India Nitrous Oxide Removal Project and the China HFC-23 Destruction Project. These two projects use new technologies to reduce emissions during the industrial process. As intended, renewable energy and waste management technologies will still dominate the final portfolio pipeline by representing 54 percent of total emission reduction purchases.

In fiscal year 2005, the PCF closed its pipeline to new projects. The placement phase will conclude upon signing of emission reductions purchase agreements for the available balance of emission reductions purchases. The PCF is expected to have signed emission reductions purchase agreements for most of its projects by December 31, 2005. The fund management unit will now focus on project implementation and portfolio management.

The PCF continued its effort in fiscal year 2005 to keep its operating cash flow needs at low levels. As a result the PCF drew funds from participants at a lower rate than originally envisaged. The original drawdown schedule outlined in the information memorandum assumed that by fiscal year 2005 about 63 percent of contributions would have been drawn. The current level of funds drawn is at 16 percent of total contributions. In fiscal year 2006 the annual drawdown will represent about seven percent and will bring the level of contribution to about 23 percent.

In fiscal year 2005 the fund management unit operated above its approved budget by \$43,000 due to higher than expected legal costs. The table below shows the summary of administrative resources over the life of the fund. Investment income earned by the fund in fiscal year 2005 represented \$105,000.

Year	Budget (US\$ in thousands)	Actual (US\$ in thousands)
FY00	350	286
FY01	1,728	1,291
FY02	1,692	1,661
FY03	1,904	1,467
FY04	1,804	1,820
FY05	1,461	1,504
Total use of administrative resources	8,939	8,029

Moldova: Soil Conservation

The Moldova Soil Conservation Project has now planted more than the 14,494 hectares planned under the emission reductions purchase agreement. The PCF made its first payment to Moldsilva in 2004. Moldsilva is Moldova's national forest agency.

The project also carries one of the very first baseline methodologies expected to be approved by the CDM Executive Board.

Afforestation of degraded land can help connect forest fragments: a belt of 62 hectares of mixed plantations extends from the foreground of the

photo, around an existing natural forest, all the way to another forest

fragment in the background to the left of the photo.



Community Development Carbon Fund



The Community Development Carbon Fund (CDCF) will purchase greenhouse gas emission reductions from projects that contribute to poverty reduction and help to improve the quality of life of local communities in the least developed countries as well as poor areas of developing countries.





Letter from the Outgoing Chair of the CDCF Participants' Committee

The Community Development Carbon Fund remains firm in its commitment to become a reference point in the global fight against climate change, particularly in the development and implementation of the flexible mechanisms of the Kyoto Protocol; in the achievement of sustainable development, especially in the most disadvantaged countries; and finally in the social and economic assistance and support to disadvantaged communities.

Through the CDCF, governments and companies, together with the World Bank, are able to mobilize resources and direct their actions towards obtaining reductions in greenhouse gas emissions, which can be used by companies and administrations to fulfill their reduction commitments. On the other hand, these greenhouse gas reductions will help improve the living conditions of the people and communities who are going to coexist directly or indirectly with the project.

The CDCF's second year of progress and development has generated an important number of benefits. Firstly, it's important to mention that membership in the CDCF has exceeded expectations with the fund reaching capitalization of \$128.6 million, which has allowed the satisfactory closing of the first tranche. Secondly, we have witnessed the registration of several projects by the UNFCCC Executive Board, including the La Esperanza Hydroelectric Project, which was the first project to be issued certified emission reductions, and the Santa Rosa Hydroelectric Project in Peru. Other CDCF projects are very close to being registered, such as the landfill project in Olavarría, Argentina. These projects have significantly contributed to the process of clarification of the registration process, opening the path for a dialogue with the relevant United Nations institutions. Finally, the signing of a number of emission reductions purchase agreements is a strong indicator of the solid progress that is being made by the CDCF.

We would like to highlight the work undertaken by the World Bank on the CDCF. Fund participants have witnessed first hand, in visits to various project sites, the commitment of the Bank's carbon finance team to identify the best initiatives that can substantially and positively contribute to the improvement of the quality of life of the most disadvantaged communities.

With the risk of not mentioning everybody, we have to say "à bientôt" to Bank carbon funds' manager Ken Newcombe, whom we must thank for the passion, vision, enthusiasm and tenacity he has shown over the last several years. These impressive qualities have provided the impetus for the World Bank managed carbon funds, and particularly the CDCF, to be pioneers in this new carbon reduction economy. Moreover, we have welcomed with high expectations Odin Knudsen, the new senior manager of the carbon funds managed by the World Bank. We wish him the best in this new task and responsibility, and we are happy to cooperate with him in attaining the important objectives pursued by the CDCF.

David Corregidor Sanz
Outgoing Chair
CDCF Participants' Committee

The CDCF, operational since July 2003, is a public/private fund initiated by the World Bank in collaboration with the International Emissions Trading Association (IETA) and the United Nations Climate Change Secretariat. The single feature that defines this fund and differentiates it from the other World Bank managed carbon funds is the generation of community benefits by the projects it finances. CDCF projects are an opportunity for small communities in poorer countries to obtain benefits such as clean water, improved health conditions and jobs for women, as well as an investment in clean technologies that help reduce greenhouse gas emissions and mitigate climate change.

Contributors to the CDCF support projects that measurably benefit poor communities and their local environment and will receive in return verified emission reductions from these projects. Resources from donors are mobilized to support technical assistance and CDCF project preparation. With a capitalization of \$128.6 million, the CDCF was closed to further subscription in January 2005.



Making the Least Developed a Priority

Twenty-five percent of CDCF resources are intended to be invested in purchasing emission reductions generated from projects located in priority countries. These are defined as (i) World Bank's International Development Association (IDA) list of countries; (ii) countries commonly referred to as "IDA blend" with a population of less than 75 million; or (iii) countries designated as least developed countries by the United Nations. Presently, priority countries account for about 41 percent of the portfolio in terms of carbon finance commitments, with projects located in Guyana, Honduras, Moldova and Nepal.

A Focus on Africa

CDCF projects cover all the major regions. However, a special effort on Africa is being made to rapidly identify

and develop viable CDCF projects. As a result, 13 of the 33 projects in the CDCF pipeline as of September 2005 are located in Sub-Saharan African countries—Ethiopia, Nigeria, Rwanda, Tanzania, Uganda and Zambia.

Delivering Community Benefits

The unique feature of all CDCF projects is that they provide significant and measurable development benefits to communities living in the immediate project vicinity or with a historical, cultural or economic affiliation to the project.

Community benefits may arise from the project itself such as village or neighborhood electrification, improved air quality or increased employment and income, or they may be additional to the project and include basic social services such as schools or health centers, or basic infrastructure such as water, irrigation, local roads or markets.

For all projects CDCF emphasizes community dialogue and consensus building, to ensure that individuals, community leaders, existing community organizations and local government officials agree on the benefits to be provided.



Who is the CDCF?



GOVERNMENT OF AUSTRIA

JI and CDM projects play an important role in fulfilling Austria's Kyoto target. The Austrian JI/CDM Programme, which is managed by Kommunalkredit Public Consulting, enables the government to purchase emission reductions from mitigation projects and through investing in carbon funds. Austria joined the CDCF in 2003 with a view to purchase certified emission reductions from high-quality projects especially from least developed countries, in addition to the project portfolio within the Austrian JI/CDM Programme.*



REGIONAL GOVERNMENT OF BRUSSELS (BELGIUM)

The Brussels-Capital Region, with a wide range of competencies in the fields of environment and energy, has its own Kyoto target. Its participation in the CDCF will help the Region meet its targets through sustainable projects in poor developing countries.*



REGIONAL GOVERNMENT OF WALLOON (BELGIUM)

To reach the regional Kyoto target, the Walloon Region of Belgium has decided to work with the World Bank. The Government believes that the CDCF is a good opportunity to implement small-scale CDM projects in developing countries including African countries. Additionally, it believes that the CDCF has a crucial role to play in proving that small-scale projects have a place in the international carbon market.*



GOVERNMENT OF CANADA

Canada is represented in the CDCF by the Clean Development Mechanism and Joint Implementation Office, Foreign Affairs Canada. The Office promotes the Kyoto flexible mechanisms by providing financial and technical assistance to Canadian companies and supporting capacity-building in host countries. Through the CDCF, Canada benefits from new market opportunities and from project development experience with strong community benefits, especially in poorer regions.*



GOVERNMENT OF DENMARK

The Danish Carbon Fund—comprised of participants from industry and government in Denmark—is now a participant in the Community Development Carbon Fund, and looks forward to sharing in the experiences gained by the CDCF. The participants expect this fund to provide valuable assistance to the development and implementation of CDM projects in countries where small-scale projects are of special importance. At the same time the CDCF is an important element in developing the width and breadth of the CDM, thus ensuring further development of this important tool for the long-term protection of the global environment.*



GOVERNMENT OF ITALY

Italy has seized the opportunity to demonstrate its commitment to greenhouse gas emission reductions, as well as to sustainable development worldwide. Italy in fact was a founding member of the CDCF, which it sees as an efficient mechanism for extending the reach of carbon finance and the Clean Development Mechanism to developing countries that would otherwise be potentially excluded from their benefits.*



GOVERNMENT OF LUXEMBOURG

Luxembourg's commitment under the Kyoto Protocol is to reduce greenhouse gas emissions by 28 percent as compared to 1990 levels. This is by far the most ambitious reduction target of a Member State of the European Union. Therefore, additional to domestic actions, Luxembourg's engagement in the CDCF will help the country to reach its reduction target. We consider the CDCF as an opportunity for poorer developing countries to participate in the CDM, and for Luxembourg to receive cost-effective and high quality emission reductions.*



GOVERNMENT OF THE NETHERLANDS

The Netherlands is a small and densely populated industrialized country with an ambitious emission reduction target under the Kyoto Protocol and has been constructively active in climate change negotiations for more than 20 years. The Dutch government joined the CDCF because it felt that small-scale projects and projects in least developed countries deserve a much better chance to benefit from the CDM, particularly because these projects are usually closely linked to the sustainable development of the communities involved.*



GOVERNMENT OF SPAIN

The Government of Spain has adopted a broad strategy to facilitate the fulfillment of its Kyoto Protocol commitments. The Ministry of Environment jointly with the Ministry of Economy and Finance are working together to take advantage of the Flexible Mechanisms, especially the CDM. In 2004, Spain became a participant in the CDCF, through which Spain expects to ensure that investments in CDM project activities reach the smallest and poorest communities in developing countries.*



BASF

BASF has implemented sustainable development through its strategy “BASF 2015.” The company sees this as a long-term competitive advantage to achieving BASF’s goal to remain the world’s leading chemical company. Therefore, BASF specifically supports the CDCF, since it is not only focusing on greenhouse gas mitigation projects, but on projects that result in environmental protection and development.*



DAIWA SECURITIES SMBC PRINCIPAL INVESTMENTS CO., LTD.

Daiwa Securities SMBC Principal Investments (DSMBCPI), a Japanese private equity firm, is aiming to explore business opportunities in carbon finance, by utilizing know-how gained through the CDCF, and through its abundant experience in wide-ranging financial technology. DSMBCPI is currently developing its activities in CDM/JI projects as well as providing finance to businesses, which will fight against global warming and help implement sustainable development.*



ELECTRICIDADE DE PORTUGAL (EDP)

For generations EDP has built a portfolio that upholds the value of environmental sustainability which is one of the pillars of its corporate strategy. EDP’s participation in the CDCF is a unique opportunity for the company to take part in an initiative that supports sustainable development in areas of the world that are most in need, and at the same time contributes to its compliance with the new European Union Emissions Trading Scheme.*



ENDESA

As part of its Strategic Plan for the Environment and Sustainable Development, Endesa participates in various types of initiatives and activities dealing with climate change. One of its most important is participation in the Community Development Carbon Fund. On one hand, it helps in achieving the company’s emission reduction commitments and on the other Endesa is happy to help foster an international investment framework that promotes the development of CDM projects contributing to the economic and social development of the least advantaged communities.*



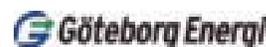
FUJI PHOTO FILM CO., LTD.

FUJIFILM aims to make innovative use of the most advanced technologies to create beautiful images and wide-ranging information, and provide the imaging, information and document solutions that will best meet the increasingly sophisticated needs of the world community. By being a participant in the CDCF, FUJIFILM would like to contribute to the social and environmental sustainability of the world community as well.*



GAS NATURAL SDG, SA

The Gas Natural Group is an energy services multinational whose activities focus on the supply, distribution and commercialization of natural gas in Spain, Latin America and Italy, where it has almost 10 million customers. The company’s participation in the CDCF is motivated by its ecological concerns and its commitment to sustainable development. The Gas Natural Group conducts its business with a strategic horizon that goes beyond any immediate economic interests, thus contributing to economic, environmental and social development, both in the short and long term.*



GÖTEBORG ENERGI AB

Göteborg Energi is western Sweden’s leading energy company, with product areas including district heating, ready heat, energy services, gas, cooling, data and telecommunications, electricity supply networks and electricity production. The company has joined the CDCF to help comply with the 40 percent emission reduction target imposed on the new combined heat and power (CHP) plant. The CDCF enables Göteborg Energi to meet obligations and at the same time make a worthwhile contribution to sustainable development in developing countries.*



HC ENERGIA

HC Energia is a company whose main activity is to produce and distribute electricity and gaseous combustibles within the Spanish market, reaching one million customers. Since 2004, HC Energia is part of EDP Group, the largest electricity company in Portugal. Sustainability is a key policy in HC Energia which regards its participation in the CDCF as a unique opportunity to provide poor communities in developing countries with projects that enable them to grow in a sustainable manner by using renewable energy and clean technology.*



IDEMITSU KOSAN CO., LTD.

Founded in 1911, Idemitsu Kosan is a Japanese integrated energy company working mainly in petroleum refining, chemicals and plastics production and marketing. Idemitsu has put into practice the concept of respect for human dignity in the conduct of business and has sought to be a company that lives up to the high expectations and trust of society. Participation in the CDCF gives Idemitsu a great opportunity for gaining knowledge and experience in the global carbon market, and also for contributing to sustainable development in the world.*



KREDITANSTALT FÜR WIEDERAUFBAU (KfW)
KfW Group ranks among the ten largest banks in Germany. KfW Group is committed to protect the environment and the climate by offering a broad range of promotional programs. For this reason the KfW Carbon Fund was created as a purchase program for cost-effective emission certificates to be used by affected companies in the framework of the European Union Emissions Trading Scheme. KfW's participation in the CDCF provides a unique opportunity to benefit from the vast experience and the leading role the World Bank has acquired in this challenging new field of activities.*



NIPPON OIL CORPORATION (NOC)
Nippon Oil Corporation is one of Japan's leading oil companies as well as a comprehensive energy enterprise. NOC is promoting corporate social responsibility-oriented management based on its basic corporate social responsibility policy. NOC participates in the CDCF because the primary purpose of the CDCF is to achieve sustainable development, which concurs with NOC's goals.*



THE OKINAWA ELECTRIC POWER COMPANY, INC.
One of Japan's ten electric power utility companies, the Okinawa Electric Power Company, Inc. (OEPC), supplies power throughout Okinawa Prefecture, an island chain located at the southernmost tip of the Japanese archipelago with a population of approximately 1.3 million. Participation in the CDCF, as well as the construction of the LNG-fueled Yoshinoura Thermal Power Plant, as part of our initiative to reduce carbon dioxide emissions, is a counter-measure we can take proactively against global warming.*



RAUTARUUKKI OYJ
Rautaruukki Oyj (Ruukki) supplies metal based components, systems and turnkey deliveries to the construction and mechanical engineering industries. The company has a wide selection of metal products and services. Ruukki has operations in 21 countries and employs 11,000 people. Participation in the CDCF is part of Ruukki's carbon dioxide risk management activities. More information can be found at www.ruukki.com*



Statkraft

STATKRAFT CARBON INVEST AS
The Statkraft Group is the third largest producer of electricity in the Nordic region, and the second largest producer of electricity based on renewable energy sources in Europe. The group engages in power trading from offices in the Nordic region and on the Continent. The CDCF's portfolio combined with the experience that the World Bank has gained with CDM projects through the Prototype Carbon Fund made Statkraft Carbon confident that the CDCF was the best alternative available, according to Statkraft's CEO Bård Mikkelsen.*



STATOIL ASA
Statoil is an integrated oil and gas company, headquartered in Norway, with almost 24,000 employees and activities in 29 countries. It is one of the world's most environmentally-efficient producers and transporters of oil and gas. Statoil sees its investment in the CDCF as an interesting combination of social investment engagement and achieving cost-effective CDM credits.*

Swiss Re



SWISS RE

Swiss Re is one of the world's leading reinsurers and the world's largest life and health reinsurer. Swiss Re offers a wide variety of products to manage capital and risk. With its participation in the CDCF, Swiss Re joins a committed group of governments and companies who see a triple win in the CDCF: greenhouse gas emission reductions, poverty reduction and corporate social responsibility.*

* The information in the participants' writeups in this annual report was provided by the participants of the various carbon funds managed by the World Bank, and with the exception of minor editorial changes, is reproduced in the same form in which it was provided. The views and opinions expressed in the participants' writeups are those of the participants providing the information, and do not represent the views and opinions of the World Bank or the Trustee. Neither the World Bank, nor the Trustee take any responsibility for the information contained, or the representations made in the participants' writeups.

