

Financing of Third Party Energy Efficiency Services in Brazil

Contribution to the Project:

**Developing Financial Intermediation Mechanisms for
Energy Efficiency Projects in Brazil, China and India**

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Table of Contents

Context	3
1. Introduction	4
2. The Market for Energy Efficiency in Brazil	4
The general context	4
<i>Initial impacts of the electricity supply crisis</i>	5
<i>Government programs</i>	5
The development of energy efficiency service providers	6
<i>The consolidation of ABESCO</i>	7
3. Financial Market Overview	7
Nature of ESCO financing	8
4. Consolidation of ESCOs	9
5. Access to Loan Financing	10
Development of specialized energy efficiency project windows within banks.....	10
Guarantee mechanisms.....	10
6. Specialized energy efficiency funds or financing institutions	12
Energy efficiency funds.....	12
Project Aggregator or “SuperESCO”	12
7. Concluding Remarks	13

INDEX

Context

This paper was originally prepared as a contribution to a Workshop on the theme of developing financial intermediation mechanisms for energy efficiency projects in Brazil, China and India. The meeting was hosted by the World Bank during June 25-28, 2001 and was structured to discuss and begin the preparation of a proposal for a program on this theme involving strong exchanges between the three countries. Besides representatives from the countries, staff and consultants from the World Bank, the United Nations Environment Program (UNEP) and the United Nations Foundation were present.

Each country prepared a document with a slide preparation on the current status of energy efficiency services companies (ESCOs) and energy efficiency financing. Approaches to consolidating the market were also proposed in a summary way. After this initial exchange, the participants focused on developing a framework for the program proposal. Individual country proposals were then developed based on this framework. The set of proposals has been submitted.¹

A key aspect of the proposed program is the creation, in each country, of a Working Group bringing together key agents in energy efficiency financing and the emerging ESCO sector. In the case of Brazil, this would mean building from several existing initiatives to stimulate dialogue on basic issues. One of these is the ESCO Financing Task Force, which has held seminars on the theme on: (1) January 23, 2001 at the BNDES in Rio de Janeiro; (2) May 2 at the headquarters of A2R in São Paulo.² The results of these meetings were an important reference for this work, as was the report of a mission organized by the World Bank in October 2000 as part of the same initiative.³

The authors have edited and up-dated the original paper. The present document seeks to provide an overview of the question of ESCO financing in Brazil today.

INEE

¹ The two authors were the participants representing Brazil. Their work was supported by resources from UNEP.

² This Task Force has operated so far rather informally, with different institutions taking a more active part at different times. The effort is now being expanded somewhat in the USAID-financed BCEE ("Brazil Clean and Efficient Energy Program") administered by Winrock International. Organizers of the ESCO FTF include ABESCO, Econergy International, INEE, A2R and the International Institute for Energy Conservation.

³ C.R. Guinn and S.J. Selman; "Brazil Mission Report - Developing Financial Intermediation Mechanisms For Energy Efficiency Investments in Developing Countries", Report prepared for the United Nations Foundation, November 2000.

1. Introduction

This paper reviews the question of financing third party energy efficiency services and especially ESCOs in Brazil. Energy efficiency services are regarded as a prime approach to improving energy efficiency in the business sector, principally among smaller and medium-sized firms and larger firms which are not very energy intensive. This is a potentially large market, where gains can often be proportionately larger than in the energy intensive industries.

ESCO experience in Brazil is recent and limited. ABESCO was founded in 1997, but only began to take off in early 2001. There are few, if any, true ESCOs as yet. Most service providers are small to medium sized engineering consulting firms and few make a living focused predominantly on energy efficiency (EE) services. What exists is a strong desire to make the transition to specialization in EE services (often including water and environmental improvements) and to develop a new set of services capable of expanding the effective market – variants of performance contracting.

