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THE CLIMATE OF EXPORT CREDIT AGENCIES

CRESCENCIA MAURER WITH RUCHI BHANDARI

INTRODUCTION

The environmental and social impacts of export credit and investment insurance agency (ECA) activities have received limited public scrutiny. Outside trade and finance circles little is known about ECAs—financial institutions that governments create to promote exports and facilitate investments in riskier overseas markets. During the 1990s, ECA financing through loans, project guarantees, and investment insurance averaged \$80-\$100 billion or more per annum,¹ roughly twice the levels of official development assistance during the same period (\$50 billion).² By the late 1990s, bilateral banks, made up largely of ECAs, accounted for 31 percent of all the long-term financing received by developing countries while multilateral institutions accounted for 17 percent.³

In the past decade, the economic liberalization policies adopted by many countries, and a phenomenal rise in private capital flows has dramatically accelerated global economic integration. This has been particularly pronounced for developing countries. Between 1990 and 1997, private capital flows to developing countries, virtually all of it from the world's leading industrialized economies, roughly quintupled.⁴ ECA provision of project and trade financing grew

in tandem, following much the same pattern.⁵ During the same period, governments throughout the world negotiated international environmental treaties to address the degradation of the world's environmental commons. But these conventions, including the United Nations Framework Convention on Climate Change (UNFCCC), are structured in terms of the nation state, largely ignoring the power of private finance to shape environmental outcomes in an increasingly integrated world economy. To an ever greater extent, private capital flows are responsible for building developing countries' physical infrastructure. Much of this infrastructure will shape the pattern of emissions growth in these countries, including power generation, transportation infrastructure, manufacturing plants, and development of coal, oil, and natural gas resources.

In the same way that international environmental agreements ignore private capital flows, commitments made by governments to address the environmental impacts of ECA financing do not address threats to global commons, including climate change. In June 1999, the world's seven leading industrial economies (Canada, France, Germany, Italy, Japan, the United Kingdom, and

the United States) plus Russia (the G8)⁶ met at a summit in Cologne, Germany, and agreed to work toward a set of common environmental guidelines among their ECAs. The G8 communiqué from the Cologne Summit also emphasized the problem of climate change and the importance of helping developing countries address its challenges. Efforts to move these commitments forward, however, have not connected these two priorities. As a result, negotiations of common ECA environmental guidelines have not included climate change concerns.

The failure to place ECAs within a wider development and environmental context is generating a *policy perversity*. Governments pursue one set of objectives through climate negotiations, while their finance and trade arms ignore the global environmental implications of their activities. Although industrialized countries emphasize the importance of addressing carbon emissions in developing countries, evidence presented below indicates that ECA financing to developing countries favors exports and investments that disproportionately benefit energy- and carbon-intensive industries.

The following analysis examines ECAs in more detail—in particular, the climate

* These seven industrialized economies are referred to as the G7. In negotiations and discussions between foreign affairs ministries and heads of state, the group has expanded to include Russia and is referred to as the G8.



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World Bank Launches First-of-its-Kind Market-Based Carbon Fund

WASHINGTON, January 18, 2000-Today the World Bank launched the Prototype Carbon Fund (PCF) - the world's first market-based mechanism to address climate change and promote the transfer of finance and climate-friendly technology to developing countries.

"The PCF offers a tremendous opportunity to boost financial and technology flows to developing countries at a time when government-to-government transfers have fallen to historically low levels," said James D. Wolfensohn, President of the World Bank. "We are determined to explore how market-based mechanisms such as the PCF - involving the considerable financial muscle of the private sector - can contribute to addressing the twin challenges of climate change and sustainable development."

"We are concerned about the vulnerability of poor people in poor countries to the threat of climate change. For an institution whose task is to alleviate poverty, we would be negligent if we failed to explore innovative ways of making the climate change convention work," he said.

Governments have recognized the seriousness of the threat of climate change and during the 1990s negotiated the Framework Convention on Climate Change and the Kyoto Protocol. The protocol, which guides implementation of the Convention, includes specific emissions reductions targets for industrialized countries. It also contains provisions allowing them some flexibility so they can meet these commitments to reduce emissions in the most cost-effective manner.

Advantages of the PCF

- Poor countries will gain access to climate-friendly technologies as well as earning revenue from selling emissions reductions.
- Contributors will receive low-cost emissions reductions to help them meet their commitments arising from the Kyoto Protocol.
- The environment will benefit because the PCF provides poor countries with funds to switch to cleaner and more efficient technologies.
- Everyone will learn about an important new market and business activity.

The PCF, established in the World Bank with contributions from governments and private companies, is an ambitious first attempt to experiment with the creation of a market in emissions reductions under these "flexibility" provisions. It will invest in cleaner technologies in developing countries and transition economies, thus reducing their greenhouse gas emissions. These emissions reductions will be independently verified and certified, and then transferred to the Fund's contributors in the form of emissions reduction certificates rather than cash.

So far, four governments and nine companies have approved participation in the PCF, bringing the total of committed contributions to US\$85 million. The Fund is capped at US\$150 million, and plans to start operations in April 2000.

Governments that have approved participation in the PCF are *Finland, The Netherlands, Norway, and Sweden*. Private sector participants include the electric power companies of *Tokyo, Chubu, Chugoku, Kyushu, Shikoku, and Tohoku*, the trading houses *Mitsubishi* and *Mitsui*, as well as the electric utility company *Electrabel* of Belgium.

Also, participation in the PCF is currently under active discussion by the top management at *Statoil* and *NorskHydro* of Norway, *Gaz de France* of France, *Environment Banc and Exchange LLC (EBX)* of the USA, and *SK Power* of Denmark.

As the manager of the PCF, the World Bank will act as broker in helping to negotiate a price for the emissions reductions that is reasonable for both buyers and sellers. Developing countries will benefit by acquiring cleaner technology and making a profit from trade in a potentially plentiful "product" - greenhouse gas emissions reductions. Industrialized country contributors will gain by paying a lower price for emissions reductions than available in the context of their own companies or countries.

"There are many opportunities to reduce emissions of greenhouse gases in developing countries at a cost of between \$5 and \$15 dollars a ton of carbon. This compares with a marginal abatement cost of upwards of \$50 a ton of carbon in advanced economies. It is the difference in cost to industrialized and developing countries of reducing greenhouse gas emissions that provides the opportunity for mutually beneficial trading relationships," says Ken Newcombe, Manager of the PCF for the World Bank. "We will endeavor to negotiate prices for emissions reductions at about \$20 a ton of carbon (\$5 a ton of CO₂), thus covering the regulatory and market risks to contributors while providing adequate incentives to project sponsors and their governments in developing countries."

The emission reductions from PCF projects may eventually be used against industrialized countries' commitments to reduce their greenhouse gas emissions. Under the Kyoto Protocol, they must bring them down to at least 5.2 percent below their 1990 levels by the end of 2012. Whether the emission reductions earned by the PCF will count towards these commitments depends on rules being developed by the Parties to the UN Framework Convention on Climate Change that should be defined when the Parties meet in The Hague in November 2000.

During the next three years, the World Bank will invest all the Fund's capital in 20 or so projects. Most are expected to be linked to projects identified by the World Bank Group as part of its regular work, but they can also originate from the private sector, other multilateral development banks, and bilateral donors. The primary focus will be on renewable energy technologies - such as wind, small-hydro, and bio-mass energy technology - that would not be profitable without revenue from emissions reductions sold to the PCF. In some cases the PCF will finance such projects through local carbon funds modeled on the PCF but using financing from local commercial and development banks, as well as private companies. Some 20 countries have already declared interest in hosting PCF projects.

For more information, please see the Prototype Carbon Fund website: www.prototypecarbonfund.org and [Frequently Asked Questions and Answers on the Prototype Carbon Fund](#)

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Prototype Carbon Fund

Costa Rica: Renewable Energy Fund

Objective

The Prototype Carbon Fund intends to co-finance the proposed Renewable Energy Fund under the Eco-Markets project of the World Bank. The Eco-Markets project aims to support the development of markets at the local level for environmental services provided by forest ecosystems, at the national and regional level for energy, and at the global level for carbon offsets.

General Program Description

The Renewable Energy Fund will be oriented to support the development of small renewable energy projects to meet increased demand for energy within Costa Rica as well as neighboring countries. In particular, the PCF financing will be used to: (i) create the local Renewable Energy Fund through the Costa Rican Office of Joint Implementation; (ii) deliver carbon offsets payments to small renewable energy projects; and (iii) provide value-added project services including: (a) certification and verification of carbon baseline and flows; (b) new projects identification; and (c) financial advisory services. The Renewable Energy Fund co-financed by the PCF will support inter alia small run-of-river and wind energy projects. Several renewable energy projects would be immediately eligible for funding via the PCF.

Additionality

The 1996 Treaty on Electricity Markets of Central America, signed by the Presidents of the six nations of Central America, created one regional electricity market supporting the interconnection of electricity systems in Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama. As a result of this interconnection, the most cost effective additional power generating capacity in the six countries is fossil fuel based thermal power plants.

Indicative PCF Contribution and Carbon Reduction

Discussions of the possible carbon offset revenue in planned projects in Costa Rica have indicated potential co-financing of up to US\$10 million from the PCF to the Renewable Energy Fund.

Timetable

With respect to project preparation, the project timetable is indicated below:

Project Preparation:	January 1999 - September 1999
Appraisal	January 2000
Negotiations	February 2000
Loan Effectiveness	May 2000

Prototype Carbon Fund

Latvia Liepaja Solid Waste Management Project

Objective

To implement a self-sustaining modern waste management system for the city and region of Liepaja, and with the PCF contribution, to install state-of-the-art energy cell technology for maximum collection of generated methane that would not be affordable otherwise. This will lead to lower greenhouse gas emissions by (1) capturing the methane emitted by decaying waste; and, (2) substituting this methane for fossil fuels to generate electricity and heat.

General Program Description

The Government of Latvia is undertaking a program of upgrading or closing all existing disposal sites, many of which pose a risk to local groundwater resources. With 65,000 tons per year, the Liepaja region generates about 10% of the country's annual municipal waste. The site in the city of Liepaja is the largest in the region, receiving about 45% of total regional waste. As with all sites in the region, it is inappropriately located due to its geology and high water table, and without an effective barrier to protect the groundwater against percolating leachate.

