***BACKGROUND NOTE*:**

TECHNOLOGY FUNDING IN A POST-2012 CLIMATE FRAMEWORK

June 2008

Key question

Multiple sources of investment – including public and private finance, carbon finance, and multilateral funding – are needed to support the adoption of climate-friendly technologies in developing countries. This note addresses one potential element of that equation. It outlines:

- Key design issues and options in considering new means of multilateral funding for climate-friendly technology in a post-2012 climate change agreement. [1]

UNFCCC/Bali Action Plan

In the UN Framework Convention on Climate Change, developed countries commit generally to provide financial resources, "including for the transfer of technology," needed by developing countries to fulfill their obligations under the Convention (Article 4(3)).

Under the Bali Action Plan, issues to be addressed in an "agreed outcome" on the full, effective and sustained implementation of the Convention include:

- Nationally appropriate mitigation actions by developing countries "supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner;" and
- "Enhanced action on technology development and transfer [including]…consideration of: (1) effective mechanisms and enhanced means for…provision of financial and other incentives for scaling up of the development and transfer of technology to developing country Parties…"

Projecting Technology Finance Needs

[1] This paper focuses on funding for mitigation technology. It does not address other funding needs (e.g., adaptation, deforestation), adaptation technology, or other aspects of the technology issue.

In one analysis of existing and potential investment and financial flows to address climate change, the UNFCCC Secretariat projected that a mitigation scenario (defined as returning greenhouse gas emissions to current levels by 2030) would require:

- *Substantial shifts* in projected energy supply investment flows, including, in the case of developing (non-Annex I) countries, significant increases in renewables ($18 billion), hydropower ($18 billion), and carbon capture and storage ($27 billion); and
- *Additional investments* for efficiency improvements and other emission reduction efforts, including, in the case of developing countries, $19.1 billion in industry, $14 billion in buildings, and $35.5 billion in transportation.[2]

Among options for meeting these projected needs, the Secretariat's analysis identifies: national policies (incentives and regulations) to steer private sector investment toward low-emission alternatives; redirection of public sector investment; an expanded international carbon market; and new multilateral funding. This paper focuses on the latter option.

Design Issues and Options

In considering a new technology funding mechanism as an element of a post-2012 climate framework, parties must consider a range of design issues. Some would likely need to be addressed in an initial agreement, while others might be addressed in subsequent negotiations or by the governing body of the mechanism once established. Issues include:

- *Focus* – A funding mechanism could target a single or multiple sectors, and could support any of a range of activities, such as:
    - Research and development of clean energy technologies;
    - Deployment of commercially available technologies;
    - Capacity-building in recipient countries (e.g., analysis of mitigation potentials; technology assessment and know-how; measurement, reporting, and verification); and
    - Development and implementation of national policies and programs.

- *Funding Sources* – An agreement could: 1) establish one or more mechanisms to generate funds, and 2) identify countries or groups of countries that must or may contribute. Mechanisms to generate funds could include[3]:
    - Periodic pledging, with amounts determined unilaterally;
    - A levy on international emissions trading (like the "share of proceeds" from the Clean Development Mechanism now dedicated to the Adaptation Fund);

[2] UNFCCC Secretariat, *Report on the Analysis of Existing and Potential Investment and Financial Flows Relevant to the Development of an Effective and Appropriate International Response to Climate Change*. The analysis also projects costs for adaptation and for mitigation in forestry and agriculture. At http://unfccc.int/files/cooperation_and_support/financial_mechanism/financial_mechanism_gef/application/pdf/dialogue_working_paper_8.pdf.

[3] Some of these and other potential funding sources, and the flows they might generate, are further elaborated in a UNFCCC background paper, *Investment and Financial Flows to Address Climate Change.* At http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/background_paper.pdf.

- Auction of emission allowances (e.g., a portion of each parties' allowances, allowances for international aviation and marine emissions, etc.);
- A levy on specific emissions-generating activities (e.g., electricity production, international air travel, etc.);
- Funding commitments, with amounts determined by negotiation or agreed formula (e.g., UN scale of assessment, indicators such as GDP, per capita GDP, per capita emissions, etc.); and
- Supplemental carbon finance (see below).

Depending on the mechanism chosen, funding could be:

- Voluntary;
- Obligatory for developed countries; voluntary for others;
- Obligatory for developed and major developing countries, on a differentiated basis; or
- Obligatory for countries meeting (initially or over time) agreed criteria.

- *Institutional Base/Governance* – A funding mechanism could be under the auspices of:
  - The Global Environment Facility;
  - The UNFCCC Secretariat;
  - The World Bank or another multilateral development bank (MDB);
  - A new multilateral institution; or
  - A commercial financial institution.

  The fund's governance could be:
  - By consensus of participating parties;
  - If administered by an MDB, under its established voting rules; or
  - By agreed voting rules weighted, for instance, equally between donor and recipient countries or according to a country's level of contribution.

- *Eligible Countries/Entities* – An agreement could provide that country's eligibility for funding (initially or over time) be on the basis of:
  - An agreed list (e.g., non-Annex I) or formula (e.g., per capita GDP threshold);
  - The country's acceptance of mitigation commitments;
  - Acceptance by the fund's governing body of a national climate program; and/or
  - The country's willingness to co-finance.

  Eligibility criteria could apply differentially to groups of countries and/or types of funding. For instance, all developing countries might be eligible for capacity-building support, while eligibility for deployment funding might be contingent on commitments or an accepted national plan.

  For eligible countries, funds could be made available to:
  - National or sub-national governments;
  - Private entities within the eligible country; or
  - Other private entities (e.g., holders of intellectual property rights).

- *Funding Criteria* – An activity proposed for funding could be assessed on its:
    - Projected emission reduction per dollar of investment;
    - Impact beyond business as usual;
    - Amenability to verification;
    - Conformity to a host country's commitment or national program;
    - Contribution to a host country's sustainable development objectives; and/or
    - Ability to leverage private investment and/or carbon finance.

- *Funding Instruments* – Funding could be provided in the form of:
    - Grants;
    - Concessional loans;
    - Loan guarantees or other risk mitigation instruments; and/or
    - Payment for access to and use of intellectual property and associated technological know-how.

- *Links to Carbon Market and Other Finance* – To leverage other sources of finance, a funding mechanism could be structured to allow bundling at the project level with other multilateral or bilateral funding, or with private sector finance. Carbon finance also could be employed, with funded projects earning greenhouse gas reduction credits, and proceeds flowing back to the fund and/or to private investors.

- *MRV* – Mechanisms would be needed to ensure that the support provided, and that the developing country mitigation actions it helps to enable, are "measurable, reportable, and verifiable," per the Bali Action Plan.