

**Workshop on EE Banking Windows and Guarantee Facilities,
January 18 – 20, 2006**

This report summarises the issues discussed and recommendations from a workshop at the end of a series of international cross-exchanges included in the UNEP/World Bank project “Developing Financial Intermediation Mechanisms for EE Projects in Brazil, China and India” (the 3 CEE Project). This fourth and final workshop was held at the Hotel Maidens in New Delhi, India during January 18 – 21, 2006. Mr K.V. Narasimha Murthy, Regional Energy Initiative - Asia, International Energy Initiative (IEI), had participated as rapporteur for this workshop and assisted in preparing the proceedings.

The objective of the 3 CEE Project is to achieve major increases in lending for energy efficiency (EE) investments by domestic financial institutions in Brazil, China and India. The project provided for:

- (i) the establishment of an informal Country Working Group in each country, consisting of representatives from the local financial and EE communities, and support provision for these groups to complete applied research and analysis on the most pressing operational topics in EE financing, including commercial bank financing of EE, Energy Service Company (ESCO) development, guarantee facilities and equity financing of EE; and
- (ii) a series of focused international cross-exchange activities, involving practitioners from the three countries, to share experiences and potential solutions to similar problems.

The purpose of this workshop was to present in-country project experiences as well as international good practices for developing EE Banking Windows and Guarantee Facilities for ESCO stakeholders and financial institutions in China, Brazil and India.

The workshop focused on sharing information/experiences on the following themes:

- i) The status of bank financing for EE / ESCOs in the three countries and some relevant international experiences on different mechanisms to increase EE lending/financing.
- ii) The status and proposals for new partial risk guarantee mechanisms for enhancement of EE financing in the three countries, with inputs from international (World Bank Group) experience in the use of these mechanisms.

The workshop aimed at providing an opportunity for the country groups to further develop and discuss the achievements realised under the 3 CEE and their ideas for future activities, which could further increase lending for energy efficiency through the use of the various mechanisms discussed. The main participants were representatives from each Core Country Group, including financial sector representatives, ESCO practitioners, and ESCO association leaders.

Overview

Brazil, China and India are the developing world's three largest economies. Their emissions of greenhouse gases (GHG) are projected to more than double in the next 20 years unless aggressive abatement measures are adopted. The potential for GHG reduction from EE projects with sound financial returns in all these countries is very high, but is not being realised due to many barriers inhibiting investment.

In countries where the World Bank has been strongly engaged in promoting EE, it has been clear for long that the key sources of finance for this unrealised investment in energy efficiency are domestic financial institutions. Lack of access to such financing has been identified as one of the main barriers for the development of EE markets throughout the world. This project has focused on the specific barriers in Brazil, China and India, in order to develop appropriate mechanisms to increase lending for EE.

During the past 3+ years of project implementation, numerous activities have been completed which have increased understanding of the country specific obstacles, increased capacity in financial institutions to address these obstacles, and designed and piloted ideas towards new or modified mechanisms. These activities include technical assistance, training, and applied research covering the following four areas of country interest: development of commercial banking windows for EE; support for ESCOs; guarantee funds for EE; and equity funding for ESCOs/EE projects. These activities have shrunk the barriers previously identified.

Among the results/events seen in recent years that are directly relevant to the objectives of the 3 CEE Project are the following:

Brazil

- The representatives from the financial sector in Brazil are now much more interested in the development of EE lending operations, either through their existing programs or through newly developed schemes. Some of these banks,

such as ABN AMRO, are trying to use CDM as an additional way to finance EE projects.

- The use of the utility wire charge resources for EE has been a key element in the development of EE activities and the launch of many ESCO operations in the last few years. The 3 CEE project supported a detailed analysis of this existing program and proposed ideas to improve future implementation.
- Significant analytical work has been completed under the 3CEE project on the risks of EE lending, on use of alternative instruments to securitise loans, and on design and financial simulations of a guarantee fund instrument. The outputs from these exercises were presented at the workshop.
- Finally, the Brazilian bank BNDES made an important announcement about their development of a new dedicated financing program with an internally-designed and operated guarantee mechanism for EE on-lending to local banks. This program was presented at the workshop, and is to be presented to the BNDES Board of Directors in the spring of 2006.