The difficulties confronting the growth and development of the EE services market are formidable. For example:

- The firms are mostly fee for service. These firms have little retained earnings, virtually no paid in capital, and no current borrowings against assets.
- They lack access to financing (as do many of their clients) without an adequate “balance sheet”;
- There is lack of know how among banks on lending to SMEs in general and ESCOs in particular;
- Long-term revenues can be projected from their energy efficiency projects but banks do not see the contract cash flow as adequate collateral.
- Performance contracts are still little known by the market

Overcoming these barriers involves a range of actions which will be summarized in this paper:

- Consolidation of ESCOs` capabilities
- Loan term financing, including
 - ◊ Development of specialized energy efficiency project windows within banks
 - ◊ Development of credit enhancing instruments, especially guarantees
- Establishment and operation of specialized energy efficiency funds or financing institutions; (emphasis on increasing equity)

We also briefly address the possible roles of energy supply utilities in the financing of third party EE services. This has so far has been secondary, but is potentially important.

2. The Market for Energy Efficiency in Brazil

The general context

The market for EE is evolving in the context of major structural changes in the economy and in the energy sector. Since 1994, inflation has been sharply reduced and the economy has been opened to more international competition.

In energy there have been widespread privatizations (mostly of distributors of electricity and natural gas) and important reforms in the power sector opening the way towards competition in the generation and commercialization of electricity. Natural gas, which has played a very small role in Brazil`s energy supply, is now expanding rapidly. In a sharp change with the past, most new generation capacity is natural gas based rather than hydroelectric.

The basic context for energy efficiency is improving, especially regarding the production and use of electricity. This trend was observed by the Brazil Mission in late 2000 and continues today. This gradual evolution (from a low base) has now entered a new phase, with the rapid emergence of a major power supply crisis.

Initial impacts of the electricity supply crisis

Until late February, 2001, government policy makers only acknowledged the possibility of shortages in capacity (kW). Energy shortages (kWh) were dismissed. While various specialists and industry leaders alerted to the possibility of more severe problems, the government's complacency left most consumers without a clear signal.

The Program to reduce electricity consumption has been organized on an emergency basis and necessarily involves curtailment, rather than energy rationalization. Every household and firm must reduce their consumption by 20%. While surcharges for consumption above the quota have been eliminated, offenders may suffer cuts of several days. Some benefits exist in principle for consumers who can reduce their consumption by more than the standard amount, however these are proving hard to realize in practice.

The rationing program was only launched at the beginning of June. It took three months to organize, due in part to legal challenges. The current strategy was the third to be designed. All this took precious time, running down already low reservoir levels. Although the targeted reductions have not quite been achieved, the reduction in consumption has been adequate so far to avoid the need to go to more severe measures, probably programmed closures of businesses rather than massive blackouts. However, these may be necessary soon in the Northeastern Region.

The beginning of rationing has certainly had an impact on popular awareness of energy issues. Vendors of energy efficient equipment (such as Chinese CFLs) are enjoying a boom. Demand for efficiency services has also surged (see below).

Unfortunately, in the short term, sheer curtailment must predominate over rationalization by consumers. There is a danger of confusion between curtailment and conservation in the popular mind. There is also the danger that important efficiency programs be interrupted as resources are shifted to deal with the crisis – whose impact on both government and utility finances will be large.

At the same time, it is apparent that returning to a comfortable electricity supply-demand balance will take several years at least. Energy investments take a long time to mature and it is early to say whether new measures will be able to break the logjam for more than a minority of the stalled thermal-electric plants. The large devaluation of the Real, for example, will complicate project viability.

Given the longer horizon for expected supply difficulties, it will be doubly important to continue developing structural measures to transform efficiency markets. These can have a larger impact at lower cost in this time-frame than emergency measures. It must be emphasized here that the government is investing heavily in emergency (3-year) generation – with a bidding process for about ~4 GW of barges, containers, etc. This will be very expensive.

