

# **HARNESSING FINANCIAL FLOWS FROM EXPORT CREDIT AGENCIES FOR CLIMATE PROTECTION**

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## EXECUTIVE SUMMARY

The financial flows from industrialized countries to developing countries are significant; in the year 2000, the financial flow was approximately \$225 billion, equivalent to about 4 percent of the combined gross domestic product of developing countries. Because a large portion of the financial flows goes to power generation and other energy-intensive industries, the associated greenhouse gas (GHG) emissions footprint of these financial flows is also substantial.

Financing originates from a range of sources—including official aid, funding from multilateral development banks, and financing from private sector banks and multinational corporations. It may be possible to harness these flows for climate protection via the institutions and entities that generate these flows. This paper takes a first step in that direction, by looking at policy options for moving the projects supported by export credit agencies in a climate-friendly direction.

National export credit agencies (ECAs)—which provide loans, loan guarantees, and risk insurance to promote the exports of their country of origin—are a key institution contributing to, and potentially influencing, the types of projects these flows finance. In particular, during the latter half of the 1990s, ECAs participated in almost half of the energy-intensive projects in developing countries. Further, the total project finance for energy-intensive projects that had ECA participation amounted to about \$20 billion annually; of this total, ECAs supported about \$8.5 billion annually in loans, guarantees, and insurance. Thus, ECAs not only participate in a large number of projects, but can provide considerable leveraging of funds.

Consistent and coordinated behavior among industrialized nations will be required to change the technology trajectory of ECA financing. ECAs are national in nature and strong international agreements govern ECA rates and policies. This suggests that, given sufficient political will, it may be possible to modify the behavior of a wide number of ECAs in a coordinated manner. However, agreement over the terms of policies to influence ECA behavior and the resulting projects that are financed will be required not only among industrialized countries, but between the industrialized countries and host developing countries.

This paper identifies several policy options that might be used to influence the decisions of ECAs, including

- A pool of concessionary funding for co-financing projects to eliminate the cost disadvantage of climate-friendly technologies compared with conventional technologies
- Financial set-asides for climate-friendly portions of the ECA portfolio, i.e., requiring a certain percent of an ECA's energy (or total) portfolio to be climate-friendly projects

- Special lending or insurance provisions for climate-friendly projects, such as lower interest rates or longer payback periods
- Portfolio standards requiring that ECA-financed energy projects meet a minimum percentage requirement for power generated by climate-friendly technologies, with options for tradable credits and benefits charges in lieu of the percentage requirement
- Increased transparency in order to encourage more routine and complete reporting of financial and emissions information: an option for the short and long terms

Although several of the policy options appear promising, this paper does not advocate any of the policy options. Rather, its purpose is to highlight the important role that these financial flows play in determining emissions trajectories in developing countries, and to stimulate further research and exploration into the viability of these and other options to influence financial flows.

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## I. INTRODUCTION

Each year, around \$200 billion in financing flow from industrialized countries to developing countries.<sup>1</sup> These financial flows come from a variety of sources, including the foreign direct investment (FDI) undertaken by multinational corporations (MNCs), loans and grants from multilateral development banks, including the World Bank and various regional development banks (such as the Asian Development Bank), and bilateral aid between governments.<sup>2</sup> Other private activities, such as commercial bank loans and purchases of bonds by foreign investors, as well as other multilateral organizations (such as the United Nations) and financial organizations (such as the International Finance Corporation) are also sources of financing.

Because the industrialized countries are a significant source of investment flows, loans, and other capital into developing countries, they—largely unintentionally— influence the greenhouse gas (GHG) emissions intensity of energy development, of transportation, and of industry in developing countries. Thus, these flows represent not only a “financial footprint” of industrialized countries in developing countries, but also a GHG “emissions footprint” that is of sizable proportions. These flows are an unexplored potential tool for changing the current technology trajectory of developing countries and moving it in a more climate friendly direction.

As a first step in this direction, this paper investigates one component of these financial flows—those associated with Export Credit Agencies (ECAs), which are national agencies that support the export of goods and services (and technology) from their country of origin. In the next section, the paper looks at the sources of financing, and the sectors influenced by these financial flows. Section III then lays the groundwork for understanding how ECA behavior might be influenced by examining the constraints on ECA behavior, which arise both because of international agreements governing ECA behavior and because ECA performance is linked to national governmental priorities. Section IV then explores several basic policy options that might be used to influence the climate impacts of ECA supported exports. The final section concludes that, although several of the options are promising, key issues must be resolved before pursuing the options further.