China

- The operation of the World Bank \$25 million Partial Guarantee Facility in China has significantly helped energy management companies (EMCs) access loans through local banks. EE lending made possible through the offering of this guarantee has begun to rapidly escalate.
- The Chinese ESCO Association (EMCA) has scaled up its operations, providing significant support to the new and growing EMC industry. Support was provided by the 3CEE project and through co-financing by UKDFID.
- A new bank lending project for large investment in energy efficiency for the industrial sector, that will build upon the lessons learned from implementation of the 3 CEE project, is currently under development.

India

- Capacity building and training for banks on EE investment options and appraisal issues, and financial structures, have led to the launch of new lending schemes as a direct result of the project. (These consist of the schemes at the State Bank of India, Canara Bank, and Union Bank of India, and the newly announced scheme of Bank of India).
- Development of pilot projects for certain small and medium enterprise (SME) clusters was supported by the project to test and apply the knowledge gained from previous activities.

- Support has been given which has led to the launch of a new Association of energy efficiency stakeholders in India (the Indian Council for Promotion of Energy Efficiency Businesses).

Summary of the cross-exchange

Barriers for financing energy efficiency projects:

Barriers for EE projects are present at different levels in all the three countries' markets that were the focus of the workshop. Of particular interest were the market barriers that have inhibited commercial bank EE financing.

In Brazil, the majority of current financing for EE projects has come from use of the wire charge (called ANEEL fund) that is used by utilities, either on a grant basis or through ESCOs developed by these utilities. High interest rates and high-risk perception by the local banks has contributed to lack of widespread bank financing for EE. In China, an important source of commercial financing for EE has been backed by the partial guarantee fund established by the World Bank with the support of a GEF grant. In India, financing for EE is available through commercial sources as part of normal bank lending operations. Several EE specific schemes and programs have been completed or are under implementation, including the EE lending of Indian Renewable Energy Development Agency (IREDA), and several banks have initiated new financing programs dedicated to EE projects. But in all three countries these mechanisms only provide a limited amount of financing, and are not sufficient to overcome the numerous barriers present which prevent realisation of the full EE potential market.

The common barriers faced by domestic financial institutions when evaluating potential loan investments for EE, include:

- The transaction costs for identification, development and financing of EE projects are high. Typically, high-return EE retrofit projects involved investments of less than \$1 million. In the three focused countries, there are many projects with return rates of 25%-30% or higher, but with investment amounts of \$200,000-\$500,000. For commercial banks, provision of project finance for such low amounts for unfamiliar products is generally not attractive because of the high transaction costs involved in assessing the technology, appraising the financial position of the borrower, preparing specific documentation, and monitoring.

- The perceived risk of EE projects is high. EE projects are non-traditional projects for local banks, in that the returns are based upon operating cost savings and not on direct increased revenue. Furthermore, EE investments entail certain types of financial risks that other loans may not face. Because EE projects usually involve an assortment of specialised equipment and materials, and significant design and installation costs, loan collateral also presents special challenges and risks, as appraised collateral values of assets purchased with loans may be below loan amounts. In enterprises that are typically short of cash (even if profitable), there may be dangers that savings on energy bills will be diverted to make other payments, rather than loan repayments. Although these risks can be managed, this requires special innovation in developing financial products tailored to meet this risk.
- A combination of financial and technical skills is necessary to successfully develop EE projects. Domestic banks are generally unaware of the potential for profitable investments in EE, as opportunities are not presented in ways that banks can properly consider. While there is a wealth of studies on technical and economic potential for EE, these are of little use for bank loan officers. A similar lack of ability to combine technical and financial skills exists on the consumer/enterprise side. The major barrier is the lack of commercial orientation among technical staff, a widespread lack of understanding of financial packaging or management, and isolation from financial institutions.
- The need for adapted collateral is also an important barrier identified by banks for EE projects. In this context, an important discussion was dedicated to the possibility of recognising EE receivables as an asset. Financial institutions do not recognise at this time the added value of EE projects to clients and neither do they reduce collateral in the presence of outside guarantee on an EE project from an ESCO.

Other important barriers related to the development of loan financing for EE have also been found in all the three countries:

- Subsidised energy prices make some projects unattractive.
- The length of the potential loans is still relatively short.
- The clients do not independently want to take loans for EE projects or themselves provide guarantees to banks.

