



ESMAP



RISØ



**DEVELOPING FINANCIAL INTERMEDIATION
MECHANISMS FOR EE PROJECTS
IN BRAZIL, CHINA AND INDIA**
January 18 – 20, 2006

**Workshop on EE Banking Windows and Guarantee
Facilities**

Workshop Summary

FINAL

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ABBREVIATIONS AND ACRONYMS

ABESCO	Associação Brasileira das Empresas de Serviços de Conservação de Energia (Brazilian Energy Service Company Association)
BNDES	O Banco Nacional de Desenvolvimento Economico e Social (The Brazilian Development Bank)
BEE	Bureau of EE (India)
EE	Energy Efficiency
EMCA	China Energy Conservation Association
EMC	Energy Management Company (Chinese term for ESCO)
EPC	Energy Performance Contract
ESCO	Energy Service Company
ESMAP	Energy Sector Management Assistance Programme (World Bank)
FI	Financial Institution
FIDC	Receivable Funds in Brazil
GEF	Global Environment Facility
Gol	Government of India
IFCI	The Industrial Finance Corporation of India
IREDA	Indian Renewable Energy Development Agency Ltd
IRR	Internal Rate of Return
I&G	China National Investment & Guaranty Co., Ltd
M&V	Measurement and verification
NDRC	National Development and Reform Commission (China)
PASA	Panamerican Surety Association
PCC	Project Cooperation Company
PU	Project Uptech
RMB	Renminbi (Chinese currency)
ROI	Return on Investment
Rs	Rupees
SBI	State Bank of India
SME	Small and Medium Enterprise
TCE	Metric Tons of Coal Equivalent
TJLP	Long-term Interest Rate (Taxa de Juros de Longo Prazo; Brazil))
TOE	Metric Tons of Oil Equivalent
UNEP	United Nations Environment Program
UNF	United Nations Foundation
URC	United Nations Environment Program Risoe Center on Energy, Climate and Sustainable Development

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PREFACE

This report summarizes the issues and discussions of the fourth workshop from a series of international cross-exchange workshops included in the UNF-funded UNEP/World Bank project “Developing Financial Intermediation Mechanisms for EE Projects in Brazil, China and India.” (a.k.a. the 3 Country EE Project). This fourth and final workshop was held at the Hotel Maidens in New Delhi, India during the period January 18 – 21, 2006.

The objective of the full 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 the in-country project experiences and international good practices in developing EE Banking Windows and Guarantee Facilities to various 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.

A special two hours session was also dedicated within the workshop to the topic of ESCO associations in the three countries, including service provision options and means for financial support.

The workshop aimed to provide an opportunity for the country groups to further develop and discuss the achievements realized under the Three Country Energy Efficiency Project 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.

Over the three days of the workshop, an overview of the banking industries in each of the respective countries, as well as the presentation of a different model approach based on a government involvement from South Korea, were provided. One of the main focuses was to obtain the bank

participant's insights on topics such as business models, financing methods, guarantee fund mechanisms and EE project case studies. Further cross exchange of information took place between the ESCO associations of the three countries and between representatives from the banks of China and India (during an additional day that will not be reported here). On the concluding day of the workshop, syntheses of various issues were discussed.

The full project Three Country Energy Efficiency is being financed by the United Nations Foundation (UNF) and the World Bank Energy Sector Management Assistance Programme (ESMAP). It is jointly implemented by the World Bank and the United Nations Environment Programme (UNEP) Risoe Centre on Energy, Climate and Sustainable Development (URC).

Pierre Langlois, President of Econoler International, acted as the workshop facilitator. His responsibilities included the design of the overall workshop agenda, opening and closing of each section of the agenda and working with the core group participants on the different issues discussed.

OVERVIEW

Brazil, China and India are the developing world's three largest economies. Their projected emissions of greenhouse gases will more than double in the next 20 years unless aggressive abatement measures are adopted. The potential for greenhouse gas reduction from EE projects with sound financial returns in all these countries is very high, but is not being realized due to many barriers inhibiting investment. In countries where the World Bank has been heavily engaged in promoting EE, it has been clear for long that the key source of finance for this unrealized investment in energy efficiency is domestic financial institutions.

Access to such financing has been identified as one of the main barriers for the development of the EE market throughout the world, and this project has focussed on the specific barriers in Brazil, China and India. Several obstacles resulting in this shortfall are described in the following chapter. In the context of the present 3 country EE project, an important focus has been put to analyze the particular situation of each country in relation with EE project financing and to try to support the development of appropriate mechanisms to increase lending for EE.

At the beginning of the project, very little EE lending on a commercial basis was realized in each country. Many barriers were identified as to why such inactivity was present, which are presented in the work shop proceedings from earlier events supported by the 3CEE project.¹ This in-depth barrier discussion will not be repeated in these proceedings.

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 to use new or modify existing 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 which are directly relevant to the objectives of the Three Country Project are the following (grouped by country):

Brazil

- The representatives from 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 country EE

¹ All Proceedings and related country reports are available at the website www.3countryee.org

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 securitize loans, and on design and financial simulations of a guarantee fund instrument. The outputs from some of these exercises were presented at the workshop.
- Finally, BNDES made an important announcement about their development of a proposed dedicated financing program with an internally-designed and operated partial credit 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 EMCs access loans through local banks in China. 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 this new and growing EMC industry. Part of this support was provided by the 3CEE project and through cofinancing by UKDFID.
- A new bank lending project for large investment in energy efficiency for the industrial sector is currently under development in China, which will build upon much of the lessons learned from implementation of the 3 country EE project.

India

- Capacity building and training for banks on energy efficiency investment options, appraisal issues for energy efficiency and financial structures has led to the launch of new lending schemes for Energy Efficiency launched as a direct result of the project (SBI, Canara Bank, Union Bank, and the newly announced scheme of Bank of India).
- Development of pilot projects for certain 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).

Even though there are still many things left to do, it must be recognized that a lot of progress has been made in reducing the financing barrier for energy efficiency through the 3 Country EE project.

1 BARRIERS FOR FINANCING EE 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 which have inhibited commercial bank financing for EE.

In Brazil, the majority of current financing for EE projects has come from the use of the wire charge resources regulated by ANEEL that are used by utilities to finance EE projects. 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, much 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 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 in and of themselves to overcome the numerous barriers present which prevent realization of the full potential EE market.

The domestic financial institutions that are most suited to provide credit for these investments still face common major barriers when evaluating potential loan investments for projects designed to improve EE, including :

- 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 supervision.
- The perceived risk of EE projects is still perceived as being high. EE projects are non-traditional projects for local banks, since the returns from these investments are essentially based upon operating cost savings and not on increased revenue. Furthermore, EE investments do entail certain types of financial risks that other loans may not face. Because EE projects usually involve an assortment of specialized equipment and materials, and significant design and installation costs, loan collateralization 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 mitigated and 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; institutional combination of these skills is rarely available. Domestic banks are generally unaware of the potential for profitable investments in EE, lacking information on such opportunities presented in ways which 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/project developer 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 of adapted collateral is also an important barriers identified by banks for EE projects. In this context, an important discussion was dedicated to the possibility of recognizing EE receivables as an asset. FIs do not recognize at this time the added value of EE projects to clients and also they do not 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:

- Certain subsidized energy prices makes some projects non attractive.
- The length of the potential loans is still relatively short.
- The clients do not want to take loans for EE projects or provide guarantee themselves to banks.