CDCF Advisory Group Annual Review Report from the Chair



The unexpectedly high capitalization of the CDCF—\$128.6 million compared with \$80 million budgeted—indicates the success of the fund concept. It gives rise to a correspondingly tougher delivery challenge before the end of 2012, when the Kyoto Protocol's first commitment period closes.

Data from the current portfolio and pipeline indicate that the distributional criteria, aiming to diversify the location of the fund's projects, are likely to be met or surpassed.

Evidence of the identification and delivery of community benefits to poorer communities has started to come in. Persistent efforts by the fund management and their host country counterparts will be needed to achieve this core objective at an affordable cost.

The Advisory Group responded to requests from the CDCF Participants' Committee for advice on the inclusion of sequestration projects in the CDCF and on criteria for hydro projects.

Coordination with the CDCF Participants' Committee has been improved in fiscal year 2005 through the institution of joint meetings of the two bodies, in order to share information and views. Each body, however, remains master of its own decisions and recommendations.

The Advisory Group joins me in wishing well to Ken Newcombe and Asif Faiz in their important new functions within the World Bank. Without doubt, Ken's commitment has been one of the main drivers of the CDCF's initial impact. We look forward to working with the new management team in meeting the challenges facing the CDCF in the year ahead.

Michael Zammit Cutajar
Chair
Advisory Group to the CDCF

The CDCF Advisory Group

The CDCF Advisory Group is composed of independent experts appointed in their personal capacity by the World Bank, as the fund's trustee, plus a representative of the International Emissions Trading Association, one of the initiators of the CDCF. In the interest of coordination, the group also includes observers nominated by the participants in the fund and the Bank's Host Country Committee, while its chairperson observes the work of the CDCF Participants' Committee.

Country/ Project Name	Project Description	Community Benefits	CDCF Contract ERs tCO ₂ e	Total Project ERs tCO ₂ e
Emission Reductions Purchase Agreements (ERPAs) Signed				
Argentina: Olavarría Landfill Gas Recovery	Capture methane and carbon dioxide generated at Olavarría municipal landfill and use the methane as a renewable source for supplying electricity to rural villages in the region	A potable water distribution network and a pilot solar water heating system in Espigas, a rural community located 80 kilometers from Olavarría. The potable water network will connect more than 80 percent of the homes, the local schools, and the Espigas Municipal Hospital to a supply of clean water, helping to reduce gastrointestinal disease, a major problem in the community. The water solar heating system to be installed at the hospital will reduce the current high energy cost	131,000	206,559
Colombia: Rio Frio Waste Water Treatment	Collect methane and nitrous oxide from waste water treatment plant of Rio Frio	Reduction of local air pollution and offensive odors by improving biogas capture and effluent treatment. Improvements in the quality of the receiving waters (Rio Frio and Rio Oro Rivers) with positive impacts on the aquatic biota. A social program will address overall health conditions (including sexually transmitted diseases and HIV/AIDS), and employment among the poorest youth	250,000	534,670
Honduras: La Esperanza Hydropower	Install 12.7 megawatt run-of-river hydropower plant	Improved electricity service in the town of La Esperanza (about 10,000 inhabitants). As a result of the project, 60 households and 200 people now have electricity. A \$12,000 contribution was made to electrify San Fernando Community, a town of 450 people. Electrification of the community of Santa Anita by the end of 2007. To date 148 people have been employed in the construction phase alone (the target was 70) and at least 20 more will be employed during the operational phase. Afforest and reforest land in the project area and in the water basin, planting at least 25,000 seedlings each year through 2012	310,000	441,491
Peru: Santa Rosa Hydro	Three run-of-river hydro projects in Lima, Peru in the Santa Rosa irrigation area (4.1 megawatts total)	A trash rack cleaner will be installed in the irrigation canal to help clean the water used for agriculture purposes. During construction 125 direct new jobs will be created. During operation 15 new jobs will be created. Other community benefits include, a new fence for the school, two new classrooms, a computer room (with 10 computers) and a community center for La Merced	88,300	328,900



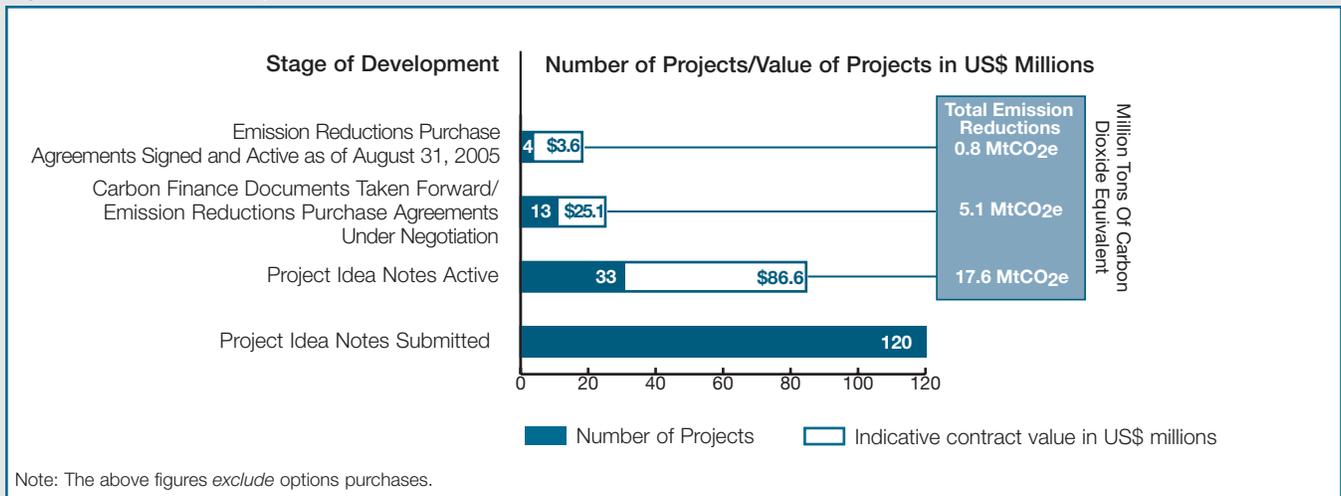
Country/ Project Name	Project Description	Community Benefits	CDCF Contract ERs tCO _{2e}	Total Project ERs tCO _{2e}
Projects Under Negotiation				
China: Guangrun Hydropower Project	Construct and operate three hydropower plants with total capacity of 28 megawatts (10, 10, and eight megawatts) on the Guangrun River	20 percent of carbon revenue will be earmarked for a poverty alleviation fund to be used by the county government to reach its social development objectives. Other benefits include increased water supply, upgraded flood control and availability of water for 1,000 hectares of irrigated farmland	500,000	1,190,00
Guyana: Skeldon Sugar Modernization Project	Use bagasse as fuel to provide a sugar factory with high thermal efficiency and export excess electricity to the national grid	Improved electrical service in the Berbice Region; at least 10 megawatts of electricity produced by the Guysuco provided to the national grid. Also, job creation and improved economic activity	500,000	674,875
India: FaL-G Brick Units in Micro Sector	200 brick production units based on FaL-G technology to save energy and nitrous oxide emissions	Personal accident insurance and health insurance to cover workers at FaL-G sites backed by carbon revenue. Health risks will be mitigated by the reduced air pollution compared with areas where traditional kilns are used	800,000	2,066,980
India: Karnataka Water Pumping	Reduce the energy required for water service delivery in six municipalities in the State of Karnataka in Southern India	Better management of water and energy resources by water utilities, improved and expanded access to clean water, and more reliable services to consumers. Also, reduction in the time spent collecting water, a function typically carried out by the women in a household	250,000	401,820
India: VSBK Kiln Cluster Project	Use energy efficient Vertical Shaft Brick Kiln (VSBK) technology for fired clay brick production, saving 30 percent in coal consumption	Joint bank account for women. Possible life and health insurance (against work related injuries and hospitalization due to accidents or illness) with the premiums (or part) being paid by the Fund under Group Insurance schemes now available for the rural poor. It is predicted that approximately 40 persons would be insured at each site. Hand pumps for clean drinking water, a day care for children below 5 years, and community stoves	340,000	393,340
Moldova: Energy Conservation	Improve quality and efficiency in the supply and distribution of heat in over 115 public buildings in 12 municipalities	Improved heating service, increased number of days buildings are heated and a decrease in the per unit cost of heat production. Heating improvements and energy efficiency increase will have a positive impact on Moldovan forests, which currently supply fuelwood	375,000	985,158
Nepal: Biogas Program	Commercial dissemination of 200,000 additional household biogas plants using animal wastes in rural Nepal between 2004 and 2009	Biogas for cooking and lighting. Significant reduction in kitchen smoke, additional latrines attached to biogas plants; and reduced incidence of diseases such as eye infections, respiratory disease, cough, diarrhea, dysentery, and parasites. Productivity improvement in crops; and saving of \$37 annually per household on fertilizer. Creation of approximately 12,000 skilled jobs in marketing, construction, manufacturing, maintenance and credit-lending. Reduced firewood consumption by about 50 percent after the biogas installation, saving 2,600 kilograms of firewood per household annually	1,000,000	5,267,000
Philippines: Laguna De Bay Watershed Project	Mitigate greenhouse gas emissions through solid waste and waste water management small-scale projects in Laguna de Bay watershed	Reduced pollution in rivers and lakes from better wastewater and solid waste management. There is currently no waste water treatment system, and limited treatment of pigfarm and industrial waste	344,000	476,890
South Africa: Bethlehem Hydroelectric Project	Construct a total of four megawatts of hydro capacity at two generation facilities in the Free State Province	The project developer is preparing a community benefits plan for communities in the immediate vicinity of the project. In addition, 40 skilled jobs and between 100 to 160 unskilled job opportunities will be created during the project construction phase. Semi-skilled staff will be recruited locally and preference will be given to previously disadvantaged groups and women	200,000	347,449

As of the end of August 2005, the CDCF had 33 project idea notes (PINs) in its pipeline. Of these, 13 have an active carbon finance document representing in total 5.1 million tons of carbon dioxide equivalent and

a carbon finance value of \$25.1 million. Of these, four emission reductions purchase agreements have been signed for 779,300 tons of carbon dioxide equivalent with a carbon finance value of \$3.6 million.

Approximately one-fifth (\$25.1 million) of the initial capitalization of the CDCF (\$128.6 million) is in an advanced stage of placement as of the end of August 2005. Over 75 percent of the emission reductions from projects in the present portfolio are expected to be generated by 2012.

Figure 3A. Status of Project Development in the CDCF



South Africa: Bethlehem Hydroelectric

The purpose of this project is to generate hydroelectricity, which will be distributed to the South African grid that currently heavily relies on coal. The project will support the development of renewable energy in the country, and assist South Africa in meeting its renewable energy target of 10,000 gigawatt hours by 2013. The CDCF intends to purchase emission reductions of 200,000 tons of carbon dioxide equivalent over a ten-year period from this project.

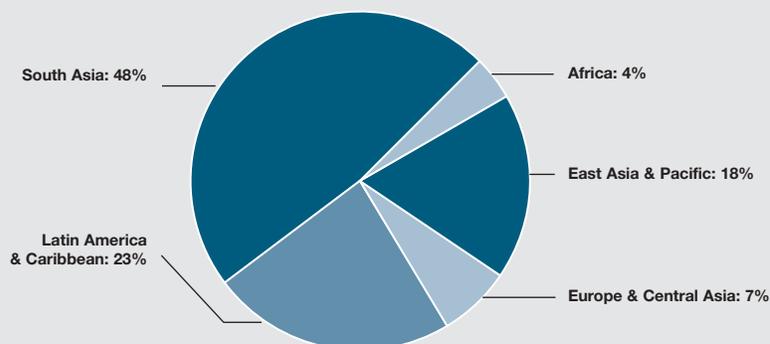
At a community level this project will provide several benefits such as local economic growth, the creation of 40 skilled and 100 to 160

unskilled job opportunities in the construction phase and technology transfer. It is expected that this project will supply power at a lower price, and

the savings to the local authority would allow them to deliver other basic services to the community.

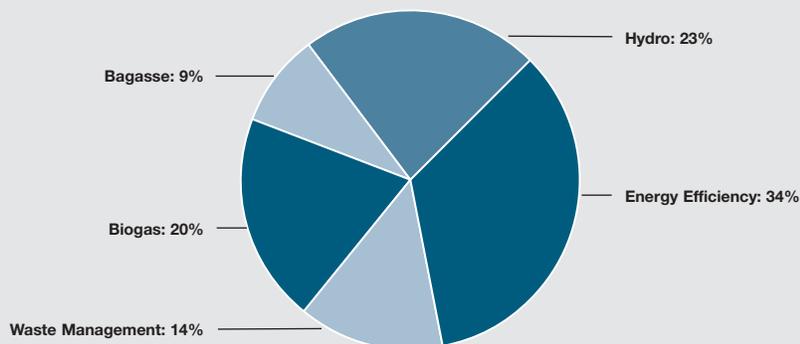


Figure 3B. Geographic Distribution of CDCF Portfolio
(Total \$25.1 million)



Geographic distribution: The CDCF portfolio is relatively well balanced compared with the previous year. South Asia still holds the lead (48 percent) followed by Latin America (23 percent) and East Asia (18 percent). Africa (four percent) and Europe and Central Asia (seven percent) are regions that require a special effort. Priority countries in Africa suffer from a challenging business environment, high risks and, high transaction costs. The fund management unit however will persist with an intensified effort towards addressing the problem of market development in these countries.

Figure 3C. Technological Distribution of CDCF Portfolio
(Total \$25.1 million)



Technological distribution:

The CDCF portfolio covers a wide range of technologies. Energy efficiency, hydroelectric and biogas projects are the most popular due to their economic feasibility and substantial community benefits.

In fiscal year 2005, the CDCF successfully completed its second year of operations. The main focus of the second year was on further developing the project pipeline, and broadening the coverage both in terms of region and type of technology. This was particularly important in line with the successful closing of the first tranche of the fund at \$128.6 million.

In fiscal year 2005, the fund administrative expenses slightly exceeded its administrative budget. Actual administrative expenses were \$1.2 million compared to the revised budget of

\$1.1 million. This increased spending was due to fund promotional and marketing expenses—related to the increased fund size—which proved to be higher than expected, increasing the overrun by \$37,000. The rest was due to higher than expected costs of insurance product development and higher legal costs.

The fund made a second installment of reimbursement of fund development costs to the World Bank of \$124,000; the last portion of the same amount will be made in fiscal year 2006. In line with its intermediary

agreements the fund made payments of \$350,000, offset by catch-up fees charged to late joining participants of \$949,000. Additional catch-up payments by late joining public sector participants are still expected in the future.

Investment income earned by the fund in fiscal year 2005 on cash balances held, represents \$74,000.



Uganda: Kakira Sugar Works Cogeneration

Kakira Sugar Works (KSW) is a sugar manufacturing company located in Kakira village, about 100 kilometers east of Kampala City. KSW crushes cane supplied from over 4,000 small farmers in its vicinity to produce sugar. It also generates electric power for its own use from bagasse, the fibrous residue left after crushing sugarcane. But most of the excess bagasse is disposed of through open-field burning.

This project will expand KSW's bagasse power generation capacity from four megawatts to over 20, for both internal use and sale to the national grid. The CDCF intends to purchase emission reductions of 440,000 tons of carbon dioxide equivalent over a ten-year period from this project.

The key community benefits from the Kakira project include expanded health services, education and other welfare facilities, as well as employment of about 100 people in addition to the existing workforce. Increased cane supply from outgrowers also means directly increasing their income, which would result in direct socio-economic benefits to the region.

“KSW provides agricultural extension services to over 3,500 farmers, employment to 6,200 rural workers, worker housing, a 100-bed hospital and 12 schools.”

*Farhan Nakhooda
Projects Director
Madhvani Group
Kakira Sugar Mill*

BioCarbon Fund



The BioCarbon Fund (BioCF) started operations in May 2004 as a trust fund administered by the World Bank. The fund is piloting projects in developing countries, as well as in countries with economies in transition, that sequester and conserve carbon in forest and agro-ecosystems.