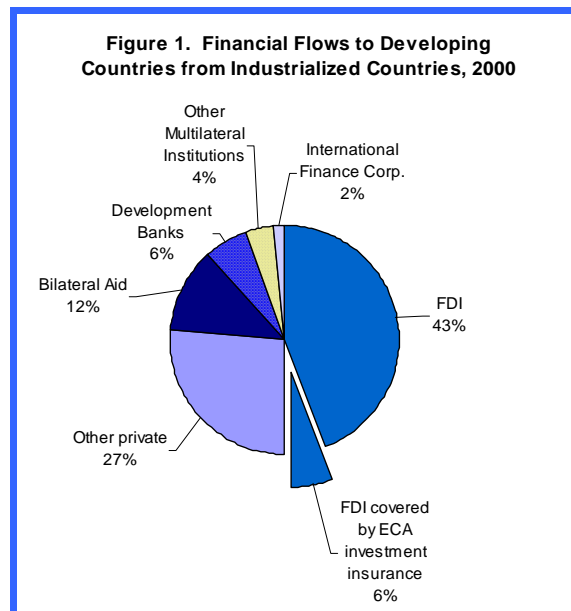
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<sup>1</sup> Throughout this paper, monetary units used will be US dollars, unless otherwise specified.

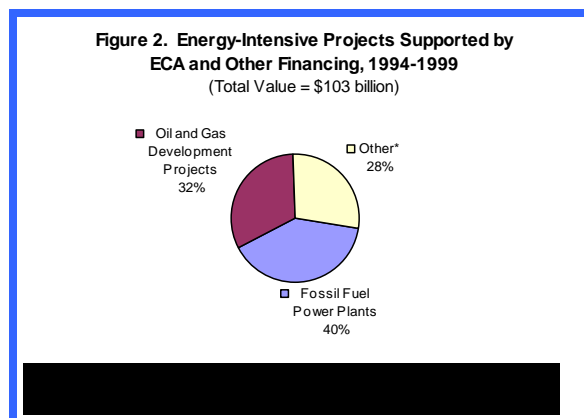
<sup>2</sup> FDI represents a net inflow of investment from MNCs to enterprises in other countries in which the MNC owns a controlling share. FDI includes equity capital, reinvestment of earnings, loans, and other financing.

## II. OVERVIEW OF FINANCIAL FLOWS: FOCUS ON EXPORT CREDIT AGENCIES

In the year 2000, approximately \$225 billion of financing flowed from various private and public sources in industrialized countries—about 4 percent of the combined GDP of developing countries. As illustrated in Figure 1, private sector flows from multinational corporations and other private sources accounted for three-quarters of total financial flows into developing countries from developed countries.<sup>3</sup> Of the remainder, bilateral government aid, including other development assistance (ODA), was the largest component, followed by the development banks and then by financing from other multilateral and financial institutions.<sup>4</sup>



Export credit agencies (ECAs) are institutions affiliated with national governments, whose purpose is to encourage exports to developing countries (primarily) from the countries where they are located. Almost every country has its own ECA, which facilitates and financially supports (via loans, loan guarantees and political risk insurance) the export of goods and services by domestic companies.<sup>5</sup>



The financial flows through ECAs

<sup>3</sup> According to World Bank (2002a), the combined gross domestic product (GDP) of developing countries in 2000 was about \$6 trillion.

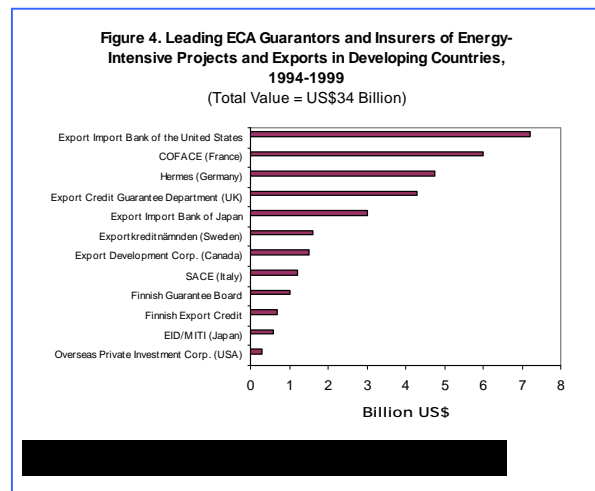
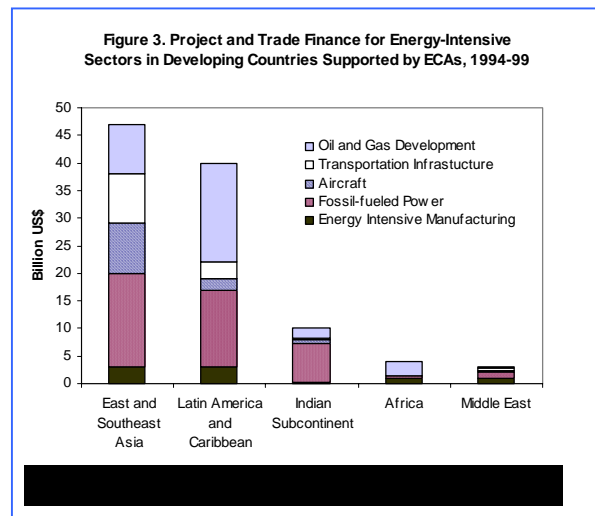
<sup>4</sup> Data sources for Figure 1 are as follows. Bilateral Aid, FDI, and other private sector flows come from World Bank (2002b), Tables 2.1 and 4.1. The same source (p. 40) estimates that 1/3 of FDI originates in developing countries, which figure is used to adjust the FDI data for Figure 1. Flows from multilateral development banks and other multilateral organizations come from OECD (2003a), Table 17. IFC data from IFC (2000).

