WORLD BANK CARBON FINANCE UNIT
CARBON PARTNERSHIP FACILITY

OPERATION OF THE FACILITY
Building a solid portfolio

Growing from an early trailblazer, the World Bank Carbon Finance Unit has built a mature portfolio while continuing to pioneer new products.

**Growth of carbon funds**

- “Crowding-in” of the private sector – the World Bank catalyzes markets and pioneers new products.
- The World Bank’s extended carbon finance family is large – 82 governments and private sector companies – together account for **28% of all CDM projects.**

**Global diverse experience**

- The World Bank’s carbon funds are developing projects in 57 countries – for many their first carbon finance project.
- The World Bank is also a leader in forest carbon development and active in many cutting-edge CDM technology types and programs of activities.

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**Value of CDM & JI Transactions (per year) (US$ billion)**

<table>
<thead>
<tr>
<th>Year</th>
<th>WB Market Share</th>
<th>World Bank</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>31%</td>
<td>$0.2 billion</td>
<td></td>
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<tr>
<td>2001</td>
<td>14%</td>
<td>$0.5 billion</td>
<td></td>
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<tr>
<td>2002</td>
<td>15%</td>
<td>$2.6 billion</td>
<td></td>
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<tr>
<td>2003</td>
<td></td>
<td>$5.9 billion</td>
<td></td>
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<tr>
<td>2004</td>
<td></td>
<td>$7.9 billion</td>
<td></td>
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<tr>
<td>2005</td>
<td></td>
<td>$6.9 billion</td>
<td></td>
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<tr>
<td>2006</td>
<td></td>
<td>$3.0 billion</td>
<td></td>
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<tr>
<td>2007</td>
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<td></td>
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<tr>
<td>2008</td>
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<td></td>
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<tr>
<td>2009</td>
<td></td>
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**Source:**
- UNEP RISØ
- State and Trends of the Carbon Market, 2010;
- Up-to 2012 vintages only
# The Carbon Finance Unit’s first generation of carbon funds

<table>
<thead>
<tr>
<th>April 2000</th>
<th>May 2002</th>
<th>March 2003</th>
<th>March 2004</th>
<th>May 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prototype Carbon Fund</strong>&lt;br&gt;World’s First Global Carbon Fund&lt;br&gt;$220,000,000</td>
<td><strong>Netherlands Clean Development Mechanism Facility</strong>&lt;br&gt;Pioneer purchaser of CDM</td>
<td><strong>Community Development Carbon Fund</strong>&lt;br&gt;Poorest country focused</td>
<td><strong>Italian Carbon Fund</strong>&lt;br&gt;Government &amp; private sector&lt;br&gt;$155,600,000</td>
<td><strong>BioCarbon Fund Tranches I &amp; II</strong>&lt;br&gt;Afforestation, Reforestation, REDD+ &amp; soil carbon&lt;br&gt;$90,400,000</td>
</tr>
<tr>
<td><strong>August 2004</strong></td>
<td><strong>January 2005</strong></td>
<td><strong>March 2005</strong></td>
<td><strong>August 2006</strong></td>
<td><strong>March 2007</strong></td>
</tr>
<tr>
<td><strong>Netherlands European Carbon Facility</strong>&lt;br&gt;Purchasing JI</td>
<td><strong>Danish Carbon Fund</strong>&lt;br&gt;Government &amp; private sector&lt;br&gt;€90,000,000</td>
<td><strong>Spanish Carbon Fund</strong>&lt;br&gt;Government &amp; private sector&lt;br&gt;€220,000,000</td>
<td><strong>Umbrella Carbon Facility Tranches I &amp; II</strong>&lt;br&gt;Adding liquidity to market at key moments&lt;br&gt;€904,100,000</td>
<td><strong>Carbon Fund for Europe</strong>&lt;br&gt;Governments &amp; private sector&lt;br&gt;€50,000,000</td>
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</tbody>
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**Unpublished**
The World Bank has established public-private partnerships to pioneer carbon markets.
The Carbon Partnership Facility