There will also be an increase in the price of electricity to all consumers, but especially medium and larger industrial consumers. The increase will be substantial, but its size is still uncertain. From a longer-term historical perspective, the average price of electricity is still relatively low in inflation-corrected domestic currency terms. The increase in prices will be a factor favoring energy efficiency investments, even after the crisis. One factor to watch for is whether there is a change in the structure of Brazilian electricity prices. The current structure rewards peak-shaving far more than efficiency.⁴

Government programs

The government programs of most potential relevance for ESCO development are:

- **PROCEL** – is the national program for electricity efficiency, which is administered by Eletrobras – the Federal holding company for the electrical sector. PROCEL has a key role in managing several of the specific programs cited below, as well as others relevant to efficiency such as: efficiency labeling, marketing and standards.

⁴ For a historical summary of electricity prices in Brazil and a discussion of the rate structure for consumers see *Acompanhamento dos Preços da Eletricidade no Brasil* available from INEE's website from November.

- **Wire-charge for Energy Efficiency** – all electricity distribution utilities must dedicate 0,25% of their gross revenue to EE projects with consumers. Today is equivalent to R\$ 90 million (~US\$ 40 million). Projects must be approved by the electricity regulator – ANEEL (based on a technical review by PROCEL). Until now, projects have been developed by individual utilities, following broad guidelines of allocation. The result has been a highly fragmented program.
- **FNDCT** - the National Technology Development Fund for electricity was established in 2000. The resources come from a wire-charge on generators, transmission and distribution utilities and were to total R\$ 380 million (US\$ 170 million) in the first year. Half the fund is to be managed by ANEEL and half by a council chaired by the Ministry of Science and Technology. Part of the resources may go to the development and transfer of technologies for efficiency.
- **Federal building energy reduction** – established in February 2000, it seeks to reduce electricity use by 20% in Federal buildings. The program is coordinated by PROCEL. There had been very little progress by the time the power crisis struck.
- **Reluz** – a large program focused on public lighting. Coordinated by PROCEL, it works through the distribution utilities. Approximately R\$ 1 billion (US\$ 450 million) were allocated for the period 2000-2003. However, financing has not been sought as expected.

One program not mentioned is CONPET – the national program for efficiency in the use of oil derivatives, administered by Petrobrás (the state oil monopoly). The program is much smaller than PROCEL and its main focus is on transport. Contact with ESCOs has been negligible.

The danger of diverting resources away from efficiency programs in this time of crisis has already been shown to be real. The wire-charge resources for EE and technology development this year have been redirected and the programs interrupted or postponed. The Federal building initiative has in effect become an emergency curtailment program. In general, the financial repercussions of the electricity crisis is likely to make the utilities even less receptive than before to measures which are perceived to reduce their income. Utilities have a major role in the implementation of many programs.

With regard more specifically, to the market for third party EE services and their financing:

- Until recently government programs have contributed relatively little to developing the ESCO market and almost nothing to enhanced access to commercial financing.
- Only in mid-2000, with new management, did PROCEL begin to give priority to developing an energy efficiency services market. The World Bank loan/GEF grant facility is to play an important part, with one initiative specifically addressing ESCO financing. However, the implementation of the program has been seriously delayed.

Discussion of ESCO markets is usually restricted to energy end-uses. However, it is possible to add investments in distributed generation – such as small-scale cogeneration, emergency reserve, microgrids, etc. Some ESCOs are already active in these markets. The energy crisis in Brazil should stimulate consumers' interest in this type of investment because it provides greater security of supply than simply reducing consumption of electricity. However, cogeneration has remained something of an orphan of government policy, despite some advances.

The development of energy efficiency service providers

As described in the Introduction, the supply of energy efficiency services is still incipient in Brazil. The vast majority of firms are small to medium-sized engineering consulting firms, which earn only part of their income from EE services. It is estimated by ABESCO that the total annual EE project flow in Brazil before the electricity crisis was about R\$ 60 million (roughly US\$25 million).⁵ ABESCO is projecting that the energy services industry could grow at an exceptionally high rate and exceed US \$500 million per year within a few years.

Very few projects have been with performance contracts and most of these have been very simple, related to water use. A landmark performance contract was signed with the airport of Belo Horizonte late last year.