<sup>5</sup> For example, an Export Import Bank of an exporting country may guarantee loans made (by exporting companies or banks in the developed country) to an enterprise in a developing country that is importing good and services from the developed country.

are substantial. In aggregate, ECAs provided investment risk insurance that directly covered about \$13 billion of FDI—about 11 percent of the total FDI—in 2000.<sup>6</sup> Including medium- or long-term loans and loan guarantees, the total amount of ECA activity in 2000 reached \$85 billion. In addition to working with the private sector, ECAs also partner with the multilateral development banks and other organizations in financing projects.<sup>7</sup> By participating in financing a variety of activities, the ECAs of industrialized countries may have a significant influence on the directions and purposes of financial flows.

From 1994 to early in 1999, about \$217 billion (about \$41 billion annually) of project and trade finance going to developing countries supported exports or investments that were energy-intensive—including fossil-fuel power plants, oil and gas development, energy-intensive manufacturing, and transportation infrastructure in developing countries (Maurer and Bhandari 2000). Collectively, ECAs participated in just under half (about \$103 billion) of these energy-intensive projects. As illustrated in Figure 2, the majority of energy-intensive projects that ECAs participated in involved oil and gas development or fossil fuel power. To these and other energy-intensive projects, ECAs provided about \$44.4 billion (\$8.5 billion annually) in loans (direct finance), guarantees, and insurance. As illustrated in Figure 3, by far the majority of these projects were located in East and Southeast Asia, Latin America, and the Caribbean.

The current emissions footprint associated with these projects is substantial: the Institute for Policy Studies estimates that the *lifetime* carbon content of fossil fuel projects financed in an average year by the two US ECAs (Ex-Im Bank and OPIC) combined is roughly three-quarters of annual US emissions (DEFRA 2002). Given the magnitude of financial support from other ECAs as well (see Figures 4 and 5), the total emissions footprint is



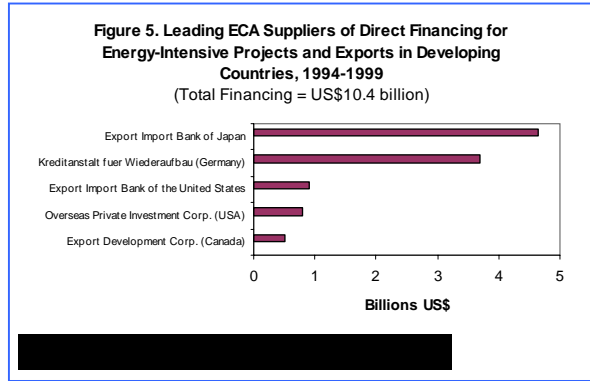
<sup>6</sup> Berne Union (2003, p. 17). The report also states that medium and long-term export credit business equaled \$72 billion in 2000. Short-term business equaled \$410 in 2000.

<sup>7</sup> For example, the European Bank for Reconstruction and Development has worked with more than 130 commercial banks and 14 ECAs (Berne Union 2003).

likely to be several times higher. Thus, the directions that ECA-financed projects take in the future will be critical to the technology trajectory of developing countries.

### III. GREENHOUSE GASES AND THE ROLE OF ECA FINANCIAL FLOWS

The foregoing section suggests that financial support from ECAs located in industrialized countries plays a significant role in contributing to—and leveraging—the total amount of financing for energy-intensive projects in developing countries. Given that these flows are already occurring, the question is: How to shift the emissions trajectory associated with these financial flows in a climate friendly direction? This section lays the groundwork for exploring several policy options by first looking at the structure and mission of ECAs and the constraints and determinants of ECA behavior.



#### III.A What are ECAs?

An ECA is a financial agency offering loans, guarantees, credit insurance, or financial technical assistance. The purpose of ECAs is to promote the exports of goods and services, primarily to developing countries, from the country where the ECA is located. ECAs generally are official, i.e., enjoy the financial participation or sponsorship of the national government. ECA objectives are therefore in line with the goals of the national government. The services of ECAs are not intended to substitute for, but rather

#### Box 1. The Larger ECAs Include:

Export-Import Bank of the United States	Hermes Kreditversicherungs (HERMES) (Germany)
Export Import Bank of Japan (JEXIM)	Exportkreditnämnden (Sweden)
Kreditanstalt fuer Wiederaufbau (Germany)	Export Development Corp (Canada)
Overseas Private Investment Corporation (OPIC) (USA)	Instituto Assicurativi e il Credito all'Esportazione (SACE) (Italy)
Compagnie Francaise d'Assurance pour le Commerce Exterior (COFACE) (France)	Ministry of International Trade and Industry (EID-MITI) (Japan)
Export Credits Guarantee Department (ECGD) (UK)	Finnish Guarantee Board (FGB)

to complement, private banks, by stepping in where private banks and insurance companies do not provide credit or insurance. Thus, ECAs are sometimes known as the lender of “last resort.”