To remedy this situation, the project will:

1. Close all existing landfill in the Liepaja region and create a regional waste treatment facility;
2. Meet sanitary landfill standards through technical and operational improvements at the new regional waste treatment facility;
3. Separate recyclable materials, transporting hazardous waste to another appropriate site;
4. Employ energy cells for enhanced degradation of easily biodegradable waste;
5. Collect landfill gas, containing 50% methane; and
6. Use captured methane to generate electricity.

Indicative PCF Contribution and Carbon Reductions

Total project costs are estimated at US\$ 12-15 million, and the PCF contribution is likely to be in the range of \$2-3 million.

The least-cost way of upgrading existing disposal sites to meet the minimum environmental requirements is through a sanitary landfill. It is estimated that, relative to this baseline, during its life the project will mitigate emissions of 106.6 million m³ of landfill gas containing 50 percent methane. Over the project lifetime of 20 years, this translates into 0.762 million tons of CO₂-equivalent, or 0.208 million tons of carbon (tC). In addition to this direct GHG reduction, there will be a reduction of about 0.047 million tC owing to substitution of natural gas for electricity generation resulting in a total reduction of 0.255 million tC over the lifetime of the project.

Timetable

With respect to project preparation, the project timetable is indicated as:

Project Appraisal:	January 2000
Negotiations:	February
Implementation:	September

Prototype Carbon Fund: Host Governments

The Prototype Carbon Fund is intended to demonstrate how project-based transactions can channel additional public and private capital for development, promote the transfer of environmentally sound technology, reduce local pollution and provide Host Countries with an equitable share of the benefits resulting from these transactions.

In accordance with the Kyoto Protocol, all Projects will require prior Host Country approval. The PCF team has held discussions with representatives of countries with Economies in Transition and with developing countries. By signing a Memorandum of Understanding and/or a Letter of Endorsement (for a future PCF project), a potential Host Country is entitled to be a member of the Host Country Committee. The following table outlines those countries having signed an MoU or Letter of Endorsement and also those that are in the midst of preparations for doing so.

Host Country Committee (as of October 1999)

Joined	Seeking Approval for Participation from National Authorities	Actively Discussing Participation
1. Latvia * Project Identification Notes 2. Costa Rica * Project Identification Notes 3. Mexico 4. Guatemala 5. Brazil 6. Russia 7. Nicaragua 8. Togo 9. Senegal	1. Argentina 2. El Salvador 3. Egypt 4. Zimbabwe	1. Kazakhstan* 2. Hungary* 3. Burkina Faso 4. Gambia 5. Uganda 6. Czech Republic 7. Poland 8. Slovakia 9. Ukraine

* For these countries, participation is based on project endorsement. For the rest, it is initiated by a memorandum of understanding.

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Prototype Carbon Fund: Participants

Contributors to the PCF will include both companies and governments so as to demonstrate convincingly that there is significant private sector interest in the emerging market for emission reductions under JI and the CDM.

The governments and private sector entities, who have signed non-binding Memoranda of Understanding, indicating their interest to explore potential participation in the PCF are:

Company	Sector	Country
British Petroleum - Amoco	Oil	UK
Chubu Electric Power Co.	Electricity	Japan
Chugoku Electric Power Co.	Electricity	Japan
Electrabel/Suez-Lyonnaise des Eaux	Energy	France
Elkraft/SK and KB Power	Electricity	Denmark
Environmental Bank Exchange, Ltd.	Financial	USA
FORTUM Group	Electricity	Finland
Gaz de France	Energy	France
Hydro Quebec	Electricity	Canada
Kyushu Electric Power Co.	Electricity	Japan
Marubeni Co.	Trade	Japan
Mitsubishi Corp.	Trade	Japan
Mitsui	Trade	Japan
Naturkraft	Electricity	Norway
Norsk Hydro	Electricity, Oil	Norway
Ontario Power Generation	Electricity	Canada
Shell Canada/Shell International	Oil	Canada
Shikoku Power Co.	Electricity	Japan
Statoil	Oil	Norway
Tohoku Electric Power Co.	Electricity	Japan
Tokyo Electric Power Co.	Electricity	Japan

Vattenfall

Electricity

Sweden

VTZ

Financial

Switzerland

Governments

Finland

Netherlands

Norway

Sweden

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DEPARTMENT OF THE TREASURY
WASHINGTON

March 25, 1998

MEMORANDUM FOR DISTRIBUTION

FROM: Helen Walsh *HW*
RE: World Bank and Climate Change
PAGES: total

Attached are additional materials for the Thursday meeting on the World Bank Carbon Fund proposal and other possible Bank climate measures. The meeting will be from 11:00-12:00 in the Treasury Annex First Floor Conference Room (north across Pennsylvania Avenue from the Main Treasury Building, with entrance facing Lafayette Park).

If you plan to attend and have not yet provided your name and birthdate to Ms. Dianne Graham or Ms. Earline Hoffman by COB Wednesday (TEL 622-1810, FAX 622-1228), please by 10:00 a.m. Thank you.

Attachments

- Agenda
- Agency comments
- Draft Carbon market functions paper

*cc: JAF
JY
Am
RL
JVA*

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	Helen Walsh	622-1228	622-1265

IFIs and the Environment**March 26, 1998*****Agenda*****1. Continued Discussion of World Bank's Proposed Carbon Investment Fund**

- Agency Positions (written submissions attached)
- Possible World Bank Role (Draft Functions paper* attached)
- World Bank Request for Consultations on USG Position

2. Preliminary Discussion of Paper on Shadow Pricing, Offsets and Quota or Benchmark for Energy Efficiency/Renewables Projects**3. Other Business**

- Additional Options: Subsidies/Energy Pricing
- NGO Request for Policy Papers

* State is drafting separate paper on CDM, which we have not yet seen.

DRAFT
**Draft Functions of CDM/Carbon Investment Fund
and Possible Role for World Bank
(3/25/98 4:00 p.m.)**

I. Description of Market Functions

A. Offsets Traders

- *Functions:* Handles the purchases and sales of offsets for its own account or for clients' accounts, making mkt between those who have excess offsets and those who need offsets.
- *Desired characteristics:* trading skills, adequate financial resources to back up trades, ethical standards, presumably subject to some form of regulation (NASD).
- *Potential Conflicts with Other Functions:* possible conflict if also trading on own account.

B. Offsets Creators

- *Functions:* Finds investment projects that will generate offsets; works with regulatory body to obtain certification of emissions reductions.
- *Desired characteristics:* could be private or public sector, although goal is to create largely private sector market in order to mainstream environmental concerns into largest volume of investment flows. It may be necessary to have transparent international public institution pilot efforts, provided a clear exit strategy is in place; some ethical standards enforced by intergovernmental body (in absence of clear international enforcement), no conflicts of interest.
- *Potential Conflicts with Other Roles:* Should be separate from any regulatory roles.

C. Offsets Bundlers

- *Functions:* Puts together packages of emissions reduction projects; promotes standardization to facilitate packaging.
- *Desired Characteristics:*
- *Potential Conflicts with Other Roles:*
-

D. Certifiers and Verifiers

- *Functions:* These entities ("operational entities" in Kyoto Agreement?) would be responsible for verifying that emissions are actually occurring, certifying offsets as being above the agreed baseline and unique (no double counting of same emissions); ensures appropriate methodology for such functions; promotes standardization to facilitate packaging. Ensures that offsets derived from developing countries are properly taxed for CDM purposes.
- *Desired Characteristics:* high standards of financial probity and professional integrity that are recognized internationally; specialized knowledge of GHG calculation methodologies. Possible candidates might include major accounting firms, environmental engineering

firms, international agencies.

- *Potential Conflicts with Other Roles:* no conflicts of interest that might influence determination of amount of offsets, i.e., no financial holdings in offsets or investment related to them.

E. Regulator(s) of Markets and Operational Entities

- *Functions:* ultimate authority for certifying, registering, and verifying emissions, i.e., these regulatory functions are delegated to operational agencies, clearing houses or other entities, which can lose their status if they do not properly perform their functions; sets methodology for calculating offsets. May also license traders and other market participants (or delegate this to stock exchange or SROs like NASD); some enforcement capability to act against fraud (delicensing) or trading violations; sets fees to pay for regulatory expenses and provide for adaptation funds.
- *Desired Characteristics:* government agency; high standards of professionalism and integrity that are recognized internationally

F. Adaptation Institution(s) (part of CDM)

- *Functions:* Accepts adaptation funds derived from CDM fees. Responsible for disbursement of these funds to those most at risk from climate change. Evaluates requests/projects for adaptation; organizes normal due diligence and project cycle procedures -- including evaluation and portfolio oversight -- of typical IFI (though services can be contracted to other public or private sector institutions).
- *Desired Characteristics:* Governed by Parties to FCCC or subset; Board and management structure are operationally oriented versus political.

G. Settlements

- *Functions:* provides international clearinghouse/stock exchange function; provides complete trade data for verification of national carbon "accounts" to Regulators. Registers emissions so no double counting.
- *Desired Characteristics:* Highly transparent; closely linked to COP and FCCC Secretariat.

II. World Bank Role

The World Bank's proposed Carbon Investment Fund (CIF) would act as a market intermediary by pooling government and private sector funds and investing in projects that result in carbon emissions reductions in client countries, in effect creating a mutual fund of projects that pay offset dividends to investors. The Bank views the CIF as an instrument to finance the "carbon component" of a regular World Bank Group pipeline project. The resulting carbon reductions could be traded or used as offsets for the investors' own emissions. Eventually, the CIF would be

a well-diversified portfolio of carbon offsets, which will reduce considerably the risks of investing in carbon reducing projects. With standardised deals, a CIF could limit transactions costs. The Bank claims that a CIF would be competitive with future players in the market; the Bank would not have a privileged position. As competition increases over time, the role of the Bank is intended to gradually diminish.

This proposal appears to have the World Bank play the roles of Offset Creator, Trader, Bundler and Certifier/Verifier. This last regulatory role presents an obvious conflict of interest. The World Bank probably should not perform any regulatory function, since it has a portfolio that could be affected by rulemaking and enforcement of those rules. However, it has and will probably continue to contribute to analysis that underlies rules that COP and regulators would adopt.

