Prototype Carbon Fund and Carbon Finance at the World Bank

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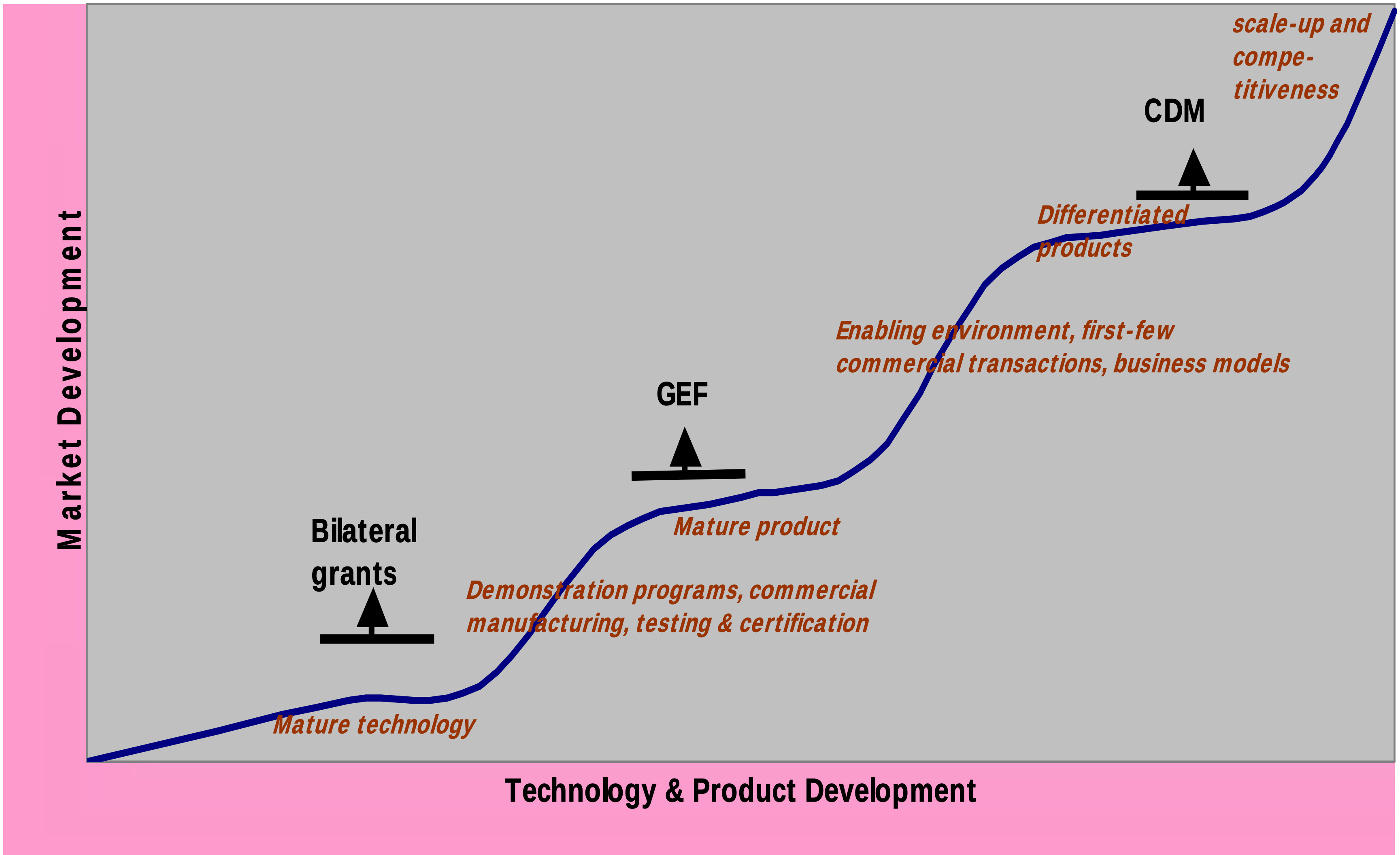
THE WORLD BANK

Overview

- Mainstreaming Low-Carbon Emissions Trajectory in Energy Dvelopment
- Design of the PCF
- Experience and Lessons
- Carbon Finance beyond PCF – “small projects”
- Capacity Building – the NSS program