As ESCOs have been trying to address these barriers in all the focused countries, some other barriers related to their specific type of operation have also been identified over the course of the project:

- Most ESCOs have little experience in seeking commercial finance.
- ESCOs' traditional assets are not big enough to guarantee the different projects they want to implement.
- Lack of credit record of ESCOs and sometimes of their clients.
- Inadequacies in energy audit reports presented to banks for financing.

Energy clients and ESCOs need project financing in order for the market to develop. ESCOs need to be financially strong in order to guarantee the loans with their balance sheet. But since they are usually not very strong financially, important traditional collateral is a must for obtaining a loan. Traditionally banks have two kinds of operations: the retail and corporate side. In the corporate side tailor-made solutions exist. Now EE projects are mainly in the corporate side, even though some banks from Brazil said that treat such projects as a retail operation. As a guarantee, considering receivables 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 recognize the difference between an EPC and a regular EE project. Hence for lending working capital they may just look into the guidelines and they may have to treat these EE projects similar to other product financings which involve a

traditional guarantee. It is not possible to impart knowledge to all their branches and even training them on EE project financing in order to consider these projects as retail.

It is not easy to overcome all these barriers, as they also relate to specific legal, institutional and economical aspects of local markets. As a conclusion to this discussion on this fundamental issue, 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.

2 WHY FINANCIAL INSTITUTIONS SHOULD BE INTERESTED IN EE

Even though many barriers are still present in the market for financial institutions to become active in EE lending, many incentives also exist. This section presents the most important incentives identified for banks to become more interested in lending for EE projects.

2.1 GOVERNMENT POLICIES AND/OR PROGRAMS

Governmental policies to increase Energy Efficiency 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 Energy Efficiency. Incentives, mandatory programs, and education/awareness building efforts have been proven as effective policy tools to achieve energy consumption reductions. In addition to 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 Energy efficiency is the case of South Korea.

The Case Study of South Korea

KEMCO is an institutional facility that 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 EE, commercialization 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 EE investments.

KEMCO on-lends government provided funds to local commercial banks for long-term loans at subsidized market rates for EE and energy conservation investments. The chief source of fund is the government budget, from an annual line item named 'The Special Accounts for Energy & Resources'.

The energy lending has been classified into three categories – rational use of energy, integrated energy supply and dissemination of new and renewable energy.

The KEMCO's terms and conditions for lending are as given in the following table:

Category	Loan coverage	Rate (variable)	Repayment period (years)	
			Grace	Pay-back
Rational Use of Energy	Up to 80%-90% of the required money per applicant	3.25%	3	5
Dissemination of New & Renewable Energy		3.25%	5	10
Integrated Energy Supply		5.00%	8	7
Working Capital	Up to \$1million per applicant	3.25%	1	2

Under the rational use of energy production, the following types of projects are supported:

- Highly efficient products using energy efficient facilities and equipment, installation of energy efficient equipment and the regional energy development projects.
- Projects with voluntary agreement with the government.
- Projects promoted by ESCOs.

Under the integrated energy supply the applicant is permitted to execute mass energy projects as prescribed by the Mass Energy Project Act - such as district heating and cooling, community energy system and combined heat and power for industrial complexes.

Under the new and renewable energy the applicant who intends to install or produce electricity using new and renewable energy source (such as solar-heat, solar-light, bio-energy, waste-energy, wind force, heat of the earth) is being supported.

The loan process starts with the applicant asking for recommendation to KEMCO through KEMCO's website. KEMCO will assess the applicant's eligibility for a loan with the type of project funding and specifies the estimated cost. If the project is assessed and selected, KEMCO issues a recommendation to both the applicant and the commercial bank. With this recommendation, the applicant asks the bank for a loan. Banks will assess the project under their internal lending provisions and if the project is eligible then approves the loan. Also in another procedure, the bank asks KEMCO for a loan. KEMCO lends to the bank and in turn the bank lends to the applicant. The bank takes the responsibility of collecting money from the applicant and for this the bank gets a commission of 1.5%. Further the bank does the monitoring of the loan extended to a specific project for its appropriateness. If misappropriation is found then the loaned money is got back with pre-determined interest rate of 13% and further lending to that applicant is restricted for a certain period.

A KEMCO assessment from the survey of randomly selected loan recipients in the year 2004 showed that, on average, energy saving/project of 155.5 toe per year was achieved i.e., equivalent to USD 31,919 per year with an investment of USD 90,910. In the year 2006 KEMCO has a target for lending USD 629 million for energy related projects.

As this case study demonstrated, incentives policies can have a strong influence on the lending process for commercial banks for EE projects. In this present case, the government essentially created enough incentives to create a large financing market for EE projects. All stakeholders realized that through this mechanism, interesting business opportunities existed. In such context, a huge market for EE projects was established based on commercially viable transactions.

Other Government Financial Institutions

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

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 to disburse lending support to renewable energy projects. IREDA is funded directly by the Government of India along with resources from international funding agencies. In 2002, IREDA started promoting more EE projects. In the last few years, IREDA developed bankable energy efficient projects in the pulp and paper, glass and steel sectors.

2.2 INCREASE PORTFOLIO

As banks recognize that there is immense potential for EE in all sectors of activities, they are seeing that there should be important lending opportunities for wide range of technologies, business sizes and geographical spread in each of these 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 in the country. Financial product design and appraisal practices should be compatible with present business strategy and methodologies of Banks. Lending to EE Projects should be remunerative for Indian Banks based on the interest in the market for existing loan products are sufficient to EE project requirement.

Interesting examples of such current activities that were supported under the 3 country project can be found in India, under the SBI, Canara and Union Bank cases.

SBI

SBI is the India's largest Commercial Bank having 9,120 branches in India and 54 overseas offices in 28 countries around the world. SBI launched in 2003 the project Uptech for EE. The bank involvement under the project Uptech included support for energy audit / energy management study, preparation of detailed project report (DPR), project implementation – engineering & supervision, plant and machinery / equipments including retrofitting / modification of existing items, miscellaneous assets

and testing equipments for establishing monitoring system and monitoring EE on long-term basis. SME units, with satisfactory credit ratings, financed by SBI are eligible for availing loans. The scheme includes a grant of 50% towards cost of energy audit and preparation of detailed project report. This grant come from a dedicated technology development fund created out of SBI's profits. The soft loan component covers hard costs i.e. plant, machinery, equipment, etc. and soft costs i.e.- energy audit fees, preparation of DPR, project implementation cost, cost of monitoring and verification and interest during commissioning etc. The main salient features of this program are a reduced interest rate and reasonable repayment schedule of 5 to 7 years. Under SBI Project Uptech, the Bank had 130 preliminary visits and discussions. This resulted in the realisation of 65 walk through audits, out of which 51 SMEs got registered under this scheme. In 44 cases, detailed energy audits were initiated and 39 were successfully completed. The global energy saving potential was estimated at Rs 9.74 Cr (>USD 2.8 million) per annum with an investment of Rs 12.82 Crores (USD > 2.8 million). The bank loan was availed by 9 units for bringing in EE. 20 other units implemented EE programs without bank loan.

Two other banks, Canara and Union Bank of India, also got involved in this market. The following table gives the comparison of current terms of the loans of SBI, Canara Bank and Union Bank of India regarding EE project lending.

	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	8%, presently 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	

As the market will react to its own interest, it is likely that other similar cases as these three banks in India will become more frequent in the three countries.