Letter from the Chair of the BioCF Participants' Committee

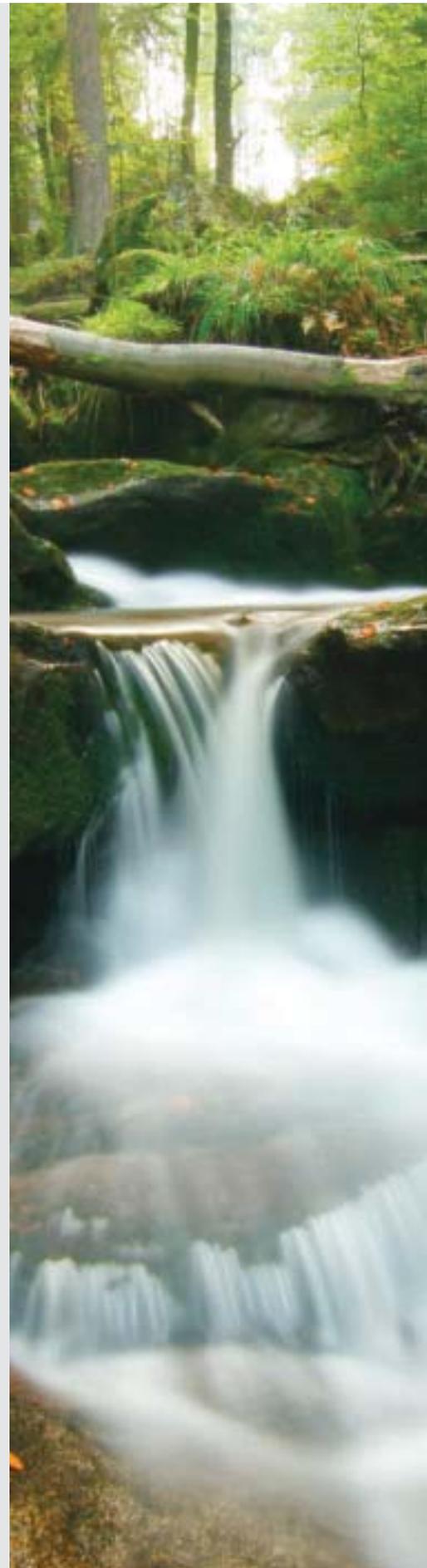
The World Bank-administered BioCarbon Fund has so far performed beyond expectation. It has mobilized more public and private investors than initially foreseen with more than \$50 million and still growing. It has been a pioneer instrument—

opening new project opportunities for developing countries, including the poorest in Africa and by promoting innovative public/private partnerships. It has focused on biological carbon sequestration, one of the best ways to make agro-forestry and forestry systems more sustainable, particularly in degraded areas. Its project portfolio is providing good, real cases of demonstrating that carbon sequestration should be regarded not as a controversial topic but rather as a necessary complement of greenhouse gas emission reductions.

Now the BioCF is facing five challenges. The first is to complete emission reductions purchase agreements for the projects ready to be implemented. The second is to secure the approval of proposed baseline and monitoring methodologies by the CDM Executive Board. The third is to leverage other carbon purchasers to buy the residual emission reductions in addition to those to be acquired by the BioCF. The fourth is to mitigate the replacement risk for temporary credits. And the fifth is to open the BioCF's second tranche with a view to mobilize more investors and contribute to enhance biological carbon sequestration and convince the international community to promote it much more convincingly than in the recent past.

I am convinced that the coalition of current and new private and public participants, with entrepreneurs in the field, together with the World Bank Carbon Finance Unit will meet these challenges.

François Falloux
Chair
BioCF Participants' Committee



The emerging carbon market represents an unprecedented opportunity for development based on competition and trade. Land-use projects offer a valuable, and maybe the only, opportunity for some of the poorest countries and their rural communities to participate in the carbon market and reap its development benefits. However, the technical and regulatory complexities associated with undertaking land-use projects are creating significant barriers to potential private and public sector investments.

Major Opportunities for Carbon Finance

Carbon finance associated with land-use activities also represents an important opportunity for the World Bank to simultaneously promote the objectives of the United Nations Convention on Biological Diversity and the United Nations Convention to Combat Desertification, which were adopted at the same time as the United Nations Framework Convention on Climate Change. Carbon finance represents a new financing source for re-vegetating drylands and making drought-prone areas more resilient to climate change. In the area of biodiversity protection, carbon finance can play an innovative role by creating market-based incentives to reverse natural habitat loss.

The BioCarbon Fund was established in 2004 to foster land use projects that mitigate climate change. Including land use in mitigation efforts is necessary considering that one-third of greenhouse gas build-up in the atmosphere has resulted from changes in land use.

A Benchmarking Fund

The BioCarbon Fund builds on the unique technical expertise and development experience of the World Bank to provide finance for projects that sequester or conserve greenhouse gases in forests and agro-ecosystems. It aims in particular to develop clear and robust methodologies necessary to enable benchmarking of carbon sequestration calculations, and to address outstanding issues regarding permanence and the crediting of biological carbon. It focuses on learning-by-doing, to build up substantial experience as the rules regarding eligibility of land-use activities are further developed. The addition to the fund of a Window Two covering activities that can make important contributions to climate change mitigation and adaptation through long-term carbon sequestration, but which are currently ineligible as CDM activities under the first commitment period of the Kyoto Protocol, responded exactly to this approach.

The BioCarbon Fund has developed a diversified project portfolio, and will buy from projects in countries so far bypassed by the carbon market. In particular, 32 percent (see Figure 4B, page 59) of the Tranche One portfolio consists of projects in Sub-Saharan Africa.

Tranche Two

As of August 31, 2005 contributions to Tranche One of the BioCarbon Fund, coming from 14 governments and companies from Japan, Europe and Canada, amounted to \$53.8 million—56 percent from private companies and 44 percent from government entities. About 150 project proposals have been received, of which about 20 have been selected to be supported in the form of emission reductions purchase agreements. Tranche One was closed to further participation on August 31, 2005 and Tranche Two opened in September 2005. It may become operational once contributions in the amount of \$10 million have been received.

BioCarbon Fund Participants



GOVERNMENT OF CANADA

Canada is represented in the BioCarbon Fund by Canada's CDM & JI Office, housed within Foreign Affairs Canada. The mandate of the Office is to facilitate Canadian participation in the CDM & JI, and it benefits from involvement in the World Bank managed carbon funds because of the learning by doing approach that these funds offer.*



GOVERNMENT OF ITALY

The Italian Ministry for the Environment and Territory, has been active in the field of climate change and forestry management for a long time. The Ministry contributes to the BioCarbon Fund in addition to its engagement in other World Bank managed carbon finance initiatives because the Ministry believes that the forest sector, with its unique opportunities and challenges, should play a role in emission reduction efforts.*



GOVERNMENT OF LUXEMBOURG

Luxembourg's commitment under the Kyoto Protocol is to reduce greenhouse gas emissions by 28 percent as compared to 1990 levels. This is by far the most ambitious reduction target of a Member State of the European Union. Therefore, additional to domestic actions, Luxembourg's engagement in the BioCarbon Fund will help the country to reach its reduction target. We consider the BioCarbon Fund as an opportunity for poorer developing countries to participate in the CDM, and for Luxembourg to receive cost-effective and high quality emission reductions through small afforestation and reforestation projects.*



GOVERNMENT OF SPAIN

Spain, as well as recognizing the necessity of units for emission reductions compliance, is aware of the importance of reestablishment and maintenance of forests in developing countries and countries with economies in transition. These projects improve natural resources, livelihood of communities and ecological value of the areas where they are implemented.*



AGENCE FRANCAISE DE DEVELOPPEMENT

The Agence Française de Développement (AFD), a public institution, is financing development operations in over 60 countries. Considering sustainable development as its priority, and recently endowed with a climate change strategy, the AFD has decided to invest in the non-Kyoto window of the BioCarbon Fund in order to investigate further the links between carbon finance and poverty reduction.*



ECO-CARBONE

Eco-Carbhone is a consulting company advising institutions concerned with curbing greenhouse gas emissions and enhancing carbon sequestration by providing all necessary services to develop projects and sell carbon assets on the emerging markets. Eco-Carbhone is very keen to collaborate within the BioCF with governments and companies that aim to develop, thanks to carbon assets, sustainable "bio" projects.*



IDEMITSU KOSAN CO., LTD.

Founded in 1911, Idemitsu Kosan is a Japanese integrated energy company mainly in petroleum refining, chemicals and plastics production and marketing. Idemitsu has put into practice the concept of respect for human dignity in the conduct of business. Participation in the BioCF gives Idemitsu a great opportunity for gaining the knowledge and experience of the global carbon market, and also for expanding its contribution to sustainable development globally.*



JAPAN IRON & STEEL FEDERATION (JISF)

The Japanese Steel Industry is making continuous efforts to save energy in order to achieve its voluntary target of a 10 percent reduction in in-house energy consumption by 2010 compared with 1990 levels. However, due to uncertainties such as the economic scale in 2010, it is becoming necessary to utilize the Kyoto mechanisms and acquire carbon credits as one of the insurance steps toward achieving the voluntary target. JISF evaluated the BioCarbon Fund as a reliable fund, taking into consideration the World Bank's strong performance in its other carbon funds, and decided to invest in the BioCF.*



JAPAN PETROLEUM EXPLORATION CO., LTD. (JAPEX)

JAPEX is participating in the BioCarbon Fund in order to contribute to help prevent global warming and to help ensure better living conditions for people in developing countries.*



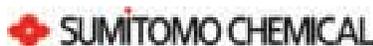
**THE OKINAWA ELECTRIC
POWER COMPANY, INC.**

One of Japan's ten electric power utility companies, the Okinawa Electric Power Company, Inc. (OEPC) supplies power throughout Okinawa Prefecture, an island chain located at the southernmost tip of the Japanese archipelago with a population of approximately 1.3 million. Participation in the BioCF, as well as the construction of the LNG-fueled Yoshinoura Thermal Power Plant as part of our initiative to reduce carbon dioxide emissions, is a countermeasure we can take proactively against global warming.*



**SUMITOMO JOINT
ELECTRIC POWER CO., LTD.**

Sumitomo Joint Electric Power Co. Ltd. supplies electricity and steam, which is essential to industry, to each of the plants at Sumitomo-group companies located around the Niihama area at Ehime-prefecture in Japan. The company is participating in the BioCarbon Fund because it is our understanding that BioCF activities contribute to environmental and social welfare, including nature conservation, as well as support for improved living conditions in developing countries through CDM projects, and the acquisition of carbon credits.*



SUMITOMO CHEMICALS CO., LTD.

Sumitomo Chemical has six business sectors: basic chemicals, petrochemicals and plastics, fine chemicals, IT-related chemicals, agricultural chemicals, and pharmaceuticals. Through creating new and useful technologies and products, Sumitomo Chemical continues to work toward improving living standards and alleviating the problems of our society. Sumitomo Chemical's decision to contribute to the BioCF will enable the company to broaden its environmental and societal contributions through the fund's projects—including preserving the natural environment and bettering livelihoods in developing countries.*



SUNTORY

Suntory group operates various businesses in 16 countries, including whisky, spirits, beer, wine, soft drinks and floral. Since potable water is indispensable to its products, the company has put much emphasis on preservation of forests with water cultivation functions. Suntory has decided to participate in the BioCarbon Fund because the fund's goals coincide with Suntory's forest preservation activities.*



**TOKYO ELECTRIC POWER COMPANY
TEPCO**, which supplies electricity to the Tokyo Metropolitan area, takes environmental issues seriously and has been very active in reducing its carbon dioxide emissions. In order to meet its voluntary target to curb carbon dioxide emissions, TEPCO is participating in the BioCF as well as the PCF in the hope that these activities contribute not only to creating emission reductions but also to generating community benefits in developing countries.*

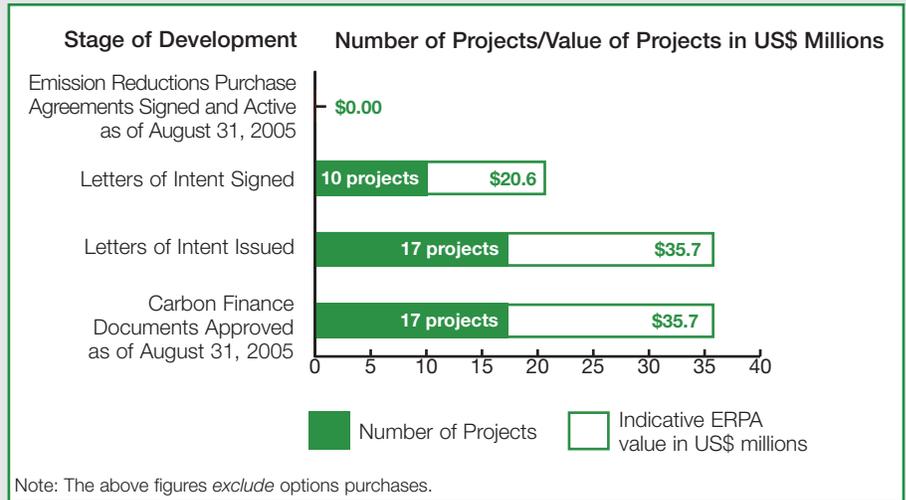
* The information in the participants' writeups in this annual report was provided by the participants of the various carbon funds managed by the World Bank, and with the exception of minor editorial changes, is reproduced in the same form in which it was provided. The views and opinions expressed in the participants' writeups are those of the participants providing the information, and do not represent the views and opinions of the World Bank or the Trustee. Neither the World Bank, nor the Trustee take any responsibility for the information contained, or the representations made in the participants' writeups.

Country/ Project Name	Project Description	Main Environmental Benefits	Main Social Benefits	Total Project ERs (MtCO ₂ e) by 2017	
				Window 1	Window 2
Albania: Assisted Natural Regeneration	Afforest/reforest 6,200 hectares of highly degraded land by developing a multi-functional broadleaf forest	Creation of habitat for native flora and fauna; stopped ongoing degradation of forest land; reduced soil erosion; reduced siltation of watercourses	Provision of short and mid-term employment to communities; reduced maintenance costs of irrigation and drainage systems; and creation of a sustainable source of firewood, timber and non-timber products	0.39	
Brazil: Reforestation Around Hydro Reservoirs	Reforest 5,500 hectares of buffer zone around four reservoirs of hydroelectric plants in the state of São Paulo using native species	Creation of a biodiversity corridor between existing forested conservation areas; improved sustainability of the hydraulic resources	Creation of employment for communities; and increased tourism revenues from the improved recreational area and landscape	1.87	
China: Pearl River Watershed Management	Afforest 4,000 hectares of shrub/grassland in the Guangxi Zhuang Region, also including the borders of the Pearl River	Creation of biodiversity corridors; reduced soil erosion; improved regulation of hydrological flows	Provision of employment to local farmers and communities; creation of a source of timber and non-timber products; and increased sustainability of the sources of livelihood	0.67	
Colombia: San Nicolás Agroforestry	Establish agroforestry and silvopastoral systems and forest plantations on 8,400 hectares of abandoned pastures in the department of Antioquia	Creation of natural habitat and corridors for biodiversity; enhanced watershed protection	Creation of direct employment; increased food supply and safety; and training of the communities in sustainable agroforestry/silvopastoral systems management	1.03	
Colombia: Silvopastoral Rehabilitation	Establish silvopastoral systems using forage shrubs and high value timber species to enhance the productivity and natural resource base of degraded lands on 400 farms, and reforest the most degraded land using native species	Increased habitat for biodiversity; rehabilitated local ecosystems; reduced soil erosion; improved moisture retention	Provision of direct employment to local populations; creation of additional sustainable sources of income from wood harvesting; improved productivity of cattle raising activities; and training of farmers in sustainable silvopastoral systems management	0.38	0.20
Costa Rica: Coopeagri Forestry	Establish agroforestry systems and commercial forest plantation, and reforest through induced natural regeneration on a total of 4,000 hectares of degraded land by extending the Program of Payments for Environmental Services	Restoration of natural habitat; increased water retention and flows; reduced land erosion	Creation of direct employment; directly increased family incomes from payment for environmental services; creation of additional sources of income from forest production activities and agroforestry; training of farmers in sustainable practices and agroforestry management	0.69	
Dominican Republic: Rio Blanco Watershed	Implement natural and intensive reforestation, native forest protection and agroforestry activities on 6,000 hectares to help rehabilitate the watershed of the Rio Blanco and Yuna Rivers within the Valle Nuevo National Park	Enhanced protection of biodiversity; creation of habitat; reduced erosion; restored hydrology balance; improved water quality	Creation of direct employment; creation of additional sustainable sources of income from agroforestry; and training of farmers in sustainable agroforestry systems management	0.28	0.20
East Africa: Small Group and Tree Planting	Empower and pay small groups of subsistence farmers to restore local deforested areas and adopt sustainable agricultural practices	Creation of additional natural habitat; reduced erosion; increased soil fertility; reduced pressure on existing forests	Direct income increase through payments; enhanced sustainability of livelihood sources; training in sustainable farming practices; and increased social organization and cohesion	1.00	
Honduras: Pico Bonito Forestry	Implement agroforestry systems for small-scale producers, reforestation for conservation, commercial plantations and community-based sustainable forest management on 3,000 hectares in the Pico Bonito National Park buffer zone	Improved biodiversity conservation; protection of vulnerable water catchments areas; stabilized vulnerable landscapes; rebuilt top soils; enhanced water supply and flow regulation	Creation of employment for the project implementation and in particular for the sustainable commercial plantation; creation of additional sustainable sources of income; training of communities in sustainable agroforestry and forestry management; and provision of on-farm technical assistance	0.63	