⁵ This value is similar to that estimated for 1996 in a survey carried out by INEE, see: A.D. Poole and H. Geller, *The Emerging ESCO Industry in Brazil*, INEE & ACEEE, 1997.

To transform the market will require a series of changes and their wide divulgation. This effort far transcends the capability of any single firm, however large. It requires the collective action of a class of firms

The consolidation of ABESCO

In response to this challenge, most EE services firms at the time joined together in mid-1997 to form ABESCO – the Brazilian Association of Energy Conservation Companies. Prior to this, INEE had organized annual forums for the new sector.

The Association did not grow as originally expected. Under-funded, it lacked the capability to implement the necessary lines of activity. Membership stagnated. The electricity conservation program (PROCEL) did not treat the class development of ESCOs as a priority and did little support the consolidation of ABESCO.

This situation began to change in late 2000. A new leadership with much strengthened executive capabilities took office.⁶ This permitted much more vigorous work, especially in communications. As part of the new strategy, ABESCO signed an agreement with FIESP (the São Paulo State Industrial Federation, which represents some 1500 companies in the State) on March 30 and moved its offices to the Federation headquarters. As result of this partnership and stimulated by the crisis, several hundred requests were received from industrial consumers. So far about fifty projects are in advanced negotiation or implementation.

Simultaneously, the question of ESCOs emerged as a priority at PROCEL (which suffered two management changes since 1998). In this the World Bank/GEF financing has a role. One part will serve to support ABESCO's institutional development. Other funding resources have begun to be available for strengthening ABESCO's executive capabilities. Though limited, they are increasing.

With these favorable winds, ABESCO's membership has surged to over 60 firms. More membership is being actively sought. This rapid development of ABESCO is timely. The challenges are urgent. At the same time, the speed of change imposes its own stresses on the institution.

3. Financial Market Overview

It is generally recognized that domestic commercial financing is a key constraint on expanding the energy efficiency project market. The combination of high interest rates with high transaction costs - since the banks are not prepared to do small loans - and little guarantee capacity from the ESCOs, leads to very limited financial resources for energy efficiency in Brazil.

As described in the Brazil Mission Report: "the financial sector has not completely made the transition to this low inflation environment and, hence, the bank loan market for small and medium-sized enterprises (SMEs) is still typically characterized by very short loan terms, extraordinarily high credit spreads and stringent guarantee and/or collateral requirements."⁷ The "all in" interest rate is typically 40-45% p.a. for short-term credit, the only form of credit typically available for SMEs.

Symptomatic of the incomplete development of the bank loan market, the BNDES (the national development bank) is still almost the only ultimate source of medium and long term (3-12 years) domestic capital for commercial loans. The cost of this money is determined from a basic interest rate - the TJLP (long term interest rate) - which is set every 3 months. Today the TJLP is 10,5% p.a., having risen from 9% in 2000.⁸ To the TJLP is added an administrative spread, usually 2.5%⁹, and a risk spread which varies from 0.5 to

⁶ This was a friendly transfer and the ex-President of the Association continues as an active Director. The internal statute required a change soon in any case.

⁷ C.R. Guinn and S.J. Selman; "Brazil Mission Report - Developing Financial Intermediation Mechanisms For Energy Efficiency Investments in Developing Countries", Report prepared for the United Nations Foundation, November 2000

⁸ Interestingly this is substantially less than the base commercial rate (CDI-SELIC) for 90 day loans - today at about 19% p.a.

⁹ Th admonistrative or "basic" spread is reduced to 1% in certain regions and sectors.

2.5% depending on the credit rating.¹⁰ For a firm with a "B" credit rating, the total interest rate will be 14 to 15.5% p.a., depending on the region or sector.

In order to directly access this credit from the BNDES, loans must be at least R\$ 7 million – much larger than most EE projects. In fact, most loans (even those above the minimum) are made through commercial banks – both private and public sector. The commercial bank intermediaries charge a larger risk spread (up to 5%) depending on their evaluation of the client. A client with a "B" credit rating will pay an interest rate of about 16.5 to 18% p.a.

