

New Approaches for Energy Efficiency Market Penetration

Ali Korakan

Director, Attest Ltd, Cyprus

Consultant to Envo Energy Services, Turkey

President, AEE Cyprus Chapter,

President, Energy Professionals' Association, Cyprus,

ABSTRACT

Penetrating the energy efficiency market is a challenge anywhere in the world. Many business models have been designed and implemented. Despite the fact that energy prices are continuously on the rise, industries in most countries have maintained the practice of investing in expanding production rather than in making operations more energy efficient. The higher cost of operations is simply transferred to the consumers in the form of increased prices for services and products. To date, investments in production expansion always win over investments in reducing operating costs through improving the efficiency of energy use. However, with oil prices exceeding \$100 per barrel, the benefits of energy efficiency—reduced costs, increased productivity and competitiveness, economic development, and improved environment—are becoming increasingly attractive and feasible. Yet investment in energy efficient technologies and systems lags behind the potential for benefits. Investors are still reluctant to implement energy efficiency projects for several reasons.

This article examines a new business model in energy efficiency market penetration. The new business approach adds energy consulting services and training to the traditional energy project services. The ESCO's consulting services establish energy programs with the host organization. The program aims to increase awareness and makes the client's staff feel that the project is its own. This helps success and sustainability. It builds confidence in the client for high investment

energy efficiency projects.

In any energy efficiency market, sustainability of ESCOs is very difficult. Project contracts are relatively large, and their timing is usually uneven. A high business development cost is associated with winning project contracts. The new business model creates a steady stream of smaller income to support the ESCO staff and office between projects. Examples of the implementation of new market penetration models are presented in this article.

A NEW BUSINESS APPROACH

The new business approach adds energy consulting services to the existing energy project services. Reliance on project contracts alone causes feast or famine. Project contracts are relatively large, and their timing is usually uneven. The addition of consulting services creates a steady stream of smaller income to support the staff and office between projects. There is a high business development cost associated with winning project contracts, and the consulting income supports this. This consulting practice, described in this article, is the basis for a new business model introduced last year by Envo Energy Services.

MONTHLY VISITS

Envo's approach is introducing a new type of consulting service to the energy services business. We know of no precedent quite like this. Many who need energy efficiency are afraid of the shock of large capital investments. Our service offers monthly visits intended to ease clients into becoming more energy efficient. It is described below.

The new low-cost consulting service will first show clients the way to the easiest cost reduction projects. The easy savings can be captured and plowed back into more capital intensive projects. The consulting service also identifies potential capital projects for further development. The project services will implement them. In the long run, Envo expects its work to have an impact that is measurable on a wide scale.

After setting the stage with consulting services, a true ESCO must stand ready to offer the standard project services, including performance contracting.

PROGRAM SUSTAINABILITY AND REPLICATION

The new consulting feature provides a level of program sustainability that project services alone could not achieve. The consulting program is designed to be ongoing with regular monthly visits to the client, at first in a one-year contract. The service will be affordable, priced at 1-3 percent of the customer's annual electric bill.

CLIENT'S ENERGY MANAGER

Under the consulting program, an ESCO becomes the client's energy manager, an extension of their management team. Experience in similar endeavors has proven that replication occurs as soon as customers see the value of our consulting services. Then the clients' competition signs up too, and most of them will renew for years to come. The consulting service will spawn capital investment projects, which the ESCO can then manage.

Sustainability in project services comes from follow-up services after implementation. The ESCO should make an effort to secure follow-up work in every project contract. Follow-up work monitors and preserves savings in the out years.

CONSULTING SERVICES

The consulting services establish an energy program with the host organization. Consulting consists of visits to the client site by the ESCO team, one day per month, supported with two or three days of office time for research, analysis, and reporting. Clients may be hotels, factories, hospitals, stores, or any organization that has the goals of energy and carbon reduction.

Our consulting program is highly structured and closely follows the steps outlined by the US EPA's Energy Star program:

1. Make a commitment.
2. Assess performance.
3. Set goals.
4. Create an action plan.
5. Implement the action plan.

6. Evaluate progress.
7. Recognize achievements.

OUR DUTIES

- Coordinating and directing the overall energy program.
- Acting as the point of contact for senior management.
- Increasing the visibility of energy management within the organization.
- Drafting an energy policy to fit the carbon footprint goal.
- Creating and leading the corporate energy team.
- Securing sufficient resources to implement strategic energy management.
- Assuring accountability and commitment from core parts of the organization.
- Identifying opportunities for improvement and ensuring implementation, including staff training.
- Measuring, tracking, evaluating, and communicating results, providing recognition for achievements

Specific Outcome

Establishment of effective, in-house energy programs at client facilities.

OUR APPROACH

- Define priorities for reducing energy costs and improving energy security.
- Capture low-cost savings first to reinvest in more serious capital projects next.
- Identify bigger project opportunities.
- Determine returns on investment with life cycle cost (LCC) analysis.
- Lay the foundation for making significant reductions actually happen.

PROJECTS SERVICES

After a project idea is accepted, a good ESCO expedites projects in the following sequence:

1. Feasibility study (technical & life cycle cost financial).
2. Business plan (large projects only).
3. Design management.
4. Financing assistance.
5. Procurement.
6. Construction management.
7. Commissioning.
8. Follow-up.
 - a) Operation & maintenance (O&M)—*preserves* savings.
 - b) Measurement & verification (M&V)—*proves* savings.