Country/ Project Name	Project Description	Main Environmental Benefits	Main Social Benefits	Total Project ERs (MtCO ₂ e) by 2017	
				Window 1	Window 2
Madagascar: Andasibe- Mantadia Biodiversity Corridor	Restore forest corridors between existing reserves, establish sustainable forest and fruit gardens, enhance protection of 80,000 hectares of prime or degraded forest north of the corridors, and establish a new conservation area	Creation of biodiversity corridors; increased viability of native species; reduced deforestation; restoration of degraded soils and lands; stabilized hydrological flows	Creation of employment; creation of additional sources of income; increased sustainability of practices and livelihood; and increased ecotourism from landscape rehabilitation	0.40	0.44
Mexico: Seawater Agroforestry	Re-vegetate and reforest 3,000 hectares of barren coastal desert and inter-tidal zones in the state of Sonora with halophytic species, using the waste water of a shrimp farm—currently directly released in the sea—for irrigation	Relieved pollution from shrimp farms; creation of natural habitat for biodiversity; soil building in the coastal desert plains; coastline protection; increased freshwater supply	Creation of employment for the project implementation; training of employees in forestry activities; provision of basic education; creation of a source of animal fodder, firewood, and non-timber products independent from droughts; and increased local fish stocks	0.72	
Nicaragua: Precious Woods	Reforest 600 hectares of degraded pastures by establishing a plantation and conserve around 400 hectares of forest remnants	Increased habitat for native biodiversity; increased landscape diversity; groundwater protection; soil regeneration; improved water balance	Creation of employment for the project implementation and for local wood processing; training of employees on job specific subjects and social subjects; possibility for farmers to grow crops between the plantation rows	0.28	
Niger: Acacia Community Plantations	Reforest 800 hectares of degraded private land directly and 8,000 hectares of degraded communal land through partnerships with communities using Acacia Senegalensis, and establish sustainable intercropping	Increased natural habitat; restored ecosystems; soil regeneration and fertilization; dune fixing; wind and sun protection	Creation of employment for the plantation establishment and Arabic gum production; income increase from Arabic gum sale; production of fuelwood and animal forage; and training of communities in sustainable intercropping and plantation management	0.69	
Philippines: Watershed Rehabilitation	Implement small-scale community-based rehabilitation subprojects in the Laguna de Bay watershed including stream bank rehabilitation, reforestation of upland areas and agroforestry	Increased natural habitat; reduced erosion and landslides; increased groundwater recharge	Creation of employment; creation of an additional sustainable source of income from agroforestry; and training of communities in sustainable forestry and agroforestry	0.09	
Trinidad & Tobago: Nariva Wetland Restoration	Afforest/reforest 1,800 hectares and protect more than 5,000 hectares in the Nariva Protected Area of wetland ecosystems	Enhanced habitat for wildlife; improved conservation of the reserve; restored natural drainage regime; decreased soil erosion; increased buffer service for inland areas	Creation of employment for restoration activities and reserve protection with adapted training; enhanced sustainability of fish stocks and water sources; and training in sustainable farming for communities	0.22	0.53
Uganda: Nile Basin Reforestation	Establish 2,000 hectares of pine and mixed native species plantation in a block design to expand national wood resources and support communities for additional tree planting	Creation of natural habitat; reduced pressure on natural forests; reduced frequency of fires; reduced land degradation and erosion	Creation of employment for forest plantation and associated training; creation of an additional source of income with the establishment of private woodlots; provision of fuelwood; and stimulation of the local economy through secondary industries	0.25	
Ukraine: Chernobyl Reforestation	Reforest 15,000 hectares of abandoned low radioactive contaminated agricultural land	Reduced dispersal of radioactive elements; creation of suitable native habitats; reduced frequency of fires	Creation of local employment; increased wood production; increased local government resources for social needs; and provision of fuelwood	1.34	

As of August 31, 2005 the Participants' Committee approved 17 carbon finance documents worth an estimated \$36 million, which is the face value of the BioCF portfolio undiscounted for risks and before emission reductions purchase agreement negotiations. Seventeen letters of Intent worth \$36 million have been issued, of which 10 have been signed for a total of \$21 million. The first emission reductions purchase agreements should be negotiated before the end of 2005.

Figure 4A. Status of Project Development in the BioCF



Ukraine: Chernobyl Reforestation

Following the 1986 nuclear reactor meltdown in Chernobyl, Ukraine, much agricultural land in the neighboring territories of Zhitomir and Kiev was abandoned due to the persistence of radioactivity. These areas are still unfit for agriculture. They have been taken over by grasses that have prevented the natural regeneration of the forest, and are particularly fire prone. The frequent fires in these open areas are distributing radioactive contaminants on surrounding agricultural lands and settlements.

The project will re-establish the natural pine and birch forest on such abandoned agricultural lands. This reforestation will reduce the occurrence of fires and limit the dispersal of radioactive material. The low presence of radioactive material in woody plant matter will also make the wood harvested suitable for industrial use. The provision of employment from the plantation will relieve the burden of unemployment in the region and wood production will stimulate the local economy. The BioCF may purchase up to one million tons of carbon dioxide equivalent from the project.



Figure 4B. Geographic Distribution of BioCF Portfolio
(Total \$35.7 million)

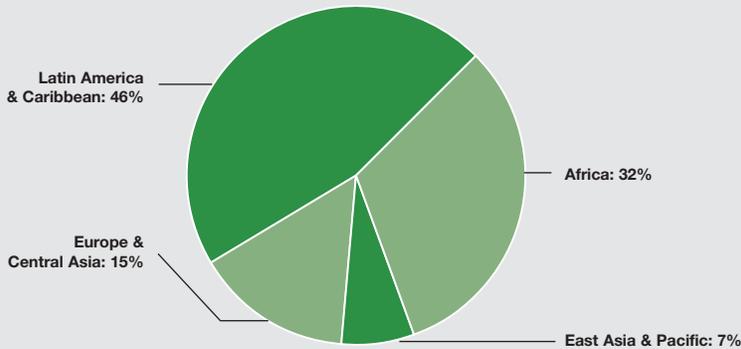
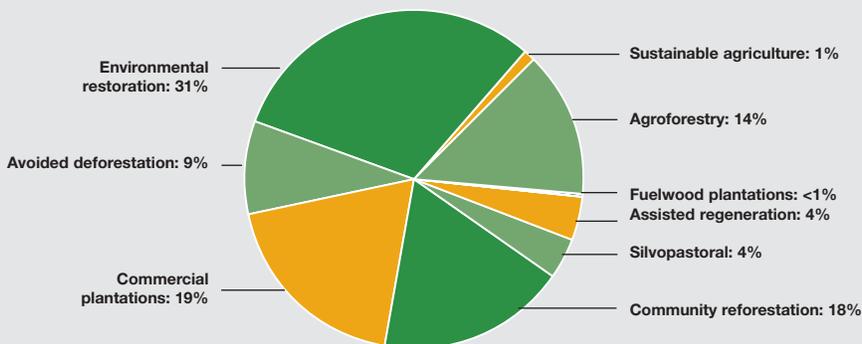


Figure 4C. Asset Class Distribution of BioCF Portfolio
(Total \$35.7 million)



The active portfolio of \$36 million is distributed over the regions where the World Bank is operating. A distinguishing feature of the BioCF is that a third of the portfolio consists of projects in Sub-Saharan Africa, which is at a strong variance relative to the overall carbon market. Overall in the carbon market, Africa represents less than half a percent of the transactions concluded so far. By allocating a large part of its portfolio to Africa, the BioCF makes good on its promise to extend the benefits of the carbon market to rural, less affluent communities. The Latin America and the Caribbean region still occupies the largest place in the portfolio.

The asset class distribution of the BioCF is relatively even with only one class making up as much as one-third of the portfolio, namely plantings aimed primarily at environmental restoration, such as reforestation of degraded watersheds. Commercial plantations make up about one-fifth of the portfolio as components of projects. Only one project is fully dedicated to commercial plantations.

Colombia: Silvopastoral Rehabilitation

The deforestation of the land in the department of Cordoba in Colombia during the last century and the subsequent unsustainable land-use practices have led to widespread degradation. Currently, only sparse native grasses and weeds remain and many areas are barren. This degradation is now threatening the livelihood of local cattle farmers. The project will respond to these concerns by expanding the use of a sustainable silvopastoral system, combining the planting of forage shrubs very well adapted to the region with high value timber species on approximately 400 farms. This system improves both agricultural productivity and the recovery of the soil, and therefore benefits both farmers and the environment. The payment for carbon sequestration will allow the expansion of the system at a significant enough rate to slow the process of land degradation and erosion.



BioCarbon Fund Issues:

There are a number of issues that by their very nature distinguish the BioCarbon Fund from other carbon funds managed by the World Bank.

Permanence

A major concern about using biological sinks to comply with Kyoto targets is whether sequestered carbon will remain sequestered indefinitely (or at least long enough to be equivalent to true emission reductions).

Practically, the carbon sequestered in trees or in the soil might be lost to the atmosphere through fires, pests or management actions. The BioCarbon Fund uses several options to mitigate this risk in its CDM projects. In each project, an assessment of the “non-permanence risk” is done and specific mitigation measures will be identified. However, the most effective option is to support projects where the new activities are sufficiently rewarding to local people that they will be encouraged to continue engaging in those activities in the future. This encouragement will also be supported by contractual agreements that require the sequestration to be maintained for long terms.

Replacement

The ninth session of the Conference of the Parties to the UNFCCC (CoP9) introduced the system of temporary crediting for CDM land use, land-use change and forestry (LULUCF) projects. Carbon credits from such projects are temporary, and necessitate verification of the continued storage of carbon at least every five years. If a project does not retain enough stored carbon, steps can be taken to replace the existing credits with emission reductions or sequestration from elsewhere. This can be done by measures including procuring credits from energy and infrastructure projects from other carbon funds administered by the World Bank.

Leakage

Some projects may lead to an increase in emissions in areas outside the project boundaries. For example, reforesting an area that has been used for agriculture could displace farmers who may then deforest lands

elsewhere to resume farming, a consequence known as leakage. This is also a risk for BioCarbon Fund projects. However, most of the BioCarbon Fund projects will be community-based. The boundaries of these types of projects can be established with good authority and leakage outside those boundaries will usually be small and contained. Projects will also typically include consultation with communities on the design of the project, and will often include training of communities in sustainable practices, and will provide farmers with alternative sources of income, for example through agroforestry (the combination of trees and agricultural crops) or silvopastoral systems (the combination of trees and grazing activities) or through direct payment for environmental services. In all cases, any leakage can and will be monitored, and will be conservatively compensated for by discounting the emission reductions claimed.

BioCF Financial Performance

In fiscal year 2005, the BioCF completed its first year of operations. The fund's main focus was to expand the capitalization base while continuing development of its portfolio. The fund successfully expanded its capitalization and by August 31 the fund closed its first tranche at \$53.8 million.

In fiscal year 2005 the fund has been extremely efficient in its use of administrative budget. The total administrative expenses came to \$405,000 compared to a first year administra-

tive budget of \$605,000. This comparison is made on a cash basis, meaning that no accruals have been made for expenses attributable to fiscal year 2005 but paid in early fiscal year 2006. These expenses will be recognized as a part of fiscal year 2006 financial statements.

Due to the increased capitalization, the fund reimbursed the World Bank fully for fund development costs of \$1.8 million. This is in line with the BioCF instrument as well as within

the fund participants' preferences for maximum fund development cost burden per participant. In line with its intermediary agreements the fund made payments of \$75,000, offset by catch-up fees charged for late joining participants.

Investment income earned by the fund in fiscal year 2005 on cash balances held represents \$51,000.

The Netherlands CDM and JI Facilities



NECF

The Dutch Government supports projects in developing countries and in countries with economies in transition that will generate greenhouse gas emission reductions through the Netherlands Clean Development Mechanism Facility (NCDMF) and the Netherlands European Carbon Facility (NECF).





NCDMF: Letter from the Ministry of Housing, Spatial Planning and the Environment (VROM)

Dear Reader:

The Netherlands has been constructively active in climate change negotiations for more than 20 years. It is the first country to have earmarked public funding for the purchase of carbon dioxide reductions. Under the agreements reached in Kyoto, and subsequently within the European Union, the Netherlands is committed to reducing its greenhouse gas emissions by a total of 199 million tons of carbon dioxide equivalent in the period 2008–2012, reflecting a minus six percent beyond 1990 levels target. Approximately 67 million tons of carbon dioxide equivalent will be purchased through the Clean Development Mechanism.

As the International Bank for Reconstruction and Development (IBRD, the World Bank) has played, and will play, a role in the development of the market for emission reduction credits, it is helping the Netherlands to meet its objectives. The Netherlands CDM Facility (NCDMF), established in April 2002, supports projects in developing countries in exchange for emission credits under the CDM. The objectives of the NCDMF are: (i) to provide resources for projects which are intended to cost-effectively generate emission reductions for the Netherlands; (ii) to endeavor to effect an equitable sharing between VROM and the host countries of any other benefits arising from projects; and (iii) in the course of the foregoing, contribute to the sustainable development of host countries.

The facility has a target of purchasing up to 31 million tons of emission reductions. The facility purchases emission reductions from projects in the following categories: (i) renewable energy technology, such as geothermal, wind, solar, and small-scale hydro-power; (ii) clean, sustainably grown biomass (no waste); (iii) energy efficiency improvement; (iv) fossil fuel switch and methane recovery; and (v) sequestration.

The NCDMF also provides an excellent opportunity for many more developing countries to gain invaluable experience, by undertaking their first commercial transactions for the purchase of emission reduction credits under the CDM, and by competing in the emerging global carbon market.

Lex de Jonge
Head of CDM Division
Ministry of Housing, Spatial Planning and the Environment (VROM)

The Netherlands: The Concern over Climate Change

The Netherlands is a small and densely populated industrialized country with an ambitious emission reduction target under the Kyoto Protocol. As the country lies largely below sea level, the Netherlands is committed to do its part to fight global warming. The NCDMF and the NECF increase the Dutch Government's range of options for complying with its Kyoto Protocol emission reduction requirements, while at the same time providing an opportunity for poor countries to compete in the carbon market.

As of fall 2005, the NCDMF has a diversified portfolio consisting of signed emission reductions purchase agreements for a total volume of 2.9 million tons of carbon dioxide equivalent, and approved carbon finance documents with a total potential volume of 31 million tons of carbon dioxide equivalent emission reductions. It is therefore expected that the NCDMF will sign emission reductions

purchase agreements for its full contracted capacity of 31 million tons of carbon dioxide equivalent by mid-2006.

At present, including approved project idea notes in the pipeline, there are 35 projects under consideration. Twelve of these projects are in Latin America, five in Sub-Saharan Africa, five in Southeast Asia, four in China, four in Central Asia, three in India,

and two in the Middle East. Fourteen of these are renewable energy projects (eight are hydro, two are wind-power, two are geothermal, one is bagasse, and one is biomass), 10 are landfill gas recovery and use projects, and eight are energy efficiency projects. The portfolio also contains single projects in the following sectors: HFC-23 destruction, coal mine methane capture, and composting.

Brazil: NCDMF Nova Gerar Landfill Gas to Energy Makes History as First Registered CDM Project

The Nova Gerar project is a Brazilian landfill gas to energy project, which was the first project to be registered by the CDM Executive Board on 18 November 2004. The project was awarded “The best CDM project 2005” at Carbon Market Insights in Amsterdam on 2 March, 2005.

The project will collect methane in landfill gas from two dumpsites in the state of Rio de Janeiro. The

project is comprised of a gas collection system, leachate drainage system and a modular electricity generation plant at each landfill site—with expected final total capacity of 12 megawatts. The generators will combust the methane in the landfill gas to produce electricity for export to the grid. Excess landfill gas, and all gas collected during periods when electricity is not produced, will be flared. Combustion and flaring together

will reduce emissions of 11.8 million tons of carbon dioxide equivalent over the next 21 years, and will reduce both global and local environmental effects of uncontrolled releases of pollutant gases.

The certified emission reductions generated by the project will be purchased by the NCDMF, which will purchase (up to and including 2012) 2.5 million tons of carbon dioxide equivalent from the project.



“The registration of Nova Gerar as a CDM project is a very important step for the development of the CDM as a mechanism for reaching global targets. This is a major reinforcement that we are on the right track.”

*Pedro Moura Costa,
Managing Director,
EcoSecurities
(Project sponsor with SA
Paulista)*

As of the end of August 2005, twenty projects in the NCDMF pipeline have incurred project preparation costs charged to the facility. Due to delays in the delivery schedule, caused by a variety of operating and regulatory issues, the facility administrative costs are likely to exceed the cash inflows from the fee structure provided in the facility instrument.

The facility management unit is currently working with VROM to modify the existing fee structure to bridge the timing gap until the emission reductions purchase agreements are signed and the projects are registered by the CDM Executive Board. Ultimately, the facility expenses are expected to equal its fees, which was the original intention of both parties.

Chile: Hornitos Hydroelectric Power

June 2005 saw Chile well on its way to becoming a strong regional player in the carbon finance market with the signing of a greenhouse gas emission reductions purchase agreement for the Hornitos Hydroelectric Power Project 100 kilometers northeast of the capital, Santiago de Chile. The Hornitos Project consists of a run-of-river power plant of 55 megawatts that utilizes the waters of the Aconcagua River in the 5th Region administrative division near Los Andes. The project is being implemented by Hidroeléctrica Guardia Vieja S.A. (HGV), a subsidiary of Minera Valparaiso S.A. HGV has

been involved in development, ownership and operation of run-of-river hydroelectric plants since 1939, including three other plants in the Aconcagua river basin.

Hornitos will contribute clean energy to the Central Interconnected System of Chile, replacing additional generation capacity that would otherwise be procured by the Chilean electrical sector from fossil-fueled power plants (coal and natural gas-based generation).

Construction is expected to start before December 2005; commissioning is expected in the third quar-

ter of 2007. The project will employ about 1,200 workers during its construction phase. The certified emission reductions generated by the project will be purchased by the NCDMF, for a total of 600,000 tons of carbon dioxide equivalent.