Could or should it engage in other functions? Would look at a number of considerations: whether Bank involvement would negatively affect the development of the offsets market;

MAR 20 1998

cc: Bill, Helen, Mary, Ray, JGruher, DWilcox

MEMORANDUM TO: TRUMAN SEAMAN
CC: DAVID SANDALOW
FROM: JEFFREY HUNKER
SUBJECT: COMMENTS ON WORLD BANK STRATEGIES

Thank you for the opportunity to comment on both the World Bank Energy and Environment Strategy and the proposed Carbon Investment Fund. These views reflect those of the Department of Commerce, which has a strong interest in outcomes which promote economically efficient mechanisms for greenhouse gas trading, incentives for energy-efficient infrastructure, and a successful Clean Development Mechanism. While our interests reflect the broader environmental agenda, this memo will focus on the Bank's strategy as it relates to advancing the US climate change agenda -- because that is the locus of intense interest.

To summarize:

- The Carbon Investment Fund (CIF) as proposed is seriously flawed. We concur with the views of the Treasury comments;
- We are highly skeptical -- given the record of the Bank -- as to the effectiveness and impact of the proposed Energy and Environment Strategy (EES). It is too general and too diffuse to suggest that it will have any real effect;
- We are particularly concerned that both the CIF and the EES appear to be add-ons to existing Bank operations, which, together with the GEF and other mechanisms, present a confusing patchwork that is supposed to address a new set of 'environmental' issues -- while indicating little changes in its core operations.
- We believe that the Bank needs to adopt an approach that integrates incentives that promote investment in environmentally appropriate projects with actions that promote an economically efficient greenhouse gas trading/Clean Development Mechanism (CDM) system. Such an approach will -- not incidentally -- support US diplomatic objectives.
- A new approach would both 1) set incentives for Bank lending across all projects to reduce greenhouse gas emissions, 2) promote a Bank role in opening its projects for competitive bidding for CDM projects, and 3) encourage the Bank to engage in developing a market for CDM credits.

Background

It is important to note that the Bank has four potential functions with regard to greenhouse gas emissions reduction and trading (or its variants, like CDM):

- *pooling of investment funds* for projects that, while promoting other Bank objectives, also reduce greenhouse gas emissions (perhaps from a business as usual case);
- *identifying, structuring, and investing in projects* (note that these functions could be disaggregated -- so that the Bank could pool funds for investment in non-Bank projects);
- *verifying greenhouse gas reductions* (from an established baseline) for projects invested in, thereby developing 'reduction credits';
- *trading or otherwise making a market in such credits.*

The CIF as proposed would place all four such functions within the Bank. Such a combination is seriously flawed for several reasons already identified in the Treasury comments, especially, conflicting incentives within the Bank; and competition with appropriate private sector roles.

An Alternative to the Current Bank Proposals

Both Bank proposals -- the CIF and EES -- are flawed as proposed. Instead of trying to fix them -- an impossible task given that one of their fundamental failings is that they are incremental to a Bank system that has failed to deliver on earlier commitments -- we recommend the following:

1) *The Bank should adopt a policy of ensuring zero net greenhouse gas emissions from its energy and energy-related lending.* Such a policy goal could be accomplished by greater emphasis on renewable energy, or by investment in offsetting emissions projects (e.g.: reforestation). In any case, cost of offset investments should be charged against the originating project. Such a policy would for the first time create an incentive structure for Bank lending that was climate-friendly.

Note that the issue of hydro-electric power remains outstanding, and would need to be clarified.

2) *The Bank should open its project portfolio/pipeline for competitive bidding for CDM projects.* CDM credits -- applicable from 2000 on -- are the most relevant greenhouse gas credit mechanism for the immediate future. By opening its project pipeline for competitive bidding by interested parties (governments, corporations, etc) and making the process transparent, we remove much of the concern about conflicting incentives within the Bank structure. We would envision that the Bank would capture a portion of the greenhouse gas credits established for itself for subsequent trading, as mentioned below.

3) *The baseline verification should be done by a non-Bank entities or entities.* We suspect that there will emerge -- and the Bank actions can do much to encourage -- a vigorous private or non-Bank industry in providing such services.

4) *The Bank should be encouraged to trade, barter, and otherwise help establish a market in greenhouse gas emissions credits.* As one of multiple players in an emerging market for CDM

credits, we see a useful role for the Bank in helping to create active interest and trading in these credits. The key point is that the Bank will be only one of many players in such a market -- in contrast to the current CIF proposal, which would establish the Bank as a predominant role

We would appreciate further dialogue with you about this important issue. Please call me to discuss.

Date: 3/23/98**FAX TRANSMISSION**TO: Truman SemansFax: 622-1228Tel: 622-1229PAGES: 1

FROM: Pam Pearson, Office of Environmental Policy
OES/ENV, Room 4325
Department of State
Washington, DC 20520

Fax: 202-647-5947

Tel: 202-647-1123

e-mail: ppearson@state.gov

**SUBJECT: Consolidated State Department Comments on CIF and
"Bank Approaches" papers**

On the CIF position paper, we have two changes to request in the para.
on "USG Position" :

add to first sentence, "a number of positive features, including the fact
that it is a rare forward-thinking initiative to reduce carbon
emissions."

To the final sentence of that para., add, "...and we should sit down with
project designers at the Bank to discuss our concerns as soon as
possible, and in any case prior to the Board seminar."

Also, at the bottom of the same page, perhaps amend the question
re:consulting the private sector to reflect the need for "broad-based
consultation" or something similar; It's obvious from the current "pilot"
participants list that at least some private actors have been contacted.

Along the lines of the second change, we request that Treasury ask
USED to schedule such a meeting.

Regarding the second paper on methodologies available to the Bank to
address climate change, we agree with the general thrust of the Treasury
paper and have no specific comments.



UNITED STATES DEPARTMENT OF COMMERCE
International Trade Administration
Washington, D.C. 20230

Options for World Bank Role in Addressing Climate

Comments U.S. Department of Commerce Office of Finance

The Office of Finance supports Treasury's recommended positions on shadow pricing, carbon accounting and offsets, and establishing quotas for energy efficiency and renewable energy associated with World Bank operations. We believe that adoption of any or all of these positions, especially shadow pricing, would demonstrate continued U.S. commitment to the environmental impact of projects financed by World Bank¹.

From a Commerce point of view, we would like to see that infrastructure and other sectors in which the United States is competitive are not neglected when new policy proposals are developed at the multilateral development banks. While implementation of Treasury's recommended positions may hasten the reduction of the World Bank lending to the energy sector (and thus reduce the business opportunities for these types of U.S. suppliers), we can envision that these losses could more than be offset by an increase in business opportunities in fuel switching, energy efficiency, "clean energy", renewable energy, and other types of energy projects. Increased World Bank financing for the latter types of energy projects may also spur development of alternative energy firms by creating a new market for these products. Our industry desks covering environmental technologies and renewable energy support this initiative.

Prepared by: MFuchs/TD/SIF/OF/ext. 3277

¹ We note that Eximbank was the first export credit agency to adopt environmental procedures and guidelines in 1995 and that OPIC is required by statute to assess the environmental impact of projects under consideration for political risk insurance and financing.



**U.S. Department of Energy Comments on Draft Paper Prepared by
Department of Treasury Entitled:
"Options for a World Bank Role in Addressing Climate, Proposed USG Positions"**

The paper prepared by Treasury does a good job of explaining the issues and laying out the associated pros and cons.

With regard to the first issue, **Shadow Pricing**, we concur that in spite of its lack of precision, the use of shadow pricing forces acknowledgment that carbon emissions have a price which must be recognized as part of the facility/project planning and investment decision process. However, we wish to note that it is unclear whether the "shadow price" applied by the Bank would actually be charged, and, if so, how the funds generated would be used. While we support the proposed positions, we would like more details on the terms under which the shadow price is applied and any linkage that may be contemplated with other Bank initiatives on climate such as carbon offsets (discussed below).

With regard to the second issue, **Carbon Accounting and Requiring Offsets**, we agree that accounting for the carbon emissions from energy related projects should be made a routine reporting requirement by the Bank. Further, the establishment of standardized methodologies for such carbon accounting at both the project and country levels will contribute to the perceived credibility of the information reported to the Bank. This will help to address leakage concerns and potentially make for a smoother graduation for some countries into accepting an emissions limitation commitment. We also feel that there may be a role for some limited form of carbon offsets program, possibly linked/coupled with the "revenues" collected through shadow pricing. Therefore, we support the proposed position, but wish to note that it is unclear whether the Bank intends to apply shadow pricing in conjunction with a carbon accounting/offsets program.

With regard to the third issue, **Establishing Quotas**, we agree with the establishment of growth targets, but strongly disagree with phase out of support of primary energy supply projects by 2005. By all accounts, fossil fuels, particularly coal, will for the foreseeable future remain the fuel of choice for many of the countries whose energy sector is expanding most rapidly. Having the Bank involved provides an opportunity to use its financial leverage to influence the technology choices that are made, such as greater application of cogeneration and clean coal technologies. Given that most of the growth in developing countries will not be met with environmentally benign technologies, the Bank can continue to provide an important role in insuring that, at a minimum, marginal improvements in the efficiency and emissions associated with a given project will continue to be made so that the rate of emissions growth is slowed in the near-term, with the longer term goal of stabilization and reduction.

We would be pleased to discuss these comments further. Thank you for the opportunity to comment.

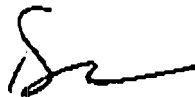


U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

MEMORANDUM

March 19, 1998

TO: Bill Schuerch, Treasury

FROM: DAA/G/ENV, David F. Hales 

CC: G/ENV/EET, Jeff Seabright
G/ENV/EET, Leslie Cordes

SUBJECT: World Bank Climate Options Paper

USAID supports Treasury's efforts to advance GHG considerations in World Bank lending and welcomes the opportunity to comment on the draft paper. We note that the paper suggests a role for development assistance in meeting these objectives. USAID is prepared to expand its direct assistance to the Bank in support of the goals noted in Treasury's paper. Below are specific comments:

Shadow Pricing: We believe that the proposed inclusion of a carbon shadow price in individual loan reviews would help force the Bank to address climate considerations in its lending practices, but would also (and perhaps more importantly) help develop a broader analytic foundation for the internalization of environmental/health/economic externalities. USAID is prepared to provide direct bilateral support to the Bank in meeting this challenge. Bank staff, however, seems reluctant to take a project specific approach to shadow pricing, preferring instead to focus on the broader sectoral strategy outlined in the new energy/environment strategy paper. USAID assistance could help overcome some of the obstacles in implementing this approach.

Offsets: We support the offset approach as a complement to shadow pricing and believe that it should be proposed as an immediate non-binding goal of the Bank rather than waiting till 2005. This would help increase incentives for renewable and efficiency lending without setting hard targets. This option may also be the most palatable to the Bank.