2.3 IMPROVED STRENGTH IN ACTUAL ASSETS

Another important incentive that banks are starting to recognize for EE projects is that such activities enable their existing clients to be more profitable by reducing their annual energy costs. As EE projects investments are often small compared to actual loans provided to these clients, banks can perceive their interest in securing their actual important investments with clients by approving small additional loans for EE projects.

It is indeed agreed on that an EE project would reduce the annual operation costs to the beneficiary of the project and increase its profitability and competitiveness, not taking account any other external (environmental) benefits. By improving such benefits, banks' client will be in a better position to repay its actual loan to the bank, or develop new expansion projects that would require additional financing, thus more business for the bank. In this context, EE projects can be seen as a win-win situation for the banks and their clients, and therefore such consideration should be taken into account while evaluating a potential loan for an EE project.

Some other potential rational could also be used to value the EE projects in the assets of the clients, and therefore be seen as a valuable element to take as a guarantee by the banks:

- The installed equipment can in many occasions be considered as some kind of liquid assets as they can be resold. This can be the case of many large mechanical equipment such as compressors, chillers, boilers, etc.
- As in the case presented by ABN Amro Bank in Brazil, valuing the positive environmental impacts of the projects can be seen as a global asset to banks, as it solidifies their global portfolio. ABN Amro developed a special financial product to lend to environmental projects where they can finance up to 100% of the project costs, even though the cost of such product is rather expensive.

3 WHAT IS NEEDED BY FINANCIAL INSTITUTIONS TO GET INVOLVED IN EE FINANCING

EE projects are generating assets that are difficult for banks to recognize under their existing systems. It is understood that the energy cost of the final beneficiary of the project will go down and that the technology is available and reliable to achieve the expected savings. The irony of the situation is that even if banks want to lend to clients on their balance sheets for EE projects, they (the clients) often do not want to take the loan. The fact that EE projects are competing with other investment options for the enterprises, and the clients do not have enough guarantees to provide the collateral required is often perceived as an important limitation. As banks are not able to recognize the negative cash flow generated by EE projects (ie the energy cost reductions), the main point is to find other ways to finance EE projects than linking lending just to the balance sheet of the final beneficiary. Savings should be accepted as collateral but it is not the case at this time.

It becomes obvious that some solutions are needed to address these complex issues. Some were widely discussed during the workshop and are presented below.

3.1 SHRINKING THE UNDERSTANDING GAP BETWEEN BANKS AND ESCOS

In order to provide adapted financing for EE project implementation, ESCOs can be seen as one of the most interesting mechanisms to be used. But there are still important gaps that exist between financial institutions and ESCOs. Many solutions have been considered in order to solve this problem. This issue was discussed in depth during the workshop and these main elements resume the discussions:

- There is an important capacity building need for developing ESCOs' capacity to set up «bankable» projects.
- There is also an important need of increasing the banks' capacity to analyze the projects proposed by ESCOs so that they can be considered for financing.
- Increasing the role played by the ESCO associations as facilitators in this dialogue can certainly be seen as an interesting option to facilitate the reduction of the actual gap.
- Banks cannot train all officers on ESCO financing as it is too expensive. Considering developing a specialized unit within a bank that would be dedicated to the analysis of such projects could be a very positive way to reduce this gap between ESCOs and banks. At the same time, some kind of standardization of project presentation and appraisal is needed to reduce transaction costs.
- It was agreed that banks should have less problem in financing EE projects after the implementation period. Financing implementation phase is a real big challenge for banks. Other ways to cover the development and implementation stages of an EE project should be

developed. One possibility exists i.e., in the SME sector, the beneficiary units can bear the risk along with the ESCO.

- Good relationship between banks and ESCOs is essential for the approval of any project. Organization of frequent meeting opportunities should be favored 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.

3.2 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 existing schemes varies greatly. BNDES is developing a loan mechanism with an 80% guarantee. 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 will be the default rate in the operation 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 firms that will request the guarantee, its 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%). At that rate, it is difficult to make it interesting to project stakeholders, as it significantly increases the project cost.
- Pool the ESCOs projects together to obtain the partial guarantee fund that could be more attracted to bigger projects. This would on the other hand create a whole set of other barriers for the development of projects by ESCOs.

Guarantee funds and other mechanisms can be used to attract the banking sector in EE lending, but it has to be considered most of the time as a temporary measure in order to jump start the market (refer here to the next section on China's and IFC's experiences).

3.3 STANDARDIZED LOAN APPLICATIONS

As EE projects are often small in size, they are often seen by banks as not that interesting since the transaction costs can be too high given the potential level of bank profits that could be made from each of them. One very important element that was mentioned by banks was related to the standardization of loan application for EE projects that could have the great benefit of reducing these transactions costs. Such standardization would enable EE projects to be considered like other loans products that have been standardized over time by banks.

As this is not an easy task since 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 standardized up to some point (categorization of types of projects could be useful). 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.

It has to be mentioned though that in some bankers opinion, processing loan applications for EE projects transaction cost can hardly be seen as material particularly since for them, they consider such loans as a long term investment and not as immediate commercial considerations. In such cases, the standardisation of loan applications for EE projects may not have such an impact on EE lending. But this opinion still remains limited to the most proactive banks present at the workshop.

3.4 LIMITING THE NUMBER OF INTERMEDIARIES OR THE COMPLEXITIES OF PROJECTS

As in any financial transactions, the more technically complex the project is, the more risky the banks will perceive the project. Furthermore, the more intermediaries that will have to take part in the deal will bring additional risk perception by the banks. This is probably even more relevant for EE projects as banks are still not very familiar with this type of projects at this time in Brazil, China and India.

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 organization. As long as the

final beneficiary of the project and ESCOs can be seen as credit worthy and that 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 also an equipment manufacturer or has strong fixed ties with major equipment suppliers.

In the case a single project is developed by a final user, the banks would certainly prefer that the project is limited in number of parties involved in the project, so it can be perceived as more simple.

As far as ESCOs are concerned, it is as better to start developing a good relationship with a bank with technically simple projects, not involving too many technologies and obviously using only well demonstrated ones to increase bank comfort on the technical level.

4 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. Some examples of those mechanisms are already in place and are presented below.