A fund to scale up investment in clean technology through programmatic and sector-based approaches

<table>
<thead>
<tr>
<th>Mission</th>
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<tr>
<td>◆ Support systematic approaches to low carbon growth by countries to catalyze investment in clean technologies</td>
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<tr>
<td>◆ The governance of the CPF is based on a partnership of buyers and sellers of carbon credits</td>
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<tr>
<td>◆ CPF utilizes programmatic modalities to scale up emission reduction programs beyond project by project approach</td>
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<tr>
<td>◆ Carbon finance included in integrated financing packages linked to Bank operations</td>
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<tr>
<td>◆ Develop innovative methodologies in areas such as energy efficiency and city-wide programs; and promote the introduction of new technologies</td>
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<table>
<thead>
<tr>
<th>Participation</th>
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<tbody>
<tr>
<td>◆ € 99 million in Buyer commitments to Carbon Fund</td>
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<tr>
<td>◆ Agreements signed with Seller Participants:</td>
</tr>
<tr>
<td>- Morocco Solid Waste Management</td>
</tr>
<tr>
<td>- Vietnam Renewable Energy</td>
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<tr>
<td>- Brazil Solid Waste Management</td>
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<tr>
<td>- Amman Green Growth (City-wide approach)</td>
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<tr>
<td>- Thailand Clean Energy</td>
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<tr>
<td>- China Hebei Regional Farm Biogas</td>
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<td>- Tanzania Renewable Energy Program</td>
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<tr>
<td>- Egypt Vehicle Scrapping and Recycling</td>
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<tr>
<td>- Philippines Animal Waste and Landfill Gas</td>
</tr>
<tr>
<td>◆ € 11 million in donor contributions in Carbon Asset Development Fund (for program preparation and implementation; methodology development)</td>
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</table>
Governance/Participants

**Governance**

- The CPF is a partnership of Buyer and Seller Participants, also includes Donors and Host Country Partners
- Partnership Committee is comprised of an equal number of Buyers and Sellers and makes decisions on key policies
- All Participants are entitled to attend and to participate in Partnership Committee meetings
- Decisions on programs to include in the First Tranche portfolio are made by Buyers

**Participants**

- **Buyer Participants**: Governments of Spain, Norway and Sweden
- **Seller Participants**: Caixa Economica (Brazil), Ministry of Industry and Trade (Vietnam), Fonds D’équipement Communal (Morocco), Greater Amman Municipality; Provincial Electricity Authority (Thailand), Hebei Green Agriculture Co. China), Rural Electricity Agency (Tanzania); Ministry of Finance (Egypt), Land Bank of the Philippines
- **Donors**: Governments of Spain, Norway, Italy; European Commission
- **Host Country Partner**: NDRC (China)

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<table>
<thead>
<tr>
<th>Buyers</th>
<th>Program Development</th>
<th>Sellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public &amp; private sector</td>
<td>Carbon Asset Development Fund (CADF)</td>
<td>Public &amp; private sector</td>
</tr>
<tr>
<td>Purchase emission reductions over the long term</td>
<td></td>
<td>Willingness to develop specific emission reduction programs and sell ERs</td>
</tr>
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**Partners (Host Governments, Others) & Donors**
Brazil Solid Waste Management Program

Program Highlights

◆ **Objective:** Enable public entities to access carbon markets through innovative financing packages in the SWM sector. Reduce environmental and social impacts and GHG emissions from the solid waste management sector.

◆ **Strategic Relevance:** The program is linked to a World Bank loan to Brazil to support the implementation of a law on national solid waste policy that was enacted in 2010 to upgrade landfill practices.