Every industrialized country, and many developing countries, has at least one ECA (see Box 1). ECAs vary considerably in terms of ownership and the types of services provided (USGAO 1996). However, some general statements can be made that apply widely across most ECAs. ECAs are generally wholly-government owned or have mixed (public and private) ownership. ECAs provide a range of financial services, including:

- Providing credit where none is available
- Providing loan guarantees and insurance to exporters or their banks as cover against non-payment of loans by foreign customers
- Issuing investment insurance (for commercial and political risk) to cover direct equity investments overseas.

In providing these services, ECAs generally must be profitable—which means that, with some exceptions, projects they support must be commercially viable. Additional information on the types of services provided by ECAs is given in Box 2.

#### **Box 2. Forms of Official Support Used by ECAs**

**Export credit**—financing extended by a commercial bank or export credit agency to an exporter or foreign buyer; medium to long-term loans are those with maturities greater than 2 years and generally are for financing projects.

**Export cover**—export credit insurance or loan guarantees given to exporters or lending institutions. There is little practical difference between the two: both cover exporters against non-payment of loans by their foreign customers.

**Investment insurance**—a form of political risk insurance protecting investors against specified risks, such as nationalization without compensation. **Reinsurance**—insurance coverage for insurance companies. For example, a private insurer may wish to keep the commercial risks of a loan on its books but seek to have the political risks reinsured.

**Interest rate subsidies for export loans**—providing a commercial bank the difference between the interest rate payable by the exporter and the bank's rate.

Sources: Gianturco (2001), Stephens (1999), Maurer and Bhandari (2001), Hampton (2001), ED (2003), and IPS, FOE, and ITIS (1999).

### **III.B What Governs ECA Behavior?**

A number of factors determine the limits within which ECA behavior can be modified, and the tools that can be used to shape ECA behavior. These factors include the international agreements that delineate the boundaries within which ECAs must function, as well as the priorities set by national governments.

*ECA policy is governed by international agreements.* Activities by ECAs are governed by the OECD non-binding *Arrangement* and by other agreements and understandings. These agreements provide a forum and mechanism for negotiation with

the largest ECAs, which are all included in the agreements, and so may facilitate change or adoption of some of the policy options discussed in Section IV below. However, these agreements and understandings also restrict behavior, and so may limit the types of options that are feasible, unless significant changes are made in the agreements or understandings.

The OECD *Arrangement on Guidelines for Officially Supported Export Credits* is the primary agreement governing ECA behavior.<sup>8</sup> The *Arrangement* is an informal “gentlemen’s agreement” that came into being in 1978. Its purpose is to promote comparability in the terms provided by ECAs, and so to prevent an export credit race in which exporters compete on the basis of the financing terms or subsidies that their respective governments allow them to offer. The *Arrangement* constrains the terms that ECAs can offer in two key respects:

- Constraints on lending provisions—interest rates must be at a minimum comparable to commercial ending rates, exports credits must have 15 percent minimum cash down, repayment terms are limited to a maximum of 5 or 10 years (depending on the country), and premiums for insurance must meet specified minimums, depending on the types of risk involved.
- Limits on tied aid—tied aid (also called “mixed credit”) is a financial arrangement that includes a combination of export agency credit and concessionary financing (donor country aid that includes a grant, i.e., subsidy, component). Tied aid can only be used under some circumstances, based on the commercial viability of the project and the income level of the developing country.<sup>9</sup>

### Box 3. Climate Friendly ECA Projects?

Many climate-friendly projects may not be easy to finance commercially. Renewable energy and advanced technologies may face higher costs and/or risks.

Barriers to financing renewables include:

- ✓ small project size
- ✓ high up-front capital costs and longer payback periods
- ✓ small collateral value
- ✓ risks associated with natural resource supply

A G8 Renewable Task Force (2001) found that expanding capacity in developing countries to 50 to 70 GW between 2000 and 2010 would require roughly \$40 billion to \$60 billion in investments—of which \$8 billion to \$12 billion (20 percent of the required investment) would be needed as concessionary funding to address cost disparity.

Advanced technologies may face similar financing barriers or higher costs than conventional technologies. Consider, for example, Integrated Gasification Combined Cycle (IGCC), a clean coal technology. IGCC combined with carbon capture and sequestration is about 30 percent more expensive (on a levelized basis) than conventional coal.

Any policy options to encourage ECA support of these types of climate-friendly projects must address these cost disparities.