The minimum credit rating for obtaining these loans is "B". Few SMEs or ESCOs will have the balance sheets necessary to obtain the minimum rating. If they pass this hurdle, collateral requirements are high, usually about 130% of loan value. Commercial banks make high returns in the short-term loan market for SMEs. Few see much financial incentive in entering the medium and long-term markets.

It is thus not hard to see why medium and long-term credit has so far played a negligible role in financing energy efficiency projects. However, access to such credit is vital both to expand the number of projects and to lengthen the short simple paybacks typically achieved today.

Nature of ESCO financing

Is ESCO financing project or corporate financing? There is a tendency to treat energy efficiency project financing as though it were a type of classical project funding, with SPCs, etc. One USAID supported initiative, the PIF, made this a basic feature.

However, most energy efficiency projects are too small for this type of structure. In practice, in more mature markets (such as North America), most financing is on existing corporate balance sheets. The big choice is whether it goes on the client's balance sheet or the ESCO's. Nevertheless, at the same time, the proposed income source - accounts receivable - is similar to that of classical project finance – future project cash flow.

This difference corresponds to two basic models for performance contracts. In one model, referred to as "Guaranteed Savings", (GS) the financing is to the client, who pays the creditor. The ESCO receives other service payments depending on the verification of savings.

In the second model, referred to as "Shared Savings" (SS), the financing is to the ESCO. In this model the ESCOs guarantee is stronger and its exposure is greater.

In North America the GS model has been much more prevalent. There are two reasons for this:

- The cost of borrowing of the client is usually lower than that of the ESCO. In the institutional sector (government, often hospitals and schools) there are tax advantages.
- With GS, the ESCO's project flow is not limited by its capacity to borrow.

Nevertheless, the SS model has strong attractions for consumers. The ESCO is providing a more complete service – mitigating transaction costs and risks of the client. The performance guarantee is fundamentally stronger. In Brazil, there are severe limits on public sector borrowing for this kind of investment. Implementation of SS contracts would be a boon. It is interesting to observe that in China a simplified SS model is the norm.¹¹

The different types of contract model will have some quite distinct implications for the design of the financial mechanisms. For example, the use of SS would probably reinforce the argument for a SuperESCO-type intermediary. This intermediary helps package sets of projects, diluting the greater risk; through leasing it could take much of the burden off of ESCOs' balance sheets.

¹⁰ The relation of credit rating and risk spread used by the BNDES is: A+, A = 0,5%; A- = 1,5%; B+ = 2%; B = 2.5%.

¹¹ A first set of bilingual model contracts has been prepared by INEE and is available on its website. It was prepared with the assistance of Eonergy International and Canadian experts and with support from PROCEL, IIEC and USAID. A Working Group with ABESCO is beginning to further develop and deepen this initial material.

However, in either the SS or GS model, the ESCOs would still face a major problem: the lack of guarantees to access credit lines. The creation of collateral funds or similar structures is then imperative for the development of the ESCO market in Brazil.

4. Consolidation of ESCOs

Financing is the key constraint on ESCO expansion. However, as was emphasized at the January 23 meeting,¹² expanded financing implies a series of other developments – such as the organization and qualification of the energy efficiency services being offered in the market. The difficulties in financing are a symptom of the lack of development of the market, as well as a cause.

As observed in Chapter 2, the power supply crisis in Brazil has both opened an opportunity and presents a challenge. The crisis has drastically increased demand for services; however, with little basic change in the form of contracts (traditional fee contracts) and financing (from cash flow).

The challenge is to translate this short-term market stimulus into a dynamically expanding energy efficiency services sector in the medium term. How to capitalize on the drastic increase in awareness among consumers?

While financing is not at this moment a major constraint on project flow, it will return to be so unless there has been a steady development of innovations.