◆ **Program Overview:**
  - **PoA Type:** Land Fill gas Methane capture and use (flaring, electricity generation)
  - **Contract Volume:** 3 million tCO2e in ER Volume + 2 million tCO2e in Options
  - **Methodology:** ACM0001: Consolidated baseline and monitoring methodology for landfill gas project activities --- Version 11.0
  - **World Bank Operations/Safeguards:** World Bank loan to Caixa to finance landfill upgrading; Caixa lending to landfill operators collateralized with carbon finance revenues. Pilot program for use of Country Systems for safeguards assessment.

◆ **Scaling up Potential:** The program could eventually be extended to municipalities throughout Brazil.

◆ **Coordinating and Managing Entity (CME):** Caixa Economica Federal, a major public sector development bank.
Program Highlights

**Objective:** The objective of the Program is to increase the supply of electricity to the national grid from renewable energy sources on a commercially, environmentally and socially sustainable basis.


**Program Overview:**
- Development of 20 – 25 small hydropower projects (CPAs) with total installed capacity of around 250 MW.
- REDP World Bank Credits (US$ 202 mil) are available through financial intermediaries.
- Carbon Finance has been an integral part of the Program design.

**Scaling up potential:** The project represents around 9 % of total potential small hydropower in Vietnam which is estimated to be around 2,900 MW which could generate more than 6 million tCO2e of GHG emission reductions, annually.

**Coordinating and Managing Entity (C/ME):** Ministry of Industry and Trade is the main counterpart of the Bank loan and also serves as C/ME.
Program Highlights

**Objective:** The objective of the Program of Activities is to reduce greenhouse gas emissions (methane and carbon dioxide) through flaring and/or use of landfill gas for energy generation.

**Strategic Relevance:** The Program is strategically linked to two development policy loans granted by the World Bank to the Moroccan government as part of a national program to modernize the sector. The two loans are well aligned with the World Bank Group Country Partnership Strategy for Morocco.

**Program Overview:**
- Development of 8-10 landfill gas management projects (CPAs) for flaring of CH4 or use for energy generation
- CPAs are implemented and financed by private sector operators, and are included in the contracts with municipalities
- Carbon Finance has been an integral part of the Program design.
- Contract volume of 4.5 million tCO2e from 2012-2020

**Scaling up potential:** The program targets the main urban areas of Morocco and medium-size cities as well.

**Coordinating and Managing Entity (C/ME):** Fonds d’Equipement Communal, the main Moroccan local development bank (public entity)
Thailand - Energy Efficiency Program

Program Highlights

◆ **Objective**: Reduce energy consumption for highway street lighting.

◆ **Strategic Relevance**: The Program is strategically aligned with Thailand National Economic and Social Development Plan 2007-2011, Alternative Energy Development Plan 2008-2022, as well as the World Bank Group Country Partnership Strategy for Thailand

◆ **Program Overview**:
  - Energy Efficiency (EE) of National Highway Street Lighting Program: Replacement of up to 500,000 High Pressure Lamps with LED lamps
  - Carbon Finance has been an integral part of the Program design
  - Contract volume of 825 thousand tCO2e from 2013-2020

◆ **Scaling up potential**: The project could be extended to cover highway street lighting on a nation-wide basis

◆ **Coordinating and Managing Entity (C/ME)**: Provincial Electricity Authority (PEA)
Tanzania Renewable Energy Program

Program Highlights

◆ **Objective:** Expand coverage of rural electrification in Tanzania, by promoting both off-grid and on-grid renewable energy projects

◆ **Strategic Relevance:** The Program is strategically aligned with Tanzania’s Energy Sector Policy. The Government has set up Rural Energy Agency (REA) to promote rural electrification in the country

◆ **Program Overview:**
  - Development of 10-12 small hydropower projects (CPAs) with total installed capacity of around 100 MW
  - IDA Line of Credit – long term financing through local banks
  - Preparation Grant – financing upfront project preparation cost
  - Connection grant – a form of capital subsidy (depending upon the number of rural connections provided)
  - Carbon Finance - bridging part of equity gap
  - Contract volume of about 850,000 tCO2e from 2014-2020

◆ **Scaling up potential:** Tanzania has abundant renewable resources, with significant scaling up potential

◆ **Coordinating and Managing Entity (C/ME):** The Rural Energy Agency (REA), the main counterpart of the IDA project
Program Highlights

◆ **Objective**: The purpose of the PoA is to support the enforcement of Traffic Law #121 (2008) to accelerate the rate of fleet replacement, thereby improving air quality, reducing greenhouse gas emissions, and improving overall road safety in Egypt.