As ESCOs have been trying to address the barriers to project financing in all the countries, problems related to their specific type of operation have been identified:

- Limited experience of most ESCOs in seeking commercial finance;

- ESCOs' not financially strong enough, i.e. traditional assets (on the balance sheet) not big enough to guarantee all the projects for implementation;
- initial small level of activities of intermediaries that want to become ESCOs;
- lack of credit record of ESCOs and sometimes of their clients;
- inadequacies in energy audit reports presented to banks for financing.

Traditionally banks have two kinds of operations: the retail and corporate side. On the corporate side, tailor-made solutions exist. Since EE projects are mainly in the corporate side, considering receivables as guarantees could be a major concern for banks. Most importantly financial managers do not have skills to analyze the proposed ESCO projects, and they may not recognise the difference between EE and other projects.

It is not easy to overcome all these barriers, as they also relate to the specific legal, institutional, and economical aspects of local markets. It was concluded that it will be necessary to continue to try establishing an adapted scheme for EE or ESCO financing that the banks will be comfortable with in all three countries.

Stimulants for financial institutions:

Although many barriers to financial institutions' becoming active in EE lending still exist, there are also many incentives. This section presents the most important incentives identified.

Government Policies and/or programs

Governmental policies to increase EE for economic, environmental and social reasons were a major topic of discussion, and strong government support was highlighted as one of the key factors required to successfully increase lending for EE. Incentives, mandatory programs, and education/awareness building efforts have been proven as effective policy tools to achieve energy consumption reductions. In addition to notified government programs, private entities can support schemes through their internal policies as part of their own corporate social responsibility.

A good example of a specific government mechanism to increase lending for EE is the case of South Korea. The Korean energy management company (KEMCO) was established by the Korean government in 1980 for creating a new energy culture. It undertakes energy audits and surveys, R&D, demonstration, and dissemination of technologies on energy and mineral resources, promotion of energy efficiency, commercialisation and diffusion of higher-efficient energy appliances and energy-saving

programs by sector of energy use and climate change mitigation. KEMCO also provides financing for energy efficiency investments.

Other Government Financial Institutions

Other ways that policies can influence banks in getting active in EE lending would be through institutional organisations, like development banks, that can provide own lending facilities for such projects, leading the way to a market oriented approach.

An example of such an approach, but done at commercial rates, has been presented by IREDA in India. IREDA was set up by the India Government in the year 1987, with the main objective of disbursing lending support to renewable energy projects. IREDA is funded directly by the Government of India with the help of international funding agencies. In the last few years, IREDA has developed bankable energy efficient projects in the pulp and paper, glass and steel sectors.

Increase in portfolio

As banks see the immense potential for EE in all sectors, they are realising the important lending opportunities for a wide range of technologies, business sizes, and geographical spread in each of their countries. In a country like India, the banks' perception is that normal loan products with some modification should be sufficient to kick-start a sustainable EE financing market. Financial product design and appraisal practices should be compatible with their present business methodologies. Lending to EE Projects should be remunerative for Indian banks, based on the market interest for the existing loan products.

Interesting examples of such current activities that were supported under the 3 CEE project can be found in India. Three nationalised banks -- State Bank of India, Canara Bank, and the Union Bank of India -- have launched special schemes to finance energy efficiency projects. The following table gives the details:

	State Bank of India	Canara Bank	Union Bank of India
Launch	2003	2004	2004

Target Group	Investment in P&M< Rs 100 mio (US 2.2 mio)	Same investment & Annual sales < Rs 1 billion (US 22 mio) Energy cost=> 20% of value addition	Same as Canara Bank & Energy Audit by IREDA approved auditor
Interest Rate	225 bps less than PLR	100 bps less than normal rate	Normal rate
Max. Loan	90% of Project Cost Rs 10 mio (US 0.22 mio). No limits for loans at normal rate	90% of Project Cost Rs 10 mio (US 0.22 mio).	75% of Project Cost Rs 10 mio (US 0.22 mio).
Grants	Up to Rs 50,000 incl. 50% reimbursement from IREDA	Up to Rs 25,000/ + matching amt. from IREDA - max Rs 25,000	

Requirements for financial institution involvement:

EE projects are generating assets that are difficult for banks to recognise under their existing systems. It is understood that the energy cost of the final beneficiary of the project will fall and that the available technologies to achieve the expected savings are reliable. The irony of the situation is that even if banks want to lend to clients for EE projects, the clients do not want to take these loans because EE projects are competing with other investment options and they do not have enough guarantees to provide the collateral required. As banks are not able to recognise the negative cash flow generated by EE projects (i.e. the energy cost reductions), ways to finance EE projects have to be found apart from lending on the basis of the balance sheet of the final beneficiary. Savings should be accepted as collateral but it is not the case at this time.