“The sale of emission reductions has been an important incentive for projects that are framed under clean and sustainable development in Chile and worldwide. We are proud to have been pioneers with the emblematic Chacabuquito project and now with the new Hornitos project. The carbon market is maturing with a strong commitment from the private sector, which reflects a clear global conscience for improving the quality of our environment.”

*Carl Weber,
CEO, Hidroeléctrica
Guardia Vieja S.A.
(Project Sponsor)*





NECF: Letter from the Ministry of Economic Affairs

The Dutch Government is committed to do its part to fight global warming. It is convinced that only a worldwide effort to decrease carbon dioxide emissions is the solution to global warming. In this spirit the Netherlands has played a pioneering role in the creation of an international market for carbon credits. Since 2000 the Ministry of Economic Affairs has been active in Joint Implementation.

By committing substantial efforts to JI with Central and Eastern European countries it has given a boost to carbon trade based on emission reductions. The international private sector has benefited from that. Together with the World Bank, the Netherlands has developed procedures and guidelines for Joint Implementation, and has been involved in institution building in Central and Eastern European countries. But there is still a lot of work to do.

The Netherlands finds in the World Bank Group an active partner for cooperation to facilitate further development of the Kyoto Mechanisms. Besides this the Ministry of Economic Affairs has agreed with the IBRD (the World Bank) and the International Finance Corporation (IFC) to develop JI projects for the Netherlands as was laid down in the foundation of the Netherlands European Carbon Facility. By concluding one agreement together with both the IBRD and IFC, in August 2004, the Netherlands can benefit from the large amount of knowledge about the Kyoto Mechanisms at the IBRD and from IFC's extensive knowledge of Central and Eastern European markets. In this agreement the World Bank Group will assist the Netherlands in acquiring 10 million tons of emission reductions from JI projects in Central and Eastern European countries.

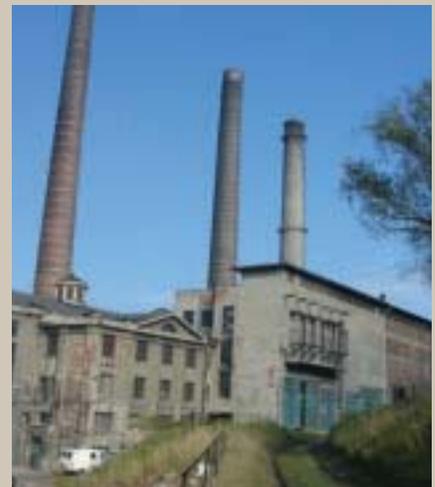
The Ministry of Economic Affairs is confident that with the assistance of the World Bank Group it will be able to fulfill its commitment towards Joint Implementation with the Central and Eastern European countries.

Pieter Boot
Deputy Director-General of Energy
Ministry of Economic Affairs, the Netherlands

Poland: Walbrzych Coke Oven Gas

One of the projects developed by the World Bank under the Netherlands European Carbon Facility is the Walbrzych Coke Oven Gas project in Poland. The project includes construction of a new gas heat-generating plant fired with coke-oven gas, which is currently combusted non-productively and in a polluting way in the adjacent coke plant's chimney. The project includes installation of an efficient boiler and an 8.5 megawatt turbine for producing electricity sold to the local utility

company. The 65 gigawatt hours of electricity produced annually by the project displaces mostly coal-based electricity in the Polish national grid, thereby generating greenhouse gas emission reductions as well as reducing local air pollution. The project was recently validated and by the end of 2012 the project is expected to generate about 420,000 tons of emission reductions.



NECF Portfolio Development

The co-managers—the World Bank and the IFC—are currently developing and negotiating projects in sectors that include renewable energy, energy efficiency, and oil and mining.

The first emission reductions purchase agreements for the facility should be signed by the end of calendar year 2005.

NECF Financial Performance

The facility management is directing its resources to the development of a pipeline that will deliver projects to the portfolio as required. Currently, three projects are in the portfolio with several others being prepared for

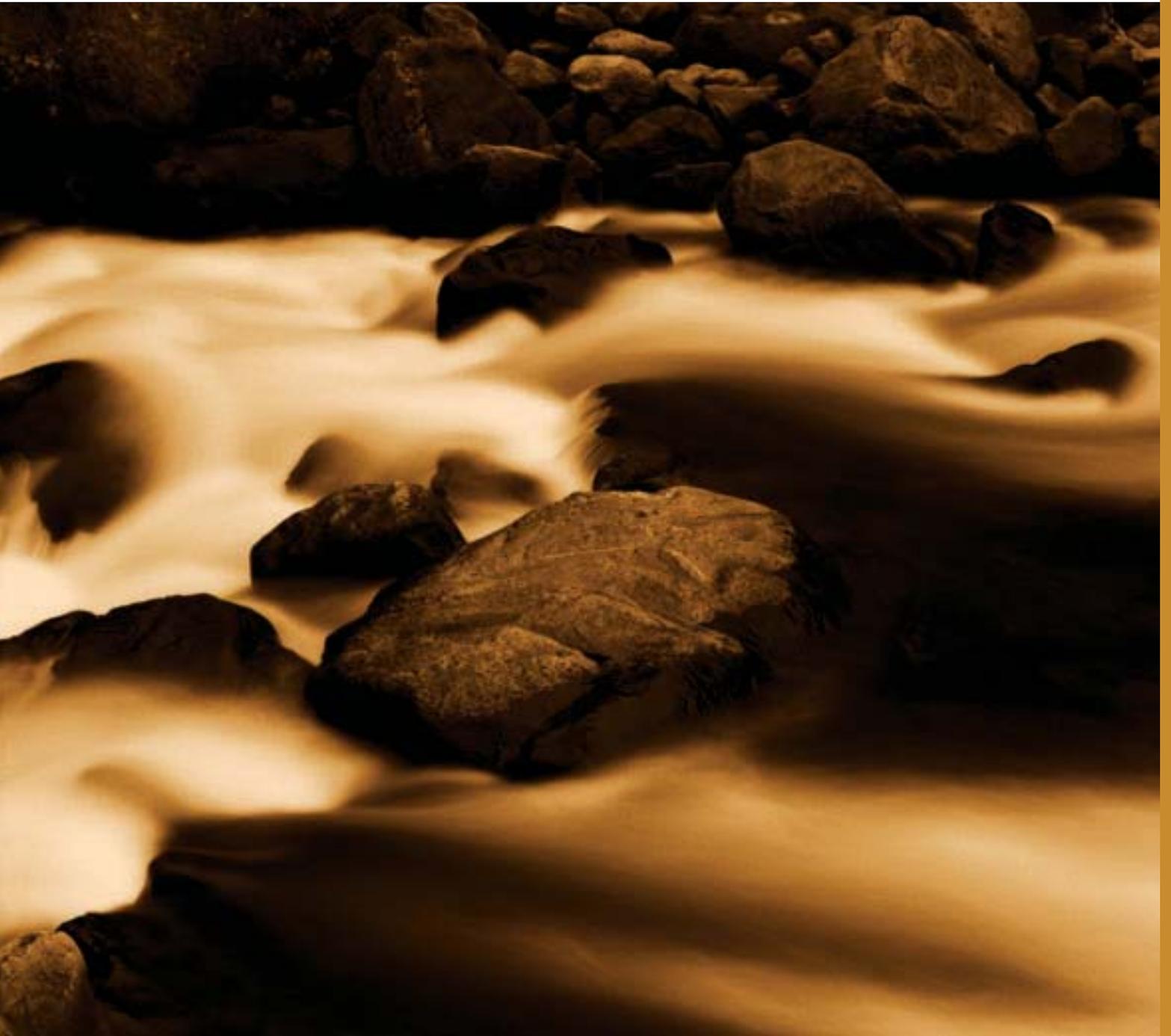
submission. The facility operating costs are in line with expectations and the management unit is closely monitoring its delivery schedule to ensure that costs and fees remain in balance.



Italian Carbon Fund



The Italian Carbon Fund (ICF) was established in early 2004 based on an agreement between the World Bank and the Government of Italy. The ICF supports a wide range of technologies and activities in China, India, Central and South America, the Balkans, East Asia, the Mediterranean and the Middle East.





Letter from the Italian Government

Integrating the environmental dimension into development strategies, and recognizing the positive and necessary role played by private companies and the business community in order to link economic growth and protection of the environment, has been the starting point for the activities of the Italian Ministry for the Environment and Territory in the past few years. We are still committed to going down this path and to facilitating the dissemination of the positive approach of the “environment as a driving force for development”.

Global climate change and increased climate variability are undermining our ability to sustain the development gains made over the past decades. The Inter-governmental Panel on Climate Change suggests that, no later than 2025 to 2030, carbon dioxide emissions must be reduced by at least 50 percent compared with 1990 levels. This cannot be achieved without a commitment by all countries to cooperate across borders in developing and disseminating clean and efficient technologies.

The transition from fossil fuels to renewable energy is hindered by numerous barriers and risks. Clean infrastructure projects, such as renewable energy technology projects, often suffer from high costs and low returns, making them uncompetitive when compared with conventional fossil fuel energy generation. Even where they are economically competitive, climate-sound technologies are rarely financially viable in emerging markets.

In this perspective, carbon finance is a valid tool to improve the viability of, and to catalyze, clean technology investments. That is why we have embraced, in partnership with the World Bank, what we see as a balanced combination of a secure yet economical way to promote the protection of the global environment, acquire and disseminate carbon finance experience, and leverage substantial investments in host countries, while meeting some of our emission reduction obligations. We were among the first participants in the CDCF. We are also participating in *CDCFplus*, the technical assistance facility established to build local capacity to develop and prepare CDCF projects. We have decided to contribute to the BioCarbon Fund. Lastly, we have established a national carbon fund—the Italian Carbon Fund (ICF).

Our financial commitment—the one to the ICF in particular—has a value beyond the monetary amount it represents. It demonstrates, on the one hand, our commitment to the concept of the “environment as a driving force for development” and to cooperating with developing countries through new investments in renewable energy and clean technology. On the other hand, it will promote and facilitate Italian industry’s engagement in the carbon market by providing knowledge about maximizing project-based opportunities for cost-effective acquisition of emission reductions and clean technology transfer.

In these two years of experience, we have been pleased with the results the ICF is achieving both in terms of promoting climate-sound, environmentally and socially responsible projects, and in terms of the direct involvement and participation of the Italian national private and public sectors, that we judge to be key to this success.

Corrado Clini
Director General
Ministry for the Environment and Territory of Italy

Currently the ICF has one very large sized project in its portfolio, namely HFC-23 destruction in China, which alone has a carbon finance value of \$48 million. HFC-23 (trifluoromethane) is a greenhouse gas that has 11,700 times the global warming potential of carbon dioxide, and is a by-product in the manufacturing process of HCFC-22, used in air conditioning and refrigeration. With a substantial HCFC-22 industry, China is the world's largest source of HFC-23. This project will significantly deepen China's participation in the CDM market by selling a high volume of emission reductions.

In addition, two projects in the ICF portfolio, worth approximately \$20 million together in carbon finance, are close to signing letters of intent, which is essentially the step prior to negotiating the terms of the contract. These are the Cairo Northern Zone Waste Management Project in Egypt (see page 70) and the Gas Flaring and Landfill Project in Tunisia.

Finally, several other project concepts are under consideration, in particular in the landfill gas capture and flaring sector, in countries such as Brazil, Egypt and Tunisia. If these projects come to fruition, it will mean an additional \$40 million in carbon finance to those countries.



Italy's Commitment to Reducing Greenhouse Gases

Italy has a significant obligation to reduce its greenhouse gas emissions. The Italian Carbon Fund provides one alternative for obtaining emission reductions while at the same time helping developing countries achieve sustainable development by leveraging these additional investments. The Italian Carbon Fund is likely to continue to increase substantially over time, as the Government of Italy continues to replenish the ICF and as the fund opens to the participation of Italian private and public sector entities.

Italian Carbon Fund Financial Performance

In fiscal year 2005 the Italian Carbon Fund expanded its capital base from \$15 million to \$45 million. This expansion, coupled with further future expansion both on the part of the Italian government and the Italian private sector leads to a need to develop the current project pipeline. Although the fund management unit has made good progress on this, still more projects need to be identified and developed.

To ensure viability under the agreed fee structure, the expanded fund size requires more working capital to allow larger scale funding for general administrative costs. The fund management unit is currently redrafting the instrument to accommodate these changes.

In fiscal year 2005 the fund operated well within its approved budget, both in terms of administrative and project preparation costs.

Egypt: Cairo Northern Zone Waste Management

Nearly all of Egypt's 77 million people live along the Nile River, mostly in Cairo and Alexandria. The capital city of Cairo is the largest city in Africa with a population of over seven million. The Northern Zone of Cairo consists of seven districts (Shobra, Rod El Farag, Sahel, Sharabia, Zawia, Hadayek and Zaitoun), and its total population exceeds two million inhabitants.

The objective of this project is to rehabilitate and upgrade an existing waste sorting and composting plant from a capacity of 320 tons of waste per day to 1,000 tons per day. It also includes gas collection and flaring of an existing landfill site. AMA Arab Environment Company (AAEC), a subsidiary of an Italian waste management company, currently has

the contract to collect, transport, and treat the solid waste.

Emission reductions will be generated by the landfill gas capture and methane flaring at the landfill site. The Italian Carbon Fund intends to purchase emission reductions of 1,500,000 tons of carbon dioxide equivalent over a ten-year period from this project. A quarter of the revenues from the sale of emission reductions to the Italian Carbon Fund will be used to strengthen a community development program. This is an extensive program that includes the employment of more than a thousand garbage collectors and scavengers, the transfer of knowledge and technical expertise, potential local manufacturing of waste collection equipment and supplies, and the raising of public awareness in the Northern Zone communities with respect to health issues and illiteracy among women and girls.



Danish Carbon Fund



The Danish Carbon Fund (DCF) became operational in January 2005 and involves the participation of Danish public and private sector entities. The DCF will purchase emission reductions from renewable energy projects, combined heat and power projects, and landfill projects, among others, that are implemented in developing countries and in countries with economies in transition.



Letter from the Government of Denmark



Climate change is one of the biggest global challenges for the present and future generations. Global warming knows no borders, and no one nation can resolve it alone. The negative impacts of climate change already affect thousands of people living in vulnerable areas of the world. Without action to mitigate climate change, human life and the global environment may suffer greatly.



The Kyoto Protocol is a key instrument in the multilateral efforts to address global warming and climate change. As a consequence of the obligations under the Protocol, Denmark has committed itself to a considerable reduction in greenhouse gas emissions. Thus, the Danish commitment to reduce emissions by the end of the Protocol's first commitment period in 2012 amounts to 21 percent compared to the 1990 level. The strategy and means of realizing emission reductions of this magnitude are outlined in the Government's 2003 National Climate Strategy. A key element in the strategy is to make extensive use of the Kyoto Protocol's flexible mechanisms. This includes the two project mechanisms, the Clean Development Mechanism and Joint Implementation.

As part of the National Climate Strategy, the Government will play an instrumental role in demonstrating how carbon markets can be developed in order for the private sector to engage in the market. To accomplish this, the Government is following a two-prong strategy by which carbon credits will be purchased through direct engagement with project partners and through cooperation with carbon funds and investment banks.

As a result, the Danish Carbon Fund was established in early 2005 with the two major Danish utilities, Elsam and Energi E2, as parties, together with the Ministry of Environment and the Ministry of Foreign Affairs. In setting up the fund, we have joined the family of funds that are now cooperating within the World Bank's Carbon Finance Unit. We are pleased to see how this organization has initiated the work with and for the new Danish member of the family.

We are encouraged by the positive reaction of Danish Industry towards the Government's first steps. Not least is this reflected in the decision of three more parties—Mærsk Olie og Gas, Aalborg Portland and Nordjysk Elhandel—to join the fund. We have reached an adequate volume of financing, which will allow Denmark to engage in carbon projects all over the world. This will be important in demonstrating how the Kyoto Mechanisms can support the overriding objectives of the Protocol, by effectively reducing greenhouse gas emissions and supporting sustainable development in significant ways.

We expect that efforts such as this can give added impetus to preparations for the next phase, the post 2012 period. At an international ministerial meeting in Greenland in August this year, participants agreed that the CDM is important for the long-term efforts to address climate change. We see the carbon business, including the Danish Carbon Fund, as a good example of how to follow up on the Greenland recommendations.