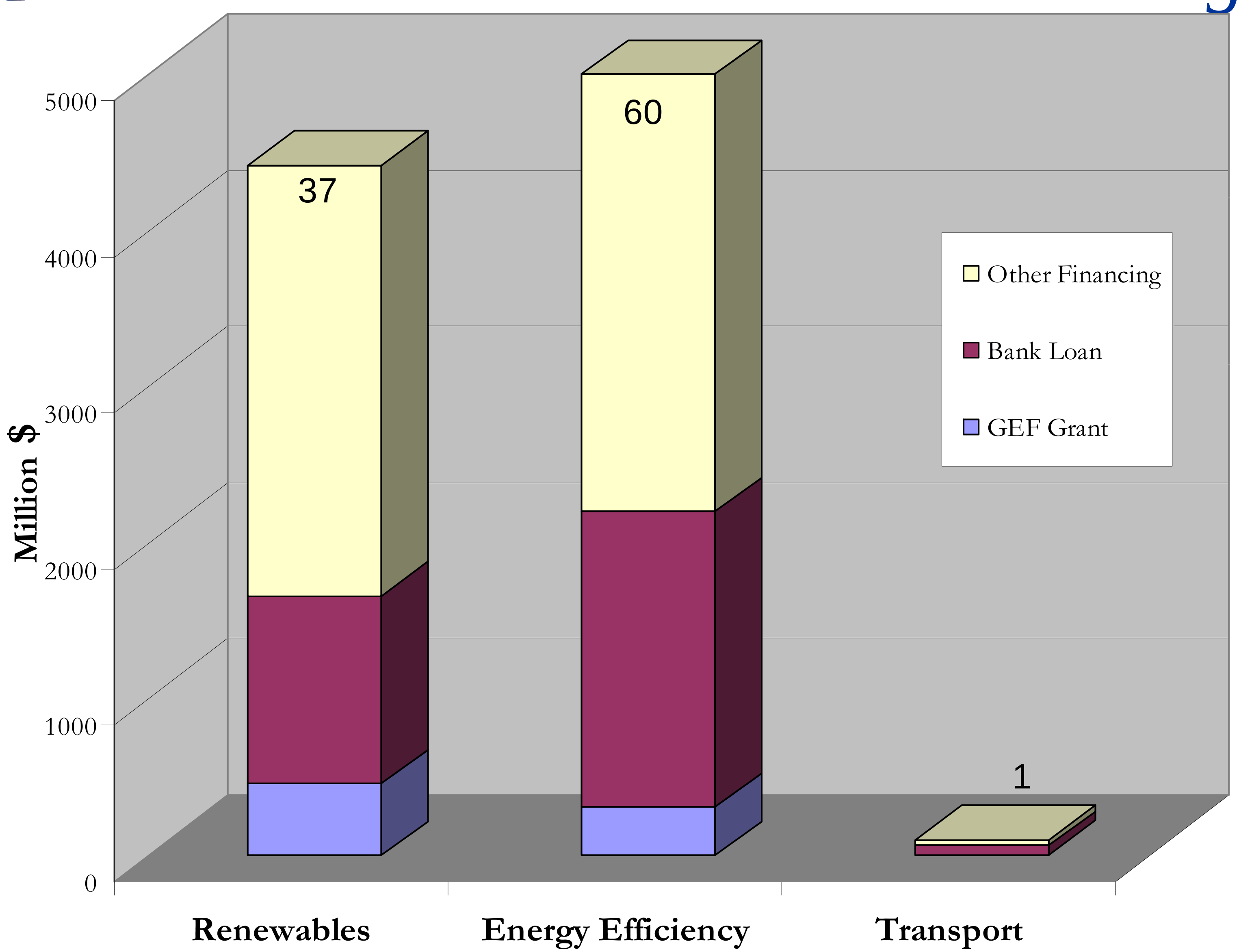
Climate Funds in the context of mainstreaming



Promoting Low-Carbon Emissions Trajectory

- Mitigating Greenhouse Gas Emissions
  - Policy reform
  - Promote markets for cost-effective renewable energy technologies and energy efficiency in partnership with the GEF
  - Develop the international carbon market, and incorporate carbon financing in Bank operations through the PCF
- Capacity Building
  - Identify cost-effective mitigation and adaptation strategies
  - Access to the emerging carbon market