It is obvious that some solutions are needed; some were discussed during the workshop and are presented below:

Shrinking the understanding gap between banks and ESCOs

ESCOs can be seen as one of the most interesting mechanisms to be used for adapted financing. But there are still important gaps that exist between financial institutions and ESCOs. This issue was discussed in depth during the workshop:

- ESCOs' capacity to set up bankable projects should be developed.
- The banks' capacity to analyse the projects proposed by ESCOs should be increased.

- The role played by ESCO associations as facilitators in this dialogue can reduce the actual gap between the banks and the ESCOs.
- Banks cannot train all officers on ESCO financing, as it is too expensive. A specialised unit within a bank could be dedicated to the analysis of such projects.
- Banks should have less problems in financing EE projects after the initial implementation period. Financing implementation phase is a big challenge. Ways to provide for the development and implementation stages of an EE project should be developed. In the SME sector, the beneficiary units can bear the risk jointly with the ESCO.
- Good relationship between banks and ESCOs is essential for the approval of any project. Organisation of frequent meeting opportunities should be favoured in each country.

It has been demonstrated that this gap is becoming smaller over time in the three countries but is not yet filled completely. Taking into account these different elements could be essential to eliminate it at some point.

Dedicated guarantee funds for Energy efficiency

Given the existing barriers identified in the different markets, it was felt that a partial guarantee mechanism for securing bank's loans can be a key instrument to facilitate access to EE project financing. Based on experiences presented during the workshop, many specific items were agreed on about the role and operation of partial guarantee funds:

i) Level of Guarantee Coverage

This refers to the amount of the loan that can be covered by the guarantee, and should be based upon the actual level of risk taken by the banks in each country while avoiding moral hazard issues. The amount of actual coverage offered in the existing schemes varies greatly. BNDES is developing an 80% guarantee on its own loan mechanism. The I&G mechanism in China provides a level of 90%. In other countries where the IFC is operating guarantee funds, the level of guarantee is more around 50%.

ii) Appropriate guarantee fee level

This refers to the fee charged by the guarantor to the banks to receive the guarantee coverage. There are no specific rules to develop this other than the theory that one should try to evaluate what the default rate could be and make sure that the fee will enable the facility to recover its costs (and profits, if it is a privately owned one). It

is important to note that, based on current IFI experiences, guarantee fees can rarely cover their operational costs while still being attractive in the market.

iii) Flexibility of the guarantee fund

The guarantee fund must be as flexible as possible, depending on market conditions, qualification of the firms that will request the guarantee, their size and type of clients.

Other potential complementary guarantee mechanisms could also be used to support the development of EE projects, such as:

- Insurance for the technical risk could be a good approach but its prices are very high (between 5% and 10%), significantly increasing the project cost.
- Pooling projects together could help for guarantee purposes. This would on the other hand create other barriers for the development of specific projects by ESCOs.

Guarantee funds and other mechanisms can be used to attract the banking sector, but should be considered only temporarily in order to jump start the market (refer here to the next section on China's and IFC's experiences).

Standardised loan applications

As EE projects are often small in size, the transaction costs are rather high in relation to the potential bank profits that could result from each of them. In this context, standardisation of loan application for EE projects could be helpful in reducing transaction costs. Such standardisation would enable EE projects to be considered like other loans products that have been standardised over time. Although EE projects can be very different one from another (technologies used, context of the project, etc), the way to present the loan application itself can certainly be standardised up to some point. Increased discussions between banks and loan recipients (end users, ESCOs, etc.) would have to take place in order to find the best ways to achieve this common goal.

Limiting the number of intermediaries or the complexities of projects

As in any financial transaction, the more technically complex the project, the more the perceived risk. Furthermore, the more intermediaries that take part in the deal, the greater the risk perception by the banks. This is pertinent for EE projects as banks are still not very familiar with this type of projects at this time.