By following these steps, we ensure intended benefits for the economic life of the project, normally 15-20 years.

Good follow-up (Step 8) is just as important as good implementation (Steps 1-7). After commissioning, the project begins to generate savings. It is essential that the new equipment be maintained and monitored. Without attention, performance inevitably deteriorates after commissioning. In our analyses, we build the follow-up costs into the net annual savings, so the expense is no surprise and the feasibility turns out as predicted.

TRAINING

Training is a major component of our approach. As a feature of our consulting service, we hold monthly training classes on energy efficiency and sustainability for clients' employees. These training modules are slightly modified to suit the specific needs of clients. Not all audiences are engineers, technicians, or technical people. Technical concepts are described using plain language that anybody can understand without difficulty, along with examples and illustrations. The aim is to attract the attention of the audiences and convey the basic information on energy efficiency that can be used in their everyday life at work and at home.

ENERGY TEAM

In the consulting program we form energy teams for each client. The energy team members are selected from the staff, from various departments and from all levels. They are not necessarily managers

or department chiefs. Team members are volunteers, preferably people who have an interest in energy efficiency and have enthusiasm to work.

Energy teams have several functions. They meet periodically. Every month they schedule a meeting on the day of our monthly visit, and we meet together. They generate an energy policy and make action plans according to the policy. The energy policy is submitted to management for approval. The team collects feedback from their departments. They follow up with the results of the energy efficiency measures and discuss how to further develop and increase the effectiveness of these measures. The main goal here is to make the staff think and feel it is their duty and responsibility to make the energy efficiency sustainable.

Action plans are generally operational efficiency measures, awareness actions, actions that disseminate information about the energy efficiency policy, and success stories of the staff.

By this means, self-control is established. This leads to success.

ENERGY POLICY

Every corporation should have a written energy policy approved by management.

The first task of the energy team is to write a concise, easily understandable, effective energy policy and send it for the approval of management. Once the energy policy is approved it becomes the official corporate energy policy.

The energy policy has imperatives for management and the whole staff and is distributed to all staff. It is important that suppliers as well as clients are aware of the corporation's energy policy. It is one of the main duties of the energy team to ensure that the aforesaid parties are informed and kept up to date about the actions.

SUSTAINABILITY

We help build an energy efficiency culture in the company. This is very important for sustainability. There are three main aspects of sustainability: economic, strategic, and environmental.

Economic Aspect

Energy prices are rising every day. Any company, to be competitive in the market, needs to control its input costs. Energy is one of the main

input costs. Reducing production costs will not only make a company and its products more competitive in the market but will also give a company the chance to raise funds for further investment in new, more cost-effective and efficient technologies. This will increase productivity as a chain reaction and ensure the continuous competitiveness and economic sustainability of the company.

Strategic Aspect

As the demand for energy increases every day, energy resources become depleted. This introduces the issue of energy security. Energy security is a very critical issue. Companies must learn to develop ways to produce the most with the least energy, and, when possible, use renewable and alternative energy sources. For sustainability, companies must prepare themselves for energy security risks.

Environmental Aspect

Fossil fuels still provide the main share of the fuel mix of every country. The results are obvious, and our planet is approaching a tipping point in global warming; the alarm bells are ringing. Reducing carbon emissions is very important for a sustainable environment.

CONCLUSION

The Fourth Aspect

There is a fourth aspect which is not mentioned in the first three. Increasing energy efficiency can only be done well with professional services. The knowhow, experience, and expertise of ESCOs are indispensable for companies. Improving the corporate energy efficiency culture with this new business model increases the success of energy efficiency projects and hence the demand for ESCO services. This is what makes ESCO business sustainable.

ABOUT THE AUTHOR

Ali Korakan is a certified energy auditor (CEA) under the Association of Energy Engineers (AEE). He conducts energy audits and develops energy efficiency and renewable energy projects. He is an electrical engineer with 26 years engineering experience and 22 years

project management and management experience. Now he develops energy efficiency and renewable energy projects internationally, having begun with Cyprus and Turkey. He develops all projects to be bankable by international standards of financial analysis. He also accounts for reduction of sulfur and greenhouse gas emissions in project analyses. He has conducted many energy efficiency and renewable energy projects in various industry sectors, including dairy farming and dairy processing; poultry; plaster and paint manufacturing; rock, stone, and marble processing; shipyards; drinks and beverages manufacturing and bottling; the leisure and hospitality industries; hospitals; steel processing industries; tobacco processing and cigarette manufacturing; hypermarkets; pharmaceutical production plants; cement factories; chlorine-alkali caustic soda plants; container ports and engine parts manufacturing plants; airports; beverage can production industries; and packaging industries. He is the president of both the AEE Cyprus Chapter and the Energy Professionals' Association in Cyprus. He is the director of Attest Ltd., a consultation and investment company established in Cyprus. He is also consultant to Envo Energy Service, in Turkey.

Tel: (+ 90 392) 228 6184 Fax: (+ 90 392) 228 2026

Mob: + 90 542 881 5353, + 90 532 353 8439

e-mail: alikorakan@gmail.com

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