4.1 GUARANTEE FUND IN CHINA

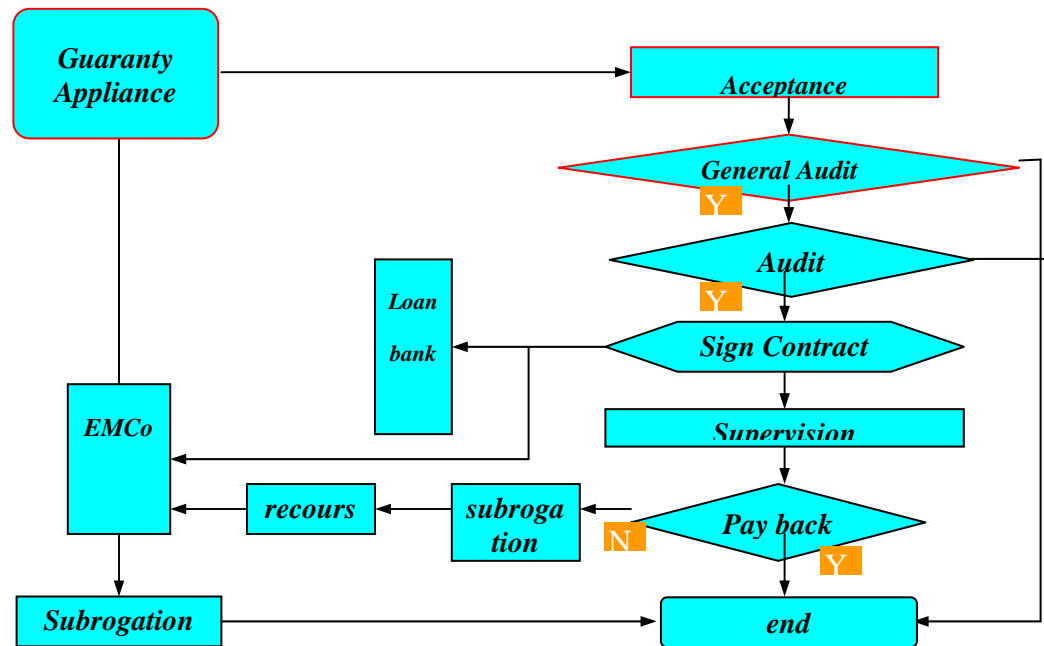
China received a grant from the GEF under an implementation agreement with the World Bank for developing EMC Commercial Partial Loan Guarantee Mechanism, for the whole country. The main objective of the project is to promote EE project implementation. Loans benefiting from the PGF started in 2004 and will extend until 2009.

This project was based on an initial innovative EPC mechanism in China. As a pilot project, WB extended a USD 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 of 300 billion guaranteed since then. Until now, it has 145 members registered. It is a policy driven mechanism.

The purpose of creating this PGF is related to the fact that the central bank requires guarantees for business loans. As such insurance had to be in the kind of mortgage, pledge and other types of solid guarantee, EMCs were not in a position to give these guarantees to implement EE projects. Therefore, the new mechanism enables I&G to provide such guarantee for EMCs' EE projects.

In order to approve the guarantees, I&G follows a rigorous process that can be presented using the following diagram:



As it can be seen, EMCs have to apply for a loan from the bank and it is the bank that approves the loan. I&G provides a 90% guarantee for the loan provided and the remaining 10% of the guarantee has to be provided through other means.

The reasons for potential default by the EMC benefiting of the loan could be: (i) that the EMC has not repaid the bank; or (ii) the client has not paid the EMC. In the case of the first default possibility, the project was a success and generated the expected savings and the client properly paid the EMC. The EMC does not just pay back its loan as agreed. In the second default case, the project may or may not be a success but for one reason or the other, the client has not paid the EMC as agreed in the contract between both parties.

In case of default, I&G pay the bank and sue the ESCO to reclaim its due. The amount is immediately paid after the default is presented to I&G and only at that point is the recovery process started.

The I&G basic guarantee is provided by the reserve fund funded by the GEF. In this specific context, I&G does not actually run any credit risk. Based on the World Bank project design, the only risk run by I&G is the one related to its fees with the World Bank project. On the CHINA guarantee fund, But it is worth noting that the I&G fees are related to performance as its management fee are set as a percentage of the Program EMC loan guarantees it issues, adjusted for actual levels of defaults and subrogation recoveries achieved relative to agreed targets

Since this PGF mechanism implementation, about 23 EMCs of different types benefited from banks loans for 52 EE projects. Total investment in these projects was RMB 237.6554 million. The different projects ranged from small to large and average size of the loan amount was about RMB 4,378,750. Due to this effort I&G got a very high appraisal from the WB.

The PGF mechanism, using the guarantee experience advantage from I&G, brought several innovations to the market, such as:

- Loan guarantee and performance guarantee.
- Management fee for I&G has been perceived.
- Guarantee fund remaining will be reused at the end of the program term.

The PGF project will run through 2009, and I&G hopes to extend its operation after that date.

4.2 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 catalyzes 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 these markets for EE lending by financial institutions (FIs) were related to the small deal size, lack of comfort/lending experience by FIs, unsophisticated vendors and developers and limited FIs' knowledge of the EE sector. IFC addresses 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.

Hungary's Case

In Hungary in the mid-1990s, local FIs were not lending for much-needed EE improvements. The identified barrier related to this situation was lack of available funding for project implementation, (insufficient liquidity in the financial system, lack of loans, etc). The FIs were lending only the blue chip companies, the interest rates were high and there was an important lack of economic incentives due to relatively low energy prices.

Two major barriers were identified for not lending to EE projects:

- i) Perception of high credit risk by financial institutions as FIs had very little experience with EE or project finance.
- ii) Poor capacity to develop projects i.e., high preparation costs and weak preparation capacity by sponsors.

More specifically, the identified barriers in the Hungarian market were:

- Lack of long-term funding to match required payback period.
- Need to overcome the liquidity barrier for EE projects in selected FIs.
- Need to mitigate technical risk and encourage funding of EE projects (small provision for first loss on loan portfolio).
- Need to improve expertise in EE project development at company level and processing by banks.
- Need to improve/build relationships between banks, ESCOs and vendors.

On the other hand, there were as well other favorable conditions for the introduction of such a PGF, such as the liberalization of the energy and financing markets. As FIs were maturing and competition was increasing with openness to new products, this new competition for new business made EE projects more attractive.

In this specific context, IFC decided to introduce with the support of the GEF several risk management tools, grouped under a dedicated EE Partial Guarantee Fund (PGF). This mechanism was used to share the risk with FIs by providing partial guarantees for domestic EE loans. Since the project became very successful, a phase 2 was introduced using essentially IFC funding.

IFC included in its innovative program capacity building tool such as technical assistance (TA) to FIs, ESCOs, and SMEs using targeted, limited grants, with a goal to assist FIs and ESCOs in preparing projects and market services.

IFC key terms for the developed guarantee facility were:

- Partial guarantees to support investors/project developers (up to 50% of the loan principal; maximum of 35% in the second phase).
- Guarantee to FIs focused on defaults by debtor/lessee.
- Market-based guarantee fee (typically 1%-2%, changes based upon market conditions), charged to the FI involved.
- In case of default, the payment was immediately released to the lender (FI) then the recovery process began.

The pilot program conceived for the Hungarian market was a great success and resulted in the following achievements:

- FIs showed a lot of interest for the new mechanism, as 5 FIs worked with IFC under the program.
- FIs used the PGM for over 150 projects for a value of USD 8 million that leverage over USD 35 million of lending.
- Local FI got very interested in EE lending and developed with or without the PGM a global investment portfolio for an estimated amount of over than USD 100 million.

On the other hand, the total default rate of the facility during the project lifetime was zero. This figure tends to indicate that IFC was too conservative in its risk evolution and that it probably did not expand the market as rapidly as it should have been.

IFC learned many lessons from this first PGM project:

- Important initial need of TA effort to build FI business and stimulate deal flow, but providing effective TA is a tricky business.
- Careful market assessment is important to determine the market needs.
- Different EE end-use sectors require specialized credit products.
- Important to follow and support each specific FI's business strategy in order to integrate EE lending.
- Credit enhancement is not the answer to every question and dialogue is needed with FIs before designing the program/ intervention.
- Pre-selling the "product" to FIs is very important.
- Improper interventions can hinder the development of commercial lending market for EE.

This experience also demonstrated that the appropriate markets for a loan guarantee mechanism need to have adequate liquidity, attractive interest rates, competition, and reasonably mature institutions in the capital markets in order to succeed. The PGM can only mobilize existing resources under such conditions.