◆ **Program Overview**:
  - Egypt’s MOF is authorized to disburse a subsidy of up to EGP 5,000 (= USD 750) per eligible surrendered vehicle.
  - Almost 41,000 taxis have joined the program as of November 30, 2012 in Greater Cairo Region. More vehicles are expected to join the POA as a new phase has started in March 2013.
  - Carbon finance plays an important role in ensuring sustainability of the program by providing support for implementing and monitoring the program.
  - The expected emission reductions are 470,000 CERs from 2013 to 2018.

◆ **Scaling up potential**: The program can be extended to cover a wider geographical area in Egypt and target minibuses as well as taxis

◆ **Coordinating and Managing Entity (C/ME)**: Ministry of Finance
Philippines Animal Waste Methane Program

Program Highlights

◆ **Objective:** Reduce environmental and social impacts and GHG emissions from the animal waste from piggeries

◆ **Strategic Relevance:** The program is part of the Philippine government’s efforts to improve environmental management of piggeries, reduce GHG emissions and reduce reliance on fossil fuels

◆ **Program Overview:**
  - The waste produced from the participating pig farms will be treated in an enclosed anaerobic system that will prevent the release of methane. The methane will then be flared and/or combusted for electricity generation, reducing the use of fossil fuels.
  - The first two CPAs (Marcela and Biotech) included/under inclusion process and three to five (3-5) additional bundles, representing 28 farms with potential for inclusion
  - LBP will provide carbon finance and investment finance assistance; US EPA providing technology and training
  - Potential to reduce more than 2.5 millions tons of GHG emissions between 2013 and 2020

◆ **Scaling up potential:** In the long-term, program scale-up is expected as the livestock sector is eyed to be export-competitive within the ASEAN region in 2015.

◆ **Coordinating and Managing Entity (C/ME):** Land Bank of the Philippines (LBP)
Philippines Solid Waste Management Program

Program Highlights

◆ **Objective:** Reduce environmental and social impacts and GHG emissions from the solid waste management sector.

◆ **Strategic Relevance:** Philippine Ecological Solid Waste Management Act of 2000 and RA 9003 requires sanitary landfills with more than 0.5 million tons of waste to have gas control systems (or consider a landfill gas to energy (LFGTE) facility), if economically viable.

◆ **Program Overview:**
  - PoA will promote the implementation of RA 9003 by providing CDM revenue to help cover costs of installation and operation of landfill gas recovery and flaring or electricity generation systems.
  - LBP will provide carbon finance and investment finance assistance for the installation of LFG collection systems
  - The first CPA: Bulacan Engineered Sanitary landfill
  - Potential to reduce more than 2.5 millions tons of GHG emissions between 2013 and 2020

◆ **Scaling up potential:** The program can help promote the closure of many existing dumpsites with the added incentive of CDM revenue from reduced methane emissions. The program will also provide a valuable incentive for new landfills, which replace dumpsites, to comply with RA 9003 throughout the Philippines.

◆ **Coordinating and Managing Entity (C/ME):** Land Bank of the Philippines (LBP)
Future Directions for CPF

- Objective of first set of programs has been to demonstrate the efficacy of using Program of Activities approach to scale up emission reductions.
- Key objective of CPF is to continue to innovate in developing programmatic carbon market mechanisms.
- The UNFCCC negotiations have created the prospect for a “new market mechanism” (NMM) and a “Framework for Various Approaches”.
- The CPF is the ideal instrument for piloting new scaled-up crediting mechanisms.