An important aspect of this is the development and gradual dissemination of the basic tools of performance contracting (PC). While PC is not the be all and end all for a dynamic EE services market, it is at the heart of many of the innovations being sought. For ABESCO, the normal commercial use of PC is a fundamental objective. This implies, for example:

- Building a growing “library” of variants of performance contract models adapted to Brazilian needs, with dissemination among service providers, consumers and financial agents.
- Further adapting and disseminating procedures for verifying the results of projects and reporting formats.
- Procedures for certifying professionals and firms providing EE services.
- Establish arbitration procedures for contractual disputes. Litigation is slow and basically kills the project. (Recent legislation makes arbitration binding for contracts in the energy sector. Hopefully could be extended to performance contracts)

All these measures are important for gaining credibility over time. Their implementation implies a vigorous association with strong capabilities in communications and gathering relevant information. ABESCO is now growing rapidly, but is still short of infrastructure.

ESCOs as a class and individual firms will also need to develop strategies for the transition from reacting to an emergency to consolidating a growing market. Many issues are involved, both of a more technical nature (e.g How to establish a baseline for performance contracts in the midst of rationing?) and client perceptions.

These activities should be parallel to initiatives directly addressing financing constraints, which are discussed in the next two chapters.

¹² IIEC (lead) "Alternative Market Frameworks for ESCO Finance: Designing instruments and institutional strategies for financing energy efficiency products in Brazil" Report sponsored by The Charles Stewart Mott Foundation, Washington DC, February 2001.

5. Access to Loan Financing

Development of specialized energy efficiency project windows within banks

In Brazil's existing financial context, the creation of a specialized line of credit is usually taken to mean opening a project line at the BNDES. This approach had not seemed very promising until recently, since it would fly in the face of the BNDES's broad policy. The energy crisis has led to some change in this policy, opening some possibilities. Independent of this, a serious effort should be made to interest banks in this market segment. They would in any case probably have a key role in any initiative of the BNDES.

The first stage in a process to stimulate private and public banks to provide funding for ESCOs in Brazil is to show them the potential returns of such investments. With the financial institutions conscious of the ESCO potential, the next step is to actively pressure these institutions to put credit lines in place for the sector. A task force should soon be created to organize a position paper on the (lack of) energy efficiency in Brazil, showing to interested parties the returns on investments that can be achieved when saving energy, as well as the scale of the market and different segments.

A paradigm needs to be broken here. So far, the perception, both of investors and energy consumers, is that saving energy represents up front costs, which should be avoided at all means, especially in a limited capital environment.

With the information available to make banks aware of the investment possibilities in ESCOs, the next step would be to develop, together with the ESCOs and other institutions knowledgeable in EE, financial products to attend the demand. More knowledge about the ESCO potential might lead the Banks to lower interest rates and make credit more available, given the fact that the risk ratings can be reduced.

A third step towards creating a funding mechanism for ESCOs would be to make a few pilot investments in selected projects. This would generate good quality data, which might make financial institutions more comfortable to make credit available to ESCOs.

Thus, with: (i) banks aware of the ESCO and EE potential, (ii) financial instruments created and available and (iii) a few pilot projects implemented; a natural consequence would be more funding available for the EE sector.

It is encouraging that a systematic dialogue has begun between ABESCO and FEBRABAN, in the form of a working group involving almost about ten banks.

Guarantee mechanisms

The Brazil Mission Report dedicated significant attention to the subject of guarantees. It observed (p 14) that: "This guarantee theme seems to permeate Brazilian banking practice and stands in contrast to banking practices in more mature financial sectors where banks structure and price risk. The thinking that a bank needs a guarantee in order to make a loan to a less-than-blue chip credit is a concept reinforced by the practices of the BNDES and the Banco do Brasil...."

The Mission Report then concludes after a discussion of the SEBRAE loan program for SMEs (p 19): "Perhaps the single greatest flaw of the SME loan program is the unwillingness of the Banco do Brasil to take credit risk. It is this aspect of the program that necessitates the Guarantee Fund or onerous collateral requirements on the borrower. Other banks interviewed (eg HSBC/Midland) have an active middle market lending operation and do take credit risk for those companies with whom they have an established banking relationship. This practice is the norm in other countries and should, with a stable macroeconomic environment and the natural forces of competition, eventually become the norm in Brazil as well."