4.3 NEW IDEAS INTRODUCED AND DISCUSSED DURING THE WORKSHOP

4.3.1 BNDES Proesco Program

BNDES, as the national development bank of Brazil, recognized 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.
- The 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. It would be operational within the existing structure of BNDES lending and thus not require a lengthy process of creating a new structure. It is expected to be presented to the BNDES Board of Directors for approval in the Spring of 2006 and launched a few months after. Its proposed features are as follows:

- Focus to finance ESCOs, but available also to other entities to finance EE projects.
- Operation will be made through commercial banks (for projects less than BRL 10 million).
- The transaction's financial risk will be shared 80% by BNDES and 20% by the banks. Thereby BNDES would implicitly provide a guarantee.
- The borrower will have to provide some guarantees. However, these may be much less than the value guaranteed.
- Relative low interest rate (about 14%), which will be based on the following evaluation.
 - Long-Term Interest Rate (TJLP, currently around 9%).
 - 3% (guarantee fee for the client risk divided between the bank and the BNDES in proportion to the risk assumed).
 - 1% bank fee.
 - 1% BNDES fee.
- The technical and economic risk of the project will be analyzed by an outside agent approved by the BNDES. It has been proposed that PROCEL, the national EE program for the electricity sector might initially provide support for these evaluations, even though this has not been considered to be a sustainable model.

The 3 country ESCO project of UNEP and the World Bank, in collaboration with GERBI and ABESCO, has initially supporting the Proesco initiative with the development of guidelines for such evaluations and training of ESCOs in the development of financing proposals. However, this support was limited compared to the needs of Proesco if it is going to be approved.

4.3.2 Brazil Guarantee Mechanism based on a Privately Managed Fund

A proposal for an innovative Guarantee Facility for EE projects in Brazil was also presented at the workshop. The initial investigation of its design also included detailed financial simulations of the operation of such a separately constituted fund, proposed to be managed by a private agent. This would be a more complex and time-consuming proposition to implement than the Proesco initiative – which had the benefit of being able to rely on an existing credit line and some preliminary work and which would essentially involve specific agreements with banks who participate voluntarily.

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 to finance the 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 indeed 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.

For the purposes of the financial simulations of the Guarantee Facility it was estimated that a capital of BRL 6.5 million (US\$ 2.8 million) would be needed to initiate the operation of the facility. This value was based on an estimated current market of about BRL 80 million (USD 34.8 million) per year of EE projects and assumes that 80% of the investment would be debt. These market estimates for dimensioning were only initial assumptions, to be confirmed or modified with future surveys and analysis.

Structure and Procedures of the Proposed Guarantee Facility

The main characteristics of such a facility would be:

- The potential project would get a technical approval from a certifier accredited by the Guarantee Facility and paid by the proponent.
- The conditions to obtain the guarantee would be:
 - The maximum amount that could be guaranteed on a single project could not be more than 5% of the fund size
 - The maximum period for reimbursement would be 10 years.
 - At least 50% of the investment in the project would have to be directly linked to the implementation of EE measures.
 - There would be no restriction on business segments or for technologies.
 - The facility could extend to contracts which would be executed for shared Savings, guaranteed Savings and SPE model types.
 - Approval for guarantee concession by a Guarantee Committee.
 - 100% guarantee on the principal and the risk restricted to interest portion of the financial institution.
 - The guarantee fee charged would be paid in the beginning and capitalized in the loan. The baseline fee assumes a default rate of 10%, which is conservatively very high relative to experience and expectations. In addition, the GF would have the right to assume the receivables and, if necessary transfer the contract to another ESCO, in the case of default by an ESCO.
 - In case of default, the facility would immediately pay the financial institution and would execute the guarantees given by the ESCO or its client.

The parameters under which the facility was developed can be summarized as:

- The GF would have a lifetime of 10 years.

- The initial capital would be BRL 6.5 million (USD 2.8 million). With a benchmark return of 12.4% per year, this would increase to BRL 21 million at the end of the period.
- Over this lifetime, the maximum allowed leveraging of guarantees relative to capital would be 10x (in fact, never much above 8)
- The monthly administrative costs for fund management are estimated to be USD 34,800.
- The assumed default rate is 10%, and the default recovery of credit would be 2.5% in the first few years of the facility and 10% at later years, over a period of 10 years. The assumed default rate has been considered as conservatively high.

Under these assumptions the average evaluated monthly guarantee fee would be 0.26%. For a 3-year loan with a 1-year grace period, the guarantee fee would increase the loan cost from 14.43% to 20.19%. This is a substantial increase. However, even with this higher cost of credit it would make a significant share of potential projects financially viable.

With a lower default rate, the guarantee fee would be substantially diminished (to about 0.15%/month for a 5% default rate). An unresolved question is whether there should be a single fee or whether the monthly fee could be modified, depending on the term and perceived risks of the project (including the ESCO's track record).

The Guarantee to be issued by the Facility should be up to 100% of the loan principal and the capitalized BNDES interest, leaving the commercial banks almost free of the credit risk. The only residual risk would be on the bank's interest in the operation. This was seen as a key factor for the success of the Facility. The banks should perceive the credit risk of the operation as being that of the Guarantee Facility and as long as they are comfortable with that risk, the banks should provide the loan to the ESCO or the ESCO's client. The banks have to view the guarantee provided by the Facility as primary and sufficient to make the loan.

If the banks treat the guarantee as secondary, the Guarantee Facility will not be feasible. The banks will already have asked for all the guarantees the ESCO would be able to give, leaving nothing that the ESCO could give to the Guarantee Fund.

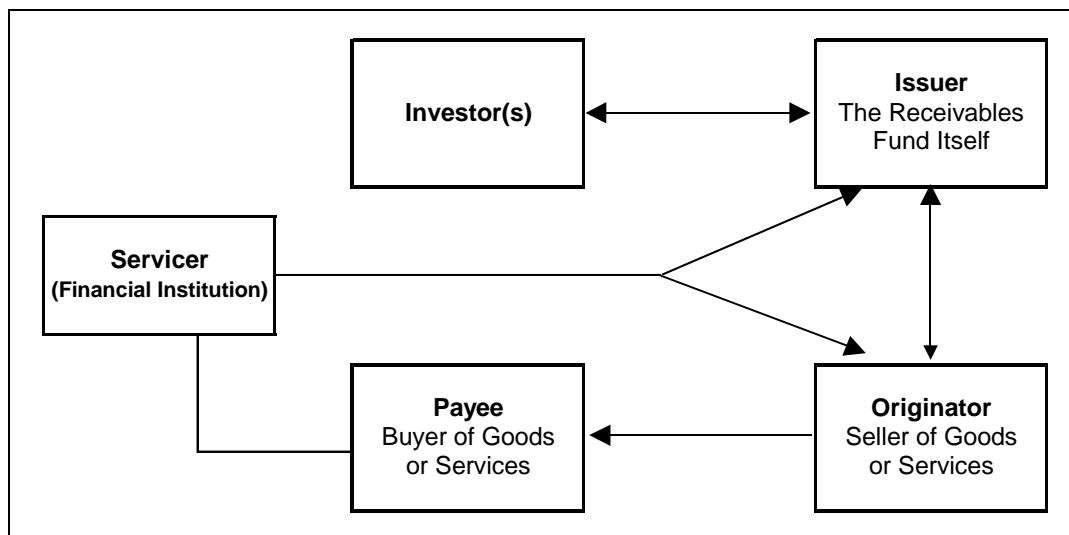
The estimated results illustrate a key point: even a small outlay of capital could have a large effect on the volume of projects. In the baseline case of simulations, projects worth approximately BRL 780 million would have received guarantees within eight years. There are very few, if any, public investments in EE which could so dramatically catalyze effective results.