Bank Loans Use GEF Grants to Mainstream Low-Carbon Technologies



Purpose of the PCF

- To help create a market for project-based carbon offsets under the Kyoto Protocol by:
  - providing "learning by doing" experience for Parties to the Protocol on key policy issues (for example, defining and validating baselines)
  - demonstrating how CDM and JI projects can contribute to sustainable development
  - building confidence that the CDM and JI can benefit both developing countries and buyers of emission reduction credits from projects

Features of the PCF

- Closed-end Mutual Fund structure with diverse portfolio to:
  - Enhance the Learning Experience
  - Reduce Transactions Costs
  - Minimize Project Risks
- Shareholding: **Governments, $10 m; Companies, $5 m**
- Total Capital: **US$145 million to be used in ~ 30 projects**
- PCF Products:
  - High value knowledge asset:
    - to facilitate understanding of how CDM and JI can be operationalized
    - facilitate efficient market regulation and
    - leverage for sustainable development for Parties
  - Competitively priced, high quality emissions reductions
    - target portfolio wide outcome price: ~$5/tCO2 ($20/tC)
    - target deal price: $3-4/tCO2 (~$9-12tC)

PCF Subscribers

- **Public Sector (6)**
  - **Governments of Netherlands, Finland, Sweden, Norway, Canada, and Japan Bank for International Cooperation**
- **Private Sector: (17)**
  - **Electrabel (Belgium), Fortum (Finland), RWE (Germany)**
  - **Chubu Electric, Chugoku Electric, Kyushu Electric, Shikoku Electric, Tohoku Electric, Tokyo Electric Power**
  - **BP-Amoco, Gaz de France, NorskHydro (Norway), Statoil (Norway)**
  - **Mitsui, Mitsubishi**
  - **Deutsche Bank, RaboBank (Netherlands)**

Host Country Committee

Joined (through MoU or Project Endorsement)

Africa (10)
Benin, Burkina Faso, Ghana, Kenya, Morocco, Senegal, Swaziland, Uganda, Togo, Zimbabwe

Asia (1)
India

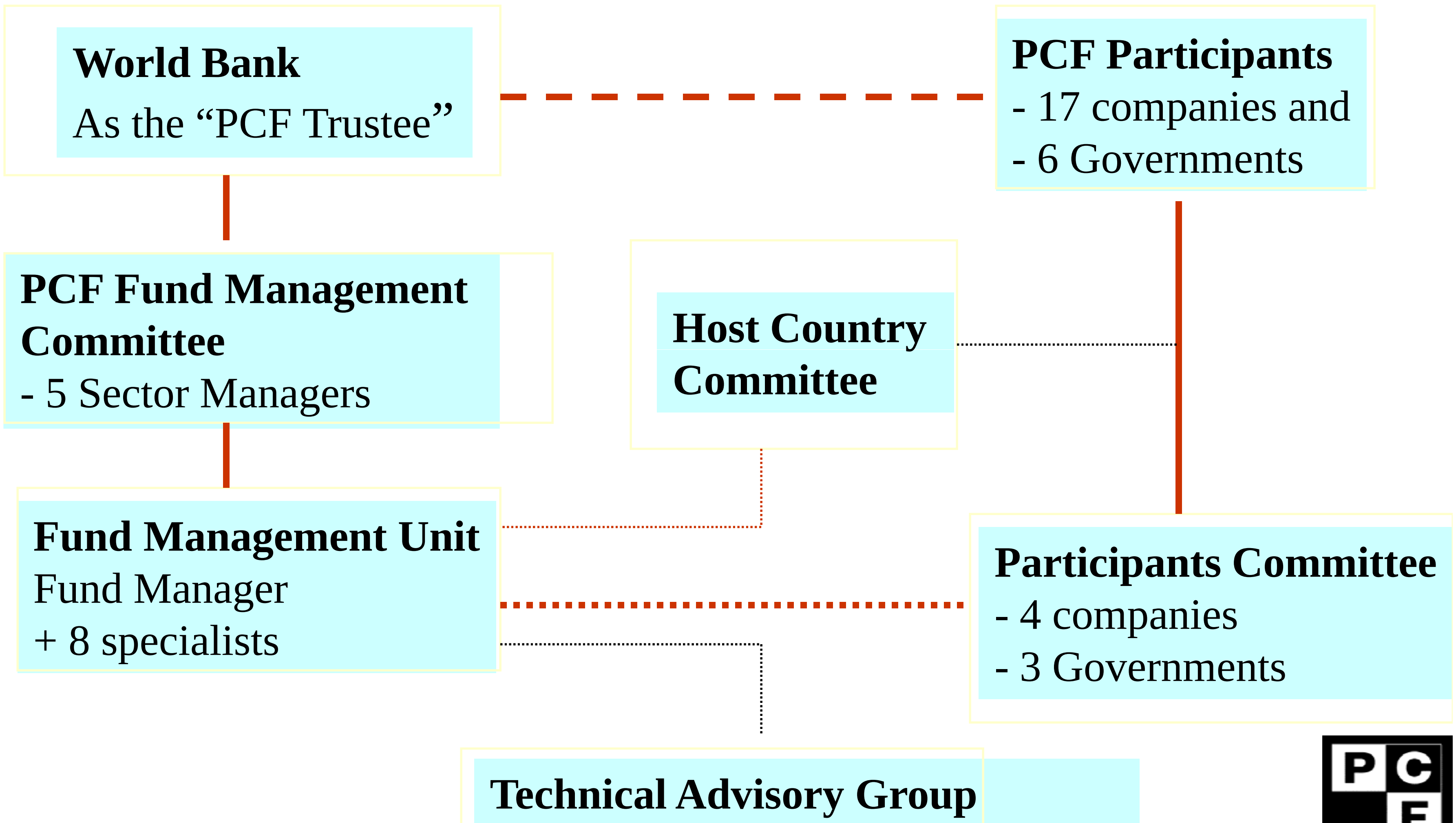
Eastern Europe/ C Asia (8)
Bulgaria, Czech R., Hungary, Kazakhstan, Latvia, Poland, Romania, Uzbekistan

