

# ***Handbook for Financial and Development Professionals***

## Chapter 6

### **Sources of Technical Assistance and Finance**

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- UNEP Investment Advisory Facility
- AREED
- E&Co
- Renewable Energy and Energy Efficiency Fund
- EEAF
- Prototype Carbon Fund

#### □ **UNEP RET/EE Investment Advisory Facility**

The *RET and EE Investment Advisory Facility* (IAF) is a pilot initiative launched in mid-1999 as the core element of the Global Environment Facility MSP 'Redirecting commercial investment decisions to cleaner technologies'. It provides targeted expertise to banks and financiers to help them evaluate proposals in the renewable energy or energy efficiency sectors.

To date the IAF has worked with the development banks IFC, IADB, ADB, FMO and DEG; with a European commercial bank; and with a few private investors (see summary table). The first two investments, whose evaluations were supported by the IAF, have now gone forward. One is a \$36 million small hydro peaking plant in Guatemala, and the other is a \$4 million biomass plantation in Tanzania. The IAF provided \$25,000 in technical support for the first investment and \$26,000 to the second, allowing both to overcome problems encountered in the due diligence process.

The banks are not used to coming to a UN institution for technical support, therefore much of the work in setting up the IAF has been building credibility with banking sector clients. This has included setting up of rapid administrative procedures which can operate within a bank's short proposal evaluation cycle. This effort has been successful, based on an October 2000 completed review of the facility.

The experience gained so far has been that the IAF can be an effective tool for helping banks over some of the hurdles they encounter in evaluating sustainable energy projects. The IAF, in its existing or some modified form, should become one element of the Sustainable Business Alternatives Network (SBAN) under development within the UNEP-GEF Strategic Partnership.

Bank / Financier	Investment Description	GHG Offsets 20 year cumul. (tons CO <sub>2</sub> )	UNEP/GEF Contribution	Investment Size
Inter-American Investment Corporation (part of IADB)	20MW Small hydro peaking plant in Guatemala.	561,000	\$25,000	\$36,700,000
Dutch and German Dev. Banks (FMO, DEG)	Sustainable forestry plantation in Tanzania	n.a.	\$26,000	\$1,200,000
European commercial bank	Biomass coffee waste utilisation in Central America	508,000	\$34,000	\$1,000,000
European commercial bank	District heating co-generation plant in Eastern Europe	n.a.	\$38,000	\$1,000,000
RES Ltd.	20MW Wind farm in Jamaica	1,107,000	\$38,115	\$28,000,000
International Finance Corporation, Pacific Hydro	5 MW Geothermal power plant on Vanuatu	324,000	\$37,000	\$14,700,000
			<b>\$198,115</b>	<b>\$93,600,000</b>

## 2. Background

Many RET and EE technologies are no longer considered experimental; they have proven to work well in commercial settings throughout the world. However, even though such RET and EE investments are 'bankable', these technologies have not found wide-spread acceptance in the financial community.

Financiers undertake a well defined appraisal process for loan and investment proposals which consists of defining a risk/return profile that considers both the various project and sponsor risks involved, and the financial returns expected. When a proposal involves a new technology or business activity, the risk assessment needed is more rigorous and the information scarce. The up-front *transaction costs* of evaluating such proposals are greater than for more conventional investments.

In the sustainable energy sector, the cautious attitude of financial institutions combined with their difficulty in correctly assessing the risks often lead to decisions against extending financing for otherwise sound projects. In the end, projects that might really be good investments and yield a global environmental benefit fail to go forward.

These up-front issues (or barriers) are the key targets of the *RET/EE Investment Advisory Facility*. If a financier is willing to invest his/her time and resources in considering a RET or EE project for investment, the IAF is able to *buy down* some of their incremental transaction costs. For example, preparing a financial risk analysis for an energy crop is more complex than for a more conventional business activity, such as thermal power generation, thus the additional incremental<sup>1</sup> effort can be IAF supported.

By supporting such efforts the IAF helps investment officers prepare financing proposals for consideration by their internal investment committees (Figure 1 shows a typical investment evaluation process). To secure approvals, besides being financially viable, sustainable energy investments must be as well

<sup>1</sup> Incremental costs are those that are over and above the baseline, which for the IAF are those costs normally involved in evaluating the least cost technology option.

documented as the conventional (and better understood) power sector investments. This is challenging for any new type of investment, let alone RETs or EE which often have complicated risk/return profiles. After investing in 10 coal fired power plants, it is far easier to invest in an 11<sup>th</sup> than to consider a wind farm investment instead. The IAF aims to level this information planning field.