The analysis is only preliminary, but the proposed Guarantee Facility appears to be financially feasible and to open a significant window for ESCOs' access to the financial market. Such an initiative (including other design alternatives) could build from the experience gained in Proesco, if it is finally implemented.

4.3.3 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 capitalization, would be to sell their receivables from performance contracts. Receivables funds, known as FIDCs (Fundo de Direitos Creditórios) 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 securitization, 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.



From an operational point of view, an ESCO FIDC would work as follows (see graph above):

- Rating agency rates FIDC based on proposed structure and investors acquire shares of FIDC.
- An ESCO would enter into performance contract with client(s) and would obtain a performance bond from an insurer.
- A servicer (FI) would confirm the eligibility of the receivable for acquisition by FIDC.
- FIDC would acquire from the ESCO the rights for a portion of future flows from a performance contract.
- The ESCO would then render the services to the client. Once the project is implemented, the ESCO client will make payments to the Servicer. The Servicer then disburses payments to ESCO and FIDC according to the terms of the receivables purchase agreement.

- There would be a periodical audit of FDIC and finally FDIC returns interest and principal to investors as per amortization schedule.

Development of such a FDIC would be a challenge in Brazil in light of substantial barriers:

- Most existing FIDCs are for current flows of funds not for future receivables. The only cases so far of future flow FDICs are for future receivables of electricity distribution companies.
- There is lag between funding and revenue generation.
- EE projects' risk is not well understood by financial investors and cost of capital in Brazil is still too high.

4.3.4 New Potential Business Models in China

Three potential EMC financing models have been imagined 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:
 - The ESCO that does not have major fixed equipment suppliers.
 - The ESCO having 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.

Model I

Model I has been developed for EMCs without major fixed equipment suppliers. It is based on the use of an intermediary called SFA (Special Financial Service Agency):

- Shareholders of the SFA would all be EMCs that would finance it.
- The SFA would negotiate with banks for a credit line, under which the SFA would assign a quota to each participated EMC.
- Each EMC's quota would depend on the SFA's own capacity of collateral.
- The cooperative agreement between SFA and the bank would stipulate that:
 - A 20% down payment from EMCs would be requested and placed as in a collateral pool.
 - The receivable accounts will also be mortgaged.

Model II

Model II has been developed for EMCs with major fixed equipment suppliers. It is based on the following assumptions:

- EMC is big and strong.
- EMC has a few fixed equipment suppliers.
- One EMC of this kind can establish a SFA.

Model II would operate based on the following:

- Funds would come from two major channels:
 - EMCs ' own funds.
 - Down payment of the implementing units.
- Shareholders of SFA might be both EMC and equipment suppliers.
- SFA guarantee would be given to equipment suppliers. The loan given by the bank to them could be used by the EMC.
- Both equipment suppliers and implementing units should pledge to open accounts in the bank and all related funds shall go through this account.
- EMC's receivable accounts could also be regarded as collateral.
- Guarantee should also include:
 - Credit guarantee
 - Certain percentage of collateral
 - Special supervision on the funds processing.

Model III

Model III has also been developed for EMCs with major fixed equipment suppliers. A big and comprehensive SFA would be established by bundling some of SFAs as presented in Model II. As in Model III, SFA would have stronger capacity and would exert a higher leverage function. The objective of this «super» SFA would be to provide guarantees, manage funds, analyze credit worthiness of implementing units and coordinate with banks.

All these three models have been developed on a theoretical basis in order to try to find a solution to the lack of available guarantees required by banks. One of the main downside of these potential mechanisms is that it might be quite difficult to have many EMCs to agree on the development of such common pool of funding.

5 ESCO ASSOCIATIONS

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 these presentations and exchanges is presented below.

5.1 THE CHINESE ESCO ASSOCIATION (EMCA)

The WB/GEF China Energy Conservation Project is a key cooperation project in the fields of energy conservation and GHG emission mitigation in China. In order to further promote EPC, a Chinese EMC association was established, known as EMCA. The main objective of EMCA is to further develop EMCs and to promote the development of Chinese energy conservation service industrialization.

EMCA's mission is to:

- Provide its members with adapted services to help develop their markets.
- Provide services to the government with respect to energy conservation by acting as an intermediary.
- Promote the development of Chinese energy conservation service industry and develop it in a sustainable way, thereby doing the same for EMCA itself.

Tasks carried out by EMCA are:

- Disseminating and implementing national policies and regulations, through the establishment of an energy performance contracting mechanism, promoting latest energy conservation technologies and products and organizing forums/workshops to promote EMCs' business opportunities.
- Providing technical assistance and consulting services for EMCs business promotion.
- Establishing cooperation and communication among EMCs and foreign ESCO associations as well as between industries and FIs.
- Enhancing its own capacity, and undertaking the businesses authorized or entrusted by related agencies and international organizations.

EMCA had 102 members as of June 30, 2005. 58% of them are new and potential EMCs; 17% are energy conservation equipment suppliers; 4% are investment companies; 7% are foreign-owned enterprises (registered in China); 6% are energy conservation centers; and 8% are associated

enterprises such as banks, law and accounting firms, magazines, inspection organization and research institutes. In 2004, 224 EPC projects had been completed with an investment of RMB 589 million resulting in 0.76 million tce (tons of coal equivalent) of energy savings per year and with a total CO₂ emission reduction of 0.49 million tce per year. EPC projects mainly dealt with technologies for motor-driving, air conditioning and heating system renovation, recovery and utilization of waste heat and flammable gas and comprehensive energy conservation renovation on buildings.

EMCA's training activities included over this period the introductory and secondary training on EPC mechanism and EMC operation and management. Advanced trainings were also given to general managers, project managers and financial managers on effective management. EMCA conducted one-on-one and one-on-three technical assistance in the light of the requirements aiming at EMC's establishment, the formulation of business plan, financing, guaranty, financial management and risk control.

EMCA supported EMCs market development activities in 2005. They assisted EMCs in:

- Customer's acquisition by focusing on key areas and industries.
- Assisting EMCs for the development of financing channels.
- Developing and establishing EMCs targeting domestic large-scale enterprises.
- Helping EMCs conduct EPC business.
- Advancing technology communication and business cooperation among domestic and foreign ESCOs/EMCs, domestic EMCs, and EMCs and energy conservation product manufacturers.

The challenges that the EMC industry's development is currently facing are:

- Lack of imperative measures on EE indicator.
- Support of authoritative energy saving verification methods.
- Lack of policy support towards fiscal measures for EMCs.
- Lack of policy support towards EMC focusing on energy conservation in government agencies.
- Lack of EMC industry norms and industry self-discipline policy measures.

5.2 THE BRAZILIAN ESCO ASSOCIATION (ABESCO)

ABESCO is the ESCO association formed in Brazil. Its mission is to promote the Brazilian EE industry by increasing competitiveness in the Brazilian economy through sustainable development. It was founded in 1997 and has 70 associates.