While the need for a Guarantee Mechanism may be a regrettable sign of an immature financial market, that is the reality project developers must live with now and probably for quite some time yet. Macroeconomic

stability (which is not restricted to low inflation) has not been a feature of the past few years nor is it likely soon.

We believe that a Guarantee Mechanism is fundamental to really open commercial credit in Brazil. Moreover, the early stage projects that might receive investments guaranteed by such a mechanism would be instrumental to help develop broader financial products to attend the demand of the sector as a whole.

There are a few guarantee funds available in Brazil today. However none of them would be able to address the ESCOs` needs. The reasons vary, but mainly these funds were set up for other types of businesses and/or there is very little incentive from the manager to use the fund (i.e. low remuneration, high costs, etc).

The start-up of a Guarantee Mechanism will clearly depend primarily on government-backed capital, since there is no track record for private sector insurers to measure risks and returns. Unfortunately, Brazil`s Finance Ministry has always opposed such Guarantee Mechanisms as a matter of principle – alleging they are not legally permitted. The broad argument of constitutional principle is a little hard to square with the massive private and public bank bail-outs which have occurred in recent years. In any case, this position has now been challenged within the Government by a proposal endorsed by the CGE (Committee for Management of the Electricity Crisis).

International public agencies can play an important role in the start-up of a Guarantee Mechanism – as they have already shown in countries such as Hungary. In Brazil`s case the transfer of risk management know-how and credibility would be as important as the capital invested. With the development of a track record there would be a possibility for growing private sector participation via insurance or capital markets.¹³

Serious thought is needed on the organization of a Guarantee Mechanism, as well as parameters for dimensioning it and criteria for project selection and aggregation. Only very initial work has been done. Some key issues are:

- How much of the credit should be covered by the guarantee?
- For how long is the guarantee needed? The risks of a project change dramatically in time, both in degree and in profile.
- Do the projects need government certification?
- How can an ESCO buy an insurance policy for an investment in a third party company or institution?
- What institution would receive the guarantees, the lending bank, the borrower, the investors of the Bank, a combination of those?

The emergence of project aggregators could simplify the resolution of some of these issues. Project aggregators should be separate from the Guarantee Mechanism (see Chapter 6).¹⁴

¹³ One somewhat speculative example refers to carbon credits. Carbon emissions per kWh in Brazil are so low that possibly the only worthwhile way to claim credits would be through participation in a Guarantee Mechanism.

¹⁴ The structure in Figure 1 of the Brazil Mission Report shows a somewhat garbled version of a proposal by the Banco do Brasil that effectively unites a kind of aggregator function with the guarantee function in one institution – erroneously referred to as EIC. See discussion in the text.

6. Specialized energy efficiency funds or financing institutions

Energy efficiency funds

In addition to the discussion on credit lines for EE projects, a number of financial instruments in the form of venture capital funds have been appearing in the international markets recently. The REEF (Renewable Energy and Energy Efficiency Fund), the CleanTech Fund, the Merrill Lynch Renewable Energy Fund, the Dexia Fondélec Fund, among many others, are some examples of products that were structured within the past 2 years.

The main incentive for these funds to invest in the energy efficiency and renewable arena can be divided in two: (i) the financial benefits and (ii) the non-financial benefits. The financial benefits are obvious, especially in places like Brazil or California faced with energy shortages, or where energy use is extremely inefficient as is often the case.

The indirect benefits, or non-financial ones, are those linked to the image of the investor. The SRIs (Socially Responsible Investors) are the fastest growing group of investors in the developed world these days. Most of these investors are willing to receive lower returns on investments or take a higher level of risk for the same return, however. The social and environmental impact is a fundamental argument for convincing a SRI to provide capital for an investment. The EE businesses are natural candidates for SRI investors.