Connie Hedegaard
Minister for the Environment

Ulla Tørnæs
Minister for Development Cooperation



MINISTRY OF FOREIGN AFFAIRS OF DENMARK

The Ministry of Foreign Affairs of Denmark is responsible for Danish activities in relation to the use of the CDM in developing countries, with a focus on capacity development, project development and purchases of CDM credits. The Ministry sees this in the context of development cooperation—the plans and priorities for Danish development assistance include contributing to the strengthening of global climate efforts. Consequently, CDM activities are carried out in close coordination in particular with Danish environmental development assistance.*



MINISTRY OF THE ENVIRONMENT OF DENMARK

The Ministry of the Environment is in charge of administrative and research tasks in the area of environmental protection and planning. The Ministry of Environment is responsible for coordination and implementation of international negotiations and reporting obligations on climate issues within the European Union and the United Nations Climate Convention. The ministry is also responsible for coordination of national measures to follow up the Danish climate commitments, for example the fulfillment of Danish reduction commitments under the Kyoto Protocol and Danish implementation of the flexible mechanisms.*



AALBORG PORTLAND A/S

Aalborg Portland A/S is Denmark's only cement manufacturer and is the market leader on the Danish market. Today the Aalborg Portland Group is the world's largest manufacturer and exporter of white cement with production plants in Denmark, the USA, Egypt, Malaysia and China.*



ELSAM A/S

Elsam is a Danish energy company and builds, owns and operates heat and power plants and sells heat and power nationally as well as internationally. The CDCF meets the condition for the sustainable development of Elsam, defined as a growing business based on balance between social responsibility, economic profitability and environmental performance and knowledge and technology development.*



ENERGI E2 A/S

ENERGI E2 is a leading Danish energy production and trading company. E2 owns and operates 17 power stations and combined heat and power plants in eastern Denmark and has numerous energy activities abroad.*



MÆRSK OLIE OG GAS A/S

Mærsk Olie og Gas AS is the operator in the Danish North Sea for Dansk Undergrunds Consortium (DUC), a joint venture consisting of A.P. Møller - Mærsk, Shell and Chevron.*



NORDJYSK ELHANDEL A/S

Nordjysk Elhandel A/S was established in 1998. Since then, we have traded power for a significant number of distribution companies and industrial clients on the deregulated Danish power market. Nordjysk Elhandel now also trades carbon dioxide allowances, and offers our experience and knowledge to the Danish companies that have been allocated allowances. We see our involvement in the Danish Carbon Fund as a natural step towards providing these services.*

* The information in the participants' writeups in this annual report was provided by the participants of the various carbon funds managed by the World Bank, and with the exception of minor editorial changes, is reproduced in the same form in which it was provided. The views and opinions expressed in the participants' writeups are those of the participants providing the information, and do not represent the views and opinions of the World Bank or the Trustee. Neither the World Bank, nor the Trustee take any responsibility for the information contained, or the representations made in the participants' writeups.

Denmark's Commitment to Greenhouse Gas Reductions

The Danish Carbon Fund's target is to place approximately \$70 million in a portfolio of 10 to 12 projects with a total reduction of 10 to 12 million tons of carbon dioxide equivalent. A little over \$5 million will be placed in the World Bank's Community Development Carbon Fund. The Danish Carbon Fund will build knowledge and understanding of the flexible mechanisms of the Kyoto Protocol and implementation of projects among the participants through their engagement in the activities of the fund. The DCF will also help build Danish private and public sector capacity to meet Danish climate obligations arising from the Kyoto Protocol.

DCF Portfolio Development

Danish Carbon Fund participants are interested in ensuring that smaller communities that are particularly vulnerable to climate change also benefit from the CDM and associated sustainable development benefits. A portion of the DCF capital (a little over \$5 million) has thus been committed to the Community Development Carbon Fund.

The DCF is open to considering CDM projects throughout the developing world, and as such treats all regions equally, without favoring one particular region over another. Moreover, the DCF seeks to contribute to the mitigation of greenhouse gases in countries with economies in transition, so a portion of its overall capital is com-

mitted to the purchase of emission reductions from projects in these countries. The DCF has also adopted a pragmatic and flexible approach with respect to the technologies that

it considers for its portfolio, although it has a preference for projects in the areas of wind power, combined heat and power (co-generation), hydropower, biomass, and landfills.



DCF Financial Performance

2005 is the first year of operation for the Danish Carbon Fund. Shortly after its launch, talks began with new participants about the DCF's possible expansion. By June 30, 2005, the fund's capitalization doubled to \$70 million (approximately €58 million).

This expansion will reduce the real costs of operation on a per ton basis. This will have a beneficial effect on

the portfolio as it allows higher average project size and better economies of scale. The expansion may also require more projects to be prepared and it may take more time to lock in the overall DCF portfolio.

The fund operation to this point has been as expected. A number of projects are being prepared for emission reductions purchase agreements.

Spanish Carbon Fund



The Spanish Carbon Fund (SCF) was created in 2005 to purchase greenhouse gas emission reductions from projects developed under the Kyoto Protocol to mitigate climate change. It is one of the initiatives implemented by the Government of Spain to achieve its emission reduction target under the Protocol. The SCF will promote renewable energy and energy efficiency projects in developing countries and countries with economies in transition.





Spain Responds to the Climate Change Challenge

The Spanish Carbon Fund (SCF) will purchase at least 34 million tons of carbon dioxide equivalent. The emission reductions generated by the projects included in the portfolio are intended to be considered for registration under the Kyoto Protocol's Clean Development Mechanism and Joint Implementation. The Spanish Carbon Fund, which started operations using financial resources provided by the Spanish Government, plans to be open to the participation of Spanish public and private entities. The private sector participation in the fund is scheduled for the fourth quarter of 2005. The minimum contribution for private sector participants is set at €2.5 million.

Letter From the Spanish Government



The Government of Spain, aware of the challenge posed by climate change, considers the Kyoto Protocol and the Climate Change Convention the only existing international agreements right now that can tackle global warming from a multilateral approach, while promoting economic development in a sustainable manner. The Kingdom of Spain ratified the UNFCCC and the Kyoto Protocol, accepting an enormous challenge in terms of quantified emission limitations. Due to the economic growth and population increase experienced in the last few years, Spain had seen its emissions rise by almost 40 per cent in 2003 over the amount targeted. However, meeting the Kyoto goal may also allow us to identify the most efficient reduction measures and, at the same time, minimize potentially adverse economic and social effects.



For this reason, the Spanish Government believes that compliance with the Kyoto Protocol requires the involvement and the effort of all key players. The first step toward this end involves a change in emission trends through national policies and measures to promote competitiveness and employment in our economy. Furthermore, the Government agreed to use the Kyoto Protocol's flexible mechanisms.

As a result, we decided to dedicate € 170 million to the creation of a Spanish Carbon Fund, to be managed by the World Bank. The World Bank is a trail-blazer in the carbon business, its knowledge and experience key assets to ensure the successful implementation of our resources. In addition, Spain has effectively become a participant in the World Bank's Community Development Carbon Fund and BioCarbon Fund, committing resources which amount to more than \$40 million. We are also present in the CF-Assist Program, in order to spur the transfer of knowledge and capacity building in the carbon business.

One pillar of the strategy of the Spanish Government is the involvement of national institutions in all stages of the project cycle, in order to help them take advantage of the emission reduction mechanisms offered by the Kyoto Protocol. Consequently, Spanish private companies will soon be able to become participants in the SCF, which will help them comply with the requirements of the national allocation plan.

From a regional focus, Spain, jointly with Portugal and Iberoamerican countries, established in 2004 the "Iberoamerican Climate Change Network", RIOCC in its Spanish initials, with the aim to deal widely with climate change matters in the region. The RIOCC allows us to carry on a continuing dialogue with the Iberoamerican Climate Change Offices and with the private sector, in order to improve the knowledge of the priorities, difficulties and experiences of these countries. One of the main areas of work is to enhance the benefits of CDM projects by promoting competitiveness and access to the market, and facilitating the identification of high quality projects. On a bilateral basis, the Government of Spain has signed memoranda of understanding with 14 countries (Mexico, Uruguay, Argentina, Panama, Colombia, Brazil, El Salvador, Morocco, Chile, Paraguay, Costa Rica, Ecuador, Bolivia and the Dominican Republic) and drafts are under negotiation with more Non-Annex I countries and countries with economies in transition.

All in all, Spain considers that the environmental policies to fight against climate change require a two-pronged approach: be strict in terms of compliance and efficient in terms of cost. Thus, ambitious objectives must be established for future periods but, at the same time, flexible tools must help to reach them efficiently and to accommodate the specific characteristics of all countries.

Madrid, 22 September 2005

David Vegara Figueras
Secretary of State of Economy

Arturo Gonzalo Aizpiri
General Secretary for Pollution Prevention and Climate Change

The Spanish Carbon Fund provides the opportunity to assist its country clients from regions that have demonstrated a strong commitment to the climate change process. The SCF is also looking for technological diversity in its portfolio including projects with a strong sustainable development component.

The fund has approved carbon finance documents for a number of projects, totaling over \$68 million. The projects include the HFC-23 Destruction Project in China; and the Mexico City Transport Corridor Project—project activities will promote a shift towards low-polluting modes of transportation (metro and large buses) via the development of a surface mass transport corridor

and traffic management measures that integrate with the existing metro infrastructure (see box below). The Spanish Carbon Fund will purchase about 11.5 million tons of carbon dioxide equivalent from these projects, and others.

Mexico: Mexico City Transport Corridor

Mexico City generates a massive demand for urban transport. The Mexico City Metropolitan Area is the second largest human concentration in the developing world. It generates 28 million trips a day, posing an enormous pressure to the urban transport network. Furthermore, due to its soil characteristics, the city has been developed as a low-density, sprawled urban region that extends for over 1,500 square kilometers. The traditional business structure of bus services in the Mexico City Metropolitan Area has led to a costly, and environmentally unsustainable public transport system.

The Mexico City Insurgentes BRT Carbon Finance Project is contributing to the reduction of global carbon emissions through a shift toward low-polluting modes of transport. The project is comprised of a mass transport corridor along Insurgentes Avenue in Mexico City, and associated infrastructure. The corridor is essentially a dedicated bus lane, providing a smoother traffic flow along Insurgentes. Only low-polluting, high capacity buses run on the corridor, replacing minibuses and other buses previously operating on the avenue.

Buses withdrawn from the corridor are destroyed through a scrapping program to prevent their usage in other cities.

Metrobús is responsible for the planning, operation and control of the entire system. A transparent fare collection system, equipped with technology for the use of electronic cards on a pre-paid basis, has been installed along the corridor. The project will support a safer, cleaner, more efficient and affordable transport system, in that way increasing the competitiveness of public transportation,

strengthening the institutions offering transport services and promoting sustainability by replacing old inefficient vehicles with modern bus technologies which leads to a reduction of local and global pollutants. Improvements in public transport systems will also benefit low-income groups in the population. The project will generate a minimum of 354,607 tons of carbon dioxide equivalent by 2015.



SCF Financial Performance

The main objectives of the Spanish Carbon Fund are to purchase greenhouse gas emission reductions to contribute to Spain's emission reduction target at a competitive cost; to promote renewable energy and energy efficiency projects in developing countries and countries with economies in transition; to acquire knowledge and experience on carbon finance; and to share that experience with the fund's participants and stakeholders.

The main focus of the Spanish Carbon Fund has been the development of its pipeline. Most resources are focused on the task of finding high quality projects and advancing them as quickly as possible.

Additionally, administrative resources are used to establish a management and administrative framework for successful operation and on interactions with participants.

So far the fund is on target to remain within the operating budget for the first year.





Making Carbon Finance a Reality: Projects in Progress

- 82 Honduras La Esperanza Hydropower (CDCF)
- 84 China Jincheng Coal Mine Methane Recovery (PCF)
- 86 Mexico Seawater Agroforestry (BioCF)
- 88 Colombia Rio Frio Wastewater Management (CDCF)
- 90 East Africa Small Group and Tree Planting (TIST) (BioCF)
- 92 Ecuador Sibimbe & Abanico Hydroelectric Power (NCDMF)
- 94 India Karnataka Municipal Water Pumping (CDCF)
- 96 Uruguay Montevideo Landfill Gas Capture (SCF)
- 97 Poland Stargard Geothermal District Heating (PCF)

Honduras: La Esperanza Hydropower Project Makes History

First Ever Certified Emission Reductions Issued



PROJECTS

A historic milestone in the global carbon market was reached in October 2005 when the Executive Board of the Kyoto Protocol's Clean Development Mechanism issued the first ever certified emission reductions (CERs) to two small CDM projects located in Honduras—the La Esperanza Hydroelectric Project and the Rio Blanco Small Hydroelectric Project. The La Esperanza project is selling certified greenhouse gas emission reductions to the World Bank Community Development Carbon Fund. In this first issuance of certified emission reductions, La Esperanza's was a small, but historically important volume of 2,210 CERs.

The issuance of the certified emission reductions is the final step in a process that officially recognizes the project and its greenhouse gas emission reductions under the rules of the CDM. The CERs that are issued can be used by countries to fulfill their Kyoto commitments to reduce greenhouse gases. Companies may acquire and use CERs to meet national obligations to reduce emissions, such as under the European Union Emissions Trading Scheme.

Greenhouse Gas Reductions and Community Benefits

Implemented by Consorcio de Inversiones S.A. (CISA) from Honduras, La Esperanza Hydroelectric Project is in the

remote and mountainous rural area of the Intibuca region of central Honduras. The project will sell the electricity generated to the National Utility Company, ENEE, for the next 15 years. The electric power generated by this 12.7 megawatt containment/run-of-river hydro project will for the first time guarantee a reliable and steady supply of electricity to the town of La Esperanza and many of the surrounding communities, reaching about 40,000 people.

The company has committed to assist local communities currently without electricity in the Rio Intibuca basin to apply for rural electrification grants from the government and other sources. In addition CISA will also plant about 25,000 seedlings a year to gradually reforest degraded watershed areas around the project site.

“One of the objectives of President Maduro’s administration has been its commitment to promote new power production using renewable resources. This goal has been reached with the commissioning of new projects like La Esperanza hydro plant. It’s a great honor for Honduras to be a leader in the Clean Development Mechanism, showing not only our commitment to the sustainable use of our natural resources but also contributing with actions to reduce greenhouse gases.”

*Gerardo Salgado
Deputy Secretary of Natural Resources and Energy
Government of Honduras*



“We feel that having certified emission reductions issued to the La Esperanza Project will be important for Central America as they can now be seen as a real source of income which can help future projects move from the idea stage to the reality phase. The certified emission reductions can be a win-win for developing countries and for the efforts to reduce global warming.”

*Ron Turner
Director General of Consorcio de
Inversiones S.A. (CISA)*



China: Jincheng Coal Mine Methane Recovery



“The success of signing this emission reductions purchase agreement serves as a model case for further promotion of similar CDM activity in China. I wish to convey my gratitude to the people involved for this success.”

*Madam Sun Cuihua
National Development
and Reform Commission
(NDRC)
for China's Climate
Change Office*

China is the second largest country in terms of energy production and consumption. In 2003, total commercial energy consumption reached 1.68 billion tons of coal equivalent, an increase of 13 percent over that of 2002, of which coal accounted for more than 67 percent. The production and consumption of vast amounts of coal has caused serious economic and social damage, for example through air and water pollution and land degradation. The production of coal also resulted in the emission of about 12 billion cubic meters of methane, which is 21 times more potent than carbon dioxide as a greenhouse gas.

A First Coal Mine Methane Project

The Jincheng project is the first coal mine methane project in the PCF portfolio. It will capture the coal mine methane gas currently being vented to the atmosphere, for fueling 120 megawatts of on-site power production to displace imported grid electricity generated by coal. The PCF has contracted to buy a minimum of 4.5 million tons of carbon dioxide equivalent from the project.

More than Greenhouse Gas Emission Reductions

The project will bring significant technological, environmental and health benefits. In addition, it will foster socioeconomic development in the surrounding poverty-stricken mining area by creating jobs and generating income. While the project will improve conditions at the mine for current employees, it will also create 60 new jobs for re-trained miners and additional specialist staff at the power project. The project will also help improve the safety of miners by establishing a better way to eliminate explosive methane from the mine.





“Caring for our environment is a collective responsibility. Governments, private sector and society, all together, have the obligation to do their part in caring for and protecting our natural resources. Today, development is either sustainable or otherwise it simply cannot be called development. That is the reason why my government is highly interested in and supports the projects whose main objective is to use our natural resources in a sustainable manner, as is the case with the Seawater Farms Bahía Kino Project”

*Lic. Vicente Fox Quesada
President of Mexico*

The Seawater Agroforestry Project is being developed along the desert coastline of the Gulf of California in the State of Sonora in Mexico, which is characterized by very little plant life and low carbon storage due to lack of rainfall and salinization of the soil by proximity to the coast. In many cases like this, desert coastlines have been negatively impacted by human activities. For example, natural salt marsh areas, which support high productivity, have been developed for shrimp farms, marinas and other uses that can harm or destroy the marshes’ natural functions. Coastal mangrove

marshes have been especially impacted by clearing for shrimp aquaculture. In addition, saltwater shrimp farms currently release their untreated effluents directly into the Gulf of California, polluting the Gulf and leading to the eutrophication—water pollution caused by excessive plant nutrients—of the coastal waters.



A plume of effluent water is seen leaving a shrimp farm and drifting along the coast, posing a potential contamination risk to neighboring shrimp farms.



Extensive shrimp farming all over the world has decimated mangroves and increased seawater pollution.

“The 33,000 hectares of seawater cropland and forest will absorb enough carbon from the atmosphere to balance the emissions of more than 100,000 automobiles and be the catalyst for automobile owners and manufacturers around the world to balance the emissions of their own vehicles. The governments, corporations, individuals and the World Bank that collaborate in this project will be in the vanguard of partnerships never before witnessed in human history, and will lead the world in the transformation of agriculture and business practices for the rest of the 21st century.”

*Carl N. Hodges
Founding Director, Environmental Research
Laboratory, University of Arizona
Chairman, the Seawater Foundation*

Making the Desert Bloom...