Latin America (13)
Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Peru, Uruguay

Considering

China, Bangladesh, Belarus, Egypt, Philippines, Sri Lanka, Thailand, Vietnam

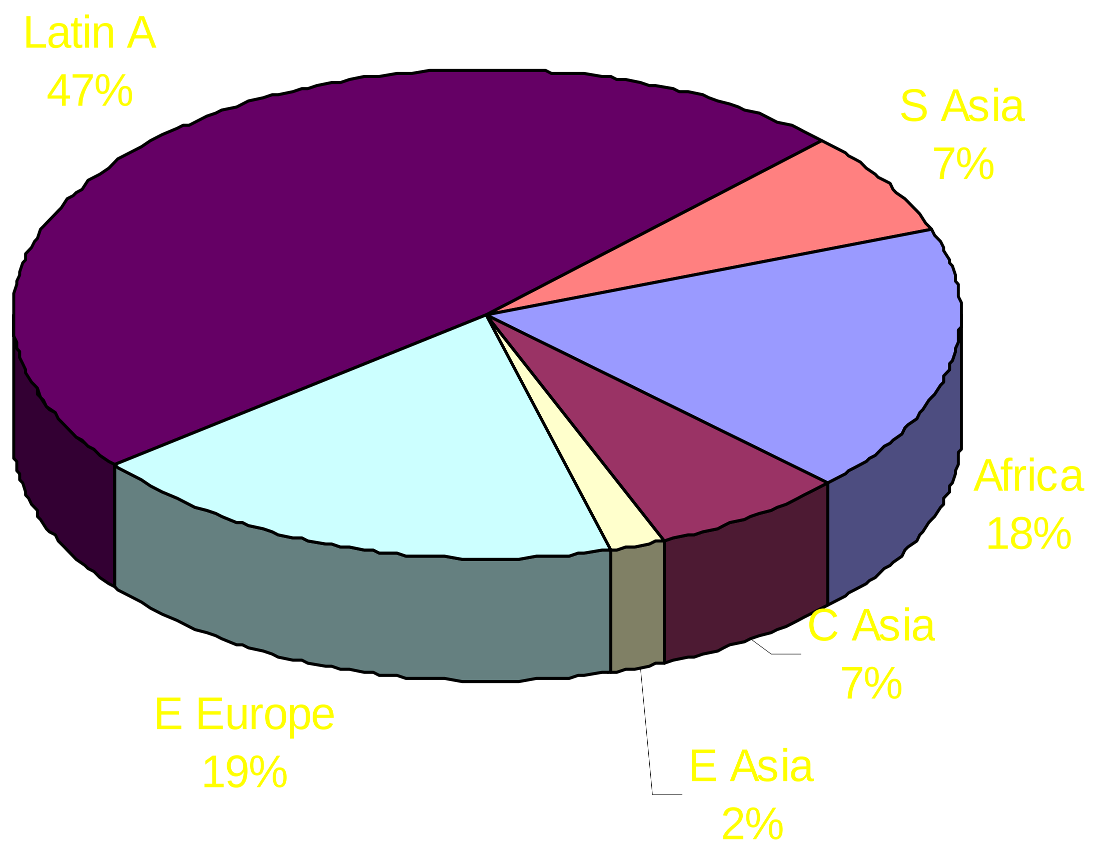
Organizational Structure of the PCF



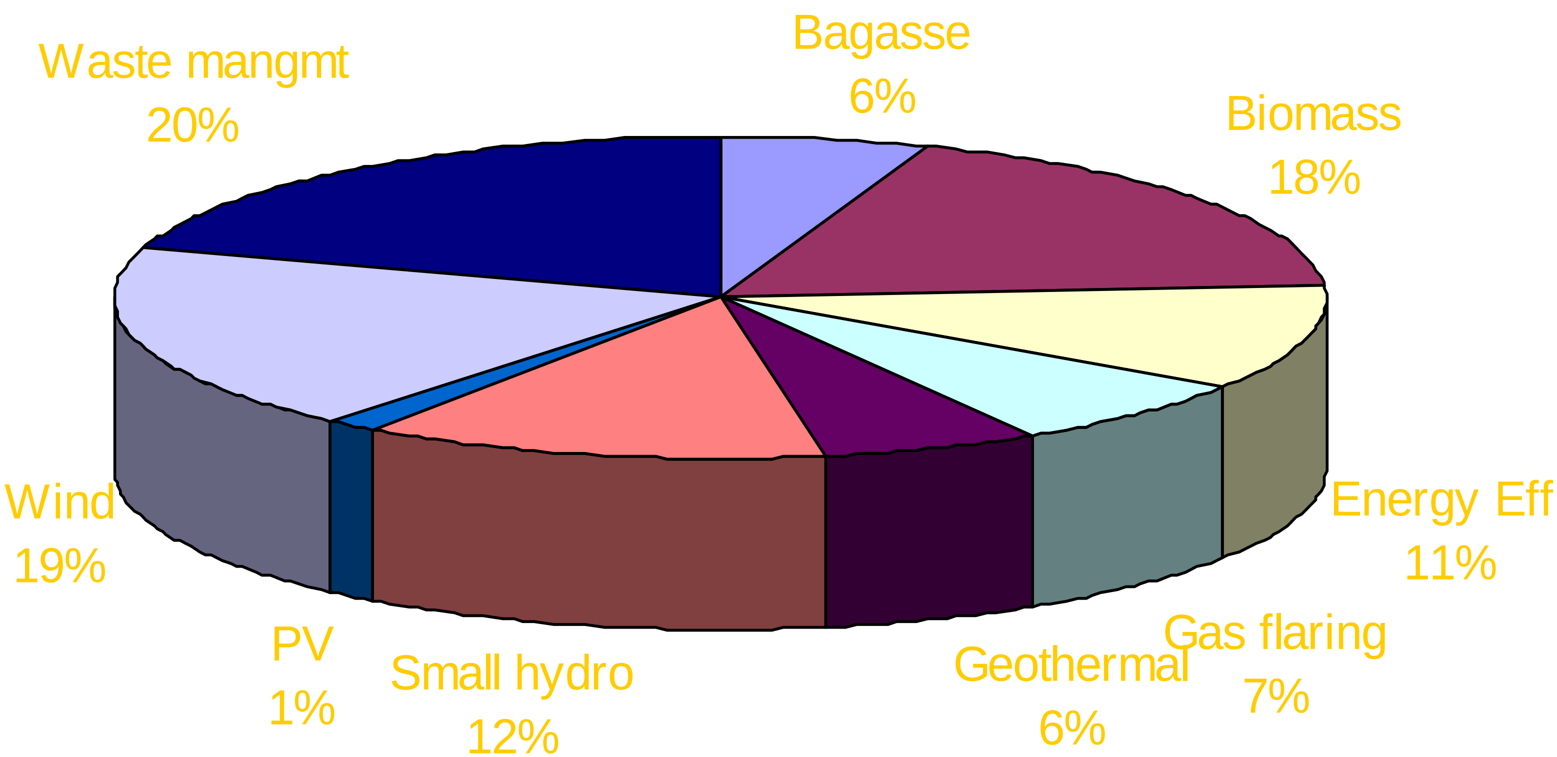
Projects Portfolio Development

- Project selection and Portfolio development criteria
  - Bank and UNFCCC standards
  - Focus on renewables and energy efficiency
  - Carbon purchase: $ 3-15 m (total investment: $15-100 m)
  - Geo-political diversity in projects
- Pipeline development strategy
  - Responding to demand in Latin America
  - Developing a deal flow in Africa and Eastern Europe
  - Outreach and consultations in East and South Asia
- Current Pipeline
  - 45 projects with potential carbon financing of $300-350 million
  - 28 projects ($ 150-200 million in ERs) in the current pipeline targeted for FY 02
  - As of February 2002, $ 90 million in 20 project approved by investment committee

Distribution of projects by end of FY 02



FY02 Pipeline Technology Distribution



Impact of Carbon Finance on Project

Assuming a revenue stream based on emission Reduction (at US$ 3/TCO2e) the change in internal rate of return (IRR) of projects:

Technology	**ΔIRR**
Energy Eff.-District Heating	2- 4
Wind	0.9-1.3
Hydro	1.2-2.6
Bagasse	0.5-3.5
Biomass with methane kick	Up to 5.0
Municipal Solid Waste with methane kick	>5.0

Project, Not Equity, IRR.

Our Observations on the Carbon Market

- Most private carbon finance will go to larger projects and larger countries, much like foreign direct investment flows in the late 80's and 90's (12 countries dominated flows)
