Market Barriers to Financing Energy Efficiency Projects

Though the Energy Efficiency projects pay for themselves in a short time, most Energy Efficiency projects stall due to some impediments i.e. lack of money to fund them, lack of time or personnel to design and plan them, or lack of internal expertise to implement them. Here are the main obstacles as identified in the Brazilian market and the role of ESCO

The primary benefit of energy efficiency (EE) projects is that they can be paid for, through a portion of Energy savings in an arrangement known as performance contracting. This way of looking at Energy Efficiency financing holds true whether an end-user is implementing the project independently or contracting the design and implementing the project through an ESCO. The benefits of evaluating an Energy Efficiency project from a financial perspective are that this allows for third party financing and makes it possible to borrow against future savings to pay for Energy Efficiency measures. In **figure 1** below, the role of the lending institution is clear. That role is to provide the credit for the transaction between the ESCO and the customer or "end-user" who benefit from the services provided by the ESCO.

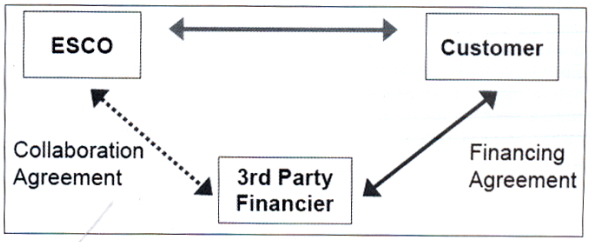


Figure 1: The role of lending institution

There are, however, a number of specific market barriers to financing Energy Efficiency projects that both the ESCO and their banks face. The main obstacles identified in the Brazilian market are given below:

- **Barrier # 1: Restrictions on leasing**

Financial security (Energy Equipment or assets) cannot be clearly identified, as all plant and machinery may be covered under an existing financing arrangement. Hence, it is difficult to secure the rights to remove EE equipment in the case of default. (In the United States there is separate filing of claims on assets such as Uniform Commercial Code filings.)

There are a handful of examples where these ESCOs have used their own equity or have borrowed from non-institutional lenders to finance Energy Efficiency projects, using a shared savings or equipment rental contracting arrangement

- **Barrier # 2: Differentiating savings "Revenue Stream" from other cash flow**

Although Energy savings generate new internal cash flow for the customer, these savings cannot be clearly differentiated form main cash flow. Thus, banks holding loans for existing equipment continue to benefit from the increased cash generated for security, while the EE project investor or financier does not necessarily benefit from the new cash flow generated by Energy savings.

- **Barrier # 3: Small project size**

The average Energy Efficiency project size is typically in the range of US$100,000 to 500,000. Due diligence requirements from a project financing perspective create relatively high transaction costs, overburdening the project and thus, Jeopardizing its financial viability.

- **Barrier # 4: Lack of sufficient market awareness on demand and supply sides**

There is a general lack of awareness among financial intermediaries and commercial bankers regarding the available mechanisms for EE project structuring and financing. In addition, purchasers of Efficiency and end-users process and by lack of understanding performance contracting mechanisms for purchasing Efficiency.

- **Barrier # 5: Legalisms and pace of project implementation**

The legal process for implementing project tends to be overly complex and the pace extremely slow. Not only is it difficult to secure the rights for EE equipment installation, it is also difficult to collect

payment in the event of a dispute over performance and if it is merited or not. This adds to the complexity of using 'Project Financing.'

- **Barrier # 6: No risk allocation framework**

The absence of a well-accepted risk allocation framework hinders projects' ability for finance. Neither end-users nor ESCOs have adequate experience negotiating a workable Energy services agreement.

During a recent workshop in Brazil on the barriers faced by ESCOs in implementing Energy Efficiency measures, gave ideas for two varied models of ESCO mechanism. The same are detailed as hereunder.

The Super ESCO Model

The Super ESCO is the name of the proposal to develop a leasing or financial company under Brazilian law to provide ESCOs and/or customers of ESCOs with Energy Efficiency equipment leases. The Brazilian constitution limits the ability of a "service" company to invest in project finance. Leasing is a financial function and is limited to financial corporations, which are regulated by the Brazilian Central Bank. Only certified leasing companies can be in the business of leasing.

The Super ESCO would be set up as a leasing company and provide financing to ESCOs, who could structure a payment model with the end-user, based upon performance. The ESCO would then match the size and timing of its payments from the customer with the payments it owes to the super ESCO.

There are essentially two types of ESCOs emerging in Brazil. There are approximately one dozen independent ESCOs, which typically work with customers to design and install Energy Efficiency projects on a fee-for service basis. There are a handful of examples where these ESCOs have used their own equity or have borrowed from non-institutional lenders to finance Energy Efficiency projects, using a shared saving or equipment rental contracting arrangement. The second ESCO type includes utility subsidiaries that were set up in reaction to customer retention pressure by the parent utility operator. The emergence of this type of ESCO presents certain challenges to both the customer (who might be looking for other options to ESCOs) and to ESCOs who might be looking at stiff or unfair competition.