The Seawater Foundation proposes to revegetate up to 10,000 hectares of barren coastal desert and intertidal zones in the State of Sonora. The BioCarbon Fund will purchase approximately 720,000 tons of carbon dioxide equivalent to be sequestered in mangrove biomass from the first project site at Bahía Kino. The project will partner with an existing shrimp farm and use its wastewater to irrigate plantations of halophytic (salt-loving) plants, mostly mangrove trees, intercropped with *salicornia bigelovii*, a salt-loving oil seed crop. After irrigating this perimeter, the water will seep into the sand where it will be slowly cleansed before returning to the sea. As a result of the project that particular farm will no longer discharge its untreated effluent waters into the sea. This innovative design will help reduce pollution by effluent-rich waste water from shrimp farms and land erosion.

...And More Benefits

The plantations will additionally offer habitat for birds, insects and fish. They will also provide a source of wood, forage and non-timber products without reducing the supply of fresh water. Finally, the project will recruit and train 200 locals. It is designed to be an ongoing enterprise and therefore to assure long term employment, purchases of carbon credits, and social and environmental benefits.

Colombia: Rio Frio Wastewater Management



In Colombia, municipal wastewater treatment covers only about eight percent of the total needs. As a result, untreated flows have had a major impact on the deterioration of surface water in lakes and rivers, and water for irrigation. The quality of potable water in downstream towns and cities has also suffered.

The Colombia Rio Frio Wastewater Management Project will increase coverage of sanitation facilities, reduce the load of wastewater effluents into the environment, and contribute to reductions in greenhouse gas emissions through the modernization of the Rio Frio wastewater treatment plant located in Giron, Colombia.

The additional advantages of the project are that it will use methane gas (from waste digestion) for electricity generation, and contribute to raising awareness on the use of bio-gas in other wastewater treatment plants. It also proposes a strategy to optimize the use of anaerobic technology of this type, which has been shown to have significant potential in

developing countries with tropical climates such as Colombia.

The CDCF intends to purchase emission reductions of 250,000 tons of carbon dioxide equivalent over a ten-year period.

The Colombia Rio Frio Wastewater Management project provides significant community benefits, such as the reduction of local air pollution, improvement in effluent treatment, and improvement in the quality of the receiving waters—Rio Frio and Rio Oro rivers. A share of the carbon revenues will be used to address health issues such as HIV/AIDS among vulnerable populations in the neighboring Giron municipality, and unemployment among the poorest youth. It is envisaged that this will be achieved through an educational program, with community participation on health and environment and select technical training.



Improvements in the existing wastewater treatment plant are designed for the elimination of methane.



Colombia Snapshot

Colombia lies at the gateway to South America. It has a land area of about 1.04 million square kilometers and occupies the northwestern end of South America. It is the only South American country with coastlines on both the North Pacific Ocean and the Caribbean Sea. At present, Colombia's population is nearly 43 million people. Its economy has been on a recovery trend in recent years despite a serious armed conflict. Reduction in cultivated land over the last 10 years has resulted in rural unemployment and the migration of rural people to the cities.



East Africa: Small Group and Tree Planting (TIST)



TIST is an innovative program that empowers and pays groups of subsistence farmers situated in some of the poorest parts of Kenya, Uganda and India to restore local deforested areas and to adopt sustainable agricultural practices. Participation in the program is voluntary, although it requires locals to form a small group (10 to 12 members) and to open an account in a rural bank. If the small group submits a series of consecutive reports on its plantings to a coordinator at a meeting, the group is considered active. The small group receives quarterly payments per trees planted and surviving trees, on the condition that the group also adopts sustainable farming practices. Calculations can convert the number of trees planted to the number of tons of carbon dioxide equivalent. Provided that the necessary approvals are received, the BioCarbon Fund intends to sign a contract with Clean Air Action Corporation, the sponsor and aggregator of TIST, to buy a certain number of tons to be generated by activities in several countries.

Adding Value through Simple Agroforestry Techniques

The TIST Program relies primarily on small group initiative and creativity to establish small, dispersed reforestation groves using hand tools and locally available materials. Small groups take the most important decisions, including the species to be planted and the location. As of today, thousands of smallholders are adopting simple agroforestry techniques,

planting trees on their agricultural plots and around human settlements and switching to conservation tillage. As a result they restore soil fertility, create a ready supply of fuelwood and additional animal forage, save capital for the future, and sequester large amounts of carbon. In addition, there may also be revenues or cost savings from subsistence crops, such as charcoal, honey, fruits, etc.

“Before I joined TIST I wasn’t doing very much. But every time I went to see my trees and watched them get bigger, it encouraged me to do more and more.”

*Raphael Chinolo
TIST Small Group participant and trainer*



“There are so many people for whom this would be something they would want to do... talking about women who were tired of walking far to get firewood, on the fact that now they could grow it themselves.”

*Joseph Kahiigwa,
Deputy to the Ambassador of Uganda*

Empowerment through Planting

Small groups are followed and empowered during the process in subjects including seedling selection and nursery development, land preparation, tree planting, and conservation farming, but also in health and social matters, such as HIV/AIDS education and prevention. The empowerment improves practices and creates experiences that are then shared among the groups through newsletters and local seminars. These further help to improve farm production, health and civic life. One such good practice is the rotating

leadership which supports gender equality and develops the capacities of each member.

All monitoring of the small group efforts is carried out by locally recruited staff, using basic public transportation, bicycles and high-tech equipment—battery-operated palm computers, GPS receivers, data and image uploads through laptops or internet access points—and is readily made available on the internet. The project’s achievements can be seen on-line at www.tist.org.



Ecuador: Sibimbe & Abanico Hydroelectric Power



PROJECTS

The Sibimbe Hydroelectric and the Hidro Abanico, both run-of-river hydro projects, will be the first carbon transactions for Ecuador—with combined greenhouse gas emission reductions of 1.25 million tons of carbon dioxide equivalent until 2012. The certified emission reductions generated by these projects will be purchased by the Netherlands CDM Facility through the World Bank, as trustee of the fund.

The Abanico Hydroelectric Project, developed by Hidroabanico S.A., is located in the southeastern region of Ecuador in the Morona Santiago Province. The project will be developed in two phases. The first phase will consist of a 14.8 megawatt plant. The second phase will double the capacity installed, as well as the energy produced, for a total capacity of 29.8 megawatts. The project is

expected to result in emission reductions of 806,280 tons of carbon dioxide equivalent until 2012.

The Abanico project will also generate additional economic, environmental and social benefits. Over its lifetime, the project will displace about eight million gallons of diesel generation from old, obsolete thermal plants; help create 250 direct jobs and 2,000 indirect jobs during the construction phase in one of the most economically depressed regions of Ecuador; provide a reliable water supply from the Abanico River to the city of Macas, through a 15 kilometer canal to be built under the project, saving \$3 million in municipal investment in water infrastructure; and help to stabilize the national grid, since the project delivers power to the most remote part of the national grid.

“The Government of Ecuador gives the highest priority to the development of CDM projects in light of their contribution to environmental improvements and (economic) development in the host country.”

*Fabian Valdivieso Eguiguren
Minister of Environment of
Ecuador*

Ecuador Snapshot

Ecuador is located in western South America, bordering the Pacific Ocean at the Equator, between Colombia and Peru. It is divided into three continental regions: the Costa (coastal plain), Sierra (inter-Andean central highlands), and Oriente (eastern lowlands) and one insular region—Galapagos Islands. It has a total area of 280,000 square kilometers and a population of about 13.4 million people. About 45 percent of the population is below the poverty line.





The Sibimbe Hydroelectric Project, developed by Hidalgo & Hidalgo Company, is a 15 megawatt run-of-river hydroelectric plant located on

the western slopes of the Andean Mountains. The project will generate renewable electricity using hydroelectric resources and sell the generated

output to Ecuador's wholesale power market through either spot market transactions or through power purchase agreements using the Transelectric transmission company to carry the energy.

“The Sibimbe hydro plant has demonstrated that 100 percent Ecuadorian funds, direct project design and an Ecuadorian labor force is indeed capable of implementing projects, even with our country's current economic difficulties. This example will inspire other sponsors to initiate other hydro projects in the country, and with the help of the World Bank and the carbon funds, we feel there is still much to be done in this area.”

*Juan Francisco Hidalgo B.
Executive President of Hidalgo e Hidalgo S.A.*

The project is expected to result in emission reductions of 452,153 tons of carbon dioxide equivalent over the first eight years of the project. The greenhouse gas reductions are the result of the displacement of generation from fossil-fuel thermal plants that would have otherwise delivered power to the interconnected grid in Ecuador.

India: Karnataka Municipal Water Pumping



The pressure on water and energy resources in urban India is rapidly increasing because of exploding and unplanned population growth in the cities. The State of Karnataka faces a huge water and energy crisis, as electricity makes up 40 to 60 percent of water supply costs, and recent power tariff hikes have increased the unit price of electricity by 20 percent.

The objective of this project is to reduce the energy required for water service delivery, through water pumping efficiency improvements, in six municipalities—Mysore, Bellary, Hubli-Dharwad, Mangalore, Belgaum and Gulbarga—in the State of Karnataka in Southern India.

By burning less fossil fuel for electricity generation, this project will reduce carbon dioxide emissions by about 25,000 tons a year over a period of 10 years. The CDCF intends to purchase greenhouse gas emission reductions of 250,000 tons of carbon dioxide equivalent over a 10 year period. The savings resulting from

these improvements can be used by the water utilities in Karnataka to expand and improve service while minimizing the impact on the electricity grids and fragile water sources.

The community benefits from the Karnataka Municipal Water Pumping Project include improved access to clean water, reduction of water-borne diseases such as dysentery and trachoma, and reduction of the time households, particularly women, spend securing clean water. The project also provides for the training and education of municipal water utility employees on the efficient use of electricity and the positive effect on the environment of proper energy management.

Most importantly, the Karnataka project will help mitigate a looming problem for developing countries in general—water scarcity—and will specifically reduce the potential for conflict between agricultural, industrial and domestic demand for water in Karnataka.

“For the first time in the country we have put in place a contract for providing continuous water supply through private sector participation on a demonstration scale. With this, Karnataka is bound to take the lead in water sector reform in the country.”

*Jawaib Akthar
Managing Director,
Karnataka Urban
Infrastructure Development
& Finance Corporation
(KUIDFC)*





India Snapshot

India is the second most populous country in the world and is the seventh largest country by geographical area. Its total surface area is approximately 3.3 million square kilometers, with the entire north and northeast states being made up of the Himalayan Range. India's total population is estimated at about 1.1 billion people, with an annual growth rate of 1.4 percent. India is also the fourth largest economy in the world in terms of purchasing power parity. Owing to its large population, however, India's per capita income was ranked 125th by the World Bank. About 29 percent of its population falls below the poverty line.



Uruguay: Montevideo Landfill Gas Capture



Uruguay is the second smallest country in South America. More than 90 percent of the country's population of 3.4 million reside in urban areas. About one-half of the people live in the capital city of Montevideo.

The Municipality of Montevideo produces an average of 1,500 tons a day of municipal solid wastes which, since the late 1980s, have been disposed of in a government-operated landfill. The controlled landfill area of 29.5 hectares is more than 30 meters high and is now about to be closed. The municipality has started depositing solid waste in a 40 hectare new sanitary landfill. This new disposal area will have improved groundwater protection through a leachate collection and treatment system and geo-membrane bottom liner. The landfill design is planned for a refuse depth of 100 feet, in compliance with the minimum 40 feet recommended for landfill gas recovery.

Both Global & Local Benefits

The project will collect the landfill gas from the Montevideo new landfill area, process it to pipeline-quality high-BTU (British thermal unit) gas, and inject it into the natural gas distribution network. The enriched gas will be sold to private natural gas distributors. The project will result in significant global and local environmental benefits through methane combustion that will generate emission reductions, and through the control of flammable gas migration and non-methane organic compounds emissions which can cause unpleasant odors. The Spanish Carbon Fund will purchase the first one million tons of emission reductions (in tons of carbon dioxide equivalent) from the project.



Poland: Stargard Geothermal District Heating



Geothermal heat production facilities at Stargard.

The objective of the project is to reduce carbon dioxide emissions through displacement of coal-fired district heat with renewable heat produced from geothermal energy. The project will be implemented in Stargard Szczecinski (Stargard), the third largest city in northwest Poland, with a population of about 75 thousand people.

Stargard Szczecinski has a well-developed district heating system that supplies more than 60 percent of the heat demand of the city. The total heat supply is from a coal-fired heat-only-boiler plant with a total installed capacity of about 116 megawatt thermal.

The project provides for a geothermal base-load heating plant with an installed capacity of about 14

megawatt thermal. It consists of three components: (a) the “underground plant” comprised of a new geothermal doublet (production well and directional re-injection well) which will be located close to the existing coal-fired district heat plant; (b) the “above-ground plant” and connections, comprising of a plant building to house heat exchangers, electrical equipment and installations, process equipment and controls, as well as internal piping; and (c) the connection to the existing district heating network of Stargard.

The 14 megawatt geothermal system proposed in the project will displace the 77 percent efficiency coal-fired boilers up to the year 2012. The PCF will purchase about 30,000 to 32,000 tons of carbon dioxide emission reductions per year.

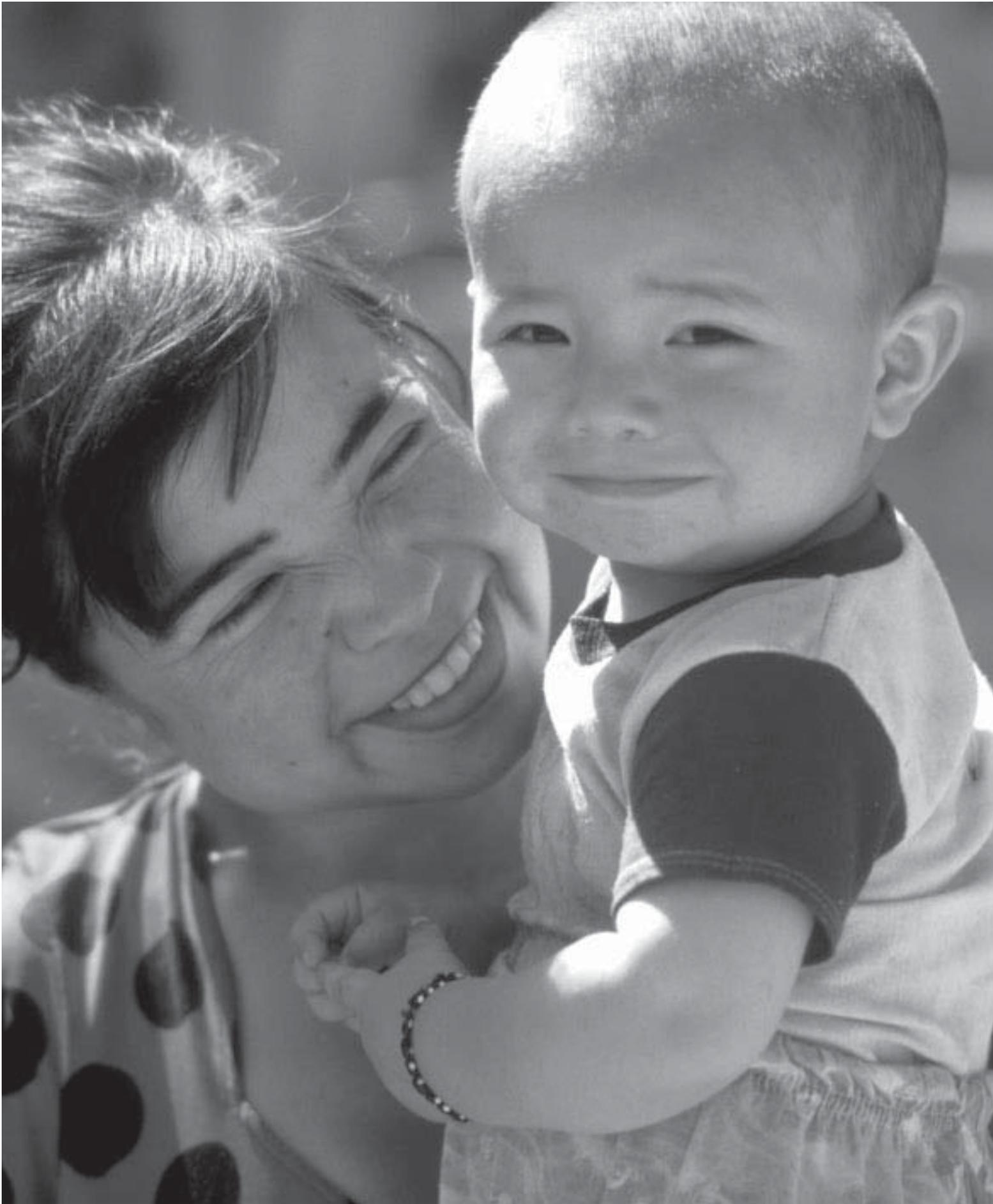
Poland Snapshot

Poland has a land area of 304,465 square kilometers and is located in Central Europe. Its landscape consists almost entirely of the lowlands of the North European Plain. About 72 percent of total population (38.2 million) lives in urban areas. About 18 percent of the population is below the poverty line, with almost 20 percent unemployed. Air pollution remains a serious concern in Poland because of sulfur dioxide emissions from coal-fired power plants; the resulting acid rain has damaged Poland’s forests.