- Project concepts submitted require a lot of effort to build them into bankable projects; achieving financial closure is the greatest challenge
- Small projects are risky and cannot easily compete for private sector carbon finance even with CDM streamlining; targeted interventions required to mitigate risk, bundle small to micro transactions and standardise both CDM/JI requirements **and** business procedures
- Private Sector demand in the CDM carbon market remains low even with increased interest after CoP7
- High Demand from developing countries for a first CDM transaction

Our Response– Carbon Finance Beyond PCF

Strategy

- Introduce more developing countries and economies in transition to CDM and JI opportunities using "learning-by-doing" around the first serious carbon purchase transaction
- Benchmark methods for creating environmentally credible emissions reductions in specific technology and policy contexts to expand the CDM/JI market
- Continue "learning-by-doing" while rules evolve for sinks activities given their wider development impact
- Open Markets for small projects and small countries: channel carbon finance to the potentially excluded majority

Our Response- Carbon Finance Beyond PCF

- PCF: Encourage shareholder to expand the Flagship product to support market development
  - Take up head room of $35m;
  - Expand to a fourth year
- Dutch/Others: agree to buy $30-50m/year for 2002-2005 so long as we have convergence of interests
- A "Sinks" Fund: design and launch by 03/2003 as a prototype specifically for LULUCF
- A Community Development (Small Projects) Carbon Fund: design and launch by end-2002 as means of distributing benefits of CDM to small projects, small countries and rural poor.