#### □ **AREED (African Rural Energy Enterprise Development) Program**

**AREED** provides early-stage funding and enterprise development services to **entrepreneurs** interested in building successful businesses that will supply clean energy technologies and services to rural African customers. Development services include training, hands-on business development services as well as early-stage investment and assistance securing financing.

AREED builds capacity in **African NGOs** to introduce and work with clean energy enterprises. This is accomplished through workshops and resource tools, focused on business planning, management structuring, and financial planning for the rural energy sector. Training for NGOs will help them identify potential rural energy projects and develop their ability to guide entrepreneurs on starting projects, as well as preparing NGOs to provide follow-up business support services to entrepreneurs both in partnership with AREED and, eventually, on their own.

AREED will also work with **financial institutions** to assess the sector and integrate it into their portfolios. This will be accomplished through workshops and specific hands-on tools focusing on rural energy markets and RET enterprises, appropriate project finance models, financial analysis and risk management issues. Opportunities for co-financing will be explored.

**For more information**, please contact AREED at [areed@energyhouse.com](mailto:areed@energyhouse.com) or consult our web site at [www.ared.org](http://www.ared.org).

#### □ **E&Co**

E&Co was created in 1994 as an independent non-profit organization to provide enterprise development services and modest loans or equity investments (\$25,000 to \$250,000) to promote economically, socially and environmentally sustainable energy enterprises in developing countries. These services and catalytic funds enable entrepreneurs to take their early stage ideas and experiences and prepare them for later stage investors, implementation and growth. E&Co's strategy is to demonstrate to public and private sector investors that the establishment of sound, indigenous energy enterprises represents a win-win solution to the twin problems of the unmet demand for energy services in developing countries and climate change. By establishing a credible portfolio of such projects, E&Co's goal is to influence the transfer of capital flows from investment in fossil fuel technologies to renewable and efficient sources of energy production and use.

E&Co's work strengthens in-country human capacity, nurtures local enterprises and accelerates project implementation by providing concrete support through the pre-investment stage. This phase of E&Co involvement provides a critical link between enterprise development and project finance.

E&Co's goal is to have a direct influence on the implementation of clean, economically sound energy projects that reach rural as well as urban populations in developing countries. E&Co will consider providing energy enterprises with support *if* the following conditions are met:

- ***New Money for New Energy***

E&Co's objective is to influence the transfer of capital from fossil fuel based energy production to renewable energy and energy efficiency enterprises. First by demonstrating the commercial viability of the enterprise and then building a pipeline of projects for future investments by others. Will the project/energy enterprise utilize renewable energy or energy efficiency technologies in a commercial fashion and attract new sources of investment?

- ***Social and Environmental Elements***

Does the energy enterprise or project improve the quality of life through the provision of energy services? For example, will it target under-served communities to create employment opportunities? Will the project improve or protect the local, national, and global environment? Will it displace harmful energy sources such as diesel, kerosene, candles or firewood?

- ***Technology***

Does the energy enterprise utilize an *appropriate technology* when compared on the basis of cost, affordability and environmental impact?

- ***Businesslike***

Does the energy enterprise/project have the technical and managerial experience required to ensure that the venture is profitable and sustainable? Has the project/energy enterprise secured collaboration with applicable third parties such as equipment suppliers, engineers, site owners, etc.? Does a second stage of the project or potential for replicability exist?

- ***Reasonable Risk***

Has the project/energy enterprise considered the market in which it will operate? Has a clear assessment been completed on the national risks – inflation, devaluation, taxation, and political uncertainty – as well as at the project level – competition, energy purchase/sale agreements, environmental and land regulations, and permitting. Are the risks reasonable and consistent with the charitable purpose of E&Co?

- ***"But For"***

Is the intervention by an entity such as E&Co necessary to advance the enterprise? "But for" the participation of E&Co, would the project succeed?

- ***Policy Framework***

Does the energy enterprise/project influence policy makers and decision makers to support renewable energy and energy efficiency initiatives?