“We are satisfied with the cooperation under the JI Mechanism. We will soon sign the emission reductions purchase agreement and start selling carbon dioxide emission reductions to the PCF. Both the project and the environment will benefit from this cooperation.”

*Artur Niewiarowski
President of the Board of
Geotermia Stargard*



Annexes

100 Governance
104 Glossary
107 Acronyms

Governance

PCF MANAGEMENT COMMITTEE

Warren Evans (Chair), Director,
Environment Department

Henk Busz, Sector Manager, Infrastructure
& Energy Services Department, ECSIE

Denis Clarke, Chief Investment Officer,
CININ, International Finance Corporation

Susan G. Goldmark, Sector Manager,
Energy Cluster, LCSFE

Arun Sanghvi, Lead Energy Specialist,
AFTEG



PCF PARTICIPANTS' COMMITTEE

Jean Claude Steffens (Chair), Electrabel

Eric Bjørnebye, Government of Norway

Ichiro Keida, Mitsubishi Corporation

Kyosuke Inada, Japan Bank for
International Cooperation

Liv Rathe, Norsk Hydro

Maurits Blanson Henkemans, Government
of the Netherlands

Olle Björk, Government of Sweden





CDCF PARTICIPANTS' COMMITTEE

Lex de Jonge (Chair), Government of the Netherlands

Elena Campos, Government of Spain

João Roda, EDP Produção (Gestão de Produção de Energia, SA)

Kazuhisa Fujiyama, Nippon Oil Company

Kunihiro Nishikawa, Daiwa Securities

SMBC Principal Investments

Toni Hemminki, Rautaruukki Oyj



CDCF ADVISORY GROUP

Michael Zammit Cutajar (Chair)

Amanda Bullen, Government of Canada

Andrei Marcu, International Emissions Trading Association

Devalla Murali, Reliance Industries LTD.

Dimitri Kanounnikoff, Agence Française de Développement

Eduardo Sanhueza, Fundación Ciudadana para las Américas

Laura Canuto, Government of Italy

Mamadou Honadia, Government of

Burkina Faso, Ministère de l'Environnement et du Cadre de Vie

Philip Gwage, Government of Uganda, Ministry of Water, Lands and Environment

Shoaib Sultan, Rural Support Programs Network

Youba Sokona, Tunisia, Observatoire du Sahara et du Sahel

Yvo de Boer, Government of the Netherlands



Governance

BioCF FUND MANAGEMENT COMMITTEE

Warren Evans (Chair), Director, Environment Department
Marjory-Anne Bromhead, Sector Manager, ECSSD
Mark Cackler, Sector Manager, LCSE
Mark D. Wilson, Sector Director, EASRD
Karen Brooks, Sector Manager, AFTS2

BioCF PARTICIPANTS' COMMITTEE

Francois Falloux (Chair), Eco-Carbone
Elena Campos, Government of Spain
Jeanne-Marie Huddleston, Government of Canada
Kan Kobayashi, Idemitsu Kosan Co., LTD.
Manabu Hirano, Tokyo Electric Power Company

NECF FUND MANAGEMENT COMMITTEE

Warrick Smith (Chair), Manager, PSDPO
Rachel Kyte, Director, CESDR, International Finance Corporation
Warren Evans, Director, Environment Department





DCF PARTICIPANTS' COMMITTEE

Frank Rasmussen (Chair), Energi E2 A/S

Albert Welinder, Danish Ministry of Foreign Affairs

Bo Lynge Rydahl, Nordjysk Elhandel A/S

Henrik Clausen, Aalborg Portland A/S

Malene Abildstrøm, Mærskolie og Gas A/S

Niels Grovn, Elsam A/S

Peter Pedersen, Danish Ministry of the Environment



CARBON FINANCE UNIT MANAGEMENT TEAM

Ken Newcombe/Odin Knudsen, Senior Manager, CFU

Andrea Pinna, Program Manager, CDCF

Benoit Bosquet, Program Manager, PCF, BioCF

Chandra Shekhar Sinha, Team Leader, Operations

Charles Cormier, Team Leader,

Stakeholder Relations and CF-Assist

Eduardo Dopazo, Program Manager, SCF

Jan Zika, Senior Resource Management Officer

Jari Vayrunen, Program Manager, NECF

Johannes Heister, Team Leader, Methodology

John Buckman, Program Manager, ICF

Maria-Isabel Alegre, Office Manager

Martina Bosi, Program Manager, DCF

Noreen Beg, Program Manager, NCDMF

Thomas A. Duvall, Chief Counsel, Project Finance & Cofinancing, Legal Department

Veronique Bishop, Team Leader, Finance



Adaptation

Actions taken to help communities and ecosystems cope with changing climate conditions, such as the construction of flood walls to protect property from stronger storms and heavier precipitation, or the planting of agricultural crops and trees more suited to warmer temperatures and drier soil conditions.

Additionality

According to the Kyoto Protocol, greenhouse gas emission reductions generated by CDM and JI project activities must be additional to those that otherwise would occur. Additionality is established when there is a positive difference between the emissions that occur in the baseline scenario (business as usual), and the emissions that occur in the proposed project.

Afforestation

Planting of new forests on lands that historically have not contained forests.

Annex I Parties

The countries listed in Annex I of the UNFCCC and in Annex B of the Kyoto Protocol.

Assigned Amount Unit (AAU)

An "Assigned Amount" is the total amount of greenhouse gas that each ratifying country is allowed to emit during the "first commitment period" (2008 – 2012) of the Kyoto Protocol. AAUs are issued by governments that have emission reduction commitments, and can be traded between countries pursuant to international emissions trading, provided that these countries are fully compliant with eligibility requirements.

Bagasse

The fibrous residue left after crushing sugarcane.

Baseline

The emission of greenhouse gases that would occur without the contemplated policy intervention or project activity.

Biomass Fuel

Energy sources that are renewable as long as the vegetation producing them is maintained or replanted, such as firewood, alcohol fermented from sugar, and combustible oils extracted from soy beans.

Carbon Asset

The potential of greenhouse gas emission reductions that a project is able to generate and sell.

Carbon Finance

Resources provided to projects generating (or expected to generate) greenhouse gas emission reductions in the form of the purchase of such emission reductions.

Carbon Finance Document (CFD)

A project document, which contains a more advanced project description than the project idea note, including financials, is submitted by a project sponsor and reviewed by the Carbon Finance Unit, which submits it for clearance to the Fund Management Committee (in the case of the PCF) and the respective Participants' Committees.

Carbon Market

A popular term for a trading system through which countries may buy or sell units of greenhouse gas emissions in an effort to meet their national limits on emissions, either under the Kyoto Protocol or under other agreements. The term comes from the fact that carbon dioxide is the predominant greenhouse gas and other gases are measured in units called "carbon dioxide equivalents."

Certification

In relation to emission reductions, certification is the written assurance by an independent third party or designated operational entity that, during a specific time period, a project achieved the reductions in emissions by sources or the removal of greenhouse gases by sinks as certified.

Certified Emission Reductions (CERs)

Units of greenhouse gas reductions generated from CDM projects (in countries that do not have emission reduction commitments under the Kyoto Protocol), verified by an external, UN-accredited third party and issued by the regulatory body of CDM, the CDM Executive Board. Certified emission reductions can be used for compliance with Kyoto Protocol obligations or to meet emissions caps under the European Union Emissions Trading Scheme.

Clean Development Mechanism (CDM)

The mechanism provided by Article 12 of the Kyoto Protocol, designed to assist developing countries in achieving sustainable development by permitting industrialized countries to finance projects for reducing greenhouse gas emissions in developing countries and receive credit for doing so.

CDM Executive Board

A 10-member panel elected at COP7, which supervises the Clean Development Mechanism.

Community Benefits

Community benefits are identifiable and quantifiable improvements in the quality of life of a local group of people who are identified by the trustee and the project entity as in the vicinity of, or affected by a CDCF project.

Conference of the Parties (COP)

The supreme body of the UNFCCC. It meets once a year to review the Convention's progress.

Conference of the Parties/Meeting of the Parties (COP/MOP)

Conference of the Parties to the UNFCCC serving as the meeting of the Parties to the Kyoto Protocol.

Designated National Authority (DNA)

An office, ministry, or other official entity appointed by a Party to the Kyoto Protocol to review and give national approval to projects proposed under the CDM.

Designated Operational Entity (DOE)

An independent entity, accredited by the CDM Executive Board, which validates CDM project activities, and verifies and certifies emission reductions generated by such projects.

Emission Reduction (ER)

The measurable reduction of release of greenhouse gases into the atmosphere from a specified activity or over a specified area, and a specified period of time.

Emission Reductions Purchase Agreement (ERPA)

Agreement which governs the purchase and sale of emission reductions.

European Union Emissions Trading Scheme (EU ETS)

is an European Union wide cap and trade emissions trading system that trades in “EU Allowances”. EU Allowances are allocated units (tons) of carbon dioxide equivalent that grant the holder—typically a private emitter of greenhouse gases—to emit the equivalent quantity of greenhouse gases towards meeting emissions obligations in the EU ETS. “Allowances” are essentially “rights to emit”, unique to cap and trade schemes, issued by national governments and allocated to emitters either by auctions, regulation or specific decree.

Flexible Mechanisms

Three procedures established under the Kyoto Protocol to increase the flexibility and reduce the costs of making greenhouse gas emissions cuts; they are the Clean Development Mechanism, International Emissions Trading, and Joint Implementation.

G8 Gleneagles Summit

In June 2005, the Group of Eight industrialized country leaders met in Gleneagles, Scotland in what became known as the Gleneagles Summit. Climate change was a major focus of the meeting and the final communiqué in which the World Bank was asked to take a leading role to work with partners in the creation of a new, long term oriented investment framework for clean energy and sustainable development.

Greenhouse Gases (GHGs)

These are the gases released by human activity that are responsible for climate change and global warming. The six gases listed in Annex A of the Kyoto Protocol are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Less prevalent—but very powerful—greenhouse gases are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

Green Investment Scheme

A financing mechanism in which the proceeds from emissions trading under the Kyoto Protocol are reinvested in projects in the host country with the objective of further reducing emissions.

HFC-23 (trifluoromethane)

Greenhouse gas that has 11,700 times the global warming potential of carbon dioxide, and is a by-product in the manufacturing process of HCFC-22, used in air conditioning and refrigeration.

Host Country

The country where an emission reduction project is physically located.

Host Country Committee (HCC)

The committee known as the Carbon Finance Host Country Committee established by the World Bank for the purpose of facilitating interaction between the host countries and the Bank in relation to the development and operation of CDM projects.

Intergovernmental Panel on Climate Change (IPCC)

Was established to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation.

International Development Association (IDA)

One of five institutions comprising the World Bank Group. IDA focuses exclusively on the world's poorest countries.

International Emissions Trading

International Emissions Trading as defined in Article 17 of the Kyoto Protocol is an allowance-based system that permits Annex I parties to buy or sell among each other any “part of an assigned amount,” which is also referred to as a collection of assigned amount units.

Joint Implementation (JI)

Mechanism provided by Article 6 of the Kyoto Protocol, whereby Annex I parties may acquire emission reductions when they help to finance projects that reduce net emissions in another industrialized country (including countries with economies in transition).

Kyoto Protocol

The Kyoto Protocol, an international and legally binding agreement to reduce greenhouse gas emissions world wide, entered into force on 16 February 2005.

Land Use, Land-Use Change, and Forestry (LULUCF)

Refers to the impact of land use by humans—and changes in such land use—on greenhouse gas emissions: expanding forests reduces atmospheric carbon dioxide; deforestation releases additional carbon dioxide; various agricultural activities may add to atmospheric levels of methane and nitrous oxide.

Least Developed Countries (LDCs)

Least developed countries are countries (i) listed in the World Bank's IDA list of countries; (ii) countries commonly referred to as "IDA blend," with a population of less than 75 million; or (iii) countries designated as least developed countries by the United Nations.

Marrakesh Accords

Agreements reached at COP7 which set various rules for "operating" the more complex provisions of the Kyoto Protocol. Among other things, the accords include details for establishing a greenhouse gas emissions trading system; implementing and monitoring the Protocol's CDM; and setting up and operating three funds to support efforts to adapt to climate change.

Methodology Panel

The CDM Executive Board at its fourth meeting held on June 9-10 in Bonn agreed to establish a Methodology Panel which is to develop recommendations to the Board on guidelines for methodologies for baselines and monitoring plans.

Mitigation

Actions to cut net emissions of greenhouse gases and so reduce global warming potential. Examples are using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere.

Monitoring Plan

A set of requirements for monitoring and verification of emission reductions achieved by a project.

Project Design Document (PDD)

A project-specific document required under the CDM rules which will enable the designated operational entity to determine whether the project (i) has been approved by the parties involved in a project, (ii) would result in reductions of greenhouse gas emissions that are additional, (iii) has an appropriate baseline and monitoring plan.

Project Idea Note (PIN)

A document prepared by a project proponent regarding a project proposed for World Bank carbon funds. The PIN is set forth in a format provided by the Carbon Finance Unit and available on its website <http://carbonfinance.org>

Reforestation

Replanting of forests on land that was previously forested but subsequently converted to other use.

Registration

The formal acceptance by the CDM Executive Board of a validated project as a CDM project activity.

Sequestration

The process of capturing carbon dioxide in a manner that prevents it from being released into the atmosphere for a specified period of time.

Small-Scale Projects

Projects which are compatible with the definition of "Small-Scale CDM Project Activities" set out in decision 17/CP.7. by the Conference of Parties to the UNFCCC.

Sustainable Development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Ton of Carbon Dioxide Equivalent (tCO_{2e})

The universal unit of measurement used to indicate the global warming potential of each of the six greenhouse gases. Carbon dioxide—a naturally occurring gas that is a byproduct of burning fossil fuels and biomass, land-use changes, and other industrial processes—is the reference gas against which the other greenhouse gases are measured.

Trustee

The World Bank, acting not in its individual or corporate capacity but solely in its capacity as trustee of a carbon fund.

United Nations Climate Change Secretariat

The main functions of the secretariat are to make practical arrangements for sessions of the Convention bodies, to assist Parties in implementing their commitments, to provide support to on-going negotiations and to coordinate with the secretariats of other relevant international bodies, notably the Global Environment Facility (GEF) and its implementing agencies (UNDP, UNEP and the World Bank), the Intergovernmental Panel on Climate Change (IPCC), and other relevant conventions.

United Nations Framework Convention on Climate Change (UNFCCC)

The international legal framework adopted in June 1992 at the Rio Earth Summit to address climate change. It commits the Parties to the UNFCCC to stabilize human induced greenhouse gas emissions at levels that would prevent dangerous manmade interference with the climate system. In December 1997, the Parties to the UNFCCC adopted the Kyoto Protocol. In February 2005, the Kyoto Protocol entered into force thus becoming a legally binding instrument.

Validation

The assessment of a project's project design document, which describes its design, including its baseline and monitoring plan, by an independent third party, before the implementation of the project against the requirements of the CDM.

Verification

The periodic independent review and expert determination by an independent third party of the monitored emission reductions that have occurred as a result of a registered CDM project activity during the verification period.

Verified Emission Reduction (VER)

A unit of greenhouse gas emission reductions generated from either CDM or JI projects and verified by the designated operational entity and measured in metric tons of carbon dioxide equivalent.

AAU	Assigned amount unit
BTU	British thermal unit
CDM	Clean Development Mechanism
CER	Certified emission reduction
CFD	Carbon finance document
CMM	Coal mine methane
COP	Conference of the Parties
COP/MOP	Conference of the Parties/ Meeting of the Parties
DNA	Designated national authority
DOE	Designated operational entity
ER	Emission reduction
ERPA	Emission reductions purchase agreement
EU ETS	European Union Emissions Trading Scheme
FaL-G	Fly ash-Lime-Gypsum
FY	Fiscal year
GHGs	Greenhouse gases
HCC	Host Country Committee
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IETA	International Emissions Trading Association
IFC	International Finance Corporation
IIC	Inter-American Investment Corporation
JI	Joint Implementation
LULUCF	Land use, land-use change and forestry
MSW	Municipal solid waste
N₂O	Nitrous oxide
PDD	Project design document
PIN	Project idea note
PHRD	Japan's Policy and Human Resources Development Fund
tCO₂e	Ton of carbon dioxide equivalent
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
VSBK	Vertical shaft brick kiln



Joke Waller-Hunter, Executive Secretary of the Secretariat of the United Nations Framework Convention on Climate Change, passed away on October 14, 2005.

Since taking over the role of UNFCCC Executive Secretary in 2002, Joke Waller-Hunter oversaw the entry into force of the Kyoto Protocol. Under her leadership, the UNFCCC Secretariat moved forward preparations for the implementation of the Protocol and advanced its support to the implementation of the Convention, in particular concerning the adaptation to climate change impacts.

UN Secretary-General Kofi Annan called her a “firm believer in the principles of sustainable development” adding that she “knew that global cooperation was essential to advancing that cause.”

Managing Editor:
Anita Gordon

Associate Editors:
Adelaida Schwab
Masha Alexandria Ageeva-Turovskaya

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Carbon Finance Unit

The World Bank
1818 H Street, NW
Washington, DC 20433
www.carbonfinance.org



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