The Super ESCO will first review the engineering calculations to verify the estimated savings. It will then evaluate the ESCO's client, whose financing position will be secured by the assumption of the rights of the energy service agreement between the customer and the ESCO by the Super ESCO in the event of default by the ESCO

The Super ESCO will provide analysis of projects by ESCO specialists and thus will minimize default with the collateral of the ESCO. The role of the Super ESCO will play out as follows. The Super ESCO will first review the engineering calculations to verify the estimated savings. It will then evaluate the ESCOs client, whose financing position will be secured by the assumption of the rights of the Energy service agreement between the customer and the ESCO by the Super ESCO in the event of default by the ESCO. (See figure 2 for an example of the Super ESCO structure and its relationship to the customer and financing sources.)

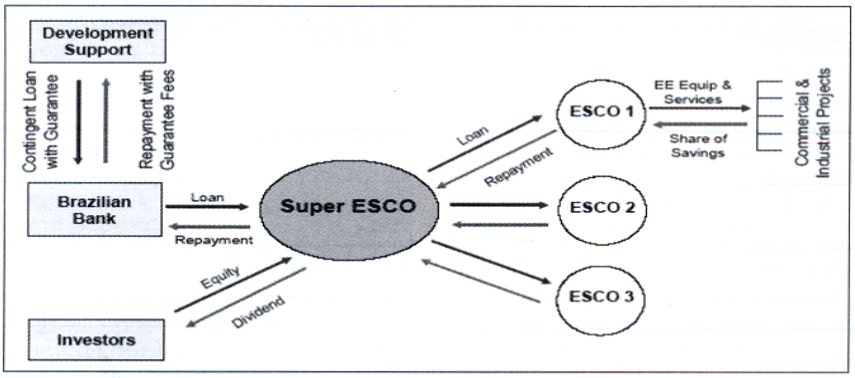
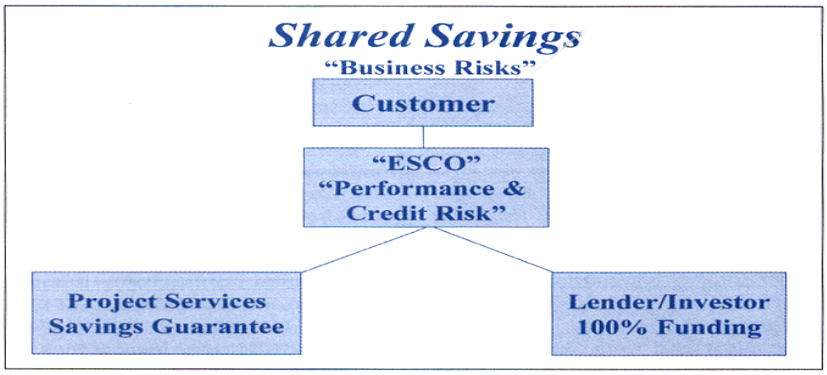


Figure 2: The Super ESCO Model

Examples of the Super ESCO model do exist in the United States. EUA Cogenex, an American ESCO, established the FLEXIFUND that purchased energy service agreements from independent ESCOs pricing the performance contracts by present valuing the anticipated payment stream from the customer. Energy Capital Partners in Boston, Massachusetts offered similar services to ESCOs and eventually ECP was sold to ABB Capital in 1999.



Courtsey: First European Conference on Energy Service Companies (ESCOs): "Creating the Market for the ESCOs Industry in Europe"

The Super ESCO will build its balance sheet for evaluation of lending institutions by raising equity capital. This way it will build up an equity base n which to support its debt, giving the lending institution comfort that adequate balance sheet so that the debt coverage ratios can be maintained over the life the Super ESCO. The investor in the Super ESCO will receive a risk-adjusted rate of return.

It is anticipated that the Super ESCO, regardless of the infusion of equity, will still require guarantees for credit. Adequate guarantees do not as yet exist (see blow). The ultimate benefit of the Super ESCO is that transaction costs would be mitigated by pooling projects and creating an adequate size to cause financing to occur.

The Guarantee Fund Scheme

Fundo de Aval para Projectos de Eficiencia Energetica is the name of the proposal to develop a guarantee fund to reduce the cost of debt financing for ESCOs and their customers. The impetus behind the Fudo de Aval proposal is the need for enabling mechanism to support the ESCOs' capital structure so that those companies in the proposal will be able to take advantage of the great potential of the market. The second reason for crating the Fundo de Aval is that banks in Brazil simply will not accept the receivables of an energy services performance contract as satisfactory collateral.
There are other "Guarantee Funds" available in Brazil, such as the FGPC, that has been tapped to support ESCO projects. However, the FGPC is still perceived by banks and others as excessively risky. FAMPE, another fund, is an alternative, but there are ceilings limiting make this alternative inadequate in light of the complexities of Energy Efficiency financing because it will not cover all the required financing.
The investors in the Guarantee Fund would have to consider their capital infusion as a grant or as a loan possible that the Guarantee Fund could provide a mix of shareholder investments.

ESCOs tapping the Guarantee Fund would have to pay an annual commission to the Fund based upon the balance of "Guarantee Coverage." The annual commission would be an additional interest charged to the ESCO and require an adjustment of the savings paid by the customer to the ESCO to cover this cost of service.

Reference book:

The Bulletin on Energy Efficiency
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