Targets: The offset approach outlined above would help generate 'internalized' targets which may be more attractive to Bank staff.



TO: Truman Semans

FROM: Jackie Krieger, OPPE
Tracy Narel, OAR
Christopher Herman, OIA

RE: Comments on World Bank GHG Options

This responds to your request for comment on options for World Bank programs to reduce greenhouse gas emissions.

(1) Shadow Pricing

The proposed Treasury position is to support expansion of Bank shadow pricing efforts and efforts to identify "win-win" project opportunities "upstream", to address emissions with local and regional as well as global impacts, and to integrate this work into normal project development. EPA tentatively supports this position.

Specific comments:

Pros and Cons:

Second bullet: The second sentence suggests that GHG reductions, unlike reductions of conventional pollutants, may not have domestic benefit. Yet GHG reductions resulting from energy efficiency improvements could well result in domestic savings. This is not gainsay the major point that shadow pricing might, as a spin-off, help improve GEF analysis.

Third bullet: It is true that developing country borrowers have not committed to GHG reductions and are not obligated to cover costs associated with achieving "global" benefits. It is also true that such borrowers may "resist" shadow pricing on these grounds. It seems to us however that the argument mistakenly implies a borrower entitlement to Bank funds. Neither the Bank nor donor countries are obliged to support carbon-intensive projects; both are entitled to the information, including information about energy alternatives, that shadow-pricing might produce; both may fairly elect to support such alternatives in country dialogue and lending operations; both, like the borrower itself, make their own decision in the last analysis.

Fourth bullet: It is true that shadow prices are imprecise and that eligible costs vary in consequentiality. But these qualities does not constitute a "con", given that they are no more imprecise than other guesstimates which are often, even typically, accepted as the basis of project economic analysis, e.g., in deriving consumer surplus or travel demand. And it can be expected that weighting factors or good practice protocols will emerge to avoid make-work exercises.

Proposed bullet: A bullet might address how a "shadow pricing" initiative would 'advance "meaningful contributions"' under the Byrd Resolution.

(2)

Proposed position:

First bullet: It is important that shadow pricing be comprehensive. Just as assigning a zero cost to emissions distorts energy "market", so might assigning costs only to "global" pollutants or only to air emissions. There is considerable danger, due to lack of comprehensiveness and the persistent practice of valuing water as "free", that the exercise could have the perverse effect of encouraging large-scale hydro projects. This danger could be avoided by a separate policy on dams involving adequate weighting of up-and down-stream hydrologic, social and ecosystem impacts.

Second bullet: Using GEF to fund shadowpricing exercises at the national energy planning level may be appropriate. The danger is that without GEF funds, which are limited, countries would decline to conduct any exercise, notwithstanding the potential for local benefit. Using GEF for analysis at the level of a conventional carbon project seems inconsistent with GEF goals.

(2) Carbon Accounting/Offsets

The proposed Treasury position would initiate energy sector gross carbon accounting and "work towards" end-use sector gross carbon accounting. A date certain would be set by which time the Bank would be expected to demonstrate a net carbon reduction in its developing country operations. EPA tentatively supports the Treasury position which, however, may need clarification in some respects.

--what is an "offset" here? Is it physical, e.g., a ton of carbon sequestered in sinks, or is it conjectural, e.g., a ton of carbon avoided in renewables, price reform or some other form of carbon demand management? EPA tentatively recommends the former. Even assuming that reasonable scoring conventions were agreed (e.g., how to derive a counterfactual baseline), the latter would present considerable room for manipulation of results. It could however lead directly to Bank support for renewable and energy efficiency projects. The former would be easier to count, would promote Bank support for reforestation if not necessarily protection of intact forests, and would constrain carbon projects to the pace of carbon sequestration projects without necessarily inviting Bank support for non-carbon energy projects. It is possible, even likely, however, that the constraint of an indirect approach would have that effect.

--would the offset requirement apply to Bank operations on an economy-wide basis or to operations in selected sectors? Limiting the offset requirement to the power sector could divert carbon-intensive operations into other sectors, i.e., transportation, primary production. EPA tentatively urges that it apply at least to power, primary production, transportation, forestry and mining.

--could the target date be calibrated to the ambitiousness of the offset requirement?

(4)

project materials of the staff response. The recent Coal India II project is a disturbing example of a first-rate expert analysis of carbon inefficiency in coal extraction that was virtually ignored in a coal expansion project that funded and perpetuated old carbon-inefficient technologies.

(5) Bank Support for Private Sector Energy Projects

Bank support for the private sector is increasing. The relation of shadow pricing, carbon accounting and subsector growth objectives to private sector guarantees, lending to intermediaries and funds, etc., should be developed.

(6) Transportation

The Bank should support development of sustainable transport planning capability in developing countries, at a minimum through a proactive program of technical assistance for integrated transport planning and demand management. Support currently is focussed, rather perversely, on improving and disseminating the Bank's highway design and capacity models. Transportation (dominated by gas-powered motor vehicles) is expected to be the fastest growing carbon-emitting sector in developing countries as well as one of the largest contributors to high levels of urban air pollution and congestion. Capacity expansion ultimately exacerbates these negative trends. Transport- and transport demand management are complex subjects requiring technical capacity and planning capabilities not available in many developing countries.

(3)

Selecting a fairly-distant target date, e.g., 2005, suggests a fairly ambitious carbon offset requirement.

Pros and Cons:

Second bullet: It is not clear why the second and third sentences are germane. They seem to be true-but-irrelevant. To state that Bank projects are part of the baseline does not Claiming that Bank involvement "reduces emissions below the (counterfactual) baseline" that would otherwise have prevailed is not the same as claiming that the Bank's portfolio already offsets carbon production with equivalent or greater carbon sequestration or non-carbon alternatives. Price reform, if actually implemented, that would not have occurred without Bank involvement allows the Bank to make the former, but irrelevant, claim--unless, of course, Bank support, although linked to price reforms, diluted and forestalled market pressures that might have led to sector reform sooner.

Third bullet: An offset requirement could also lead to renewed Bank support for large-scale hydropower projects. EPA urges that needed strategies to reduce Bank-generated carbon emissions be accompanied by measures to reduce risk of perverse consequences.

Potential bullet: A bullet might address how "carbon accounts and offsets" would 'advance "meaningful contributions"' under the Byrd Resolution.

(3) Quotas for Energy Efficiency and Renewable Energy

The proposed Treasury position would seek annual growth targets in the number and value of energy efficiency and renewable energy projects. It would not seek a portfolio share for these subsectors. It would seek to end Bank support for primary energy supply projects by a date certain. EPA tentatively supports this position.

Pros and Cons

For ease of reference, a bullet format would be helpful.

"Blunt object" is forensics. Do you mean "blunt instrument"?

(4) Energy Efficiency Analysis

EPA urges that consideration be given to seeking energy efficiency analysis in projects in the power (including coal mining) and industrial sectors. Such analysis would highlight opportunities for energy efficiency components. It should be linked to explicit discussion in

To: Tommy Semans
From: Ray Squitieri
Subject: Draft position paper on the World Bank and climate change

The draft position paper on the World Bank and Climate Change makes a good case. The three possible approaches discussed -- shadow pricing, requiring offsets, and adopting lending quotas are all worth considering. At the same time, I wonder if draft doesn't occasionally lose sight of the forest.

First, shouldn't energy subsidies be our first target? I know we have conflicting evidence on this. Several years ago, calculations made with OECD's GREEN model several years ago showed that eliminating energy subsidies would reduce carbon emissions by 18 percent, compared with the baseline. I also recall a more recent WB research paper that concluded that restructuring in the FSU had rendered most of the fat previously contained in energy subsidies. Perhaps we should consider a condition that limits WB loans to countries that have made progress in eliminating energy subsidies?

Second, there is something to be said for shadow pricing, but isn't it a better idea, at least in principle, simply to adjust existing taxes so they better reflect the carbon content of fuels? Shadow pricing is based on the same idea, but introduces additional opportunities for rent-seeking and market distortions; it won't take the affected parties long to see this. We have seen the unintended consequences of shadow pricing already, in New York, Massachusetts, and several other states, where public utilities commissions have applied "adders" to electricity generated by out-of-favor fuels. The result has been to produce an industry whose product is neither cheap nor green.

Third, and most generally, we should be careful about asking the World Bank to divert resources from its central mission, which is to improve the lives of the world's poor. Traditionally -- and appropriately -- the Bank has addressed its mission by focusing on long-term growth in poor countries. We should cast a skeptical eye on anything that diverts resources from this objective. The World Bank's 1992 Development Report (under the general direction of Larry Summers) made this point emphatically. Pointing out the great opportunities for improving lives in poor countries, the report noted that : " ... investments with real rates of return as low as 5 percent could do more for future generations than investments in large reductions of greenhouse emissions."

MEMORANDUM TO: TRUMAN SEAMANS
CC: DAVID SANDALOW, MIKE COPPS, JEFFREY HUNKER
FROM: NAZIR BHAGAT Ph: 482-3855
SUBJECT: COMMENTS ON WORLD BANK STRATEGIES

I would like to add to Jeffrey's comments on a new approach for the Bank. Specifically, Jeffrey's recommendations were to: "1) set incentives for Bank lending across all projects to reduce GHG, 2) promote a Bank role in opening its projects for competitive bidding for CDM projects, and 3) encourage the Bank to engage in developing a market for CDM credits." My comments on each are as follows:

1. Setting Incentives for Bank Lending:

I propose that the Bank be urged to accept a CAFE like constraint on all new power plant lending it does. Thus, the Bank should formally commit that the portfolio of power plant projects that it will approve in the year 1999 (and each succeeding year) will have an average Emissions per Kilowatt Hour of power delivered to be X percent below the average emissions/KWH of project portfolio it approved in the last five years. The standard of X percent for a particular year should include credits for emission reductions due to any projects to modernize and improve the energy efficiency of existing power plants and T&D systems that the Bank approves in that year.

I suggest that the X percent should be negotiated first within the G-7, and then the OECD and/or Annex-I, prior to its wider discussion and adoption of a specific target by the Bank. Moreover, the X percent target should be set for the initial few years and the percentage should be revised (presumably tightened gradually) periodically to reflect new data and technologies.