<sup>8</sup> The OECD compiles detailed information on ECAs that participate in the *Arrangement*, and provides copies of the *Arrangement* and other agreements governing ECA activities. See OECD (2001, 2003b).

- Specific guidelines and exclusions—the terms of the Arrangement have been modified for some sectors and there are exceptions. For example, power plants are eligible for longer payback periods (up to 12 years) than other projects, and special guidelines apply to certain sectors, such as ships, nuclear power plants, and aircraft. The arrangement does not apply to military equipment and agriculture products.

***National interests and agency charters govern ECA decisions.*** ECA objectives will be in line with the goals of the national government. These goals will primarily be to expand exports of goods and services, and to match official supported foreign competition faced by exports, so that national exports are not disadvantaged by the actions of other governments. Many ECAs are required to be financially self-sufficient. Further, ECAs generally focus on financing projects that are commercially viable. Thus, to the extent that many renewable energy or other climate friendly projects are not always commercially viable, they may not be good candidates for ECA financing (see Box 3).<sup>10</sup> Any policies that are developed to encourage ECA support of climate-friendly projects must recognize the competing interests of ECAs in different countries, as well as the constraints that ECAs operate under as national institutions. At the same time, the close relationships between ECAs and national governments suggests that modifying ECA policy can be a component of national policy and so rely only on incentives for change at the national—rather than the institutional—level.

***ECA control over project development is limited.*** In general, ECAs are reactive rather than proactive in project development, responding to projects that are presented to them rather than seeking out projects. To some extent, however, ECAs can increase the number of project proposals they receive by targeting information and other outreach to particular areas, such as renewable energy.

#### **IV. POLICY OPTIONS TO SHAPE A CLIMATE-FRIENDLY ROLE FOR ECAS**

Viable policy options will have to address the economic and political circumstances under which ECAs operate, as well as the technological and cost realities associated with climate friendly technologies. To be successful, policies will also need to address the motivations and interests of all parties involved—including national governments and affiliated ECAs, developing countries, project developers, and commercial banks and other private sector entities involved in projects. In general, to be viable, a policy option should:

- Recognize cost differentials and other barriers to implementing new and climate-friendly technologies
- Hold developing countries relatively harmless, i.e., not increase the cost to developing countries of technology

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<sup>9</sup> For a detailed discussion of tied aid, see USGAO (2002b).

<sup>10</sup> Lack of familiarity among investors with renewable energy technologies can also impede ECA involvement in these types of projects, as can the lack of mechanisms for overcoming the barriers faced by small and medium sized enterprises (Hampton 2001; IPS, FOE, and ITIS 1999).

- Be consistent with the missions of the organizations (both ECAs and others that may be involved in co-financing arrangements)
  - Be compatible with other international agreements, such as the OECD Arrangement
  - Not create competitiveness issues across ECAs, i.e., be inclusive in terms of who participates
  - Be realistic in terms of implementation and providing incentives for compliance
  - Provide measurable and significant environmental results
  - Have low transactions and administrative costs
  - Succeed in influencing the mission of ECAs so it includes the pursuit of climate-friendly technology
- This section describes five possible policy options that seek to present viable means of influencing ECA policy:<sup>11</sup>

- A pool of concessionary funding for co-financing projects to eliminate the cost disadvantage of climate-friendly technologies compared with conventional technologies
- Financial set-asides for climate-friendly portions of the ECA portfolio (requiring a certain percent of the portfolio to be climate-friendly projects)
- Special lending or insurance provisions for climate-friendly projects
- Climate-friendly portfolio standards for ECA projects, with options for tradable credits and benefits charges
- Increased transparency in order to encourage more routine and complete reporting of financial and emissions information: an option for the short and long terms

All the policy options have three features in common. First, all (or virtually all) ECAs participate in any changes in policy, both to achieve a greater benefit for the environment and in order to limit undesirable impacts on competitiveness (both across countries of origin and across host countries). Second, the options redress, in different ways, the cost disparities between climate-friendly and conventional technologies, so that projects are “bankable,” i.e., meet commercial bank criteria. Third, the options are intended to encompass a broad range of climate-friendly technologies, including renewable energy and advanced technologies. Further, it is a premise underlying all the options that developing countries, industrialized countries, and ECAs will all need to agree on key features of the policy options, if they are to be viable.

The paper does not advocate any of the individual policy options. While each of the options is identified based for the most part on discussions in the literature, the options have not been closely examined, and the analysis presented here should be

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<sup>11</sup> These policy options have been developed based in part on discussion from a number of the sources cited in the reference section of this paper.

considered preliminary. The options appear, however, to be promising and worthy of further exploration.

#### **IV.A A Pool of Concessionary Funding**

The first option is a fund that provides concessionary financing, in addition to the types of financing traditionally provided by ECAs and other sources. The fund would be financed by contributions from donor countries. The financing provided by the fund would be supplemental to project finance from other sources. In this way, the use of concessionary financing would address the higher costs of climate-friendly technologies, without raising the cost of financing climate-friendly projects for the ECA, the project developers, or the host country.