Developing an EE project directly through an ESCO could be seen as one way to reduce the complexity of a project deal, as the bank has then only to deal with one organisation.

If the final beneficiary of the project and ESCOs can be seen as credit worthy, and the ESCO can be found technically credible, the complexity of the transaction would be simplified. Chinese banks mentioned that they found this scheme even better when the ESCO is a manufacturing-based one or have strong fixed ties with major equipment suppliers. In the case of a project developed by a final user, the banks would certainly prefer that the number of parties involved in the project is limited.

As far as ESCOs are concerned, it is as better to start with technically simple projects, or using only well-demonstrated technologies, to increase bank comfort on the technical level.

Mechanisms available to support financial institutions in EE lending:

As presented in the previous sections, some innovative mechanisms may be required in order to support the development of EE lending:

Guarantee fund in China

China received a grant from the GEF under an implementation agreement with the World Bank for developing the EMC Commercial Partial Loan Guarantee Mechanism, for the whole country. The main objective of the project is to promote EE project implementation. Loans started in 2004 and will extend until 2009. As a pilot project, the WB extended a US\$ 22 million as a special fund for the purpose of EMC Guarantee Program for EE projects.

I&G is the implementing agency of EMC Commercial Loan Guarantee Program. I&G was founded at the end of 1993 under the State Council in China and has taken about 10,000 projects with a total RMB 300 billion guaranteed since then. It has 145 members registered.

The purpose of creating this fund was to provide the central bank requires with the required guarantee for business loans. As such insurance had to be in the form of mortgage, pledge or other types of solid guarantees, EMCs were not in a position to give these guarantees to implement EE projects. Hence, the new mechanism enables I&G to provide such guarantee for EMCs' EE projects.

IFC programs

The International Finance Corporation (IFC) is the largest multilateral source of loans and equity financing for private sector projects in the developing world. It catalyses the adoption of commercially viable environmental products and services by the mainstream markets. The main tools adopted by IFC are risk-sharing, capacity building,

demonstration, industry collaboration, and market aggregation. Based on these tools, IFC has supported EE guarantee operations in Eastern Europe, including Hungary, Estonia, Latvia, Lithuania, Slovakia, Czech Republic and Russia.

IFC decided to develop EE guarantee mechanisms in these markets since important financing barriers were perceived in each of them. Weaknesses identified in the markets for EE lending by financial institutions (FIs) were small deal size, lack of lending experience for EE, unsophisticated vendors and developers, and limited knowledge of the EE sector. IFC addressed these barriers through technical assistance to FIs on EE finance, and developed credit enhancement/ other financial products, in order to support the development of a lending industry for EE projects.

New ideas introduced and discussed during the workshop:

BNDES Proesco Program

BNDES, as the national development bank of Brazil, recognised over the years that even though a large potential for EE projects exists in Brazil, the following financing barriers prevented stakeholders to benefit from this market:

- Brazilian banks' current practice of credit assessment.
- banks' limited knowledge of EE projects.
- ESCO's financial structure.

In order to overcome or reduce the effect of these barriers, BNDES presented a new facility to promote EE lending. This facility would pilot a partial guarantee mechanism, operational within the existing structure of BNDES lending, and thus not entail the lengthy process of creating a new structure. It is expected to be presented to the BNDES Board of Directors in the Spring of 2006 and launched a few months after. Its proposed features are as follows:

- Focus on financing ESCOs, but available also to other entities for financing EE projects;
- operation through commercial banks (for projects less than BRL 10 million);
- transactions' financial risk shared in the ratio 4:1 by BNDES and the banks (with BNDES implicitly providing a guarantee);
- relative low interest rate (about 15%), based on the following evaluation:
 - Long-Term Interest Rate (TJLP, currently around 10%).
 - 3% (guarantee fee for the client risk).
 - 1% bank fee.

- 1% BNDES fee.

Since banks are getting more concerned about the technical soundness of EE projects and have no staff to analyse them, the technical risk of the project will be analysed by an outside agency. It has been proposed that PROCEL, the national EE program for the electricity sector will initially provide such support, even though this has not been considered to be a sustainable model.