• **Human Capability**

Does the energy enterprise/project improve national or local capacity to promote renewable energy and energy efficiency initiatives?

For more information visit E&Co's website at [www.energyhouse.com](http://www.energyhouse.com).

□ **Renewable Energy and Energy Efficiency Fund**

The Renewable Energy and Energy Efficiency Fund for Emerging Markets, Ltd. (REEF) is a private equity investment fund with an initial capitalization of \$65 million. REEF, launched in February 2000, is the first global fund organized to tap the sizable opportunities to invest in emerging markets renewable energy and efficiency. REEF actively seeks to make minority equity and quasi-equity investments in profitable, commercially viable private companies and projects in sectors that include: electricity generation primarily fueled by renewable energy sources, energy efficiency and conservation, and renewable energy/efficiency product manufacturing and financing. These projects can be on or off-grid.

**INVESTMENT CRITERIA**

- Sectors:**
- Low-impact Hydro
  - Solar/PV
  - Geothermal
  - Wind
  - Biomass
  - Energy Conservation and Efficiency

**Geographic Focus:** Emerging market countries eligible for IFC financing. This includes all of Africa; all but two countries in South and Central America; Mexico; most of the Caribbean; all but two countries in Asia; the former Soviet Union and Eastern Europe.

**Investment size:** The REEF will consider investment in projects with total capitalization requirements of between \$1,000,000 and \$100,000,000.

**Instruments:** REEF's investments may take a variety of forms including common and preferred stock, partnership and limited liability company interests, and convertible or subordinated debt with equity warrants/options. REEF may also make loans to projects or project sponsors on a bridge or permanent basis. Equity transactions are typically structured so that the entrepreneur retains the majority of shares and/or management of the company.

*Contact Information*

To be considered for an investment, submit a brief introductory letter describing your firm, the investment proposal and the anticipated financial plan to the REEF management team. For projects of interest, business plans and other materials will be requested at a later stage.

<u>Projects over 7MW</u>	<u>Commercial projects &lt; 7MW</u>	<u>Off-grid projects and Developmental projects &lt; 7MW</u>
EIF Group	<u>Environmental Enterprises</u>	<u>Energy House Capital Corp.</u>
727 15 <sup>th</sup> St., NW – 11 <sup>th</sup> floor	Assistance Fund 1655 N. Fort Myer Drive, Suite 520	383 Franklin Street
Washington, DC 20005	Arlington, VA 22209, USA	Bloomfield, NJ USA 07003
Tel: (202) 783-4419	Tel: (703) 522-5928	Tel: (973) 680-9100
Fax: (202) 371-5116	Fax: (703) 522-6450	Fax: (973) 680-8066
e-mail: <a href="mailto:klocklin@eifgroup.com">klocklin@eifgroup.com</a>	e-mail: <a href="mailto:brooks@eeaf.org">brooks@eeaf.org</a>	e-mail: <a href="mailto:capital@energyhouse.com">capital@energyhouse.com</a>

#### □ **Environmental Enterprises Assistance Fund**

Environmental Enterprises Assistance Fund is a non-profit organization that operates as a venture capital fund, providing long-term risk capital to environmental businesses in developing countries. EEAF has made over 20 direct investments and manages for-profit funds for Latin America. Through the mobilization and distribution of capital, EEAF has become a leading implementor of sustainable development.

EEAF invests in businesses engaged in agriculture, forestry, aquaculture, tourism, renewable energy, energy efficiency, pollution abatement and recycling. The financing offered by EEAF is \$100,000 to \$2 million in either debt, equity or a combination. EEAF will syndicate for investments in excess of these amounts.

EEAF is active in Latin America, Indonesia and the Philippines. For more information, visit EEAF's website at [www.eeaf.org](http://www.eeaf.org).