**Concessionary (or concessional) financing** is support that either takes the form of a direct grant, or contains a significant grant element (e.g., contains an interest rate subsidy for a loan).

The fund could be used to target a range of climate-friendly technologies—possibly both renewables and newer clean technologies, such as IGCC, that use fossil fuels. Thus, the fund would rely on a list of acceptable technologies (based on climate impacts and donor host country priorities. Countries—both donor and host—would need to agree on an approved list. In order to gain additional support from donor countries, one possibility way to structure the fund would be to earmark a portion of funds for specific

#### **Box 4. Examples of World Bank and International Finance Corporation (IFC) Funds**

The World Bank participates in 4 energy-environment donor-funded programs.

- ✓ **Asia Alternative Energy Program (ASTAE)** brings alternative energy into the mainstream of WB's Asia energy portfolio. Supports project preparation and implementation, including World Bank and GEF loans, credits and grants.
- ✓ **Africa Rural and Renewable Energy Initiative (AFRREI)** focuses on rural poverty reduction and on developing renewable energy where appropriate.
- ✓ **Energy Sector Management Assistance Programme (ESMAP)** is a global technical assistance program to accelerate the delivery of energy services to the poorest populations. Assists governments and private sector. Largely funded by bilateral donors and the World Bank.
- ✓ **Regional Program on the Traditional Energy Sector (RPTES)** helps client countries in the review, formulation and implementation of policies, programs and projects in the traditional and biomass energy sector in Africa. It works to promote an orderly energy transition toward modern fuels in the household and small- and medium-sized enterprise sector.

The IFC has three innovative funds to address the need for small-scale financing of renewable energy in developing countries:

- ✓ **The PV Market Transformation Initiative (PVMTI)** aims to accelerate the commercialization and financial viability of PV-based energy services in India, Kenya, and Morocco. The initiative has been operational since 1998, and uses \$25 million of concessionary finance from the GEF. It provides finance (debt, equity, or guarantees) and business advice to local PV businesses.
- ✓ **The Renewable Energy and Energy Efficiency Fund (REEEF)** targets renewable and energy efficiency projects. It is a mixed fund with private equity and GEF concessionary financing.
- ✓ **The Solar Development Group** was formed by the IFC, GEF, the World Bank, and some US foundations with a \$30 million for-profit fund and \$20 million for charitable funding. It aims to accelerate for-profit distribution, retailing and financing of environmentally sound and reliable energy to rural areas in developing countries.

Sources: Jeucken (2001). World Bank (2002c). IFC examples adapted from DEFRA (2002).

technologies—reflecting the mix of donors and technologies to be supported (i.e., identified as of particular interest to donor countries). Box 4 presents some examples of funds that could provide lessons for the design of this policy option.

The advantage of this approach is that it may be possible to achieve significant environmental results, given a concessionary pool of sufficient magnitude and efforts to locate and propose relevant projects. In addition, the fund can be designed to address multiple objectives—including those of ECAs, host countries, and investors. The key disadvantage of this approach is that, in order to get significant contributions from donors it will likely be necessary to earmark a portion of the funds for certain technologies, in order to satisfy donors. Earmarking may be disliked by host countries, if some control is lost over the types of projects that are undertaken. Host countries ultimately have veto power, however, since an ECA cannot force a host country to accept a particular project.

#### ***IV.B Financial Set-Asides***

Under this option, ECAs “set aside” a percentage of the financing they provide for the specific purpose of supporting climate-friendly technologies. For example, ECAs could commit to move a given percentage—say 5 or 10 percent—of financing for energy projects into climate-friendly projects.<sup>12</sup> Alternatively, ECAs could adopt a portfolio-wide balancing approach, i.e., the percentage could be calculated across all projects. The set-aside could be voluntary or mandatory.

A key advantage of this policy option is that it provides for measurable and—if set high enough—potentially significant environmental results. Further, it is compatible with the requirements of the OECD *Arrangement* governing ECA policies. A key disadvantage is that the existence of a set-aside does not guarantee that it will be met, as the experience of Ex-Im Bank illustrates (see Box 5). Further, it can be difficult to meet a mandatory target for a given year (rather than a series of years), since it is hard to predict what projects will come in over the course of the year.

The key to making this option successful is supplemental financing. Because many climate-friendly projects are not currently commercially viable, some sort of concessionary funds—perhaps in the form of a pool of concessionary financing—is necessary, realistically, if ECAs are to meet set-aside targets. For example, as described in Box 5, the Ex-Im Bank of the United States has had a financial set-aside target for renewable projects of 5 percent, which for the most part they have been unable to meet. Ex-Im Bank has claimed that not enough renewable energy projects walked in the door for them to meet their requirement. While Ex-Im Bank could also have done more to find viable projects and to market themselves in that sector, it is also true that many climate-friendly projects will not meet the financial viability criteria of the ECAs without supplemental financing.