Brazil Private Guarantee Fund Mechanism

A new bank credit structure investigated under the 3CEE project featuring an innovative private Guarantee Facility for EE projects in Brazil was presented at the workshop. This investigation also included detailed financial simulations of the operation of such a fund.

The primary objective of this potential Guarantee Facility would be to stimulate the EE industry, giving ESCOs and their clients the opportunity to obtain the necessary debt-financing for EE investments. At the same time, in order to reinforce the credibility of the guarantee, it was assumed that the capital of the investors in the fund should not be considered as grant money, but preserved and aimed to meet a benchmark return. However, the benchmark return used in the simulations of the Guarantee Facility described below is less than private markets would accept, considering the uncertainties and risks involved. There is a compromise between "credibility" and development objective of developing activities that generate public benefits in addition to private ones. Therefore, public funding of the guarantee capital should initially be considered.

Receivable Funds

One potential instrument to counter the limited ability of ESCOs to obtain financing for a large number of projects, due to their weak capitalisation, would be to sell their receivables from performance contracts. Receivables funds, known as FIDCs (Fundo de Direitos Creditórios) in other markets have seen a substantial uptake in Brazil during the past few years. They lower the cost of capital, diversify risks and have certain tax advantages. The application of such a receivables fund for ESCOs was investigated within the 3CEE project.

FIDC in its general form would be an asset securitisation, working through true sale agreements for each receivable and thereby eliminating the payment risk by removing the debt from the originator's (ESCO's) balance sheet and make it more creditworthy. FIDCs would enable medium and small companies to have direct access to capital markets.

New Potential Business Models in China

Three potential EMC financing models have been envisaged in order to address the issue of banks getting more involved in this new business, based on the facts that:

- EMCs have been seen as one of the most interesting vehicles to develop and provide financing for EE projects;
- There are essentially two kinds of EMCs at this time in China:
 - ESCOs that do not have major fixed equipment suppliers
 - ESCO with major fixed equipment suppliers.

These models were presented by the China team to further spur discussion on the issues involved in bank lending for ESCOs.

ESCO associations exchanges

ESCO associations have been seen as playing a very important role in the development of performance contracting activities in any country. Not only can they reduce intermediation costs between ESCOs and other stakeholders in the markets (banks, guarantee fund managers, governments), but they also serve to increase the credibility of the ESCO concept towards potential beneficiaries of such projects.

During the workshop, a specific session was devoted to an exchange between the three ESCO associations: ABESCO from Brazil, EMCA from China and ICPEEB from India.

A summary of the exchanges is presented below.

Type of members

- In Brazil, the association focuses only on ESCO development but other players like industries, educational universities, etc., can be members although they do not have the right to vote because the association is meant for the development and promotion of ESCOs' EE projects. The motto of the association is to increase the ESCOs involvement.
- In India, all EE stakeholders -- energy auditors, consultants and small-scale industries, etc., can join the association.
- In China, EMCs and other related stakeholders can join, but they have to focus on the development of EMCs' activities. EPC and EEP contractors are important members of EMCA; most of them show interest but they will not all progress to become EMC.

Certification

In no country is there is an official certification process needed to become a member of an ESCO association. While this can be an interesting way to obtain some needed funds for associations, such certification has also its problems. Continuous discussions on this subject are still likely to go on for some time in each association.

Financing and Operating Costs

- China
 - EMCA gets its resources from members to a certain extent but important support comes from the WB GEF project. EMCA employs 11 persons and has four departments:
 - Planning and training department with two staff-members
 - Market and member department with two staff-members
 - Information and Policy department with a single staff-member
 - One person in charge of the web-site
 - Two directors manage the entire operation with their administrative assistants. Some activities are carried out by consulting companies.
 - EMCA wants to be independent and self-reliant over a period of time to be able to sustain itself. EMCA charges its members two kinds of fees: a regular member pays RMB 3,000 per year and an executive member pays RMB 5,000 per year. In the last two years, support money for training and technical or other activities has come through international activities like UNDP's lighting program WWF's ESCO development fund.
- Brazil
 - ABESCO currently has only one permanent staff-member and several volunteer members.
 - One important activity is the production of a periodic magazine that is still barely breaking even at the time.
 - Utilities support ABESCO regarding technical information and contribute to the magazine.
- India

As the association is new, there are no employees and no relevant activities to be reported at this time.