

The ESCO concept in the Indian scenario

Introduction

The concept of Energy Services Company (ESCO) is relatively new in India and has been picking up momentum in recent times. Under this, the energy saving equipment/ investment is arranged by an ESCO and the repayment towards this investment is arranged by the company from out of the cost savings it realizes from installing the equipment technology.

Industries in India generally are not very forthcoming in making large investments on replacing existing equipment with modern energy saving equipment/technology because of the risk of non-realization of energy savings as anticipated, and also because of the limited availability of funds to make this kind of investment.

Under this concept, the ESCO installs energy saving equipment at the client company at the latter's cost, operates it with the client's staff and gets back the investment through the contract period. In some cases, the ESCO may part some portion of the savings with the client company. This can be mutually agreed between the ESCO and the client. Thus the risk of unachieved savings is assumed by the ESCO. At the end of a pre-determined period of time (say 5-7 years), the equipment will be transferred to the company enabling it to get full energy saving from then onward.

On the other hand, in the case of "Performance Contracting," the ESCO will arrange finance for investment on modern plant/technology, and implement and test for energy savings on a sustained basis. The company is expected to repay the investment on a long-term basis, out of the cost savings it achieves through the implementation.

Analysis and findings on ESCO concept in the Indian context

Present Status

- It is perceived as something under which the ESCO will make huge profits at the cost of the company and the company would be the ultimate loser.
- Till today, there are not many full-fledged success stories on the ESCO concept. In many cases, projects that have seen some success are related to their own group products of ESCO companies.
- In some of the ongoing projects, the baseline studies require through attention; in most cases, clients are interested in third party monitoring and verification. The actual energy savings are not at par with the estimations. This has led to a mistrust on the ESCO concept for establishment of baseline and subsequent benefit analysis.
- Defining a base-line, monitoring and verification protocol design itself is unacceptable to several clients in view of the low knowledge, lack of adequate metering and analytical capability, in addition to high investments necessary for metering and monitoring. The specific energy consumption figures are generally sidelined and total energy consumption becomes the point of dispute.
- There are not many proven standard financial models on the ESCO concept to suit Indian conditions. The hidden and extra costs are resulting in very poor rate of returns.
- Though some financial institutes are giving attention to the ESCO concept, not much of penetration has happened.
- At present, several energy-efficient equipment or energy saving retrofit manufacturers and suppliers are offering products based on the ESCO mechanism (pay after saving); however the investment required in most of such cases is low or medium. Some of the products that were offered to consumers under this mechanism are energy-efficient lighting retrofits / products, synthetic flat belts, variable speed drives, fuel switching, etc.

Opportunities for ESCOs

Reluctance in investing on utilities: Experience during various energy audits shows that there is a great reluctance by managements in investing on plant utilities even if finances are available, but would readily do so on main production machinery, either for modernization or expansion.

Priority for latest production equipment: In the most modern industrial plants, while the main production lines are of the latest designs and technology, the auxiliaries and utilities are not of the same order. Energy audits which mainly cover the study of plant utilities are mostly focused on low and medium investment options and recommendations that require large investment are not implemented though the pay-back is attractive. This could be favorable situation for ESCO investment in modernization of plant utilities and auxiliaries.

Significance of energy consumption: More than 50 percent of commercial energy in the country is consumed by the industrial sector. The energy intensity of the Indian industry is said to be significantly higher in comparison with those in developed countries. There is wide variation in energy performance (over 250%). Specific Energy consumption in the Indian Industry is higher than that in developed countries.

Energy saving potential: As per the estimates of Planning Commission, there is a huge potential for energy savings.

Energy Shortages and rising Prices: There is constant shortage of energy and power in addition to ever-increasing prices with no relief in sight in the foreseeable future. With the cost of energy on the rising path, and the high project costs of new power plants, the scenario is ideal for the development ESCOs.

Dominance of energy cost on overall production cost: Energy forms a very significant part of the manufacturing cost in most industries. Some years ago, labor costs used to be the second largest component of the expenditure after raw material. But the rate of increase in the price of the energy has been so large that in recent years, energy cost has gradually overtaken all other costs as the single largest item of the expenditure after raw material.

Increasing awareness: The importance of saving energy in the industry is getting to be known over the last few years – because of the energy crisis – contributed by the high cost of energy and scarcity of energy. There is now a greater awareness that in order to survive in this very competitive market resulting from a liberalized import policy, cost cutting is the only practical option. Energy cost saving provide a more practical and comparatively easy option in this direction.

Sector	Energy Saving Potential
Economy as whole	Up to 23%
Agriculture	Up to 30%
Industrial	Up to 25%
Domestic and commercial	Up to 20%

Low priority for high investments: There exist a large potential for energy savings in India through small, medium and large investments. In most cases, small and medium investments, which have payback period less than two years, are generally given a high priority. Large investment oriented proposals are given a low priority. ESCOs can tap the large investment proposals. For ESCOs, the investment required should be significant in order to meet the economic feasibility.

Energy Conservation Act: The Energy Conservation Act 2000 is giving adequate thrust to the development of ESCOs in India. As per the Act, a Central Energy Conservation Fund would be set up at the Centre to develop the delivery mechanism for large-scale adoption of energy efficiency services such as performance contracting and promotion of energy service companies. The BEE will use this fund and other funds raised from various sources of innovative financing of energy efficiency projects in order to promote energy efficient investments.

Support for Government: Following the announcement made by Dr Manmohan Singh, India's Prime Minister, on August 23, 2002, that all government organizations must reduce energy consumption by 30 percent in five years by contracting for guaranteed levels of energy efficiency improvements involving ESCOs, BEE initiated the energy auditing of central government buildings and establishments.

Threat problems with ESCO projects

From a technical and economic yardstick, the concept of ESCO should find ready acceptance by industry, and several companies mentioned above could be ideal candidates for ESCO projects. But, management decisions on using ESCO participation more often are not based on these factors alone but a host of other attributes, such as:

- Management attitude and vision, its perception of priorities
- Confusion on ESCO mechanism and misgivings
- Absence of success stories / case studies
- Lack of knowledge of how it works and disadvantages, and generally hazy understanding of the whole ESCO concept
- It is perceived as something under which the ESCO will make huge profits at the cost of the company, and company would be the ultimate loser. This misconception could be a major barrier.

Way Forward

The potential for ESCOs in India is theoretically huge; there are very strong barriers for its growth, mainly arising out of misconception and an information gap about the ESCO mechanism and concept. Likely actions to be taken include the following actions:

- Educate the top management on the implications of energy cost reduction, its influence on profits, competition, pricing, etc. Before they consider the ESCO option, they will have to appreciate that energy savings will result in profit improvement, and energy saving is the easiest option to improve profits compared to all other options
- Demonstration projects pertaining to various industrial sectors and utilities in addition to the present promotional demonstration project for government buildings.

Courtesy: Ramesh Babu Guptha
Paluri, Senior program Officer, Winrock International India, Bangalore Office,
Email: ramesh@winrockindia.org

Reference Book:

[The Bulletin on Energy Efficiency](#)
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