2. Competitive Bidding for CDM on Bank Projects:

If proposal 1 above is accepted, then the Bank will need to track the projected Emissions per KWH of Bank projects prior to their approval. Moreover it would be in the Bank's interest to reduce the average emissions per KWH on its portfolio. Thus, it would be in the Bank's interest to act as a matchmaker and help the developers of proposed high emission power projects to seek out firms that can help reduce emissions and include the emission reduction portion as an integral part of the project submitted to the Bank for approval. Presumably, the issue of proving "additionality" would be easier for such two part projects.

3. Engage in Developing A Market For CDM Credits:

The Bank's role in developing a market for CDM credits should be approached with care because the CDM rules are yet to be negotiated at COP 4. Whether the Bank itself can generate any CDM credits (if, for example, the average Emissions/KWH on its portfolio falls below its established target) is yet to be decided. However, even if the Bank is allowed to generate credits, the Bank generated credits will be only a small part of the total. Hence, the Bank role in developing a market for CDM credits should be primarily as a catalyst and facilitator, as recommended by Jeffrey.

DEPARTMENT OF THE TREASURY
WASHINGTON

March 16, 1998

cc: JAF
AM
JA
RL
JY

MEMORANDUM FOR RAFF POMERANCE
BARBARA GRIFFITHS
DAVID SANDALOW
PETE JORDAN
WILLIAM NITZE
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BROOKS YEAGER

CC: Distribution

FROM: William E. Schuerch *WES (Gruffs)*
Deputy Assistant Secretary
International Development, Debt and
Environment Policy

RE: Global Environment Facility (GEF) Assembly

PAGES: 5 total

Deputy Secretary Larry Summers has asked me to lead the U.S. delegation to the upcoming GEF Assembly and GEF Council meeting on March 29 - April 3 in New Delhi, India. A schedule for the both meetings is attached.

The Council meeting will focus on preparations for the Assembly (rules of order, final agenda, joint Assembly Statement), new project proposals, the FY99 GEF budget, and the GEF-2 Replenishment Report. On the margins of the meetings, there may be contact groups to address current financial issues involving the Biodiversity and Climate Conventions, although nothing is scheduled at present.

I strongly believe that the delegation should be small, especially given the relatively simple agenda. Most other donors plan not to send high-level officials and some indicated they will send small delegations.

You may obtain further details about arrangements from Truman Semans, at TEL (202) 622-1229.

Thank you.

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Global Environment Facility**GEF/C.11/1/Rev.1**

**GEF Council Meeting
March 30-31, 1998
(NGO Consultations March 29, 1998)**

PROVISIONAL AGENDA

1. Opening of the meeting
2. Election of a Chairperson
3. Adoption of the agenda
4. Statement by the Chair of STAP
5. Report on the second Replenishment of the GEF Trust Fund
6. Review of evaluation reports and follow-up actions
7. Review of CEO Report and other documentation prepared for the GEF Assembly
8. Work Program
9. GEF Corporate Budget for FY99
10. Other business
11. Joint Summary of the Chairs

GEF ASSEMBLY PROVISIONAL TIMETABLE***Wednesday, April 1******Morning session***

8:00 - 9:30	Registration ¹
9:00 - 10:30	Opening Session Welcoming address by the host Government Welcoming address by the CEO/Chairman of the GEF Statements by the Heads of the Implementing Agencies
10:30 - 11:00	Break
11:00 - 12:00	Election of the Chairperson of the Assembly Adoption of the Rules of Procedure Election of Vice-Chairs Adoption of the agenda Organization of work
12:00 - 12:30	Statement by Representatives of Conventions, STAP, NGOs
12:30 - 2:30	Constituency meetings (box lunches available)

Afternoon session

2:30 - 3:30	Overall Performance of the GEF and Lessons Learned	
3:30 - 4:30	Policies, Operations and Future Development of the GEF	
4:30 - 7:00	Statements by Representatives of GEF Participants	5:00 - 7:00 Panel of Eminent Persons on the Global Environment and Sustainable Development

Thursday, April 2***Morning session***

9:00 - 9:30 Status of GEF Trust Fund
 9:30-10:00 Report on Membership
 10:00 - 1:00 Statements by Representatives

Afternoon session

1:00 - 3:00 Constituency Meetings (box lunches available)
 3:00 - 7:00 Statements by Representatives

9:00 - 7:00 Workshops and Seminars

9:15 - 10:45 Panel Organized by the Government of India: Efforts towards Sustainable Development: Role of GEF

11:15 - 1:00 Panel on Science and the Global Environment

3:00 - 4:30 Panel organized by NGO's

5:00 - 7:00 Panel on Parliamentarians and the Global Environment

Friday, April 3***Morning session***

9:00 - 1:00 Roundtable of Representatives
 1:00 - 3:00 Lunch

Afternoon session

3:00 - 4:00 Statement of the Assembly
 4:00 - 5:00 Break/Press Conference
 5:00 - 6:00 Closing of the Assembly

9:00 - 1:00 Workshops and Seminars

9:00 - 10:30 Panel on the Media and the Global Environment

11:00 - 12:30 Panel on the Private Sector

DEPARTMENT OF THE TREASURY
WASHINGTON

March 13, 1998

cc: JAF
Aur
KLL
JVA
JY

MEMORANDUM FOR DISTRIBUTION

FROM: Truman Semans *TTS*
RE: World Bank and Climate Change
PAGES: 7 total

Please see, attached, a rough draft position paper on three possible approaches to increasing World Bank support of climate change mitigation -- shadow pricing, carbon accounting and offsets, and lending targets/quotas. This draft is not yet cleared in Treasury at the DAS level. Please provide us any comments by COB Thursday, March 19 at fax (202) 622-1228.

attachment

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Options for a World Bank Role in Addressing Climate
Proposed USG Positions

Rough Draft

This paper discusses three proposals for reducing carbon emissions associated with World Bank's operations and sets forth possible USG policy positions on them: (1) whether to use shadow carbon pricing to internalize the cost of carbon emissions in the Bank's energy portfolio, (2) whether to insist on the Bank including "offsets" for projects that produce an increase in carbon emissions, either as part of individual loans or part of its overall portfolio, and (3) whether to urge the Bank to adopt quotas for energy efficiency and renewables. A key underlying issue is the degree to which these and other initiatives would (a) advance "meaningful contributions" in line with the Byrd Resolution, and (b) achieve real climate change mitigation.

(1) Shadow Pricing

Under this proposal, the Bank would be asked to include the cost of carbon emissions in the economic rate of return calculations of projects through the use of shadow prices. This would internalize the global and local economic externalities that are not currently taken into consideration. A range of shadow carbon prices could be used, depending on the extent to which the costs would be fully internalized. For example, the lower end of the range (e.g., \$5 per ton) might represent an analysis that takes into account only the costs associated with health problems, while the upper range would incorporate all the identified local externalities plus the global costs related to the impact on climate change.

The Bank has already piloted shadow pricing (based on a USAID model) on a number of projects, with interesting results. The Carbon Backcasting Study analyzed the effect of using a shadow price on carbon emissions for a sample of recently approved energy loans to determine whether the shadow price could adversely affect their economic analyses, and whether a shadow price would encourage investment in low-carbon alternatives. The results showed that a significant share of projects (10-40 percent depending on the shadow price) would have had a negative rate of return, while a number of clean energy investments become significantly more attractive with carbon costs included. The Bank's Global Overlays program has identified win-win project opportunities in specific countries that the Bank could finance as alternatives to higher carbon options.

Pros and Cons:

-- Applying a shadow price, even if it does not fully internalize costs, would give a more accurate picture of the costs and benefits of projects than current Bank practice. Once the true costs are understood, there may be greater willingness on the part of borrowers to choose low-carbon energy production paths, and greater borrower interest in pursuing the cost savings of energy efficiency projects. Over time, these choices would lead to sounder energy policies in developing countries, more efficient use of World Bank resources, and lower carbon emissions than would have otherwise occurred.

-- Better data on global and local externalities would help identify which costs are and are not eligible for Global Environment Facility (GEF) funding. Shadow pricing that distinguishes between local versus global impacts may be justifiable given higher domestic benefits for borrowers -- measures to reduce local pollution often have ancillary carbon reduction benefits. Finally, there is an inherent appeal in project evaluation being done on the basis of a comprehensive, all-in cost estimation.

-- However, borrowers are likely to resist, arguing that they have no binding commitment to reduce emissions, much less to select projects on the basis of global costs and benefits. It can also be argued that baseline energy development only includes projects with sufficiently high local economic return, whereas the Convention obligates Annex I countries to cover costs associated with "global" benefits.

-- Shadow pricing is not as precise as other economic measures on which projects are typically judged. For example, where should the line be drawn on the cost of local externalities of carbon emissions? One can make a solid argument for including health costs, but should it also include the costs of sandblasting walls of buildings more frequently? These types of issue mean that shadow pricing can require significant additional time and expense in project preparation.

Proposed Position

- Support expansion of the Bank's shadow pricing efforts, efforts to identify win-win project opportunities upstream in the project pipeline development process. Address not only carbon but also sulfur, nitrogen oxides, and particulates.
- Support covering the cost of this work as a normal part of the project development process, i.e., out of the Bank's operating budget, and ultimately paid for by the borrowers. If needed (and possible), offer U.S. bilateral support. (As fallback, agree to use of GEF funds for sectoral shadow pricing studies if done in the context of borrowers' national climate action plans.)

Carbon Accounting and Requiring Offsets

Under this proposal, the Bank would be required to keep track of the change in carbon emissions associated with its projects and provide "offsets" for projects that produce an increase in carbon emissions, either as part of individual loans or part of its overall portfolio. Currently, the Bank does not keep a tally of what level of carbon emissions growth results from Bank operations, although it often claims that many high-carbon projects are better off with Bank involvement than without.

Pros and Cons

departments.

However, quotas have historically promoted economically inefficient outcomes. At least in the short run -- until the Bank improves its expertise -- minimum quotas for clean energy could lead to bad investments, given the Bank's high failure rate for efficiency and renewables projects. In addition, the costs of preparing efficiency and renewables projects are higher than for many "normal" projects.

Reduction targets for primary energy production projects might be viable, especially since these projects can be increasingly financed through the private sector alone.

Proposed Position

- Do not push for quotas on energy efficiency and renewables, but establish growth targets of [15% annually] for the number and value of these projects. If possible, offer bilateral assistance (or secondment) in the short-term for staff training and project preparation.
- Call for the Bank to phase out support of primary energy supply projects by [2005].