In order to increase its membership and dissemination capability ABESCO has begun publishing a magazine and an electronic newsletter, besides improving its website. In the first edition of the magazine 7,000 copies were printed, while the electronic newsletter has a circulation of 10,000. This activity was supported by the three country EE project.

ESCO training was also given in partnership with GERBI / WB/UNF through the project. Two courses focused on management, legal and financial aspects. There were 30 participants in each course.

ABESCO's main efforts are:

- Maintain utilities' investments related to EE under the regulated wirecharge.
- Performance contracts development with all consumers, except residential ones.
- Develop energy management practices in educational and municipal buildings.

Future steps of ABESCO will be to continue actions for the EE market promotion through publication of magazines, discussions in EE forums, conduction of ESCO training and establishment of relations with industry and business associations. It also wants to improve communication with the government for the promotion of EE projects and to overcome financing barriers by bringing together BNDES and banks. ABESCO has been the leader in successfully lobbying the National Congress in order to restore the amount of EE funding from the wire charge mechanism to the 0.5% level through a project law. This renewal was approved at the end of January 2006.

5.3 INDIAN EE ASSOCIATION

The main objective of this newly created association is to promote a professional association of ESCOs, energy auditors, energy managers and other stakeholders in the EE market such as EE equipment vendors, banks/ FIs to improve delivery of energy services with the aim to reduce energy intensity of Indian economy and enhance the energy security of India. The Indian EE and ESCO Association (ICPEEB) is foreseen to be a "market driven" initiative. It has received significant support from the three country project.

ICPEEB is a non governmental, not-for-profit association of EE professionals incorporated as a Section 25 Company under the Companies Act. The memorandum and articles of association are finalized. Incorporation is under process. Formation activities (vision and mission, preparing business plans, setting up secretariat, etc.) have been taken up by Shri Shakti with assistance from the World Bank under the 3 Country EE Project.

ICPEEB intends networking with other members, state institutions and central governments. It will have regular dialogues with policy makers and statutory authorities. It would seek expert advice on government legislations, regulations, etc. and sending representations to central and state governments and other institutions.

ICPEEB will also support business development by intermediating between banks and FIs, providing legal guidance, contract review and arbitration services, disseminating information on tenders and business opportunities, etc.

In the short term ICPEEB intends to accomplish policy analysis, research and advocacy through a regular dialogue with concerned ministries to ensure enabling policies and institutional support. It

envisages coordination with BEE, NPC, ERCs, CII, FICCI, and support of banks, multilateral and bilateral funding agencies.

In the long term ICPEEB intends development of ESCOs, imparting selling skills, training and capacity building of ESCOs, partnering with EE equipment vendors, arranging ESCO exchange visits and study tours and getting a new loan product for ESCO contracts. It has the objective to make EE a priority sector for lending and giving representation to Ministry of Finance to exempt service tax on energy consulting fees and income from shared-savings contracts.

5.4 ESCO ASSOCIATIONS EXCHANGES

Many subjects of interest were exchanged between the different associations during the cross-exchange meeting on the following issues:

Type of members

- In Brazil, the association focuses only on ESCO development but other players like industries, educational universities, etc. can be members but they do not have the right to vote because this association is meant for the development and promotion of ESCOs' EE projects. The motto of the association is to have more and more ESCOs to join them.
- In India, all EE stakeholders can join the association like energy auditors, consultants and small-scale industries, etc.
- 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 countries is there is an official certification process needed to become a member. 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 staffs.
 - Market and member department with two staffs.
 - Information and Policy department with a single staff.
 - One person in charge of the website.

- Two directors manage the entire operation with their administrative assistants. A lot of activities are done 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 common 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 is composed of only two permanent staff (including an administrative assistant) and depends a lot on the voluntary work of members.
 - Most income is from members' dues. The 3CEE project has also provided some limited support. Additional income has been raised from an annual Congress on EE. More recently a magazine was begun, but it is still barely breaking even.
 - Utilities support ABESCO regarding technical information and add in the magazine. ABESCO also seeks to cost-share and collaborate with other groups, such as the training programs with GERBI.
- India
 - As the association is totally new, there is no employees, no funding mechanism and no relevant activities to be reported at this point.

Lessons learned

An important consensus conclusion of the discussion was to the effect that ESCO Associations in emerging market are likely not to be viable with the income from members' dues alone.

Another interesting conclusion was that it was important for the three Associations present at the workshop was the huge interest by each of them to continue to exchange among themselves even after the end of the 3CEE project.

6 FINAL THOUGHTS

6.1 SHRINKING THE GAP BETWEEN THE BANKS AND ESCOS

Shrinking the gap between banks and ESCOs is one central area which should be focused on to increase the implementation of EE projects in Brazil, China and India. Some ideas were proposed throughout the workshop to try to attain this objective:

1. Improve ESCO's capacity building in developing «bankable» projects.
2. Increasing the banks' capacity, both on the technical and organizational aspects, to analyze ESCO projects.
3. Increasing the role played by the ESCO associations as facilitators.

The use of certain innovative, and often temporary, mechanisms, such as partial credit guarantee funds or performance guarantee mechanisms, could help facilitate actions to overcome the perceived risk, thus improving understanding between banks and ESCOs through the experience gained in actual project finance.

One barrier that was not explicitly discussed during the workshop, which is certainly a huge barrier to the development of the ESCO market, is the access by ESCOs to public facilities. As in all countries public procurement rules are often not adapted to the development and adaptation of such projects under a performance guarantee approach, and there is important lack of capacities to develop good request for proposals adapted to the ESCO concept in the public sector. Banks will have an important role to play in these types of projects, as the financing requested to address the potential in each country can be enormous. This is a subject that was left for further discussion.

Shrinking this gap between banks and ESCOs will certainly remain an important challenge for many years in each of the three countries, as it will require adaptation and increase capacity on both sides. Even though many elements have been proposed to reduce this identified gap, it will take time to implement them. Furthermore, it is probable that other ways to reduce this gap have been missed. As the ESCO market will start to develop in each country, much more work will be needed to reach this goal and increase the number of projects implemented by ESCOs in each country.

6.2 EE LOAN FUNDS WITHIN EXISTING ACTIVITIES

Energy efficiency lending already occurs within each of the banks to a limited extend as part of their normal operations. Even though banks have not yet integrated dedicated EE activities in their normal operation, there should be increased incentives to do so in the future. As energy cost will rise and influence the competitiveness of their clients, banks should see EE as an opportunity to increase their own loan portfolios and to strengthen the strength of their existing clients. Furthermore, as environmental concerns will become more and more important in Brazil, China and India, it will be important for banks to develop specific products to enable their clients to address these concerns.

Ways to include EE loans in banks' activities can either be integrated to actual existing products they already have or current loans to offer to clients, or through dedicated credit lines adapted to EE projects. No strong conclusion has been made on the best approach to use, and each bank will likely use one or the other approach, in fact the one that is the most adapted to its market.

6.3 RESPONSIBILITY TO MARKET EE FUNDS

Even if banks develop dedicated financial products for EE projects, the workshop was not able to conclude what is the best way to market such products. ESCOs can certainly play an interesting role in developing a pipeline for banks loans. An ESCO or EE association would also be a very good vehicle to disseminate information on the available financing products offered by banks.