#### □ **Prototype Carbon Fund (PCF)**

The PCF is a \$145 million fund supported by 6 governments and 17 private sector firms. Its main objective is to create a market for carbon offsets within the framework of the Kyoto Protocol. It has completed an agreement with the government of Latvia and has 20 other projects presently under consideration. It presently has a request for proposals pending on the purchase of emission reductions from Central America, with a particular focus on projects in the 100-1000 kW range, involving purchases in the \$1-\$3 million range. The PCF seeks projects that can produce emission reductions at a cost of \$10 per ton of carbon (~\$3 per ton of CO<sub>2</sub>) and appears to be motivated to purchase emission reductions at a price of \$20 per ton of carbon (~\$5 per ton of CO<sub>2</sub>)

See [www.prototypecarbonfund.org](http://www.prototypecarbonfund.org)

Recognizing that global warming will have the greatest impact on its borrowing client countries, on July 20th, 1999 the Executive Directors of the World Bank approved the establishment of the Prototype Carbon Fund (PCF). The PCF, with the operational objective of mitigating climate change, aspires to promote the Bank's tenet of sustainable development, to demonstrate the possibilities of public-private partnerships, and to offer a "learning-by-doing" opportunity to its stakeholders.

### **Objectives: What Will The PCF Produce?**

1. **High-Quality Emission Reductions**  
The PCF funds projects that produce high quality greenhouse gas emission reductions which could be registered with the United Nations Framework Convention on Climate Change (UNFCCC) for the purposes of the Kyoto Protocol. To increase the likelihood that the reductions will be recognized by the Parties to the UNFCCC, independent experts will provide baseline validation and verification/certification procedures for emissions reductions that respond to UNFCCC rules as they develop.
2. **Knowledge**  
By transacting the business of reducing greenhouse gas emissions, the PCF is developing a knowledge base of business processes and practice to facilitate climate-friendly investment and inform the ongoing UNFCCC negotiations. PCF is pioneering approaches to achieving environmentally credible emissions reductions beginning with defining baselines for more climate-friendly activities to verification, certification, and transfer of emissions reductions achieved. The analyses, independent opinions, and contracts which underpin this process will be made public, along with lessons learned.
3. **Public-Private Partnership** Finally, PCF resources are provided by both the public and private sectors. The PCF demonstrates how insights and experience from both sectors can be pooled to mobilize additional resources for sustainable development and address global environmental concerns. The active participation of both sectors ensures that the PCF operates efficiently and in accordance with the Kyoto Protocol while serving the interests of World Bank client countries.

### **Operations: How Will The PCF Work?**

Companies and Governments have contributed to the PCF which will use Fund resources to support projects designed to produce emission reductions fully consistent with the Kyoto Protocol and the emerging framework for Joint Implementation (JI) and the Clean Development Mechanism (CDM). Contributors, or "Participants," in the PCF will receive a pro rata share of the emission reductions, verified and certified in accordance with carbon purchase agreements reached with the respective countries "hosting" the projects.

#### **A Consultative Process**

From its inception, the PCF has strived to engage constructively all interested parties in its development and operations. In this regard, strategic guidance will be sought, through the life of the PCF, from representatives of host countries, participating entities, and NGOs, while being sensitive to the UNFCCC process.

#### **Operational Processes**

The PCF Team developed an **Operations Handbook** for PCF project managers and others interested in learning from the PCF's experience in producing emissions reductions consistent with the Kyoto Protocol. This

handbook is available in the "Projects" and the "Document Library" sections of the PCF website.

### **Project Pipeline: What Kind of Projects Will The PCF Fund?**

The PCF is endeavoring to achieve a balanced portfolio both geographically and technologically. Approximately half of the investments will be made in Economies-in-Transition demonstrating JI, and half will be made in developing countries facilitating the CDM. The major emphasis will be placed on renewable energy and energy efficiency projects, which have a great potential for replication and for reducing climate change at a reasonable cost. Normally, the PCF will purchase emission reductions from projects directly, and not through intermediaries. However, PCF will also work through established intermediaries, such as local or regional energy investment funds, energy service companies, commercial banks, and others to aggregate smaller projects efficiently and build capacity for smaller economies to supply high quality, attractively priced emission reductions.

### **Participants: Who Contributes to the Prototype Carbon Fund?**

To demonstrate convincingly to developing country governments that there is significant private sector interest in the emerging market for emission reductions under JI and the CDM, contributors to the PCF include both companies and governments ("PCF Participants"). Participation by private companies is essential to this effort, since private sector investment must dominate trade under the Kyoto Mechanisms in order to reach the scale necessary to address climate change effectively. Governments are involved to assure companies that the PCF will operate within the regulatory framework being developed by the Parties to the UNFCCC, and to guide and learn from the PCF's experience in supporting sustainable development.