Conclusion: A U.S. push on any of these items would require support at the World Bank Board from several other countries. Typically, few other Board members support such activist approaches on environment at the Bank. The G-7 appear increasingly willing to push "mainstreaming" of environment at the Bank. However, winning support for any of the three measures discussed here would likely require considerable diplomatic effort. Each of the initiatives would increase the costs of doing business for the Bank. Providing bilateral assistance, at least in the early stages, could improve our prospects of winning support from the Bank and other countries. Finally, it would take some time for the measures to be adopted by the Board, let alone implemented by the Bank. We should not expect these measures to be a quick fix.

DEPARTMENT OF THE TREASURY
WASHINGTON

March 11, 1998

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MEMORANDUM FOR DISTRIBUTION

FROM: Joe Eichenberger *TTS for*

RE: World Bank and Climate Change

PAGES: 5 total

This fax is to confirm the meeting tomorrow, March 12, to develop a position on the proposed World Bank Carbon Investment Fund (CIF) and to discuss the the Bank's Energy and Environment Strategy. The meeting is from 2:30-3:30 in Main Treasury Room 2127. If you plan to attend, please provide your name and birthdate by COB Wednesday to Ms. Dianne Graham or Ms. Earline Hoffman at tel: 622-1810, fax: 622-1228.

The proposed agenda is as follows:

1. Proposed U.S. position on the Carbon Investment Fund
2. Initial discussion of three Bank energy/environment policy issues:
 - Shadow pricing
 - Carbon accounting and offsets
 - Quotas for lending
3. Initial discussion on process to address the revised draft Bank Environment Strategy for the Energy Sector

A draft position paper on the CIF is attached. We will try to circulate a paper on the three additional topics prior to the meeting.

attachment

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DOD	Sherri Goodman	703-693-7011	703-695-6639
	David Weisman	703-614-1158	703-697-1887
NEC	Peter Orszag	456-2223	456-5358
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	Bill Schuerch	622-2536	622-0154
WB/OUSED	Michael Kaplan	477-2967	548-1549

DRAFT
World Bank's Proposed Carbon Investment Fund (CIF)
Proposed USG Position

--DRAFT --

Basics of CIF: The World Bank has proposed the creation of a Carbon Investment Fund (CIF), which would act as a market intermediary by pooling government and private sector finance and investing in projects that result in carbon emissions reductions in client countries. The Bank views the CIF as an instrument to finance the "carbon component" of a regular World Bank Group pipeline project. The resulting carbon reductions could be traded or used as offsets for the investors' own emissions. Eventually, the CIF would be a well-diversified portfolio of carbon offsets, which will reduce considerably the risks of investing in carbon reducing projects. With standardized deals, a CIF could limit transactions costs. The Bank claims that a CIF would be competitive with future players in the market; the Bank would not have a privileged position. As competition increases over time, the role of the Bank is intended to gradually diminish.

Proposed USG Position: The CIF has a number of positive features. For one, it has helped develop our thinking about how offsets trade might develop and could further sharpen our views about the operation of such transactions. In addition, it may help shift a portion of Bank-financed projects -- although not necessarily Bank operations -- toward somewhat more advanced energy technologies. Finally, it may help lower initial transactions costs for offset trades. However, there remain a number of unresolved issues and serious concerns about the proposal. We believe these should be resolved before the Bank Board considers approval of the launch of a CIF.

1. **Bank Additionality/Market Impact.** As a general rule, the USG has opposed any Bank operation that would supplant the private sector. The investor and trading functions described in the CIF proposal appears to be roles that, judging from experience with emission trading in the United States, the private sector could easily assume. Therefore, we question what additionality the Bank would bring to the transaction, especially if it uses its pipeline projects as the investments. Moreover, there is a real risk that, given the Bank's dominant role in some countries' economies and its lending relationship to member governments, the CIF could create serious price distortions in the fledgling carbon offsets market and stymie its development.

- As a major market actor and middleman in jointly implemented carbon offset projects, the Bank probably has enough market influence to set the price of offsets in certain markets. If over time the Bank were to pay a higher "rent" on carbon mitigation/sinks projects to host countries than the market would allow, this would undermine the ability of private actors to negotiate best prices and would displace some investors from entry into carbon markets or at least impede their timely entry. This could easily offset the potential benefits from potentially lower transaction cost through Bank-brokered investments.
- Has the Bank sought the views of the private sector as it has developed the CIF? Does the Bank have a clear "exit strategy" to turn over a pilot effort to the private sector?

2. **Potential Conflicts for the Bank.** The CIF proposal has the Bank playing potentially conflicting set of roles: a development bank, a promoter of greenhouse gas reduction, a carbon market regulator and

-2-

trader, and an offset investor. The Bank also has a credibility problem, having long supported fossil fuels development to meet the demands of economic growth, and having failed to follow its own energy and environment policies.

- As a carbon investor, the Bank would face disincentives to require a best-practice baseline, since lenient baselines would reduce the price per unit of carbon offsets. Lower baselines would allow the Bank to expand its CIF business and bring in increased concessional (GEF and CIF generated) financing to its overall energy pipeline and to specific projects. Potential CIF beneficiaries also have an strong incentive to propose the lowest possible baseline energy development scenario in order to gain concessional financing and CIF-generated investment. This appears to reward countries that do not reform or that reform slowly. How would the Bank address these perverse incentives?
- The Bank's net impact over the past several years has to increase carbon emissions. It is unclear that the CIF would alter this net impact, since carbon investments would still presumably be in the Bank's regular portfolio. Can the Bank credibly advocate and facilitate greenhouse gas (GHG) mitigation while increasing overall GHG emissions?
- The CIF's proposed regulatory role for the Bank in the emerging carbon market involves ensuring the use of rigorous, transparent methodologies for determining baselines as well as for monitoring and accounting carbon emissions and offsets. Existing Bank policy calls for the Bank to help countries establish integrated energy strategies that fully exploit economically sensible energy efficiency and renewables -- which should be part of energy baselines. However, in very few cases has the Bank ensured that countries "mainstream" win-win environment into their CASs and project pipeline. If the GEF experience is any guide, there is a risk that a new CIF product line could undermine mainstreaming efforts, with the Bank viewing the CIF as a source of revenue rather than a catalyst for energy reform. Given the poor track record in complying with its own mandatory policies, can the Bank act as a credible regulator, or developer of regulatory regimes?

3. Jumping the Gun? To date, the international community has not agreed on methodologies needed for carbon markets or the Clean Development Mechanism to function -- determining and adjusting baselines; estimating, monitoring, and verifying emissions reductions/sequestration; accounting carbon credits and settling trades, etc. Nor has it determined how the resulting carbon offsets of IDA or foreign aid projects should be credited.

- Does the Bank propose to operate a CIF in the absence of internationally agreed methodologies? If so, what methodologies would be applied, and at whose cost? What role does the Bank propose to play in developing and implementing international methodologies, and how would these efforts be financed?

4. Relationship to Bank Board, the GEF and other MDBs. There are a number of unresolved questions about how the CIF will be governed and how it will related to other institutions, especially the GEF and the regional development banks. There are two concerns from USG perspective: (1) that the

-3-

CIF not undermine other institutions, and (2) that the CIF not weaken Bank accountability to its shareholders.

- The Bank and the GEF have proposed a strategy in which the CIF would focus on short-term mitigation measures like fuel-switching, and the GEF would focus on longer term measures like renewable energy and energy efficiency. However, the CIF offers to fully fund upgrades to cleaner fossil fuel technology plus large additional cash payments, while the GEF only offers grant financing for energy project costs, and regular Bank assistance offers at best small technical assistance grants and IDA concessional loans. Bank staff may tend to prefer CIF involvement over GEF involvement for related reasons. How would these problems be addressed?
- What CIF oversight role does Bank management propose for the Bank Board? Would each project still be subject to normal Board review?

Treasury: OASIA/IDB 3/11/98

DEPARTMENT OF THE TREASURY
WASHINGTON

March 9, 1998

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MEMORANDUM FOR DISTRIBUTION

FROM: Truman Semans *TS*
RE: World Bank and Climate Change
PAGES: 4 total

The World Bank Board is preparing to consider a new Environment Strategy for the Energy Sector, and Bank management are also proposing the Carbon Investment Fund (CIF) for Board Approval.

Joe Eichenberger will chair an interagency meeting to develop a U.S. position on the CIF and discuss the Strategy. The meeting is tentatively scheduled for this Thursday, March 12, from 2:30 - 4:00 p.m. in Main Treasury, Room 2127. If you plan to attend, please provide your name and birthdate to Ms. Earline Hoffman or Ms. Dianne Graham at 622-1810 (fax 622-1228).

We will circulate a draft position paper on the CIF prior to the meeting. Attached are U.S. comments on the previous draft of the Bank Strategy, sent to Robert Watson on early October. The latest draft strategy can be found at <http://www.worldbank.org/html/fpd/ienpd/ienpd.html>.

The meeting time and place will be confirmed with a following fax.

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	Joe Eichenberger	622-1228	622-1810
WB/OUSED	Michael Kaplan	477-2967	548-1549

U.S. Comments: World Bank Energy and Environment Strategy (7/22 draft)

We welcome the opportunity to comment on this important Bank paper, which is the result of a productive dialogue between Bank divisions. We support the goal of "ensuring that energy services are supplied and used at the lowest economic cost including social and environmental externalities." Please note that we are preparing separate comments on the proposed Carbon Initiative.

Relation to Existing Policy. At the outset, the paper should clearly state that the 1993 electric power sector and energy efficiency policy papers remain binding Bank policy. If changes are proposed in Bank policy, these should be clearly listed and evaluated.

- It might be worthwhile to consider a thorough OED review of Bank implementation of existing energy and environment policies, recommending steps to rectify any shortcoming, including staffing, staff training, and internal incentive structures. We welcome the Bank's views on this.
- The Strategy should clearly state existing Bank policy that countries not willing to undertake fundamental reforms will be ineligible for loans to any part of the energy sector, particularly for use of IDA funds.

The Role of the World Bank Group. The Strategy should clearly distinguish between the Bank Group's role, as a public sector institution, and that of the private sector. When and why are Bank lending services for energy justified? Where should non-lending services be applied?

- The Strategy should encompass all parts of the Bank Group, including IFC and MIGA, helping ensure that sound environmental policy guides all types of Bank Group assistance.
- The Bank should focus on capacity-building and other technical assistance that allow markets to function well and account for costs and benefits to society of energy development. The Bank should also increase both direct lending and technical assistance for energy efficiency and renewable energy.