CDCF Overview

- Support small GHG reduction projects in small countries + poor, rural areas in all CDM countries through purchase of ERs
- US$ 100 m
- Private & Public shareholders
- Managed as a World Bank Trust Fund

Objectives

- Distribute – through ERs – benefits of carbon finance to small countries, rural areas
- Build the market for “development+ C” through projects that alleviate poverty in local communities
- Catalyze private capital flows for sustainable development

Portfolio Criteria

- Compatibility with UNFCCC definition of “small scale CDM”
- No > 20% of capital in one country
- Priority to small island DCs and LDCs
- [Up to 25% of capital for small-scale afforestation, reforestation]
- Local+Global environmental benefits **+** improving local livelihoods

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Terms

- Target fund size: $ 100 m, Minimum size: $ 50 m
- Additional tranches: possible once 1st tranche is placed in projects
- Minimum contributions: private sector $ 2 m, governments $ 4 m
- Additional shares: available for $ 1 m/ share
- Intermediaries encouraged to participate
- Advance payments into Holding TFs encouraged => interest income => project preparation grants

Management Structure

- Advisory Group:
  - Design phase => establish quality criteria, design project screening tools, guide marketing efforts
  - Implementation phase => advice on portfolio development, independent review against objectives
- Fund Manager, Fund Management Unit: part of World Bank carbon finance team
- Fund Management Committee, Participants Committee: operational guidance, decision-making
- Host Country Committee: same one advising all carbon finance initiatives

PCF

Next Steps

- April 2002: 1st Advisory Group Meeting
- May-June: Marketing
- July: Meeting of MoU signatories
- September: Public Launch at WSSD
- November: Opening for subscriptions
- January 2003: Minimum fund size achieved, Operations begin

National Strategy Studies (NSS) program

- Supports host countries to address strategic, project identification, and human and institutional development issues related to operationalizing CDM/JI
- Implemented through national focal points, and overseen by a steering committee consisting of representatives of various ministries, private sector, financial institutions, and NGOs/policy-research institutions
- Implemented by national consultants, with international consultants providing limited support

PCF

NSS program structure

- Initiated in 1997 with Swiss financing; other donors include Germany, Canada, Australia, Finland and Austria
- 10% cost-sharing by host country
- Managed by the World Bank
- 20 Studies completed; 11 ongoing; and 5 in preparation
- Strong demand continues – for new Studies and for follow-up activities; focus now on regional Studies

NSS lessons

- Flexibility – different countries have different needs – and new needs are identified as the process goes on
- Linkages – important to ensure linkages with other national and international initiatives – helps to carry-on beyond the NSS
- Helps the UNFCCC process – not the main aim, but positive synergy

Approved Projects (1)

- **Latvia: $2.5 million PCF Purchase**
  - anaerobic decomposition of about 20,000 tons of garbage a year
  - ERs from the existing landfill site gas recovery by June 2002
- **Uganda: $3.9 million PCF purchase**
  - a 5.1 MW and 1.5 MW small hydro generating facilities in the West Nile region
  - Displaces >200 small and few large public diesel gensets
- **Chile: $3.5 mm PCF Purchase**
  - 26MW run-of-river hydro generating 175 GWh to replace coal/gas
- **Brazil: $5 mm of PCF Purchase**
  - Substituting coal/coke by sustainably produced charcoal in pig iron production, plus afforestation and ecosystem restoration, biodiversity and health benefits

Approved Projects (2)

- **India: PCF Purchase $8 million**
  - **waste to energy project:** 220,000 tons per year of waste to generate 14.8 MW of power
- **Morocco: PCF Purchase $7 million**
  - 140-300MW wind farms in Tangiers and Tarfaya replacing light oil and or coal
- **Costa Rica: $10 million PCF Purchase**
  - Consists of 5 hydro (of which 2 are hydro rehab) 2 windfarms (total of 18 MW). One hydro rehab found non-additional
  - Sectoral baseline and MVP to be finalized and validated in November, 2001
- **Nicaragua: $700,000 PCF purchase**
  - 1.4MW rice-husk fired power plant displacing diesel power
- **Honduras : $5 million PCF purchase**
  - 60MW windfarm displacing oil/coal on national and regional grid

PCF

Approved Projects (3)

- Kazakhstan: Kumkol gas flaring reduction
  - To generate 40MW of power
  - PCF purchase of $ 10 million
- Kenya Busia bagasse cogen
  - 20MWe of generation – 13.6 MWe for export
  - PCF purchase of $ 4 million
- Romania: Cluj-Napoca district heating
  - 430 MWt and 35MWe combined heat and power project
  - PCF purchase of $6-8 million
- Uzbekistan: Andijan district heating
  - Rehabilitation of 8 of the 22 new regions in Andijan
  - PCF purchase of $ 5 million