6.4 PROPER ROLE OF THE GOVERNMENT

Governments can take numerous actions to promote the development of adapted EE financing schemes as well as to try to trigger a strong ESCO market in their countries. Governments can use many different innovative initiatives to improve EE market development. On top of the direct programs to support EE lending as presented during the workshop, announcing tax concessions for EE projects can also be a good way to boost EE and ESCO activities. Other ones could focus on the removal of the specific barriers in all market segments, including large scale outreach and education programs. A special focus should be given to the municipal, national and state public sectors in order to have EE projects implemented one way or the other.

Among additional possibilities for increasing EE projects, governments can focus on policies, regulations and tax policy, and simplify the development of adapted financial tools for such projects.

More aggressive mechanisms could be considered to stimulate the EE market development (such as the concessional finance available through KEMCO, the GOI equity investment in IREDA, the government agreements setting up the China guarantee fund, the government policy for the BNDES programs, etc) but continuing political support must be provided to sustain initial gains made in increasing financing for energy efficiency.

ANNEXES

ANNEX A: WORKSHOP PARTICIPANTS

Cross Exchange Workshop on EE Banking windows and Guarantee facilities

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UNF, UNEP, The World Bank
Developing Financial Intermediation Mechanisms for EE Projects
in Brazil, China and India

Workshop Summary

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ANNEX B: WORKSHOP AGENDA

UNF/UNEP/World Bank

Developing Financial Intermediation Mechanisms For EE Projects In Brazil, China and India Workshop on EE Banking windows and Guarantee facilities

**January 18th, 19th and 20th 2006
Delhi, India**

Final

DAY 1, JANUARY 18TH AM

9:00 Welcome

Speakers:

Mr. V Raghuraman, Sr Adviser, Confederation of Indian Industry

Jyoti Painuly, URC

Mr. D Majumdar, is Managing Director, IREDA

Chandra Govindarajalu, WB

9:45 Introduction of the workshop

- Purpose of the workshop and expected outputs
- Ground rules for the workshop
- Introduction of morning session

Speaker: Pierre Langlois, facilitator

I EE Banking Windows

10:00 Formal presentations by the countries

- *Brazil: Eduardo Bandeira; Linda Murasawa and Fernando Baseggio*

11:00 Break

11:15 Formal presentations by the countries (continued)

- *China: Zhang Yongmiao*

11:35 Formal presentations by the countries (continued)

- *India: Mr. Sonalal Datta and Mr. K S Sridharan*

12: 15 Summary of the morning session, Facilitator

Speaker: Pierre Langlois, facilitator

12:30 Lunch

DAY 1, JANUARY 18TH PM

13:45 Welcome, summary of morning session and introduction of afternoon session

Speaker: Pierre Langlois, facilitator

14:00 Special presentation of Receivables fund mechanism in Brazil

Speaker: Maurício Marçal

14:40 Special presentation, Point of view of an ESCO

Speaker: José Starosta

15:00 Break

15:30 Roundtable on presentations and experiences in lending facilities

Questions to be answered:

1. Why should banks become involved in EE lending? Is it worth to make special programs in the banks for EE lending? If yes, why? If no, why not?
2. What are the pros and cons of large vs. small-scale EE loans? How are these two markets different? What is attractive/unattractive about each? To what extent can small EE loans help open broader SME lending business? To what extent can large EE loans help open medium tenure (4-5 year) lending markets to industry?
3. How can loan structures best be linked to the project cash flow of EE projects?
4. What are some of the most efficient approaches for technical EE project identification and appraisal?

17:15 Summary and discussions, presentation of the Day 2 activities

Speaker: Pierre Langlois, facilitator

17:30 Closing Day 1

DAY 2 JANUARY 19TH AM

9:00 Welcome, summary of Day 1 and introduction of Day 2

Speaker: Pierre Langlois, facilitator

II. EE Guarantees Facilities

9:15 Formal presentations by the countries

- *China: Jiang Benqiang*
- *India: Sunil Kulkarni & Koshy Cherail*

10:45 Break

11:00 Formal presentations by the countries (continued)

- *Brazil: Eduardo Bandeira; Luís Eduardo Lima*

12:00 International experiences

- *Yewon Choi, Korea Energy Management Corporation(KEMCO)*

12:20 Summary of the morning session, Facilitator

Speaker: Pierre Langlois, facilitator

12:30 Lunch

DAY 2 JANUARY 19TH PM

13:45 Welcome, summary of morning session and introduction of afternoon session

Speaker: Pierre Langlois, facilitator

14:00 Formal presentation on World Bank Group international experiences with commercial EE financing Mechanisms

- *Jeremy Levin, World Bank*

14:30 Workshop session on Guarantee facilities

Questions to be answered:

1. What are the most practical risk sharing ratios/arrangements between the guarantor and the banks (esp. what are the most realistic shares of loan guarantee coverage)? What are the most desirable ratios/arrangements?
2. What counter guarantee requirements should borrowers expect? In what ways can/should borrower counter guarantee requirements from loan guarantors be different from those of participating banks?
3. What are appropriate guarantee fee levels (%)? Is it suitable or practical for guarantee programs to make commercial sustainability an objective? If not, who will subsidize?
4. What are the most practical options for securing guarantee program capital?
5. Should guarantee programs cover projects involving ESCO only or other types of EE projects as well? Why or why not?
6. What are the practical pros and cons of guarantee operation by a bank? by a guarantee company? by the government or an international donor?

15:45 Break

16:00 Workshop session on Guarantee facilities (Continuation)

17:00 Summary and discussions, presentation of the Day 3 activities

Speaker: Pierre Langlois, facilitator

17:15 Closing Day 2

DAY 3 JANUARY 20TH AM

III. Global exchange sessions

9:00 **Special Cross exchange session for ESCO Associations**

- Update situation by each Association on there activities, challenges, etc
- Exchange session between Association members

(Presentations of 15 min. each, exchange period of 30 min.)

- *Brazil: Oscar de Lima e Silva*
- *China: Shen Longhai*
- *India: Mr. Sathya Kumar (10 minutes) and Dr Datta Roy (5 minutes)*

Notes: Other workshop participants can attend as observers

10:15 Break

10:30 Welcome, Summary of Day 2, Introduction of Day 3 morning session

Speaker: Pierre Langlois, facilitator

10:45 Synthesis of the cross exchange discussions & Perspective

Speakers

*Pierre Langlois, facilitator
Open floor for participants*

12:15 Summary of the morning session, Facilitator

Speaker: Pierre Langlois, facilitator

12:30 Lunch

DAY 3 JANUARY 20TH PM

13:45 Welcome, summary of morning session and introduction of afternoon session

Speaker:

Pierre Langlois, facilitator

14:00 3 CEE project, Final report, preparation and use

Speakers *Chandra Govindarajalu, World Bank*
Open floor for participants

14:30 Closing remarks

Speakers:

Mr. D Majumdar, is Managing Director, IREDA
Chandra Govindarajalu, World Bank
Jeremy Levin, World Bank
Jyoti Painuly, URC

15:00 Closure

DAY 4 JANUARY 21st

SPECIAL EVENT

Meeting of Indian and Chinese bankers on EE Financing Issues

This special event is dedicated to an exchange session between Indian and Chinese bankers. The focus of the exchange will be to address the following issues;

1. What kind of regulations and requirements enacted by Indian Government to promote the investment on EE projects?
2. Whether Indian commercial banks will plan to develop new instruments on EE projects, esp. on ESCO, or not. and what kinds of existing instruments
3. The current situation on energy investment carried out by Indian Banks
4. The current situation on EE investment carried out by Indian Banks
5. Financing business on supporting ESCO and SMEs to implement projects