Country Assistance Strategy. Stronger emphasis on energy and environment issues in the Country Assistance Strategy process is a top priority.

- The "Indicators" should include energy and natural resource data from World Development Indicators such as on demand growth for energy services in key sectors, energy intensity trends, costs and prices associated with energy production and use, etc.
- CASs should be based on integrated energy supply and use strategies that account for local/regional environmental externalities and fully integrate energy efficiency and renewable energy. All planned assistance, regardless of sector or type of assistance, including to transport and other energy end-use sectors, should be consistent with these national energy strategies.

Internal Reforms. The document acknowledges that institutional and capacity factors within the Bank may undermine the Bank's ability to support sustainable energy. The Strategy should propose specific internal improvements that allow the Bank to be more effective.

Sequencing Assistance and Reforms. Restructuring and price reforms should be central pillars of Bank assistance. However, reforms that promote energy efficiency and renewable energy resources should proceed

simultaneously with pricing reform and should be fully integrated into planning for restructuring. Price reforms alone fail to capture large segments of energy efficiency and some approaches to restructuring may yield net negative environmental performance.

- The paper should outline the particular types of Bank Group assistance needed to ensure optimum environmental performance in each main type of energy sector restructuring situation (commercialization, privatization, unbundling, competition).
- In particular, the Bank should aggressively support the development and implementation of energy efficiency codes and standards (or implementation at the national level of existing regional standards) -- especially for appliances, motors, and buildings.

Hydroelectricity. We recommend that discussion of hydro be dropped from the Strategy until the conclusion of the international panel on dams co-sponsored by the Bank. The implication that Bank experience with large hydroelectric projects has been positive is clearly inaccurate. Clearly, no other single type of sectoral project has a more problematic track record, and the recent OED study of hydro has been strongly criticized both within and outside the Bank.

Beyond the issues noted above, we have the following additional comments:

Internalizing Externalities. We welcome analysis on internalizing environmental and other externalities into sectoral and project planning. We believe a useful medium-term objective is to identify and internalize local and regional externalities -- costs to human health, infrastructure, and the environment -- into energy supply and end-use development decisions.

Trade and Investment. The Bank should encourage reduction in barriers to trade and investment in clean energy technologies and pollution abatement equipment. Reforms that facilitate joint ventures may be especially important, since considerable anecdotal evidence indicates extensive application of these technologies won't work with imported equipment.

Procurement. Corruption is an important issue in both public and private operations in the energy sector, with its big-ticket project components and corresponding high stakes for sellers, governments and consumers. We recommend that the Bank Group have a policy on contracting and completion arrangements in private sector operations (as does the EBRD). Also, the proposed industry-linked advisory function raises problems of insider advantage.

Concessions/BOTs/PPAs. To avoid real or perceived corruption, the Bank Group should require "international" competitive bidding (not single source or national competitive bidding or unspecified "competitive" bidding) for the award of all concessions, BOTs, PPAs, etc. in which the Bank Group participates.

Carbon Fund. We are preparing separate comments on the proposed Carbon Initiative. While it has some interesting elements, it raises a number of serious and unresolved issues. Perhaps the greatest concern is that the Bank, with a huge portion of its business in financing fossil fuel-fired power plants, faces a serious conflict of interest in also managing the first and largest international fund for jointly implemented carbon mitigation at the project level. At this stage, it is premature to include this proposal in the Strategy.

Transportation. The document should build on the Transport Sector Review completed in 1995 with specific steps for improved Bank support of environmentally sustainable transport systems.

PROPOSAL FOR THE INTERNATIONAL BANK FOR ENVIRONMENTAL SETTLEMENTS

The International Bank for Environmental Settlements (IBES) would be a market-oriented institution that acts as an intermediary, organizes, and regulates the global trading of emissions permits and other environmental asset-backed securities by corporations and/or sovereign nations. Its governance rule would be determined by its members, for example in line with their financial commitments to the Bank (as in the IMF) or other contributions. Its annual operating budget could be decided by its members.

THE IBES MANDATE

The mandate of IBES is to enhance wealth generation while protecting the environment. It will accomplish this by providing liquidity and economic return from environmental assets (such as forests) for their owners while ensuring judicious use. A more familiar example is an equity source account, which also provides capital while requiring owners not to alter the property without approval.

HOW IBES OPERATES

Once the world's ceiling of emissions is agreed upon, permits can be allocated following a sliding rule. The rule could start from the current situation in industrial and developing nations (a grandfather allocation) and could be adjusted over time toward an incentive system allocating more permits to those who emit less. Auctions would be used to allocate permits in the most efficient way.

Preserving national sovereign rights, IBES will:

- Act as an intermediary in multilateral borrowing and lending of permits.
- Trade options on carbon permits in the future.
- Clear and settle multinational transactions.
- Ensure market integrity and efficient price mechanisms (such as SEC < CFTC)
- Enter into open market operations and set discount rates to smooth prices
(Much like the Federal Reserve)
- Offer credit enhancement to facilitate trade, geared to reducing sovereign risk.
- Monitor compliance.
- Renegotiate targets as scientific understanding advances.
- Establish disclosure guidelines (analogous to "surveillance" function of IMF).
- Provide technical assistance at members' requests in developing and industrial nations, and strengthening national systems.

IBES could have its own capital, allow private members and trade for its own account.

THE IBES : A WIN-WIN SOLUTION

The industrial nations have more capital. The developing nations are richer in the environmental account. They emit less carbon and have most of the world's forests and 80% of its biodiversity. According to economic models, there are economic gains to be made from trade while insuring judicious use of environmental assets. Trading permits will encourage more exports from industrial countries to developing countries. It will fuel world markets without inflationary pressures.

Linking Technology Transfer with Emissions Trading

A Win-Win Approach to the Kyoto Protocol

Draft for comments only

Program on Information and Resources
Earth Institute
Columbia University

February 27, 1998

Abstract

The Kyoto Protocol is a landmark agreement for humankind. In it 166 nations recognized the need to change the pattern of energy generation and use across the world, addressing in a fundamentally new way the environmental impact of human activity. This proposal identifies the main obstacles for the implementation of the Kyoto Protocol, and examines policy options that could resolve these obstacles. The main obstacles are the opposition by industrial sectors in the US to the Kyoto caps on emissions, and the lack of participation by developing countries in the agreements to reduce emissions. These two obstacles are interconnected. Both are based on the fear of the economic burden that is imposed by caps on emissions. From their different positions, both groups are skeptical about finding equitable solutions for sharing this burden. This proposal suggests a new strategy that could move towards a resolution of these issues, and embodies policy oriented research and diffusion of the findings in a two and a half year effort involving several leading institutions in industrial and developing nations. The strategy involves linking three distinct parts of the Kyoto Protocol in a novel way. It involves securitizing the gains from the transfer of clean technology (Article 11) by using as an underlying asset the credits corresponding to the emissions cuts resulting from an R&D project (Article 12), using the trading regime for emissions in Article 6 of the Protocol. Our research suggests that with such a strategy a cap on emissions need not detract from, and may even enhance, the creation and diffusion of clean technology that fosters rapid and sustainable development. This proposal outlines a winning strategy for developing and industrial nations, involving a practical regime for technology transfer that is tied to the trading of emissions of greenhouse gases. It shows how the introduction of emissions trading can accelerate technological innovation as well as multiply economic returns on R&D. It can lead to win-win strategies for all nations. The effective administration and monitoring of this new mechanism, and the equitable and efficient implementation of emissions trading, require a new institutional framework. We proposed this to be International Bank for Environmental Settlements.

The Kyoto Protocol

Human activity is changing the atmosphere of the planet and altering the complex web of species that constitutes life on earth. In the Kyoto Protocol 166 nations recognized the need to change the pattern of energy generation and use across the world, addressing in a fundamentally new way the environmental impact of human activity. The Protocol set a cap on the emissions of greenhouse gases by industrial nations. By restricting the burning of fossil fuels such as coal and oil, the Protocol could have a major impact on a main engine of industrialization. The strategy of this project is to use the unique opportunity provided by the Kyoto Protocol to address key issues arising from the global use of energy—particularly the trading regime to implement emissions caps in Article 6—to develop and diffuse widely economic and technological strategies which could foster human progress that is equitable and harmonious with nature. This proposal introduces a novel economic approach to linking emissions trading with technology transfer (Article 11) in a way that fosters clean economic development beyond anything currently available (Article 12) and multiplies the economic returns of business projects involving efficient and renewable energy use.

Successful implementation

The fear of adverse economic consequences is a major obstacle for the ratification and implementation of the Kyoto Protocol. Developing countries have not accepted any emission caps because they fear that they will forestall their process of industrialization. In industrial nations, where most emissions originate, business representatives have lobbied tirelessly against emissions caps. These problems are interconnected. Both fear the economic burden imposed by caps on emissions. From their different positions, both groups are skeptical about finding equitable solutions for sharing the burden. A political manifestation of this connection is that the US Congress and Senate have voted not to agree to ratification without the participation of developing nations.

While there is a wide agreement on the aim of seeking sustainable development, very few understand what is involved in capping emissions as required by the Protocol, and even fewer wish to pay the attendant economic costs. The equitable sharing of the burden of emissions cuts has become a contentious issue between industrial and developing nations. Positive solutions that benefit all the participants are needed to encourage participation by industrial and developing nations. Otherwise, the Kyoto Protocol may not be ratified, and a historical opportunity to redirect economic development in a sustainable direction may be lost.

Win-win strategies for industrial and developing nations

This proposal aims to develop and diffuse policy-oriented research focussed on win-win strategies that encourage the participation of industrial and developing nations in the ratification and implementation of the Kyoto Protocol and the corresponding changes in the global use of energy. Building on the expertise of leading scientists at Columbia's Program on Information and Resources (PIR), who proposed the emissions trading regime to the OECD, the Secretariat of the Framework Convention of Climate Change (FCCC), and the World Bank in 1993, 1994 and 1995 respectively, and with the collaboration of partner institutions identified below, our research team will

- Address changes in the global use of energy and develop the connection between global emissions trading (Article 6 of the KP) and technology transfers in the private sector (Article 11 of the KP).
- Provide modalities and mechanisms to organize and monitor emission trading, assisting the Parties of the Kyoto Protocol: defining a tradable commodity, identifying international performance measurements and verification protocols, modalities for accounting, monitoring, certification, reporting, non-compliance and enforcement and, simultaneously,
- Create new financial structures and mechanisms that foster the development and transfer of clean technology (Article 12 of the KP).
- Develop efficient and equitable trading rules and instruments, and the institutions to support these, exemplified by an International Bank for Environmental Settlements.