However, although venture capitalists often do not require guarantees, the analysis of individual investments are much deeper and thorough than a credit analysis. This might be an extra difficulty, since most of the ESCOs or their projects cannot wait for long before the investment is made.

A combination of venture capital and credit, with a guarantee fund is the ideal model to provide funding for a broader number of ESCOs and EE related firms.

Project Aggregator or “SuperESCO”

This player can be seen as a kind of special case of efficiency funds, but is quite different from the funds as they are now conceived.

The SuperESCO, as defined here, is a specialized financial intermediary who aggregates and packages ESCO projects for financing. It works closely with the ESCOs – who are the principal clients. It brings economies of scale, scope and diversity to its role of financial intermediation, permitting the ESCOs to concentrate on core project competences. (Larger ESCOs can also aggregate projects, but a SuperESCO can probably do this better).

Part of the argument for creating a SuperESCO as an alternative (or complement) to a guarantee fund is as follows: If the capital markets demand a 100% guarantee from a third party to provide a loan, why not have that third party directly provide the capital for the project and earn the return on capital the commercial bank would otherwise receive. The argument is simply “If you have the exposure, why not get the return.”

There are different possible variants of the SuperESCO idea. In the form initially conceived with EIC, it would take the shape of a Leasing Company. It would use a mix of equity, bank credit and suppliers` credits (or their own leases) to price its products.

Brazilian law allows financing only by specialized financial agents. In the case of credit – banks; in the case of leases – leasing companies. This restriction effectively prohibits an ESCO from providing SS contracts – ie financing. Working in conjunction with the SuperESCO, the ESCO can provide a service very close to the SS model. Nothing impedes using the GS model as well. However, the biggest trick is to viabilize SS. Being leases, there are advantages for the balance of the consumer and the ESCO.

For the SuperESCO the SS approach also brings benefits. A common problem in Brazil is that debtors with problems don't try to pay, they go to court. Litigation is slow, which is convenient for the debtor. In the case of an ESCO with SS projects, this kind of default would be tantamount to going out of business. So frivolous delays are less likely.

In the version visualized by the Banco do Brasil and shown in somewhat garbled fashion in the Brazil Mission Report, the SuperESCO brings only equity to the project (EIC is not the SuperESCO!). The bank makes a loan directly (usually to the ESCO's client) and works with the SuperESCO on the due diligence (the SuperESCO concentrating more on project risks, the bank on client credit risks).

The BdB also saw the SuperESCO bringing credit guarantees for the bank, in effect administering the mechanism. This joining together of equity involvement and project aggregation on the one hand with credit guarantees on the other seems infelicitous. These are two very different parts of the puzzle and there is a clear issue of moral hazard.

The SuperESCO should, however, be well placed to negotiate with an eventual guarantee mechanism (or support ESCOs in their negotiations). It may be able to more effectively use partial guarantees, which may be all that is realistically possible.

7. Concluding Remarks

The political context for energy efficiency is evolving quickly in Brazil and there are tremendous uncertainties about the future. Brazil's society and economy have suffered three large shocks since May 2001.

- The beginning of rationing of electricity; which was a result above all of the failure of Brazil's government to successfully manage the transition to the new model for the energy market.
- The rapid devaluation of the Real and difficulties in attracting short-term foreign capital to fill the nation's current account deficit.
- The terrorist attack on the USA and the subsequent war, which have rapidly worsened Brazil's prospects – both to export more and to attract capital.

All of these shocks have reinforced the argument for rapidly increasing both energy efficiency and its corollary – increasing the capability of consumers to implement rational decisions regarding energy use. Brazil's energy market still has important distortions and many barriers.¹⁵

Under the pressure of immediate emergencies, Brazil's government has so far shown little sense of the important role that structural efficiency-oriented energy efficiency measures could play in responding to the energy crisis. There are signs that this may change. Well designed policy measures could do much to accelerate investment in energy efficiency and the benefits that this can bring.

¹⁵ See the bilingual report prepared by INEE, *Energy Efficiency and Brazil's New Energy Market*.