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<sup>12</sup> GLOBE’s RENEW initiative, which is supported by a group of organizations, has as its goal that Britain, Canada, Germany, Japan, and the United States strive to devote 10 percent of their energy export finance portfolios to renewable energy technologies by 2010 (GLOBE 2002). CIEL (2002) has proposed a target of 20 percent for renewable energy and energy efficiency by 2006. IPS, FOE, and IT IS (1999) also propose 20 percent.

### **Box 5. Renewable Energy Set-Aside for Ex-Im Bank in the United States**

Ex-Im Bank is an independent US government agency whose mission is to finance the export of US goods and services overseas, particularly when private sector lenders are unable or unwilling to accept the risk. Ex-Im Bank provides medium- and long-term loans and guarantees and export credit insurance.

In 1989, congressional legislation required Ex-Im Bank to seek to provide not less than 5 percent of its energy sector financing for renewable energy projects, and to report annually to Congress on these efforts. Overall, Ex-Im Bank financed renewable energy projects totaling \$730 million from 1990 through 2001, or about 3 percent—less than its goal—of all energy projects financed. Almost 60% of these funds were provided in 1994, when two large geothermal projects were financed in the Philippines. Reporting has also been spotty.

Ex-Im Bank cites various factors in its inability to meet its target, including cost disadvantages of renewable projects; project risk and substantial exploration and development costs; lack of investment capital for small businesses; and higher up-front costs that result in a need for longer repayment terms. An investigation of Ex-Im Bank's practices, however, found that a key factor is that Ex-Im Bank has not placed a priority on promoting renewable energy exports. In May 2002, Ex-Im Bank established the Renewable Energy Exports Advisory Committee, to help expand its support of US renewable energy exporters. Source: US General Accounting Office, *Export-Import Bank: Energy Financing Trends Affected by Various Factors* (2002a).

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### **IV.C Special Lending Provisions**

Under this option, ECAs would offer special lending provisions to encourage projects using climate-friendly technologies, i.e., would develop financial products that help to overcome industry-specific barriers (Hampton 2001). In particular, ECAs could offer more generous terms under loan or insurance programs for selected technologies. Special provisions could include:

- Extended payback periods
- Reduced fees or faster transaction processing
- Lower interest rates on loans
- Lower premiums on insurance

This policy option will be more effective if it is adopted by all ECAs; however it might require modifying the OECD *Arrangement*, which specifies limits to many of the terms that ECAs can offer. There is some momentum in this direction already. As a result of Ex-Im's difficulties meeting the set-aside, a Renewable Energy Export Advisory Committee was formed to evaluate Ex-Im's policies. Many of the recommendations of the committee are similar to those in this policy option.

A key advantage of this policy option is that it does not require using a concessionary pool of funding. In addition, precedent already exists—the provisions in the *Arrangement* governing power plants—for lengthening payback periods, which is a key barrier to more widespread use of renewable energy technologies. Further, longer

payback periods are cheaper to provide in the near term than many other concessions (such as lower interest rates).

The policy option has several disadvantages. First, self-funded ECAs (those required to be self-sufficient) might require additional funding depending on the financial product (the form of the special lending provisions) offered. Without additional funding, the ECAs might end up being able to finance fewer projects. Second, not all ECAs offer the same services; rather many ECAs fall into one of two groups that employ very diverse instruments: those that provide loans and loan guarantees versus those that provide political risk insurance and similar insurance. A different approach will be needed to engage ECAs providing insurance, rather than loans.<sup>13</sup> Third, depending on the extent and nature of the special financial instruments or provisions that are developed, this policy option may provide only a small benefits and so not demonstrably change the trajectory of ECA financing. Finally, differential lending terms may be criticized as market distorting.<sup>14</sup>

#### ***IV.D Climate-Friendly Portfolio Standard***

This policy option requires that a minimum percentage of power generated by ECA projects come from a specified list of climate-friendly technologies. The percentage would be established for each ECA, and would apply to all projects. Power projects that do not meet the criterion would have the option of purchasing tradable credits or certificates representing a sufficient number of kWh of climate-friendly power. Alternatively, they could choose to pay a charge per kWh. One advantage of the charge is that it provides a ceiling on the cost of the standard. The United States and Europe have related programs for renewable energy that can provide lessons for the possible design of this policy option.

The advantage of the portfolio standard is that it can help expand or create a market for renewable energy in countries where none exists. The charge is also a possible additional source of funding for a concessionary pool. At the same time, this option has some strong disadvantages that suggest it may be difficult and complex to implement. First, it sets up competing goals for ECAs—providing additional hurdles for projects to meet (in terms of the percentage of climate-friendly power) is in conflict with the ECA mission of encouraging projects and exports. Second, most ECA power projects use only one technology and so will have to purchase credits or pay the charge (unless they are entirely climate-friendly). Third, the costs of reporting, certification, and tracking may be substantial for credit/certificate transactions.