Within such an institutional framework:

- Focus on the creation and implementation of equitable, win-win strategies, based on financial mechanisms and structures that favor simultaneously developing and industrial nations.
- Develop a framework for case studies involving the private sector that are meant to attract the cooperation of the private sector in industrial countries and developing nations, as well as governments of developing countries towards the implementation of a global trading regime to reduce global emissions.

- Use the case studies to inform the participants of COP4 in Buenos Aires and beyond on the applicability of the results, involving the transportation sector and electric utilities in the US and in India.
- Diffuse widely the findings of the policies and the research by publishing on paper and on the Web a periodic newsletter with a wide international reach, organizing executive courses, seminars and major international conferences in the US, France, Argentina and India during 1998 and 1999, and using multimedia communications, including presentations to the press, videos, and innovative uses of educational games.

Research team and project support

The research team includes leading scientists of the Program on Information and Resources (PIR) at Columbia University in cooperation with institutional partners in the US and in developing nations: the Jet Propulsion Laboratory (JPL) of Pasadena, California; the Indira Gandhi Institute of Development Research in Bombay, India; the University of Buenos Aires; and the Division of Financing for Energy Efficiency and Renewable Energy of the US Department of Energy. They will be joined by business partners in transportation and utilities sectors in US and India.

The project is sponsored by several United Nations agencies: the United Nations Development Program (UNDP), the United Nations Industrial Development Organization (UNIDO), and the United Nations Educational, Scientific and Cultural Organization (UNESCO); it had seed funding for a preparatory workshop and concept development from the Global Environment Facility (GEF), conference support from the Rockefeller Foundation, the Italian Academy and the Earth Institute of Columbia University.

A focus on emissions trading

Our policy oriented research will focus on Article 6 on emissions trading. We introduce a novel economic approach to linking emissions trading with technology transfer (Article 11) in a way that fosters clean economic development beyond anything currently available (Article 12) and multiplies the economic returns of business projects involving efficient and renewable energy use. The end product should encourage the participation of industrial and developing countries in a win-win solution to emissions trading that benefits both.

The analysis will go further than the standard market contemplated by the Chicago Board of Trade and other international organizations that promote emissions trading today. The aim is to develop specific institutional proposals for organizing and monitoring the trading of emissions rights, based on modalities and financial mechanisms that encourage the participation the private sector and foster equitable and efficient market functioning. These strategies will involve the transfer of clean technologies (Articles 11 and 12 of the KP). Case studies involving the transportation and utilities sectors in several nations will help demonstrate the desirability and feasibility of the strategies we propose to the participants of the COP4. This meeting will take place in Buenos Aires in November 1998.

Equitable modalities and financial mechanisms

The research will apply recent economic findings by PIR on the connection between equity and efficiency in markets for carbon emissions trading. It will develop win-win strategies for industrial and developing countries including (1) modalities and mechanisms for the periodic allocation of initial emission allotments that advance simultaneously the aspirations of developing and industrial nations, and (2) mechanisms for structuring a well defined connection between clean technology transfer and emissions rights. These mechanisms, and the certification and monitoring of the underlying contracts, will be organized and certified by an institutional market framework that we call an *International Bank for Environmental Settlements*. IBES could be either a stand alone institution, or an adjunct to existing institutions. Figure 1 below illustrates its role. In addition to providing the services described above the IBES will work as an adjunct to the FCCC in offering a continuing forum for organization, monitoring, compliance and negotiation during the periods between the meetings of the parties of the.

Technology transfer and emissions trading

Based on a novel proposal for linking three different parts of the Kyoto Protocol, global emissions trading (Article 6) and transfers of technology for clean development strategies (Articles 11 and 12), the IBES can provide financial modalities and mechanisms to organize and assist the trading of clean technology rights in exchange for emissions permits. The proposal is to organize the creation of specific financial structures to foster projects involving the transfer of clean technology (Article 12), in which emission quotas will be credited for the transfer of clean technologies on the basis of the emissions they save, thus securitizing the energy savings so these can be passed on to private investors, attracting additional capital for business R&D and for sustainable development projects. The securitization will be based on standard measures or protocols of the type that have been designed at the US Department

of Energy for energy savings in retrofitted buildings, such as the existing International Performance Measurement and Verification Protocol (IPMVP).

Technical support to the FCCC

The research will offer technical support for the follow-up of the Kyoto Protocol in the Buenos Aires COP4, including the development of a certification mechanism similar to that achieved under the Montreal Protocol, which could be similarly administered by UNIDO. At present Article 6 of the Kyoto Protocol contemplates trading of emissions rights for Annex 1 countries. Significant changes will be needed in the private sector within industrial and developing nations to extend this regime to a global system. Our research will suggest such changes involving the periodic allocation and retirement of allotments and transfer of clean technology mentioned above.

Research Summary

The research will span two and a half years, starting in May 1998. It will produce experimental work based on simulations of general equilibrium models for emissions trading developed at Columbia. These models are based on dynamic economic models developed and used by the OECD, and scientific global circulation models developed at NASA-Goddard Institute for Space Studies of Columbia University. Using these models we will carry out experiments to

- Identify, evaluate and analyze the main economic impacts of the implementation of the Kyoto Protocol, in key sectors of industrial and developing nations, including agriculture and industry,
- Simulate, and show in graphic form easily available to the non-expert, how markets for emissions trading operate under different scenarios of the viewer's choice,
- Demonstrate the modalities and mechanisms under which the markets for emissions trading can provide the basis for win-win strategies benefitting both industrial and developing countries, simulating technology transfers and alternative patterns of periodic emissions allotments, and suggesting modalities for monitoring the execution of contracts,
- Develop specific case studies within those scenarios, showing how linking technology transfer and emissions trading can promote win-win solutions and therefore foster cooperation by developing and industrial countries, within the transportation and utilities industries,
- Produce graphic software and other graphic presentation material to bring these strategies and case studies to the attention of diplomats involved in the COP4 in Buenos Aires during November 1998 and in other meetings of the parties beyond Buenos Aires, in a format that is clear and attractive, and
- Diffuse the findings widely in Buenos Aires and in other selected sites across the world, using multimedia communications, including the international press and news outlets, videos, and innovative educational games.

The latter aims to foster an understanding of the goals of the Kyoto Protocol to the wider public including younger segments of the population in schools and communities.

Partnership of public and private sector

The group of scientists at Columbia University leading this project have a unique expertise on the use of financial instruments for achieving sustainable development. In addition to proposing the trading regime for emissions rights, they have proposed partnerships between the private and the public sector in attracting financial resources for the purpose of conservation. Recently they made proposals for securitizing watersheds globally, and for financial instruments that could help conserve biosphere resources. Columbia's scientists have developed the fundamental research and the blueprints for an institutional framework for emissions trading—an **International Bank for Environmental Settlements, IBES**—that offers solutions for (a) achieving equity as well as efficiency in global environmental markets, and (b) linking technology transfer with emissions trading. These solutions are designed with the aim of attracting the participation of the developing countries as well as business sectors in the industrial countries, thus extending globally the reach of the trading regime provided in Article 6, which applies at present only to Annex 1 (industrialized) countries.

Research plan

The plan is to use a geophysical-economic simulation models of the world which include the GREEN model developed and used by the OECD and modified by Columbia's PIR, in conjunction with the NASA-GISS Global Circulation Model developed for forecasting climate impacts of changes in atmospheric

gaseous concentrations. The GREEN model is a general equilibrium model of the world economy involving 12 regions and 8 sectors, and a 12x12 international trade matrix.

Building on these models, PIR's scientists produced the first model of a global economy which includes a global market for emissions trading. In the PIR model 12 regions trade with each other in 8 sectors and in emissions rights. The emissions rights are traded in conjunction with the international markets for private goods, so we can simulate the impact of emissions trading on the world flow of goods and services between industrial and developing nations. Our model will be adapted to simulate the impact on the 12 regions and 8 sectors of alternative scenarios for the allotment of emission permits, and the strategies linking technology transfers with emissions rights described above.

- I. The first step is to update and adjust the parameters of the models to reproduce the Protocol's specifications on caps and formulate realistic migration paths starting from present conditions.
- II. The next step is to design the main scenarios for allotment of rights in a 2 and 5 year periodic basis, based on the experience of the previous period, and for linking technology transfers to emissions rights.

Simultaneously with steps I and II we will

- III. Establish the business partnerships needed for running the case studies in transportation and utilities, and
- IV. Write the final script and finalize a contract for the production a market game using our algorithms. This will demonstrate win-win solutions for industrial and developing nations.
- V. This part of the project will include a conference already planned for April 24-26 to take place at Columbia University introducing the proposals for linking technology transfer with emissions rights.
- VI. Starting in June 1998 we will use our already adapted economic models to run simulations from the present to the year 2050, focusing on the impacts of the Kyoto caps on the 2 regions and 8 sectors and particularly in the use of energy in agriculture and industrial sectors.
- VII. We will compare the impacts with and without the trading regime for emissions rights, and under the different scenarios for allotments and for technology transfers.

Simultaneously with VI. and VII, we will start the process of

- VIII. Map out and prepare a plan for a newsletter and for two years of presentations to the press, executive courses, seminars and conferences.
- IX. Map out and prepare a plan for the production of teaching material and books on the policy oriented research.
- X. Design and produce a graphic presentation material that will provide the ability to test scenarios by the diplomats in Buenos Aires, and to complete the beta-test version of the game that will be available on site to the participants of the Buenos Aires COP4 in November 1998.
- XI. Produce the deliverables and execute the plans for the policy oriented research and its diffusion.

Impact of the Project

1. The project should help redefine the area of market economics addressing environmental issues, so that it addresses more accurately the value systems associated with sustainable development. The impact of the research should therefore spread across Universities in the industrial and developing nations, and have also an impact on informed non-technical audiences such as the diplomats in the Secretariat of the FCCC and the major energy agencies in industrial and developing nations.

2. Through a newsletter, multimedia activities, press relations and educational games we will reach a larger audience including young audiences in the school systems, so they can perceive and "feel" directly and in practical terms the impact of win-win strategies on the resolution of environmental issues.

3. Our ultimate target is helping the ratification and the implementation of the Kyoto Protocol, and its implications for shifting the world's use of energy in a more sustainable direction.