ESCOs’ Role in the Energy Efficiency Value Chain

To unlock the energy cost savings potential in the industry and commercial sectors, the various stakeholders in the energy efficiency market need to work in cooperation in the multi-stage value chain.

Besides energy users who are the companies and businesses, the other stakeholders are Energy Services Companies (ESCOs) as suppliers to the users; banks/financial institutions; and governments. Each stakeholder has roles to play along the different stages of the energy efficiency value chain – from the initial phase of demand identification, to manufacture and sale of products, evaluation and investment phase, delivery and installation of products, and finally to long-term operations and maintenance (Figure 2).

Mismatch of Expectations & Knowledge Gap

Among the challenges that disrupt the value chain is the mismatch of expectations and information gap between stakeholders, in particular companies and ESCOs.

A study *Market Potential in Energy Efficiency in Southeast Asia*\(^1\) which involved diverse stakeholders in Singapore, Malaysia, Indonesia, Thailand and Vietnam highlighted the charge by companies that ESCOs do not commit ‘sufficient resources’ – to help clients conduct a proper projection of potential energy savings.

Many companies, as it turns out, are unwilling to invest in a thorough energy audit carried out by the ESCO as a starting point for a potential energy efficiency project – expecting that this initial cost be borne by ESCOs.

ESCOs, on the other hand, have found that some companies may not go on to purchase their products and services even after an auditing process is completed.

Mistrust between companies and ESCOs is a barrier and can spread through the industry, according to study by the European Chamber of Commerce, Singapore in collaboration with Roland Berger Strategy Consultants.

On top of this, a gap exists in user information and knowledge required for sound decision-making, when it comes to energy savings initiatives being considered. This could even be to distinguish between different products, technologies and ESCO skills base and to ascertain match to specific needs. Even more daunting for companies is being able to discern which ones can be reliably counted upon to deliver the results as promised.

In Singapore, Thailand and Malaysia, it helps the energy efficiency industry that systems have been put in place to accredit and certify ESCOs. In Singapore too, where companies pay the true cost of energy, there is greater incentive to lower energy consumption and costs through energy efficiency projects with the possible involvement of ESCOs.
Understanding ESCOs

ESCOs are not a new concept and have been operating for many years. Still in many countries ESCOs may be a relatively new concept to most individuals as well as the energy performance contracting (EPC) approach that some ESCOs take.

Based on the “Energy Service Companies in Europe” report, the characteristics of an ESCO are typically defined to be:

- It guarantees energy savings and/or provision of the same level of energy service at lower cost
- Its remuneration is directly tied to the energy savings achieved
- It can either finance, or assist in arranging financing for the installation of an energy project they implement by providing a savings guarantee

In the publication *ESCO Feasibility Study* by UK energy consultancy firm TNEI Services, the study pointed out it is important to be ‘open-minded’ when considering the potential applications for ESCOs as ESCOs do not provide a fixed offering, but a service solution customised for the client’s needs. A wide range of activities are included under the definition of ‘energy services’ by ESCOs:

- Energy analysis and audits
- Energy management
- Project design and implementation
- Maintenance and operation
- Monitoring and evaluation of savings
- Property/facility management
- Energy and/or equipment supply
- Provision of service (space cooling, lighting etc)

Advantages of Using an Energy Services Company

Broadly, taking the ESCO approach can offer both public sector organizations and private companies significant benefits towards their energy efficiency projects, given that in the current economic climate organizations face similar capital constraints. Some of these benefits according to TNEI are:

- **Technical capacity and capability**
  - With provision of energy services being a core business for ESCOs, greater energy management, technical and commercial expertise, manpower and experience are available. ESCOs are also able to access experienced personnel with broader skills base and can be far more responsive, as well as to handle turnkey project management of capital projects.

- **Performance risk management**
  - Clients are able to transfer performance risk to ESCOs and in some cases, the financial risk as well.
  - ESCOs have an incentive/commitment to reduce either energy costs or energy usage and are backed with the resources including expertise and manpower to ensure these improvements are achieved. Often in-house energy managers while having the objective to reduce costs do not necessarily have the resources to do so; this can result in demotivation and failure to consider major improvements.
  - It is in an ESCO’s interest to identify and document energy efficiency savings accurately; including cross-system efficiencies. For example, more efficient lighting reduces heat thus decreasing cooling loads. This benchmarking provides a level of understanding and helps guard against unexpected costs and loss of energy savings.
  - Continual longer-term incentives mean that some ESCOs are also more inclined to deliver continual improvement and technology upgrades.
ESCOs ensure that upgrading of equipment meet industry-wide measurement and verification protocols, providing reassurance to customers.

**Flexibility**
- ESCOs have the potential to offer significant benefits through economies of scale for capital equipment and technologies. For example, they are able to link several clients to a single order. Because of this they may be more inclined to commit the resources necessary to deliver larger integrated projects.
- Innovative ESCOs are far more likely to deliver new services than their clients are to develop them internally.
- The use of an ESCO can provide an increased level of ‘transparency’ and engagement required by public sector bodies.
- The use of an ESCO can be a positive driver towards achieving successful solutions due to the pooling of combined resources and motivation to take the project forward.
- An ESCO may provide the opportunity to bundle projects thereby creating economies of scale and enabling projects to be realised that otherwise would not have been viable.

**Financing benefits**
- The involvement of an ESCO with experience and expertise may facilitate access to finance more easily than the client organization
- An ESCO can provide the facility for capital investment to be made off the client’s balance sheet, thereby potentially increasing operational overheads, but freeing up capital to be invested in core business related assets.
- Legal and financial processes and costs may be improved by working with an ESCO that has experience and established processes and documentation in place.

**Enabling Energy Efficiency**

Despite the benefits of the ESCO approach documented in many sources of literature, several barriers stand in the way of capitalising on energy savings opportunities. In the study *Market Potential in Energy Efficiency in Southeast Asia*, companies called for more education, including demonstration projects to showcase the benefits of energy efficiency. User lack of understanding of ESCOs could be surmounted to an extent through standards and systems setting. As more documents and case studies become available as the market evolves, these would provide further guidance on local issues, such as how ESCOs and stakeholders can more effectively engage with each other.

*Adapted from two reports: “Market Potential in Energy Efficiency in Southeast Asia” 2011 by Roland Berger Strategy Consultants and “ESCO Feasibility Study” 2007 by TNEI Services with full reports available for download:*


http://manchesterismyplanet.com/strategy/esco-feasibility-study

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2. *ESCO Feasibility Study*, 2007 by TNEI Services