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<sup>13</sup> Activities of ECAs providing insurance are governed by the Berne Union, which sets premiums by risk category.

<sup>14</sup> Some economists argue that, ideally, from the perspective of economic efficiency we want the best projects to be undertaken (i.e., those with the highest rates of return). Thus, it is less efficient to subsidize projects by providing favorable lending provisions (which alter market conditions) than to directly subsidize projects using grants.

#### **IV.E Increased Transparency**

The final policy option is to require ECAs to monitor and report GHG emissions associated with their financing and to improve financial reporting. Most ECAs do not report financial or emissions information transparently, and some ECAs do not have clear information disclosure policies (Maurer 2002). Publicly available information on ECA financing, while available, is difficult to track. Accurate reporting is a prerequisite for all of the policy options examine here. Increased transparency is also a possible first step that can be accomplished in the nearer term and more rapidly than the other options could be implemented. Implementing this option would required developing methodologies for reporting and verification. The key disadvantage of this option is that is does not directly change technology choices and reduce GHG emissions; rather it works indirectly using accountability and public pressure to reduce emissions.

### **V. CONCLUSIONS AND KEY ISSUES TO RESOLVE**

The financial flows and resulting GHG emissions footprint of industrialized countries in developing countries is significant, particularly in the power generation sector. These financial flows come from a variety of sources—including official aid, funding from multilateral development banks, and private sector banks and multinational corporations. It may be possible to harness these flows for climate protection via the institutions and entities that generate these flows. This paper takes a first step in that direction, by looking at policy options for moving the projects supported by export credit agencies in a climate-friendly direction.

National export credit agencies (ECAs)—which provide loans, loan guarantees, and risk insurance to promote the exports of their country of origin—are a key institution contributing to, and potentially influencing, the types of projects these flows finance. In particular, during the latter half of the 1990s, ECAs participated in almost half of the energy-intensive projects in developing countries. Further, the total project finance for energy-intensive projects that had ECAs participation amounted to about \$20 billion annually; of this total, ECAs supported about \$8.5 billion annually in loans, guarantees, and insurance. Thus, ECAs not only participate in a large number of projects, but can provide considerable leveraging of funds.

Consistent and coordinated behavior among industrialized nations will be required to change the technology trajectory of ECA financing. ECAs are national in nature and strong international agreements govern ECA rates and policies. This suggests that, given sufficient political will, it may be possible to modify the behavior of a wide number of ECAs in a coordinated manner. However, agreement over the terms of policies to influence ECA behavior and the resulting projects that are financed will be required not only among industrialized countries, but between the industrialized countries and host developing countries.

This paper identifies several policy options that might be used to influence the decisions of ECAs, including (1) a pool of concessionary financing funded by donor

contributions; (2) financial set-asides; (3) special lending provisions; (4) a climate-friendly portfolio standard with credits and charges; and (5) increased transparency in financial and emissions reporting by ECAs.

Overall, the policy options pose some general challenges, which will need to be addressed in any next steps that are taken to develop the options further. For several of these options, concessionary financing is key to turning technologies that are not commercial today into viable projects that are consistent with ECA financing rules. The policy options may also need to be adapted to ECAs that have different mixes of financial products that they offer. Further, a clear understanding of the cost and emission potential of candidate technologies will be needed to determine the extent to which policy options can be environmentally successful.

The policies also face individual challenges, which will be key issues to resolve in further research. Some of the key issues for the first four policies—those involving directly changing how the ECAs do business and what they finance—are discussed below.

- **Creating a pool of concessionary financing.** Implementing this option would require making a number of critical decisions, including how the pool is structured (whether multilateral or unilateral) and determining rules for contributions, defining the technologies funded by the pool, deciding the extent to which funds can/should be earmarked for specific technologies, and developing rules governing the distribution of concessionary financing to projects. It is also important to adapt the rules governing the pool to the different types of financial instruments used by different ECAs, and to encourage cooperation and partnerships between the pool and the ECAs while keeping transaction costs low.
- **Financial set-asides.** Key issues for this option are choosing acceptable technologies, and determining a realistic level of the set-aside based on the cost and expansion potential of these technologies in the context of ECA projects. An additional key issue is how to provide concessionary funding in order to make the more projects using these technologies commercially viable.
- **Special lending provisions for climate-friendly technologies.** Key issues for this option include what types of provisions should be included or new instruments developed, and whether the provisions can be adopted unilaterally or multilaterally.
- **Climate-friendly portfolio standards for ECA projects.** This option could result in a system that is complex to design and administer, and so a key issue is how to streamline implementation in order to keep transactions and administrative costs low. As in the other options, it will be important to define acceptable technologies. From a design perspective, one key issue will be determining the stringency of the standard and the level of charge, both of which entail weighing the tradeoff between achieving measurable environmental results and imposing high costs. An issue unique to this option will be how to determine the pool of certificates/credits so that purchases of certificates/credits by projects represent environmental benefits (i.e., additional climate-friendly power generation).

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